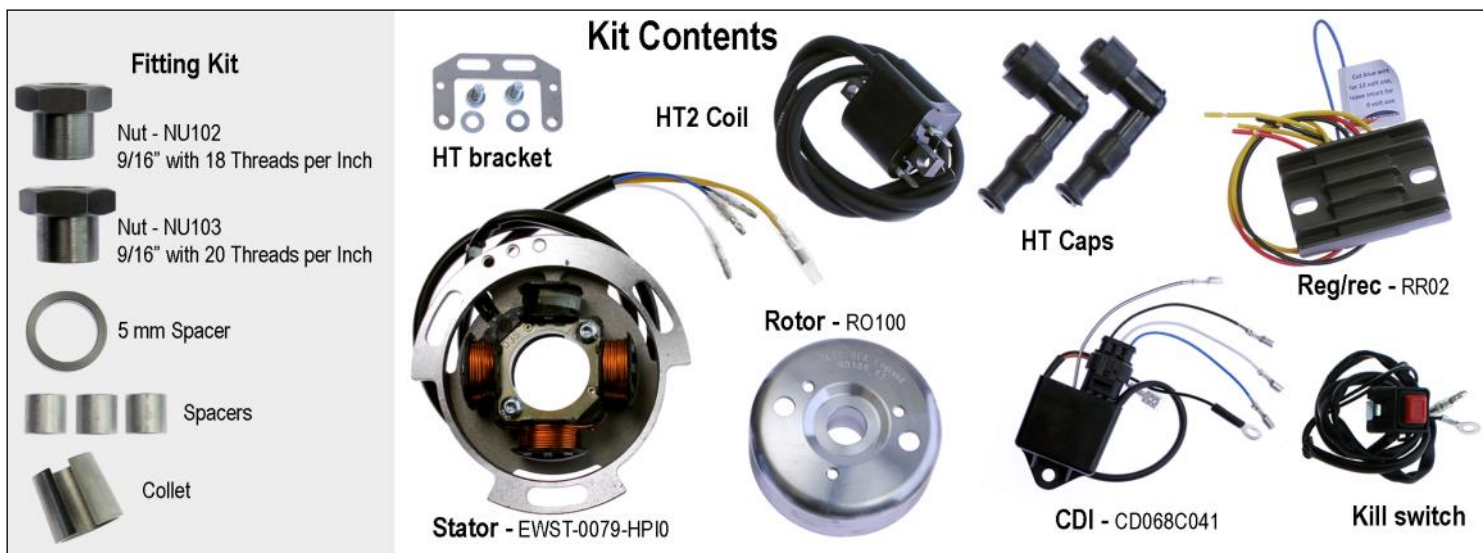


# STK-102DC - CDI ignition + 12V DC battery/power pack charging

## BSA A50, A65, TRIUMPH 3TA, 5TA, T100, T110, T120, Norton Commando, Atlas, Interceptor



### Information

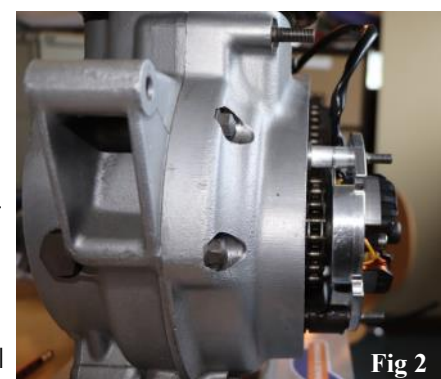
- Replacement for Lucas or Wipac alternator. Complete digital self generating ignition and alternator, pre-programmed advance curve gives optimum performance for the 4 stroke twin engine.
- No battery, contact breaker assembly or distributor required for the ignition.
- Simple timing set-up align marks on the rotor and stator at TDC.
- 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 on wiring diagram (page 3). 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 PP12 on wiring diagram (page 3).
- 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.

### 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°.

### 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 original nuts., washers and spacers. Remove old alternator/stator from the crank cases.
- Step 3** Remove rotor retaining nut followed by rotor and woodruff key from the crankshaft.
- Step 4** Temporally fit the stator onto the 3 mounting studs. Check the stator is located parallel to the crank case and just clear of the primary drive crank with a gap of approx. 3-5mm. Adjustment may be required using the spacers provided. Remove stator from engine. (See fig. 2)
- Step 5** Carefully feed the stator harness through the exit tube, this is made easier by inserting each terminal and cable one behind the other. Refit the stator in the best position to allow easy cable exit, usually in the position shown in (fig. 1). Use any of the x3 holes in the stator plate to retain the harness with a 'cable tie'. Locate the stator midway on the mounting slots to allow for adjustment if necessary. Replace the original x3 nuts and washers and tighten stator to the studs.
- Step 6** **Fitting the rotor** - Locate the taper collet onto the crankshaft, push it fully on to touch the primary drive pinion. Fit the rotor so that it engages with the collet and locks onto the shaft, if necessary remove stator and collet and and fit the 5mm spacer provided, refit collet and rotor. Fit the original nut or one of the x2 provided, tighten nut loosely allowing the rotor to move relative to the crank



(Continued on page 2)

(Continued from page 1)

**Step 7 Setting the Timing.** The rotor has accurate degree markings engraved on the side, these enable the ignition timing to be easily set up without a timing disc or dial gauge. Set piston at TDC (top dead center). See fig. 3 shown at 38° correct for most Triumph models.

BSA twins 34°      Triumph twins 38°      Norton twins 28/31°

**Note:** For versions 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 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 HT Coil:** 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 CDI: (see wiring diagrams)** Connect the x 3 stator cables Black, White and Blue to the CDI ensure the bullet connectors are tightly located. 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.

**Step 11 Wiring: (see wiring diagrams)** Cut the blue link wire on the regulator rectifier for 12v system. Connect the x2 yellow cables from the stator to the x2 yellow wires from the regulator/rectifier.

**Battery reg/rec connections:** connect the black cable to the negative terminal on the battery and the red cable to the positive.

**Power pack (PP12) reg/rec connections:** connect the black and red cables to one set of the black and red cables on the power pack then connect yellow lighting cables to the other red cable on the power pack and the lighting earth cables to the other black cable on the power pack - Note: it doesn't matter which set of cables you use on the power pack to connect to the reg/rec or lighting.

The motorcycle can be connected as negative or positive earth.

All the power for the lighting, horn etc is taken from the battery/power pack.

**Important:** All additional earth cable connections need to be linked together with a cable.

## STK-102D-DC - Common Problems

### No Spark visible on kick over.

- A spark isn't always visible when kicking the bike over and this is normal. The CDI produces a high voltage short duration spark, this intensifies as RPM increases, as opposed to points which produce a low voltage long duration 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.
- Disconnect the Black/White wire from the kill switch for testing.
- **Always test start bike before contacting us about 'no spark problem'.**

## Optional parts



Rotor puller  
(FP-10)



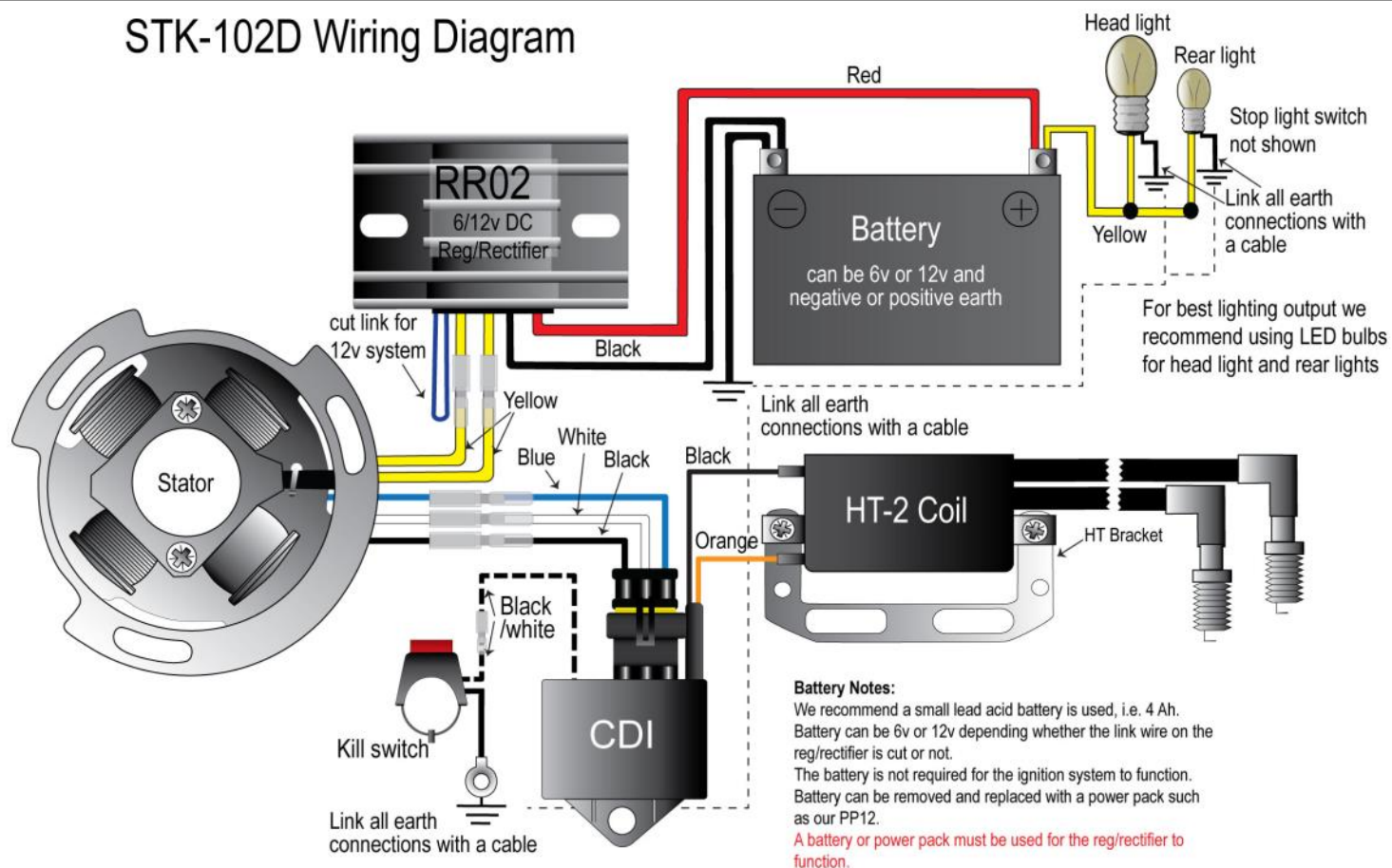
Key Switch  
(SW01K)

Power Pack  
(PP12)





## STK-102D Wiring Diagram



## STK-102D Wiring Diagram - using optional Power Pack - PP12

