



SPARES for ROYAL ENFIELD & AMAL

EMAIL: info@hitchcocksmotorcycles.com

WEB: www.hitchcocksmotorcycles.com

HITCHCOCK'S MOTORCYCLES LTD
ROSEMARY COURT
OLDWICH LANE WEST
CHADWICK END
SOLIHULL
B93 0EY ENGLAND

TELEPHONE: 01564 783 192

FAX: 01564 783 313

MK 4 IGNITION SYSTEM FOR ENFIELD 350/500 cc INDIA BULLET FITTING INSTRUCTIONS (PART 200001)

The kit Comprises

- Ignition Unit (Black unit with wires)
- Stator Plate (Circuit board with two coils)
- Magnetic Rotor (Round steel plate with two magnets)
- 6mm Cap Screw

If you are not familiar with fitting electronic ignition systems please read the Hints and Tips page before commencing fitting the kit.

Disconnect the battery and remove the seat (for better access to the electrics)

Fix the Boyer Ignition Unit in a suitable position so that the wires can reach the Coil and the Distributor

To fit the Stator Plate and set the ignition timing

- Take off the Distributor Cap. Undo the two pillar screws holding the Contact Breaker plate and remove this plate.
- Undo the nut holding the Advance and Retard and remove the whole unit. On early bikes this is a 6mm nut and stud, on later bikes a 6mm cap screw. Remove the stud if fitted. Ensure the Advance and Retard mechanism comes away with the Points Cam. The unit is on a taper. If it does not readily come off screw an appropriate bolt into the unit (generally a 5/16 cycle thread) and gentle tap the bolt up and down to free the taper.
- Remove the spark plug and, using the TDC tool set the piston to Top Dead Centre (on Compression or Exhaust stroke).
- Fit the Magnetic Rotor in place of the Advance and Retard unit using the 6mm cap screw, leave this loose





SPARES for ROYAL ENFIELD & AMAL

EMAIL: info@hitchcocksmotorcycles.com

WEB: www.hitchcocksmotorcycles.com

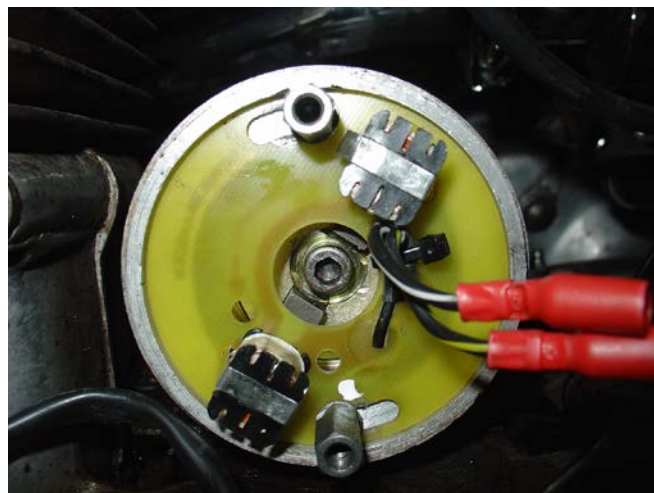
**HITCHCOCK'S MOTORCYCLES LTD
ROSEMARY COURT
OLDWICH LANE WEST
CHADWICK END
SOLIHULL
B93 0EY ENGLAND**

TELEPHONE: 01564 783 192

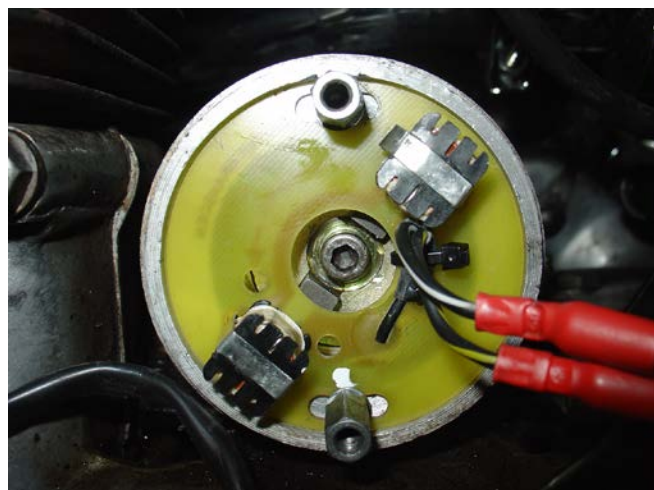
FAX: 01564 783 313

- Fit the Stator Plate in place of the Contact Breaker Plate using the two pillar screws. Rotate the plate anti-clockwise until the lower fixing screw is to the left side of the lower adjustment slot and tighten down the two pillar screws.

By rotating the Magnetic Rotor, line up the centre of the magnets on the Rotor with the centre line of the two Stator Coils. Tap the Magnetic Rotor onto its taper and tighten with the 6mm cap screw. Recheck by ensuring the piston is still at Top Dead Centre and the magnets are in the centre of the Coils. Re-adjust the Magnetic Rotor position if required.



- Loosen the two pillar screws and reset the Stator Plate to halfway along its adjustment slots and re-tighten the two pillar screws. The magnetic rotor should have the leading edge of the magnets in line with the front edge of the Stator Pole Piece.





SPARES for ROYAL ENFIELD & AMAL

EMAIL: info@hitchcocksmotorcycles.com
WEB: www.hitchcocksmotorcycles.com

HITCHCOCK'S MOTORCYCLES LTD
ROSEMARY COURT
OLDWICH LANE WEST
CHADWICK END
SOLIHULL
B93 0EY ENGLAND

TELEPHONE: 01564 783 192
FAX: 01564 783 313

To fit the Stator Plate and set the ignition timing

Please Note: there may be different wire colours on the loom. There are many variations of wire colours dependant on the year of the bike, home market or export, aftermarket looms, home modifications etc. The connections below are physically correct but the loom colours may vary.

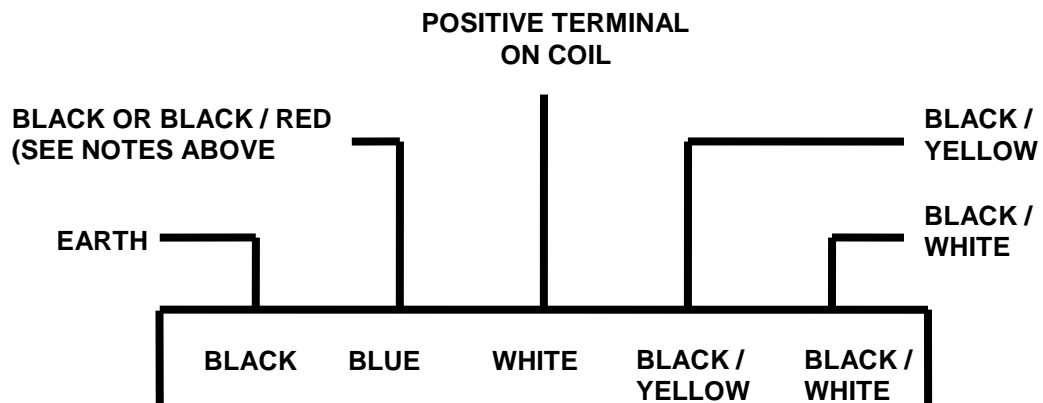
Disconnect the Points Feed Wire into the Distributor

- On machine fitted with a Kill Switch this will be a Red and Black wire
- On machines without a Kill Switch this will be a Black wire

Then connect the wires on the Ignition Unit as follows

- Black Earth
- Blue To the wire in the loom that has been removed from the Distributor, (this used to go to the old contact breaker) ref note above
- White Positive terminal on the coil
- Black / Yellow Black / Yellow on the Stator Plate
- Black / White Black / White on the Stator Plate

These two connections can be made inside the Distributor Cap



Refit the Spark Plug and Seat and reconnect the Battery.

Note : Wrong battery connection can damage the Boyer Ignition Unit.
Double check when connecting the battery or charging the battery if it is in situ.

The system is now ready to run. Start the and warm up to normal running temperatures

The timing is now set and should not need further adjustment. However not all bikes are the same so a small amount of adjustment may be required for optimal running. Adjustment can be made by moving the Stator Plate on the slotted holes.

However, any adjustment is magnified by 2 on the crankshaft so it is advisable to mark the position of the Stator Plate and make small adjustments until the required engine performance is achieved.



SPARES for ROYAL ENFIELD & AMAL

EMAIL: info@hitchcocksmotorcycles.com

WEB: www.hitchcocksmotorcycles.com

**HITCHCOCK'S MOTORCYCLES LTD
ROSEMARY COURT
OLDWICH LANE WEST
CHADWICK END
SOLIHULL
B93 0EY ENGLAND**

TELEPHONE: 01564 783 192

FAX: 01564 783 313

To fit the ignition system requires basic mechanical and electrical knowledge. If you are not familiar with these skills please allow a competent motorcycle engineer to fit the system. Incorrect fitting and electrical connections may cause damage to the ignition unit.

In addition to standard tools, fixing will require a 6mm Allen Key and a Top Dead Centre tool.

With this kit a 5000 OHM suppressed spark plug cap must be used.

Electronic ignition systems do require a good voltage supply, coil, wiring connections and charging systems.

The operating voltage for the Ignition is between 10 volts and 16 volts

Below 8 volts may produce an unstable Advance curve which may result in poor starting

The battery should supply at least 12 volts, ideally between 12.5 and 13 volts. A simple test is to switch on the headlights and brake lights and place a voltmeter across the battery terminals. For AC/DC lighting set the bike to a low tick over in order to run the lights. A strong battery should be able to hold 12 volts for a few minutes.

If running the system without a battery, the Alternator must also be in good condition producing a good output at "kick over" speed.

A good coil is essential, if the coil runs excessively hot with the normal points setup this is an indication that the coil is starting to fail.

Good HT and LT wiring is critical.

Check the High Tension wires are in good condition, the plug caps give the correct resistance reading and the plugs are the correct grade set to the right gap.

Check all the wiring connections. Pay particular attention to the earth connections, especially the main earth point behind the battery, as this is a known weak point.

Voltage drop is usually a build up of resistance in the circuit which can be caused by poor connection, frayed wires, dirty switch connections etc. For optimum performance it is advisable to regularly check and maintain the wiring system. Remember most of the wires are open to the elements and tend to corrode easily.

The charging system on the bike must be able to supply between 12 and 14 volts under load.

Some Simple Checks

Sparks on Cranking but Won't Fire

Check the stator wires do not change colour in the wiring loom, as swapping these will make the ignition fire over 50 degrees retarded. With a digital system check you have suppressed plug caps fitted of approx. 5000 ohms.

Engine Runs Fast at Idle, Kicks Back on Starting

Low or variable voltage to the ignition. As the alternator charges into the system with increasing speed the problem can clear. Check the wiring (as described above).

Engine Runs, Possible Poor Starting, But Misfires

Faulty HT circuit, poor HT Wiring, Plug Caps open circuit (suppressors broken up) Faulty Plugs.