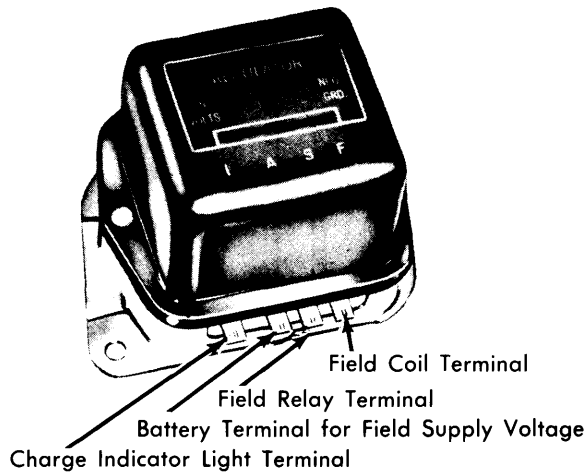


Alternator Regulators

MOTORCRAFT (AUTOLITE) ELECTRO-MECHANICAL REGULATOR

DESCRIPTION

Alternator Regulator is composed of two control units, a field relay and a voltage limiter, mounted as an assembly. No current limiter is required as alternator is self-limiting. Field relay serves to connect charging system voltage to field circuit while engine is running. Voltage limiter is double contact unit which controls amount of current supplied to alternator rotating field. 1965-67 regulators can be adjusted as needed, 1968-74 regulators are factory calibrated, have no adjustment, and must be replaced if defective.



3FO02

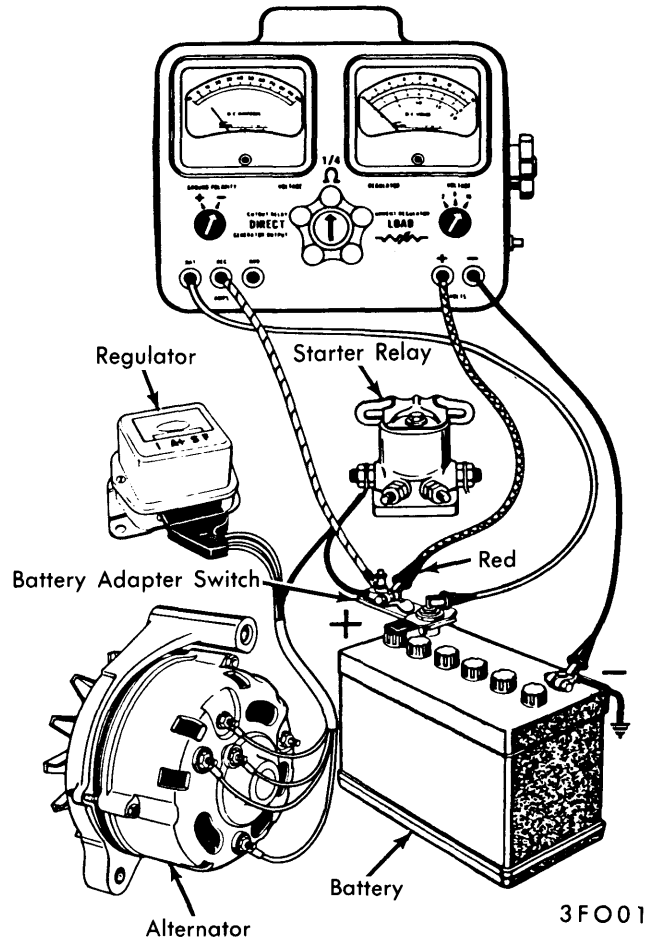
REGULATOR TERMINAL IDENTIFICATION

REGULATOR TESTS

Field Relay Test — Remove regulator from vehicle and remove regulator cover. Connect suitable alternator-regulator tester as shown in illustration. With field rheostat control at maximum counterclockwise position, rotate control clockwise until field relay contacts close. Observe voltmeter reading at moment relay contacts close (indicating closing voltage). **NOTE** — If relay closes with field rheostat control close to maximum counterclockwise position, push red button between meters on tester and repeat test. If closing voltage is not within specifications, adjust relay as necessary.

Voltage Limiter Test — With battery fully charged, regulator cover in place and regulator at normal operating temperature (equivalent to 20 minutes of vehicle operation), test regulator on vehicle as follows:

- 1) Make test connections as shown in illustration. Turn off all interior lights and accessories, close battery adapter switch and start engine. Open adapter switch and attach thermometer to regulator cover. Operate engine at approximately 2000 RPM for five minutes.
- 2) Ammeter should indicate less than 10 amperes with master control set at 1/4 "OHM" position. Cycle regulator as follows; turn ignition off to stop engine, close adapter switch and restart engine, open adapter switch. Increase engine RPM to



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VOLTAGE REGULATOR TEST CONNECTIONS

2000, allow battery to normalize for about one minute, then read voltmeter and thermometer and compare both readings with figures given in Voltage Limiter table.

3) If regulated voltage is not within specifications, remove regulator to suitable test stand and make voltage limiter adjustment. After each adjustment, be sure to cycle regulator before each reading.

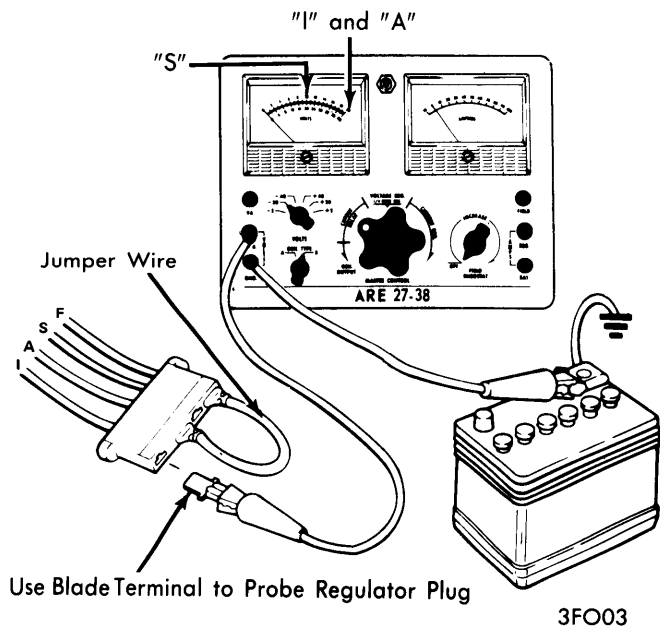
Field Relay Specifications

Application	Core Air Gap	Closing Voltage
All Models (1965-67).....	.010-.018"	2.5-4.0
All Models (1968-74).....	Sealed Unit	2.0-4.2

Voltage Limiter Specifications

Air Temperature	Voltage Setting
50°F.....	14.1-15.1
75°F.....	13.9-14.9
100°F.....	13.7-14.7
125°F.....	13.6-14.6

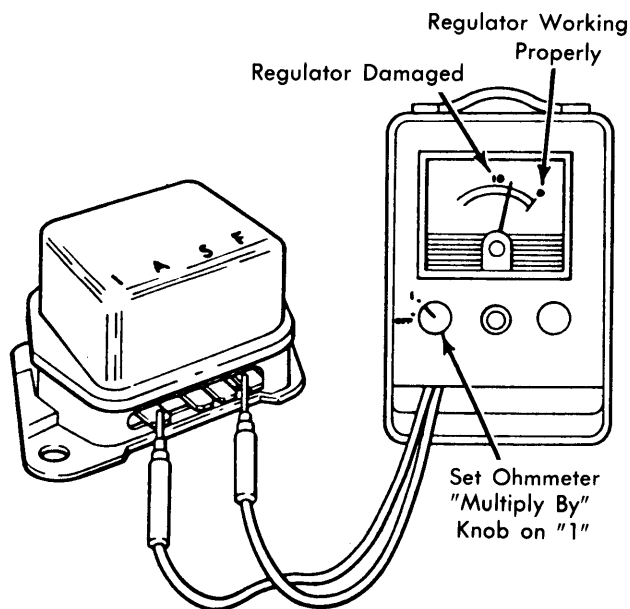
MOTORCRAFT (AUTOLITE) ELECTRO-MECHANICAL REGULATOR (Cont.)



"I", "A", & "S" TERMINAL TEST CONNECTIONS

REGULATOR CIRCUIT TESTS

"S" Circuit With Ammeter — Connect positive lead of voltmeter to regulator "S" terminal of regulator wiring plug, then turn on ignition switch (do not start engine). Voltmeter should indicate battery voltage. If no voltage is indicated, "S" wire lead from ignition switch is open.



BURNED OR OPEN CONNECTOR WIRE TEST

"S" and "I" Circuit With Indicator Light — Disconnect regulator wiring plug and install suitable jumper wire between "A" and "F" terminals. With engine idling, connect positive lead of voltmeter to "S" and then to "I" terminals of regulator wiring plug. Voltage of "S" circuit should be about ½ of voltage at "I" circuit. If no voltage is present, repair alternator or faulty wiring circuit. If above tests are satisfactory, regulator requires replacement.

Regulator Burned Open Wire — Check for burned open wire is made by connecting suitable ohmmeter from "I" to "F" terminals of regulator. Reading should indicate zero, no resistance. If reading indicates about 10 ohms, connector wire inside regulator is open. Field circuit ground has caused burned condition and must be repaired before installing new regulator.

Regulator Output — Make certain alternator belt is correctly tensioned, and all charging connections are clean and tight. Connect voltmeter to battery, turn off all electrical loads and note battery voltage. Run engine at 1800-2000 RPM for several minutes and note voltage reading. If voltage reading is 1-2 volts higher than battery voltage, regulator is satisfactory. If voltage reading is not within given range, replace regulator. If reading is satisfactory, turn on headlights and turn heater blower motor (or air conditioner) to high speed. Voltage should not decrease more than ½ volt, replace regulator if voltage drop exceeds ½ volt.

IN-VEHICLE ADJUSTMENTS

FIELD RELAY & VOLTAGE LIMITER (1965-67)

Dirty or Pitted Regulator Contacts — Field relay and voltage limiter contacts may be cleaned using 400 grade silicon carbide abrasive paper. Pull abrasive paper through contacts to clean and avoid fouling contacts with oil or grease. Do not use compressed air to clean regulator after sanding contacts. Use clean feeler gauge to adjust gap spacing.

BENCH ADJUSTMENTS

FIELD RELAY (1965-67)

Air Gap Adjustment — Place .010-.018" feeler gauge on top of coil core closest to contact points. Hold armature down on gauge, do not press down on contact spring arm. Bend contact post arm until bottom contact just touches upper contact.

Closing Voltage Adjustment — To increase closing voltage, bend armature frame down, to decrease voltage, bend frame up. Follow test procedures outlined in Regulator Tests when making these adjustments.

VOLTAGE LIMITER

Adjustment — Place regulator on suitable test stand. Voltage limiter is adjusted by bending voltage limiter spring arm. To increase voltage setting, bend arm downward, to decrease setting, bend arm upward. *NOTE* — Final adjustment of regulator must be made with regulator at normal operating temperature on vehicle. Before setting voltage and making final voltage test, alternator speed must be zero and ignition switch opened momentarily to de-energize regulator circuit and cycle regulator.