

# Voltage Regulator Test Guide

by Denny Williams  
Photos by Denny Williams

**W**e came across an old shop guide put out by the Echlin Manufacturing Company of Branford, Connecticut who made replacement voltage regulators. Their guide states at the top "Follow this guide - eliminate complaints." They also advertised that their regulators included "tags to identify wires." So, it looks like they really wanted to make it easy for the mechanics.

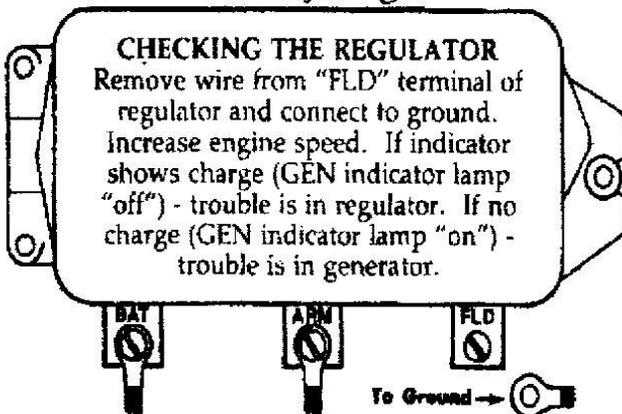
Here are the easy steps for determining if the voltage regulator is bad and how to go about changing the regulator. The test guide can even help determine if the problem is in the generator. The electrical charging system for the 1958-1962 cars used a generator and a voltage regulator. The late 1962 models started using an alternator and regulator. All 1963 and 1964 models used an alternator.

Before removing the regulator, make the following tests.

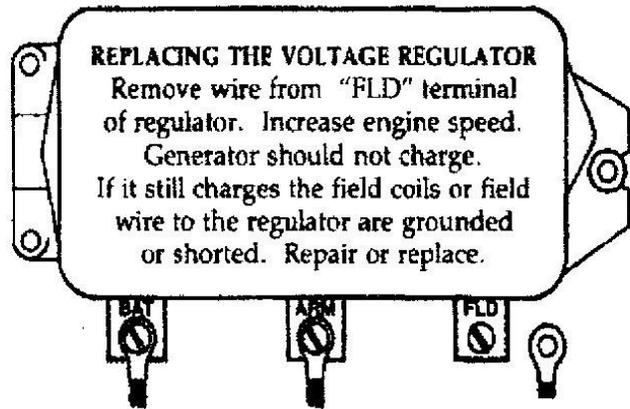
1. Check fan belt. If worn or loose, the generator cannot function properly.
2. Check to determine if trouble is in generator or regulator.

Checking The Regulator

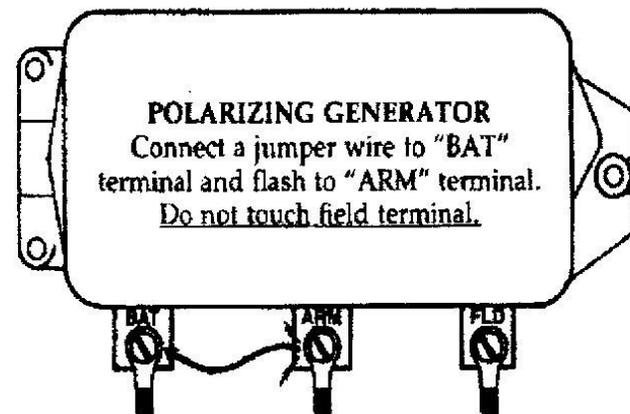
## Delco-Remy Regulator



3. If charge is too high and regulator adjustment does not correct; Follow directions written in next diagram at the top of right-hand column.



1. Disconnect one battery cable before removing wires from regulator.
2. Disconnect and tag each wire or set of wires from each of the three terminals. "BAT" "ARM" "FLD"
3. Worn or dirty generator brushes can ruin the regulator. Inspect and replace if necessary.
4. Remove regulator by removing the three snub-nosed sheet metal screws which secure the regulator. A black ground wire is secured just under the head of an upper screw. This wire is grounded not only to the regulator and engine compartment, but also the generator itself.
5. Install new regulator. Make sure wires are connected to correct terminals. Wrong wire connections can ruin regulators.
6. Reconnect battery cable.
7. Check the black ground wire, make sure that it is "grounded" to the regulator (between screw head and regulator). Broken or loose connections at these points can ruin the regulator.
8. Polarize generator before starting engine. Connect a jumper wire to "BAT" terminal and flash to "ARM" terminal. Do not touch field terminal.



CONTINUED ON OTHER SIDE.....

## GENERATOR/VOLTAGE REGULATOR TESTS

1. Check battery water and general battery condition to see if it will take a charge. Load testing may be necessary.
2. Check wiring for damage and make sure all connections at generator, regulator and battery are tight and free of corrosion.
3. Make sure fan belt is tight enough to drive generator at full capacity.
4. Run engine at medium speed. Using a wire, touch one end to regulator base and other end to a good ground. If this corrects trouble, regulator is not properly grounded.
5. If test 4 does not correct trouble, make this test: Connect a wire from regulator terminal marked "ARM" or "GEN" to regulator terminal marked "BAT" with engine running at medium speed. If charging rate increases, regulator is bad.
6. If test 5 does not correct trouble, make this test: Connect a wire from "FLD" terminal of regulator to a good ground with engine running at medium speed. If charging rate increases, regulator is bad.
7. If none of the above indicate a bad regulator, trouble is in generator. Check generator for a brush not fully seated against commutator (copper bars on end of armature), check for loose brush wire or loose terminal wire. If all good than the armature is likely shorted.

ALSO:

Look inside gen case at rear (pump must be removed), see if solder has melted at the pins at the rear of the copper bars. This will be evident if the solder has slung onto inside of case. The ONLY thing that will cause solder to sling out of the armature is over charging and the ONLY thing that will cause overcharging is a faulty voltage regulator. If the regulator sticks and allows the generator to charge at maximum capacity without shutting off, the armature heats to the point of melting the solder out of the pins. REPLACE THE REGULATOR and REPLACE THE ARMATURE.