

## **Jubilee, Navigator Electrics update, including Electra, 12V and electronic ignition.**

The Jubilee and the Navigator have an identical electrical system from Wipac so the following conversion from 6V to 12V and electronic ignition covers both bikes. Electra owners need to take note as well.

Due to the ravages of owners/time on the wiring it is likely and advisable that a complete rewire is also planned at this conversion. Upgrading a new 6V loom will leave you with several areas of rewiring/connecting, including the 'Resistor wire' in the old loom, which is not needed. In fact some new remanufactured looms do not have this wire or have an 'unsafe' resistance wire in the loom. Either way a 15W 3 ohm resistor is what you need if you must continue with 6V. (Get in touch if you want a resistor or have any doubts). So a new rewire is recommended but initially you will need to decide on switches.

**Switches/sockets** The original switches (they are identical, just have different knobs) may be usable perhaps even with a little servicing if you can get some switch cleaner (or WD40) inside and give the switch a workout. Be careful if trying to take the switch apart-they tend to self destruct ...balls..and springs! etc. The sockets are not available as a separate item. You might be able to use the old ones with some cleaning up but a recommended sort out is to solder short lengths of correct coloured wire to each flat switch blade (it's brass, easy) then cover the joint with heat shrink. Then traditional bullets on the wires to connect to the new wiring loom. It is possible to find a Luca connector that almost fits, but there is not a lot of room for an insulator.

**Alternator.** The Wipac alternator parts fare very well for their age and the stator can be replaced with a Lucas one if you must. BUT as the crank is 1-inch diameter there isn't any rotors! The 'Lucas' rotor cannot be re machined. Re-magnetising is possible. Stator checking-first a good inspection, are any coils loose? Are any wires bare and liable to short to earth? Then check that the readings across the coils 1.5 to 3 ohms while there must NOT be any connection between any alternator wire and the metal pole pieces. To get to 12V-all of the alternator wiring that goes to the lights switch is redundant and is removed. (Disconnected and made safe if you must modify an old loom) The alternator is reconnected as a two-wire unit. ORANGE and Light GREEN connect together. WHITE is the second wire. If replacing the Wipac with a 'Lucas' RM19 then Wipac WHT is Lucas WHT/GRN. Wipac L/GRN is Lucas GRN/BLK and Wipac ORN is Lucas GRN/YLW.

**Rectifier.** The original was a large square thingy in pale green/brown or even a shiny green with rubber edges-THROW them away! The black 'circular Lucas unit in good order can be retained OR fit a modern encapsulated unit, that is if you are going to fit a Zener diode for regulation. If not, then a modern Regulator/Rectifier is recommended.

**Capacitor (2MC type).** It is recommended that you fit a capacitor, to assist in flat battery/emergency start situations, as the emergency start facility is lost when on 12V.

**Battery.** 5 AHr is the minimum I recommend for British motorcycles, larger if you can get it in. Do not use batteries from the Alarm world! These usually have very square corners, are sealed and have spade terminals. They will overcharge and dry

out in due course. Only use a battery that is for 'automotive use'.

**Bulbs.** Headlamp-bearing in mind the size of it then fitting a new 7" reflector unit is unlikely. Fitting 12V halogen lamps to an old style reflector is also liable to give an average result. The best result is use a reflector unit specifically made for Halogen lamps ie the H4. Dare I say the right size reflector unit can be found from Japan.

**Fuse.** You must fit one, 12V is more powerful than the old 6V. 25A or thereabouts.

**Horn.** New at 12V.

**Ignition.** If you do all of the above and do NOT change to electronic then you are being 'silly'. The original advance retard will be well worn, the points will be very tired, often new ones are of poor manufacture, getting condensers to fit in with the points is virtually impossible unless you modify some thing from the 60s car world- don't do it! You will also have to buy 2 new ignition coils, which is half the cost of the electronic ignition!

Fitting electronic will reduce vibration, extend engine life, improve starting and save fiddling and breakdown time. I rest my case. Setting ignition timing is 10 times easier and far more accurate as you do it dynamically with a strobe. The initial engine timing with electronic will take as long doing one cylinder with points and will take a quarter of the time, thereafter!

**Ignition coils.** Retain the two Wipac 6V ignition coils as they suit the Boyer-Brandsen or Pazon ignition perfectly. As well as fitting very neatly under the tank they are long term ultra reliable. (Also saves the cost of two new coils).

**Fitting Boyer Brandsen ignition.** There are a couple points (sorry about the pun) to note. When you try to fit the pick-up stator plate you might find it sits a little too far into the ignition rotor and so touches it. The best way to clear this is to have the taper on the rotor, that fits into the cam, machined a couple mm further towards the magnets. Retain the taper of course. This allows the pick-up rotor to be positioned further into the engine giving the stator plate clearance.

**Ignition timing.** You will need some timing marks (fixed and rotating) on the alternator. You need a pointer fitted under a stator stud/nut. (A O has a specific design/part) And a line scribed on the rotor to coincide at the fully advanced ignition point. These need to be used when strobing the ignition in line with the instructions that come with the ignition kit.

**Electra.** Even though the Electra comes as 12V the most of the above still applies. The original 12V system on the Electra was with an alternator switching box, they seem to go on for ever (mine did) but they tend to under or over charge the battery-so move on. Electronic ignition on the Electra has two subtle points, firstly you start with 12v Wipac coils-best replace with some 6V Wipac as above. Secondly if you are trying to use the electric start this tends to lower the battery voltage, so if your battery is not up to much then the ignition can run out of volts. Only answer is to maintain a decent battery. Talking of which, the original Electra set up was 2 by 6V. You can get a big enough 12V under the seat so freeing up the tool box for 'tools'. To get 12V under the seat, first remove the original 12V voltage control box off of the mudguard (if you have it) then remove the original 6V battery carrier from under the seat. This leaves enough room for a 12Ahr Battery, (basic requirement.) with a little juggling.

A further problem with restoring the Electra is the starter button on the handle bar! The original button was built into the Wipac Triconsul switch. This is fine if you have an original 60yrs on! The starter button switched live electricity out to the starter solenoid, the solenoid itself has a built in earth on its coil hence it must be switched by live 12V. BUT modern Triconsuls (from the far east) only switch to earth on the handlebar. Hence we have to do a trick with a relay. ie one side of our new relay coil is (via the ignition switch) connected to 12V while the new type Triconsul switch switches to earth operating the relay, which in turn is arranged to put power to the starter solenoid.