

## Lucas Generator Connections and Testing

**The first thing to be aware of in testing any Generator is how is the field circuit connected?**

The Lucas or "Prince of Darkness" field circuit in a generator is internally ground so the field is supplied power to excite it – described as Field to Positive in a negative earthed system. Yes – there did used to be Positive earth systems in mainly Old British Vehicles such as MG's, Austins and Landrovers to name a few.

Bosch and Delco Generators have their field circuits internally connected to the Dynamo positive connection which supplies power and are then externally earthed through the Voltage Regulator to control them.

Testing Lucas Generators is very simple, using a small jumper lead join D+ve to F and then slowly bring the engine revs up with a voltmeter connected to D+ve. The voltage should rise initially slowly but as output builds up the voltage will run away very quickly. As the voltage reaches 12 Volts you can then use an Ammeter to link the D+ve output to battery positive (positive lead to the generator) and check the output current of the generator, GNL400 and GNL400T (for Tacho drive) can output 22amps and GNL400E (Enclosed) must only be set at 11Amps or they will overheat! NB The ammeter link **MUST** be disconnected as the generator slows down or current will flow back into the generator destroying it after a short time!

I prefer using an AVR set with analogue gauges for this as it is much easier to see than an digital multimeter which cannot handle the current and bounces around too much in voltage.

