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BULLET CHARGING 1987 to 1999

In this article we cover the earlier Enfield India models imported between approximately 1987 and 1999. These feature a 12v negative earth system, (A few earlier 12v models featured a positive earth system), with either a 5 or 5.5 ah battery. These are identified with either a 2 or 3 wire alternator and a 12volt battery.

TOOLS NEEDED

A wiring diagram/workshop manual/service guide, a multimeter with both ac and dc volts scales, insulation tape, connectors and wire cutter/pliers, and a tin of 'contact cleaner'.

With these machines, all the output from the crankshaft mounted alternator is fed to a rectifier/regulator and in to the battery. The ammeter will normally give early warning of any charging problems. A small positive reading should be present regardless of load at all engine speeds above a fast tick-over. The original Indian made regulator is fairly crude and can cause the headlight beam to 'flicker' as the regulator cuts in and out, but this does not cause major problems. However, they can fail, sometimes at quite low hours and are best replaced when they give problems with a 'Boyer Powerbox'. These are much more reliable, and avoid the over/under charge symptoms. They include both the regulator and rectifier in one unit, and also feature a capacitor to ease starting with a flat battery.



If your ammeter readings indicate a problem with the charging system then a careful examination is the only way to be certain of the fault(s). Starting at the battery, check for corroded or loose connections, electrolyte levels, fuse and earth lead security. With your multimeter set to the dc scale, check the input between the two battery connections. With the engine running this should be between 13 and 14.9 volts. (See photo on left).

With the aid of the correct wiring diagram, trace the wiring back via the ammeter and ignition switch to the regulator/rectifier. Again on the dc scale check the output here. This should be between 13 and 14.9 volts across the black and brown terminals. (Black and Red on the Boyer Power box). On post 1995 machines where the rectifier and regulator are 2 individual units, and the regulator is suspected it can be disconnected at its block connector as a 'get you home' repair. However as this part is not supplied separately, a complete replacement unit will be needed.



*Early type used
until 1995*



*Two piece used
from 1995 to 1999*



*Popular replacement
Boyer Powerbox*

Should none of these checks reveal a problem, then the alternator should be suspected. Although very reliable as there are no touching parts unless the stator or rotor works loose, (check you have an air gap between the stator and rotor), occasionally the coil wires or output leads can fail.

Disconnect the alternator where it joins the loom and with your multimeter set to the ac scale, start the engine and between the green and white you should obtain a reading in excess of 20 volts at a fast tick-over, which will rise rapidly as the revs are increased. (See photo on right).



NOTE: Most of these alternators have 3 separate wires exiting from the alternator, Violet, Green and White. Approximately 30cm from the alternator the Violet and Green are joined together and connected via a Double Bullet connector to the Green in the main harness.

As most problems in the charging system are caused by wiring or battery failures, I have started the 'trouble shooting' there. You can, of course, start at the alternator, but to help eliminate any expensive re-occurrence always check all the circuit.