

# Charging Circuit Voltage Drop

Meets NATEF Task: (A6-D-5) Perform charging circuit voltage drop tests; determine necessary action (P-1)

Name \_\_\_\_\_ Date \_\_\_\_\_ Time on Task \_\_\_\_\_

Make/Model/Year \_\_\_\_\_ VIN \_\_\_\_\_ Evaluation: 4 3 2 1

- \_\_\_\_\_ 1. Check service information for specified procedures and voltage drop specifications of the charging circuit.
- \_\_\_\_\_ 2. Connect one test lead of a digital multimeter set to read DC volts to the generator (alternator) output terminal and the positive (+) terminal of the battery.
- \_\_\_\_\_ 3. Start the engine and run to 2,000 RPM (fast idle).
- \_\_\_\_\_ 4. Turn on the headlights to force the generator to charge the battery.
- \_\_\_\_\_ 5. The voltage drop reading should not exceed 0.40 volt.

\_\_\_\_\_ = the voltage drop of the *insulated* (power side) of the charging circuit (between the output terminal of the generator and the positive (+) terminal of the battery).

OK \_\_\_\_\_ NOT OK \_\_\_\_\_

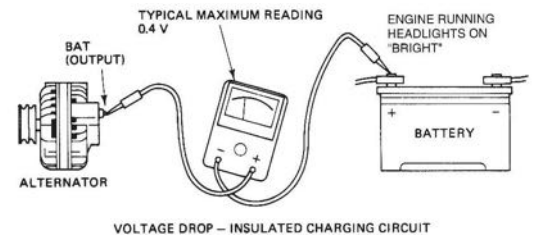
- \_\_\_\_\_ 6. To test if the generator is properly grounded, continue operating the engine at a fast idle with the lights on, connect the meter leads to the case of the generator and the negative (-) terminal of the battery. A reading of greater than 0.20 volt indicates a poor generator ground.

\_\_\_\_\_ = the voltage drop of the *ground side* of the generator (between the rear housing of the generator and the negative (-) terminal of the battery).

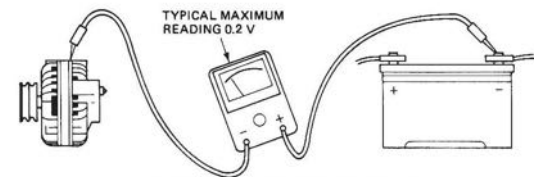
OK \_\_\_\_\_ NOT OK \_\_\_\_\_

- \_\_\_\_\_ 7. Based on the test results, what is the necessary action? \_\_\_\_\_

\_\_\_\_\_



VOLTAGE DROP – INSULATED CHARGING CIRCUIT



VOLTAGE DROP – GROUND CHARGING CIRCUIT