SEV MARCHAL ALTERNATORS

Renault
Saab
Volvo

DESCRIPTION

Alternator is a conventional three-phase, self-rectifying type. Six silicon rectifier diodes are connected to form a full-wave, three-phase rectifying bridge. Three exciter diodes are connected to stator windings and have a common junction point.

► *BATTERY INSTALLATION, BATTERY CHARGING, OR USING A BOOSTER BATTERY FOR ENGINE START* – Reversed polarity or excessive voltage will result in extensive damage to alternator system. Note the following to prevent damage:

Battery Installation – Negative battery terminal must be connected to ground and positive terminal must be connected to starter. DO NOT reverse polarity.

Battery Charging – If a Quick Charger is used, both battery cables must be disconnected from the battery. DO NOT use a Quick Charger to provide starting voltage.

Circuit Interruption – Battery and/or regulator must NEVER be disconnected while alternator is running

Alternator Removal – Always disconnect battery ground before removal and replacement of alternator.

High Voltage – DO NOT use a high voltage source to test diodes.

Exciter Terminals – NEVER ground the exciter terminals of the alternator or regulator.

APPLICATION

Model	Part No.
Renault 5	A13 R154
Saab 99	S.E.V. 71212002
Volvo 260 Series	S.E.V. 7160410

SPECIFICATIONS

Application	Data
Output @ 3000 Alternator RPM	48 amps.
Output @ 5000 Alternator RPM	55 amps.
Rotor Resistance between Slip Rings	3.7-4.3 ohms
Stator Windings Resistance	.18 ohms ± 10%
Minimum Brush Protrusion from Holder	.16"(4 mm)

OVERHAUL

DISASSEMBLY

1) Remove brush holder attaching screws and carefully remove brush holder. Scribe a mark on end frames for reassembly reference, then remove four through bolts. Separate end frames by inserting two screwdrivers into notches on sides of alternator. **CAUTION** – *Do not insert screwdrivers deeper than .08" (2 mm) or damage may occur to stator windings.*

2) Remove nuts and washers for positive and negative diode holders from end frame. Carefully remove stator from end frame. Hold rotor in a vise using special wood blocks so no damage will occur to rotor. Remove nut, washer, pulley, fan, key and spacer. **NOTE** – *Check which way spacer faces for reassembly reference.*

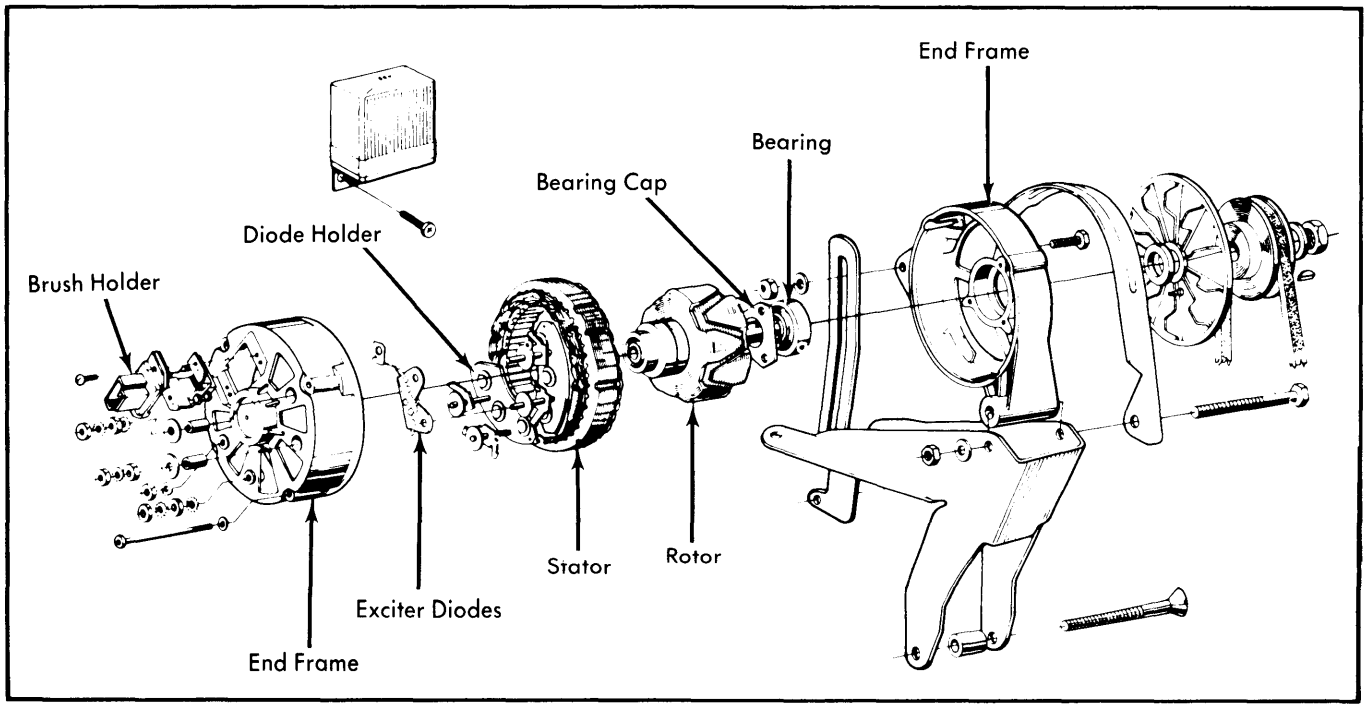

Fig. 1 Disassembled View of Alternator

SEV MARCHAL ALTERNATORS (Cont.)

3) Remove three attaching screws for bearing cap, then push rotor shaft from end frame. Press bearing from end frame. Use a puller to remove bearing from slip ring end of rotor.

BENCH TESTING

Rotor – Check resistance of winding across slip rings using an ohmmeter. If resistance is not within specifications replace rotor. Use a 40V/40W test lamp to check for insulation between one of the slip rings and any rotor pole. If lamp lights, rotor is shorted.

Stator – Using an ohmmeter connect probes between each pair of stator leads with leads disconnected. All readings should be within specifications or stator should be replaced. Use a 40V/40W test lamp and check for a short by connecting one probe to iron core of stator and other probe to each of the three disconnected leads. If lamp lights replace stator.

Diodes – 1) Perform a conduction test on all diodes, in both directions, using an ohmmeter. Test the conduction between each terminal and plate with terminals disconnected. Positive diodes should allow current to flow from terminal to plate, but not from plate to terminal. Negative diodes should allow current to flow from the plate to terminal, but not from terminal to plate.

2) If current flows in both directions, the diode is shorted. If current does not flow in either direction, the diode is open. If any diode is defective, replace the entire diode assembly as individual diodes are not serviceable.

REASSEMBLY

1) Press on inner race of bearing to position bearing on slip ring end of rotor shaft. Press on outer race to press bearing into end frame. Install bearing cap and three attaching screws. Press end frame with bearing assembly firmly onto rotor shaft. Install spacer, key, fan, pulley, washer and nut onto rotor shaft. Tighten nut to 29 ft. lbs.

2) Install insulating washers and sleeves onto positive diode holder, then install stator to end frame while inserting brush holder through opening in end frame. Install nuts and washers to secure diode holders. Check that "O" ring in end frame bearing seat does not block vent hole.

3) Assemble two end frames along with stator and rotor assemblies together, then secure with four through bolts. Install brush holder attaching screws and tighten.