

Alternators & Regulators

MOTORCRAFT HIGH VOLTAGE ALTERNATOR

DESCRIPTION & OPERATION

High voltage alternator is an auxiliary unit for quick defrost system in windshield and rear window. Alternator has its own drive belt and components are completely isolated from regulator electrical system by shielded high voltage wiring. Alternator stator is "Y" connected three-phase. Operating voltage approaches 120 volts alternating current without using diodes or voltage regulator. Field current and system operation is controlled by a relay timer and switch from instrument panel.

TESTING

NOTE — Manufacturer recommends that all repairs to high voltage alternator system be made by Ford and Lincoln Mercury service departments.

SAFETY NOTE — Voltage approaches 120 volts during full heat interval and presents a danger of electrical shock. All tests must be performed with field lead disconnected, and with engine stopped. Do not attempt to test alternator output.

ALTERNATOR FIELD COIL

Connect ohmmeter to field terminal stud, and to rear housing. Field circuit is satisfactory if resistance is between 3-250 ohms.

STATOR COIL

Stator coil resistance between any two of the three output terminals in connector should be equal and approximately one ohm. Check resistance between all three terminals. Check coil for grounds by connecting ohmmeter to any stator terminal and rear housing. An infinite ohmmeter reading indicates a good coil.

FIELD CIRCUIT VOLTAGE TEST

Remove push-on type field terminal connector. Connect a 12 volt meter to field terminal and rear housing. With system switch in "ON" or "NORMAL" positions, 12 to 13 volts should be indicated. With switch in "OFF" position, voltage should drop to zero.

SPECIFICATIONS

Current — 14 amps. A.C. per phase at 5000 RPM.

Power — 2200 watts at 5000 RPM.

Rotor — 2.8 ohm coil; 4.3 amps at 12 volts.

OVERHAUL

DISASSEMBLY

1) Mark both end housings and stator with a scribe mark for reassembly. Remove housing through bolts and separate front housing and rotor from rear housing. Remove nuts retaining outlet plug and separate stator from rear housing. Remove brush holder screws and brush assembly.

2) Press rear bearing from housing while supporting inner boss. Remove pulley nut with suitable tool (T65P-10300-B). Remove lockwasher, pulley, fan, fan spacer, front housing and rotor stop from rotor shaft. Remove screws holding front bearing retainer and remove retainer. Press out front bearing while supporting housing close to bearing boss.

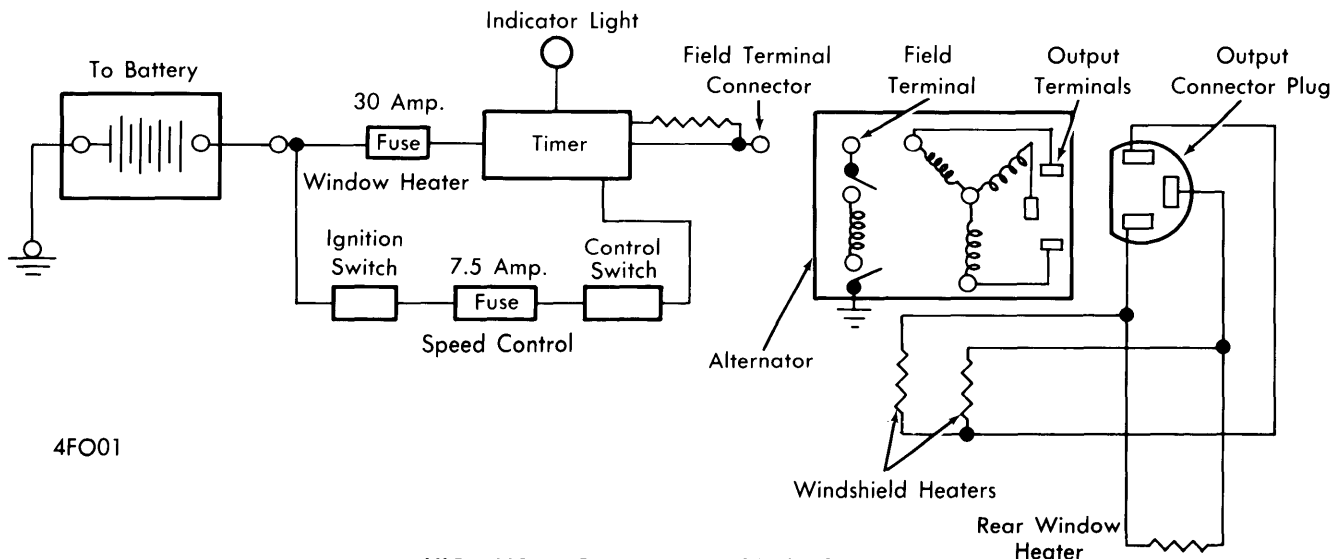
CLEANING

Rotor, stator and bearings must not be cleaned with solvent. Wipe parts off with a clean cloth.

REASSEMBLY

1) Press front bearing in housing applying force on bearing outer race while supporting boss. Install bearing retainer. If stop-ring on rotor drive shaft was damaged, install a new stop-ring. Push new ring onto shaft and into groove. **CAUTION** — Do not open ring with snap ring pliers as damage will result. Position rotor stop on drive shaft with recessed side against stop-ring. Install front housing, fan spacer, fan, pulley and lock washer on drive shaft. Tighten retaining nut with suitable tool (T65P-10300-B). Support rear housing inner boss and press in bearing flush with outer end surface.

2) Install brush springs, brushes, brush terminal and terminal insulators; hold brushes in positions by inserting wire through holder. Position brush holder assembly in rear housing and install mounting screws. Position brush leads in brush holder. Place stator in rear housing and install nuts that hold output connector to rear housing. Position rear housing and stator assembly over rotor and align scribe marks. Seat machined portion of stator core into steps in end housings, and install through bolts. Remove brush retaining wire and apply a drop of waterproof cement over hole.



HIGH VOLTAGE ALTERNATOR CIRCUIT