

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. If the wires are short (seat post mount coils) and wire resistance is less than 4,000 ohms a resistor cap or boot is required. If using Taylor Pro wire at least 12 inches are required. Solid or Spiral wound wires or wires with less than 4,000 ohms of resistance may 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:

Dual Fire -1 Plug per cylinder Multi-Spark 0.025"-0.032"

Many things effect spark plug gap settings:

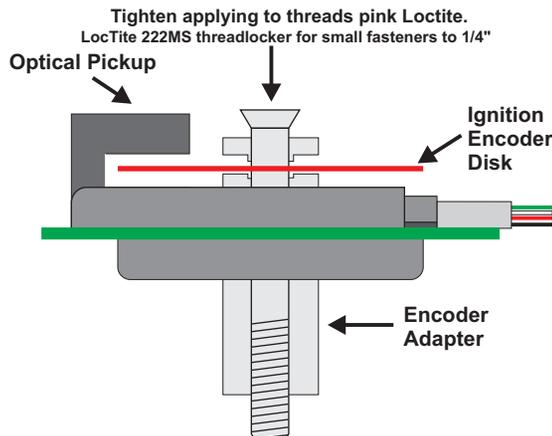
Compression Ratio: The higher the engine compression, the more voltage required to fire the plug, and the narrower the plug gap should be.

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.

Encoder Installation and Cam end play

Cam end play should not exceed 0.020"



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SPYKE INC.
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Downey, CA 90241
Phone (562) 803-1700

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.

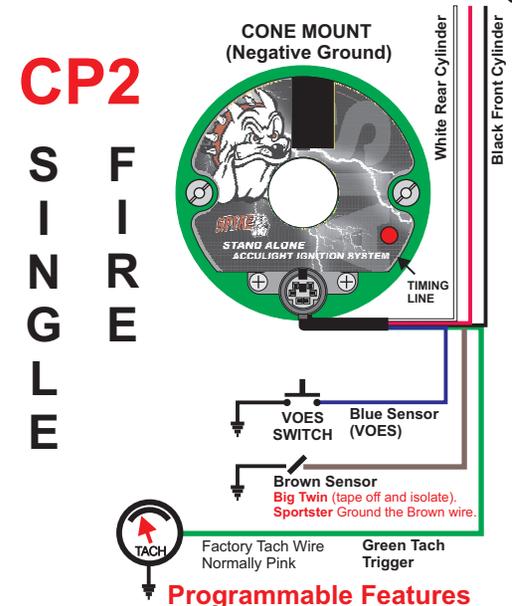
Any module returned under the warranty must include note of explanation of failure and be accompanied by a dated bill of sale. Warrantied items must be taken up directly with Spyke Inc. by the individual user. Failure to do so will void Spyke Inc. of any obligation to repair or replace the ignition.

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!**



- Reprogrammable via PLC Cable
- Spark timing placement in 1° increments
- Placement of 1-3 Sparks/Compress Stroke
- 2 Digital sensor inputs
- 4 Independent Timing Curves
- Tach Output 1-8 Cylinder
- Coil Saturation Control (dwell)
- Precision Rev limiter
- Curve Fallback

Features

- Static Timing Light
- Stainless Steel Encoder
- Automatic Coil Shutoff

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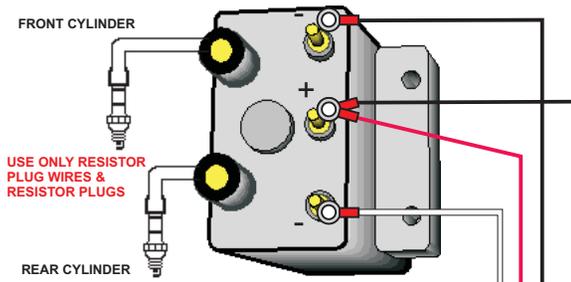
Phone (562) 803-1700 Fax (562) 803-0378

(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 www.spyke1.com

SEE COIL WIRING DIAGRAM FOR DUAL FIRE OPERATION.

To +12 VDC from KillSwitch, usually White with Black Stripe.



USE ONLY RESISTOR PLUG WIRES & RESISTOR PLUGS

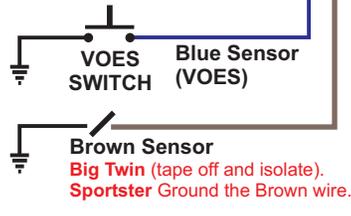
CONE MOUNT (Negative Ground)



White Rear Cylinder

Black Front Cylinder

VOES Should Be Adjusted To 4 - 5 1/2" Lbs, This can vary with Carb type and load.



Factory Tach Wire Normally Pink
Green Tach Trigger

Programming

Programming is done using the AIS Program and attaching a PLC Cable to the Ignition via a PC's serial port and the Ignitions PLC connector.

Rev Limits can be set in 50 rpm increments from 50 - 12500 rpm's.

For complete AIS programming capabilities see www.spyke1.com

Download of the AIS program is Free and complete programming and installation information is available in the program help section.

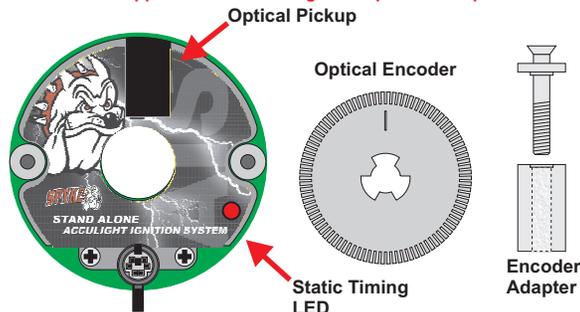
Note: PLC (Program Link Cable) must be unplugged after Programming is complete for Ignition to work.

WARNING: Do not touch coil output wires (White & Black) To +12. DO NOT USE SOLID OR SPIRAL WOUND SUPPRESSION SPARK PLUG WIRES, USE RESISTOR WIRES ONLY. FAILURE TO OBSERVE THESE PRECAUTIONS WILL DAMAGE IGN. & VOID THE WARRANTY.

*See Encoder Installation and Cam end play on back page.

1. Remove all components from the ignition cone cam cover area, exposing the cam shaft end. If you have a stock module it may be left mounted in place, but disconnect it from the coil, tachometer and ignition switch wire.
2. Pull ignition wire through wire hole. Make sure not to run wiring near high heat areas of the motorcycle, such as the exhaust system. Rock the ignition into cone, with the optical pickup at the top or in the case of a Sportster® everything is rotated 90° clockwise with optical pickup facing forward and hold down screws in the vertical position.
3. Insert the front and rear lock down screws & tighten.
4. Hook ignition positive (red) wire to the ignition supply, usually at the coil positive (center terminal) with the kill or ignition switch wire.
5. Hook the green wire to the tach trigger wire of motorcycle (usually pink) if used.
6. Hook the blue VOES wire to VOES switch.
If you are installing on:
Big Twin® do not ground the Brown wire (tape off and isolate).
Sportster® Ground the Brown wire.
It is recommended that you use a VOES switch if one was on your motorcycle or you should add one if you have a high performance, heavy bike or have wide engine load variations. If you did not have a VOES ground the blue wire.
7. Insert the encoder adapter through the center hole of the ignition step side out. Press the washer into the optical encoder wheel centered on the step in the washer. Using the existing flyweight screw apply pink Loctite to the screw and insert the hex head screw with washer through the center of the adapter and lightly tighten, making sure the optical encoder is centered by the step in the washer (see diagram below).
8. Remove the timing plug and rotate the engine to **TOP DEAD CENTER FRONT CYLINDER COMPRESSION STROKE.** (see drawings at bottom of next page)
9. Turn the Ignition and Kill Switch on and rotate the Optical Encoder Counter Clockwise until the Static Timing LED lights and stop. Holding the Optical Encoder tighten the Adapter Hex screw firmly to hold the Encoder wheel in place. Recheck top dead center timing mark to make sure the timing has not moved.
10. Hook the Black front cylinder wire to the front coil & the White wire to the rear cylinder coil. Do not hook the white wire to positive. Some Harley-Davidsons® use a white wire for positive. If you wish to use the ignition in the dual fire mode with a dual fire coil, connect the White & Black wire together and hook to the coil trigger (see dual fire wiring diagram).
11. Start the Engine.

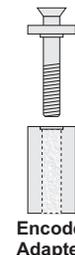
Do not Install Factory Cam Cover Lid with Rivets
Upper Rivet will Damage the Optical Pickup.



Optical Pickup

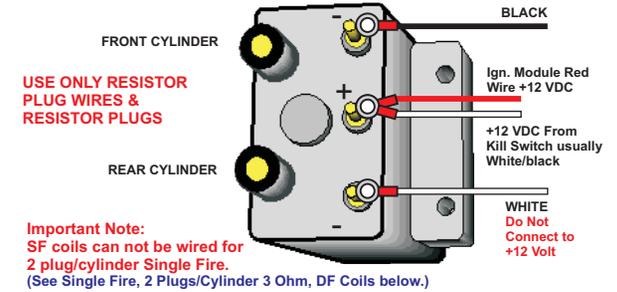
Optical Encoder

Static Timing LED



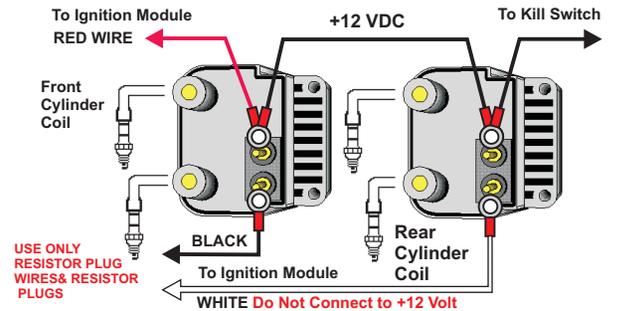
COIL HOOKUP DRAWINGS

Single Fire, 1 Plug/Cylinder, 3 Ohm, SF Coil



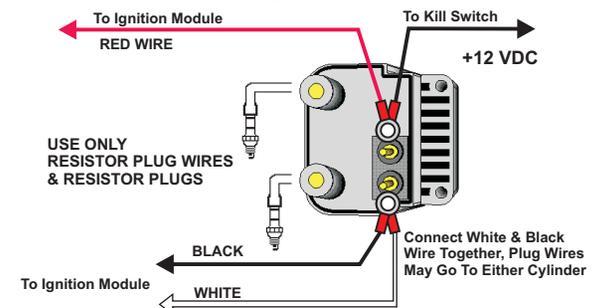
Important Note:
SF coils can not be wired for 2 plug/cylinder Single Fire.
(See Single Fire, 2 Plugs/Cylinder 3 Ohm, DF Coils below.)

Single Fire, 2 Plugs/Cylinder, 3 Ohm, DF Coils



Important Note: DF coils can not be wired for 2 plug per cylinder Dual Fire. You are jumping double the gap under compression when dual plugging. With two plugs per cylinder gapped at 0.040" you're jumping 0.080" under pressure. Would you gap a single plug at 0.080 under raised compression.

Dual Fire, 1 Plug/Cylinder, 3 Ohm, DF Coil



Locating TDC Front Cylinder Compression Stroke

Note: a Sportster is rotated 90° Clockwise

