

DIAGNOSIS AND TESTING (Continued)

- Start engine and increase speed to approximately 1500 rpm. With no other electrical load (foot off brake pedal and doors closed), voltmeter pointer should move upward (increase) but not more than 3.0 volts above base voltage.

NOTE: The reading should be taken when voltmeter pointer stops rising. It may take a few minutes to reach this point. If voltage increases to proper level, perform Load Test. If the pointer continues to rise, perform the Over Voltage Tests. If the voltage does not rise to proper level, perform Under Voltage Tests.

Load Test

- With engine running, turn heater / air conditioner blower motor on (high speed) and headlamps on high beam.
- Increase engine speed to approximately 2000 rpm. Voltmeter should indicate a minimum of 0.5 volt above base voltage. If not, perform Under Voltage Tests.

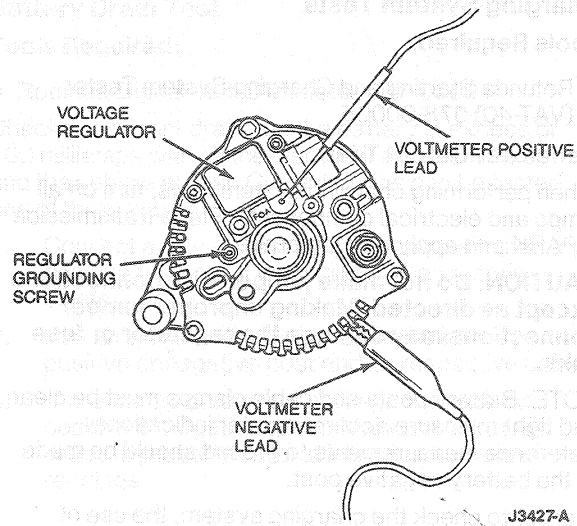
If above tests indicate proper voltage readings, charging system is operating normally. Proceed to the following tests if one or more of the readings is different than shown above and use a test lamp to check for battery drain.

Over Voltage Tests

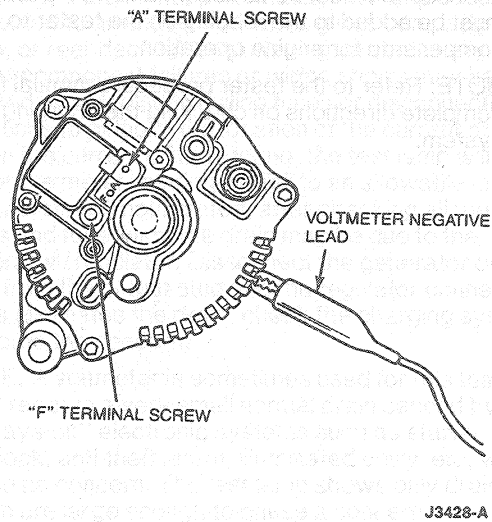
If voltmeter indicates more than 3.0 volts above base voltage in No-Load Test, follow these procedures:

- With ignition switch in RUN position (engine not running), connect voltmeter negative lead to ground. Contact voltmeter positive lead first to generator output connection at load distribution point and then to regulator 'A' screw head.
- If voltage difference between two locations is greater than 0.25 volt, service 'A' terminal wiring circuit to eliminate high resistance condition indicated by excessive voltage drop.
- If over voltage condition still exists, check for loose regulator and generator grounding screws. Tighten loose regulator grounding screws to 1.7-2.8 N·m (16-24 lb-in).

DIAGNOSIS AND TESTING (Continued)



- If over voltage condition still exists, connect voltmeter negative lead to ground. With ignition switch in OFF position, contact voltmeter positive lead first to regulator 'A' screw head and then to regulator 'F' screw head. Different voltage readings at two screw heads indicate a malfunctioning regulator grounded brush lead or a grounded rotor coil. Replace regulator / brush holder or generator assembly.
- If same voltage reading (battery voltage) is obtained at both screw heads in Step 4 then there is no short to ground through the generator field / brushes. Replace the regulator.

**Under Voltage Tests**

If voltmeter does not indicate more than 0.5 volt above base voltage, follow these procedures: