

SPARK PLUG WIRES

Choice of spark plug wires is an important consideration when using an electronic ignition system. Use ONLY Resistor (CARBON CORE) or Approved Spiral Wound Spark Plug Wires & Resistor Spark Plugs. Solid or Spiral unapproved spiral wound wires will damage the ignition module and void the warranty!

SPARK PLUGS

You must use a resistor spark plug with electronic ignitions. 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:

Spark plug Multi-Spark 0.025-0.032

Many things effect spark plug gap settings:

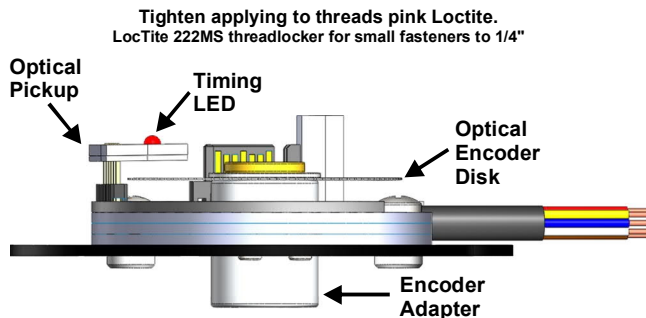
Compression Ratio: The higher the engine compression, the more voltage required to fire the plug, and the narrower the plug gap should be.

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 (rotor) Installation and Cam end play

Cam end play should not exceed 0.020". The encoder disk should be fall the constraints of the optical pickup triggers.



Optical Encoder Disk can not strike the Ignition Module or Optical Pickup at anytime during operation. Cam walk is normally outward so position Encoder Disk appropriately using shim washers.

OWNERS MANUAL

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

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The following customer actions automatically voids the warranty.

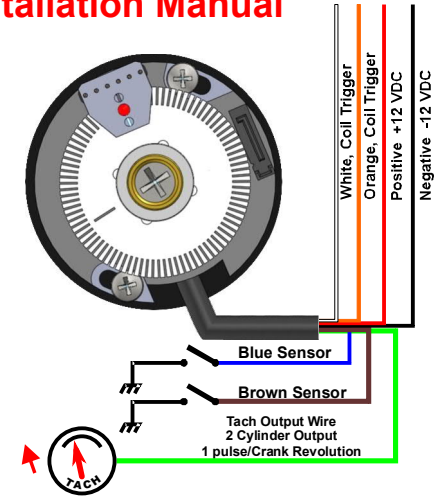
1) Use of any other spark plug wires other than resistor type wires with at least 800 ohms of resistance. 2) Use of non-resistor spark plugs. 3) Drilling or cutting of any kind into the module. 4) Incorrect wiring of the module. 5) Use of module on systems with defective charging systems. 6) Use of defective or incorrect 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 & instruction manual.

LIMITED WARRANTY

Power Arc Ignition Co., Inc. warrants to the original retail purchaser of a Power Arc IDS ignition that it will, free of charge, repair or replace at its own option, the product if returned to Power Arc Ignition Co., Inc. within 6 months after purchase and if found by Power Arc Ignition Co., 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 Power Arc Ignition Co., 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, or has been used on circuits or voltages other than those indicated in its instruction manual. If the equipment is found to be defective in materials or workmanship the equipment will be returned and Power Arc Ignition Co., Inc. will pay the return shipping (this does not include next day shipping, second day shipping, shipments outside of the continental U. S. A. or shipments outside of the U.S.A.). All warranty work outside of the U.S.A. must include prepayment of return shipping. Customs, duties or tariffs are not covered by this warranty. If the equipment is found to be defective but is due to customer misuse (as described in warranty) Power Arc Ignition Co., Inc. will notify the customer and if the customer wants the defective equipment returned Power Arc Ignition Co., Inc. will return the equipment C.O.D. freight. If the equipment is found to be in operational order when returned to the factory Power Arc Ignition Co., Inc. will return the module with a \$30.00 service charge plus freight and C.O.D. Charges. Any module returned under the warranty must include note of explanation of failure and be accompanied by a dated bill of sale. Power Arc Ignition Co., Inc. warranty obligations are limited to those set forth herein and no other obligations, expressed or implied, are assumed by Power Arc Ignitions Co., 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.



Power Arc CD2-LM HD Installation Manual



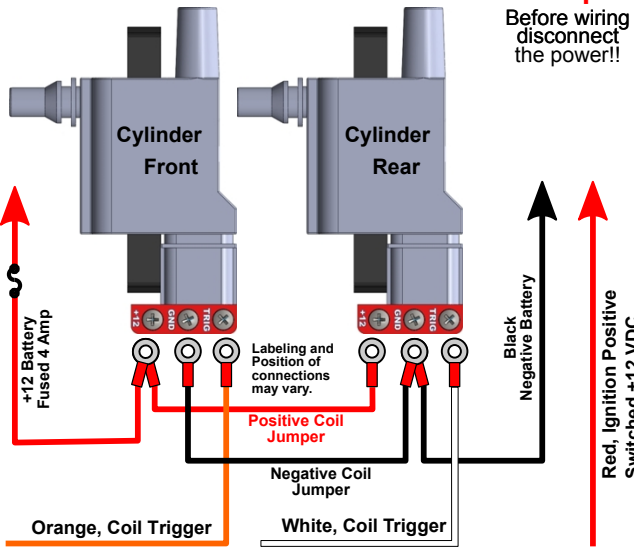
CD2-LM Ignition System

- Negative or Positive Ground Operation
- CW or CCW Cam Operation
- No External Module (All in the Points Housing)
- Low Voltage Operation
- Uses less Energy than Points
- For 1 or 2 Cylinder Engines (with Coil change)
- Multi-Spark 3 Sparks / Compression Stroke
- Automatic Coil Safety Shutoff
- Precision Rev limiter
- Static Timing Light
- Stainless Steel Encoder Disk
- Electronic Tach Output (1Pulse/CrankRevolution)

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<http://www.powerarc.com>
PATENT #4,951,629 OTHER PATENTS PENDING

Single Fire (Fires on Compress Only) 2 Cylinder, 2 Plug/Cylinder

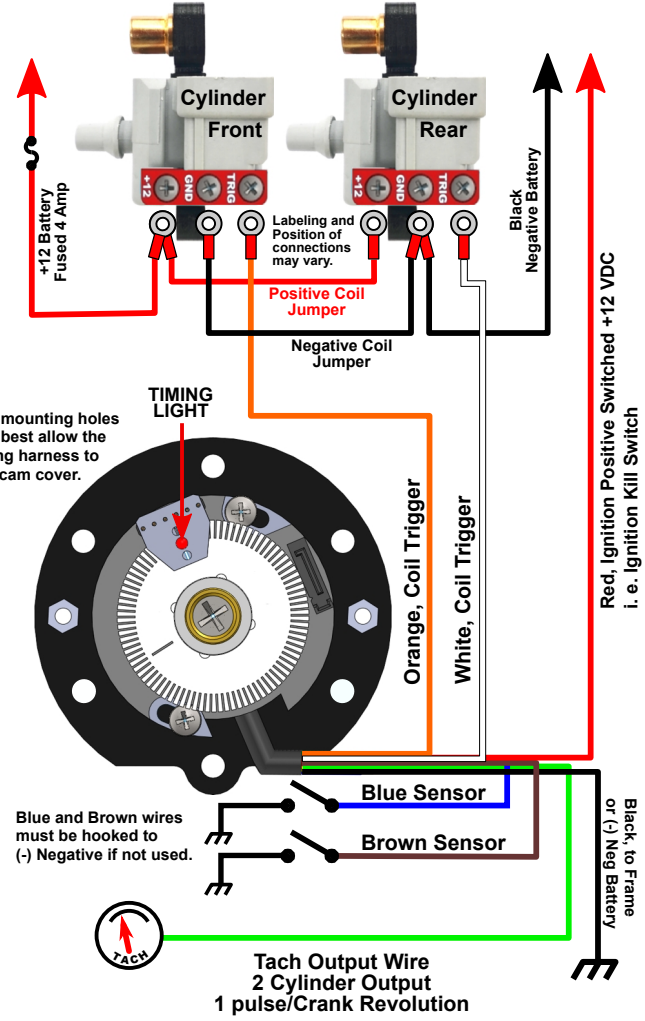


Stop
Before wiring
disconnect
the power!!

WARNING: Do not touch coil output wires Orange or White to +12. DO NOT use Solid or Spiral wound suppression spark plug wires of less than 800 Ω per foot. DO NOT bundle module control wires with HV spark plug wires. DO NOT use with lithium ion batteries. Failure to observe these precautions will damage Ignition & Void the Warranty.

- Secure bike and put the transmission in neutral.
- Remove all components from the ignition 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.
- 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.
- Insert the front and rear lock down screws & tighten.
- Hook ignition positive (red) wire to the kill switch only.
- Hook the green wire to the tach trigger wire of motorcycle (usually pink) if used. (If not used isolate)
- 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.**

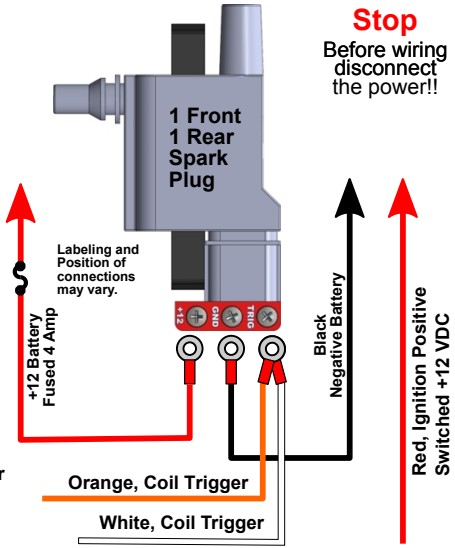
Single Fire (Fires on Compress Only) 2 Cylinder, 1 Plug/Cylinder (Negative Ground)



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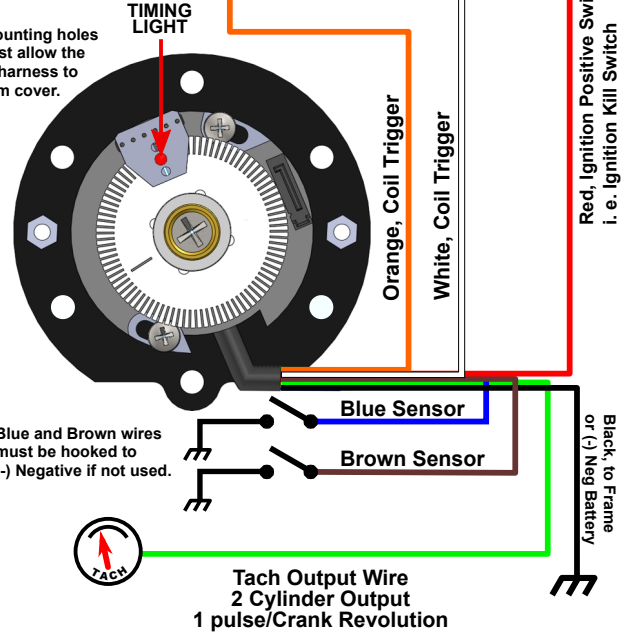
- Insert the encoder standoff through the center hole of the ignition step side out. Set the Encoder Disk centered on the Standoff. Put the locking washer and flat washer on the bronze flange bushing and push thru the Encoder Disk. Apply appropriate Loctite to the screw and insert the screw with flange bushing and washer and lightly tighten, making sure the optical encoder is centered. (see diagram below).
- Remove the timing plug and rotate the engine to **TOP DEAD CENTER FRONT CYLINDER COMPRESSION STROKE.**
- Hook the Black Grounding wire to -12 VDC (Battery Negative or Frame)
- Single Fire:** Hook the Orange wire to the front coil & the White wire to the rear cylinder coil. **(DO NOT hook the white trigger wire to positive)** some Harley-Davidsons® use a white wire for positive. **DO NOT wire coil +12 to the battery at this time.** This will stop the coils from firing during timing procedure.
- Wasted Spark:** Hook the Orange and White wire together on the TRIG terminal of the MC2 coil.

Wasted Spark 2 Cylinder, 1 Plug/Cylinder

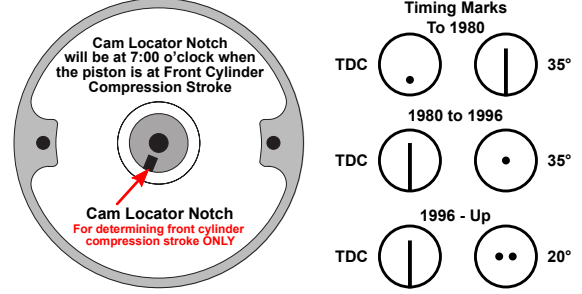


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- Turn the Ignition and Kill Switch on and rotate the Optical Encoder Counter Clockwise until the Static Timing LED lights and stop. Holding the Optical Encoder, tighten the Adapter screw firmly to hold the Encoder wheel in place. Recheck top dead center timing mark to make sure the timing has not moved. Fine adjustments can be made using the hold down screws and rotating the module.
- Turn power OFF
- Hook a Red wire with a 4 amp fuse inline near the battery from the + Positive of the battery to the (+12) Positive coil terminal.
- Turn the ignition/kill switch ON and start the engine.



Locating TDC Front Cylinder Compression Stroke
Note: Below is for Stock Flywheels
Sportster® is rotated 90° Clockwise



Special coil mounts or fabrication may be required when using MC-2 coils.

