

## 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. 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 0.028-0.032

### Many things effect spark plug gap settings:

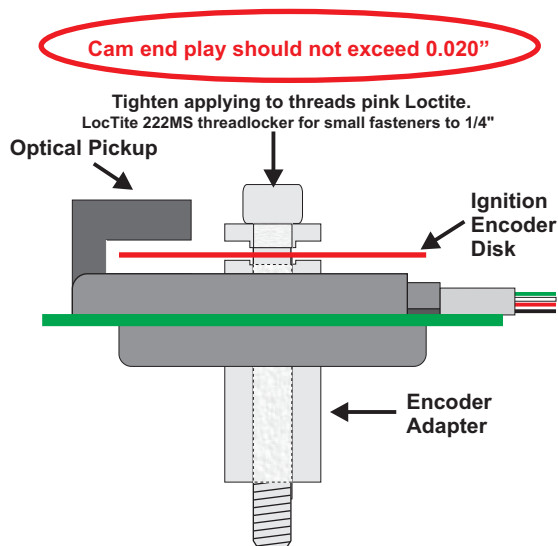
**Compression Ratio:** The higher the engine compression, the more voltage required to fire the plug, and the narrower the plug gap should be.

**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.

### 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. See encoder positioning in optical trigger pickup as indicated below as red line. Encoder must not strike pickups should the cam move.



## OWNERS MANUAL

All information contained in this owner manual is the property of P. A. Ignition 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.

Power Arc Ignitions Co., Inc.  
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Ankeny, IA 50021  
(515) 964-7608

### The following customer actions automatically voids the warranty.

- 1) Use of any other spark plug wires other than resistor type wires with at least 4.000 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 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

P. A. Ignition Co., Inc. warrants to the original retail purchaser of a PowerArc IDS ignition that it will, free of charge, repair or replace at its own option, the product if returned to P. A. Ignition Co., Inc. within 6 months after purchase and if found by P. A. 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 P. A. 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 P. A. 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) P. A. Ignition Co., Inc. will notify the customer and if the customer wants the defective equipment returned P. A. 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 P. A. Ignition Co., Inc. will return the module with a \$25.00 service charge plus freight and C.O.D. Charges.

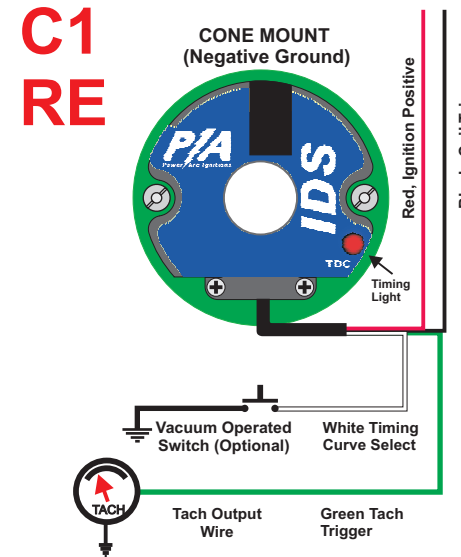
**Any module returned under the warranty must include note of explanation of failure and be accompanied by a dated bill of sale.**

P. A. Ignition Co., Inc. warranty obligations are limited to those set forth herein and no other obligations, expressed or implied, are assumed by P. A. 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 IDS-C1 RE OWNER'S MANUAL

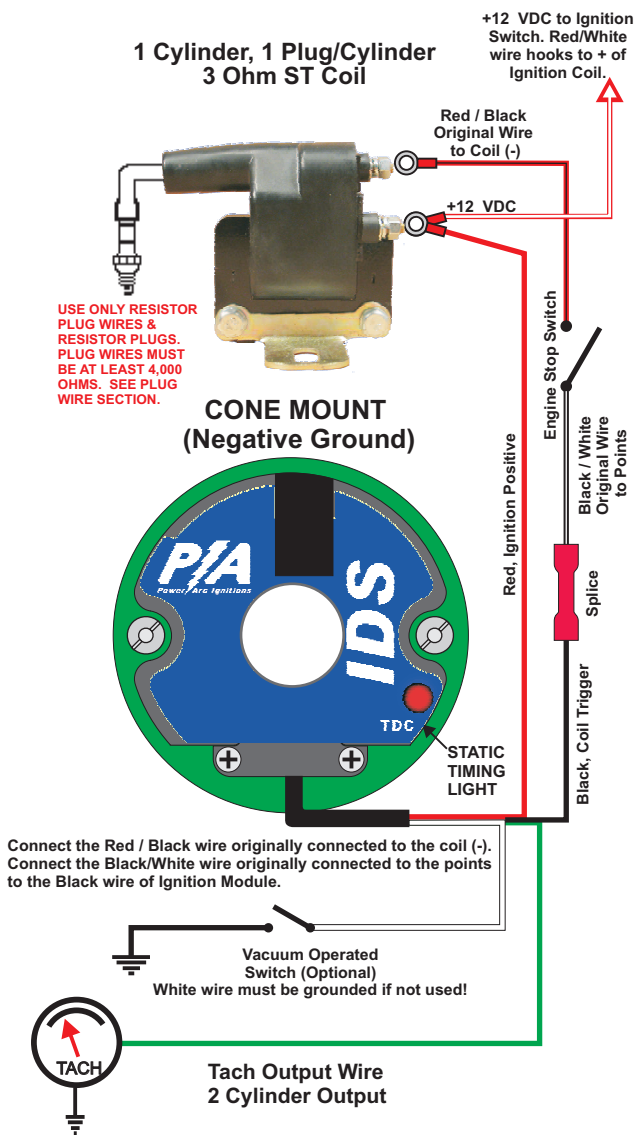


## IDS-C1 RE Ignition System

- No External Module (All in the Distributor Housing)
- Low Voltage Operation (down to 6 Volts)
- Uses less Energy than Points
- For 1 or 2 Cylinder Engines (with Coil change)
- Timing Curve Select Wire
- Multi-Spark 3 Sparks / Compression Stroke
- Programmed Placement of Multi-Spark sparks
- Automatic Coil Safety Shutoff
- Precision Rev limiter
- Static Timing Light
- Stainless Steel Encoder Disk
- Electronic Tach Output (2 cylinder tach output)

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



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

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

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

**Addition of a high flow fuel valve may be required to supply sufficient fuel to the delivery system due to the ability of the engine to accelerate more rapidly.**

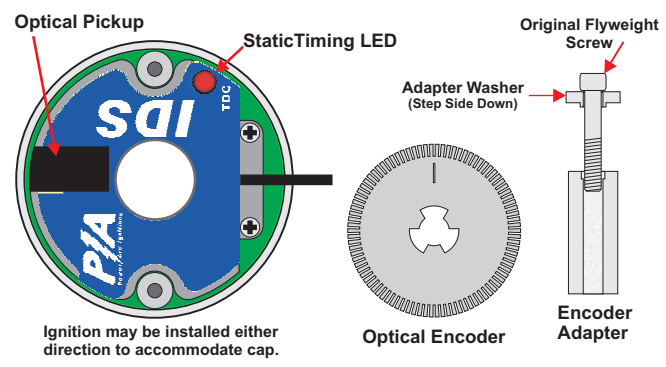
## INSTALLATION INSTRUCTIONS

**WARNING: Do not touch coil output wire 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.**

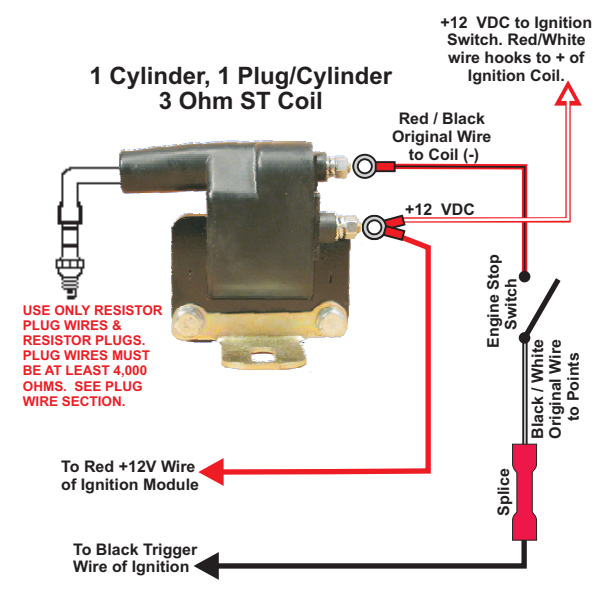
**\*See Encoder Installation and Cam end play on back page.**

1. Turn the ignition switch OFF, put transmission in neutral. Remove and replace the existing ignition coil with a Power Arc ST coil (1 cylinder) or DF coil (2 cylinder).
2. Remove all components from the ignition distributor (points and flyweights assembly), exposing the cam shaft end.
3. Insert ignition into the distributor with the optical pickup pointing to the rear of the bike. Insert the two standoff screws & tighten.
4. Connect ignition positive (red) wire of module and the original +12 VDC Red/White wire to the coil (+) terminal post.
5. Connect Red/Black wire that was originally connected to the (-) coil post of the Coil to the (-) post of the new coil.
6. Connect the Black/White wire originally connected to points to the black wire of the ignition module.
7. Ground the White wire from module if vacuum switch is not used.
8. Hook the green wire to the tachometer trigger wire if used.
9. 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).
10. Rotate the engine to **TOP DEAD CENTER**.
11. Turn the engine stop switch OFF and the ignition switch ON. 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 to make sure the timing has not moved.
12. Turn the engine stop switch to the ON position.
13. Start the Engine.

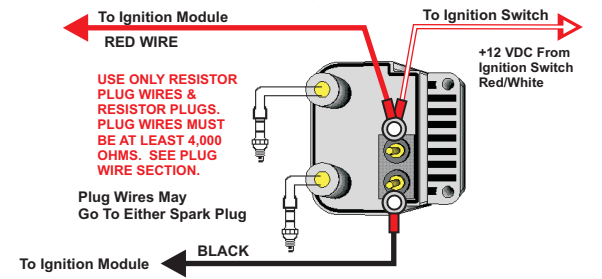
**Note: Ignition wire exit hole or slot may need to be enlarged.**



## COIL HOOKUP DRAWINGS



### 2 Cylinder, 1 Plug/Cylinder, 3 Ohm, DF Coil or 1 Cylinder, 2 Plug, 3 Ohm, DF Coil



**Use of NGK 5K Ohm resistor spark plug boots are recommended when plug wires have less than 4,000 ohms of resistance, resistor spark plugs are still required.**

### White Wire, Timing Curve Select Wire

When the white wire is grounded the Ignition is set for an optimal timing curve for stock engines. This wire can be hooked to a vacuum switch connected to the intake manifold to sense load for high compression performance engines or side car applications and can be controlled via a manual switch for manual operation.

When ungrounded the timing curve has been modified (retarded) for and engine running under loaded conditions. The addition of a vacuum operated switch attached to the engine intake manifold will sense a loss of vacuum, un-grounding the White wire under load and retard the engine at the vacuum switch set point.

Un-grounding the White wire enters the Ignition into a completely different and distinctive timing curve.