



Welcome to the Future!

Please follow the instructions carefully, and use all tools listed below, if you are in any doubt with fitting the kit in any way please ask!

The Varitronic sparks much more efficiently than any current electronic system on the market, if you are replacing an old system, because of this you may need to re jet your carburettor to suit as you will burn more fuel as a result!

Tools Needed

Timing Light (Strobe Gun)

Torque Wrench

32mm Ring spanner

TDC tool

Timing disc or dial gauge

10, 17 and 19mm Sockets

Fitting the kit

Fit the new stator plate, the slots at this point need to be in the centre of the dots. Feed the wire out through the top wiring plates, and secure the stator in place, making sure to secure the wires properly with the wiring tag. Find TDC on your scooter; temporarily fit the flywheel, using the arrow on this mark this position on your mag housing. Using a dial gauge, timing disc, or other accurate method you then need to measure out and mark the firing point, or ignition timing.

Setting the timing

There are two versions of the stator plate, earlier versions

1) These have a slot with A & R marked each side.

2) Later ones can be identified by having six increments marked on the stator and feature more choice for timing settings.

To set the timing proceed as follows

(1) Early :- These plates need to be set to maximum advance, by rotating the stator plate anti clockwise. You can achieve further advance if desired by elongating the slots, but for most applications setting at maximum advance is fine.

Timing when the stator is positioned fully advanced will give you around 21 to 22 degrees when the engine is not running (you cannot check this). When your scooter is at fast tick over it will advance around 2 degrees to 23 to 24 (you can check this with a strobe. When fully retarded, depending on how hard your scooter revs, this figure can go as low as 12 to 14 degrees. The thing to remember with the Varitronic is by setting much lower timing, you may lose some top end power, but by running this far retarded your engine will run cooler and safer. Regarding the possible loss of top end power, you should bear in mind by the time the Varitronic system retards further than 17/16/15 degrees (it does most of its retard at between 4 to 6000 rpm), most expansions will have given up making peak power, so we feel it is not worth trying to hang on to a higher state of degrees as the end result probably will not work with most expansions and gear ratios. The gain in terms of power from the Varitronic is a good increase of power in all bar the top end, so some trade off in terms of power output will be needed in most cases.

(2) Late -: Initially the stator should be set on the centre mark. The use of a strobe gun to obtain your final retard is needed. Check with your tuner or kit supplier as to their recommendations on timing. Most kits will be from 16 to

19 degrees at 7000 + rpm. You will need to adjust the stator accordingly to achieve this final figure.

Wiring The System In

Wiring depends on the wiring loom you use, the choices are original, replacement or electronic loom.

1) Electronic loom :-

following the diagram sticker, the green from the wiring loom connects to terminal one from the CDI. The brown from the wiring loom should be joined with the yellow/white from the stator, and connected to terminal 3 on the regulator. All other connections are as per the diagram included with the kit.

2) Original or replacement looms :- Non Battery machines.

The original green wire going to the coil will have a ring terminal on it. Cut this and replace it with one of the spade terminals provided in the kit. This wire goes to terminal one on the CDI. The other end of the green that was in the junction box, needs to be either left on its own in the junction box touching nothing or connected to nothing else, or taped up. The brown, purple and pink wires from the main wiring loom need to be connected together. The best way to do this is to use an electronic junction box, or a bolt and fit ring terminals to each wire, then then "screw" them together. Make an extension wire from either the junction box, or the joined wires and run this to the regulator. The extension wire needs to be joined to the white/yellow from the stator and is then plugged into terminal 3 on the regulator. The rest of the wires from the stator should be connected as per the diagram. Fit 12v bulbs.

3) Original or replacement looms : Battery Machines.

For original style battery machines where you want to retain the use of the battery for parking lights, horn and brake light should be as follows. The original green wire going to the coil will have a ring terminal on it. Cut this and replace it with one of the spade terminals provided in the kit. This wire goes to terminal one on the CDI. The other end of the green that was in the junction box, needs to be either left on its own in the junction box touching or connected to nothing else, or taped up. The brown and purple wires from the main wiring loom need to be connected together and are then joined by the yellow/white wire from the stator and are connected to terminal 3. The grey and red wire from the main wiring loom also need to be connected together, and they go to terminal B on the regulator. Do not forget you need to fit a 12V battery, bulbs and horn!

Fitting the flywheel

Using a new woodruff key fit the flywheel onto the crankshaft, please note the flywheel requires a 32mm ring spanner as a holding device to lock it while you tighten the flywheel on. Torque the flywheel to 50lbs anti clockwise using a torque wrench, this is important!

Now you are ready to check and set the timing, using your strobe gun (or timing light).

The Varitronic is now set and ready to use!

Cambridge Lambretta Workshops