



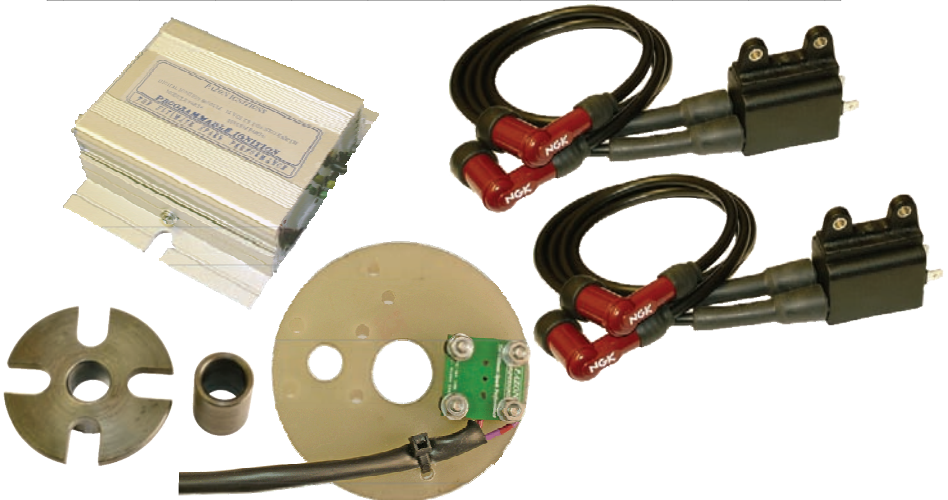
Quality
British
Product



SYSTEM TYPE: PDHG1

Electronic Ignition Systems For Classic Road & Racing Applications

SMART-FIRE
HIGH-PERFORMANCE
IGNITION SYSTEM
FOR
HONDA
GOLDWING GL1000



PAZON : THE ULTIMATE SPARK PERFORMANCE

SMART-FIRE APPLICATIONS

- **HONDA GL1000 FOUR CYLINDER**

FEATURES

- **HIGH-POWER PROGRAMMABLE DIGITAL IGNITION MODULE (FULLY ENCAPSULATED)**
- **LOW POWER CONSUMPTION**
- **FULLY PROGRAMMED IGNITION TIMING & COIL ENERGY CONTROL: IGNITION ADVANCE CURVE IS MAPPED TO SUIT THE GL1000 ENGINE**
- **USER-PROGRAMMABLE REV.LIMITER BUTTON**
- **ELECTRONIC TACHOMETER OUTPUT**
- **PRECISION ENGINEERED STEEL TIMING DISC ASSEMBLY**
- **RELIABLE & RUGGED HALL-EFFECT SENSOR , INCLUDES ON-BOARD STATIC TIMING LIGHT, FOR EASY SETTING OF IGNITION TIMING**
- **LESS MAINTENANCE**
- **IMPROVED ENGINE PERFORMANCE, INCLUDING BETTER STARTING & SMOOTHER RUNNING**
- **FOR RACING APPLICATIONS: SPECIAL ADVANCE CURVES & REV-LIMITERS AVAILABLE**
- **COVERED BY MANUFACTURER'S FIVE-YEAR WARRANTY**
- **MODULE SIZE(mm):
90 LONG x 65 WIDE (95 INC. MOUNTING BRACKETS)
x 30 DEEP, WEIGHT: 400g (INC. WIRES)**

IGNITION SYSTEM COMPRISES:

- **IGNITION MODULE (ALUMINIUM HOUSING WITH MOUNTING BRACKETS) & WIRING**
- **IGNITION TRIGGER ASSEMBLY**
- **STEEL TIMING DISC, SPACER TUBE, FIXING BOLT & WASHER**
- **TWO DIGITAL IGNITION COILS (DUAL OUTPUT)**
- **H.T. LEADS (COPPER-CORED)**
- **PLUG CAPS (5K RESISTOR TYPE)**
- **MODULE & COIL FIXING SCREWS, WASHERS & NUTS**
- **CRIMP TERMINAL CONNECTORS & INSULATORS**
- **BLACK COIL LINK WIRE**
- **YELLOW-GREEN EARTHING WIRE**
- **TIE-STRAPS**

SMART-FIRE FITTING INSTRUCTIONS

**WARNING: THIS SYSTEM PRODUCES VERY HIGH VOLTAGES,
ALWAYS SWITCH OFF BEFORE WORKING ON THE SYSTEM.**

IMPORTANT NOTES:

BEFORE FITTING, PLEASE READ THESE INSTRUCTIONS CAREFULLY, INCLUDING THE NOTICE ON PAGE 16.

This system is designed to work only with the special digital ignition coil provided with the system. 5K resistor plug caps as supplied with the system should be fitted to the h.t. leads. Alternatively, resistor spark plugs can be used. resistor plugs & resistor caps can be used, although it is not necessary to use both. Attempting to run the system without resistor type caps or plugs will result in excessive radio frequency interference (r.f.i.), which may cause bad running, misfiring and loss of ignition. For reliability, copper or steel cored h.t. lead should be used, we do not recommend using carbon fibre leads. This ignition is a wasted spark system, therefore both plugs fire at the same time.

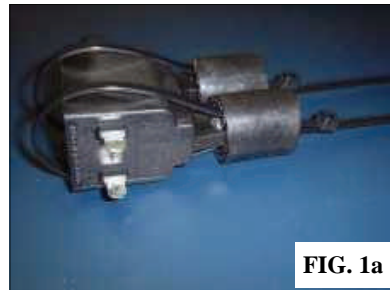
These instructions are a general guide for installing the system to various machines and therefore it may be necessary to modify the length or routing of some wires in order to complete the installation. All connections should be made using good quality crimped or soldered connections; twisted wires will not give satisfactory operation. Wiring should be trimmed to the correct length, excess wire should not be coiled up as this can affect the correct running of the ignition system. If electric welding is to be carried out, the ignition module should be disconnected and its connectors covered with insulation, to help prevent stray sparks from damaging the module. If in doubt, remove the unit from the machine.

1. Remove the battery cover.
2. For safety, disconnect the battery (preferably both terminals).
3. Remove the points cover.
4. Remove the 10mm bolt holding the automatic advance assembly.
5. Remove the two screws holding the points plate and keep in a safe place. Disconnect the points wires (normally coloured blue & yellow) from the wiring harness and remove the complete contact-breaker assembly.

6. There are two other wires connected to where the points plugged into. These wires go to the condensers mounted in front of the battery. Unplug both wires and tuck out of the way. The condensers are not required with this ignition system and should not be connected.
7. Remove the complete automatic advance assembly from the engine. The points housing is now empty. See fig.2, page 9.
8. Take the steel timing disc (round steel plate with four slots), note that it has a small slot in the rear side. See fig. 3. Slide the timing disc over the camshaft (rear slotted side first), turning and gently pushing in until the slot aligns with the locating peg. Note: the position of the four slots may be different to that shown, as this depends upon the engine position (and hence the locating peg) when the timing disc is fitted. Take the steel spacer tube and slide over the camshaft. Gently tap the top of the spacer tube with a soft mallet to ensure that the timing disc is fully seated. Fit the M6 fixing bolt & washer and tighten. See fig. 4, page 9.
9. Fit the ignition trigger assembly into the points housing. Refit the M6 fixings & washers removed in step 5, earlier. Finger tighten only so that the trigger can be rotated to set the ignition timing. See figs. 5/6, page 12.
10. Open the top and side compartments.
11. Locate the two ignition coils and ballast resistor that are directly in front of the air cleaner intake. On some models it may be easier to remove the air cleaner to gain access to the ignition coils.
12. Disconnect the wires from the original ignition coils. Remove the ignition coils, h.t. leads & plug caps.
13. Fit the ignition module in a convenient place. This could be under (or on the side of) the battery platform, inside the toolbox (if available) or secured to the frame using a suitable mounting bracket. The unit can be orientated in any position, but this should be onto a flat surface, if possible. the module can be secured by the mounting flanges using the two M5 bolts, washers & nuts. Alternatively, the mounting flanges can be removed by slackening the bracket securing screws and sliding the brackets out of the dovetail slots. The module can then be mounted using large tie-straps, with a small sheet of rubber between the case & the frame. The module casing acts as a shield for the internal electronics, therefore it is recommended that the case is connected to the

frame. This can be achieved by direct contact between the mounting brackets & screws, but if the mounting surface is non-metallic, plastic-coated or not connected directly to the frame, then an earthing wire should be provided. This would be a short wire with a ring/fork terminal at one end (placed under one of the mounting screw heads or nuts, or under the head of one of the module end plate screws) and a ring terminal at the other end connected to the frame earth. A short yellow/green wire is provided for this.

14. Fit the ignition coils in a convenient place, this could be in place of the original coils, if desired. Secure the coils by the two mounting lugs, using the M5 bolts, washers & nuts. Alternatively, to avoid the need for drilling or a mounting bracket, each coil can be rubber mounted using two small pieces of rubber tubing (such as fuel pipe or heater hose) & two large tie-straps, see figs. 1 / 1a. The coils can then be secured to the frame tube by fully tightening the tie-straps. Fit the new h.t. leads by pushing the brass connectors fully into the h.t. outlets of the coil, along with the rubber boots. Small tie-straps can be placed around the rubber boots & tightened to give extra security, if desired. Coil #1 fires cylinders 1&2, coil #2 fires cylinders 3&4. The h.t. leads should now be cut to length, if necessary, & the plug caps screwed onto the ends of the h.t. leads. Push the plug caps onto the plugs, they should click into place.



Wiring

(Please see wiring schematic on page 8)

All connections should be made using good quality crimped or soldered connections; twisted wires will not give satisfactory operation.

1. From the ignition trigger unit, feed the sleeved bi-coloured wires (white-black, white-red & violet-red) through the original aperture used for the contact-breaker wires and up to the ignition module. The original grommet can be used by cutting a slit in it and removing it from the contact-breaker wiring. Where possible, avoid running the wires alongside other wires or the ht leads.
2. 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, using suitable crimp connectors or multi-way plug & socket (**colours must match**).

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

The yellow-green wire from the module is not required and can be connected to earth or left unconnected.

3. Connect the violet wire from the ignition module to the negative (—) terminal (left-hand spade connector) of ignition coil #1, using a female crimp connector and insulating cover.
4. Using the black coil link wire, connect the positive (+) terminal of ignition coil #1 to the negative (-) terminal of ignition coil #2. See page 8.
5. Connect the kill switch to the positive (+) terminal (right-hand spade connector) of ignition coil #2. One of the original connections removed from the ignition coils (step 12, page 4) can be used for this.

***Re-check the connections to the ignition coil;
reverse polarity may damage the coils***

6. Connect the red wire from the ignition module to +12 volt supply from the ignition switch. On 1978/1979 models, the 12 volt supply can be taken from the accessory terminal in the left-hand side compartment
7. Connect the black wire from the ignition module to a good earth point on the frame or directly to the battery negative (—), using a ring terminal.
8. The **ORANGE** wire is an IGNITION INHIBIT input. This can be connected to a grounding kill switch/lanyard or a hidden security switch. If not required, place insulating tape over the end of the wire to prevent accidental shorting out.
9. The **GREY** wire is a tacho output signal for driving an electronic tachometer, if fitted. This is a 12 volt output and provides 2 pulses per engine revolution (2 pulses/rev). If your tacho requires a different pulse rate, contact Pazon Ignitions. Connect to the tacho signal input terminal/wire. If you have a mechanical tacho, an inductive pickup tacho (e.g. Scitsu) or no tacho, then leave unconnected; cut short the wire & and insulate the wire end.
10. Any remaining wires which may be present on the ignition module are for factory use and should remain unconnected and insulated, as supplied.
11. Remove any redundant wires or insulate bare ends. Re-check all connections are good and tight; any loose crimps should be removed, slightly closed up and refitted, or preferably replaced.



WARNING: TURN OFF/DISCONNECT THE BATTERY BEFORE WORKING ON THE SYSTEM HIGH VOLTAGES CAN KILL

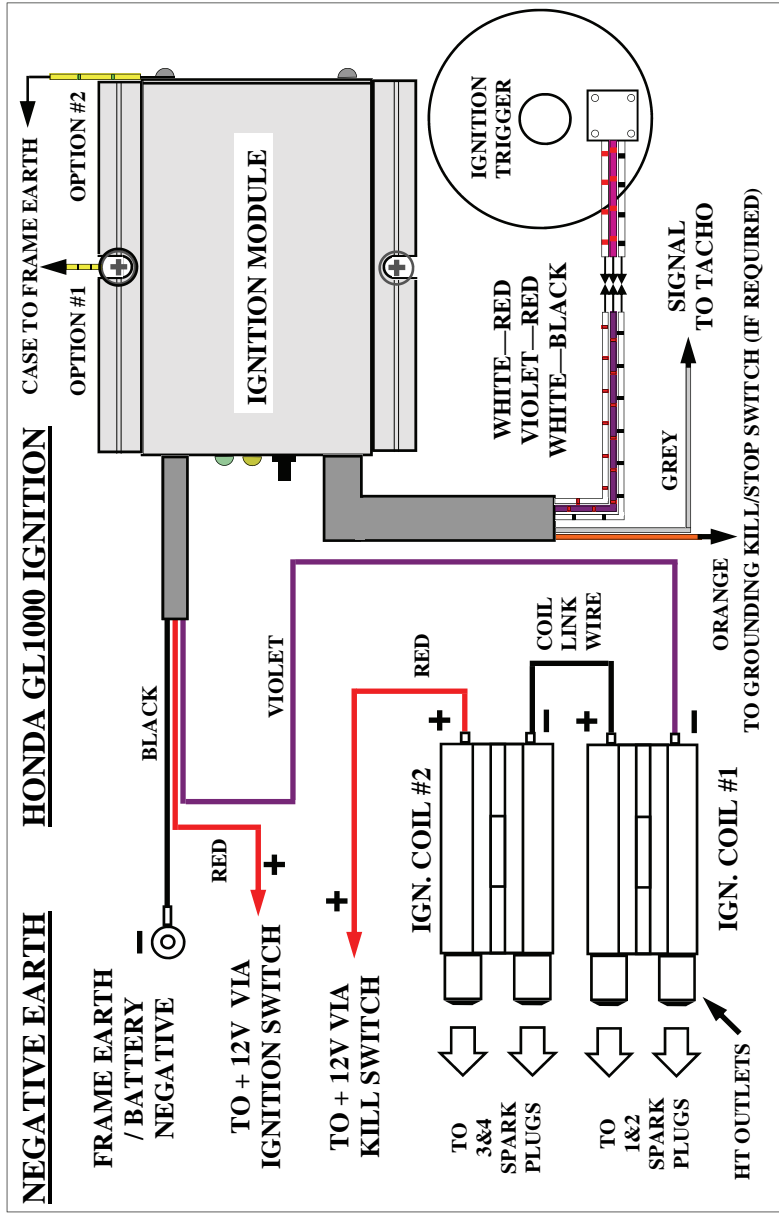
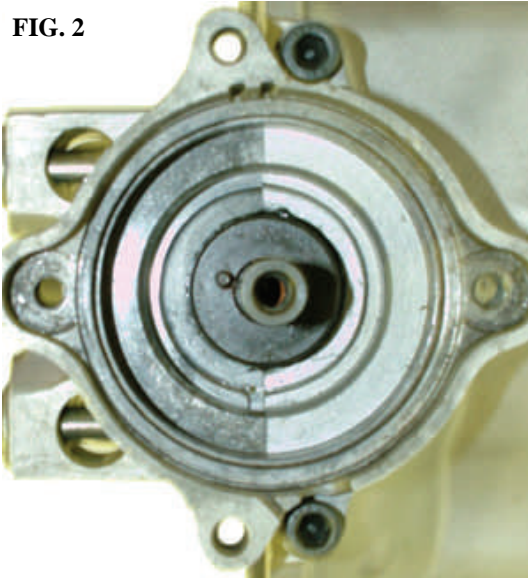


FIG. 2



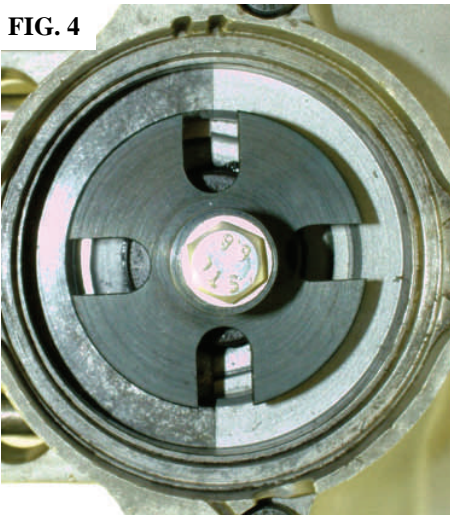
**POINTS COVER OFF
CONTACT-BREAKER ASSEMBLY
& MECHANICAL ADVANCE UNIT
COMPLETELY REMOVED.
NOTE SMALL LOCATING PEG**

FIG. 3



**STEEL TIMING DISC
& SPACER TUBE**

FIG. 4



**TIMING DISC FITTED,
ENSURE REAR SLOT
ALIGNS WITH
LOCATING PEG.
SLIDE ON SPACER TUBE.
FIT M6 WASHER & BOLT**

IGNITON TIMING (see figs. 7-11, pages 12-13)

1. Switch off ignition.
2. Set the engine to the static timing position, 5° BTDC.
3. If necessary, slightly loosen the ignition trigger fixings so that it can be rotated by hand.

Warning: risk of electric shock, keep hands & body away from coil, ht leads, caps & plugs

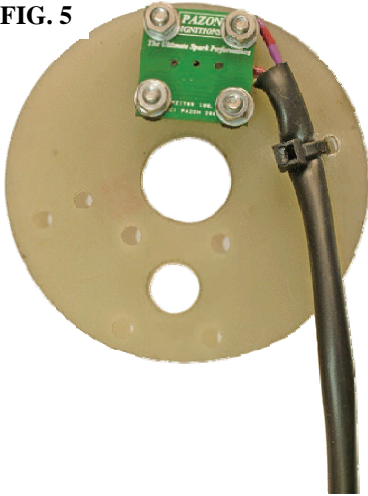
3. The following operations may produce a spark from the plugs, therefore it is recommended that the spark plugs be removed and grounded onto the cylinder head (with the plug caps & h.t. leads connected to them). Alternatively, the violet wire can be temporarily removed from the negative terminal of ignition coil #1, place insulating tape over the end of the connector to prevent shorting to earth. This will prevent any undesired sparks whilst timing.
4. (Reconnect the battery).

Note: the timing disc and trigger may be in different positions to that shown in the drawings. This is not important, as long as the following sequence is followed.

- a) Position the trigger baseplate as in fig.7 (page 12), so that both edges of any one of the timing disc slots is visible through the inspection hole.
- b) Switch the ignition on, the small green light on the ignition module should flash once then stay “on”.
The red static timing light on the trigger should turn “on”
- b) Turn the baseplate slowly clockwise until the red timing light turns “off”; STOP TURNING. See fig. 8.
- c) Turn the trigger plate slowly anti-clockwise (back to the start position), the red timing light blinks “on” then “off”. See fig. 9.
- d) Turn the baseplate slowly clockwise until the red timing light turns “on”; STOP TURNING. The trigger is now calibrated. See fig. 10.
- Finally, turn the baseplate very slowly anti-clockwise until the red timing light turns “off”; STOP TURNING. See fig 11.

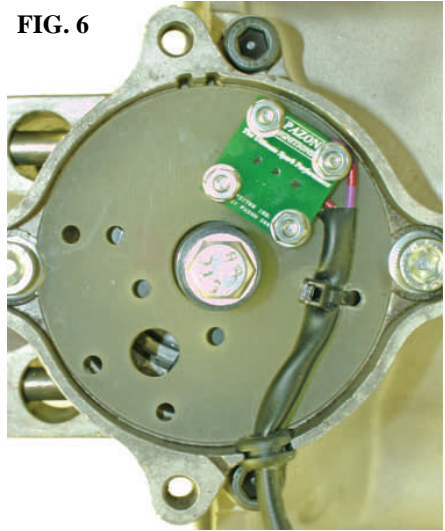
- Keeping the trigger in position, tighten the fixings.
 - Note the final position of the timing disc through the inspection hole.
 - If you make a mistake, switch the ignition off and restart from the beginning of step 4a (above).
5. Switch off the ignition.
 6. Refit spark plugs, if removed earlier. Reconnect the violet wire to the ignition coil, if disconnected earlier in step 3.
 7. If removed earlier, push the plug caps firmly onto the plugs, they should click into place.
 8. The engine should now start and after warming up should tick over well, provided everything else is correctly adjusted. The ignition will advance as per the pre-programmed curve (see advance graph, page 15).
 9. Strobe timing is not essential, but if desired, proceed as follows:
 - Warm engine for 4-5 mins.
 - Using a white light strobe, time the engine to the full advance mark: 32° BTDC @ 4000+ RPM
 - To advance the timing, rotate the trigger baseplate clockwise
 - To retard the timing, rotate the trigger baseplate anti-clockwise
 - Make very small adjustments; 1° of trigger movement equals 2° of crankshaft movement
 - **For safety, switch ignition off between adjustments**
 10. Refit all covers previously removed. Installation is complete.

FIG. 5



IGNITION TRIGGER ASSEMBLY

FIG. 6



**TRIGGER FITTED INTO POINTS HOUSING.
FIT M6 WASHERS & SCREWS**

SEE-THROUGH VIEW OF TIMING DISC (TURNS ANTI-CLOCKWISE)

FIG. 7

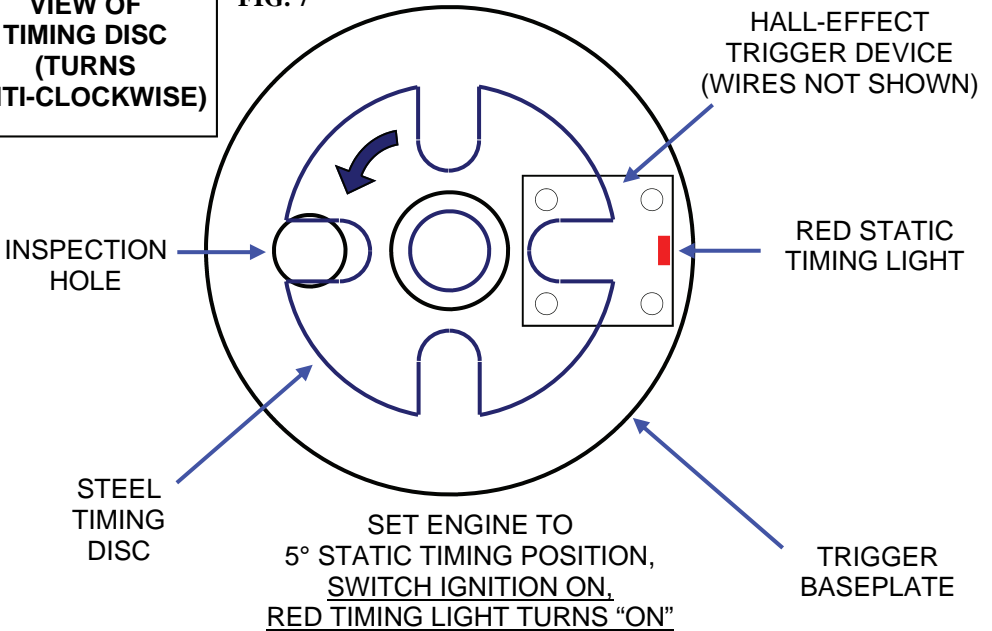
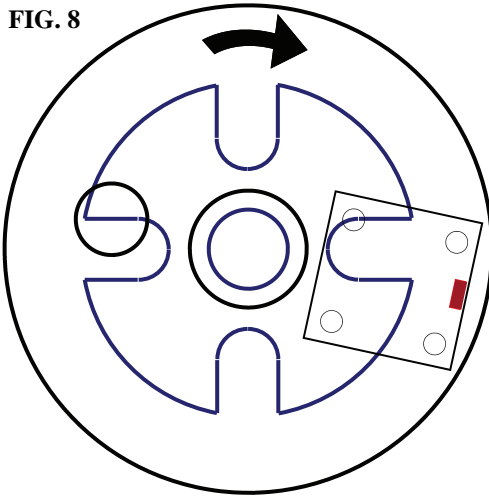
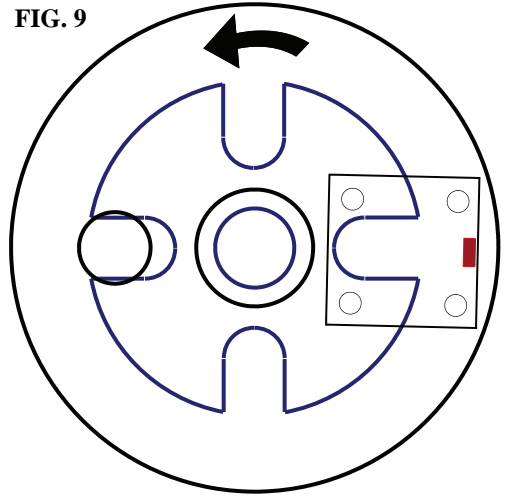


FIG. 8



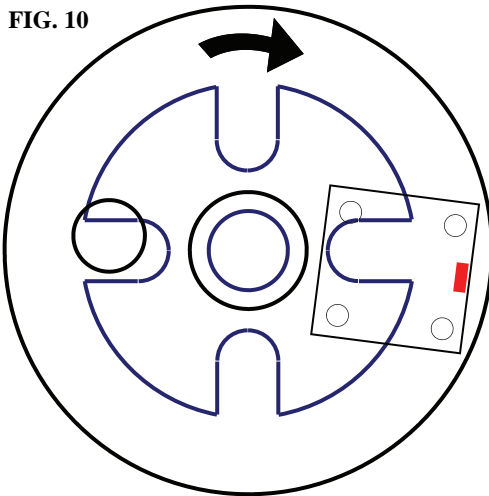
TURN BASEPLATE SLOWLY
CLOCKWISE UNTIL
RED TIMING LIGHT
TURNS "OFF"

FIG. 9



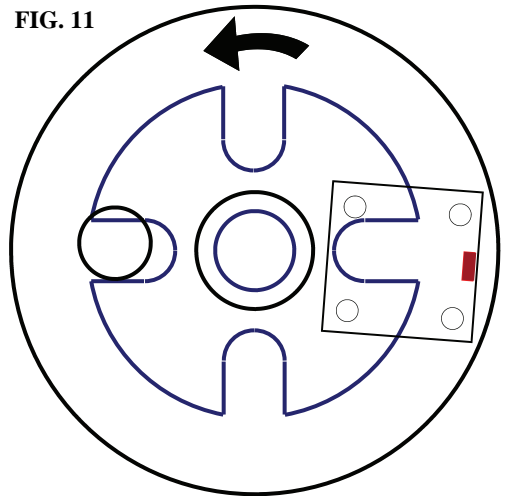
TURN BASEPLATE SLOWLY
ANTI-CLOCKWISE,
BACK TO START POSITION
RED TIMING LIGHT
BLINKS "ON" ⇔ "OFF"

FIG. 10



TURN BASEPLATE SLOWLY
CLOCKWISE UNTIL
RED TIMING LIGHT
TURNS "ON"

FIG. 11



TURN BASEPLATE SLOWLY
ANTI-CLOCKWISE UNTIL
RED TIMING LIGHT
TURNS "OFF",
TIGHTEN PLATE FIXINGS

REV-LIMITER

USE OF THIS FUNCTION IS AT YOUR OWN RISK, SINCE IT IS POSSIBLE TO SET THE REV-LIMITER TO BEYOND THE DESIGNED UPPER RPM LIMIT FOR YOUR ENGINE.

The **SMART-FIRE** ignition module features a function button that enables the user to set/reset the ignition rev-limiter. Unless specified when purchasing the system, the rev-limiter is not preset, allowing your engine to rev to its maximum (unrestricted).

To set the rev-limiter

To accurately set the rev-limiter you will need a rev. Counter/tachometer to monitor the engine rpm. Rev the engine to one-half the desired rev-limit rpm, press & hold the function button for a minimum of 3 seconds. The ignition module will take a snapshot of the engine rpm at the instant the button is pressed, therefore it is not essential to maintain a precise rpm whilst the button is pressed. The yellow indicator led on the module will flash 5 times. Release the button. The rev-limiter is now set. When your engine reaches the preset rpm the ignition will turn off the ignition coil, cutting all sparks. Thus, the engine rpm will fall and, once below the rev-limit setting, ignition will resume.

The minimum rev-limiter setting is 3000 rpm (i.e. set with the engine running at 1500 rpm).

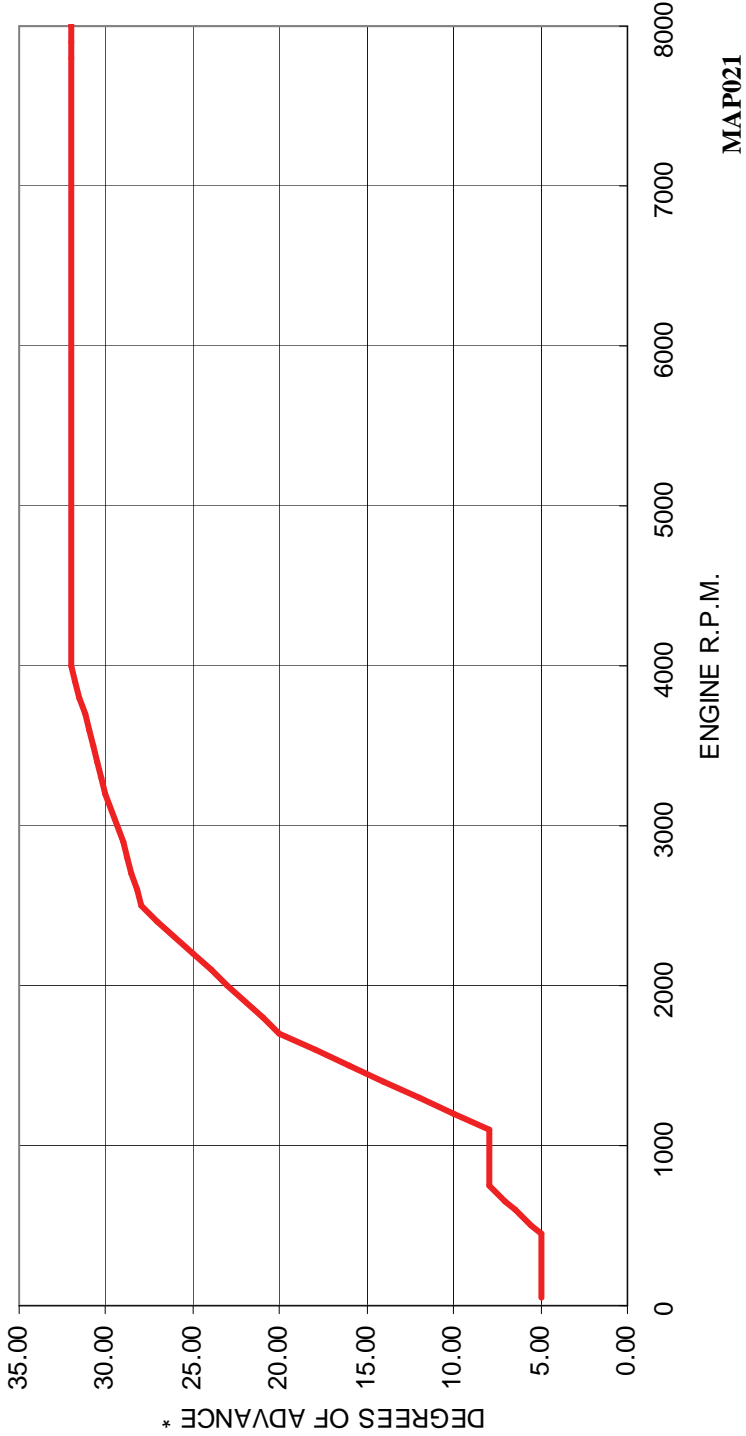
To reset the rev-limiter

To reset (disable) the ignition rev-limiter, press & hold the function button for a minimum of 3 seconds, with the engine below 1500 rpm (or stationary). The yellow indicator led on the module will flash 5 times. Release the button. The rev-limiter is now reset.

The rev-limiter setting is retained in the ignition module memory & will be recalled when the ignition is turned on.



SMART-FIRE
IGNITION TIMING
HONDA GOLDWING GL1000



Terms & Conditions and Warranty

- Use of this product indicates your acceptance of this notice.
- The product design, firmware & literature is Copyright © PAZON 2005-2006, & is protected under international copyright, trademark & treaty provisions.
- To provide the best ignition systems possible, PAZON IGNITIONS reserves the right to alter & 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 five years from date of purchase.

Ignition Spares

- Spares are defined as item(s) not purchased as part of a complete ignition system. Pazon 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's liability related to the product exceed the purchase price actually paid for the product.
- Neither PAZON 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 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 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, 30 DOUBLEDAY DRIVE,
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