



CDI ignition + 12V DC battery charging

STK-102DC - BSA A50, A65, TRIUMPH 3TA, 5TA, T100, T110, T120, Norton Commando, Atlas, Interceptor

Contents

Stator EWST-0079	Rotor R0100	RR2
CD041	Fitting kit	HT Coil HT2 + caps 5k
1 Male & 1 Female bullet + cover		2 Ring Tags M6

Optional parts

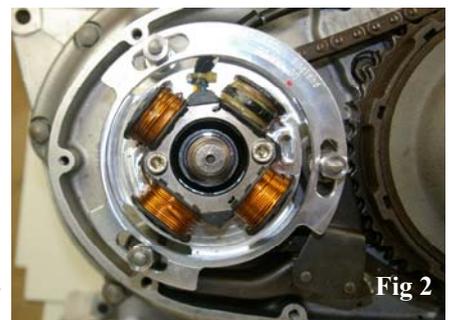


Information

- Replacement for Lucas or Wipac alternator. Complete digital self generating and alternator, pre-programmed advance curve gives optimum performance for the 4 stroke twin engine.
- No battery, contact breaker assembly or distributor required for the ignition.
- Simple timing set-up align marks on the rotor and stator.
- Supplied regulator/rectifier is 6v or 12v selectable by cutting the blue wire. Output is DC to charge a small battery - see notes about battery overleaf.
- The battery can be replaced with a PP12 capacitor pack, this is more reliable than a battery but has limited energy storage. See notes about battery overleaf.
- Rotor is supplied with a taper locking collet, enabling the rotor to be fitted on the 3/4" crankshaft without the need for a woodruff key, this allows system to be fitted even if keyway is damaged. The rotor can be fixed in any position making timing easier to set up.

Fitting Instructions

- Step 1** Remove the petrol tank and seat, this allows access to original coils etc.
- Step 2** Remove LH engine cover, exposing alternator. Undo the x3 nuts holding the alternator/stator. Retain the nuts. Remove old alternator/stator from the crank cases.
- Step 3** Undo the rotor nut, this can be done by holding the rotor with a suitable tool. If an impact wrench is available it is not normally necessary to hold the rotor.
- Step 4** Fit new stator in position shown (fig. 2), use the 3 spacers supplied, on the threaded studs and use the original retaining nuts. Don't fully tighten yet. Feed the stator cables through the crankcase using the original grommets as required.
Note: The cables are pre-terminated but not inserted into connector block to make the cable feeding easier. Feed the cables with terminals one behind the other if the hole they are passing through is very small.
- Step 5** Remove the woodruff key from the crankshaft. Locate the taper locking collet on the crankshaft as far as possible and then fit the new rotor. Ensure the rotor is not touching the stator when turned by hand. If so it may be necessary to fit a spacer/washer on the crankshaft before the taper collet is fitted. Fit the original stepped nut and tighten a little so the rotor can still be moved relative to the crankshaft. We recommend using loctite on the thread to retain the nut.
Note: Pre 1968 BSF thread used was BSF and after UNF was used; these are very similar but not interchangeable.



- Step 6** **Setting the timing** - This is simple to do as the rotor (R0100 - 03on) has degree marks engraved on it. Set the piston at TDC (top dead centre) then without moving the crankshaft rotate the rotor so that the relevant angle BTDC (before top dead centre) on the rotor is aligned with the punch mark highlighted in red on the stator. See Fig.3 shown at 38° correct for most Triumph models.
- | | | | | | |
|------------------|------------|----------------------|------------|---------------------|---------------|
| BSA twins | 34° | Triumph twins | 38° | Norton twins | 28/31° |
|------------------|------------|----------------------|------------|---------------------|---------------|

Note: For singles with twin plug heads the timing can be set a few degrees retarded as the explosion in the cylinder occurs more rapidly. Tighten the rotor retaining nut to about 40Ft/lbs torque. Final adjustment can be made by moving the stator on the slotted holes - tighten the x3 nuts when set.

- Step 7 CDI connections** - Fit the 3 yellow cable seals onto the wires then attach the 3 connectors to the blue, white and black cables. It is recommended these are crimped and soldered. Insert the connectors in to the connector block, see numbers on the connector block, and circuit diagram. Black cable in to position 1, the white cable in to position 2 and the blue in to position 3. See circuit diagram, below.
- Step 8** Remove the original HT coils, the mechanical advance unit and points; these are not required for this system. The distributor if fitted is also not required but may wish to be retained for originality.
- Step 9** Locate the HT coil in a convenient position, note the HT coil is supplied with an adaptor plate, also the HT cables can be cut to length as required. Only use the HT coil provided as this is suitable for cdi ignition, also the plug caps should be used as these are 5k ohms resistor type and will protect the digital cdi from damage.
- Step 10** Locate the CDI unit in a position to allow the orange and black wires to connect to the HT coil. The remaining black/white wire from the CDI is for connection to a stop switch - when grounded it will cut the ignition; see circuit diagram., on next page.
- Step 11** See Fig.5. Connect cables for regulator connector as shown. **Important:** All additional earth cable connections need to be linked together with a cable. See Product Features for more info regarding alternator and reg/rec.

How it works

The cdi (capacitive discharge ignition) works by charging a capacitor within the cdi unit from the source coil on the stator, this same coil also produces the timing signal. The cdi digitises the signal and uses the microprocessor to derive the pre-programmed ignition timing curve. Electronic advance at 5000 rpm is 21°.

Troubleshooting - No Spark

- With the dual output HT coil spark is produced between the 2 ends of the HT lead, therefore when testing with a plug on the cylinder head make sure the other lead/ht cap is connected on the plug.
- Check resistance of source coil on stator, this should read approx. 270-300 ohms between the blue and white cables.
- When inserting the terminals in the connector - **see Fig 4** - you should hear a click, gently pull each cable to make sure they are attached. **NOTE: They only fit one way so please ensure that they are connected correctly.**
- Disconnect the Black/White wire from the kill switch for testing.

