

MOPAR CHARGING SYSTEM PRE-1970

Diagram #1 shows the basics of the early alternator / voltage regulator design. There are 2 brushes in the alternator, each one has a field terminal, one is labeled "FLD", the other is labeled "GND". The GND brush is grounded with the brush mounting screw. The other brush is the (+) brush (or field) and attached to it is a green wire that routes over to the voltage regulator (which is behind or near the brake master cylinder). This green wire is connected at the voltage regulator at the "FLD" connection (with a screw). The other connection on the voltage regulator is a blue wire with a female plug end. This is the "IGN" Ignition side.

Basically, the Voltage Regulator completes the charging circuit and allows the alternator to charge the system. When a certain voltage is obtained, the regulator "opens" (or turns off) the circuit until the electrical system's voltage drops, then it completes the circuit again. The old voltage regulators are repairable and rebuild able. The 1969 Dodge Shop manual (available from a number of vendors) details how to do this. If you think your regulator is failing, open it up and clean the "points" with some emory paper (sometimes these points get corroded).

NOTE: in diagram #1, the FLD is generally green, and the IGN wire is Dark blue on stock wiring harnesses.

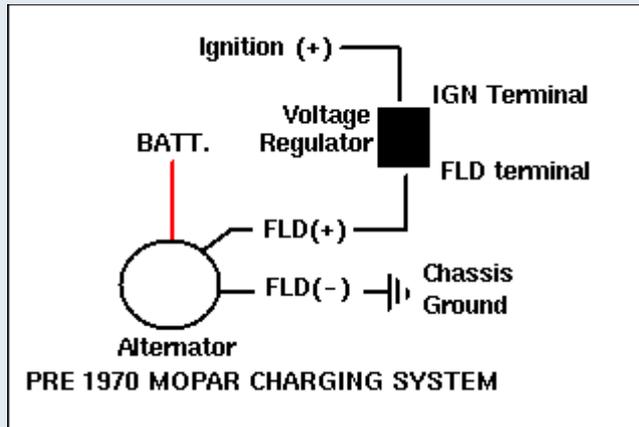
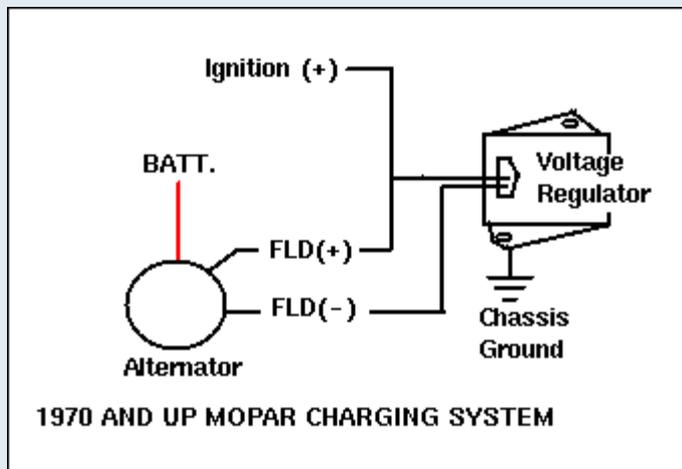


Diagram #1

MOPAR CHARGING SYSTEM - 1970 AND LATER

In 1970 Mopar switched from an analog type voltage regulator to a transistorized regulator. The basic circuit, shown in Diagram #2, is completely different. Before the voltage regulator monitored the (+) ignition voltage and opened/closed the (+) field circuit as needed to maintain a steady voltage. The 1970 design, instead, monitored the (+) field voltage and open/closed the (-) ground field as needed to maintain a steady voltage. To identify the (+) field circuit and (-) field circuit terminals on the alternator, look at the back of the alternator and put the "BATT" terminal at the 12 o'clock position. The two "FLD" terminals would appear as though they were at approximately the 10 o'clock and 11 o'clock positions. The terminal at 10 o'clock would be the (-) field circuit and 11 o'clock would be the (+) field circuit.



PRE-1970 CHARGING SYSTEM CONVERSION TO TRANSISTOR VOLTAGE REGULATOR

There are a number of reasons one might want to upgrade a pre-1970 system to a post-1970 transistorized voltage regulator. The list of reasons include

- Chrysler recommends you switch to a transistorized voltage regulator if you upgrade to an electronic ignition from a points style ignition.
- If you have to buy a new voltage regulator, the difference in cost is only about \$5-10 more for the transistorized unit. Not to mention, the quality of replacement early style voltage regulators is spotty.
- The transistorized voltage regulator will have a longer life.

Diagram #3 below describes how to install a 70 and later voltage regulator on a pre-1970 Mopar.

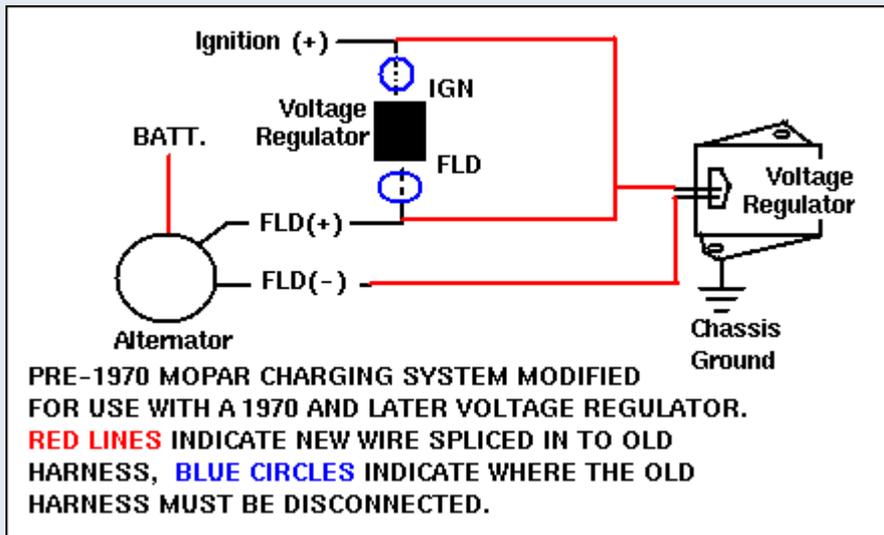


Diagram #3

Basically, a wire is added to the second field brush on the alternator. On the original alternator, this brush is grounded to the case of the alternator, so you'll need to change the alternator to a 1970 or newer style. The second field wire is connected to the outside plug on the newer voltage regulator (two plugs, one is in the middle, one is on the outside). The original field wire that ran to the "FLD" plug on the original voltage regulator (green wire) needs to be connected with the wire that ran to the "IGN" side of the original voltage regulator. This wire (both the old FLD and the old IGN) need to be connected to the center plug on the newer voltage regulator as well. One more important step is required, the new voltage regulator must have a good case ground (-) to its mounting surface. If there isn't a good ground to the new voltage regulator case, the charging system will not work.

If a wiring modification of this level is not something you wish to tackle, reproduction engine wire harnesses for pre-1970 Mopars can be purchased that incorporate the newer voltage regulator and electronic ignition wiring and connectors.