

# BOYER BRANDSEN ELECTRONICS LTD

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## TYPE MK3 ELECTRONIC IGNITION SYSTEM FOR PRE 1979 B.M.W. MOTORCYCLES WITH 12 VOLT ELECTRICS

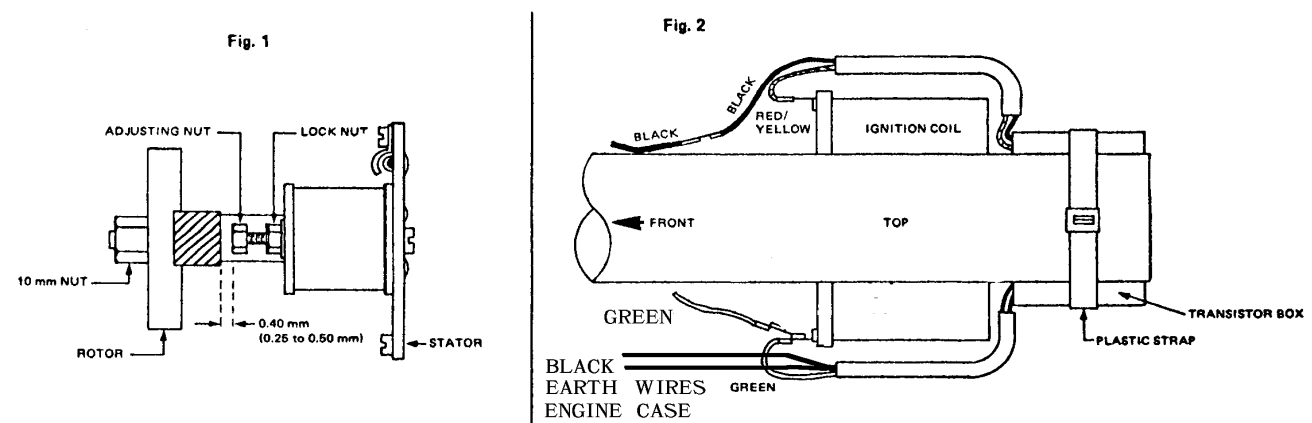
### Comprising:-

- a) Transistor Box (Black box with wires)
- b) Stator Plate (round printed circuit with two coils and one connecting wire)
- c) Magnetic Rotor (round plated steel unit with two magnets fitted)
- d) Plastic strap

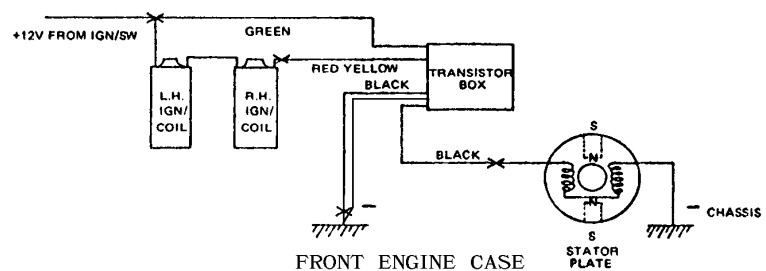
### Fitting instructions:

(Tools required are the standard tool kit plus a strobe timing lamp for final timing).

- 1) Open seat and remove tool tray. **Disconnect the battery earth wire**
- 2) Undo the two wingnuts holding the rear of the petrol tank.
- 3) Turn off both petrol taps and undo the pipes from the bottom of each using the 24mm end of the large "C" spanner.
- 4) Remove petrol tank by sliding back and lifting.
- 5) Remove engine front cover by undoing the three caphead screws.
- 6) Remove contact breaker and auto-advance unit by undoing the two holding screws and single 10mm fitting nut on the end of the shaft.
- 7) Remove the capacitor and disconnect the wires. Pull the contact breaker from the rubber grommet.
- 8) Feed the wire on the ignition stator plate through the long rubber grommet.
- 9) Fit the stator plate into the contact breaker housing with the two screws and wire clamp from the standard contact breaker unit.  
Set halfway along adjustment slots.
- 10) Refit rubber grommet mounting bracket and connect male connector from stator plate to the female connector removed from the capacitor.
- 11) Slide the rotor unit onto the end of the "D" shaped contact breaker shaft with the magnets facing the stator plate.  
Slowly turn the engine using the kick-starter until the magnets are over the top of the adjustable pole pieces of the stator plate.  
**(WARNING: the magnets must not come into contact with the pole pieces as they could easily be sheared off).**
- 12) Adjust the gap between magnets and pole pieces to 0.4mm to 0.7mm using the feeler gauge and secure the rotor with 10mm fitting nut. This may be a little variable as the magnets are cast. See Fig.1
- 13) Remove the black wire from the right hand ignition coil and the green wire from the left hand ignition coil.
- 14) Fit the transistor box behind the two ignition coils with the green wire on the left hand side, using the plastic strap around the top frame tube to secure it. See Fig.2
- 15) Connect the green wire from the transistor box to the left hand ignition coil and reconnect the green wire from the wiring loom onto the back of it.
- 16) Connect the red/yellow wire from the transistor box to the right hand ignition coil connection.
- 17) Connect the black wire on with male tag from the transistor box to the black wire from the wiring loom.
- 18) Run the long black earth wires down to the mounting screw that held the capacitor unit in place. Run the black sleeve for these wires under the rubber grommet on the top of the front engine case.
- 19) Check all connections are good and tight and wires fitted neatly.
- 20) Refit petrol tank and pipes, reconnect battery.
- 21) Remove rubber timing hole bung in left hand engine side casting.
- 22) Start engine and run for three to five minutes for it to warm up.
- 23) Connect the strobe lamp and time through the timing hole to the Full Advance Mark (F) with the engine running at 4500 RPM.  
This final position is obtained by moving the stator plate on its slotted holes; this should be done with the engine stationary, the screws being tightened after each adjustment. The timing mark can be seen as the electronic advance is operating, when the engine is speeded up. Anticlockwise movement will advance the ignition. **Disconnect battery** before refitting the front cover as it can short the diodes on the alternator and damage them.



IGNITION CIRCUIT DIAGRAM



PLEASE TURN OVER

OLD-BM-3.PUB

# **WARNING**

**REMOVE THE MAIN BATTERY EARTH CONNECTION AT ALL TIMES WHEN REMOVING THE FRONT ENGINE COVER DO NOT REMOVE THE SPARK PLUG CABLES WHEN THE ENGINE IS RUNNING AS THIS WILL DAMAGE THE IGNITION COILS. TO RUN THE ENGINE ON ONE CYLINDER FOR CARBURETOR ADJUSTMENT USE TWO SMALL WIRES FED UNDER EACH PLUG CAP, RUNNING CLOSE TO THE CYLINDER FINS. PUSH THESE ONE AT A TIME TO THE FIN USING AN INSULATED SCREWDRIVER.**

**SOME RUN OUT IS COMMON ON THE MAGNETIC ROTOR. THIS DOES NOT EFFECT THE TIMING AS THE OUTPUT OF THE STATOR COILS IS ALWAYS ADDED, PRODUCING ONE PULSE PER TURN OF THE CRANKSHAFT.**

**A SMALL HESITATION ON STARTING IS COMMON WITH THIS UNIT. TRY BRINGING THE CHOKE ON AS THE ENGINE STARTS CRANKING, THIS WILL OVERCOME THE PROBLEM WHEN COLD. WHEN HOT IT SHOULD NOT BE A PROBLEM.**

**THE TWO EARTH WIRES ON THIS UNIT ARE REQUIRED TO REDUCE THE PROBLEM OF HIGH CURRENTS FLOWING THROUGH THE FRAME DURING ELECTRIC STARTING MISTRIGGERING THE IGNITION SYSTEM. ALWAYS KEEP THE MAIN BATTERY AND FRAME EARTH CONNECTIONS IN GOOD ORDER.**

**HIGH VOLTAGES DEVELOPED FROM THIS SYSTEM CAN BE VERY DANGEROUS  
ALWAYS SWITCH OFF BEFORE WORKING ON THE SYSTEM.**