

# ALTERNATOR & REGULATOR - SEV MOTOROLA

## Article Text

1987 Volkswagen Quantum/Quantum Syncro

For Volkswagen Technical Site

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Sunday, March 19, 2000 01:02AM

## ARTICLE BEGINNING

ELECTRICAL

Alternators & Regulators - SEV Motorola

All Models

## DESCRIPTION

SEV Motorola alternators are conventional 3-phase, self-rectifying type alternators. Three positive and 3 negative silicon diodes are used to rectify AC current.

## BELT TENSION ADJUSTMENT

### BELT TENSION SPECIFICATIONS

AA

Application (1) Deflection In. (mm)

Vanagon ..... 3/8-9/16 (10-15)

All Others

New Belt ..... 5/64 (2)

Used Belt ..... 13/64 (5)

(1) - Deflection is with 22 lbs. (10 kg) pressure applied midway on longest belt run.

AA

## TROUBLE SHOOTING

NOTE: See TROUBLE SHOOTING - BASIC PROCEDURES article in the GENERAL TROUBLE SHOOTING section.

## TESTING (ON-VEHICLE)

1) Disconnect battery cables and install cut-out switch, variable resistor, ammeter and voltmeter. See Fig. 1. Connect ground cable and ensure cut-out switch is in closed position.

2) Start engine and run at 3000-4000 RPM. Adjust variable resistor to following amperage readings. Turn battery cut-out switch to "OFF" position. Set 65-amp alternators to 45 amps and 55-amp alternators to 25 amps. System is okay if voltmeter reads between 12.5-14.5 volts.

3) If system does not read correct voltage, substitute a good voltage regulator and repeat test. If correct voltage is still not present, alternator is defective.

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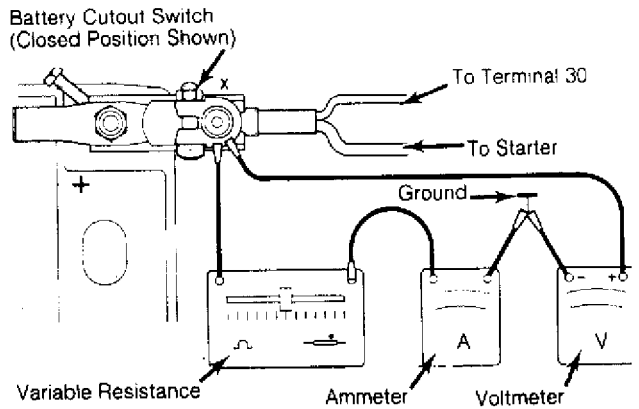


Fig. 1: Alternator Testing Set-Up  
Courtesy of Volkswagen United States, Inc.

### BENCH TESTING

#### STATOR

1) Check stator for short circuits. If one or more coils are burned, stator may be shorted.

2) Connect a self-powered low voltage test light between stator plates and stator terminal. If light illuminates, insulation between stator winding and stator plates is defective and stator should be replaced.

**CAUTION:** Use only specified test light. Do not use 110 or 220-volt test light on this or any other alternator test procedure.

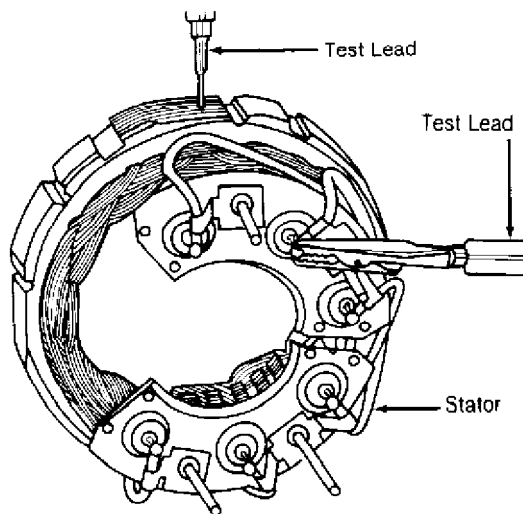


Fig. 2: Checking Stator for Shorts  
Courtesy of Volkswagen United States, Inc.

#### DIODES

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1) Check diodes with a diode tester for shorts or open circuits. If any diode is defective, entire diode assembly must be replaced.

2) If diode tester is not available, diode leads should be quickly and carefully unsoldered and tested with an ohmmeter. Diodes should show low resistance in flow direction and high resistance in reverse direction.

### ROTOR

1) Ensure slip rings are not dirty or burned. Check winding for breakage or damaged isolation. Measure resistance between slip rings.

2) Normal resistance should be about 4.5 ohms. If winding is faulty, rotor must be replaced.

### BRUSH HOLDER

1) Connect a self-powered low voltage test light between brushes. Test light should not illuminate. Connect test light between "DF" terminal and "+" brush. Test light should give steady light even if brush and/or terminal cable is moved.

2) Connect 12-volt test light between brush holder frame and "-" brush. Light should give steady light. If test results are not satisfactory or brush length is less than .51" (13 mm), replace brush holder. See Fig. 3.

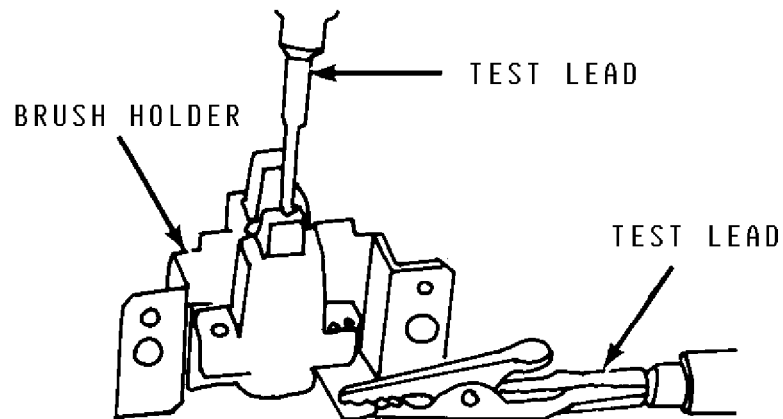


Fig. 3: Checking Brush Holder  
Courtesy of Volkswagen United States, Inc.

NOTE: Brush length is measured between brush contact surface and holder, with brush resting against spring.

### OVERHAUL

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NOTE: Overhaul information is not provided. See Fig. 4 for overhaul reference.

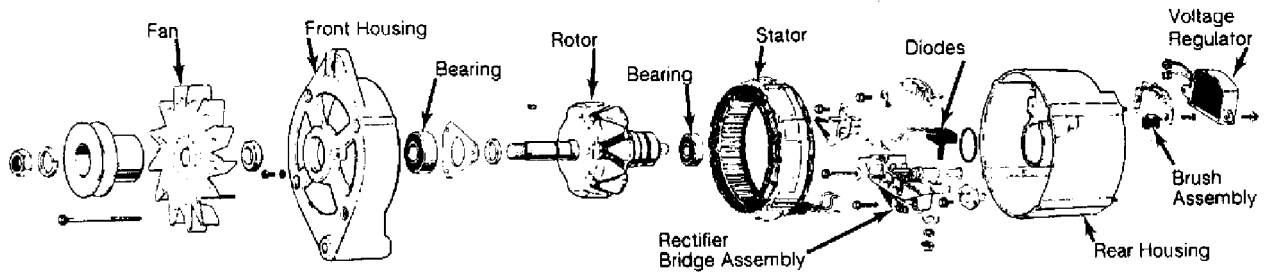


Fig. 4: Exploded View of SEV Motorola Alternator  
Courtesy of Volkswagen United States, Inc.

END OF ARTICLE