FIAT 850

Fiat Starter Type E 76-0.5/12 Var. 9

DESCRIPTION

12 volt four pole type with solenoid pinion shift (overrunning clutch). Drive unit mounted directly on armature shaft. Four field coils, series connected.

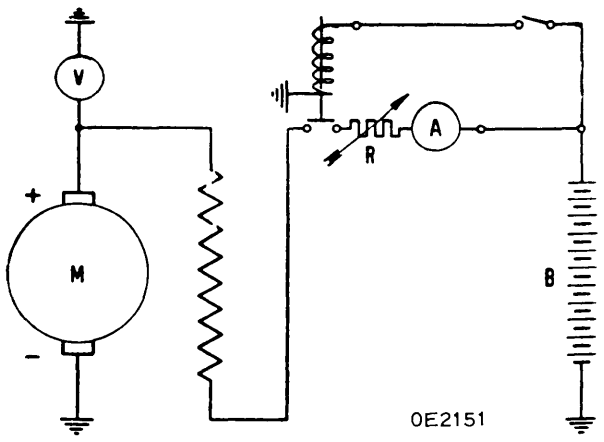
TESTING

PERFORMANCE TESTS

Cranking Amperage Draw – Mount starter on starter test stand. Make wiring connections as shown in accompanying illustration. Starter test stand should have a ring gear and a dynamometric brake. If test stand not so equipped, follow manufacturer's instructions in use of test stand. Test should be made with ambient temperature of 68°F. Observe amperage draw, voltage reading, and delivered torque while operating starter. Compare observations with values given under "Specifications".

Stall Test – With the starter mounted in the test stand, adjust the test stand rheostat to obtain values specified (see Starter Performance Specifications). With ring gear locked, observe the delivered torque shown on the dial of the torque dial indicator.

STARTER PERFORMANCE SPECIFICATIONS		
No Load Test		
Volts	**Amps.**	**RPM**
12	30	7500-9500
Lock Test		
Volts	**Amps.**	**Torque (Ft. Lbs.)**
7.4 - 8	258	4.92 - 5.64



M – Starter motor. V – 15V Voltmeter.
A – 1000 amp. Ammeter. B – 12 volt battery.
R – 800 amp. capacity Rheostat.

PERFORMANCE TEST WIRING DIAGRAM

No Load Test – With starter mounted on test stand, move the starter away from ring gear so that pinion cannot mesh with ring gear. Operate starter and observe current draw, voltage, and armature RPM. Compare with "Starter Performance Specifications".

SPECIFICATIONS

Cranking Amperage Draw – 130 amps. at 10 volts, with a delivered torque of 1.88-2.17 ft. lbs. (0.26-0.30 kgm) at 2150-2350 RPM.

Brush Spring Tension – 2.5-2.9 lbs. (1.15-1.30 kg) with new brushes.

Rotation (Pinion End) – Counterclockwise.

Armature Shaft End Play – .0059-.0256" (0.15-0.65 mm).

OVERHAUL

DISASSEMBLY

Remove brush cover band. Lift brush hold-down springs and remove commutator end plate. Remove armature and drive end housing from starter frame. Remove clutch drive assembly from armature.

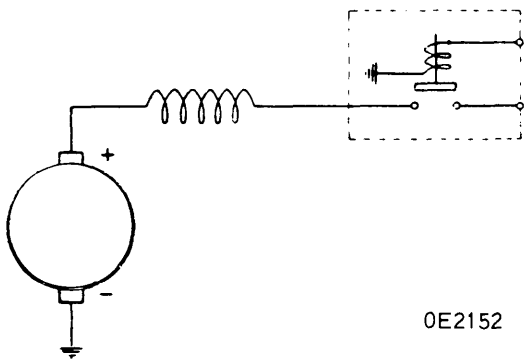
CLEANING

Do not immerse starter components in solvent. Use compressed air to blow dirt and worn brush dust from field coils and armature. Use cleaning brush dipped in solvent to clean drive unit, then blow dry with air.

PARTS REPLACEMENT

Field Coils – Mount starter frame in press-type screwdriver stand and remove pole-piece attaching screws. Remove pole pieces and field coils. Prior to installing new coils, heat the windings to 122°F in order to obtain added flexibility and facilitate seating the coils under the pole shoes. Use the press-type screwdriver stand to completely tighten the attaching screws. After installation is completed, measure the pole shoes inner diameter. To assure proper air gap between pole shoes and armature, inner diameter must be within 2.069-2.076" (52.57-52.75 mm). Do not ream the pole shoes to obtain the specified diameter. If inner diameter is not within tolerance, coils and shoes have been improperly installed.

REASSEMBLY – Reverse disassembly procedure. Lubricate inner splined face of drive assembly with SAE 10 motor oil.



STARTER MOTOR WIRING DIAGRAM