

Electric Window Defoggers

FORD MOTOR CO. QUICK DEFROST WINDOWS

**Thunderbird
Continental Mark IV**

DESCRIPTION

Quick defrost windshield and rear window system consists of a special front windshield and rear window glass, a separate three phase high voltage alternator, a two stage electrical timer, a control switch, indicator light and special wiring to carry high voltage and current between alternator and glass. Heater elements in front and rear glass are composed of a thin film of gold metal deposited throughout glass. Almost the entire area of windows are uniformly heated.

OPERATION

A relay timer and switch provide automatic control of system. Switch positions are "ON", "OFF" and "NORM". The "ON" and "OFF" positions are spring loaded and return to "NORM" when released. An indicator light will glow when system is operating. When unit is turned on, current flows through timer to system's alternator field; alternator then transmits about 120 volts to front and rear glass. The timer limits high voltage current to glass for about ten minutes; then automatically cuts output to low voltage. This is accomplished by a 2.2 ohm resistor being inserted in field current by a timer. The engine must be operated at 1500 RPM for alternator to deliver high voltage. See *Motorcraft High Voltage Alternator in ELECTRICAL Section*.

TESTING

NOTE — *Manufacturer recommends that all repairs to high voltage alternator system must be made by Ford and Lincoln Mercury service departments. See Motorcraft High Voltage Alternator in ELECTRICAL Section.*

Preliminary Checks — If system appears to malfunction, check supplemental alternator drive belt tension. Check alternator connections, check wire connectors at windshield and back glass. Connectors at rear of right front fender apron must be firmly connected. Start engine and turn control switch to "ON" position; check indicator light. Allow system to operate about four minutes at 1500 RPM; touch glass on both sides to verify system operation.

System Does Not Turn "ON" — 1) Check number one terminal power at relay panel with timer removed (see illustration). With power available, see step 2). No power, check for power at load side of 30 amp. window heater fuse; no power, replace fuse; with power, locate and repair open circuit No. 37 Yellow wire.

2) Check relay panel number two terminal power with switch in "NORM" position. Power available, see step 3). No power, check for power at "L" terminal connector of control switch in "NORM" position. Power available, repair open circuit No. 688 Gray/Lt. Blue wire. No power, check for power at terminal "B" of connector "S". Power available, replace switch. No power, check for power at load side of 7.5 amp. speed control windshield washer fuse. No power, replace fuse. With power, locate and repair open circuit No. 298 Purple/Orange wire.

3) Check number four terminal power at relay panel with switch held "ON". Power available, see step 4). No power, check for power at terminal "H" of control switch connector with switch held "ON". No power, replace switch; with power, locate and repair open circuit No. 112 Black/Yellow Dot wire.

4) Check relay panel number five terminal for ground. No ground, repair open ground circuit. With a good ground, check relay panel number three terminal for power with switch held "ON", and timer installed. No power, replace timer.

System Will Not Turn "OFF" — 1) Check for power at terminal number four on relay panel with switch in "NORM" position and timer installed. No power, see step 2). With power available, disconnect switch and check relay panel number four terminal power. With no power, replace switch. With power, repair crossed or shorted circuit No. 112 Black/Yellow Dot wire.

2) Check relay panel number two terminal power with switch held in "OFF" position. No power, replace timer; with power, disconnect switch and check relay panel number two terminal power again; no power, replace timer; with power, repair crossed or shorted circuit No. 688 Gray/Lt. Blue wire.

Indicator Light Does Not Illuminate, But Glass Heats — Check terminal number one power for light socket with switch held "ON". If power is available, check ground at terminal number two and check light continuity. If power is not available at terminal number one, check for power of relay panel number three terminal with switch held "ON" and timer installed. No power, replace timer; with power, repair open circuit to light socket circuit No. 186 Brown/Lt. Blue wire.

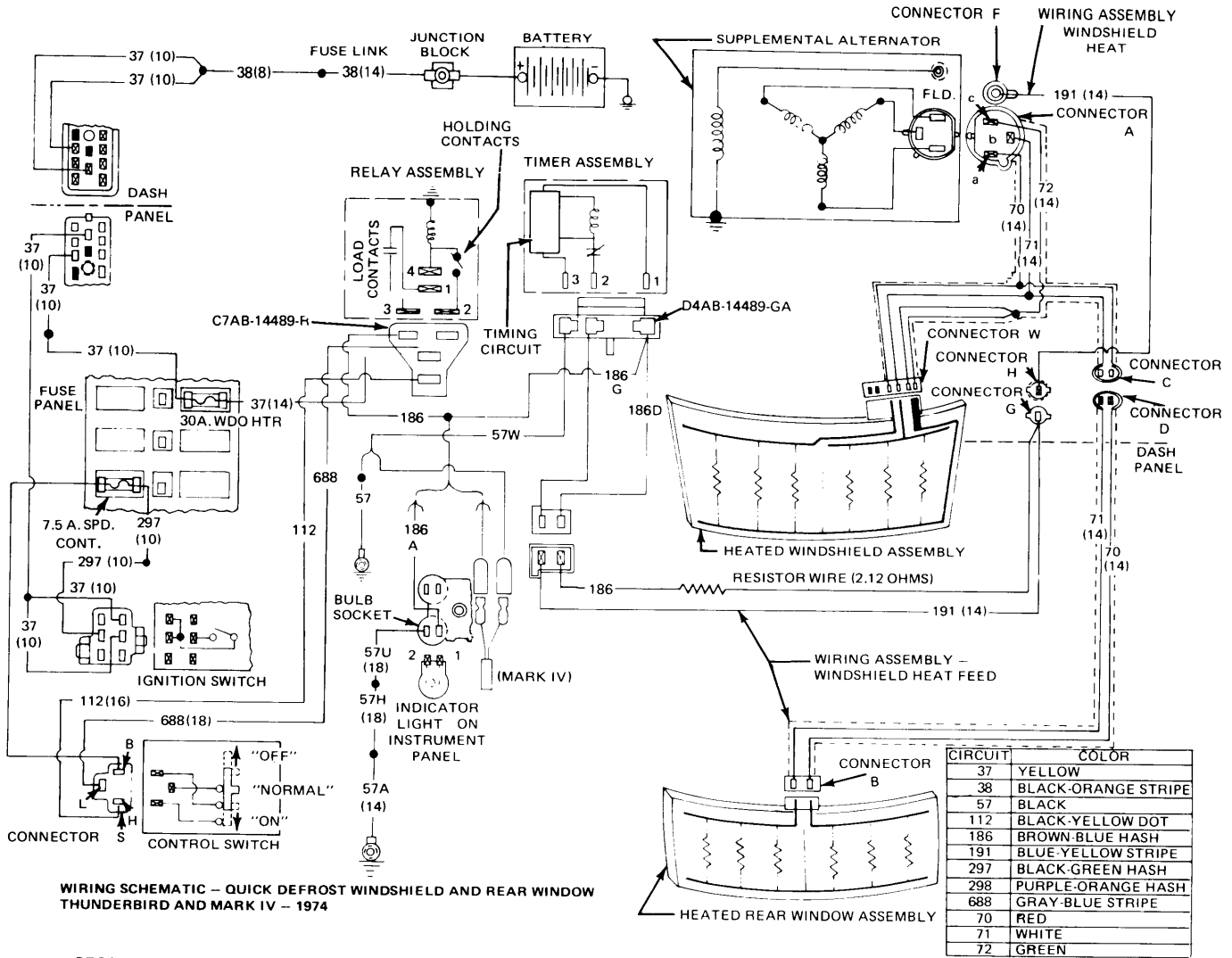
Indicator Light Comes On, Glass Does Not Heat — Check connector "F" power at alternator (see illustration). No power, check for power at relay panel number three terminal with timer installed. Power available, locate and repair open circuit to field. No power at terminal number three; locate and repair crossed or shorted circuit No. 186 Brown/Lt. Blue wire to indicator light. If power was available at connector "F", check continuity of circuits No. 70 Red, No. 71 White and No. 72 Dk. Green wires (all wires disconnected). If wires are good, check alternator. See *Motorcraft High Voltage Alternator in ELECTRICAL Section*.

Windshield Glass Does Not Heat — Disconnect connector "A" at alternator and connectors "C" and "D" to rear window. Measure resistance between terminals "A" and "C" of connector "A" for left side of windshield and "B" and "C" for right side (see illustration). If resistance is less than seven or more than 20 ohms, check wire numbers 70 Red, 71 White and 72 Dk. Green and windshield for shorts or open circuits. If tests are satisfactory, check alternator output. See *Motorcraft High Voltage Alternator in ELECTRICAL Section*.

Rear Window Glass Does Not Heat — Disconnect connectors "C" and "D". Measure resistance between terminals on connector "D" (see illustration). If resistance is less than seven or more than 20 ohms, check wire numbers 70 Red and 71 White and rear window for shorts or open circuit. If tests are satisfactory, check alternator output. See *Motorcraft High Voltage Alternator in ELECTRICAL Section*.

Electric Window Defoggers

FORD MOTOR CO. QUICK DEFROST WINDOWS (Cont.)



5F01

QUICK DEFROST SYSTEM WIRING