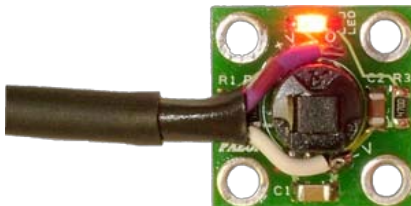


**Pazon**  
IGNITIONS WITH THE 7½ YEAR WARRANTY

**True-Fire™**

**HALL-EFFECT TRIGGERED  
ELECTRONIC IGNITION SYSTEM  
WITH FIXED ADVANCE  
FOR 4 STROKE & 2 STROKE  
PETROL ENGINES  
WITH 12 VOLT ELECTRICS  
POSITIVE OR NEGATIVE EARTH**



**SYSTEM TYPE: PTF2**

## **SYSTEM CONTENTS:**

- 12 VOLT IGNITION MODULE (BLACK BOX WITH WIRES)
- TRIGGER ASSEMBLY (SMALL SQUARE UNIT WITH SLEEVED WIRES)
- TRIGGER FIXING SCREWS, WASHERS & NUTS
- BLACK COIL LINK WIRE (FOR VEHICLES WITH TWO IGNITION COILS)
- RED EARTHING WIRE (FOR POSITIVE EARTH ELECTRICS)
- CRIMP CONNECTORS & INSULATORS
- LARGE & SMALL CABLE TIES
- CABLE TIE ADHESIVE MOUNTING BASE (FOR IGNITION MODULE)
- TRIGGER MOUNTING PLATE ([OPTIONAL, PLEASE SEE TEXT BELOW](#))
- MILD STEEL ROTOR & FIXING ([OPTIONAL, PLEASE SEE TEXT BELOW](#))

## **IMPORTANT NOTES:**

This system suits many applications, therefore the trigger mounting plate & rotor (timing disc) will be different for each system. This ignition system does not normally include these items, unless agreed & specified in advance with your ignition dealer. If your system has been supplied without these items, you will need to make them to fit your machine. On some machines it may be possible to mount the trigger on the contact-breaker plate and/or use the points cam as the rotor. See page 8 for examples.

This system gives fixed ignition (no advance/retard). This will normally be satisfactory for many 2 strokes and some 4 strokes (e.g. Racing/special machines). If ignition advance/retard is required you will need to make arrangements for this either by use of the original mechanical advancer unit or by some other mechanical means (e.g. A lever connected to the trigger mounting plate or housing).

- This ignition can triggered from the camshaft (or ½ engine speed shaft) or from the crankshaft (or engine speed shaft).
- Can be used as a wasted spark system,  
e.g. Single/twin cylinder 4 stroke firing every 360° crankshaft (or 180° camshaft), or  
twin cylinder 2 stroke firing both plugs every 180° crankshaft.
- Can be used as a non-wasted spark system,  
e.g. Single cylinder 4 stroke firing every 720° (triggered every 360° of the camshaft), or  
twin cylinder 4 stroke firing every 180° camshaft using a single ignition coil and distributor
- Can be used on a v-twin, triggered from a rotor on the camshaft & 12 volt dual output coil, or triggered using a distributor and single 12 volt coil

**WARNING: RISK OF ELECTRIC SHOCK**  
**ALWAYS TURN OFF BEFORE WORKING ON THE SYSTEM**

**INSTALLATION INSTRUCTIONS:**

1. All connections must be of the highest quality, use crimped or soldered connections; twisted wires will not give a satisfactory operation.
2. If necessary, remove the petrol tank and/or seat to gain access to the ignition coils, condensers and wiring (if fitted).
3. For safety, disconnect the battery (preferably both terminals).
4. Remove timing cover (if fitted), disconnect wire(s) and remove contact-breaker assembly & condenser(s) (if fitted).
5. If a distributor is fitted, disconnect the low tension wire and remove the cap; note the position of the distributor body and remove from the machine. Any condenser(s) are no longer required and can be removed. They should not be connected to the electronic ignition system.
6. Disconnect any remaining wires from the ignition coil(s). These come from the ignition switch supply. Any wires running from the ignition coil(s) to the contact-breakers can be removed.
7. If not included with your system, you will need to make a suitable rotor for your machine (see pages 8 & 10). Fit the rotor to the camshaft/crankshaft/distributor shaft as required. If you require ignition advance/retard you will need to attach the rotor to the mechanical advancer unit (does not apply if you are using the original points cam to trigger the ignition). Note: example rotor shows two slots/projections at 180° (for a twin), your application may be different, e.g. one slot for a single cylinder.
8. If not included with your system, you will need to prepare a suitable baseplate for mounting the trigger; this can be the original contact-breaker plate, or if this is not practical you will need to make one the correct size for your housing. Mark out & drill four trigger mounting holes (centres 14mm x 14mm); if preferred these can be tapped M3 to accept the mounting screws. Mark out & drill two 3mm holes (approx. 8mm apart) close to the trigger connector block; these will be for securing the sleeved trigger cable to the baseplate with a small tie-strap. Fit the ignition trigger to the baseplate, using the four screws, washers, spacers & nuts. The trigger must be mounted with the hall-effect device facing

towards the rotor. The trigger can be oriented in a variety of positions: trigger above the rotor, under the rotor or side-on. **Note: the rotor must pass over the face of the trigger in the directions shown on page 8.** The air gap between the trigger face and rotor face/edge should be between 0.5-2.5mm (not critical), we recommend 1.5mm/0.060". See page 8 for examples (note: for your application, the wiring route & trigger position may be different to that shown in the examples). Secure the sleeved wire to the baseplate with one or more small tie-straps (pass through the two holes (drilled in step 8) and over the sleeved wires. It is important that these wires are secured to minimise vibration effects & also to prevent contact with spinning objects (e.g. the rotor or distributor rotor arm).

9. Fit the trigger into the contact-breaker housing / distributor body.
10. If using a distributor, refit to the machine.
11. Find a suitable place for the ignition module, preferably near to the ignition coils (but not strapped to an ignition coil). Secure the ignition module to the frame using one or more large cable ties. An adhesive mounting base is provided; this can be affixed to the underside of the module and the cable tie passed through and around the module and frame. A thin sheet of rubber can be placed between the module and the frame, but do not completely wrap the module in foam rubber.
12. For machines with two ignition coils, take the black coil link wire, connect the negative (—) terminal of one ignition coil to the positive (+) terminal of the other ignition coil. See figs.1/2 on page 9.
13. Take the black wire from the ignition module, cut to length and fit an insulator and a suitable crimp connector (normally female spade) to the end. Connect to the negative (—) terminal on the ignition coil (negative of coil#2 on a two coil system). If an electronic rev-counter is fitted, the feed to it will normally be taken from this point (negative terminal of the first ignition coil). See figs.1/2 on page 9.
14. Take the red wire from the ignition module, cut to length and fit an insulator and suitable crimp connector to the end. Connect to the positive (+) terminal on the ignition coil (positive of coil#1 on a two coil system). See figs.1/2 on page 9.
15. For **NEGATIVE EARTH** electrics go to step 18.
16. For **POSITIVE EARTH** electrics (most early British bikes/cars):

Take the white wire from the ignition module, cut to length and fit an insulator and suitable crimp connector (normally male spade) to the end. Connect to an ignition feed wire previously removed in step 6. Any remaining feed wires are spare and should be covered with suitable insulation to prevent shorting to the frame etc.

17. Taking the red earthing wire, connect one end to the positive (+) terminal on the ignition coil (positive of coil#1 on a two coil system). Cut to length and fit a ring terminal on the other end and connect to a good earth point on the frame, ideally the battery positive (+) terminal. See fig.2 on page 9. **GOTO STEP 20.**
18. For **NEGATIVE EARTH** electrics:  
Connect a positive ignition feed wire (previously removed in step 6) to the positive terminal of the ignition (positive of coil#1 on a two coil system). See fig.1  
Any remaining feed wires are spare and should be covered with suitable insulation to prevent shorting to the frame etc.
19. Take the white wire from the ignition module, cut to length and fit a ring terminal connector to the end. Connect to a good earth point on the frame, ideally the battery negative (—) terminal. See fig.1 on page 9.
20. Feed the sleeved bi-coloured wires (white-black, white-red & violet-red) up to the ignition module, where possible feeding through the original aperture used for the contact-breaker wire(s). Where possible, avoid running the wires alongside other wires or ht leads. If you are retaining the distributor, remove the contact-breaker mounting stud, insulator & terminal and feed the wires through this hole (using a grommet if required).
21. On the trigger and the ignition module, cut the bi-coloured wires & sleeving to length. Carefully strip back 4-5mm of insulation from the ends of the trigger wires and the corresponding wires on the ignition module. Connect each wire as detailed below.

<u>TRIGGER</u>		<u>IGNITION MODULE</u>
White-Red	⇒	White-Red
White-Black	⇒	White-Black
Violet-Red	⇒	Violet-Red or Green-Red

**See page 8, Figs. 3 / 4**

The connection to Violet-Red or Green-Red determines the coil on/off time and is rotor design dependent, see page 8.

You will have one spare wire (Violet-Red or Green-Red) on the

ignition module; cover this with sleeving or insulating tape. This spare wire can be folded back & tucked into the sleeving.

22. To time the ignition, first set the engine as follows:
  - For engines with no advance/retard:  
set engine to full advance mark/position (e.g. 38° BTDC / 10mm)
  - For engines with mechanical advance/retard:  
set engine to the static advance mark/position (e.g. 10° BTDC / 5mm)

If no timing marks are available, the engine will need to be set using either a dial gauge down the bore or a degree disc.

Note: if using a degree disc attached to the camshaft (or ½ engine speed shaft), the full advance figure reading on the disc must be halved, e.g. for 38°, set engine to T.D.C., zero disc and rotate engine backwards until degree disc has travelled 19°.

23. **WARNING: RISK OF ELECTRIC SHOCK.**

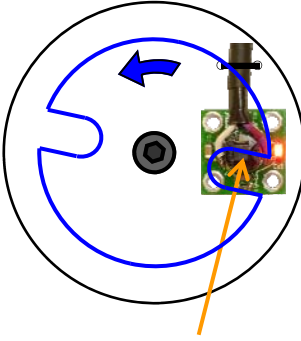
The following operations may produce a spark from the plug(s), therefore it is recommended that the spark plugs be removed & grounded onto the cylinder head (with the plug caps & h.t. leads connected to them). Alternatively, the black wire can be temporarily disconnected from the negative terminal of the ignition coil, place insulation tape over the end to prevent shorting to earth, etc.

24. Reconnect the battery.
25. Position the rotor with the slot/projection approaching the trigger, in the direction of rotation.
26. Switch the ignition on. The red timing light on the ignition trigger should turn on.
27. If the rotor can be turned (i.e. not keyed or fixed), proceed as follows, otherwise go to step 31. Without turning the engine, turn the rotor in normal direction of rotation until first slot/projection completely passes the trigger face.
28. Repeat the previous step. The trigger is now calibrated. This will give the most accurate results. If the calibration stage is not carried out the timing may be inaccurate (by a few degrees), requiring use of a strobe light and adjustment to achieve the correct timing.
29. Continue turning rotor in normal direction of rotation until the red timing light on the trigger changes state (i.e. goes from “ON” to “OFF” or “OFF to “ON”). See page 8.
30. Keeping the rotor in this position, tighten its fixing bolt/nut.  
**GOTO STEP 32.**

31. The alternative method of timing is by moving the trigger baseplate. Turn the plate against the normal direction of the rotor until the rotor slot/projection has passed over the face of the trigger. Back off the trigger plate, then finally turn the trigger plate against the normal direction of the rotor (passing the rotor slot/projection over the face of the trigger) until the red timing light on the trigger changes state again, stop turning. Tighten the trigger plate fixings.
32. Switch the ignition off.
33. For distributor models: refit rotor arm/cap. It is important that the rotor arm is pointing to the correct h.t. outlet on the cap. It may be necessary to reorder the h.t. leads so that the plugs are fired in the correct sequence (refer to owners/workshop manual).
34. Refit spark plugs & caps, if removed in step 23. Reconnect the black wire to the ignition coil, if disconnected in step 23.
35. Re-check all connections are good and tight; any loose crimps should be removed, slightly closed up and refitted, or preferably replaced.
36. Refit tank, fuel lines, battery & seat, as required.
37. The engine should now start and after warming up should tick over well, provided everything else is correctly adjusted.
38. **FOR SAFETY, SWITCH IGNITION OFF BETWEEN ADJUSTMENTS.** If desired, the ignition timing may be checked/ fine tuned with the aid of a white light strobe (preferably powered by a separate battery). Time the engine in the normal manner, either to the full advance mark or static advance mark, as appropriate. Adjust the timing by making very small movements of either the ignition trigger baseplate or the rotor. If triggering off the camshaft, 1° movement here is equivalent to 2° of the crankshaft. To advance the timing, turn the trigger against the direction of the rotor (or turn the rotor in its normal direction). To retard the timing, turn the trigger baseplate in the same direction as the rotor. If no timing mark is available, road test the vehicle and adjust (if necessary) for optimum performance.
38. Refit timing/contact-breaker cover, as necessary. The timing is now set and requires no further adjustment. However, please note that for satisfactory operation of this ignition system it is important that the wiring, ignition coils, switch, battery, h.t. leads, plugs and plug caps are in good order.

Fig. 3

**ANTI-CLOCKWISE  
ROTATION**

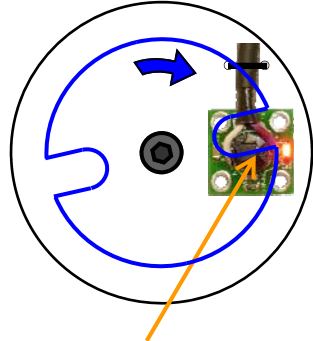


**SLOT LEADING EDGE  
RED LIGHT "ON"**

**CONNECT VIOLET-RED WIRE  
TO GREEN-RED WIRE**

Fig. 4

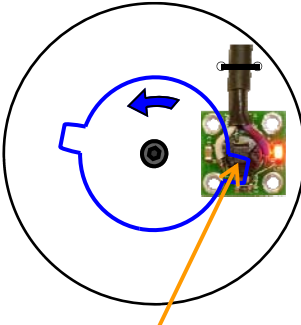
**CLOCKWISE  
ROTATION**



**SLOT LEADING EDGE  
RED LIGHT "OFF"**

**CONNECT VIOLET-RED WIRE  
TO VIOLET-RED WIRE**

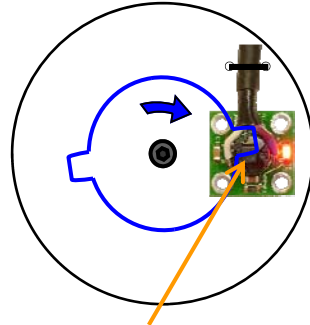
Fig. 3a



**PROJECTION  
LEADING EDGE  
RED LIGHT "OFF"**

**CONNECT VIOLET-RED WIRE  
TO VIOLET-RED WIRE**

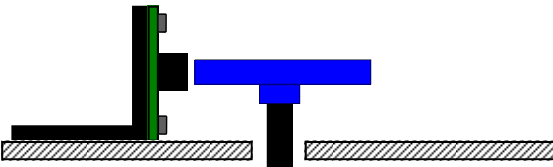
Fig. 4a



**PROJECTION  
LEADING EDGE  
RED LIGHT "ON"**

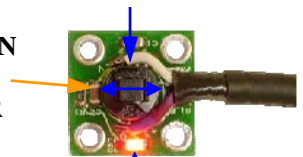
**CONNECT VIOLET-RED WIRE  
TO GREEN-RED WIRE**

**ALTERNATIVE TRIGGER POSITION**



**FLAT SIDE  
ROTOR  
DIRECTION  
ACROSS  
TRIGGER  
FACE**

**FLAT SIDE**



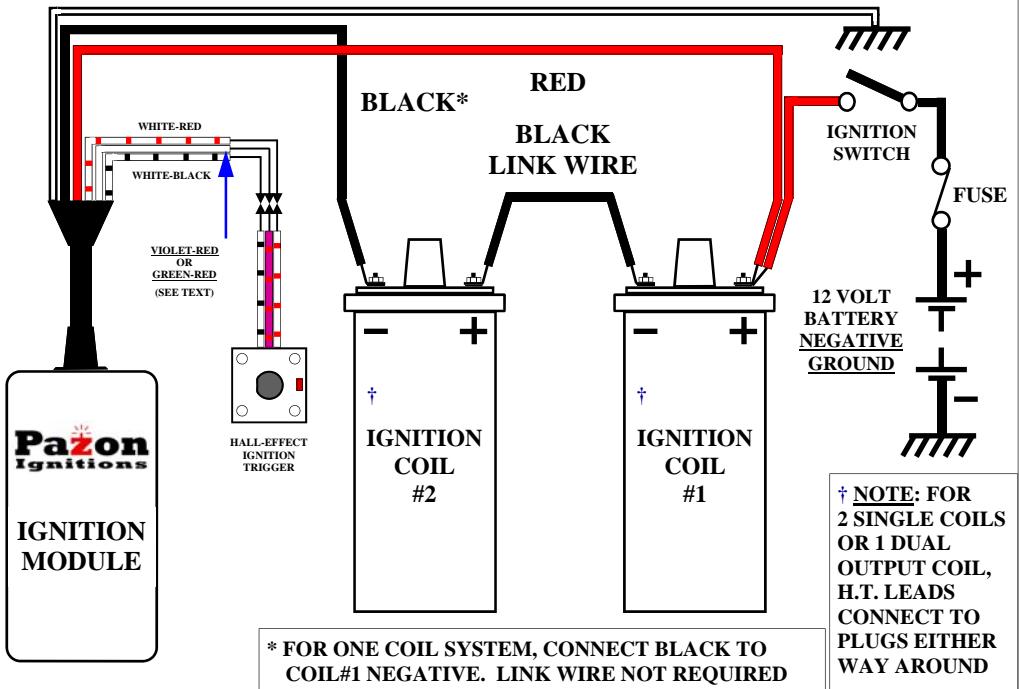
**STATIC TIMING LIGHT**

# NEGATIVE GROUND

WHITE

CHASSIS GROUND/  
BATTERY NEGATIVE

Fig. 1



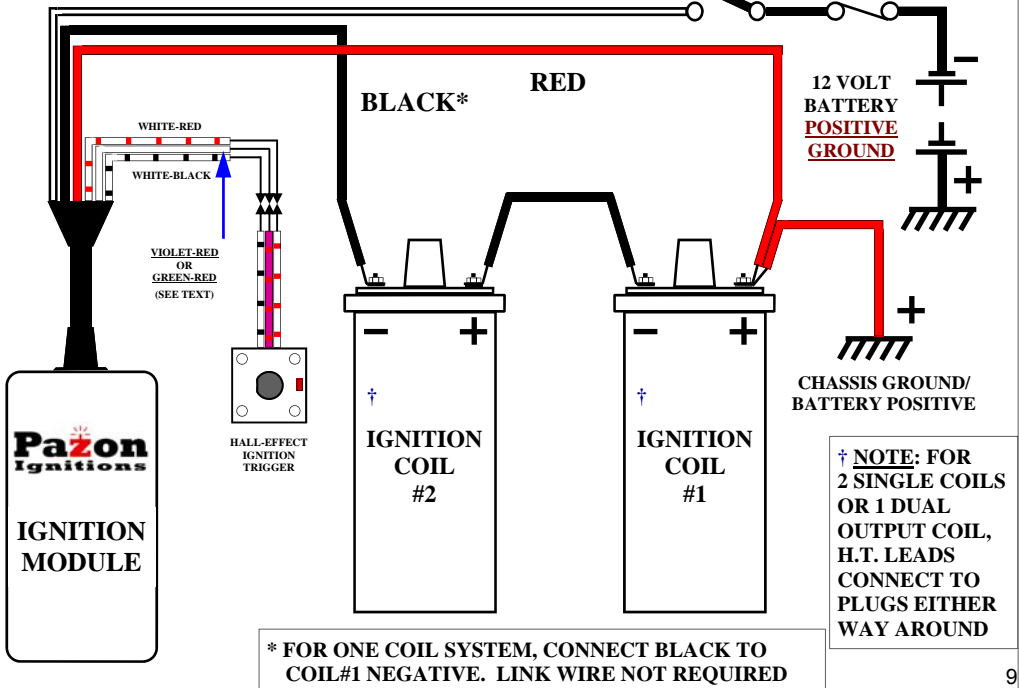
# POSITIVE GROUND

WHITE

IGNITION SWITCH

FUSE

Fig. 2



## Ignition Coils

When using two ignition coils (whether 6 Volt or 12 Volt coils), they must be connected in series, as shown in the wiring diagrams on page 9. Do not wire the coils in parallel. For low compression ratio engines (less than 9:1), two 12 volt coils connected in series are satisfactory. For best results on racing or high compression ratio engines use two 6 volt coils connected in series or one 12 volt dual output coil with a primary resistance of 3 to 4.5 ohms. CDI type and some electronic ignition coils are incompatible with this system; for suitability check the total primary resistance is 3 ohms or more (measure across the + and — terminals with a multimeter).

## General Data/Troubleshooting

Wiring should be cut to the correct length. Excess wire should not be coiled up; this can affect the correct running of the ignition system. Where possible the wires from the ignition trigger should be run separately from the rest of the wiring loom, especially the h.t. leads. The frame/chassis must act as an electrical return (ground/earth), whether positive or negative earth. If the engine is rubber mounted a good ground/earth strap must be provided.

The system can be run total-loss from a battery only (e.g. for racing/off-road applications).

If there are no sparks, check battery, switch, earthing, wiring, connections & ignition module. Continuous sparks without turning the engine indicates a poor supply to the ignition; check battery (bad cell), switch, earthing, & connections.

## TECHNICAL DATA

### Ignition Module (Part# PAMF2)

Minimum Supply Voltage:	10 Volts DC
Maximum Supply Voltage:	16 Volts DC (Reverse Polarity Protected)
Maximum Ignition Coil Peak Primary Voltage:	400 Volts (Regulated)
Maximum Ignition Coil Secondary Voltage:	Ignition Coil Dependent
Current Draw (Static):	0.05 Amps Max. (Ignition Coils Off)
Current Draw (Dynamic):	Typically 2 Amps (Coil Dependent)
Maximum Ignition Coil Current Draw:	5 Amps
Ignition Coil Turn Off (Engine Static):	3 Seconds (Typical)
Minimum Cranking Speed:	50 rpm (Typical)
Maximum Switching Rate:	10,000 Sparks/Minute (coil type/dwell period & supply dependent)

### Ignition Trigger (Part# PDT10)

Trigger Type:	Differential Hall-Effect (Direction sensitive)
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### Ignition Rotor (Application dependent)

Material:	Low Carbon (mild) steel
Recommended Thickness:	3+ mm
Tooth/Slot Width:	2+ mm
Tooth/Slot Depth:	2+ mm



## Terms & Conditions and Warranty

- Use of this product indicates your acceptance of this notice.
- The product design & literature is Copyright © PAZON IGNITIONS LTD. 2005-2007, and is protected under international copyright, trademark & treaty provisions.
- To provide the best ignition systems possible, PAZON IGNITIONS reserves the right to alter and improve the specifications of its products without prior notice.

## Ignition Systems

- Pazon warrants to the original purchaser that the Pazon Ignition System be free from defects in workmanship & parts under normal use for a period of 7½ years from date of purchase.

## Ignition Spares

- Spares are defined as item(s) not purchased as part of a complete ignition system. Pazon Ignitions warrants to the original purchaser that these item(s) be free from defects in workmanship & parts under normal use for a period of one year from date of purchase.
- Ignition coils will only be covered by the warranty if it can be proved that the fault is due to a manufacturing fault within the coil.

## Limitation of Liability

- In no event shall Pazon Ignitions liability related to the product exceed the purchase price actually paid for the product.
- Neither Pazon Ignitions nor its suppliers shall in any event be liable for any damages whatsoever arising out of or related to the use or inability to use the product, including but not limited to the direct, indirect, special, incidental or consequential damages, or other pecuniary loss.
- This warranty will be void if the product or parts have been altered, damaged, abused or installed incorrectly.
- This warranty will be void if parts supplied by Pazon Ignitions are used with other makes of ignition. Your statutory rights are not affected.

## Warranty Claims

- To make a claim under warranty, the product must be returned to PAZON IGNITIONS or its authorized representative, with a copy of your receipt (or evidence of date & place of purchase), within the warranty period.
- Include a detailed description of the problem and why you believe there is a fault within the ignition system.
- The system must be returned postage paid. Proof of posting is not proof or receipt, therefore we recommend using a recorded mail service.
- Upon receipt we will thoroughly test the returned items and repair or replace any items found to be faulty and covered by the warranty.
- Please allow seven working days from receipt of the returned parts before contacting us, to allow sufficient time for a thorough test and evaluation.
- PLEASE CONTACT PAZON IGNITIONS FOR RETURN INSTRUCTIONS.

✉ **Pazon Ignitions Ltd, 274 Hot Springs Road, RD 2,  
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