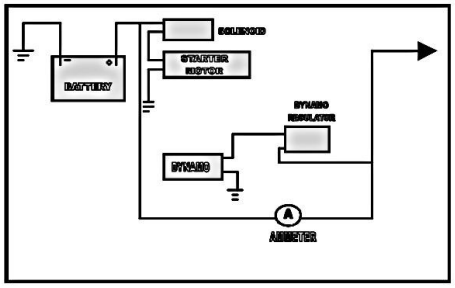
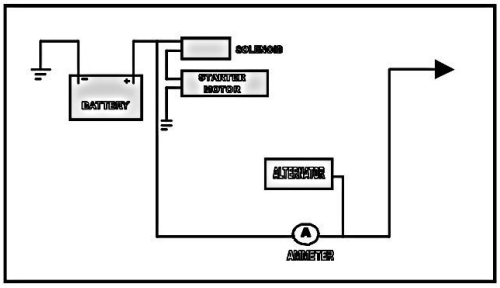
Taken from TVMGOC newsletter June 2013

FITTING AN AMMETER

Fitting an Ammeter to your classic MG can tell how you if the battery is charging or discharging. This will provide you with valuable advance warning of impending



Ammeter Wiring Diagram - Dynamo (Typical)



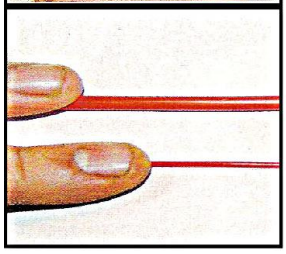
Ammeter Wiring Diagram - Alternator (Typical)

(1) Study Hard.

Prior to ordering any gauge for your classic, have a good look at your car electrical diagram. To see how you are going to fit it, without doing any damage to the original cabling.

(2) Decide on Parts.

Best to order a 30amp for dynamos, and a 60amp for alternators. But never be tempted to overload an ammeter with excessive current.

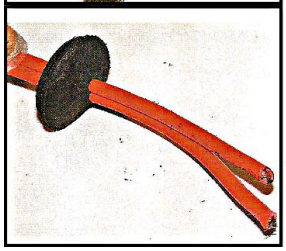


(3) Thick & Thin.

Obtain two wires, each of sufficient length, to run between the gauge and the engine bay. The wire must tolerate an amperage that is in excess of the maximum current produced by the charging system.

(4) Solder & Crimp.

Ammeter terminals are more substantial than those fitted to the rears of most instruments. Here, 9.5mm female connectors were soldered to each wire end, prior to being imped.

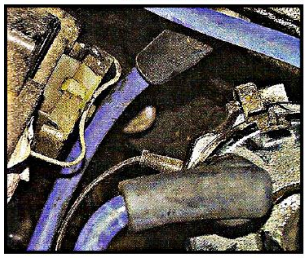


(5) The Chafing Risk.

Thread the wires through the engine bay, into the car. Should they pass through apertures in metal panels always ensure a rubber grom-met is used. Alternatively, drill a hole through a rubber bung.

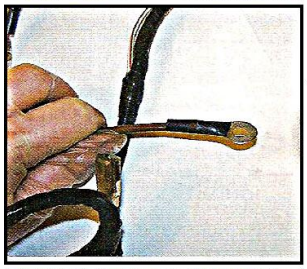
(6) Correct Connections.

Never wire an ammeter in line with the thick cables that supply the starter motor itself with current. Otherwise, 200-plus amps will overcome your 30-60amp gauge and wiring.



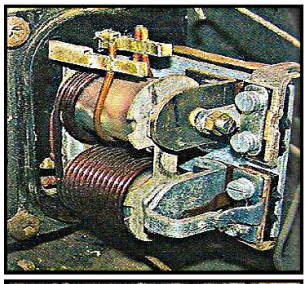
(7) Finding Charge.

You need access to the main charge wire on the rear of the alternator. If two main cables exist, you need only to tap into one. On the Lucas ACR alternator range, the plastic multi-plug is difficult to access...



(8) Lucas Tracing.

..therefore, trace where a main charge wire breaks out of the loom. On this car, it exits at the starter motor solenoid and ends in a simple ring connector. Loom removed from the car for clarity.

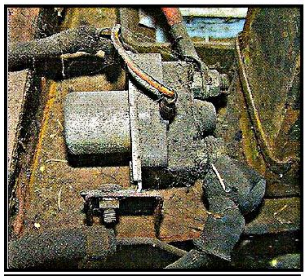


(9) Dynamo Differences.

As dynamos lack an integral regulator, identify the separate control box. Make use of the terminal marked 'A' on the cover, for it supplies current to-and-from the battery, rather than others intended to feed auxiliary circuits.

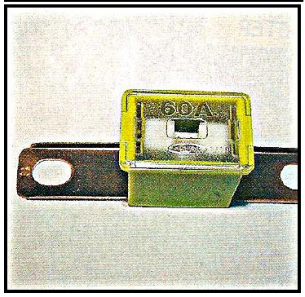
(10) Establishing Wires.

Pictured is the wire from step 8, attached to the starter motor solenoid. The positive battery lead and the main wire that feeds the car's ancillary circuits are connected to the same terminal.



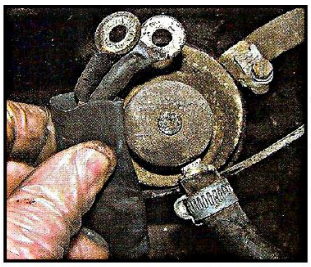
(11) Easy Inertia.

Solenoids for inertia starter motors are mounted differently. This MG Midget's solenoid has connections for the battery and charge circuits, although its discharge feed should be taken from the dynamo's regulator control box.



(12) Fuse It.

Instead of cutting off original terminals from the wiring loom, consider buying a connector, such as a junction box or a bus connector of the correct amperage. Alternatively, use a fused connector as pictured, (supplied by Holdens)



(13) Heavy Current Precautions.

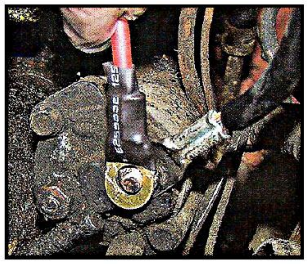
Impeccable insulation is essential, to prevent a short circuit. Prior to connecting up anything, cut a suitable length of heat-shrink tubing and place it over the alternator charge and ancillary circuit discharge wiring.

(14) Connecting Up.

Here, the charge and discharge wires were fixed to one side of the fused connector. Solder another connector to your new wire that leads to the gauge and attach it to the block's opposing side.

(15) In and Out.

Connect the new wire to the gauge, which acts as it's input. Using the other wire you have made, connect up the 'output' terminal and ensure it is threaded safely into the engine bay.

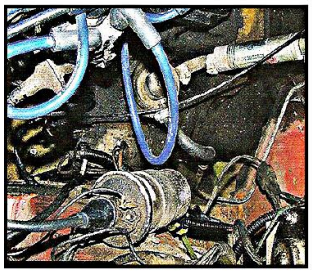


(16) Finish at Starter.

Solder the appropriate connector to the other end of the wire. In this car's case, it had to be connected to the starter motor solenoid, along with the positive battery lead.

(17) Tidying Up.

Protect the live wire from damage, by cutting plastic wiring sheaths to size and feeding the wires into them, both within the engine bay and under the fascia. Cable-tie the covering in place adjacent to the original wiring loom.



(18) End Result.

The new wiring should be neither too slack nor too taut. By not cutting into the loom, the ammeter and its wiring can be removed later and the electrics returned easily to their standard specifications.

Now you will now know if you are charging or discharging your MG battery!