

# **BOYER BRANSDEN ELECTRONICS LTD**

Frindsbury House, Cox Street, Detling, Maidstone, Kent ME14 3HE. ENGLAND Telephone: 0044 (0)1622 730939 Fax: 0044 (0)1622 730930

Website: www.BoyerBrandsden.com Email: info@BoyerBrandsden.com

## **KIT00069 – INDUCTIVE DISCHARGE ELECTRONIC IGNITION UNIT – NEGATIVE EARTH**

This unit is for 6 or 12 volt negative earth coil and contact breaker ignition systems only. General instructions are supplied as the unit will fit many vehicles with the same basic ignition system, only the position of the ignition coil, wiring and colours varying. The unit has only four wires, if the function of each is understood, fitting can be simplified. The White Wire, feed to the ignition unit, this should become live when ignition is switched on. The Black Wire, earth wire for the ignition unit connects to the chassis, remove paint from its point of contact, one of the ignition coil mounting bolts is satisfactory. The Blue wire carries ignition coil current and connects to the negative or CB terminal on ignition coil (Ballast resistor must be left in the circuit if fitted). The Black/White wire carries small current to the contact breaker. Before fitting check the vehicle handbook wiring diagram to identify wiring colours and if a ballast resistor or resistance wire is fitted in series with ignition coil. See instructions 5b, 5c and 5d.

### General fitting instructions:

1. Mount ignition unit near to ignition coil. The two strips of self adhesive tape will hold the unit to a clean grease free surface. Clean with solvent and let dry. Warm adhesive, remove paper strips and push into place. If it is not possible to use the adhesive, the unit can be taped or strapped to any convenient point, but do not mount in the direct heat of the exhaust system or radiator water pipes. On a motorcycle it can be taped to a frame tube normally under the seat or tank.
2. Remove connector from negative (-) or CB terminal of ignition coil, if more than one wire connects to this point, remove only the wire connecting to the contact breaker (normally Black/White).
3. Connect Blue wire from ignition unit to negative (-) or CB terminal on ignition coil (see 6c).
4. Connect the Black/White wire from ignition unit to wire removed in instruction No. 2.
5. Connect Black wire from ignition unit to a good earth on the frame of the vehicle.
  - a) **For vehicles without ballast resistor**, connect the White wire from the ignition unit to positive terminal of ignition coil. See fig. 1.
  - b) **With ballast resistor**, connect White wire to terminal of ballast resistor which connects to ignition switch. See fig. 2.
  - c) **With ballast resistor in negative or CB side of ignition coil**, connect Blue wire to the ballast resistor terminal which normally connects to the contact breaker, the White wire going to the positive on the ignition coil. See fig. 4.
  - d) **With ballast resistor wire** from ignition switch to ignition coil, connect White wire to ignition switch end by extending the White wire, any point that becomes live when ignition is switched on i.e. fuse, or accessory point is satisfactory. See fig. 3.

The fitting is now complete, tidy wires by taping in place with black PVC tape.

### Notes

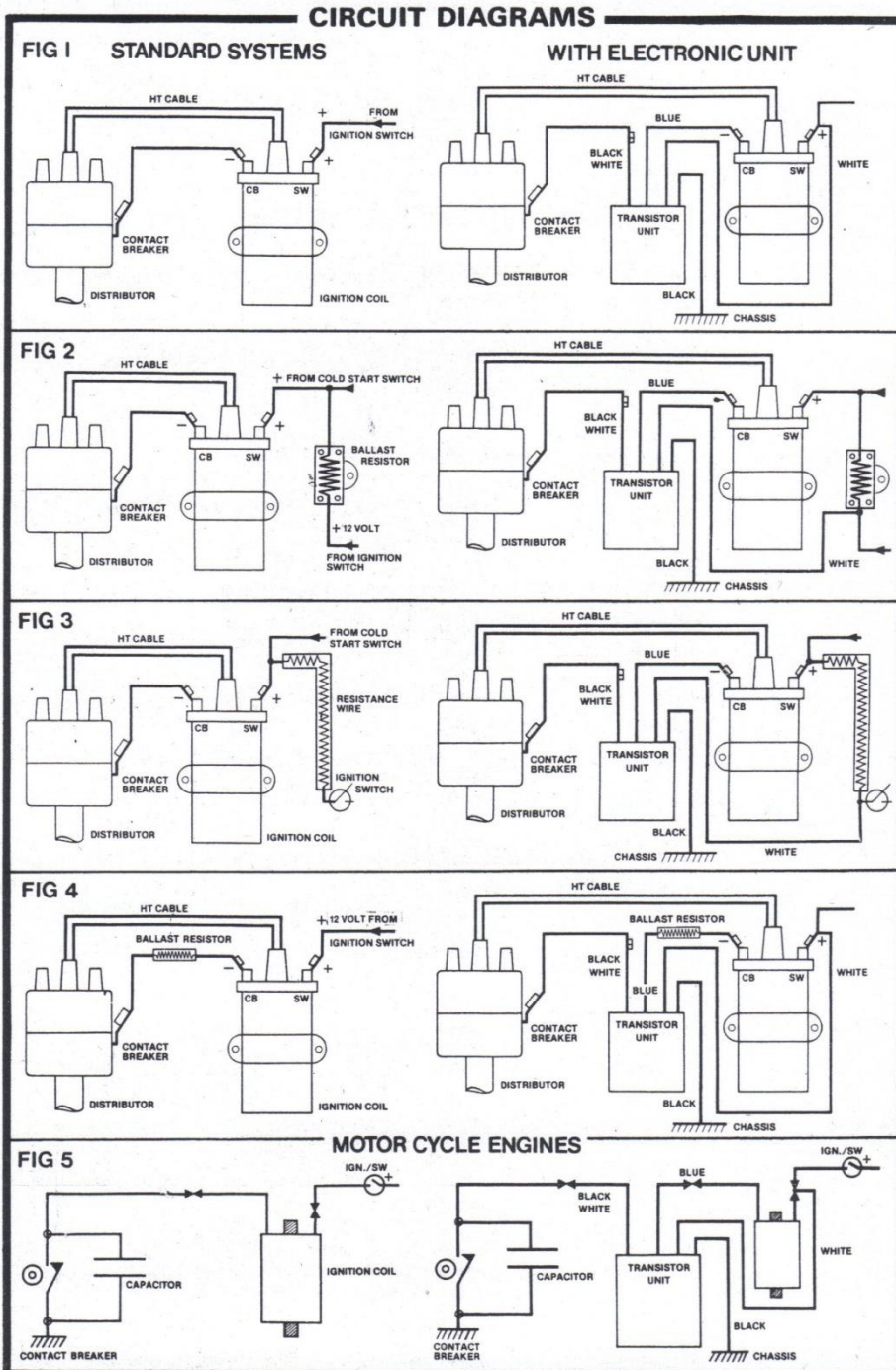
There will be no burning of contact breaker points, new points will need adjustment after 500-miles to compensate for bedding in of heel, they should then last 25,000 miles. All standard methods of timing can still be used, the contact breaker gap will have little effect on the output voltage of the system, therefore, smaller gaps can be used on high revving engines, but standard settings are satisfactory for normal operation. The spark plug gaps should be left as standard, no improvement will be found by opening them up. A small increase in tickover may be found due to improved combustion, this may affect automatic transmission vehicles, if so the carburettor idle screw can be re-adjusted. The unit can be used with engines having no distributor, but one unit per contact breaker is required, this applies to most motorcycle engines. The standard fitting instructions can be used but the condenser must remain across the contact breaker not the ignition coil.

A red light emitting diode has been included in the circuit and can be seen in the centre of the ignition unit, this lights up when the contact-breaker points open, it is only necessary to synchronise the illumination of the diode with the timing mark on the engine to achieve accurate static timing. The green diode is only to show power is on to the unit.

N.B. Please ensure that the earth polarity of the unit matches that of the vehicle before fitting. Units connected to reverse polarity cannot be guaranteed. Black unit for negative earth. Red unit for positive earth.

For vehicles fitted with electronic impulse tachometer (rev counter) General data;

1. The tachometer must be wired in the ignition coil circuit, i.e. the blue wire or the feed to the ignition coil from the switch.
2. There will be insufficient current in the contact-breaker circuit to trigger the tachometer, i.e. the black/white wires. Many vehicles have the tachometer wired between the contact-breaker and the ignition coil.
3. These units are now suitable for 6 or 12 volt operation. Some vehicles are fitted with a ballast resistor wire that is difficult to trace. If so, wire as figure 1. as the reduced voltage will not affect its operation.



Fitting:

The simplest method of fitting is to cut the LT cable from the distributor (the thin wire from the contact-breaker) and fit a male connector to the wiring loom side and a female to the distributor side. The black/white wire is then connected to the distributor side and the blue wire to the wiring loom side. The black and the white wires being connected as per the main instructions. The tachometer should then operate in the normal manner.

N.B. We have found with positive earth units the operation is improved by disconnecting the condenser inside the distributor.

Radio Suppression:

All the normal types of radio suppression components can be used with this unit. On the positive earth the 1 mfd coil suppression capacitor should be connected to the white wire on the unit as the coil CB or positive terminal is connected to earth.

Fault Finding

If any fault is suspected with the unit check the earth or chassis connection is good and clean as a poor earth will produce misfiring. Twisted wire joints are no good with electronics, a good terminal joint, good soldering or a crimped joint is required. The timing light would go on and off as the engine is cranked. Also if the black/white wires are disconnected and touched on and off, the earth should produce a spark from the coil.

