SPARK PLUG WIRES
Choice of spark plug wires is an important consideration when using an electronic ignition system. You must use carbon core resistor or Spiral wound spark plug wires with at least 800 Ohm per foot resistance. Failure to observe these precautions will damage Ignition & 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 effects 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, break down voltage and 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 which 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”

Tighten applying to threads pink Loctite. Loctite 222MS threadlocker for small fasteners to 1/4”

Optical Pickup

Washers may be added under Encoder Disk to shim for correct height.

Extra washers may be included for shimming the Encoder Disk outward. Place on encoder standoff if Encoder Disk is to close to Optical Pickup.

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 without prior written consent of P.A. Ignition 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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POWER ARC IGNITIONS
A GIFT FROM ABOVE

POWER ARC IDS-C1 HD
OWNER’S MANUAL

IDS-C1 HD Ignitions Systems
- Multi-Spark 3 Sparks / Compression Stroke
- Programmed Placement of Multi-Spark sparks
- Automatic Coil Shutoff
- Cam based sensor pickups
- Dual Fire Operation
- VOES Control Wire
- Precision Rev limiter
- Static Timing Light
- Stainless Steel Encoder Disk
- Corrected Tach Output

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PATENT #4,951,629 OTHER PATENTS PENDING
**INSTALLATION INSTRUCTIONS**

**WARNING:** Do not touch coil output wire (Black) To +12. DO NOT use Solid or Spiral wound suppression spark plug wires of less than 800 Ohms per foot. Failure to observe these precautions will damage Ignition & 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 leave it 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 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.

   Note: It is recommended you leave enough extra wire to allow the module to be removed from the cam cover for inspection and reprogramming, approximately, 6" minimum.

3. Insert the front and rear lock down screws & tighten.

4. Hook ignition positive (red) wire to the ignition supply, with the kill or ignition switch wire.

5. Hook the green wire to the tach trigger wire of motorcycle (usually pink) if used, if not used isolate.

6. Hook the White VOES wire to VOES switch.

   Note: 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 white wire.

7. Insert the encoder standoff through the center hole of the ignition to end of cam. 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 pink Locite to the screw and insert the screw with flange bushing and washer lightly tightening, making sure the optical encoder is centered. (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 Encode wheel in place. Recheck top dead center timing mark to make sure the timing has not moved.

10. Hook the Black wire to the coil. Do not hook the white wire to positive. Some Harley-Davidsons use a white wire for positive.

11. Start the Engine.

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

**Spark Plug Wire Guidelines**

1. Use only resistor (carbon core) spark plug wires or approved spiral wound spark plug wires & resistor spark plugs.
2. Do not use spiral wound suppression of less than 800 Ohms or more per foot.
3. Failure to observe these precautions may cause ignition malfunction and could damage the ignition module or coil.

**Coil Hookup Guidelines**

1. Use of coils other than PA coils will result in loss of Multi-Spark capabilities.
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.

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**COIL HOOKUP DRAWING**

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

<table>
<thead>
<tr>
<th>To Ignition Module</th>
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</thead>
<tbody>
<tr>
<td>RED WIRE</td>
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<table>
<thead>
<tr>
<th>To Kill Switch</th>
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<tbody>
<tr>
<td>BLACK</td>
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Plug Wires May Go To Either Cylinder

Note: There is no Neg or Pos on a wasted spark coil
You pick the terminal for the + and trigger, NEVER put on the same terminal.