# Fitting Instructions

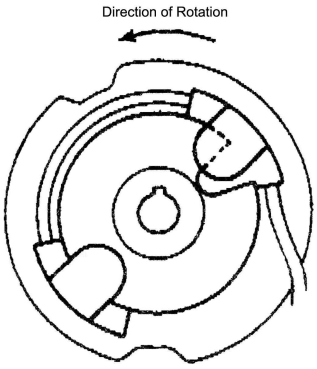
Thank you for choosing a Newtronic contactless optical ignition system. For a speedy and successful installation, it is recommended that you first read all the way through the fitting instructions and familiarise yourself with the parts provided in the kit

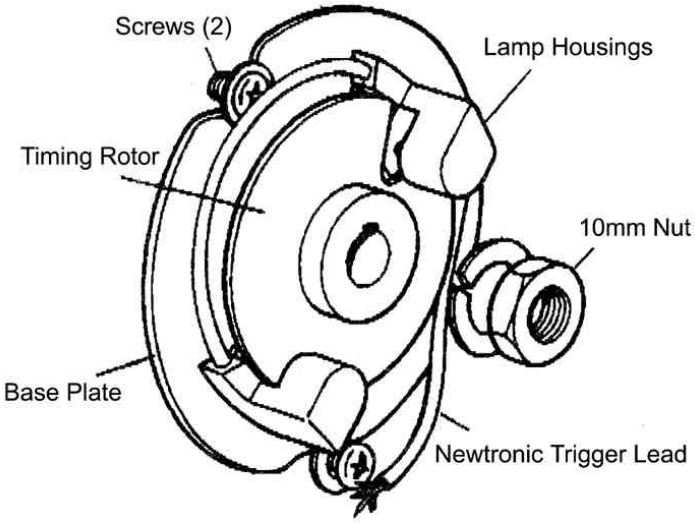
1. DISCONNECT BATTERY
2. Raise the seat, remove cover over contact breakers, remove the casting covering the timing marks.
3. Remove petrol tank.
4. Disconnect the points wires from the bullet connecters where they enter the main harness (1 orange, 1 grey). Disconnect the condensers.
5. Undo the two screws securing the points baseplates and remove.
6. Undo the 10mm nut and washer securing the points cam and remove.
7. Fit the Newtronic assembly to the bike making sure the rotor drive pin is engaged and secure with the 10 mm nut and washer.
8. When fitting the rotor to the auto-advance shaft it will be necessary to remove the cover over the auto-advance to hold the shaft in place. This is to prevent the shaft sliding outward and the bob weights becoming disengaged with their driving slots.
9. Temporarily secure the baseplate with the two Phillips screws and washers. Set the baseplates to the centre of its adjustment.
10. Route the Newtronic trigger lead (re-using the original clips) to appear under N/S side cover. Connect the trigger lead to the Newtronic switching unit using the moulded plug cover and fill with the sealant provided. Secure the plug with the two self tapping screws. (See diagram).
11. Thread the three wires from the Newtronic unit along the frame top rail to the coils. Connect the grey and orange wires to the bullet connectors from which the original points wires were removed, (make sure that grey is matched to grey, and orange to orange).
12. Connect the red/white to the coil feed as shown in the diagram. (see next page) This is the 12 V feed for the Newtronic, Do not disconnect the original coil feeds.
13. Earth the blue lead to the battery negative terminal. Ensure good electrical contact.
14. Wipe clean inside side cover, remove the protective backing from the self-adhesive panel on the back of the Newtronic switching unit and fit to the side cover, ensuring it doesn't foul when the side cover is refitted.
15. Replace petrol tank, reconnect battery and refit the cover over auto-advance unit.

**TIMING THE ENGINE**

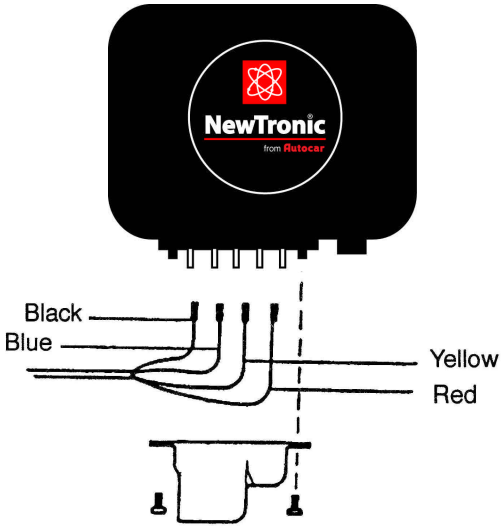
All the necessary components are now fitted and it only remains to set the ignition timing. This should not be done in bright light or the timing will be affected.

Setting the ignition timing is basically no different to the procedure adopted when using contact breakers, except that a stroboscope timing light must be used.




EXPLODED VIEW OF IGNITION ASSEMBLY

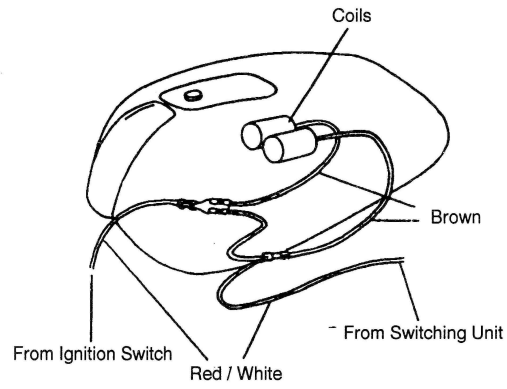



TRIGGER LEAD CONNECTIONS TO SWITCHING UNIT AND PLUG ASSEMBLY

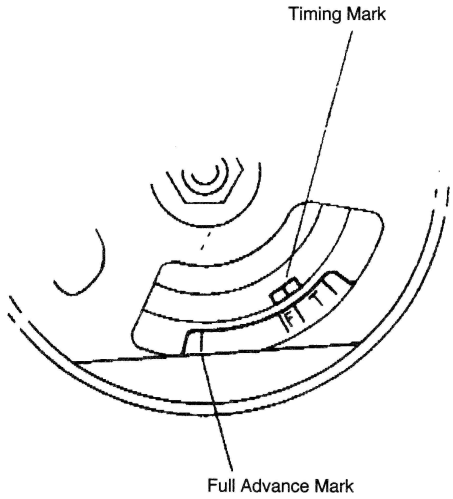
It should be remembered that the engine fires as the timing rotor leaves the lamp housing. You must ensure that the rotor does not foul the lamp housings.

**To set the ignition timing proceed as follows:**

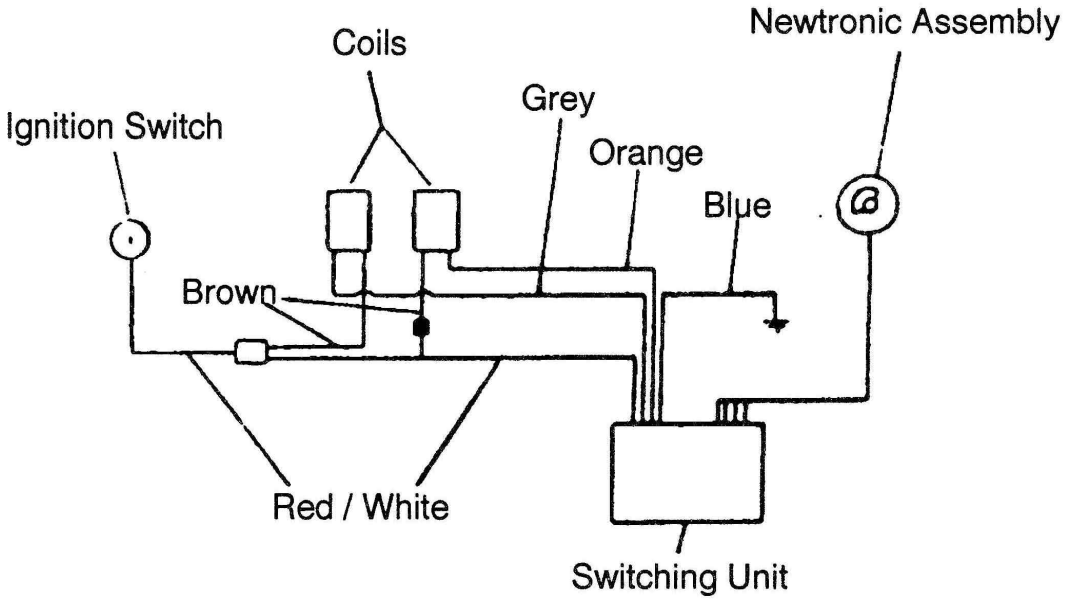
1. Connect the timing light to either cylinder and start the engine. Align the F mark with the pointer by rotating the whole Newtronic baseplate. Also ensure the advance marks are correctly aligned by revving the engine and checking with a stroboscope.
2. Check all screws are tight and refit the cover over the points, and also cover over the timing marks.




WIRING CONNECTIONS UNDER TANK




XS650 TIMING MARKS




SCHEMATIC WIRING DIAGRAM