CHRYSLER CORP. (MITSUBISHI) ALTERNATORS

Chrysler Corp.
2.6L Engines
Aries
Reliant

DESCRIPTION

The alternator used in the above vehicles consists of a rotor, stator, rectifiers, end shields and a drive pulley. An electronic voltage regulator is built into the interior of the alternator's rear housing. See *Fig. 1*.

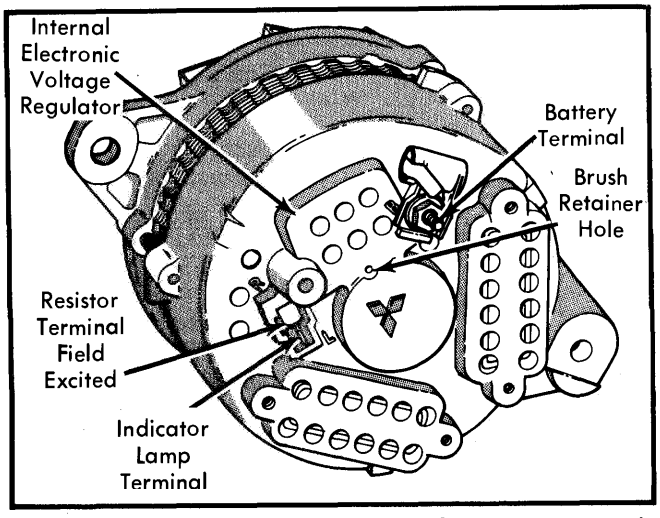

Fig. 1 Chrysler Corp. (Mitsubishi) Alternator Terminals

The regulator, using integrated circuits, limits the output voltage generated by the alternator, by controlling the amount of current allowed to pass through the alternator field winding. It also regulates system voltage in response to changes in ambient temperature.

SPECIFICATIONS

Alternator Part No.	Volts	Rated Amp. Output
A4T25191	12	75

Rotation – Clockwise as viewed from drive pulley end.

Current Output – 17-25 amp. at 13.5 volts and 500 RPM; 63-70 amp. at 13.5 volts at 1000 RPM; and 74 amp. at 13.5 volts at 2000 RPM.

Brush Length – Standard, .71 inch; Service limit, .32 inch.

Brush Load – Standard, 0.7-1.0 lbs.; Service limit, 0.5 lbs.

Charging Voltage – 14.4 volts (±0.3 volts) at 68°F.

Temperature Compensation – Less 0.1 volt per 50°F.

ON VEHICLE TESTS

VOLTAGE REGULATOR TEST

1) Turn ignition switch off. Disconnect cable from positive terminal of battery and connect an ammeter between disconnected lead and battery positive terminal. See *Fig. 2*.

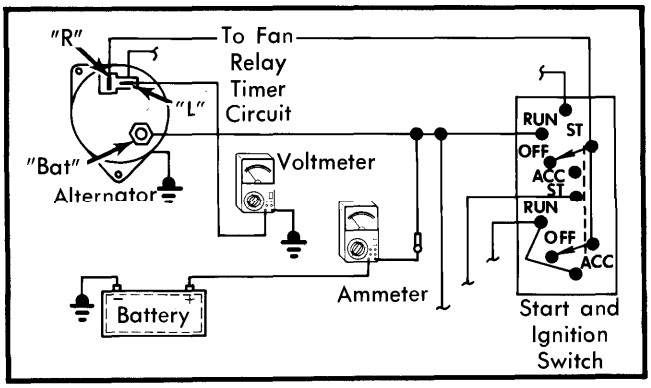

Fig. 2 Diagram Showing Meter Connections for Voltage Regulator Test

2) Connect a voltmeter between terminal "L" of alternator and a good ground. Be sure voltmeter reading is zero. If voltmeter deflects, voltage is present, indicating defective alternator or wiring.

3) Turn ignition switch on, but do not start engine. The voltmeter reading should be considerably below battery voltage, approximately 1 volt or less. If any higher, a defective alternator should be suspected.

4) Connect tachometer to engine. With ammeter terminals short circuited, start engine.

CAUTION – *Be sure no starting current is applied to ammeter when engine is started.*

5) Remove short circuit across ammeter terminals and increase engine speed to approximately 2000-3000 RPM. Check ammeter reading. If reading is 5 amps. or less, take voltmeter reading without changing engine speed. This reading is charging voltage.

NOTE – *The electronic voltage regulator compensates for temperature change. Therefore, check temperature around rear alternator bracket, and adjust the charging voltage accordingly.*

6) If ammeter reading is more than 5 amps., continue to charge the battery until the reading falls to less than 5 amps. Replace battery with a fully charged one, if necessary.

CURRENT OUTPUT TEST

1) Turn ignition switch off. Disconnect battery ground cable. Disconnect "Bat" lead wire at alternator output terminal. See *Fig. 1*. Connect an ammeter (0-100 amp. minimum) in series with alternator "Bat" terminal and disconnected "Bat" lead wire. See *Fig. 3*.

2) Connect positive lead of a voltmeter (0-15 volt range) to the "Bat" terminal of alternator. Connect negative lead to ground. Disconnect green field wire from alternator. Connect engine tachometer and reconnect battery ground cable.

3) Connect a variable carbon pile rheostat between battery positive and negative terminals. Be sure carbon pile is in open or off position when connecting leads. Start engine and operate at idle speed.

4) Adjust carbon pile and accelerate engine to specified speeds and measure current output. Do not permit voltage to exceed 16 volts. Compare ammeter readings with specifications.

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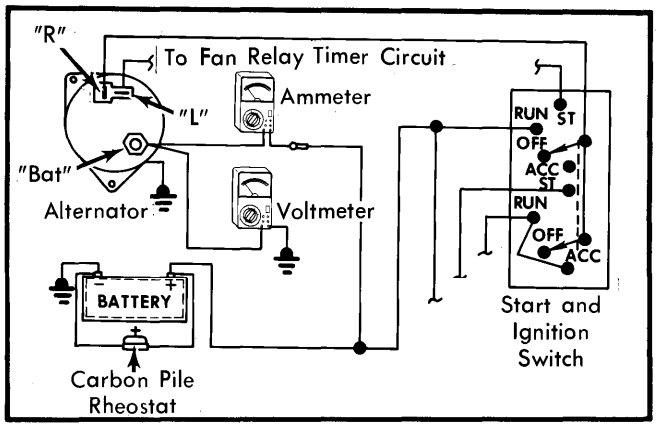

Fig. 3 Diagram Showing Meter Connections for Alternator Current Output Test

5) If reading is less than specified, remove alternator for bench testing.

BENCH TESTS

ROTOR ASSEMBLY CHECK

1) Check outside circumference of slip rings for roughness or foreign materials. Replace slip ring if badly worn or if roughness is noted.

2) Using an ohmmeter, connect leads to field coil and slip ring. Continuity should exist. If not, field coil is defective. Replace rotor assembly.

3) Connect ohmmeter leads to slip ring and rotor shaft. If there is continuity, slip ring is grounded. Replace rotor assembly.

STATOR ASSEMBLY CHECK

Using an ohmmeter, connect leads to stator coil leads. Continuity should exist. If not, replace stator assembly.

RECTIFIER ASSEMBLY CHECK

Using an ohmmeter, check for continuity between positive heat sink and stator coil lead connection terminal. Reverse ohmmeter leads. If continuity exists in both directions, diode is shorted. Replace rectifier assembly. Attach ohmmeter leads to negative heat sink and stator coil lead connection terminal. Again, continuity should only exist in one direction.

RECTIFIER TRIO CHECK

Using an ohmmeter, check 3 diodes for continuity in both directions. If there is either continuity or an open circuit in both directions, diode is defective. Replace rectifier assembly.

OVERHAUL

DISASSEMBLY

1) Remove alternator and place mounting lug in soft-jawed vise. Remove 3 through bolts. Pry between stator and drive end shield with screwdriver blade, and carefully separate drive end shield, pulley and rotor assembly from stator and rectifier end shield assembly. See *Fig. 4*.

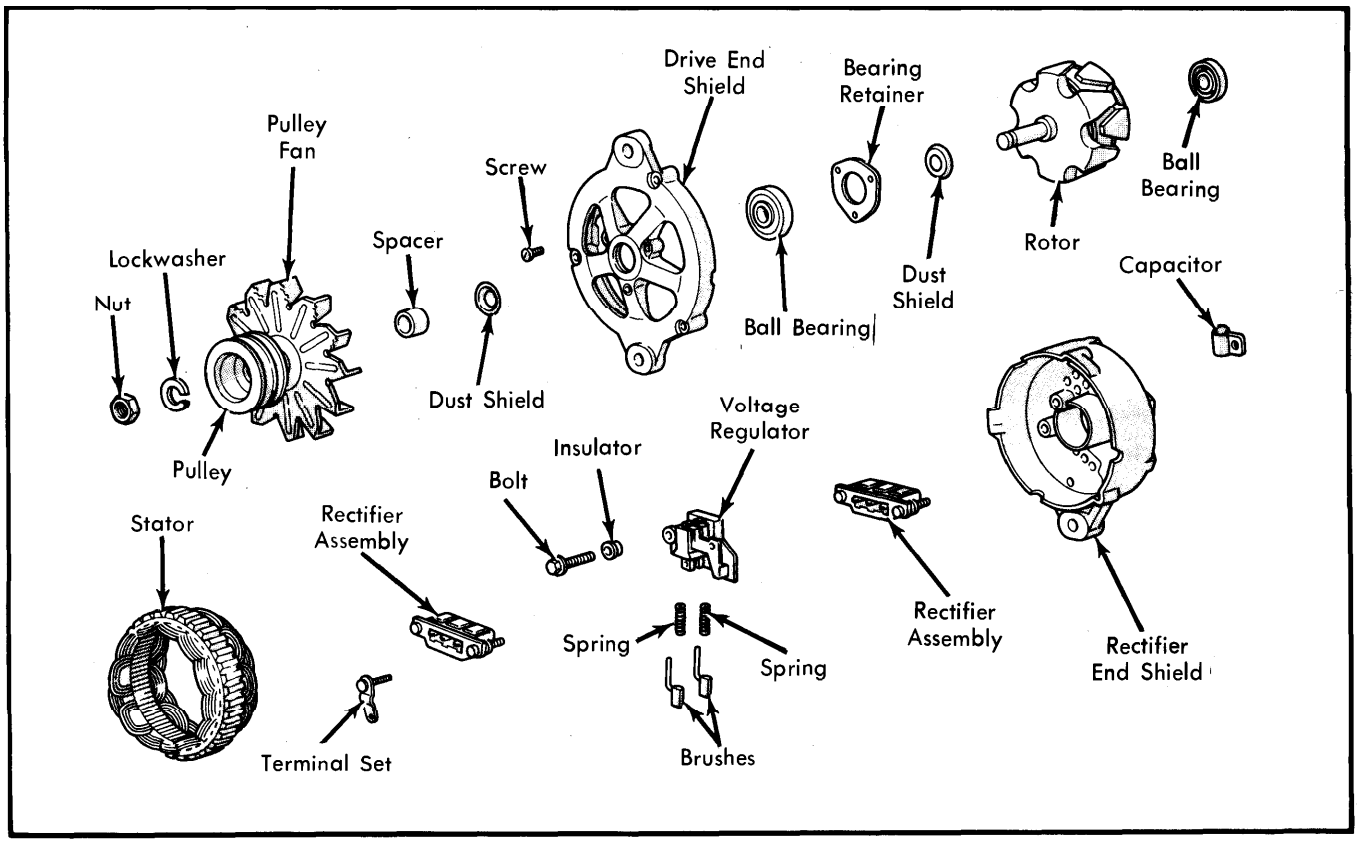

Fig. 4 Exploded View of Chrysler Corp. (Mitsubishi) Alternator

CHRYSLER CORP. (MITSUBISHI) ALTERNATORS (Cont.)

2) Place rotor in vise and remove pulley nut. Remove pulley, pulley fan, fan spacer and alternator drive end shield from rotor. Remove front and rear dust seals from drive end shield. Remove 3 bearing retainer screws, and remove drive end shield bearing retainer.

3) Using a suitable socket and hammer, tap alternator drive end shield bearing from housing. Locate 6 stator leads and remove their solder connections. Remove stator end shield assembly.

4) Remove 4 rectifier screws, rectifiers, brush holder and regulator screw from stator end shield housing. Remove "Bat" terminal nut and lift out capacitor.

5) Remove regulator and rectifier assembly. Unsolder one rectifier-to-regulator assembly, and remove other assembly by sliding battery stud out of regulator. Inspect rotor bearing surface for scoring.

REASSEMBLY

To reassemble, reverse disassembly procedure. However, install seals on each side of front bearing. See *Fig.* 5. When installing rotor, push brushes into brush holder. Insert a wire in end shield's brush retainer hole to hold brushes in raised position. See *Fig. 1.* Remove wire after rotor is installed.

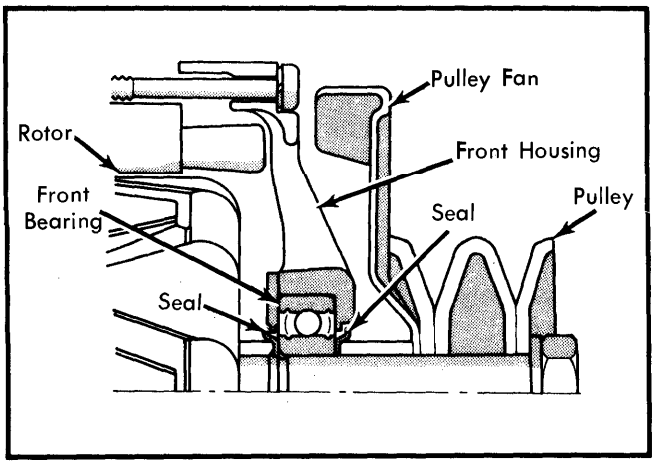

Fig. 5 Installing Front Bearing Seals