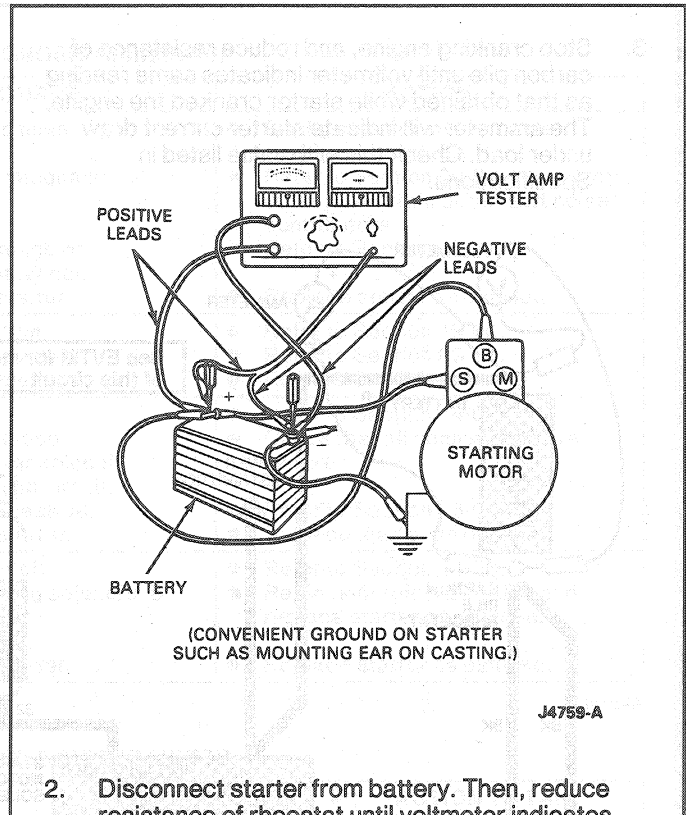
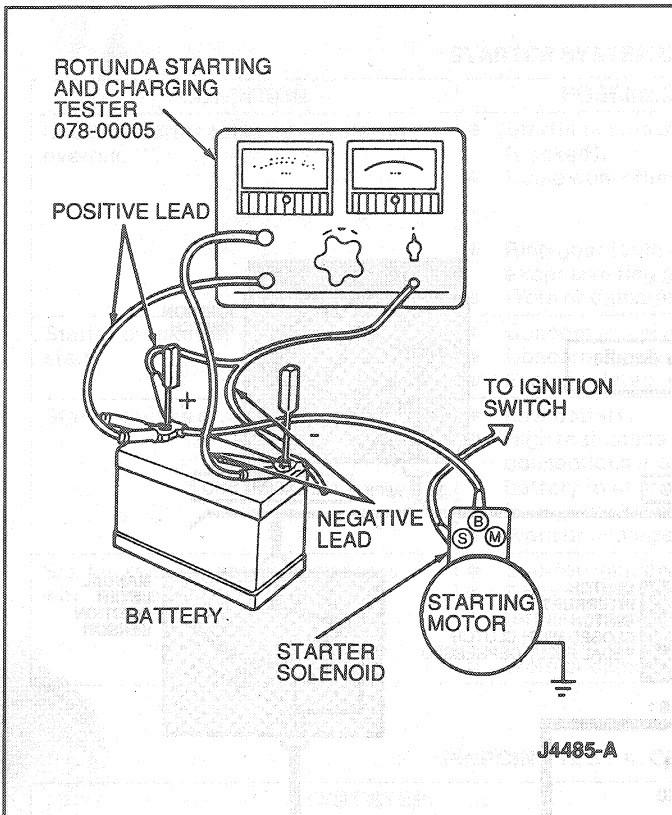


DIAGNOSIS AND TESTING (Continued)

**Bench Tests****Tools Required:**

- Rotunda Starting and Charging Tester 078-00005
- Rotunda Digital Volt-Ohmmeter 007-00001

Starter No-Load Test

The starter no-load test will uncover such conditions as open or shorted windings, or rubbing armature. The starter can be tested, at no-load, on the test bench only.

1. Make test connections with Rotunda Starting and Charging Tester 078-00005 or equivalent cables connected to starter, large enough to carry high current (the same as in the vehicle). The starter will run at no-load. Be sure that no current is flowing through ammeter (rheostat at maximum counterclockwise position). Determine exact reading on voltmeter.

CAUTION: Make sure that the starter is securely mounted in bench vise while energizing, as starter will move or jump.

2. Disconnect starter from battery. Then, reduce resistance of rheostat until voltmeter indicates same reading as that obtained while starter was running. The ammeter will indicate starter no-load current draw. Refer to Specifications at the end of this Section for a comparative value.
3. If current exceeds specification, check for rubbing armature, bent shaft, binding bearings, or shorts in armature, or brush assembly.

Armature Open Circuit Test

An open circuit armature may sometimes be detected by examining the commutator for evidence of burning. A burn spot on the commutator is caused by an arc formed every time the commutator segment, connected to the open circuit winding, passes under a brush.