

## 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:

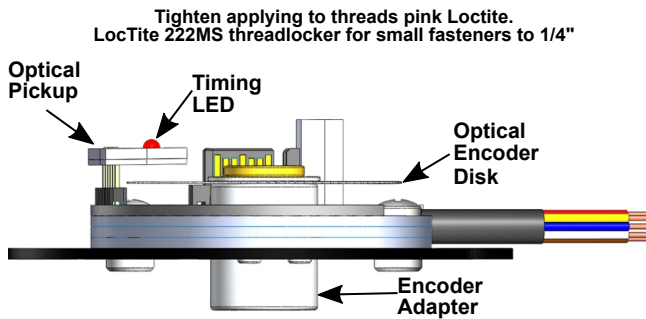
**Compression Ratio:** The higher the engine compression, the more voltage required to fire the plug, and the narrower the plug gap should be.

**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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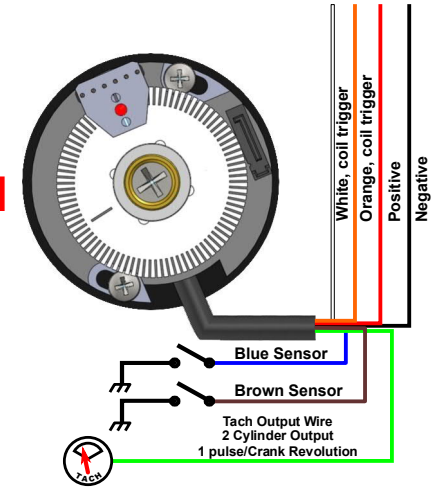
The following customer actions automatically voids the warranty.  
1) Use of any other spark plug wires other than resistor type wires with at least 800 ohms of resistance. 2) Use of non-resistor spark plugs. 3) Drilling or cutting of any kind into the module 4) Incorrect wiring of the module. 5) Use 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 no apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



Ural  
CD2-LM  
12 Volt

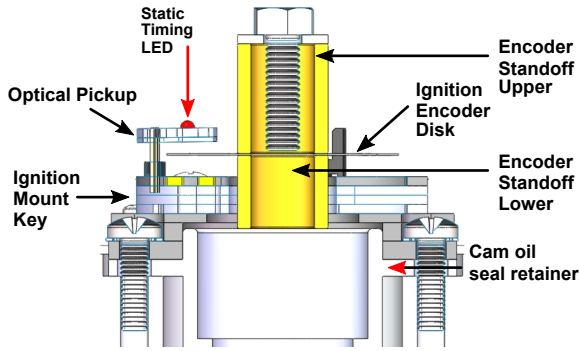


## CD2-LM IgnitionSystem

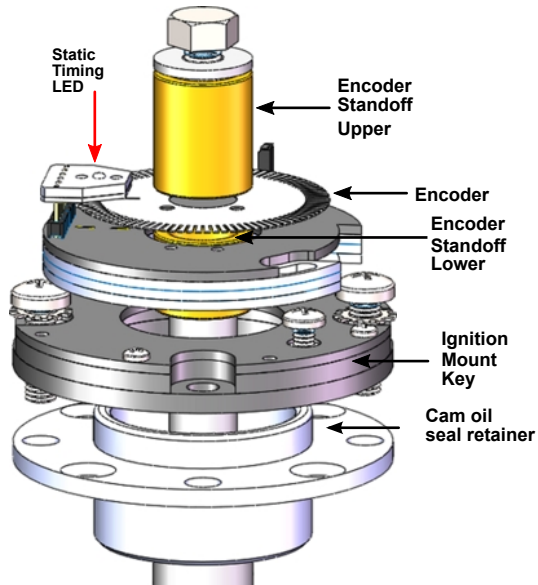
- Negative or Positive Ground Operation
- CW or CCW Cam Operation
- No External Module
- Low Voltage Operation
- Uses less Energy than Points Systems
- For 1 or 2 Cylinder Engine (with coil change)
- Multi-Spark 3 Sparks / Compression Stroke
- Automatic Coil Safety Shutoff
- Precision Rev limiter
- Static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

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PATENT #4,951,629 OTHER PATENTS PENDING

Encoder must not hit or contact the Optical Pickup or Face of Module



Shims washers may be used above the lower encoder standoff to center optical encoder in the optical pickup.



## INSTALLATION INSTRUCTIONS

**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  $\Omega$  per foot. DO NOT bundle module control wires with HV spark plug wires. Failure to observe these precautions will damage Ignition & Void the Warranty.

1. Apply parking brake and put the transmission in neutral.
  2. Mount the Ignition Coil in suitable location and route Spark Plug Wires.
  3. Remove all existing Ignition components from the ignition cam cover area, exposing the cam shaft oil seal retainer.
  4. Remove the screws from the cam oil seal retainer and attach the Ignition mount to the cam cover using the ignition mount with screws going through the cam seal retainer.
  5. Insert the shorter encoder adapter standoff and a shim washer over the cam sliding down to bottom.
  6. Slide the ignition and optical encoder over end cam sliding downward until it rests on key and encoder sits on the short encoder adapter. Place the longer encoder standoff over the end of the cam dropping on to the optical encoder. The long encoder standoff should protrude approximately 0.050" above the end of the cam. Place existing flat washer and lock washer on top of the encoder adapter and lightly tighten. Encoder must not hit or contact the Optical Trigger. If Encoder hits the Optical Sensor supplied shim washers may be added to reposition the optical encoder.
  7. Rotate the engine to Cylinder of your choice TOP DEAD CENTER using a piston stop, dial indicator, degree wheel, or other appropriate method. Make a mark on crank to crank case for later reference.
  8. Attach the ignition positive (red) wire of module and the original wire from the kill switch to the (+12) of the MC-2 coil. Connect the black wire of the module to the GND of the coil and a jumper wire to the frame or negative of the battery. **Do Not** hook the Orange and White coil trigger wires to the TRIG of the MC-2 coil terminal at this time.
  9. Turn the Ignition and Kill Switch on and rotate the Optical Encoder in the opposite direction of engine rotation until the Static Timing LED lights and stop. Holding the Optical Encoder tighten the Adapter cam end screw firmly to hold the Encode wheel in place. Check top dead center timing mark to make sure the timing has not moved.
- Fine tune TDC by loosening slotted screws and rotating the module to light the LED. Again check top dead center to make sure the timing has not moved. Turn the Ignition and Kill switches OFF.
10. Hook the Blue wire to the frame or (-) Neg of the battery.
  11. Hook the Orange and White coil trigger wires to the Trig of the MC-2 coil.
  12. Turn the Ignition and Kill switches ON and Start the Engine.

