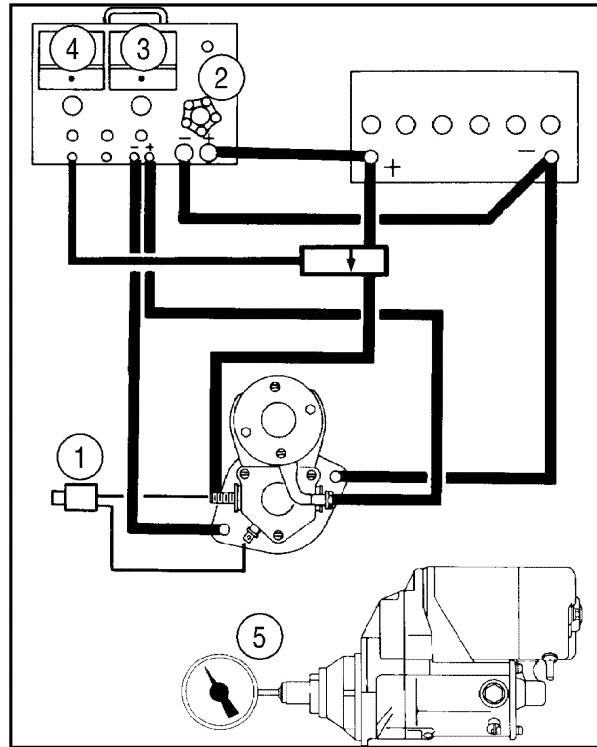


9. Actuate the remote starter button and turn the load control until the voltmeter indicates **11 volts**. Do this within 15 seconds, and then let the starter cool for 60 seconds.

- (1) Remote starter button
- (2) Load control
- (3) Voltmeter
- (4) Ammeter
- (5) Hand held tachometer



B831436 8

10. Look at the ammeter it should read **200 amps** maximum. Do this within 15 seconds, and then let the starter cool for 60 seconds. Make a record of the ammeter indication.
11. Use the hand held tachometer and check the armature shaft speed, it should read **3000 RPM** (r/min) minimum. Do this within 15 seconds, and then let the starter cool for 60 seconds. Make a record of armature shaft speed.
12. Release the remote starter button and turn the load control to the "OFF" position.
13. If the current draw and the armature shaft speed are within the ranges under Specifications, the starter is good.
14. Low armature shaft speed and high current draw are indications of too much friction. Possible causes of too much friction are:
- (a) Tight, dirty, or worn bearings.
 - (b) A bent armature shaft
 - (c) Loose pole shoes (pole shoes make contact with the armature).
 - (d) A short circuit in the armature coil. Disassemble the starter. Use an armature tester to test the armature. Use the instructions included with the armature test.
 - (e) Damaged field coil. Please refer to the test **Engine starter - Electrical test (B.80.A)**.

15. If the armature does not rotate and the current draw is high, possible causes are:
 - (a) Field terminal making contact with the field frame. Inspect the insulators for the field terminal.
 - (b) Damaged field coil. Please refer to the test **Engine starter - Electrical test (B.80.A)**.
 - (c) Damaged bearings.
16. If the armature does not rotate and the current draw is zero, possible causes are:
 - (a) An open field circuit. Disassemble the starter and inspect the field coil connections.
 - (b) An open armature coil. Disassemble the starter and check for burned commutator bars. Use an armature tester to test the armature. Use the instructions included with the armature tester.
 - (c) Brushes not making good contact with the commutator bars. Check for high insulation between the commutator bars, broken brush springs, or worn brushes.
17. Low armature shaft speed and low current draw are indications of:
 - (a) Dirt or corrosion on connections.
 - (b) Damaged wiring.
 - (c) Dirty commutator bars.
 - (d) An open circuit, open armature coil, brushes not making good contact with the commutator bars.
18. High armature shaft speed and high current draw are indications of a short circuit in a field coil. It will be difficult to find a short circuit in a field coil. Install a new field coil. Do the No-Load Test again to check for improvement in the operation of the starter.

Next operation:

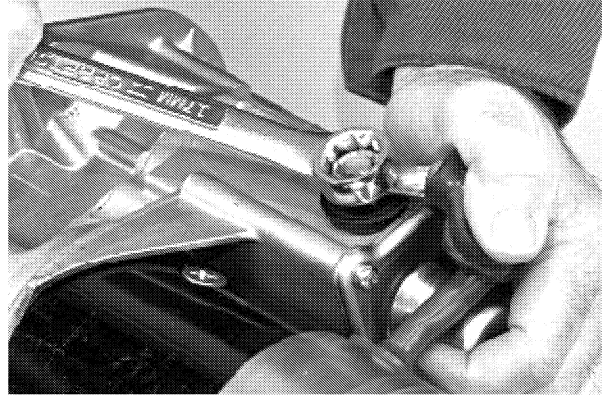
Engine starter - Disassemble (B.80.A) or Engine starter - Install (B.80.A).

Engine starter - Disassemble

Prior operation:

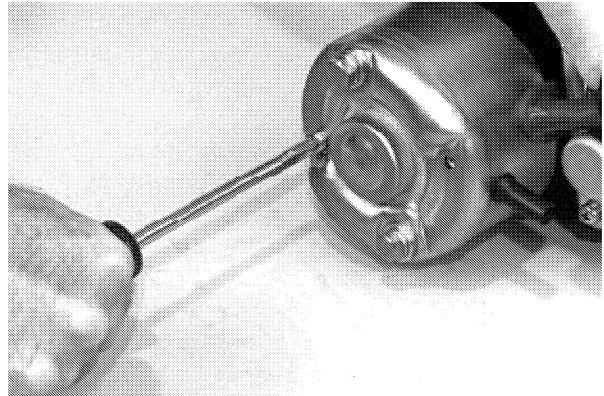
Engine starter - Remove (B.80.A) or Engine starter - Preliminary test (B.80.A).

1. Pull back the boot on the motor terminal. Loosen and remove the nut and lock washer.



b330731 1

2. Loosen and remove the screws that mount the cover to the brush holder.



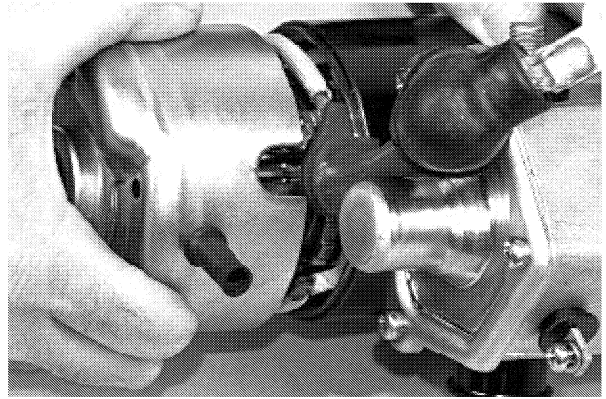
b330732 2

3. Loosen and remove the bolts that mount cover to the field frame.



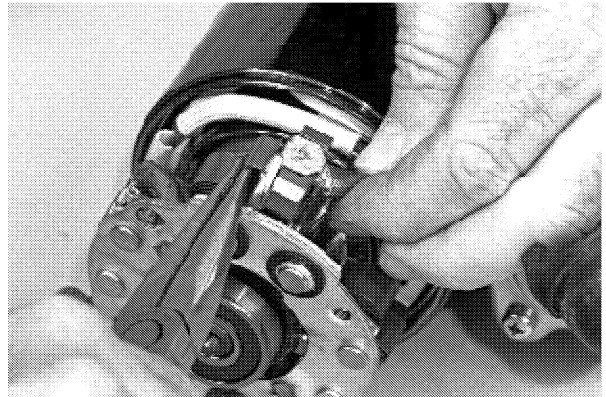
b330733 3

4. Remove the cover.



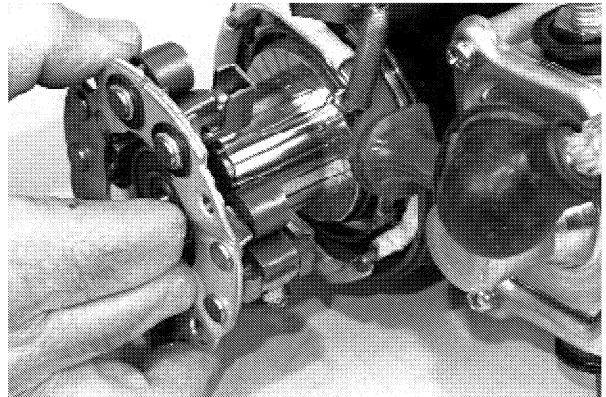
b330735 4

5. There are two brushes connected to the field coil. Hold back the spring and remove one brush at a time from the brush holder.



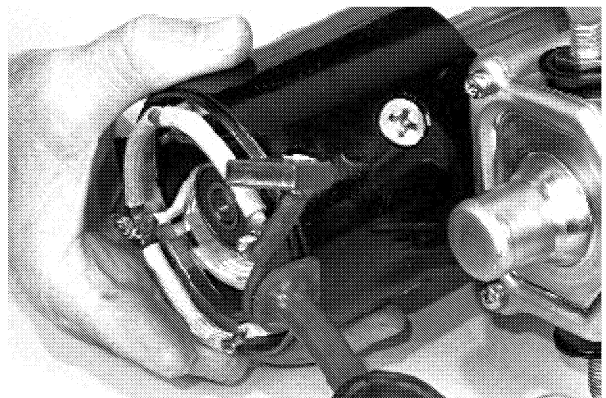
b330736 5

6. Remove the brush holder.



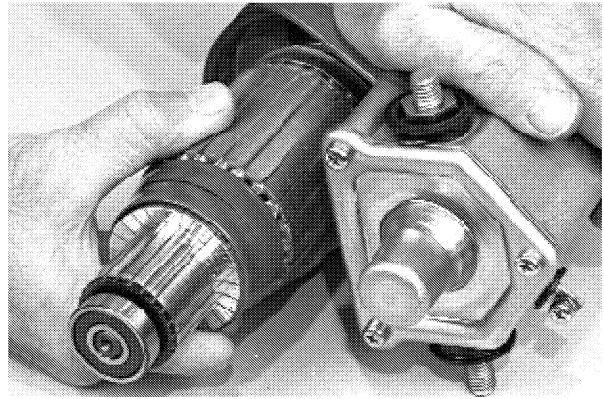
b330737 6

7. Remove the field frame assembly.



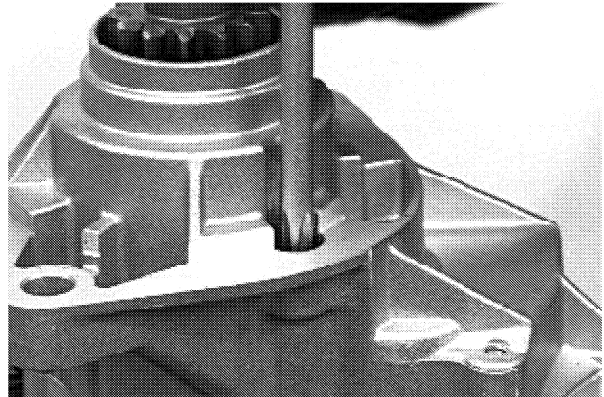
b330738 7

8. Remove the armature.



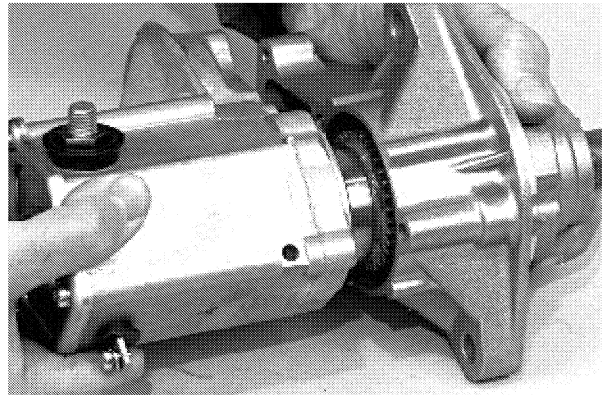
b330739 8

9. Fasten the starter solenoid in a vise with soft jaws. Loosen and remove the screws that hold the starter drive housing.



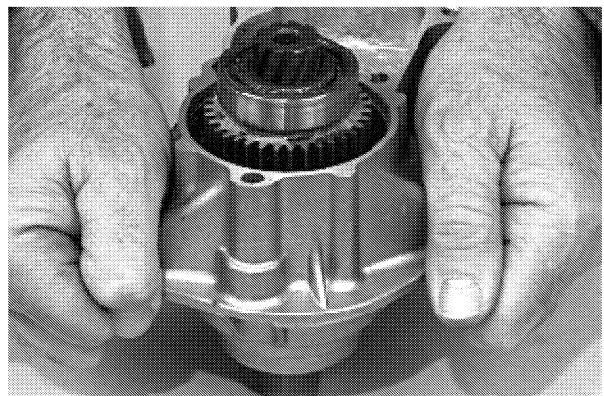
b330740 9

10. Remove the starter drive housing from the starter solenoid.



b330741 10

11. Push down on the starter drive housing to loosen and remove the starter drive.



b330743 11