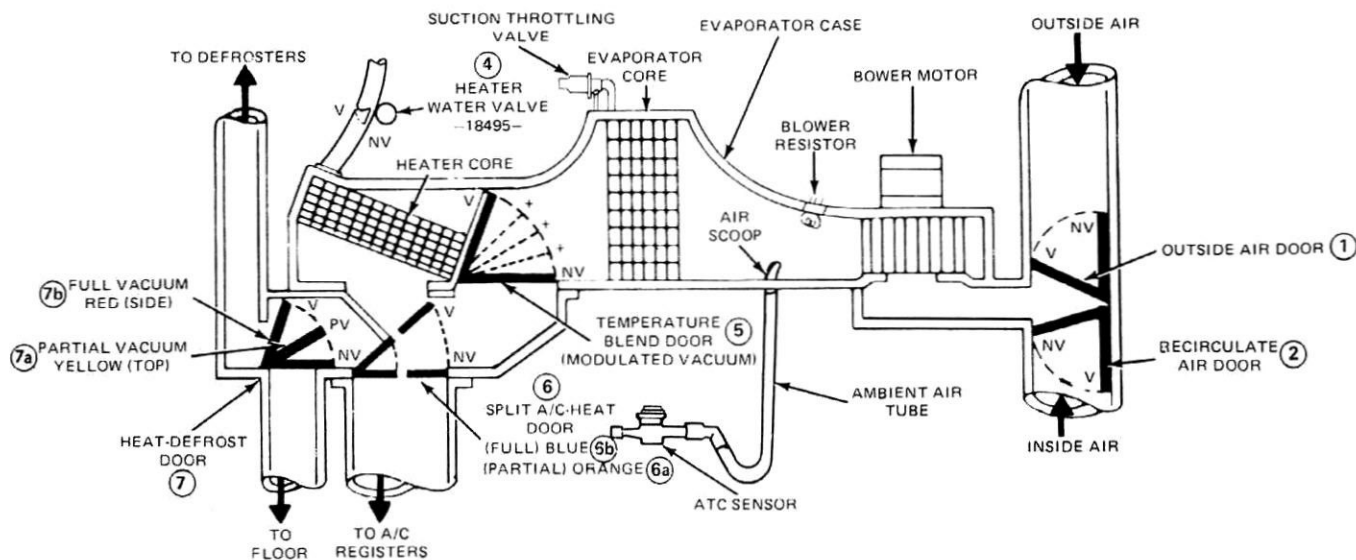
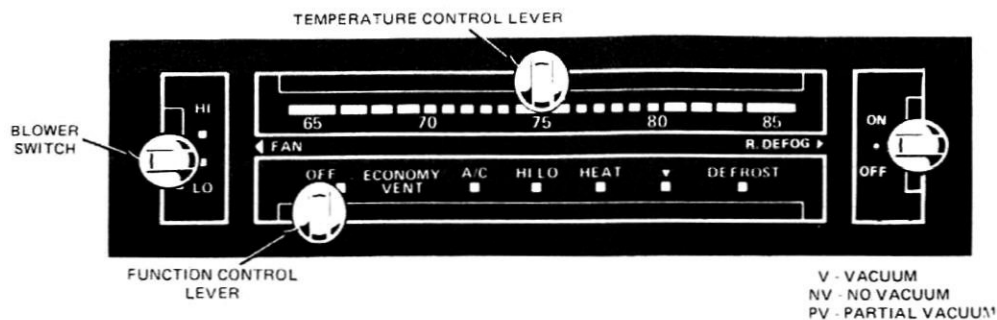




1978 FORD, MERCURY, LINCOLN AUTOMATIC TEMPERATURE CONTROL SYSTEM VACUUM MOTOR TEST CHART									
FUNCTION CONTROL LEVER POSITION	ATC REQUIREMENT	VACUUM MOTORS APPLIED WITH VACUUM							
		OUT SIDE	RE CIRC.	WATER VALVE **	TEMP BLEND †	A/C-HEAT		HEAT-DEFROST	
						PARTIAL	FULL	PARTIAL	FULL
OFF	-	1	2	**	+	-	-	7a	7b
ECONOMY VENT	Cool	-	-	4	5	6a	6b	7a	7b
	Mid	-	-	-	+	6a	6b	7a	7b
	Warm	-	-	-	-	6a	6b	7a	7b
A/C *	Cool	1**	2**	4	5	6a	6b	7a	7b
	Mid	-	-	-	+	6a	6b	7a	7b
	Warm	-	-	-	-	6a	6b	7a	7b
HI-LO *	Cool	-	-	4	5	6a	-	7a	7b
	Mid	-	-	-	+	6a	-	7a	7b
	Warm	-	-	-	-	6a	-	7a	7b
HEAT	Cool	-	-	4	5	-	-	7a	7b
	Mid	-	-	-	+	-	-	7a	7b
	Warm	1†	2†	-	-	-	-	7a	7b
▽ (DEFOG) *	Cool	-	-	4	5	-	-	7a	-
	Mid	-	-	-	+	-	-	7a	-
	Warm	-	-	-	-	-	-	7a	-
DEFROST *	Cool	-	-	4	5	-	-	-	-
	Mid	-	-	-	+	-	-	-	-
	Warm	-	-	-	-	-	-	-	-
VACUUM LINE COLOR CODE		WHITE	WHITE	GREEN	TAN	ORANGE	BLUE	YELLOW (TOP)	RED (SIDE)

* COMPRESSOR CLUTCH ENGAGED WHEN AMBIENT CUT-OFF SWITCH IS CLOSED

† DELAYED BY ENGINE TEMP. SENDER AND E.V. RELAY UNTIL 120°F. ENGINE COOLANT TEMP.

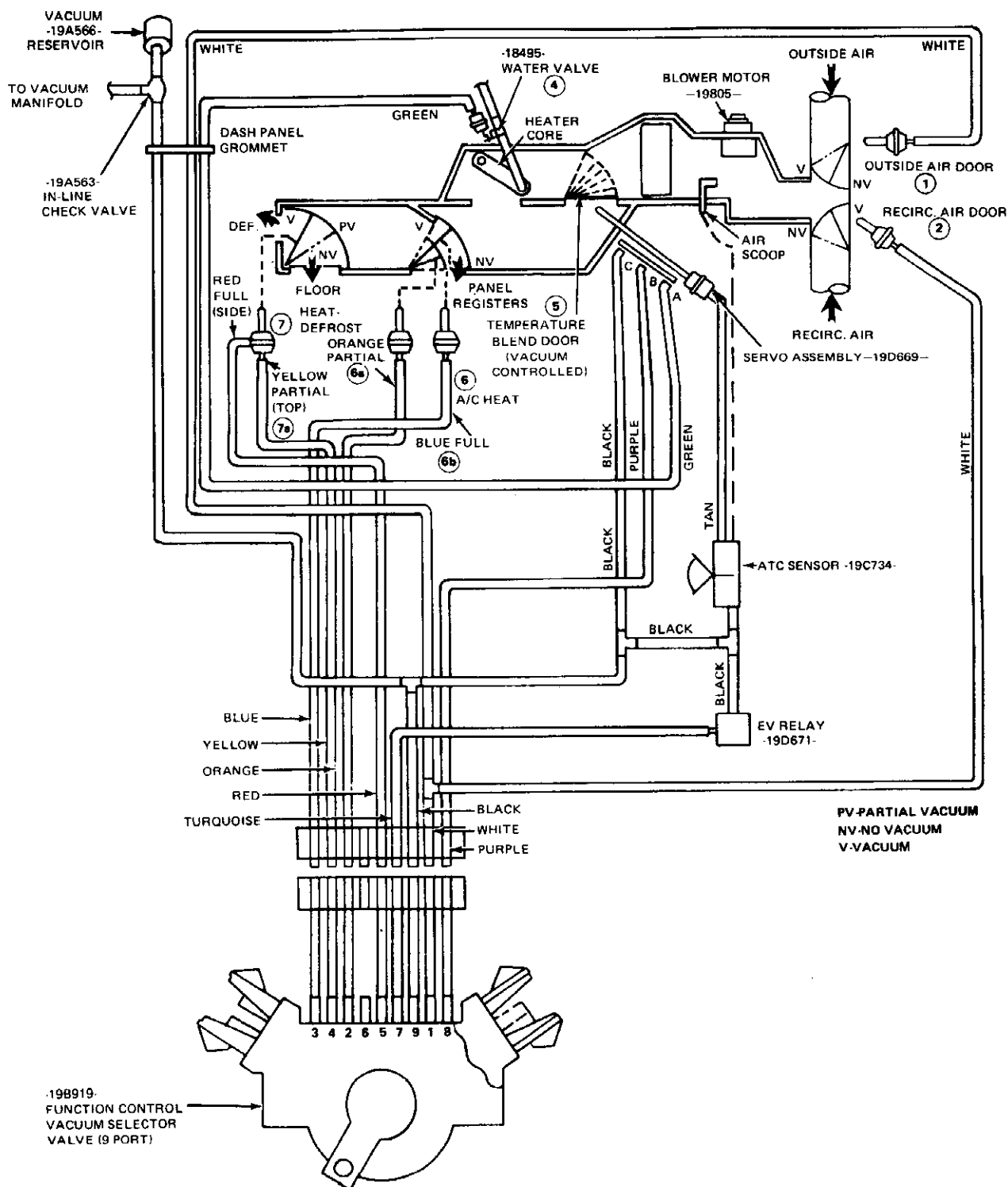
** DEPENDENT ON HEATING/COOLING REQUIREMENT OF SERVO DIVERter VALVE

+ MODULATED VACUUM

- NO VACUUM

L2610-2A

FIG. 2 ATC System Air Flow Schematic and Vacuum Control Chart – 1978 Ford, Mercury and Lincoln Continental



PORT	FUNCTION	FUNCTION SELECTOR VALVE LEVER POSITIONS							HOSE COLOR
		OFF	ECONOMY VENT	A/C	HI-LO	HEAT	DEFROG	DEFROST	
1	Outside-Recirc.	V		To 8		To 7			White 1-2
2	Partial A/C-Heat		V	V	V				Orange 6a
3	Full A/C-Heat		V	V					Blue 6b
4	Partial Heat-Defrost	V	V	V	V	V	V		Yellow 7a
5	Full Heat-Defrost	V	V	V	V	V			Red 7b
6	No Function	Seal	Seal	Seal	Seal	Seal	Seal	Seal	-
7	From EV Relay	Seal	Seal	Seal	Seal	To 1	Seal	Seal	Turquoise
8	From Servo Diverter Valve Port B	Seal	Seal	To 1	Seal	Seal	Seal	Seal	Purple
9	Source Vacuum	V	V	V	V	V	V	V	Black

V - VACUUM

BLANK - ATMOSPHERE

L2611-2A

FIG. 3 ATC System Vacuum Schematic and Selector Test — 1978 Ford, Mercury and Lincoln Continental

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ENGINE TEMPERATURE
SENDER CLOSED BELOW 100 F.
OPEN ABOVE 120 F.

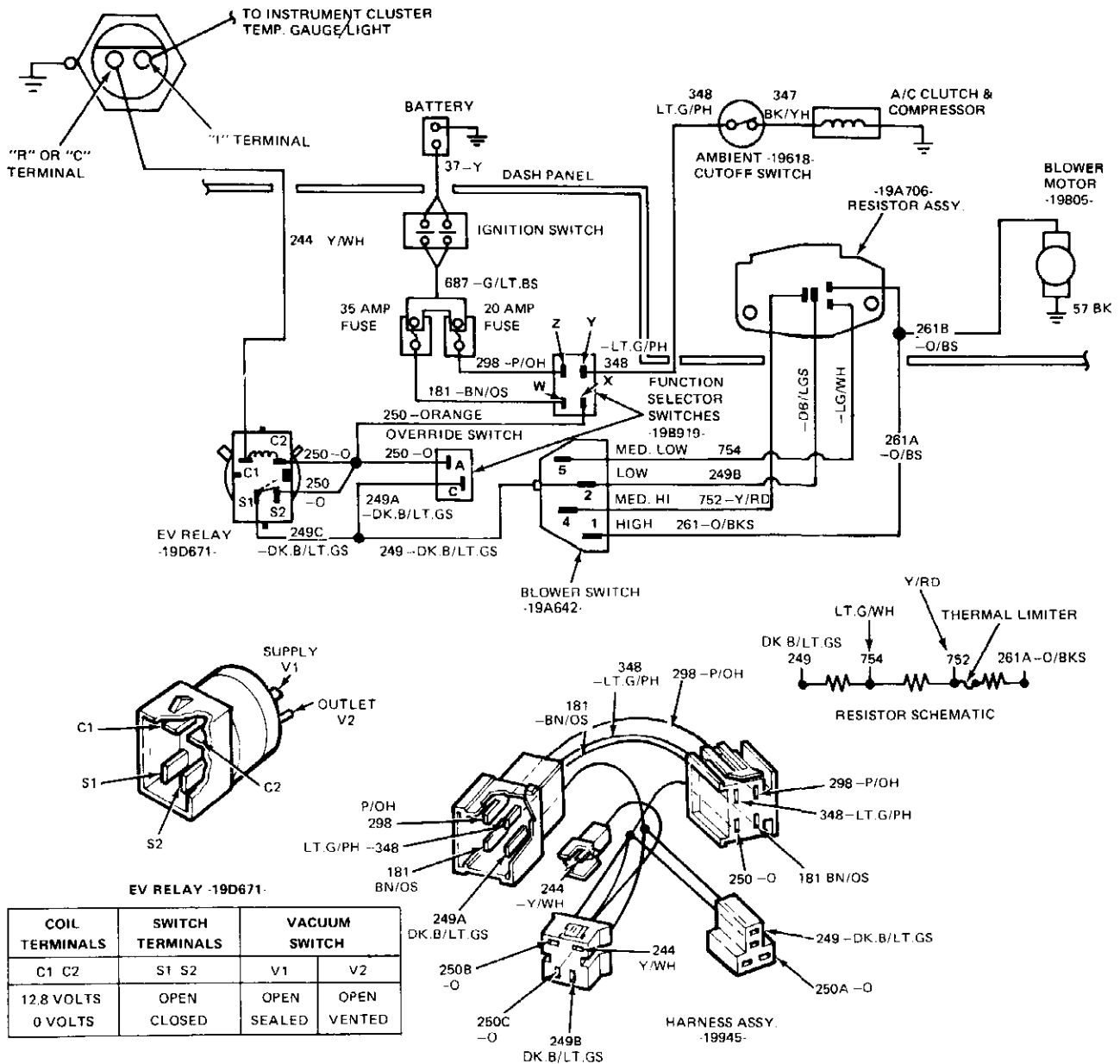


FIG. 4 ATC System Electrical Wiring Diagram and Continuity Test - 1978 Ford and Mercury

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SYSTEM AIR FLOW

Figures 2 and 3 contain system vacuum schematics and vacuum motor charts which illustrate vacuum routings and air flow during the various system conditions. Figures 4 and 5 show the system electrical wiring diagram including continuity test information.

OFF POSITION

In OFF position the outside-recirc air doors are in recirculating position. The A/C-heat door is in the heat (no vacuum) position, and the heat-defrost door is in the heat (full vacuum) position. The blower is off and the temperature blend door and water valve assume a position depending on the modulated vacuum from the sensor to the power servo.

NOTE: A modulated vacuum is produced in ALL function control lever positions and is entirely dependent on the temperature lever setting and existing in-vehicle temperature conditions.

ECONOMY VENT POSITION

In ECONOMY-VENT position, outside air is directed through the panel (A/C) registers with automatic control of discharge air temperatures and water valve actuation. However, refrigerated cooling is not available. ECONOMY-VENT and HEAT positions provide the most economical operations because the compressor does not operate.

A/C POSITION — MAXIMUM COOLING (RECIRCULATE)

With the function lever in the A/C position and the car interior temperature considerably above the temperature setting, the modulated vacuum is high at the servo motor, causing:

1. The outside-recirc door to go to the recirc position;
2. The water valve to close;
3. The temperature blend door to close, allowing all air to by-pass the heater core. Air is drawn from the passenger compartment, directed through the evaporator core where it is cooled and returned to the car interior through the panel (A/C) ducts and registers.

A/C POSITION — MODULATED COOLING (OUTSIDE-AIR)

When less cooling is required to maintain the temperature setting, the temperature blend door is actuated to a mid-position where part of the air leaving the evaporator core is directed through the heater core. Blended air (the combination of cooled and heated air) is then mixed in the plenum and directed into the car interior through the panel (A/C) ducts and registers. The temperature selected. If the in-car temperature rises above the temperature lever setting, the blend door moves to admit more cooled air and less heated air. If the in-car temperature drops below the setting, the blend door moves to admit more heater air and less cooled air.

HI-LO POSITIONS

Operation is similar to that described in the A/C position paragraphs, except that airflow is divided between the panel registers and floor ducts. The system will not recirculate interior air for maximum cooling.

HEAT POSITION — MAXIMUM HEATING

With the function control lever in the HEAT position and the car interior temperature below the temperature setting, the modulated vacuum is low, causing the water valve to open and the temperature blend door to fully open. Blower operation will be delayed until the engine coolant reaches approximately 120°F (49°C), then the air is forced by the blower through the evaporator and all of the air passes through the heater core before being distributed through the heater (floor) ducts into the car interior. A portion of this air is diverted to the defroster nozzles.

HEAT POSITION — MODULATED HEATING

When less heating is required to maintain the temperature setting, the temperature blend door has moved to a mid-position so that only part of the air leaving the evaporator core is directed through the heater core. Blended air (the mixture of outside air and heater air) then is directed into the car interior. The A/C clutch does not operate in the HEAT position.

DEFOG (▼) POSITION

In DEFOG (▼) operation is the same as the HEAT position, except that the A/C-Heat doors are in the HEAT (no vacuum) position and the heat-defrost door is in a partial position. The air flow is directed to the defroster nozzles and the floor outlets. The A/C clutch will also be engaged when the outside air temperature is sufficiently high to close the ambient cut-off switch. This assists in reducing windshield fogging by dehumidifying the outside air.

DEFROST POSITION

When the function lever is in the DEFROST position, the A/C-heat doors and the heat-defrost door are in the full defrost (no vacuum) positions so that all incoming air is directed to the defroster nozzles with a slight bleed to the floor. The temperature blend door modulates in this position but maximum heat can be obtained by moving the temperature lever to the highest temperature position. The A/C clutch also operates in this position to dehumidify the air and reduce windshield fogging.

COMPONENTS

SENSOR ASSEMBLY

The sensor assembly is located behind the instrument panel above the glove box. A small opening in the instrument panel allows passenger compartment air to enter the sensor. The sensor assembly contains a bi-metallic sensor that senses the passenger compartment air temperatures. The output controls a vacuum modulator and higher temperatures cause higher vacuum gauge readings. A bias to the vacuum output level is accomplished by means of a control arm attached by a cable assembly to the temperature control lever.

Thus, the modulated vacuum output is the result of the effects of the control bias and the temperature of the air across the bi-metallic sensor.

The sensor assembly also includes an aspirator or venturi (as it is called in previous ATC systems). The aspirator provides a very small vacuum to draw a continuous sampling of passenger compartment air across the air temperature sensing bimetal. Primary air is ducted to the sensor via a tube from the blower stream providing the power to operate the aspirator for the in-car sensor.

SERVO ASSEMBLY

The servo assembly is a large calibrated vacuum motor and vacuum diverter valve and is located behind the lower edge of the glove box on the mounting bracket attached to the plenum chamber. The calibrated vacuum motor provides specific temperature blend door positions for given vacuum levels. The attached vacuum diverter valve controls water valve operation and recirc or outside air operation.

ELECTRO-VACUUM RELAY (E.V. RELAY)

Located on the servo assembly mounting bracket the E.V. Relay is a combination normally closed vacuum solenoid valve and a single pole single throw normally closed electrical relay, both actuated by one electrical coil. The E.V. Relay is used during cold engine operation, in the HEAT function lever position, to lock-out blower operation, and to switch the system to recirculating air until the engine coolant warms up to above 120°F (49°C).

CONTROL ASSEMBLY

The control assembly consists of three main parts: 1) the function selector — a nine-port vacuum selector valve combined with two cam operated electrical switches; 2) blower switch — an electrical switch that provides four speeds of blower operations; and 3) the temperature control lever which connects through a control cable assembly to the sensor assembly.

1. The 9-port vacuum selector valve is very similar to the manual A/C 9-port vacuum selector valve. It directs source vacuum to various vacuum motors and connects the vacuum from the electro-vacuum relay to the outside air-recirc door in HEAT (See Vacuum Schematic — Figure 3). A single pole and a double pole cam operated electrical switch is also controlled by the vacuum selector. The combination of these cam operated electrical switches controls the electrical supply to the A/C clutch and blower switch.
2. The four-position blower switch is identical to the manual A/C heater system blower switch.
3. The temperature control lever is connected to the sensor assembly by a control cable assembly. Movement of the control lever from 65 to 85 causes a corresponding movement on the pre-load (bias) portion of the sensor assembly, and determines the temperature that the system will maintain.

THERMAL LIMITER RESISTOR ASSEMBLY

The blower motor thermal limiter resistor assembly is located on the evaporator assembly in the engine compartment. There are three resistance elements mounted on the resistor board to provide four blower speeds. Depending on the blower switch position, series resistance is added or by-passed in the blower motor circuit to decrease or increase blower motor speed.

A thermal limiter resistor assembly is similar to a standard resistor assembly except an overheating protective device (thermal limiter) has been added to prevent heat damage to the evaporator case assembly (Fig. 6). Overheating of the resistor coil(s) may occur when the system air flow is reduced as a result of an inlet or outlet air restriction or if the blower wheel becomes locked and/or is unable to turn freely.

When the thermal limiter resistor circuit has opened as a result of excessive heat, it should be replaced only with the identical replacement thermal limiter resistor assembly. It must not be substituted with a standard resistor assembly which does not include the thermal limiter device.

THERMAL LIMITER

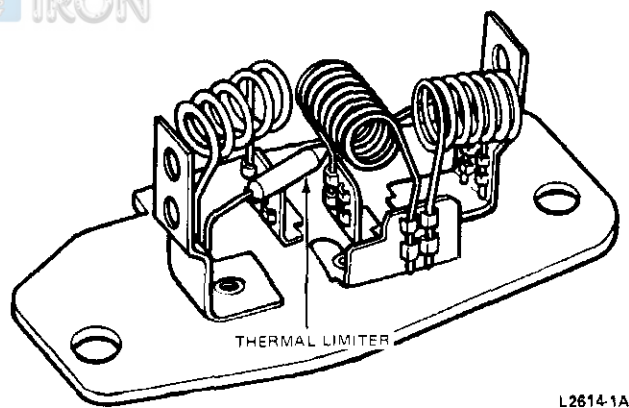
The thermal limiter, used in the thermal limiter resistor assembly, serves as a temperature protecting fuse. Located a predetermined distance from the resistor coils and in series with the coil circuit, it will open the resistor coil circuit when the temperature of the thermal limiter reaches 300°F (149°C) interrupting blower operation in all speeds except high blower. Internal spring loaded contacts are held closed with a wax material which has a melting point of 300°F (149°C). When the wax softens, the spring contacts separate, opening the resistor circuit. The spring contacts cannot be closed again. As a result, it is necessary to replace the entire thermal limiter resistor assembly.

ENGINE TEMPERATURE SENDER SWITCH

The engine temperature sender switch is located on the engine and senses the engine coolant temperature near the engine thermostat. In the HEAT position only, a ground circuit from the engine temperature sender switch to the E.V. relay coil prevents blower operation until the engine coolant temperature reaches approximately 120°F (49°C).

HIGH BLOWER RELAY (LINCOLN ONLY)

On Lincoln, a high blower relay is used to switch the blower feed from the resistor output to a direct low resistance feed from the battery. Power to the relay coil comes from the blower switch "high" position.



L2614-1A

FIG. 6 Thermal Limiter Resistor Assembly

REGISTER ASSEMBLIES

Retaining tabs lock the register assemblies into the register housings of the instrument trim panels. Horizontal registers swivel and direct the register outlet air up or down while the louvers permit side to side air distribution or closure of the register outlet. Vertically mounted registers swivel and direct the register outlet air from side to side while the louvers permit upward and downward air distribution or closure of the register outlet.

REFRIGERANT SYSTEM

The refrigerant system incorporates a six cylinder compressor with an ambient cut-off switch connected in series with the compressor clutch to control compressor

operation. The ambient switch will open and close between 35°F (2°C) minimum and 50°F (10°C) maximum with a minimum difference of 3°F between opening and closing temperatures. The ambient switch is located in the airflow path behind the radiator grille.

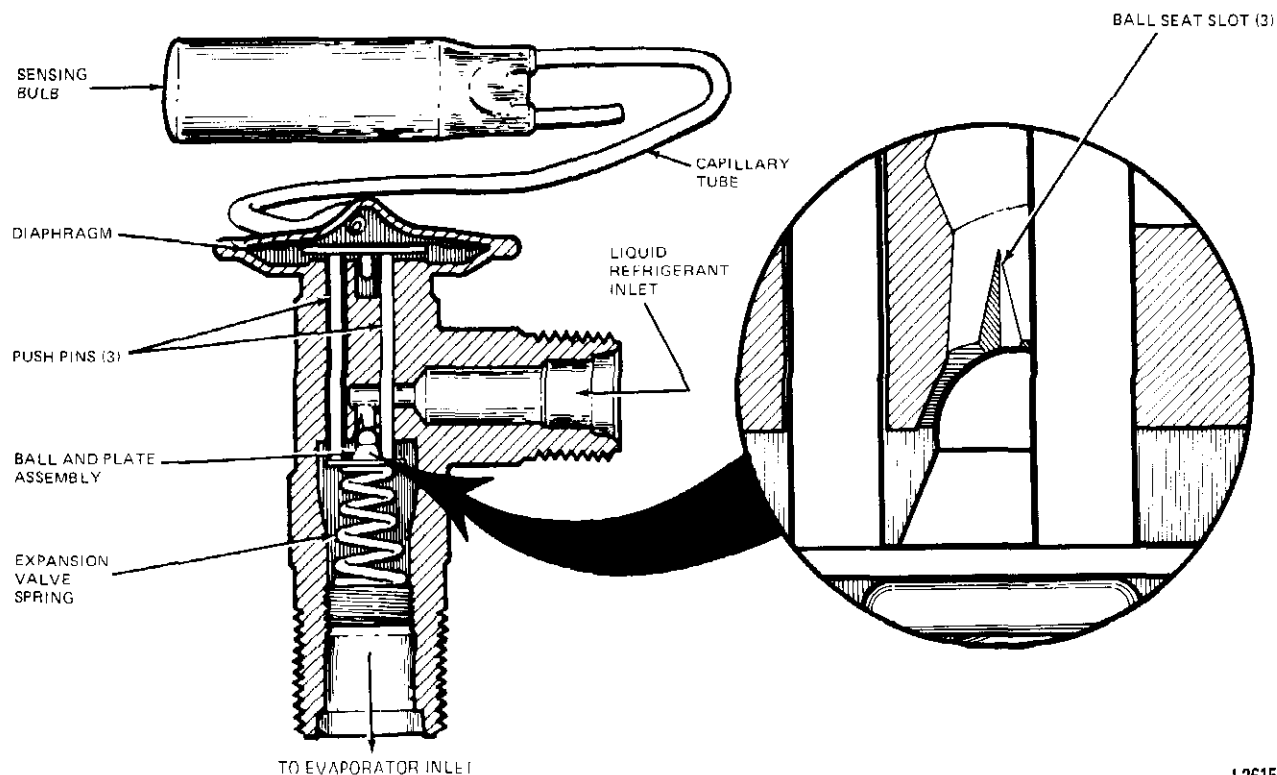
An internally equalized By-Pass Orifice Expansion Valve is used with a separate Suction Throttling Valve which does not have the equalizer line fitting (Fig. 8).

Refer to the Normal System Operation Charts and the Problem Refrigerant System Pressure Evaluation Chart for refrigerant system testing and diagnosis. Refer to the Car Shop Manual — A/C General Service Section for servicing the refrigerant system.

BY-PASS ORIFICE (BPO) EXPANSION VALVE

The By-Pass Orifice (BPO) Expansion Valve is the capillary tube type similar to those used on earlier refrigerant systems, except the tapered ball seat is *slotted to prevent complete sealing of the liquid refrigerant inlet to the evaporator*. The need for the external equalizer line is eliminated, as the BPO expansion valve is internally equalized through the passages around the push pins (Fig. 7). The slotted ball seat provides additional refrigerant and refrigerant oil flow to lubricate and cool the compressor, during minimum cooling requirement conditions, when the expansion valve is closed.

The By-Pass Orifice (BPO) Expansion Valve must regulate the flow of liquid refrigerant during cool-down (while the car interior and evaporator core are cooling down). As the evaporator core temperature approaches 32°F, the Suction Throttling Valve begins to control refrigerant pressure.



L2615-2A

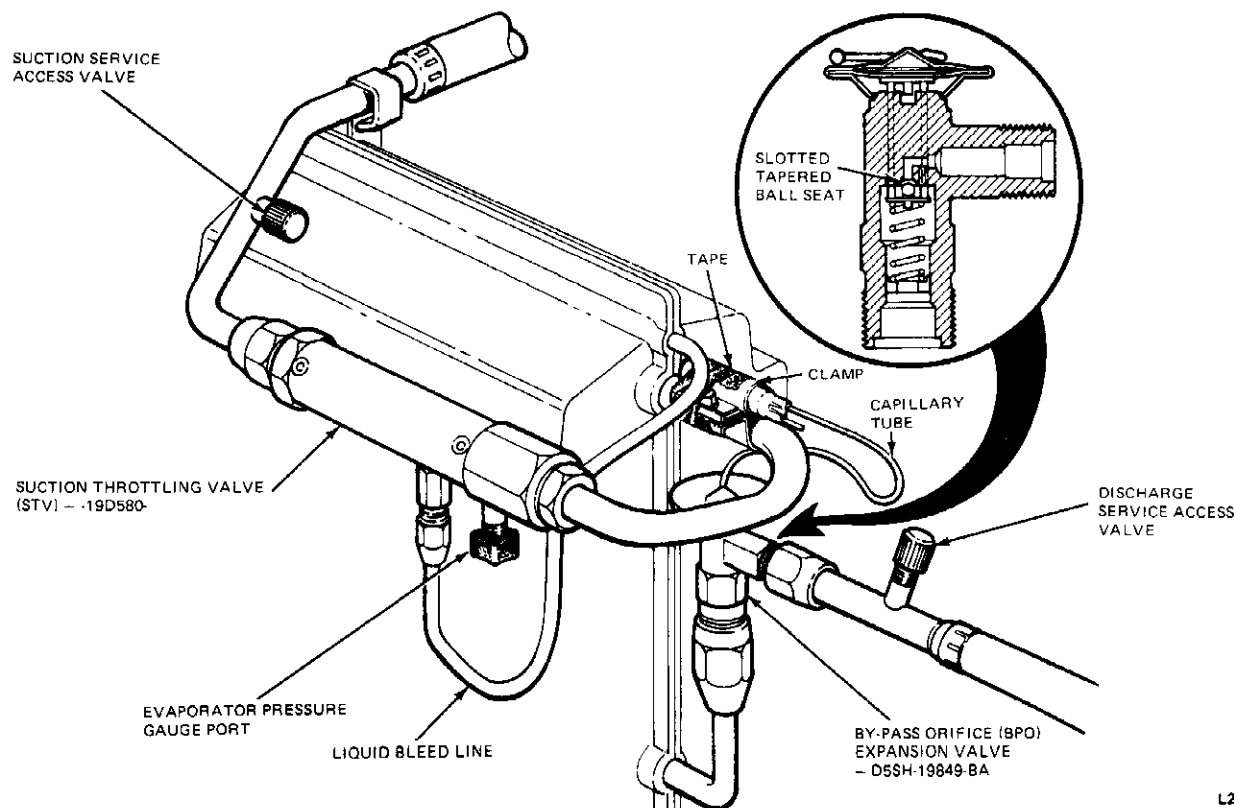
FIG. 7 By-Pass Orifice (BPO) Expansion Valve Cutaway View

SUCTION THROTTLING VALVE (STV)

The Suction Throttling Valve (STV) is the same used in current model refrigerant systems, except the equalizer line connection has been removed (Fig. 8). Its purpose is to control suction pressure in the evaporator to prevent ice or frost from blocking the flow of air through the heat exchanging surfaces of the evaporator. Gauge pressure at sea level is specified at a minimum of 28.5 psi. The pressure reading is higher at higher altitudes because of gauge error, not be-

cause of a change in pressure inside the evaporator. Refer to the normal Pressure/Altitude Chart in Fig. 14.

Suction "throttling" starts when the compressor suction pressure decreases below the pressure setting of the valve. Compressor suction pressure can continue to drop but the evaporator pressure is held steady by the controlling or "throttling" action of the STV.



L2616-2A

FIG. 8 By-Pass Orifice Type Expansion Valve and Suction Throttling Valve

PRESSURE DIFFERENTIAL VALVE

A calibrated Pressure Differential Valve core is provided, in the liquid bleed line fitting, as a liquid refrigerant bleed circuit around the STV to assure oil return to the compressor when the STV is closed due to minimum heat loading of the A/C system. Refer to Fig. 9.

The Pressure Differential Valve is a Schrader type valve that has been calibrated to open at a pressure range of 10 to 20 psi. Its function is to by-pass oil laden refrigerant around the restriction formed when the STV is closed (due to reduced heat load on the A/C system) and thereby provide an assured oil return to the compressor. Under high heat loads this valve is closed, since ample refrigerant is moving through the compressor suction line back to the compressor. Substitution of a Schrader type service access valve core from one of the gauge port valves is not permitted and would result in compressor damage by oil starvation because the substituted valve core would never open.

The calibrated Pressure Differential Valve Core is supplied installed in the liquid bleed line fitting of the Suction Throttling Valve and is not serviced separately.

INSPECTION AND ASSEMBLY REQUIREMENTS

O-ring seal surfaces must be free of dirt, lint, burrs and scratches.

All O-rings must be lubricated with clean refrigerant oil immediately prior to installation.

NOTE: At any time a hose or component connection leak is observed, tightening the connection will only stop the leak temporarily. To correctly repair the leak, the connector fitting must be separated, cleaned and a new O-ring installed. The O-ring and connector surfaces should be lubricated with clean refrigerant oil prior to assembly.

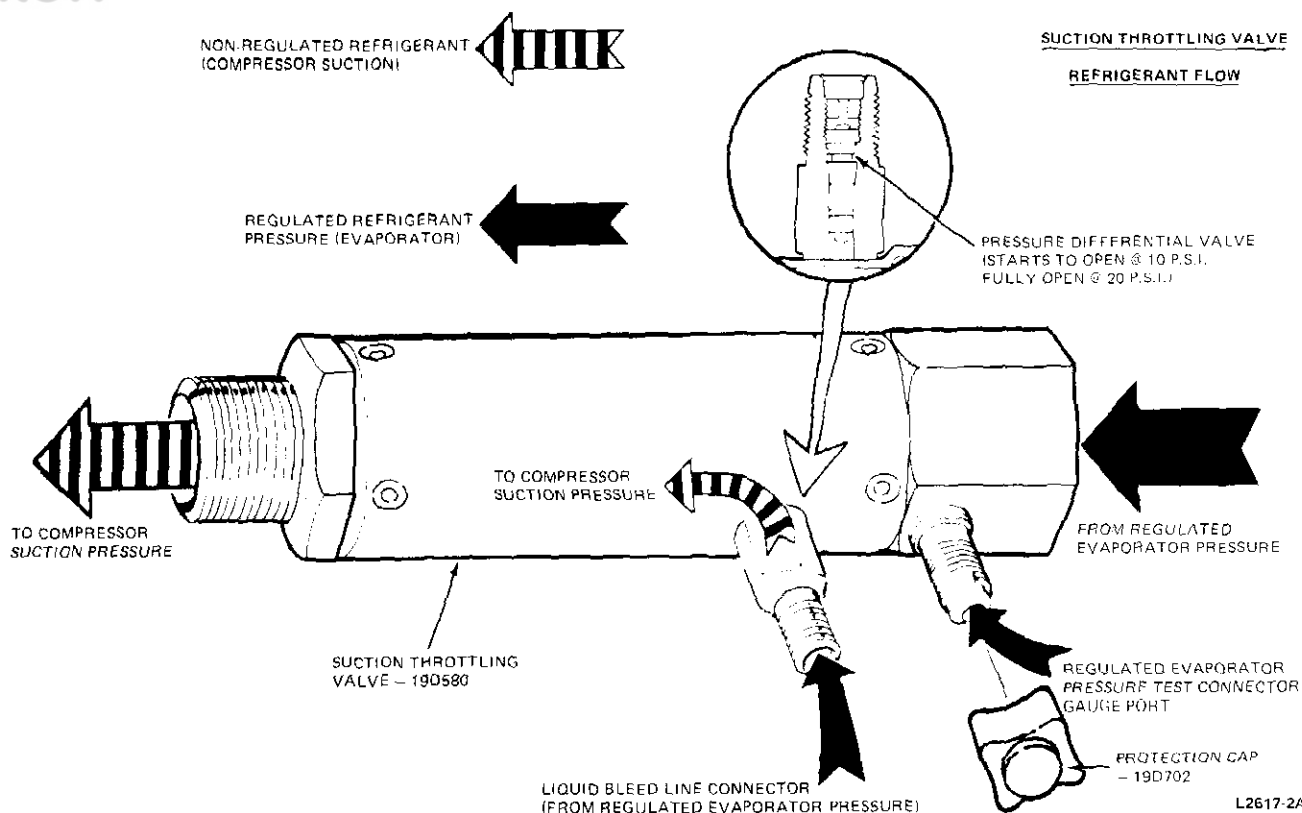


FIG. 9 By-Pass Orifice Type Suction Throttling Valve

REFRIGERANT FLOW

1. Liquid refrigerant from the receiver/drier enters the high pressure liquid line fitting of the By-Pass Orifice (BPO) Expansion Valve.
2. During stabilized (vehicle shutdown) conditions, the pressure on the bottom of the Expansion Valve diaphragm rises above the pressure on the top of the diaphragm, closing the valve.
3. When the system is started, the pressure on the bottom of the diaphragm drops rapidly, allowing the valve to open and spew liquid refrigerant to the lower evaporator tube where it begins to vaporize.
4. The compressor suction draws the vaporized refrigerant out of the top of the evaporator at the outlet (top) tube where it passes, and the temperature is transferred to the bulb of the capillary tube, which is clamped tightly on the tube.
5. Gas pressure in the capillary tube drops when cooled and the expansion valve starts to close. Its pressure rises with evaporator superheat and opens the expansion valve, allowing more refrigerant to flow.
6. Pressure differences, between the evaporator and compressor, force the Suction Throttling Valve control piston further into the valve cylinder. This allows the refrigerant to escape out of the internal side slots of the STV and enter the housing, or suction side, of the Suction Throttling Valve.
7. As the system operates, the temperature (and pressure) in the evaporator core begins to drop. If operating conditions (ambient temperature, vehicle speed, blower speed) permit the temperature

of the core to approach the freezing point, the reduced pressure in the evaporator core allows the STV piston to move back and partially cover the side slots. This action "throttles" or restricts refrigerant flow through the STV and maintains the evaporator core pressure of 28.5 psi. This pressure for R-12 corresponds to a temperature of 32°F. The evaporator core is therefore kept above the temperature at which it would freeze the condensed moisture on its surface.

8. The liquid bleed line circuit parallels the Suction Throttling Valve. The Pressure Differential Valve, in the circuit (no replacement part available), starts to open when the suction pressure in the STV housing is 10 psi less than the evaporator pressure. It will fully open when the suction pressure is 20 psi less than the evaporator pressure.
9. The bottom of the pressure sensing diaphragm (on top of the expansion valve) internally senses the evaporator pressure through the internal passages around the ball and plate assembly push pins. As evaporator pressure is increased, the diaphragm flexes upward pulling the push pins away from the ball and plate assembly. The expansion valve spring forces the ball onto the slotted tapered seat and the liquid refrigerant flow is reduced.

As the pressure is reduced, due to the restricted refrigerant flow, the diaphragm flexes downward again opening the expansion valve to provide the required controlled pressure and refrigerant flow condition.

10. Gas in the capillary tube bulb produces the required pressure on the top of the pressure sensing diaphragm. As the cool refrigerant passes through the evaporator outlet tube, the temperature is transferred to the bulb of the capillary tube and the gas above the diaphragm will contact and allow the expansion valve spring to close the expansion valve.

When heat from the passenger compartment is absorbed by the refrigerant, it will cause the gas in the capillary tube to expand and the push pins will again force the expansion valve to open, allowing more refrigerant to flow so that more heat can be absorbed.

TESTS

ELECTRICAL

Refer to the ATC System Electrical Wiring Diagram and Continuity Test illustrations Figs. 4 and 5 to assist in performing component and system electrical wiring and continuity tests. The blower switch chart also provides blower motor voltage and current information for each blower switch position.

VACUUM

Refer to the ATC System Vacuum Schematic and Selector Test illustrations (Fig. 3) to assist in performing vacuum system and function selector valve tests. Also refer to Figs. 10, 11 and 12 for the ATC system vacuum leak diagnosis charts.

AIR FLOW

Refer to the ATC System Air Flow Schematic and Vacuum Control Chart (Fig. 2) to assist in performing air flow function and Vacuum Motor Application Tests.

REFRIGERANT SYSTEM

Refer to the normal system operation charts (Figs. 13, 14 and 15) for normal center register discharge air temperatures, normal evaporator pressure gauge readings vs. altitude and normal STV/BPO refrigerant system pressures. Also refer to the problem refrigerant system diagnosis (Fig. 16) for systems with pressures outside of those specified in the charts.

COLD ENGINE BLOWER CIRCUIT INTERRUPTION

1. Turn the ignition switch ON (Do not start engine).
2. Move the blower switch to HI position.
3. Move the Function Control Lever to HEAT position.

Results:

- a. If the engine coolant temperature is below 100°F, the blower should not operate and the outside air door should be closed.
- b. If the engine coolant temperature is above 120°F, the blower should turn on and the outside air door should be open.
- c. If results of a or b are not satisfactory, proceed to step 4.

4. Start the engine and operate at idle rpm.
5. Disconnect the "D" shaped connector from the engine temperature sender unit (Figs. 4 and 5). The blower should turn ON. If the blower does not turn ON, the E.V. Relay should be checked for contact continuity between switch terminals S₁ and S₂. When below 100°F the contacts should **not** have more than one ohm resistance. If one ohm or more, replace the E.V. Relay.
If the E.V. Relay is OK, check for an improper ground contact in the 244 (Yellow w/White Hash) circuit of the wire harness.
6. Connect a jumper wire from frame (ground) to the 244 circuit (Yellow w/White Hash) in the "D" shaped engine temperature sender wire harness connector. The blower should turn OFF.

CAUTION: Do not accidentally ground the other terminal (I) of the "D" connector if the vehicle is equipped with a temperature gauge. Serious temperature gauge damage may result.

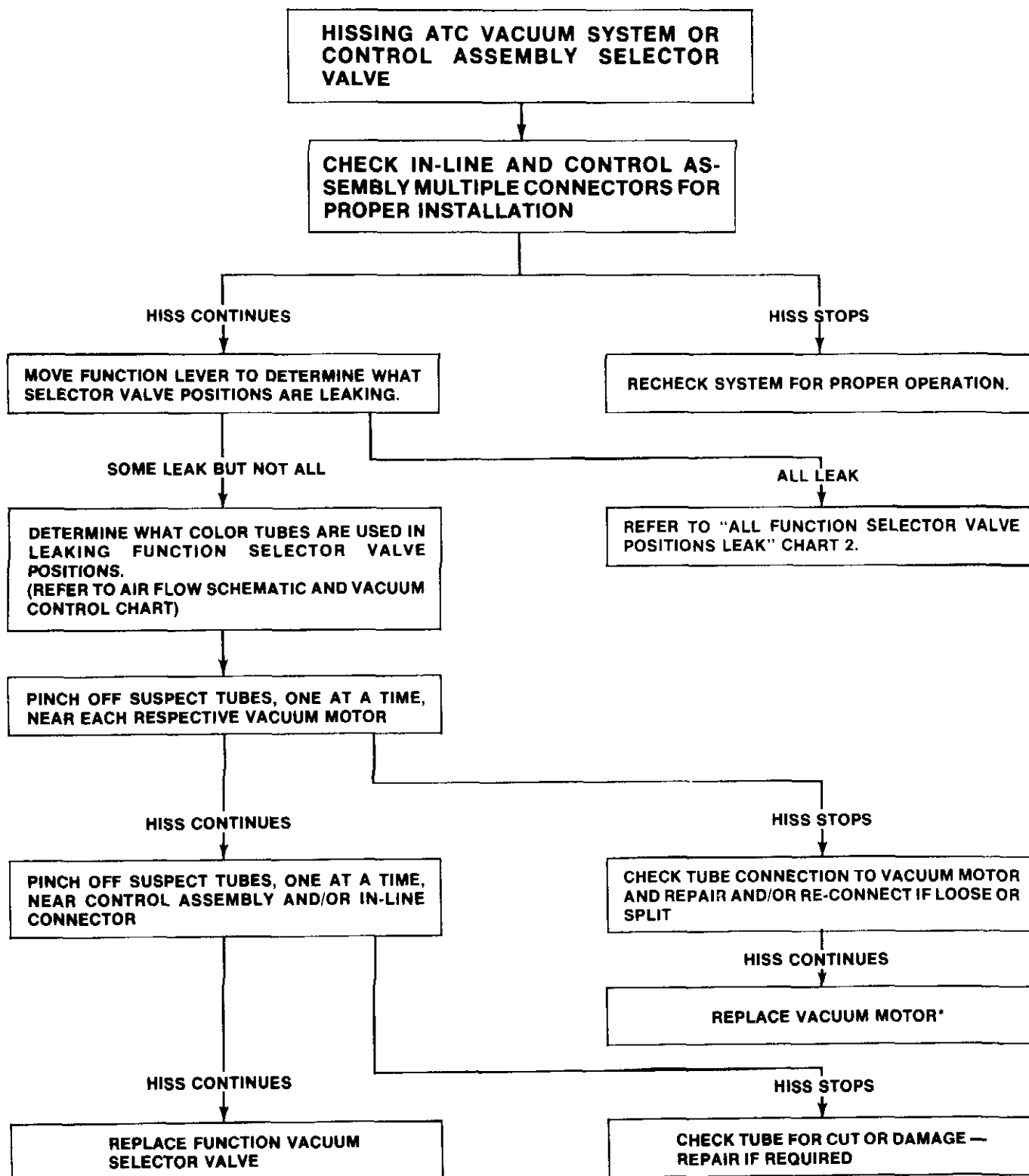
If the blower does not turn OFF, check for continuity between the coil terminals C₁ and C₂ should have continuity (approximately 31 ohms). If no continuity between terminal C₁ and C₂ exists, replace the E.V. Relay.

7. If the results in step 3a and 3b do not agree with step 5 and 6, the engine temperature sender should be further tested for improper operation. Refer to Engine temperature sender test.

ENGINE TEMPERATURE SENDER

The terminal marked "R" (vehicles with temperature gauge) or "C" (vehicles with engine temperature warning light system), should provide an engine ground circuit below 100°F and an open circuit above 120°F engine coolant temperature. If a terminal resistance of one ohm or more with the coolant temperature below 100°F, or if the circuit does not open above 120°F, replace the engine temperature sender.

CHART 1



*NEVER MANUALLY OPERATE ANY VACUUM MOTOR OR VACUUM MOTOR CONTROLLED DOOR — THIS MAY CAUSE INTERNAL DAMAGE TO THE VACUUM MOTOR DIAPHRAGM

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FIG. 10 ATC System Vacuum Leak Diagnosis

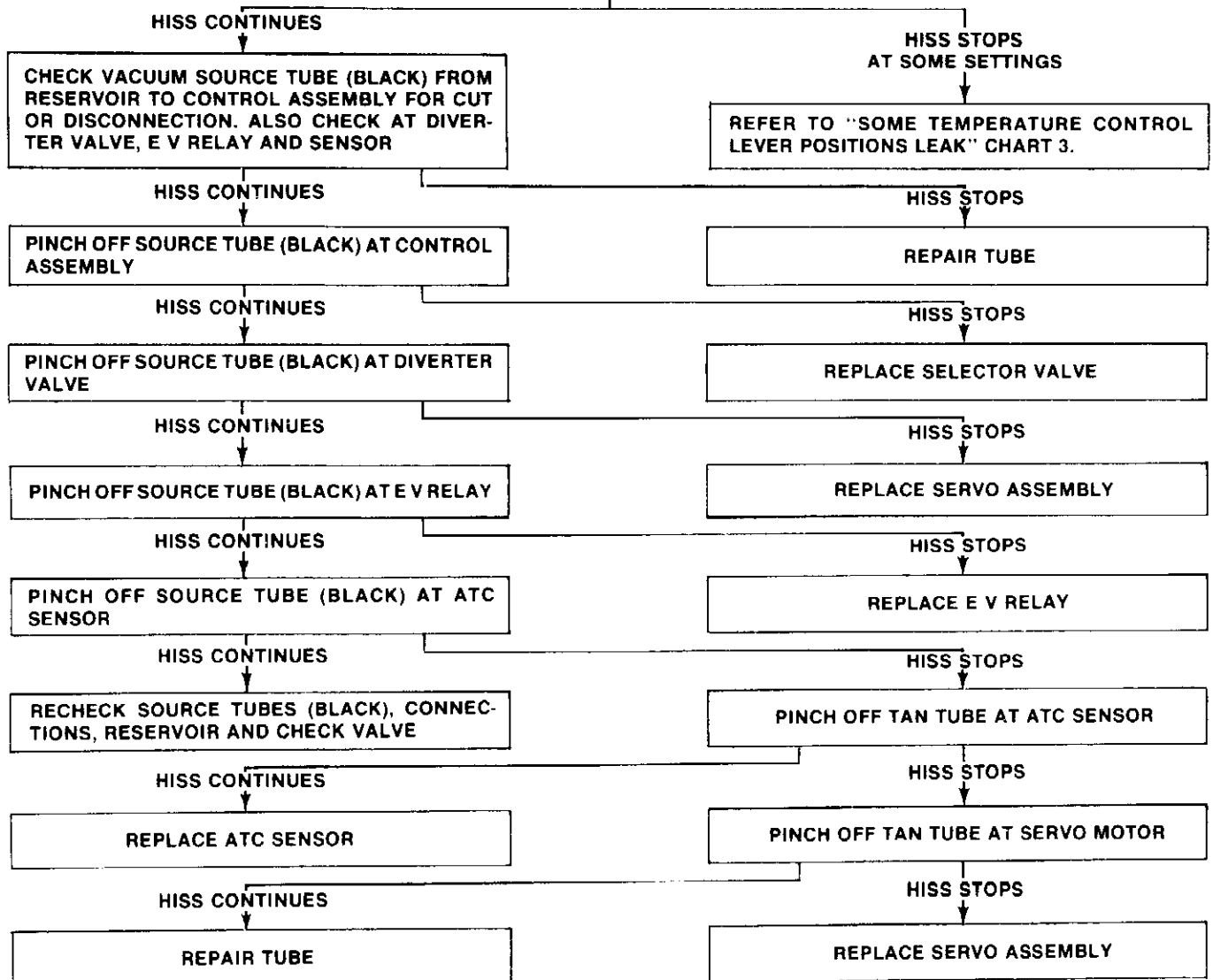
CHART 2

**HISSING ATC VACUUM SYSTEM OR
CONTROL ASSEMBLY SELECTOR
VALVE**

CONTINUED FROM CHART 1

**ALL FUNCTION SELECTOR VALVE
POSITIONS LEAK**

**MOVE TEMPERATURE CONTROL
LEVER FROM 65 TO 85**



CL2619-2A

FIG. 11 ATC System Vacuum Leak Diagnosis

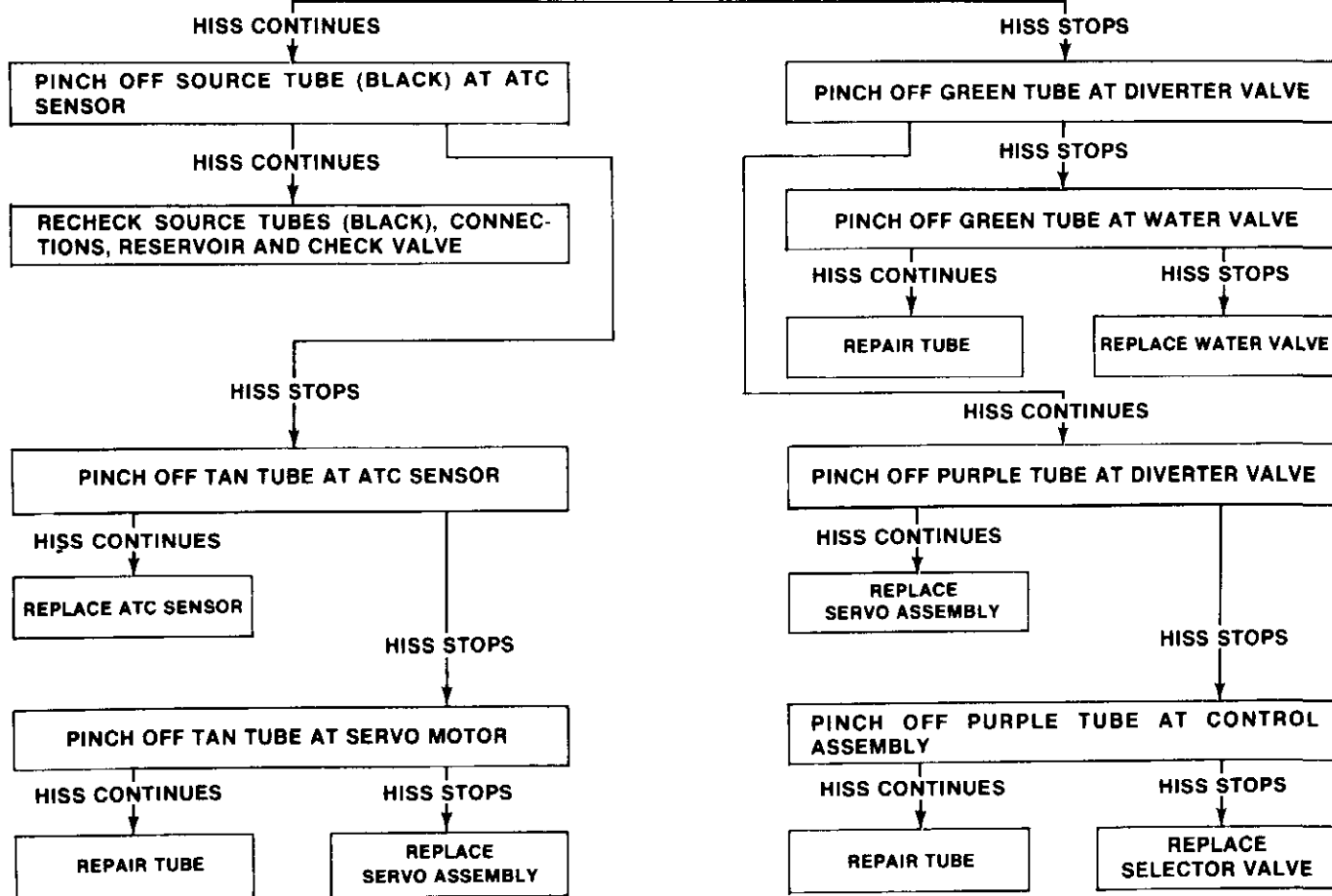
CHART 3

**HISSING ATC VACUUM SYSTEM OR
CONTROL ASSEMBLY SELECTOR
VALVE**

CONTINUED FROM CHART 2

**SOME TEMPERATURE CONTROL
LEVER POSITIONS LEAK**

**PINCH OFF SOURCE TUBE (BLACK) AT
DIVERTER VALVE**



CL2620-2A

FIG. 12 ATC System Vacuum Leak Diagnosis

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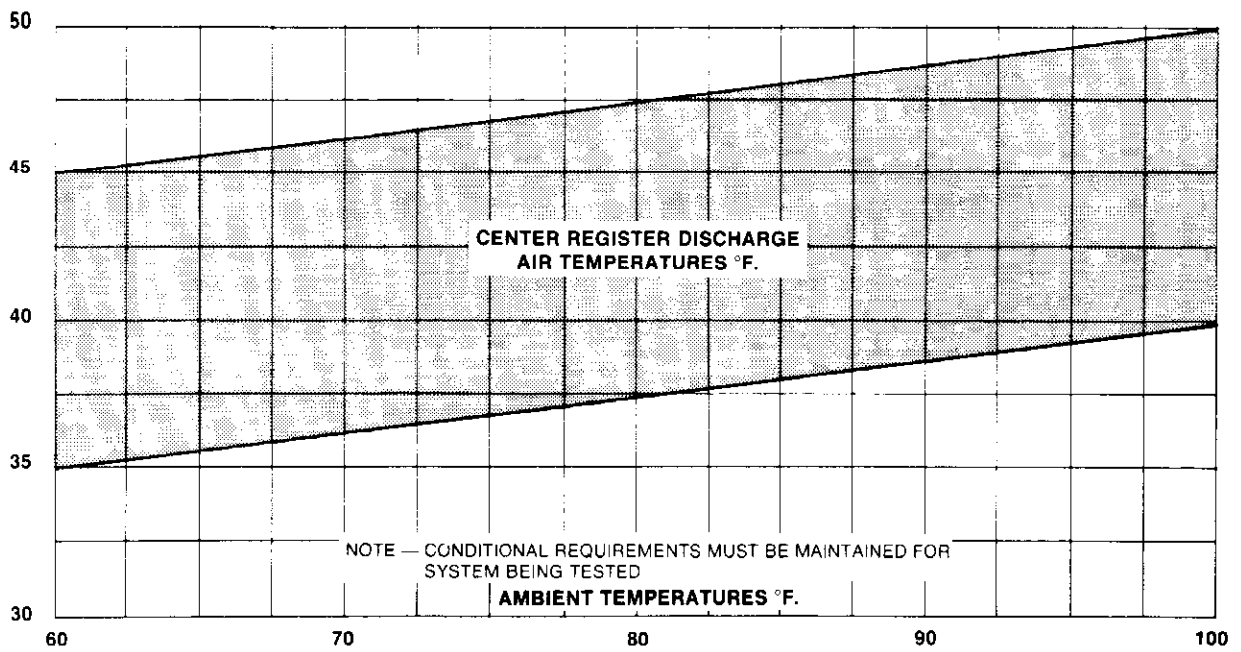


FIG. 13 Normal Center Register Discharge Air Temperatures

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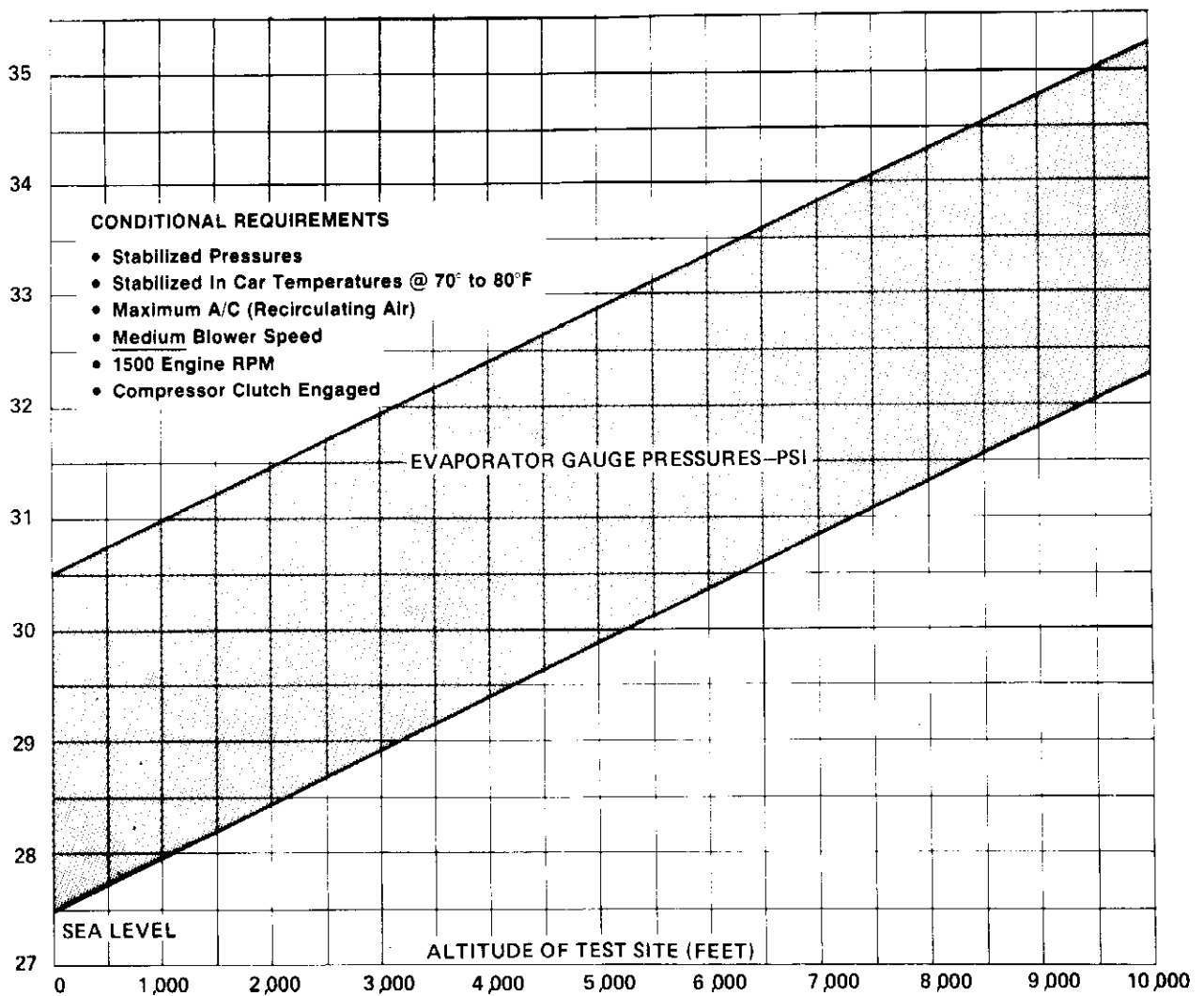
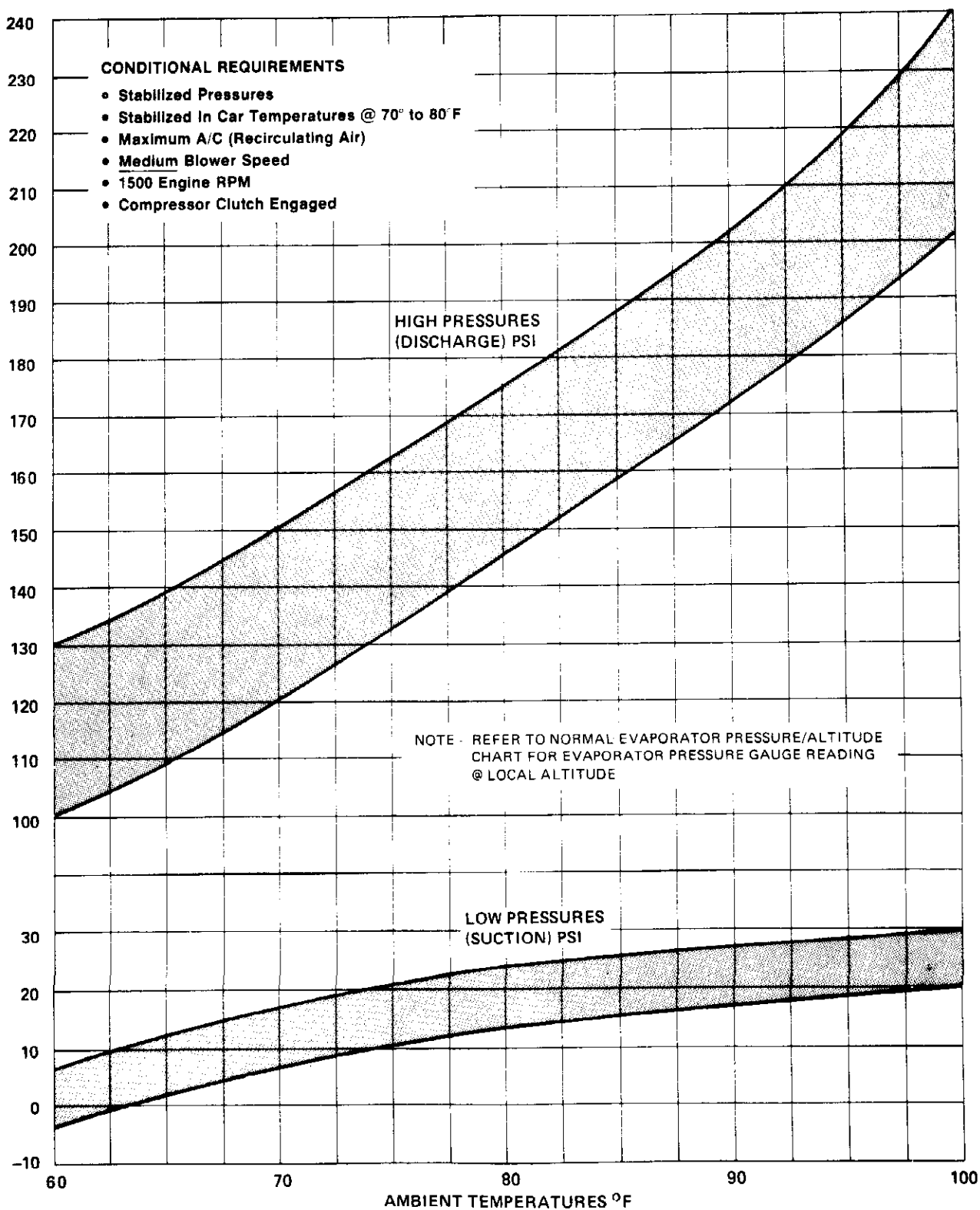


FIG. 14 Normal Evaporator Pressure Gauge Readings VS. Altitude

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NORMAL STV/BPO REFRIGERANT SYSTEM PRESSURES



CL2623-2A

FIG. 15 Normal STV/BPO Refrigerant System Pressures

PROBLEM REFRIGERANT SYSTEM PRESSURE EVALUATION
For All STV and STV/BPO Systems with Low Pressure Suction Service Access Gauge Port Valves

NOTE: Normal system conditional requirements must be maintained to properly evaluate refrigerant system pressures. Refer to chart applicable to system under test.

HIGH PRESSURE		LOW PRESSURE	EVAPORATOR PRESSURE	POSSIBLE PROBLEM/COMPONENT
@ LIQUID LINE	@ COMPRESSOR			
HIGH	HIGH	HIGH	HIGH	ENGINE OVERHEATING / EXPANSION VALVE SENSING BULB – Poor Contact, Inadequate Insulation
HIGH	HIGH	HIGH	NORMAL TO HIGH	HEATER WATER VALVE – Insufficient Closure / EVAPORATOR – Too Much Air Flow - Reset Blower to Conditional Requirement / EXPANSION VALVE – Sticking Open
HIGH	HIGH	NORMAL TO HIGH	NORMAL	AIR IN REFRIGERANT SYSTEM
HIGH	HIGH	NORMAL	NORMAL	REFRIGERANT – Overcharge
HIGH	HIGH	LOW	LOW	COMPRESSOR-TO-CONDENSER A/C LINE – Restriction; After Service Access Valve
NORMAL TO HIGH	NORMAL TO HIGH	HIGH	HIGH	CONDENSER – Inadequate Air Flow (Bent Fins, Debris, Loose Radiator Fan Belt, Slipping Fan Clutch)
NORMAL TO HIGH	NORMAL TO HIGH	NORMAL TO HIGH	NORMAL TO HIGH	HUMIDITY WELL ABOVE NORMAL
NORMAL TO HIGH	NORMAL TO HIGH	NORMAL TO HIGH	NORMAL	EXCESSIVE REFRIGERANT OIL
NORMAL	NORMAL	NORMAL	LOW	SUCTION THROTTLING VALVE – Sticking Open – May Cause Iced-Up Evaporator, May Be Related to Moisture.
NORMAL TO ERRATIC	NORMAL TO ERRATIC	NORMAL TO ERRATIC	NORMAL TO ERRATIC	MOISTURE IN REFRIGERANT SYSTEM – Affects Expansion Valve and STV Functions.
ERRATIC	ERRATIC	ERRATIC	ERRATIC	EXPANSION VALVE SENSING BULB – Kinked Capillary Tube
NORMAL TO LOW	NORMAL TO LOW	NORMAL TO LOW	NORMAL	EVAPORATOR Restriction, Inadequate Air Flow - Reset Blower to Conditional Requirement and/or Confirm Blower Condition
LOW	HIGH	LOW	LOW	RECEIVER/DRIER Restriction / A/C LIQUID LINE – Restriction; Before Service Access Valve CONDENSER – Restriction
LOW	LOW	HIGH	NORMAL TO HIGH	A/C SUCTION LINE Restriction; After Service Access Valve SUCTION ACCUMULATOR Restriction; After Service Access Valve
LOW	LOW	HIGH	HIGH	COMPRESSOR Damaged Valves (Inadequate compression)
LOW	LOW	LOW	HIGH	SUCTION THROTTLING VALVE – Sticking Closed - May Be Related to Moisture
LOW	LOW	LOW	NORMAL TO HIGH	A/C SUCTION LINE - Restriction; Before Service Access Valve / SUCTION ACCUMULATOR – Restriction; Before Service Access Valve
LOW	LOW	LOW	LOW	EVAPORATOR - Iced-up / CONDENSER – Plugged / RECEIVER/DRIER – Plugged / A/C LIQUID LINE - Restriction; After Service Access Valve / EXPANSION VALVE SENSING BULB Perforated Bulb / EXPANSION VALVE Sticking Closed / REFRIGERANT LEAK AND/OR UNDERCHARGE COMPRESSOR-TO-CONDENSER A/C LINE - Restriction; Before Service Access Valve

**ADDITIONAL POSSIBLE PROBLEM COMPONENTS
ASSOCIATED WITH INADEQUATE COMPRESSOR OPERATION**

COMPRESSOR CLUTCH – Slipping / COMPRESSOR DRIVE BELT – Loose / CLUTCH COIL – Shorted Coils; Slipping / CLUTCH COIL – Open Circuit / AMBIENT CUT-OFF SWITCH – Sticking Open / BLOWN CLUTCH CIRCUIT FUSE – Improper Clutch Circuit Contact in Control Assembly Switch.

**ADDITIONAL POSSIBLE PROBLEM COMPONENTS
ASSOCIATED WITH A COMPRESSOR FAILURE**

PRESSURE DIFFERENTIAL VALVE (In Liquid Bleed Line) – Sticking Closed / AMBIENT CUT-OFF SWITCH – Sticking Closed / SUCTION THROTTLING VALVE – Sticking Open / REFRIGERANT LEAK

CL2624-2A

FIG. 16 Problem Refrigerant System Pressure Evaluation

ADJUSTMENTS

SENSOR CALIBRATION

1. Remove the instrument panel pad and visually determine which direction to rotate the sensor calibration locking pin (Fig. 17).
2. While moving the temperature control lever, rotate the calibration locking pin into the calibration notch of the sensor control arm.
3. Check the position of the temperature control lever, it should be at 75. If it is not, loosen the cable housing-to-sensor attaching screw and move the temperature control lever to 75 while the sensor control arm is locked in the calibration position. Retighten the cable housing-to-sensor attaching screw, making sure the temperature control stays at 75 and the sensor arm stays locked.

Readjusting Sensor Calibration Point

If it should become necessary to change the calibration point to suit a customer, first check the sensor calibration as described in the above procedure. If OK, use the following procedure:

1. Establish the customers preference and the difference between the present and desired comfort level setting.
2. Determine the direction of change.
3. To decrease or increase, adjust the temperature control lever position with the sensor arm locked in

the calibration notch. Loosen the cable housing-to-sensor attaching screw, move the temperature control lever the desired amount and retighten the attaching screw (Fig. 17).

NOTE: Move the temperature control lever **HIGHER** to **DECREASE** and **LOWER** to **INCREASE** the controlled temperature at a given setting.

CAUTION: If a readjustment of the temperature control lever of more than 4°F. is required, and the cable adjustment is correct, per Sensor Calibration Procedure above, replace the sensor assembly.

SERVO MOTOR

1. Remove vacuum from the servo motor by disconnecting the tan vacuum hose.
2. Loosen the two (2) retaining screws (Fig. 18).
3. Carefully slide the motor forward (into the housing) until the blend door seal just contacts its stop (full heat). Continue to slide the motor forward another 1/8 inch (3.2 mm). The diaphragm should move into the motor housing about 1/8 inch (3.2 mm).
4. Tighten the two retaining screws.
5. Connect the tan vacuum hose.

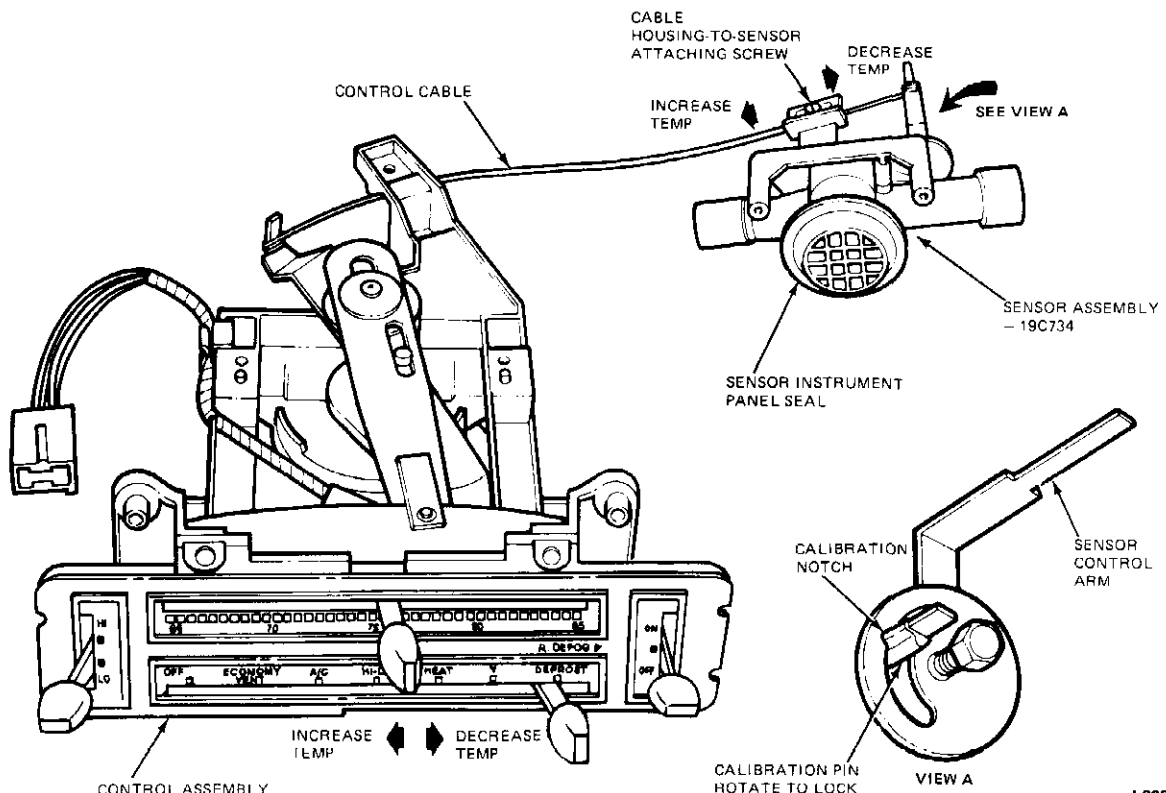


FIG. 17 A.T.C. System Temperature Calibration

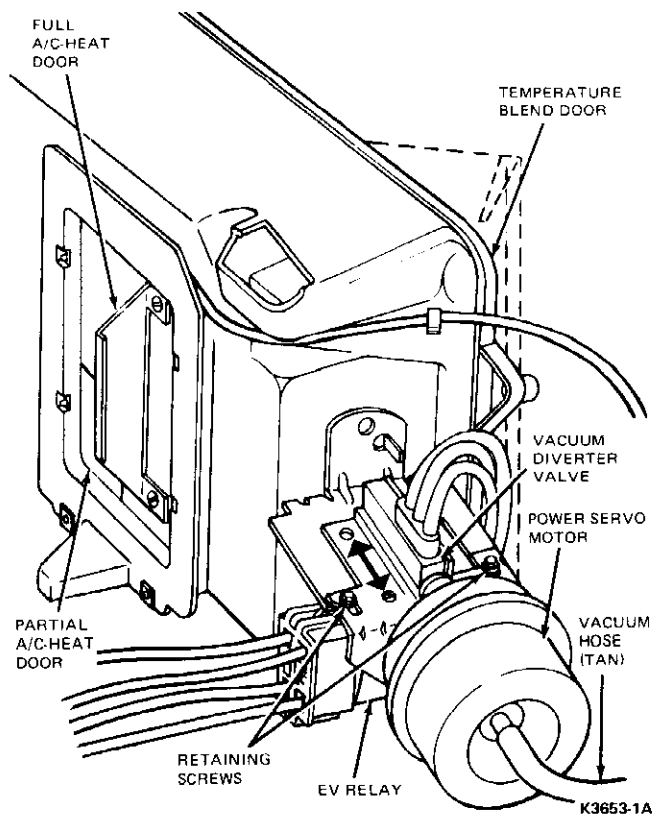


FIG. 18 1978 Ford, Mercury and Lincoln Continental ATC Servo Assembly Adjustment

COMPRESSOR DRIVE BELT TENSION

5.0L (302 CID), 5.7L (351 CID) and 6.6L (400 CID) Engines

1. Check the belt tension with Tool T63L-8620-A or equivalent. The belt tension should be within specifications.
2. If the belt tension is not within specification, loosen the two idler pulley arm attaching bolts until they are just snug (Figs. 19, 20, and 21).
3. Insert the end of a 1/2 inch flex-handle into the square hole in the idler arm and apply pressure to the idler arm with the flex handle until the belt tension is within specifications. Then, tighten the idler arm attaching bolts while holding pressure on the idler arm. Again check the belt tension and tighten the idler arm attaching bolts to the specified torque.
4. Remove the belt tension gauge and the flex handle.

7.5L (460 CID) Engine

1. Check the belt tension with Tool T63L-8620-A or equivalent. The belt tension should be within specifications.
2. If the belt tension is not within specification, loosen the compressor adjusting bolt and the two pivot bolts (Figs. 22 and 23) until they are just snug.
3. Insert the end of a 1/2 inch flex handle into the square hole in the brace at the front of the compressor (Figs. 22 and 23). Apply pressure to the brace with the flex handle until the belt tension is within specification. Then, tighten the adjusting bolt.
4. Again check the belt tension. If it is within specification, tighten the two pivot bolts and the adjusting bolt to specifications.
5. Remove the belt tension gauge and the flex handle.

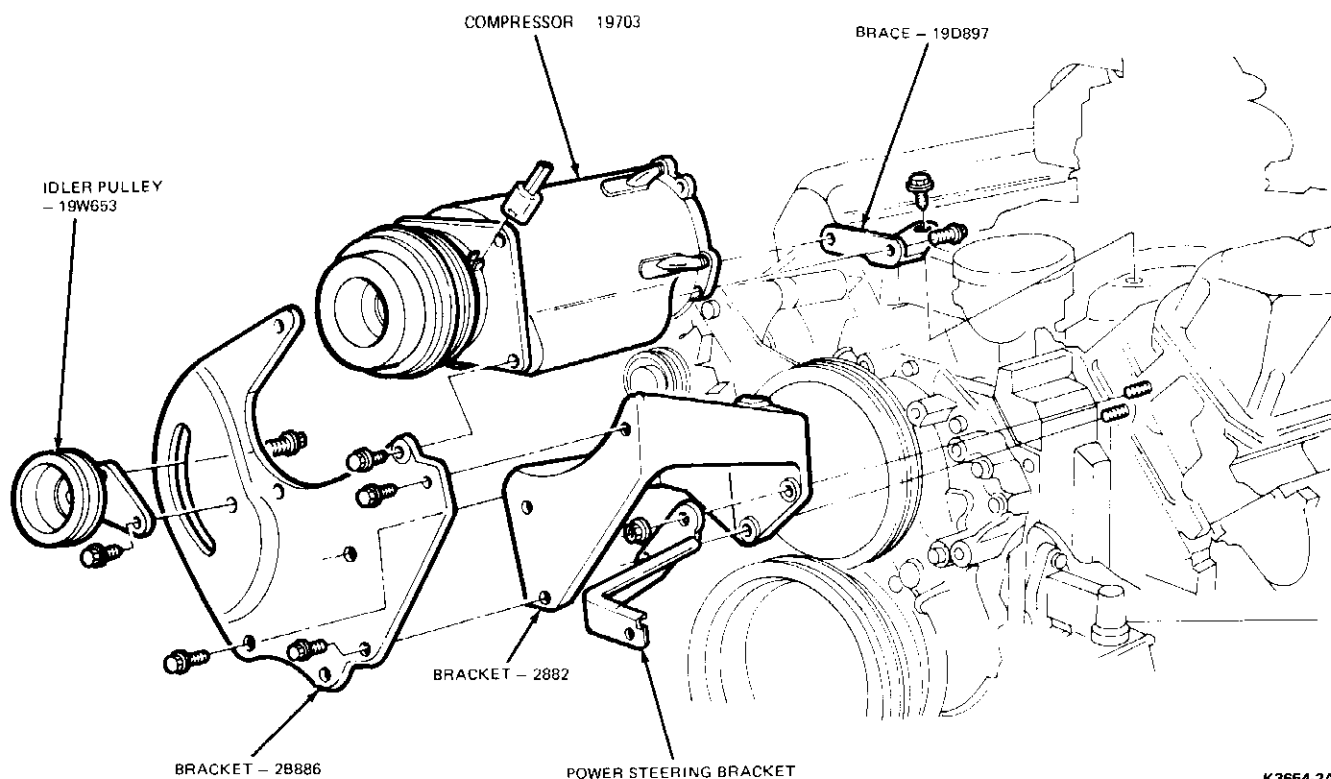


FIG. 19 Compressor Installation — 5.7L (351-M CID) and 6.6L (400 CID) Engines — Early Production

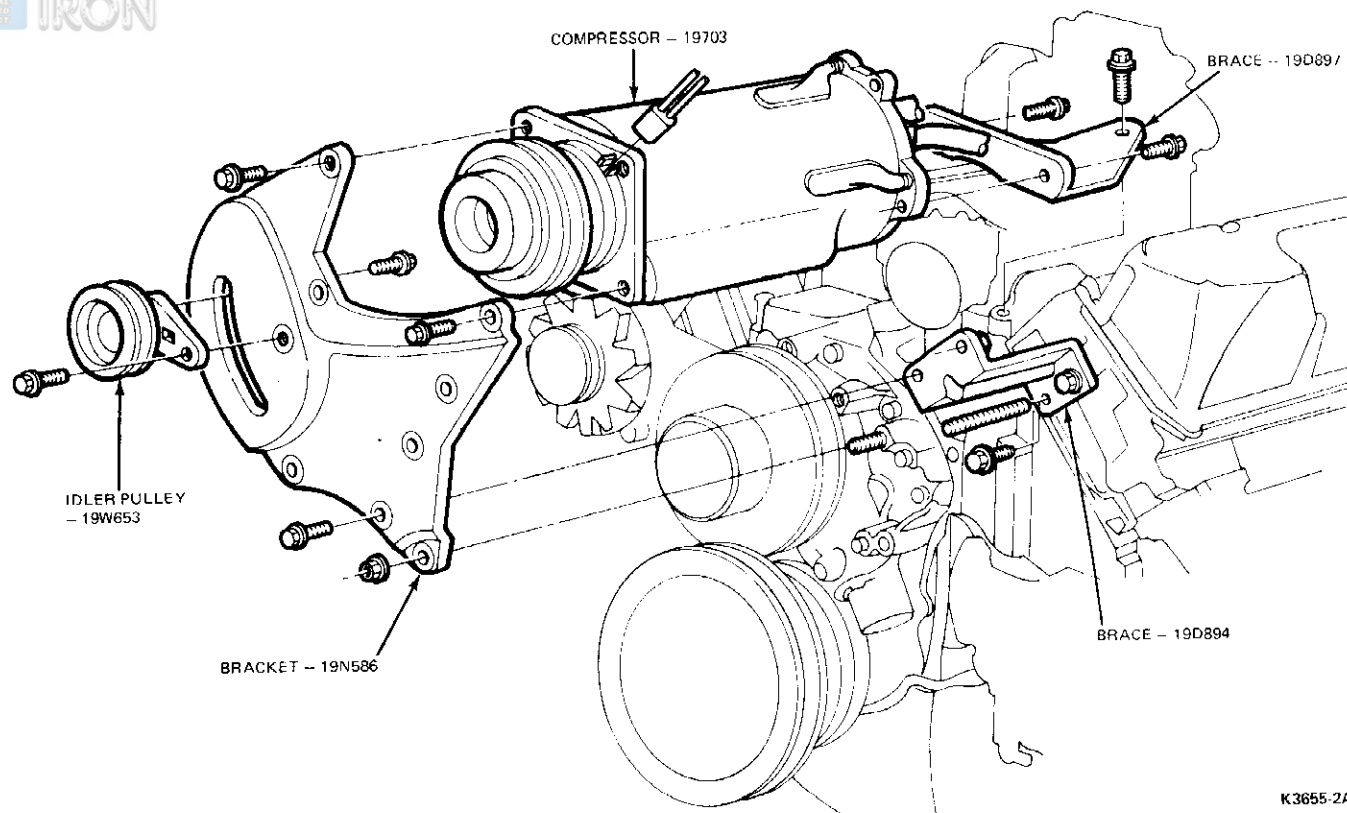


FIG. 20 Compressor Installation — 5.7L (351-M CID) and 6.6L (400 CID) Engines — Later Production

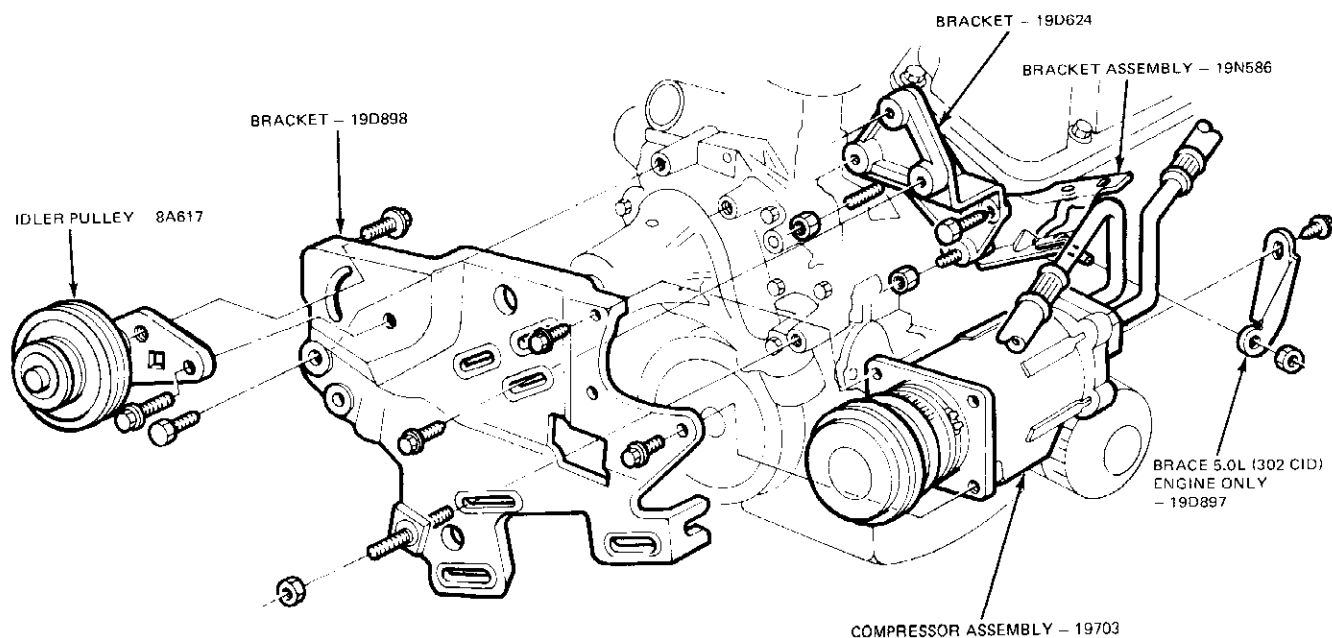


FIG. 21 Compressor Installation — 5.0L (302 CID) and 5.7L (351-W CID) Engines

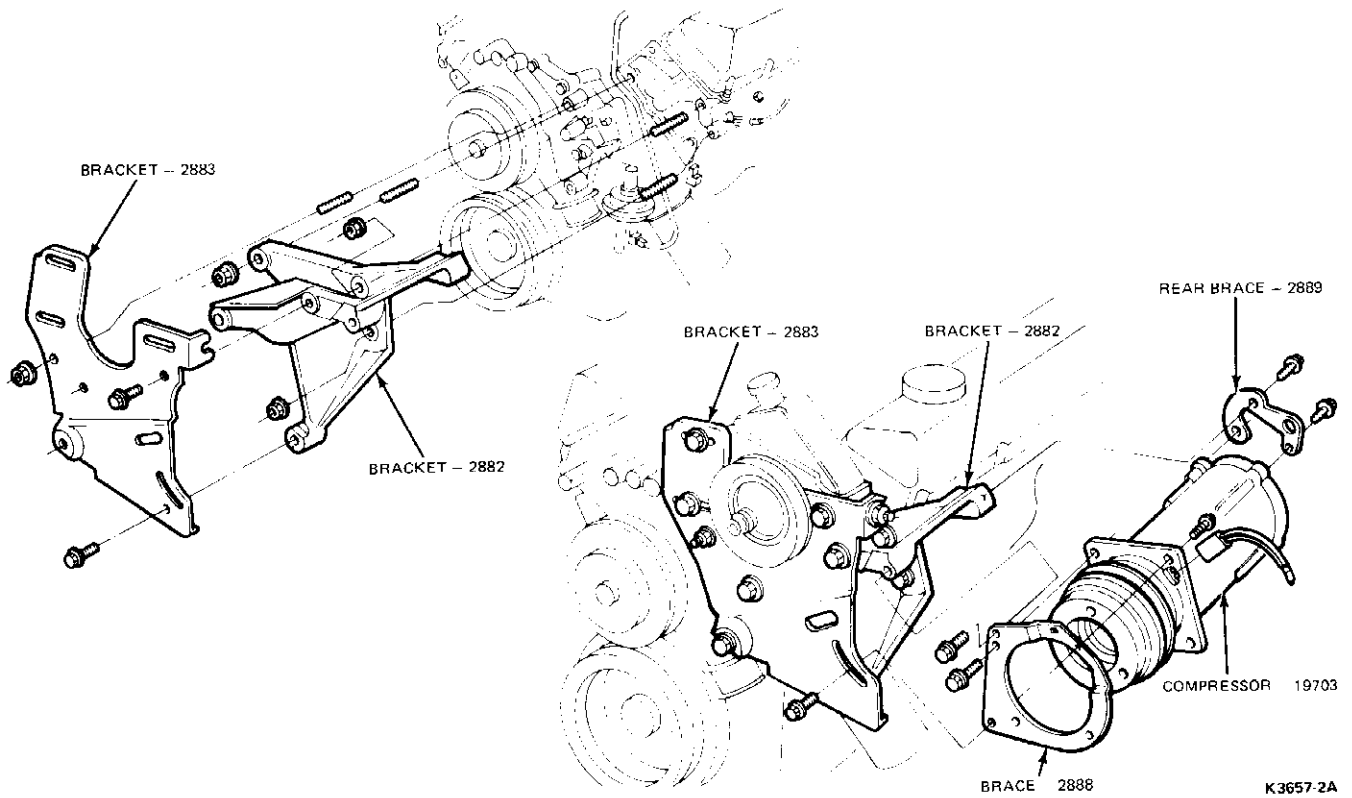


FIG. 22 Compressor Installation — Lincoln Continental with 7.5L (460 CID) Engine

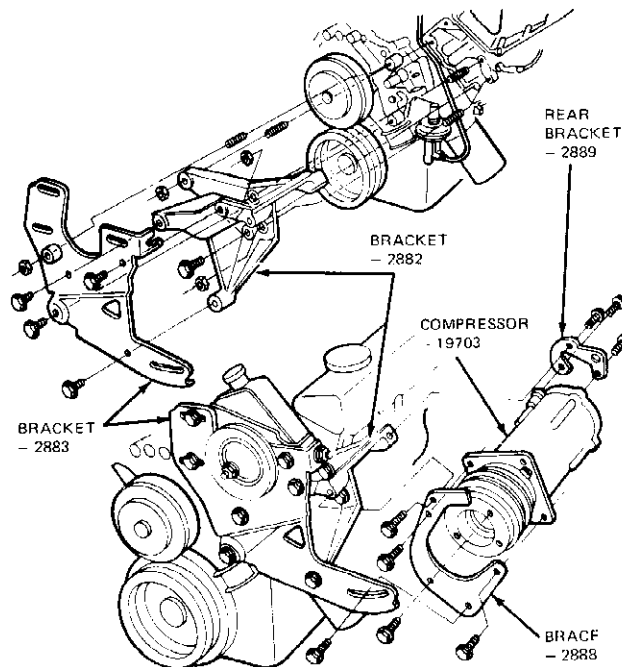


FIG. 23 Compressor Installation — Ford and Mercury with 7.5L (460 CID) Engine

REMOVAL AND INSTALLATION

CONTROL ASSEMBLY

Removal

1. Remove the radio knobs (4) from the radio.
2. Remove the retaining screws (2) securing the right instrument cluster trim panel to the instrument panel.
3. Pull the lower edge of the right instrument cluster trim panel away from the instrument panel and disengage the top right instrument cluster trim panel tabs (2) from the instrument panel. Put the instrument cluster trim panel, radio knobs and trim panel retaining screws aside for later installation.
4. Remove the ash tray from the ash tray support bracket.
5. Remove the retaining screws (3) securing the ash tray support bracket to the instrument panel and remove the ash tray support bracket.
6. Disconnect the multiple vacuum connector from the rear of the function control vacuum selector valve (Fig. 24).
7. Disconnect the electrical wire harness connectors (2) from the function control vacuum selector valve.
8. Disconnect the electrical wire harness connectors from the blower switch and the accessory switch (if applicable).
9. Remove the retaining screws (4) securing the control assembly to the instrument panel.
10. Pull the control assembly out of the instrument panel for access to the temperature control cable assembly retaining screw (1).

11. Remove the retaining screw (1) securing the temperature control cable assembly to the control assembly and remove the control assembly.

Installation

1. Position the control assembly near the instrument panel opening and slip the wire coil of the temperature control cable assembly onto the temperature lever arm.
2. Position the temperature control cable housing on the control assembly, install and tighten the control cable housing end tab retaining screw (1).
3. Position the control assembly into the instrument panel opening, install and tighten the control assembly-to-instrument panel retaining screws (4).
4. Install the blower switch and accessory switch (if applicable) electrical wire harness connectors.
5. Install the function vacuum selector control valve electrical wire harness connectors (2).
6. Install the multiple vacuum connector onto the function vacuum selector control valve.
7. Insert the top right instrument cluster trim panel tabs (2) into the tab slots at the top of the instrument panel, lower the trim panel into position and install the right instrument cluster trim panel-to-instrument panel retaining screws (2). Tighten the retaining screws to specification.
8. Align and install the radio control knobs (4).

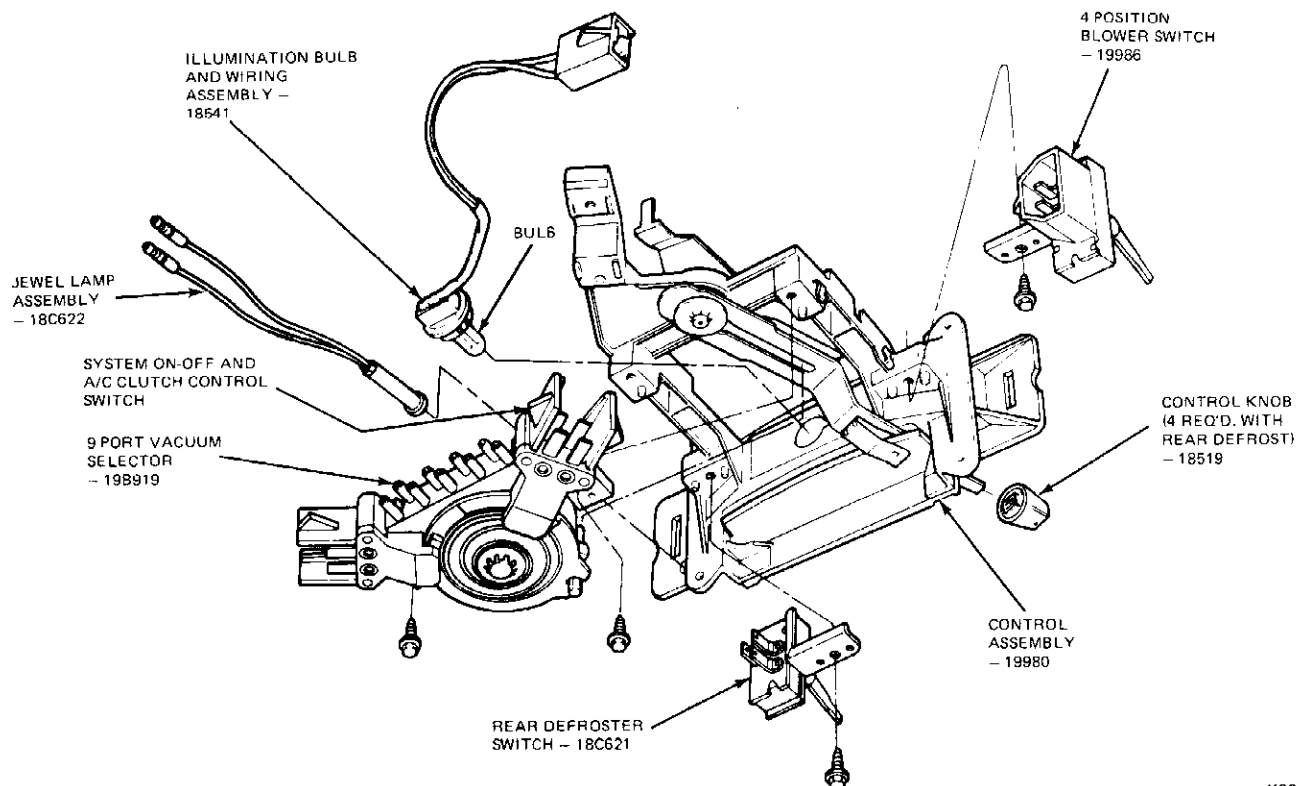


FIG. 24 ATC Control Assembly Disassembled

9. Position the ash tray support bracket, install and tighten the ash tray-to-instrument panel retaining screws (3).
10. Insert the ash tray into the guide tracks of the ash tray support bracket and install the ash tray.
11. Test the ATC system for proper operation.

BLOWER AND/OR ACCESSORY SWITCH(ES)

Removal

1. Remove the ash tray from the ash tray support bracket.
2. Remove the retaining screws (3) securing the ash tray support bracket to the instrument panel and remove the ash tray support bracket for access.
3. Disconnect the electrical wire harness connector(s) from the blower and/or accessory switch(es).
4. Depress the locking tang(s) securing the control knob(s) onto the switch(es) arm(s) and remove the blower and/or accessory control knob(s).
5. Remove the retaining screw (1) securing the blower and/or accessory switch(es) assembly(ies) to the control assembly and remove the switch(es) from behind the instrument panel (Fig. 24).

Installation

1. Insert the switch(es) shaft through the slotted opening and position the blower and/or accessory switch onto the control assembly.
2. Install and tighten the blower and/or accessory switch(es)-to-control assembly retaining screw.
3. Install the electrical wire harness connector(s) until the connector fully engages the spade terminals of the blower and/or accessory switch(es).
4. Install the blower and/or accessory control knob(s).
5. Position the ash tray support bracket, install and tighten the ash tray-to-instrument panel retaining screws (3).
6. Insert the ash tray into the guide tracks of the ash tray support and install the ash tray.
7. Operate the blower and/or accessory switch(es) to test for proper function.

FUNCTION CONTROL VACUUM SELECTOR VALVE

Removal

1. Remove the ash tray from the ash tray support bracket.
2. Remove the retaining screws (3) securing the ash tray support bracket to the instrument panel and remove the ash tray support bracket for access.
3. Disconnect the multiple vacuum connector from the function control 9-Port vacuum selector valve (Fig. 24).
4. Disconnect the electrical wire harness connectors (2) from the function control vacuum selector valve.
5. Remove the retaining screws (2) securing the function control vacuum selector valve to the control assembly and remove the function control vacuum selector valve.

Installation

1. Align the function lever slot with the pin on the function control vacuum selector valve, position the alignment pins of the control assembly with the alignment holes on the selector valve body and install the function control vacuum selector valve-to-control assembly retaining screws (2). Tighten the screws to specification.
2. Install the electrical wire harness connectors (2).
3. Install the multiple vacuum connector.
4. Position the ash tray support bracket, install and tighten the ash tray-to-instrument panel retaining screws (3).
5. Insert the ash tray into the guide tracks of the ash tray support bracket and install the ash tray.
6. Operate the function control lever to test the function control vacuum selector valve for proper function.

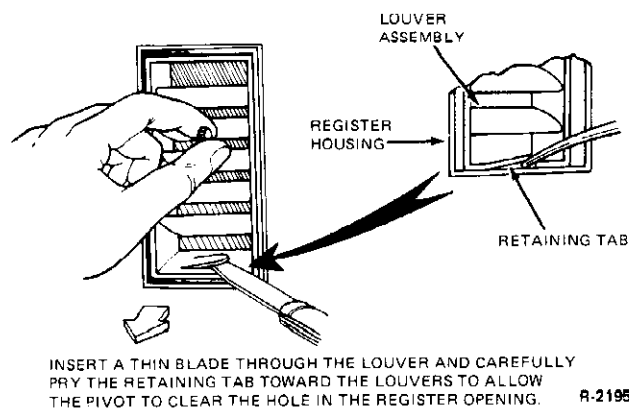


FIG. 25 Instrument Panel Register Removal

REGISTER ASSEMBLIES

Removal

1. Insert a thin blade under the retaining tab (Fig. 25) and pry the retaining tab toward the louvers until the retaining tab pivot clears the hole in the register opening.
2. Pull the register assembly end out from the housing only enough to prevent the pivot from going back into the pivot hole.
3. Repeat Step 1 for the other retaining tab and pull the register assembly from the register opening.

Installation

The pivots on each end of the register assembly are different diameters and therefore determine the installed position of the register assembly.

1. Position the register assembly into the opening with the largest diameter pivot near the largest pivot hole.

2.

Depress the retaining tabs, push the register assembly into the register opening and engage the retaining tab pivots in the pivot holes.

A/C REGISTER DUCTS

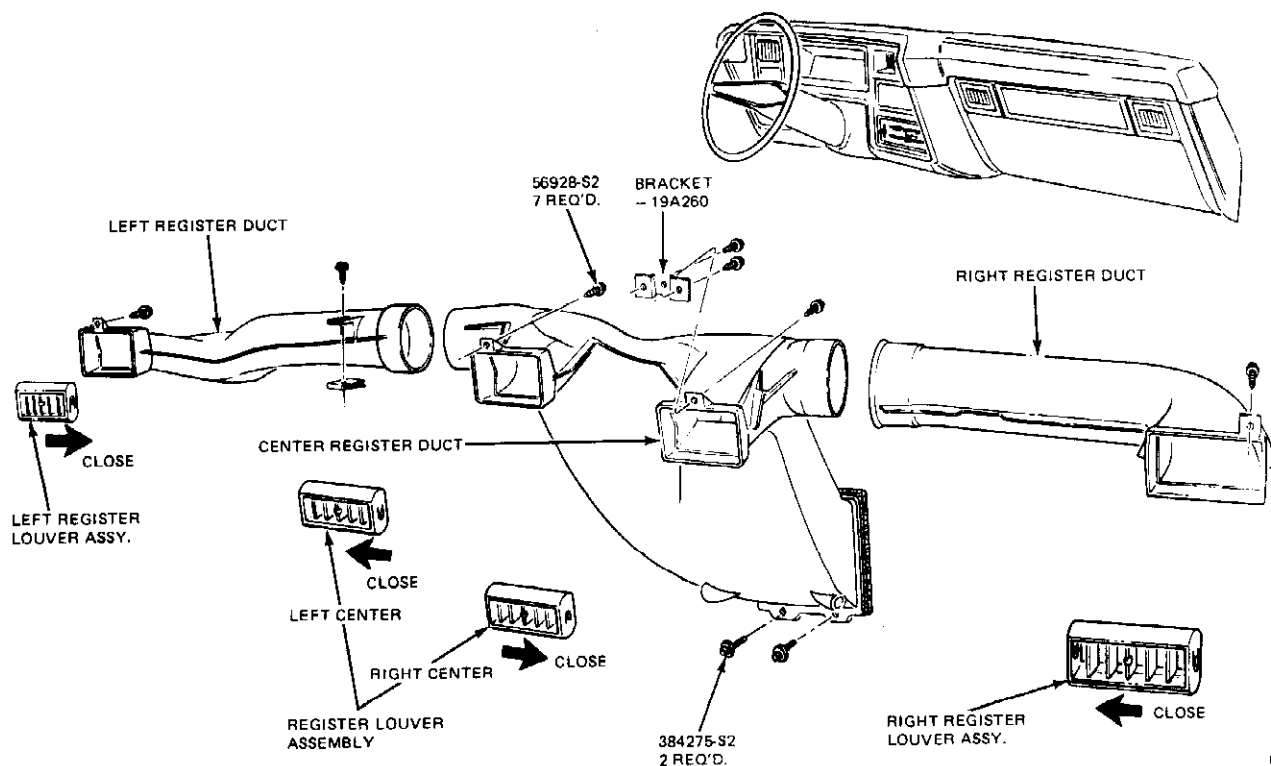
Removal

1. Disconnect the ground cable from the battery.
2. Remove the pad from the instrument panel.
3. Remove two screws attaching the steering column opening lower cover to the instrument panel and remove the cover.
4. Remove the steering column support bracket and lay the steering column against the seat.

5. Remove the instrument panel attaching bolts and lay the instrument panel back on the seat. Disconnect wires, vacuum hoses, speedometer cable and other components as necessary to lay the instrument panel on the front seat.
6. Remove five screws attaching the register ducts to the instrument panel (Figs. 26 and 27). On Lincoln and Mercury models, remove one screw attaching the right duct to the center duct (Fig. 27). Then, remove the register ducts.

Installation

1. Position the register ducts to the instrument panel and install the attaching screws. (Fig.
2. Position the instrument panel near the dash panel and connect all the inter-connecting components. Then, install the instrument panel attaching bolts.
3. Secure the steering column to the support and install the steering column opening lower cover.
4. Install the instrument panel pad and connect the ground cable to the battery.



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FIG. 26 1978 Ford A/C Register Ducts and Registers

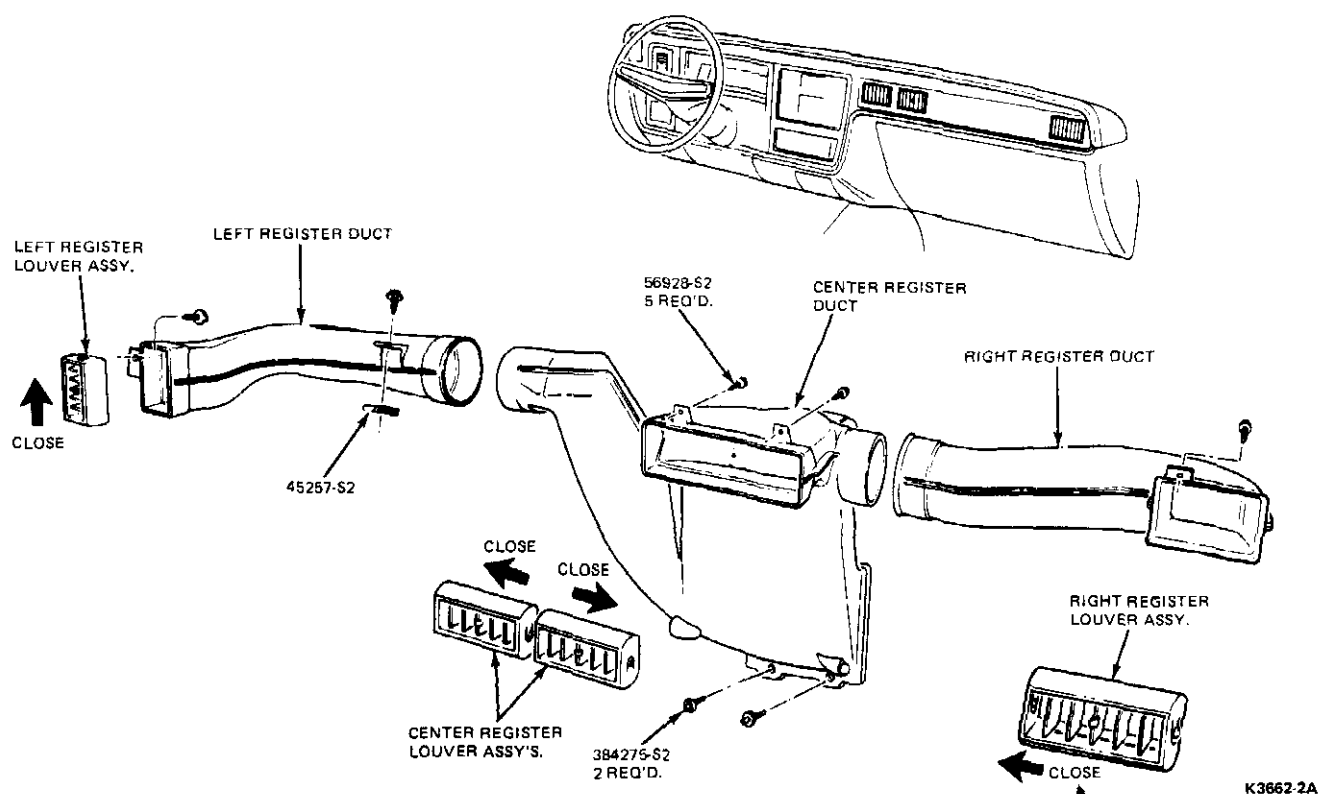


FIG. 27 1978 Mercury and Lincoln Continental A/C Register Ducts and Registers

DEFROSTER NOZZLES

Removal

1. Disconnect the battery ground cable.
2. Remove the instrument panel pad.
3. To remove the right defroster nozzle, remove two screws attaching the nozzle to the dash panel and one screw attaching the nozzle to the duct (Fig. 28).
4. To remove the left defroster nozzle, loosen the Y-brace near the cluster. Then, remove two screws attaching the defroster nozzle to the dash panel and one screw attaching the nozzle to the duct.
5. Separate the defroster nozzle from the duct and remove the nozzle through the instrument panel pad opening.

Installation

1. Position the defroster nozzle to the dash panel and the defroster duct. Install two screws to attach the defroster nozzle to the dash panel and one screw to attach the nozzle to the defroster duct.
2. Tighten the brace near the cluster if it was loosened for removal of the left defroster duct.
3. Install the instrument panel pad and connect the ground cable to the battery.

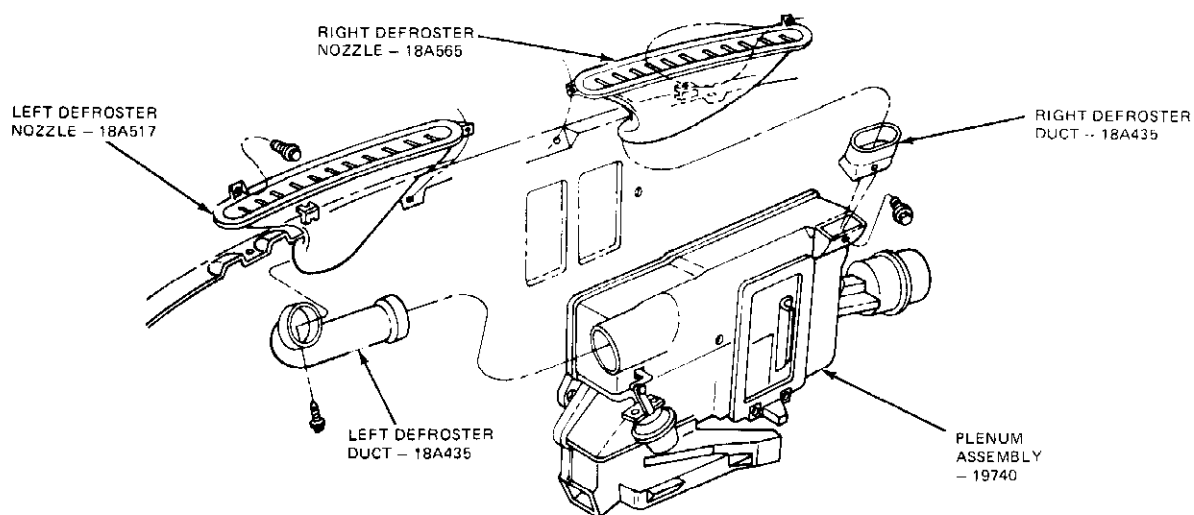
INSTRUMENT PANEL PAD-FORD

Removal

1. Using a magnetic or locking tang-type phillips screwdriver, remove the retaining screws (2) securing the leading edge of the upper finish panel to the defroster openings (Fig. 29).

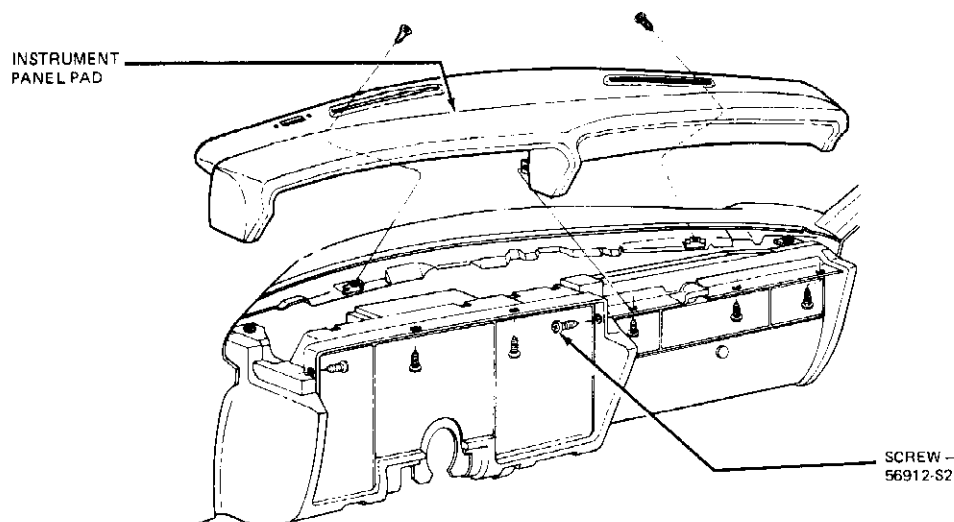
CAUTION: CARE SHOULD BE TAKEN TO PREVENT RETAINING SCREW LOSS IN THE DEFROSTER OUTLET OPENINGS. DAMAGE TO THE PLENUM DOORS MAY OCCUR, RESULTING IN CASE ASSEMBLY REMOVAL AND DISASSEMBLY FOR PROBLEM CORRECTION.

2. Remove the retaining screws (3) securing the instrument panel pad to the instrument panel, above the glove box door.
3. Remove the retaining screws (4) securing the instrument panel pad to the instrument panel, around the top of the instrument cluster.
4. Raise the brow edge the instrument panel pad and carefully remove the instrument panel pad and upper finish panel assembly from the vehicle.



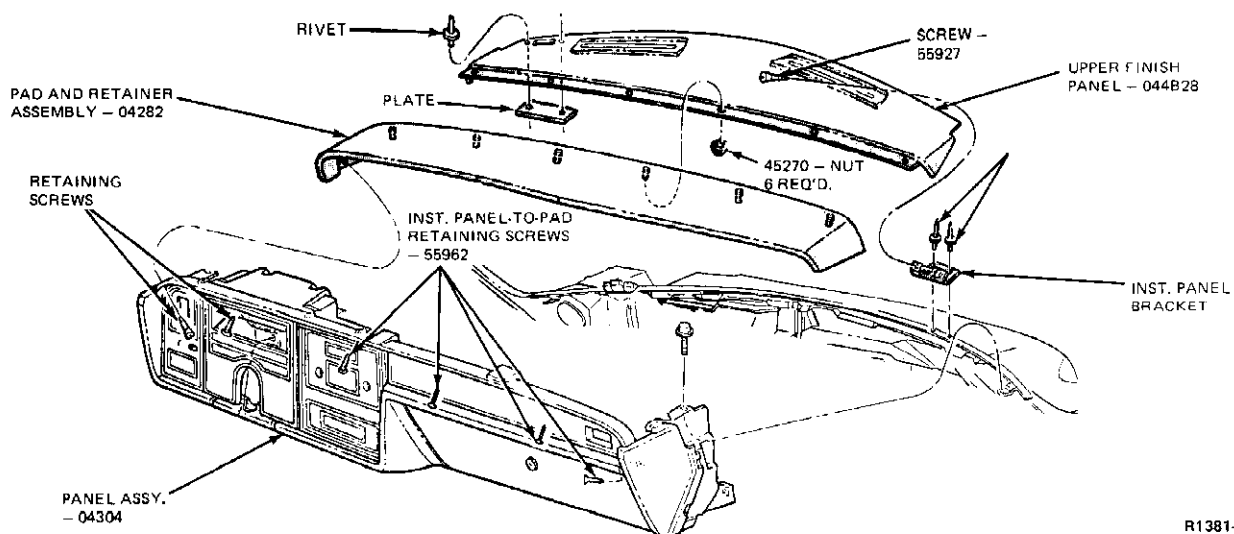
K3663-1A

FIG. 28 Defroster Nozzle Removal



K3691-2A

FIG. 29 Instrument Panel Pad Removal - Ford



R1381-2D

FIG. 30 Instrument Panel Pad Removal - Mercury and Lincoln Continental

Installation

1. Carefully position the instrument panel pad and upper finish panel assembly onto the instrument panel (Fig. 29).
2. Using a magnet or locking tang-type phillips screwdriver, loosely install the upper finish panel retaining screws (2) in the retaining screw holes of the defroster outlet openings.

CAUTION: CARE SHOULD BE TAKEN TO PREVENT RETAINING SCREW LOSS IN THE DEFROSTER OUTLET OPENINGS. DAMAGE TO THE PLENUM DOORS MAY OCCUR, RESULTING IN CASE ASSEMBLY REMOVAL AND DISASSEMBLY FOR PROBLEM CORRECTION.

3. Loosely install the retaining screws (4) securing the instrument panel pad to the instrument panel, around the tip of the instrument cluster.
4. Loosely install the retaining screws (3) securing the instrument panel pad to the instrument panel, above the glove box door.
5. Secure the instrument panel pad and upper finish panel in position by tightening the retaining screws (9) described in Steps 2, 3 and 4 to specifications.

**INSTRUMENT PANEL PAD—
MERCURY AND LINCOLN****Removal**

1. Using a magnetic or locking tang-type phillips screwdriver, remove the retaining screws (2) securing the leading edge of the upper finish panel to the defroster openings (Fig. 30)

CAUTION: CARE SHOULD BE TAKEN TO PREVENT RETAINING SCREW LOSS IN THE DEFROSTER OUTLET OPENINGS. DAMAGE TO THE PLENUM DOORS MAY OCCUR, RESULTING IN CASE ASSEMBLY REMOVAL AND DISASSEMBLY FOR PROBLEM CORRECTION.

2. Remove the retaining screws (4) securing the instrument panel pad to the instrument panel, along the top edge of the instrument panel.
3. Remove the retaining screws (2) securing the instrument panel pad to the instrument panel, at the ends of the top edge of the instrument panel.
4. Raise the brow edge of the instrument panel pad and carefully remove the instrument panel pad and upper finish panel assembly from the vehicle.

Installation

1. Carefully position the instrument panel pad and upper finish panel assembly onto the instrument panel (Fig. 30)

2. Using a magnet or locking tang-type phillips screwdriver, loosely install the upper finish panel retaining screws (2) in the retaining screw holes of the defroster outlet openings.

CAUTION: CARE SHOULD BE TAKEN TO PREVENT RETAINING SCREW LOSS IN THE DEFROSTER OUTLET OPENINGS. DAMAGE TO THE PLENUM DOORS MAY OCCUR, RESULTING IN CASE ASSEMBLY REMOVAL AND DISASSEMBLY FOR PROBLEM CORRECTION.

3. Loosely install the retaining screws (4) securing the instrument panel pad to the instrument panel, along the top edge of the instrument panel.
4. Loosely install the retaining screws (2) securing the instrument panel pad to the instrument panel, at the ends of the top edge of the instrument panel.
5. Secure the instrument panel pad and upper finish panel in position by tightening the retaining screws (8) described in Steps 2, 3 and 4 to specifications.

SENSOR ASSEMBLY**Removal**

1. Remove the instrument panel pad for access to the sensor assembly.
2. Carefully, disconnect the inlet air elbow and hose, the vacuum connector and control cable.
3. Remove the retaining screws (2) securing the sensor assembly (sensor and bracket on Mercury and Lincoln) to the instrument panel and remove the sensor assembly (Fig. 31).

Installation

1. Rotate the sensor control arm to the mid-position and turn the calibration pin to the locked calibration position.
2. Position the sensor assembly in the mounted position behind the instrument panel and install the sensor-to-instrument panel retaining screws (2). Tighten the retaining screws to specification.
3. Snap the inlet air elbow and hose onto the sensor housing.
4. Install the vacuum hose connector. Check to be certain the locking tangs are fully engaged.
5. Slip the control cable wire and loop over the sensor control arm.
6. Position the control cable housing tab onto the sensor and loosely install the retaining screw.
7. Move the Temperature control lever to 75, while the sensor control arm remains locked in the calibration position, then tighten the cable housing-sensor retaining screw.
8. Check the system for proper operation.

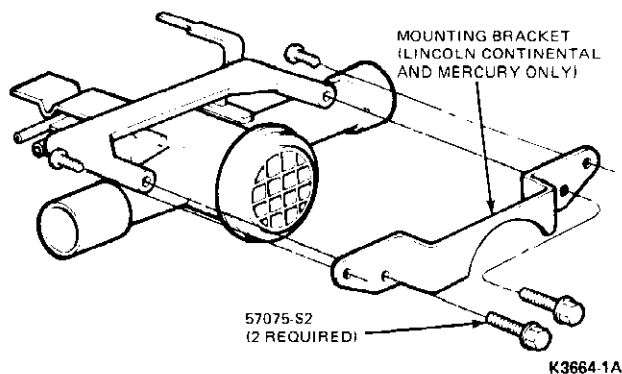


FIG. 31 ATC Sensor Assembly

ATC SENSOR SEALS

MERCURY AND LINCOLN

A seal is used at the ATC Sensor opening on Mercury and Lincoln models. The two piece seal is located between the instrument panel and the trim panel as shown in Fig. 32 to prevent the sensor from drawing air from behind the instrument panel.

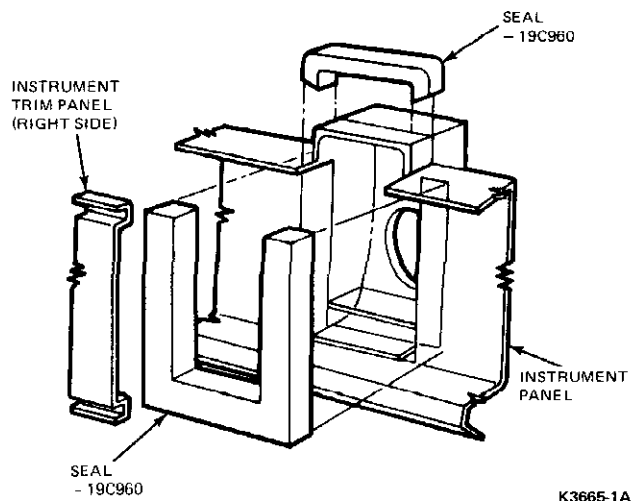


FIG. 32 Installation of 1978 Mercury and Lincoln Continental ATC Sensor Seals

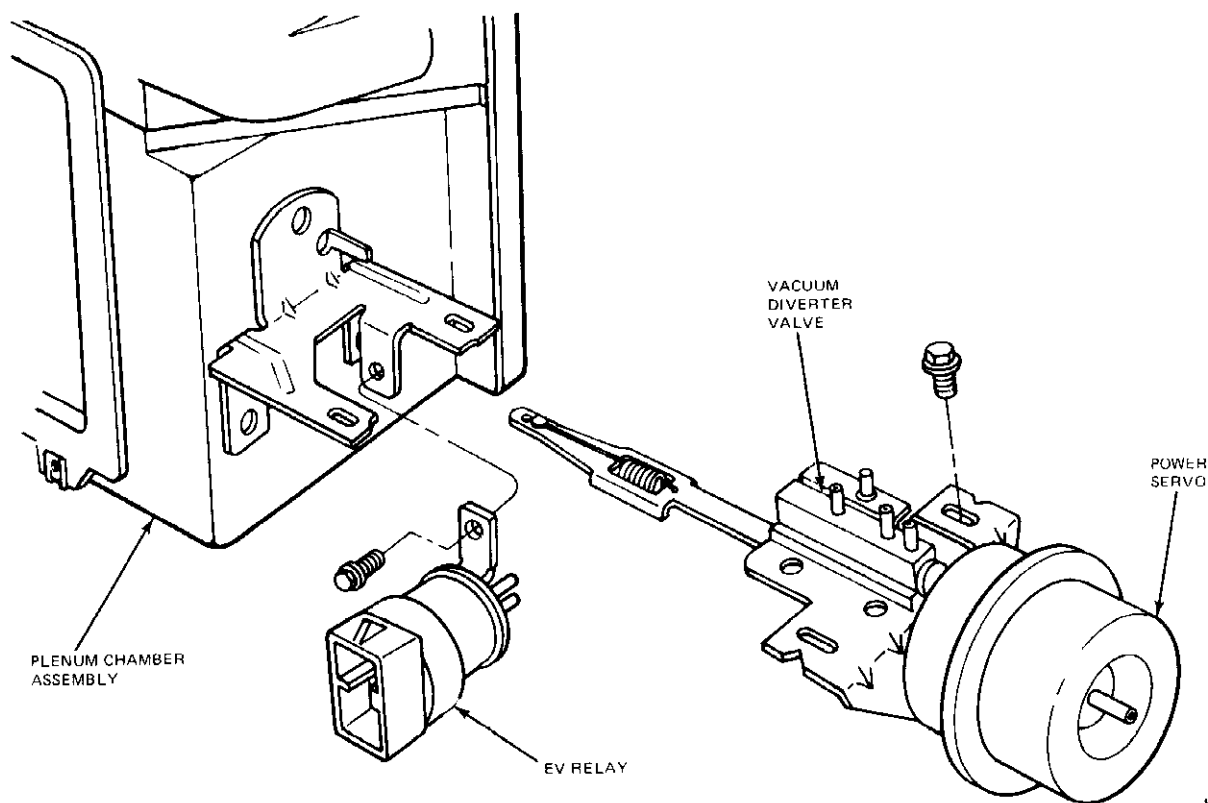
SERVO ASSEMBLY

Removal

1. Remove the Center A/C Distribution Duct for preliminary access to the Servo Motor Arm-to-Temperature Blend Door connecting pin.
2. Disconnect the blue and orange vacuum hoses from the full (blue) and partial (orange) A/C-Heat Door vacuum motors.
3. Using a tee connector and a hand vacuum pump, evacuate both full and partial A/C-Heat Door vacuum motors to provide final access to the Servo Motor Arm-to-Temperature Blend Door connecting pin.
4. Loosen the two (2) Servo Motor-to-Mounting Bracket retaining screws (Fig. 33) to relieve the pressure on the connecting pin and remove the connecting pin to separate the door arm from the servo link and overtravel spring.
5. Remove the tan vacuum hose from the servo motor.
6. Remove the Servo Motor-to-Mounting Bracket retaining screws (2), pull the servo motor away from the plenum to clear the arm and lower for access to the vacuum diverter valve.
7. Remove the push-nut securing the multiple vacuum connector to the servo motor vacuum diverter valve and disconnect the vacuum connector.
8. Remove the servo motor assembly.

Installation

1. Install the multiple vacuum connector on the vacuum diverter valve and secure with a new push nut.
2. Slide the servo motor arm into the opening of the plenum, position and loosely install the servo motor-to-mounting bracket retaining screws (2).
3. Align the holes of the temperature blend door arm with the eye of the servo motor link and overtravel spring and insert the connecting pin.
4. Carefully slide the servo motor forward on the mounting bracket until the blend door seal just contacts its stop (full heat). Continue to slide the motor forward approximately 1/8 inch (3.2mm). The diaphragm should move into the servo motor housing about 1/8 inch (3.2mm).
5. Tighten the servo motor retaining screws (2).
6. Disconnect the tee connector and hand vacuum pump from the partial and full A/C-Heat Door vacuum motors.
7. Connect the partial (orange) and full (blue) vacuum hoses to their respective A/C-Heat Door vacuum motors.
8. Connect the tan vacuum hose to the servo motor.
9. Install the center A/C Distribution Duct.
10. Test the ATC System for proper operation.



K3666-2A

FIG. 33 ATC Servo Assembly Removal — 1978 Ford, Mercury and Lincoln Continental

E. V. RELAY

Removal

1. Remove the retaining screw securing the E. V. Relay to the servo motor mounting bracket and pull the E. V. Relay out for access to the vacuum and electrical connectors (Fig. 33).
2. Remove the push-nut, securing the vacuum harness connector onto the E. V. Relay, and disconnect the vacuum harness connector.
3. Carefully exert outward pressure on the locking tabs, securing the electrical wire harness connector onto the E. V. Relay, and disconnect the electrical connector.

Installation

1. Install the vacuum harness connector on the E. V. Relay and secure with a new push nut.
2. Install the electrical wiring harness connector. Be sure the locking tabs are fully engaged.
3. Position the E. V. Relay on the servo motor mounting bracket and install and tighten the retaining screw.

4. Remove the steering column support bracket and lay the steering column against the seat.
5. Remove the instrument panel attaching bolts and lay the instrument panel back on the seat. Disconnect wires, vacuum hoses, speedometer cable and other components as necessary to lay the instrument panel on the front seat.
6. Remove three nuts retaining the plenum chamber to the dash panel (Fig. 34), and disconnect the wires at the connectors. Then, remove the screws attaching the ducts to the plenum and remove the plenum chamber.

Installation

1. Position the plenum and defroster ducts to the dash panel and defroster nozzles. Then, install the three retaining nuts attaching the plenum to the dash panel.
2. Install the two screws attaching the defroster ducts to the defroster nozzles.
3. Position the instrument panel near the dash panel and connect all the inter-connecting components. Then, install the instrument panel attaching bolts.
4. Secure the steering column to the support and install the steering column opening lower cover on the instrument panel.
5. Install the instrument panel pad and connect the ground cable to the battery.

PLENUM CHAMBER

Removal

1. Disconnect the ground cable from the battery.
2. Remove the instrument panel pad.
3. Remove two screws attaching the steering column opening lower cover to the instrument panel and remove the cover.

EVAPORATOR CASE
ASSEMBLY — 19850

NUT AND WASHER
(2 REQ'D.)
— 45333

LEFT DEFROSTER
NOZZLE — 19A517

LEFT DEFROSTER
DUCT — 18A435

NUT AND WASHER
(2 REQ'D.)
— 45333

PLENUM CHAMBER
ASSEMBLY — 19740

SCREW
(3 REQ'D.)
— 386877

RIGHT DEFROSTER
NOZZLE — 18A565

SENSOR HOSE
ASSEMBLY
— 19D888

RIGHT DEFROSTER
DUCT 18A435

"J" NUTS
(2 REQ'D.)
— 45257

NUT AND WASHER
(2 REQ'D.)
— 33795

K3667-2A

FIG. 34 1978 Ford, Mercury and Lincoln Continental ATC System — Exploded

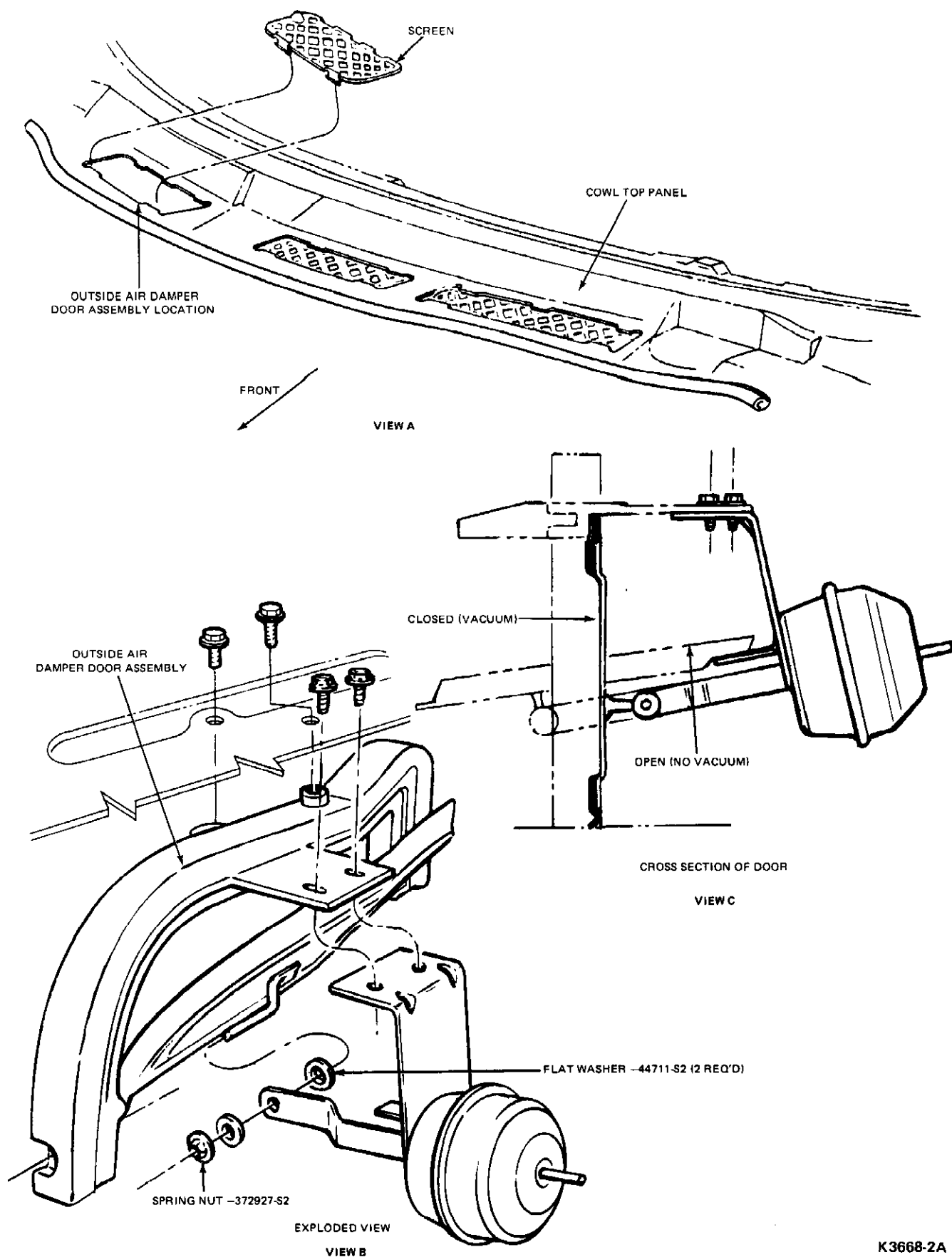
OUTSIDE AIR DOOR VACUUM MOTOR

Removal

1. Remove the right cowl air intake screen located under the hood near the bottom of the windshield (Fig. 35).
2. Remove two screws retaining the outside air door assembly to the cowl panel and lift the assembly from the cowl (Fig. 35).
3. Disconnect the vacuum hose from the vacuum motor.
4. Remove the spring nut and washer retaining the motor arm to the door.
5. Remove two attaching screws and remove the vacuum motor from the air door assembly.

Installation

1. Position the vacuum motor to the airdoor assembly and install the two attaching screws.
2. Connect the motor arm to the door and install the washer and spring nut.
3. Connect the vacuum hose to the vacuum motor.
4. Position the outside air door assembly to the cowl and install the attaching screws.
5. Install the air intake screen.



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FIG 35 Outside Air Door Assembly

RECIRCULATING AIR DOOR VACUUM MOTOR

Removal

1. Remove the sill plate from the right (front) door opening.
2. Remove the right cowl side trim panel (Fig 36).
3. Remove the push nut retaining the vacuum motor arm to the cowl vent assembly.
4. Disconnect the vacuum hose from the vacuum motor.
5. Remove two vacuum motor attaching screws and remove the motor.

Installation

1. Position the motor to the vent assembly and install the two attaching screws.
2. Connect the vacuum motor arm to the vent assembly door and install a new push nut.
3. Connect the vacuum hose to the vacuum motor and install the cowl side trim panel.
4. Install the door opening sill plate.

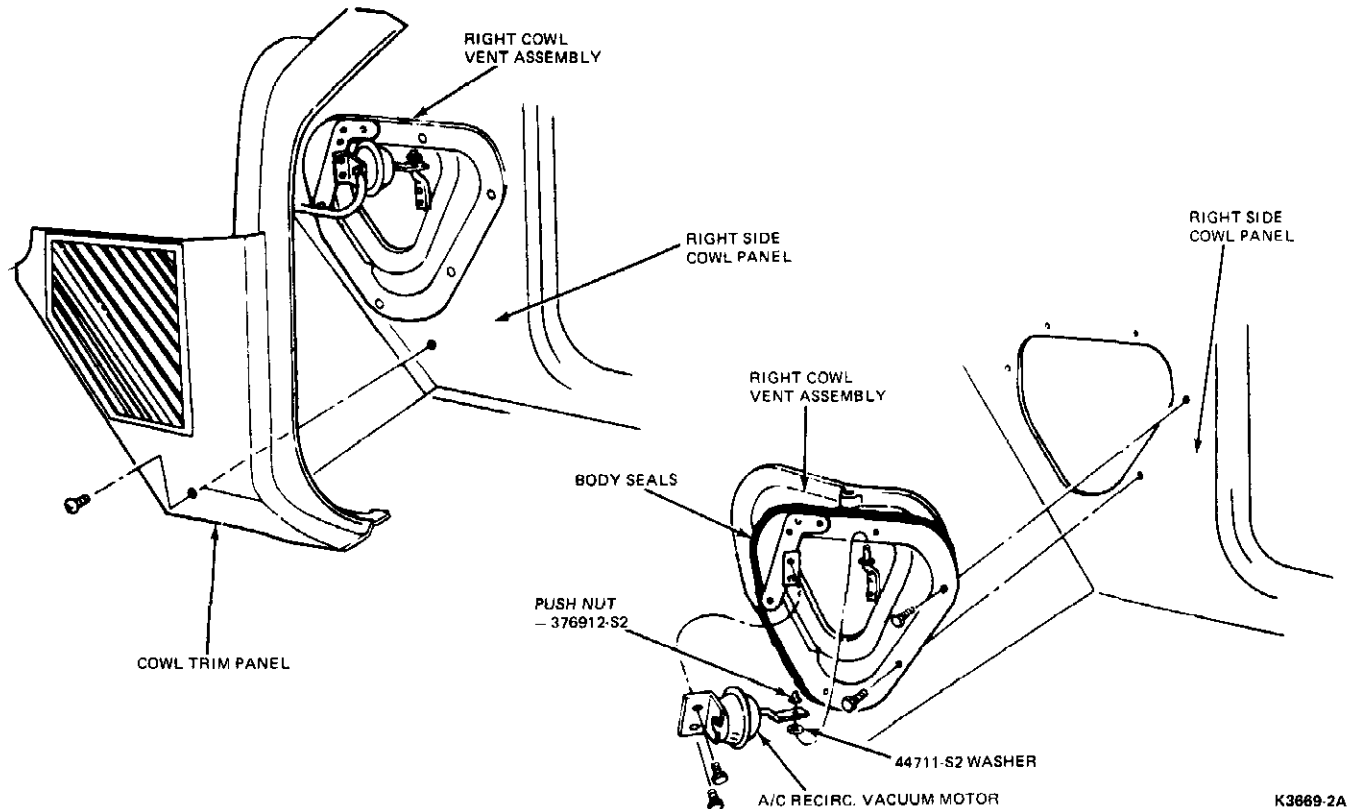


FIG. 36 1978 Ford, Mercury and Lincoln Continental A/C Recirculating Air Inlet

A/C — HEAT DOOR VACUUM MOTOR

Removal

1. Remove the floor air distribution duct from the plenum assembly.
2. Remove the push nut from the door crank and disconnect the motor arm from the door crank.
3. Remove two retaining nuts and separate the motor from the bracket. Then, disconnect the vacuum hose from the motor.

Installation

1. Connect the vacuum hose to the vacuum motor.
2. Position the motor to the door crank and the mounting bracket. Install a new push nut on the door crank and install the two motor retaining nuts.
3. Install the floor air distribution duct.

HEAT-DEFROST DOOR VACUUM MOTOR

Removal

1. Disconnect the vacuum hoses from the heat-defrost door vacuum motor.
2. Remove the push nut from the door crank arm.
3. Remove two retaining nuts and separate the vacuum motor from the mounting bracket and the door crank arm.

Installation

1. Position the vacuum motor to the door crank arm and the mounting bracket.
2. Install the two retaining nuts and a new push nut.
3. Connect the vacuum hoses to the vacuum motor.

WATER VALVE

Removal

1. Loosen the radiator cap, open the radiator drain cock and partially drain the coolant from the engine cooling system. Close the radiator drain cock.
2. Disconnect the vacuum hose (green) from the vacuum motor.
3. Loosen the hose clamps (2) securing the heater core inlet hose to the water valve.
4. Disconnect the Engine-to-Water Valve inlet hose.
5. Disconnect the water valve from the heater core inlet hose and remove the water valve.

Installation

1. Position and install the water valve into the heater core inlet hose.
NOTE: The Arrow on the side of the valve should point toward the heater core inlet tube.
2. Connect the Engine-to-Water Valve inlet hose and tighten the water valve hose clamps (2) to specification.
3. Connect the vacuum hose (green) to the water valve vacuum motor.
4. Refill the engine cooling system to proper level with a 50-50 mix of coolant and water.
5. Move the function control lever to HEAT and start the engine to refill the heater core and hoses.
6. Recheck the engine coolant level after operating the engine and, if necessary, add additional 50-50 mixed coolant to proper level.
7. Check the system for proper operation.

BLOWER MOTOR AND WHEEL ASSEMBLY FORD AND MERCURY

Removal

1. Disconnect the ground cable from the battery.
2. Remove the right front tire and wheel assembly.
3. With reference to Fig. 37, locate the access opening area shown and clean this area of the fender apron.
4. Drill a 1-inch hole tangent to the centerline of the bead using the drill dimple provided in the apron 1/2 inch from the centerline of the bead.
5. Cut out the access opening along the centerline of the bead with aircraft snips. Smooth any rough metal edges.
6. Working through the access opening in the apron, remove the cooling tube from the blower motor (Fig. 38).
7. Disconnect the blower motor connector from the wiring harness.
8. Remove four (4) blower motor mounting plate screws and carefully move the motor and wheel assembly forward out of the evaporator case through the access hole.

Installation

1. Procure a cover plate (Part No. D3AZ-18A475-A or equivalent).

2. Position the cover plate over the access opening and drill eight (8) 1/8-inch holes in the apron, using the 8 holes in the cover as a template. Protect the evaporator case with a metal shield during the drilling operation to prevent damage to the case.
3. Apply rope sealer to the motor mounting plate and install the blower motor and wheel as an assembly.
4. Replace the cooling tube in the cooling hole in the blower motor.
5. Reconnect the blower motor connector.
6. Connect the battery ground cable to the battery and check operation of the blower motor.
7. Apply rope sealer to the perimeter of the access cover and position the cover on the apron. Install the cover with eight (8) 357903-S8 or equivalent screws self-tapping round washer (No. 8-15 x 1/2 inch).
8. Replace the tire and wheel assembly.

BLOWER MOTOR AND WHEEL ASSEMBLY LINCOLN

Removal

1. Remove the hood-to-hinge attaching bolts and remove the hood from the car.
2. Remove the right hood hinge and right fender inner support brace as an assembly.
3. Disconnect the blower motor air cooling tube from the motor (Fig. 38).
4. Disconnect the motor connector from the harness.
5. Remove the four blower motor mounting plate screws. Move the motor and wheel forward out of the blower scroll and remove the assembly through the opening while applying pressure to the fender apron to enlarge the opening at the hinge area (Fig. 39).

Installation

1. Install rope sealer to the blower motor mounting plate while applying pressure to the fender apron to enlarge the opening. Carefully insert the blower motor and wheel assembly through the opening to prevent damage to the blower wheel.
2. Position the blower motor wheel assembly into the blower scroll and install the four blower motor mounting plate screws (Fig. 38).
3. Connect motor connector to wire harness.
4. Connect the motor air cooling tube to the motor.
5. Install the right hood hinge and fender inner support brace assembly.
6. Position the hood to the hood hinges and install the attaching bolts. Adjust the hood for a good body fit and the hood latch for proper retention.

BLOWER WHEEL

Removal

1. Remove the blower motor and wheel assembly from the vehicle. Refer to the blower motor and wheel removal procedure.
2. Remove the hub clamp spring from the wheel hub.

NOTE: Hose clamp pliers for flat spring type clamps will simplify this operation.

3. Slide the blower wheel from the motor shaft.

Installation

1. Align the flat surface on the I.D. of the blower wheel hub with the flat surface of the motor shaft.
2. Slide the blower wheel onto the motor shaft until it is fully seated.
3. Using flat spring type hose clamp pliers, install a new hub clamp spring. Position clamp 90° to the flat on the motor shaft.

NOTE: DO NOT RE-USE THE OLD HUB CLAMP SPRING.

4. Connect the blower to a battery and check for excessive wheel runout and/or vibration before installing the blower motor and wheel assembly in the vehicle.
5. Install the blower motor and wheel assembly in the vehicle. Refer to procedure.
6. Check the system for proper blower operation.

RESISTOR ASSEMBLY

Removal

1. Disconnect the wire harness connector from the resistor assembly.
2. Remove the resistor assembly retaining screws (2) securing the resistor board to the evaporator case assembly.
3. Remove the resistor assembly.

Installation

1. Position the resistor assembly onto the resistor opening of the evaporator case assembly.
2. Install the resistor assembly retaining screws (2) and tighten to specification.
3. Install the resistor wire harness connector and test blower for proper operation.

HIGH BLOWER RELAY (LINCOLN ONLY)

Removal

1. Disconnect the electrical wire harness connector (Fig. 40).
2. Remove the retaining screws (2) securing the high blower relay to the dash panel.
3. Remove the high blower relay from the vehicle.

Installation

1. Position the high blower relay in its mounting location on the dash in the engine compartment.
2. Install the Relay-to-Dash Panel retaining screws (2) and tighten to specification.
3. Connect the electrical wire harness connector.
4. Check the system for proper high blower operation.

OUTSIDE AIR DOOR ASSEMBLY

Removal

1. Raise hood and remove the screen from the right side of the cowl top panel (Fig. 35).

2. Disconnect the vacuum hose from the outside air door vacuum motor.
3. Remove two (2) vacuum motor mounting plate screws (Fig. 35).
4. Remove two (2) air door to cowl top panel mounting screws.
5. Carefully remove the push nut and two flat washers from the door crank arm and remove the vacuum motor.
6. Move the air door assembly inboard and rotate the door and frame assembly carefully to clear the opening in the cowl top panel.

Installation

1. Carefully insert the air door and frame assembly into position in the cowl top panel.
2. Install the motor shaft on the door crank arm as shown in Fig. 35.
3. Align the air door frame mounting holes with the two screw holes in the cowl top panel.
4. Install the air door frame mounting screws. Do not tighten the screws at this time.
5. Install the vacuum motor mounting plate screws.
6. Tighten the air door frame mounting screws.
7. Connect the vacuum hose to the motor.
8. Install the cowl screen.

EXPANSION VALVE

Removal

1. Discharge the refrigerant system using established procedures. Be sure to observe all safety precautions.
2. Remove the insulation from the expansion valve (Fig. 41).
3. Loosen the fitting and remove the high pressure hose (liquid line) from the expansion valve.
4. Loosen the clamp retaining screw and pull the sensing bulb from the clamp.
5. Loosen the fitting and remove the expansion valve from the evaporator core inlet tube.

Installation

1. Lubricate and install a new O-ring and install the expansion valve on the evaporator core inlet tube.
2. Position the sensing bulb in the clamp and tighten the retaining screw. Be sure that the sensing bulb, outlet tube surface and the clamp are clean to maintain good thermal contact.
3. Lubricate and install a new O-ring and connect the high pressure hose (liquid line) to the expansion valve.
4. Install the insulation on the sensing bulb and clamp to prevent engine compartment temperature from affecting the operation of the expansion valve.
5. Evacuate and charge the refrigerant system, with Refrigerant 12, using established procedures and safety precautions.

SUCTION THROTTLING VALVE (STV)

Removal

1. Discharge the refrigerant system following the recommended procedures and safety precautions.
2. Disconnect the suction line from the STV and cap the suction line (Fig. 41).
3. Disconnect the liquid bleed line from the STV and cap the bleed line.
4. Remove the clamp from the STV and disconnect the STV from the evaporator core outlet tube. Cap the evaporator outlet tube if the STV or a new STV will not be installed immediately.

Installation

1. Assemble the STV to the evaporator core tube using a new O-ring dipped in clean refrigeration oil.
2. Position the clamp around the STV and install the attaching screw.
3. Connect the liquid bleed line to the STV using a new O-ring dipped in clean refrigeration oil.
4. Connect the suction line to the STV using a new O-ring dipped in clean refrigeration oil.
5. Leaktest, evacuate and charge the refrigerant system with 4¼ lbs. Refrigerant-12. Use the recommended procedures and observe all safety precautions.

EVAPORATOR CORE

Removal

1. Discharge refrigerant system following the recommended procedure observing all safety precautions.
2. Disconnect the suction line from the STV and cap the suction line and STV.
3. Disconnect the liquid line from the expansion valve and cap the valve and liquid line (Fig. 41).
4. Remove the insulation tape from the expansion valve capillary bulb. Disconnect the capillary bulb from the suction tube.
5. Remove the STV clamp (Fig. 41).
6. Remove the liquid line support clamp (1 screw).
7. Remove four (4) right-to-left cover flange screws.
8. Remove five (5) cover to case mounting screws from left (inboard) cover and remove cover.

NOTE: A bead of rope sealer between the two covers must be replaced during installation.

9. Remove five (5) cover-to-case mounting screws from the right (outboard) cover.
10. Pull the evaporator core and right cover diagonally forward away from the case.
11. Disconnect the oil return line from the STV.

12. Disconnect the STV from the evaporator core.
13. Remove the right cover from the core.
14. Disconnect the expansion valve from the evaporator core tube.
15. Remove the core mounting gasket.

Installation

1. Install the gasket on the evaporator core.
2. Connect the expansion valve to the evaporator core. Use a new O-ring dipped in clean refrigeration oil.
3. Install the core right cover (Fig. 41) on the evaporator core.
4. Connect the STV to the evaporator core using a new O-ring dipped in refrigeration oil.
5. Connect the oil return line to the STV using a new O-ring dipped in refrigeration oil.
6. Place the evaporator core and attached components in the evaporator case and install the five attaching screws (Fig. 41).
7. Place a bead of rope sealer between the two covers and install the left evaporator core cover.
8. Install the five left cover attaching screws.
9. Install four screws to attach the left and right covers together.
10. Install the liquid line support clamp and connect the liquid line to the expansion valve. Use a new O-ring dipped in refrigeration oil.
11. Position the capillary bulb to the suction tube and install the clamp. Be sure the bulb makes good contact with a clean area of the suction tube.
12. Install the insulation tape on the capillary bulb and suction tube.
13. Connect the suction line to the STV using a new O-ring dipped in refrigeration oil.
14. Leak test, evacuate and charge the refrigerant system following the recommended procedures and safety precautions.

REFRIGERANT LINES

1. Discharge the refrigerant from the A/C system following the recommended procedure and observing all safety precautions.
2. Disconnect and remove the refrigerant line using a wrench on each side of each fitting.
3. Route the new refrigerant line with the protective caps installed as shown in Figs. 42 through 46.
4. Connect the refrigerant line into the system using new O-rings dipped in refrigeration oil. Use two wrenches when tightening the fittings.
5. Leak test, evacuate and charge the refrigerant system following the recommended procedures and safety precautions.

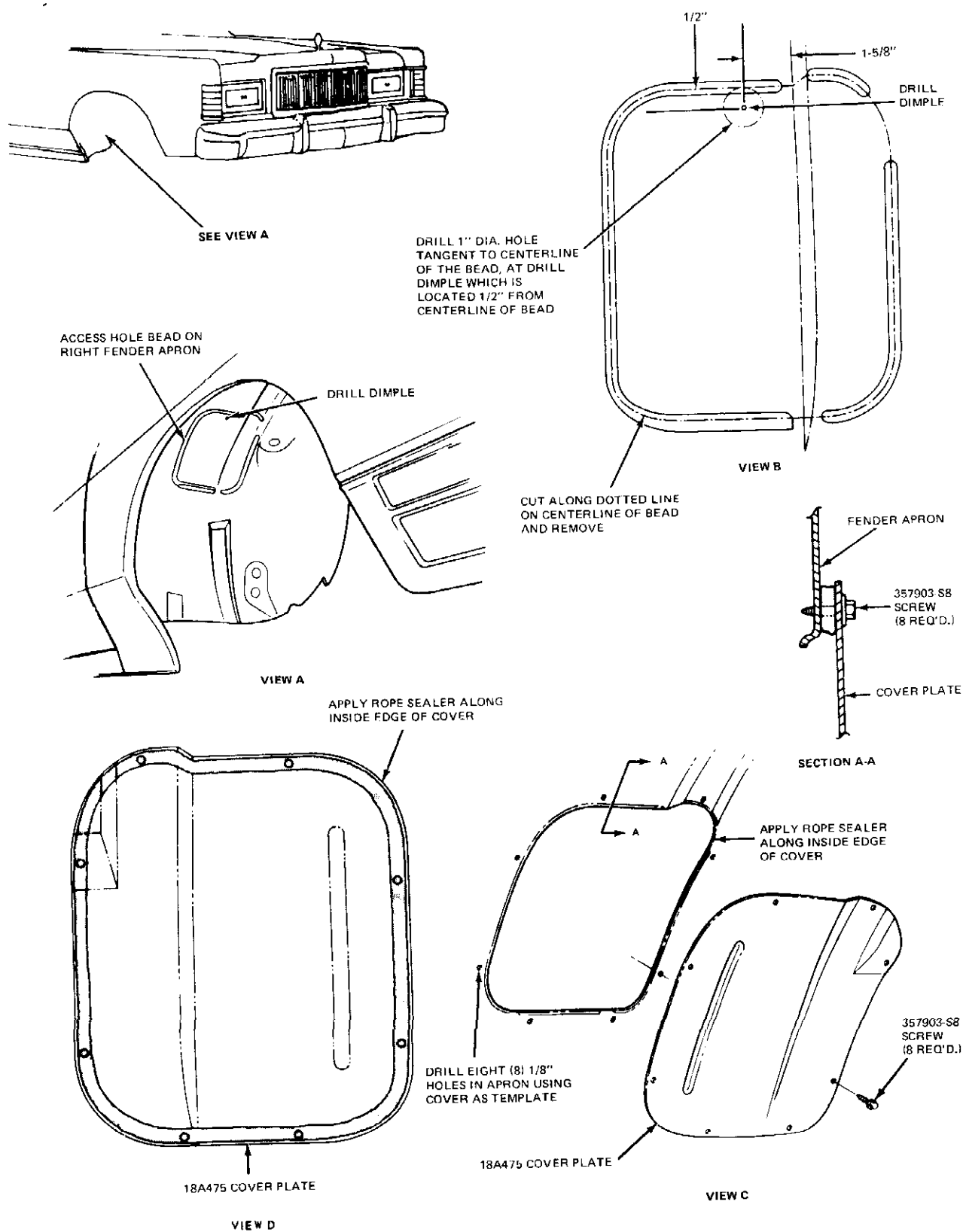


FIG. 37 Blower Access Hole in Fender

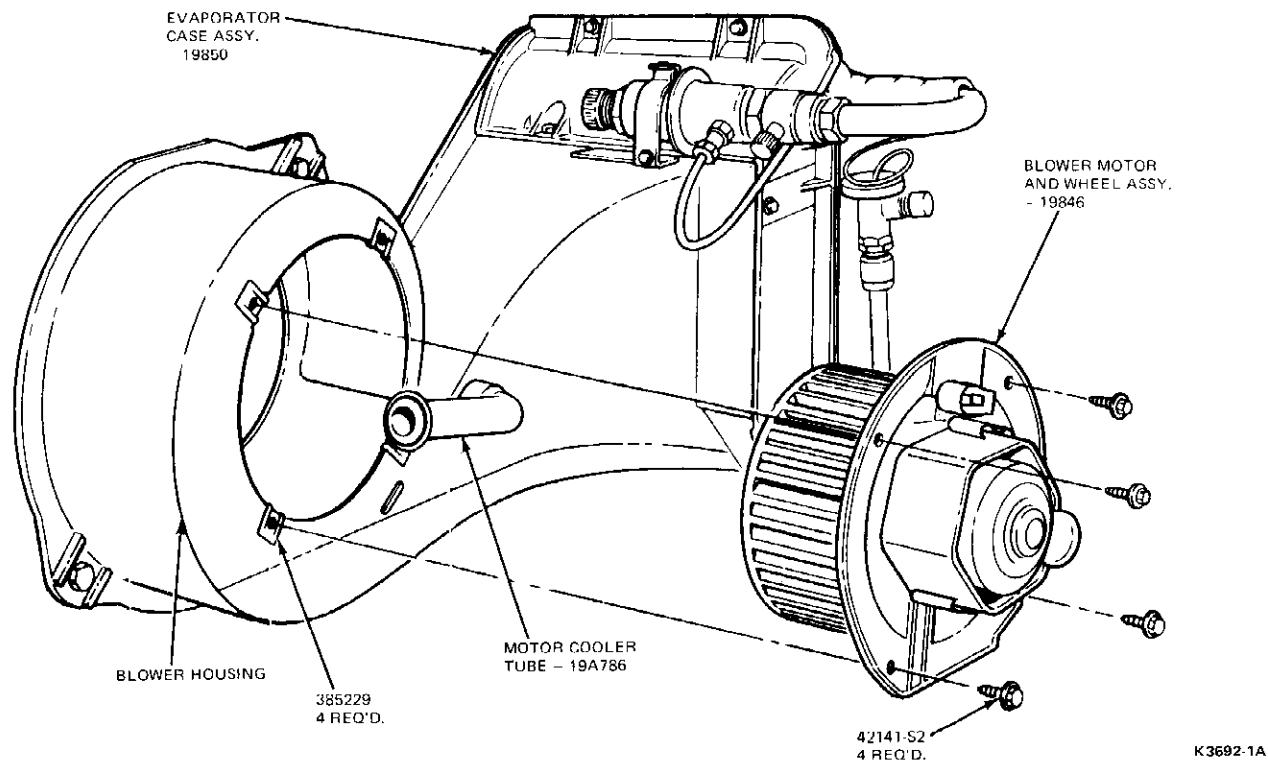


FIG. 38 Blower Motor and Wheel—Disassembled

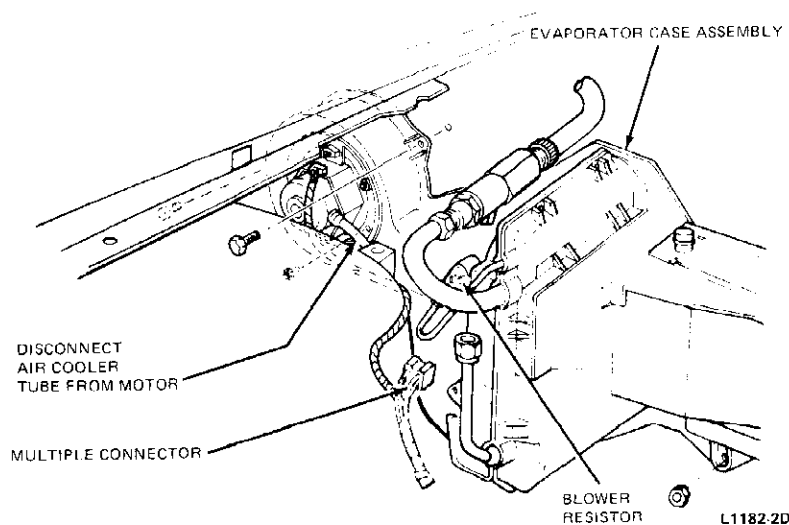
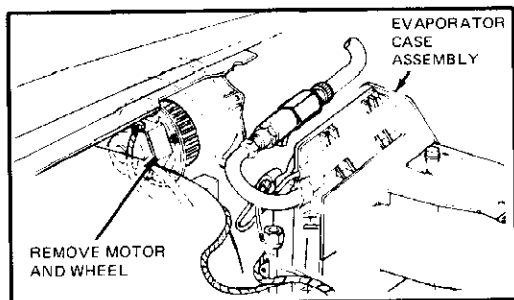


FIG. 39 Blower Motor and Wheel Removal—Lincoln

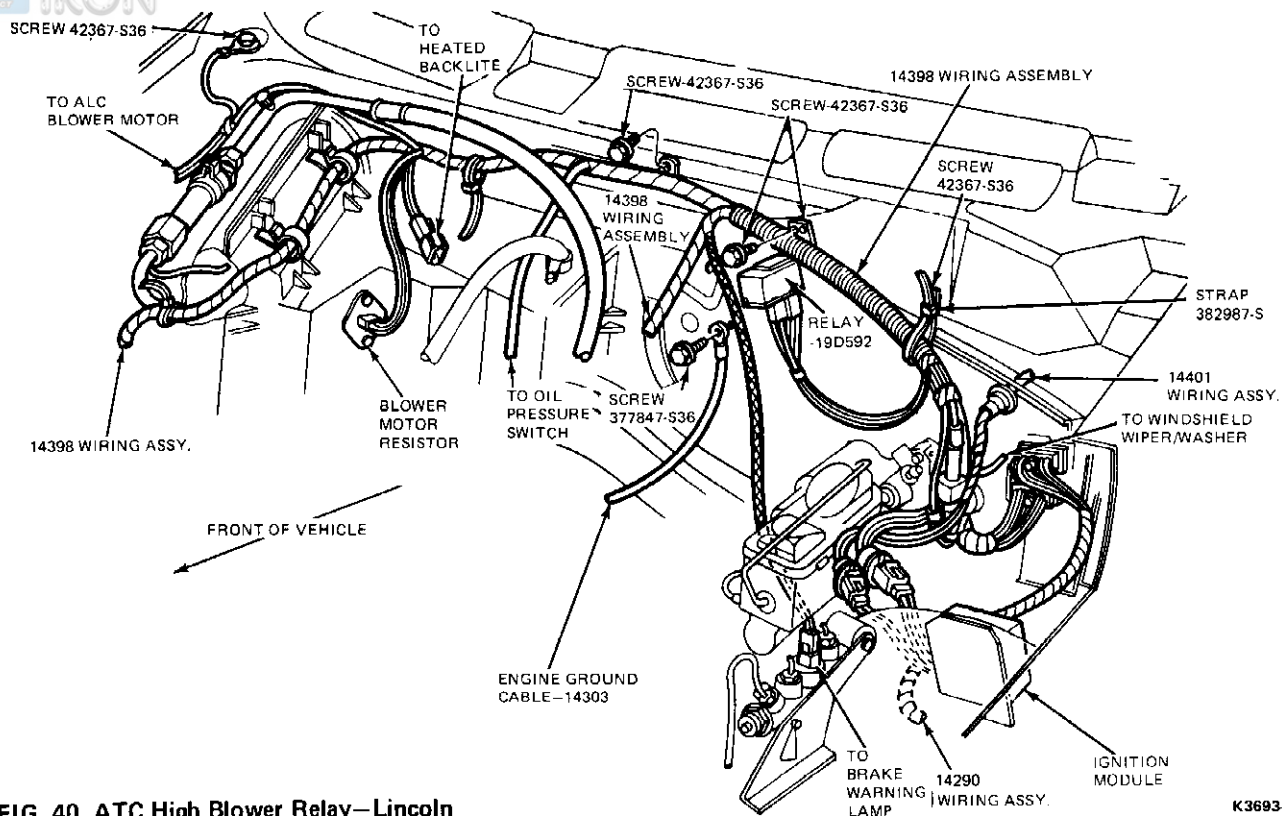
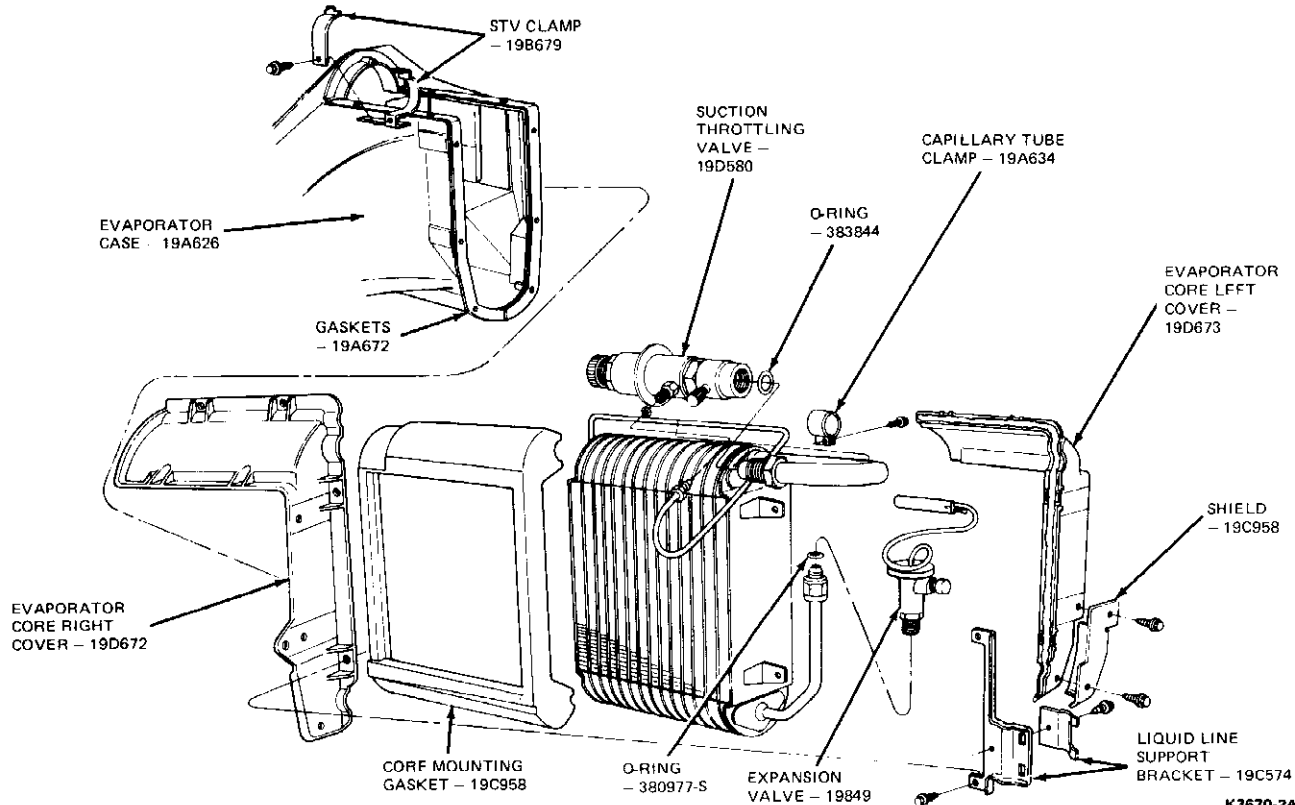


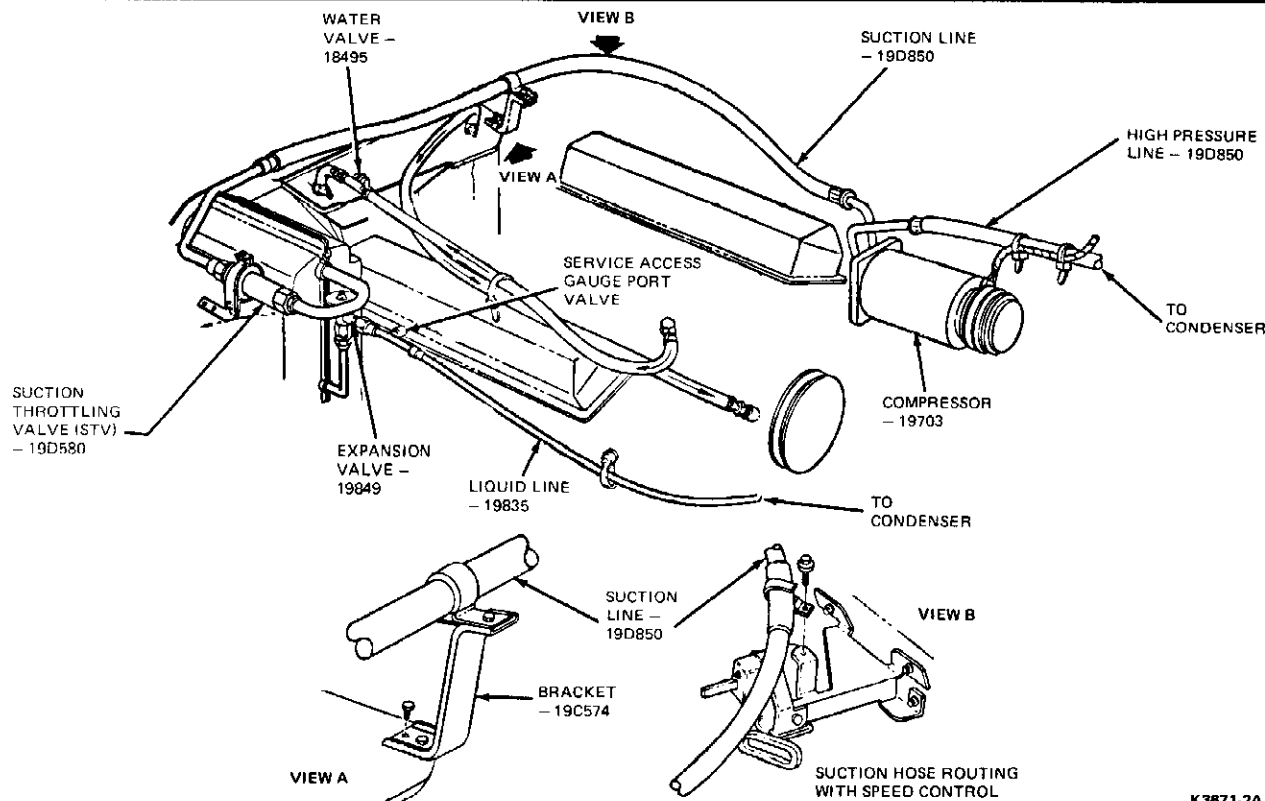
FIG. 40 ATC High Blower Relay—Lincoln

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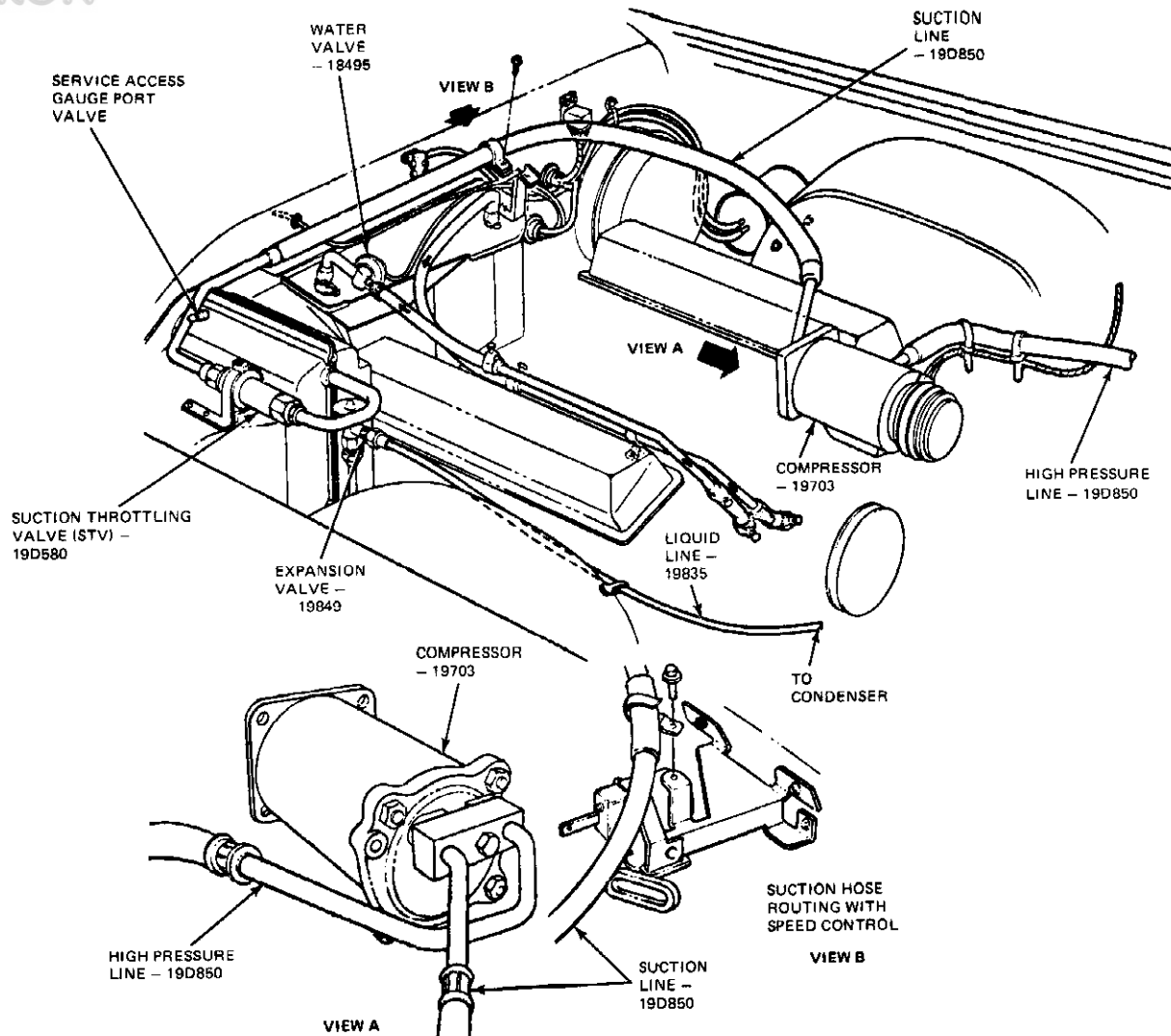
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FIG. 41 Evaporator Core Removal



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FIG. 42 Refrigerant Lines and Heater Hoses—5.0L and 5.7L (302 CID and 351W CID) Engines



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FIG. 43 Refrigerant Lines and Heater Hose Routings—5.8L and 6.6L (351M CID and 400 CID) Engines

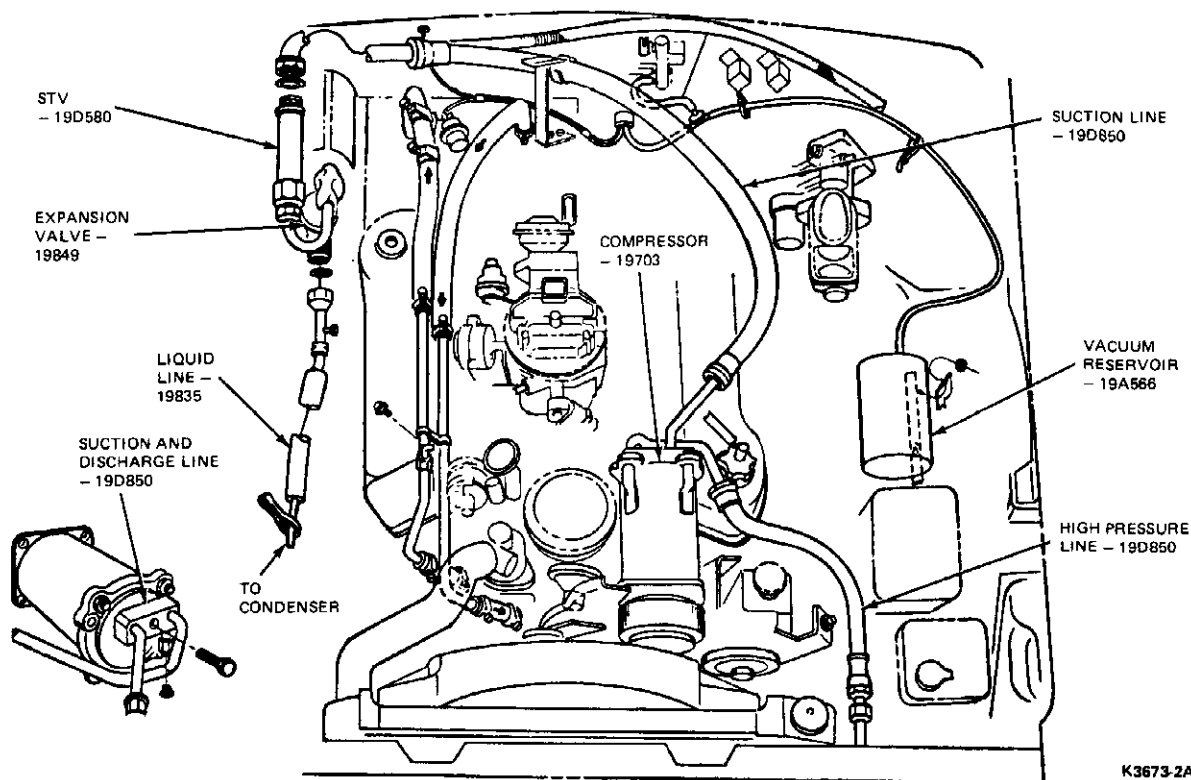


FIG. 44 Refrigerant Lines and Heater Hose Routings—Lincoln with 6.6L (400 CID) Engine

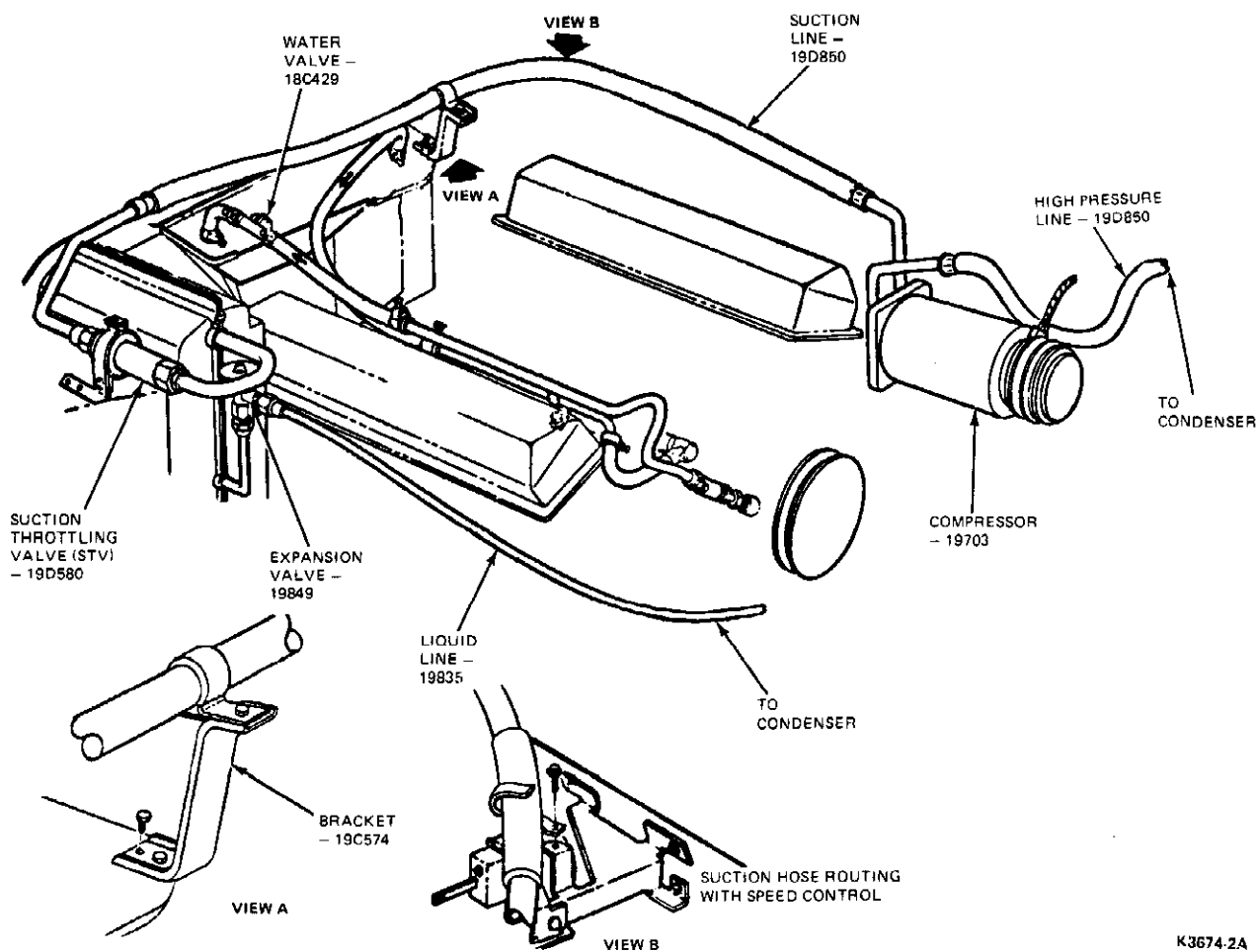
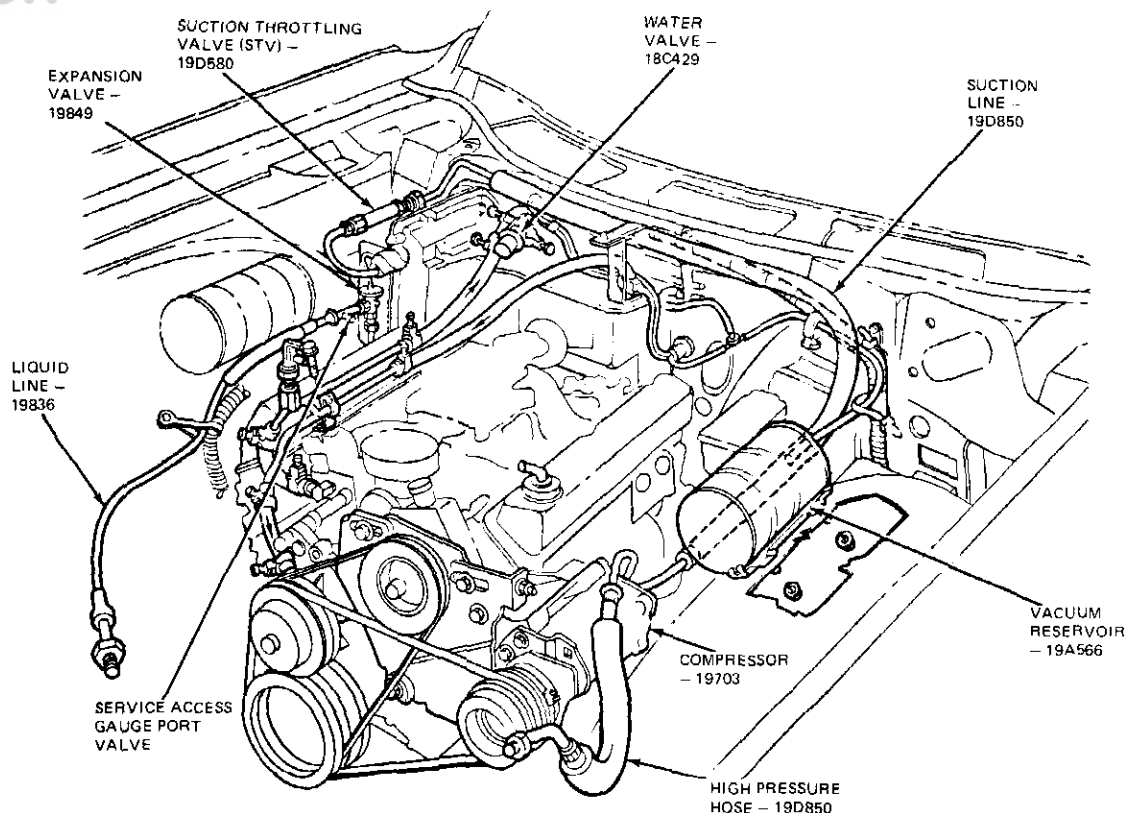


FIG. 45 Refrigerant Lines and Heater Hose Routings—Ford and Mercury with 7.5L (460 CID) Engine



**DETROIT
IRON**



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FIG. 46 Refrigerant Lines and Heater Hose Routings — Lincoln with 7.5L (460 C.I.D.) Engine

HEATER CORE

Removal

1. Loosen the radiator cap, open the radiator drain cock and drain the engine coolant.
2. Close the radiator drain cock.
3. Loosen the heater hose clamps and disconnect the heater hoses from the inlet and outlet heater core tubes.
4. Remove the engine vacuum distribution connector (Christmas tree), located on the dash panel above the heater core cover plate, for clearance.
5. Remove the electrical harness ground terminal, located on the dash panel above the heater core cover plate, for clearance.
6. Remove the heater core cover plate retaining screws (7) and remove the heater core cover plate and cover plate gasket (Fig. 47).
7. Lift the heater core and lower mounting gasket out of the evaporator case.
8. Remove the lower mounting gasket from the heater core.

Installation

1. Install the lower mounting gasket on the heater core.
2. Lower the heater core and lower mounting gasket into the heater core opening of the evaporator case. Be sure the core and gasket are seated firmly forward of the core retention spring in the evaporator case.

3. Place the heater core cover plate gasket and cover plate over the core tubes and align the retaining screw holes.
4. Install the heater core cover plate retaining screws (7) and tighten to specification.
5. Install the engine vacuum distribution connector (Christmas tree) on the dash panel above the heater core cover plate.
6. Install the electrical harness ground terminal on the dash panel above the heater core cover plate.
7. Install the inlet heater hose (with water valve) on the core tube nearest the evaporator core. Tighten the hose clamp to specification.
8. Install the outlet heater hose (to water pump) on the remaining core tube furthest from the evaporator core. Tighten the hose clamp to specification.
9. Fill the cooling system with the recommended mixture of engine coolant.
10. Start the engine and check for coolant leaks around the heater core tubes and radiator drain cock.
11. Recheck the coolant level and add additional coolant, if required.

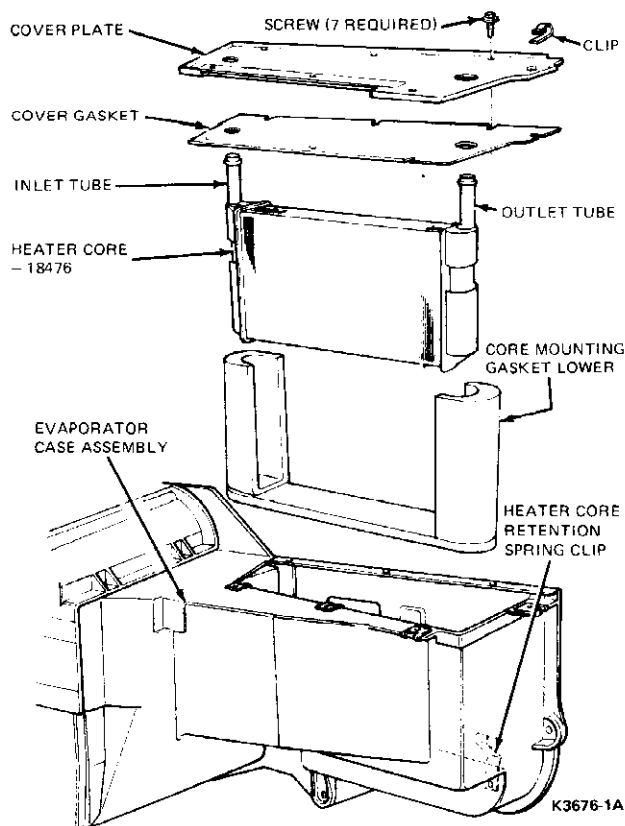


FIG. 47 Heater Core Removal — Ford, Mercury and Lincoln Continental

EVAPORATOR CASE ASSEMBLY

Removal

1. Drain the engine coolant in a clean container and save the coolant.
2. Discharge the refrigerant system following the recommended procedures.
3. Remove the hood hinge attaching bolts and remove the hood from the vehicle.
4. Remove the right hood hinge and right front fender inner support brace as an assembly.
5. Disconnect the suction throttling valve from the suction line (Fig. 42).
6. Disconnect the liquid line at the expansion valve.
7. Remove the multiple connector from the blower resistor and harness from the clamp on the case.
8. Disconnect the blower motor connector from the harness.
9. Disconnect the vacuum junction valve from the dash panel and move the valve and vacuum hoses away from the case.
10. Disconnect the speed control servo and bracket assembly from the dash panel (on vehicles so equipped), and move them away from the case.
11. Disconnect the heater hoses from the heater core and the hose support bracket from the front of the case. Move the hoses and water valve away from the case.

12. Remove one case mounting stud nut under the instrument panel on the right side of the plenum chamber mounting flange (Fig. 34).
13. Remove three case-to-dash panel mounting screws and two stud mounting nuts.
14. Move the case assembly forward to clear three studs, lift the case upward to clear the engine and inboard to clear the fender and aprons.

Installation

1. To provide a positive seal between the case and dash panel and ensure against water leaks, apply rope sealer body caulking around the edge of the dash panel openings before installing the evaporator case assembly (Fig. 34).
2. Carefully place the evaporator case assembly over the dash panel openings and on the two mounting studs. Make certain that the mounting stud on the evaporator case aligns properly with the hole in the dash panel.
3. Install three evaporator case-to-dash panel mounting screws and two mounting stud nuts.
4. Install the one case mounting stud nut under the instrument panel on the right side of the plenum chamber mounting flange.
5. Plug the wire harness multiple connector onto the blower resistor and insert the harness into the clip on the case.
6. Connect the blower motor ground wire to the dash panel and the lead wire to the harness.
7. Connect the heater hoses to the heater core tubes and secure the hoses and hose support clamp to the core cover with the retaining bolt. Position and secure the heater hose clamps at the heater core tubes.
8. Position the speed control servo and bracket assembly (if so equipped) on the dash panel and secure it with the two dash panel mounting screws.
9. Position the vacuum junction valve on the dash panel and secure it with the two dash panel mounting screws.
10. Lubricate and install a new O-ring and connect the liquid line to the expansion valve.
11. Lubricate and install a new O-ring and connect the suction throttling valve to the suction hose.
12. Install the right hood hinge and front fender inner support brace assembly.
13. Position the hood to the hood hinges and install the attaching bolts. Adjust the hood and hood latch as necessary to obtain a good fit.
14. Fill the cooling system with coolant; start the engine; and test the heater system for coolant leaks.
15. Evacuate, leak test and charge the refrigerant system following the recommended procedures and safety precautions.

CONDENSER

Removal

1. Discharge the refrigerant from the system observing all safety precautions.
2. Drain the coolant from the radiator in a clean container.
3. Remove the radiator hoses and the transmission cooler lines from the radiator. Then, remove the radiator and related components.
4. Remove two nuts retaining the bottom of the condenser to the lower mounting brackets (Fig. 48).
5. Disconnect the refrigerant lines from the condenser and cap the lines.
6. Remove two screws attaching the condenser upper brackets to the radiator support and carefully remove the condenser from the vehicle.

Installation

1. Position the condenser to the lower mounting brackets and the radiator support. Install the two lower retaining nuts and the upper attaching bolts.
2. Connect the refrigerant lines to the condenser using new O-rings dipped in refrigeration oil.
3. Install the radiator and related components.
4. Connect the radiator hoses and automatic transmission oil cooler lines to the radiator.
5. Fill the cooling system following the recommended procedure.
6. Leak test, evacuate and charge the refrigeration system with 4½ lbs. of refrigerant-12.

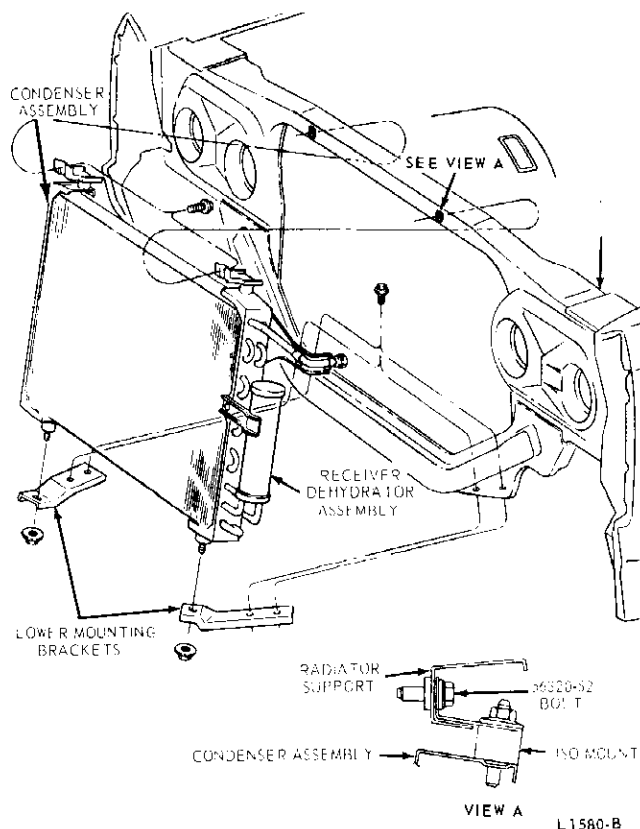


FIG. 48 Condenser Installation

RECEIVER-DRIER—FORD & MERCURY

Removal

1. Discharge the refrigerant from the system at the service access gauge port valve on the STV. Observe all safety precautions.
2. Working under the vehicle, disconnect the two refrigerant lines at the fittings on the bottom of the receiver-drier.
3. Reach in behind the radiator grille and remove the screw attaching the receiver-drier mounting bracket to the condenser (Fig. 48). Remove the receiver-drier from under the vehicle.

Installation

1. Position the receiver-drier to the condenser and install the mounting bracket attaching screw.
2. Connect the refrigerant lines to the receiver-drier using new O-rings dipped in clean refrigeration oil.
3. Leak test, evacuate and charge the refrigerant system following the recommended procedures and safety precautions.

AMBIENT CUT-OFF SWITCH—FORD & MERCURY

Removal

1. Remove six screws and remove the radiator grille from the vehicle.
2. Remove one screw attaching the ambient cut-off switch to the hood latch support (Fig. 49).
3. Separate the wires at the connector, unhook the connector from the hood latch support, and remove the switch.

Installation

1. Connect the wires at the connector and engage the connector tab in the hole of the hood latch support.
2. Position the ambient cut-off switch to the hood latch support and install the attaching screw.
3. Install the radiator grille.

AMBIENT CUT-OFF SWITCH—LINCOLN

Removal

1. Open the hood and remove six screws attaching the upper sight shield to the radiator support and the grille opening panel. Then, remove the sight shield.
2. Reach down behind the grille and remove one screw attaching the ambient cut-off switch to the hood latch support (Fig. 49).
3. Disconnect the ambient cut-off switch wires at the connector and remove the switch.

Installation

1. Position the ambient cut-off switch to the hood latch support and install the attaching screw (Fig. 49).
2. Connect the ambient cut-off switch wires at the connector.
3. Install the sight shield between the radiator support and the grille opening panel.

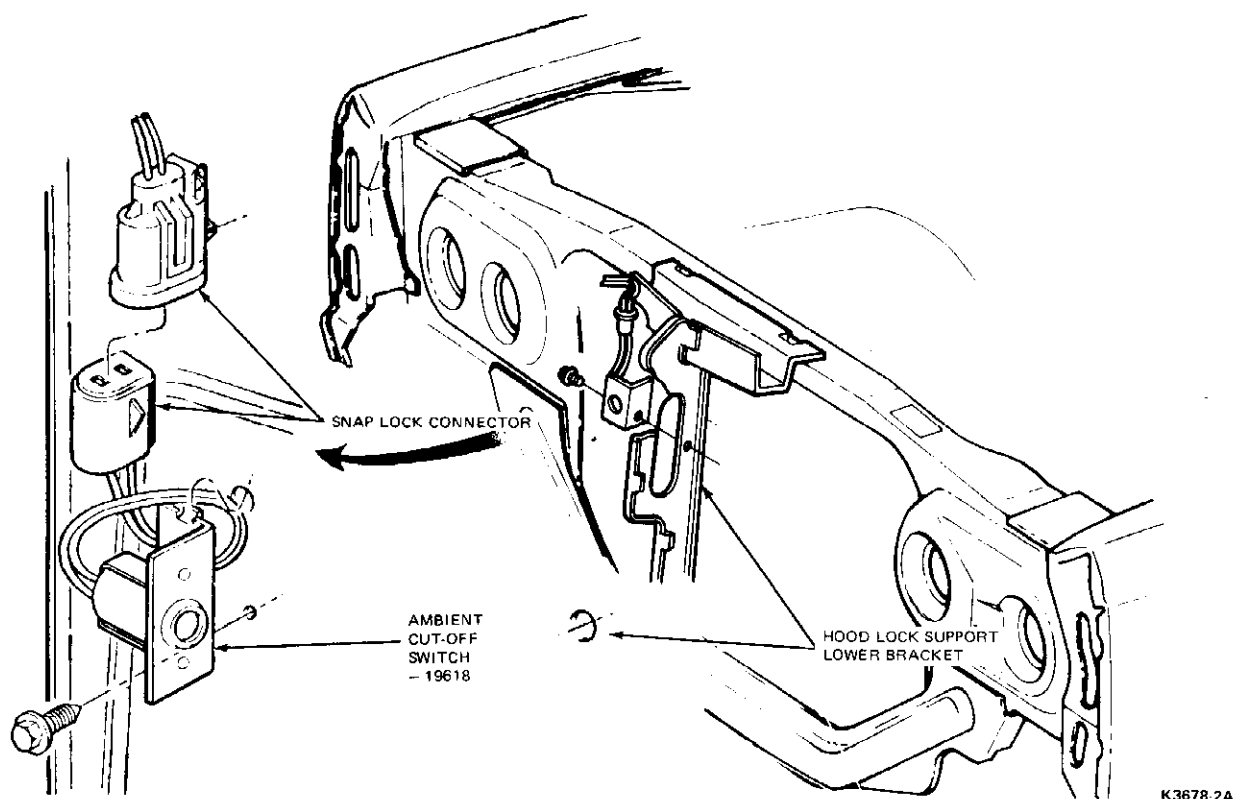


FIG. 49 Ambient Cut-off Switch Removal — Ford, Mercury and Lincoln Continental

COMPRESSOR

Removal

1. Discharge the refrigerant system following the recommended procedure and observing all safety precautions.
2. Disconnect the suction and high pressure refrigerant lines from the compressor. Cap the refrigerant lines and compressor to prevent the entry of dirt or other contaminants.
3. Disconnect the compressor clutch wire at the compressor.
4. On all engines except the 7.5L (460 C.I.D.), loosen the idler attaching screws and release the drive belt tension.
5. On 7.5L (460 C.I.D.) engines, loosen the two compressor mounting brace attaching screws (Figs. 22 and 23), and release the drive belt tension.
6. Remove the compressor mounting bolts and nuts as shown in Figs. 19 through 23 and remove the compressor.
7. Remove the magnetic clutch components from the compressor following the instructions in Part 36-34 of the car shop manual.

Installation

1. Assemble the magnetic clutch components to the compressor following the instructions in Part 36-34 of the car shop manual.
2. Position the compressor to the mounting brackets and install the attaching bolts and nuts.
3. Install the drive belt and adjust the drive belt tension as outlined under Drive Belt Adjustments.
4. Connect the compressor clutch wire.
5. Connect the suction and high pressure lines to the compressor. Use new O-rings dipped in refrigeration oil.
6. Leak test, evacuate and charge the system following established procedures and safety precautions.

SPECIFICATIONS

ELECTRICAL

System Protection

Clutch (Accessory) Circuit	20 Amp Fuse in Panel
Blower Circuit	35 Amp Fuse in Panel

Blower Motor Current Draw

Switch Setting	Amps	Volts
Low	6	5
Medium Low	10	7
Medium High	17	10
High	25	12.4

Magnetic Clutch

Current Draw	Approx. 3.44 Amps @ 12.8 Volts
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Illumination

Control Head	One ICP-161 Bulb
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REFRIGERANT

Capacity	4-1/4 Lbs. Plus 1/4 Lb., Minus 0 68 Oz. Plus 4 Minus 0 1.928 Kg Plus .113 Minus 0
Type	Refrigerant 12 (R-12)

COMPRESSOR – 6 Cylinder

Type – Swash Plate – Three Double Acting Pistons – Axial Type

Cylinder Bore	1-1/2 Inches
Stroke	1-3/16 Inches
Rotation	Clockwise
Refrigerant Oil	
Type	TL 4538 Texaco 525 Viscosity
Capacity	10-1/2 Fluid Ounces (Ford D1VY-19557-A)
Drive Belt Tension	
New	120-160 Lbs.
Used	(after operation for 10 minutes or more) – 75-120 Lbs.

TORQUE SPECIFICATIONS

Heater Hose Clamps	13 to 18 In-Lb.
Heater Core Cover Plate Retaining Screws	12 to 16 In-Lb.
Compressor-To-Mounting Bracket	20 to 30 Ft-Lb.
Idle Arm-To-Mounting Bracket	30 to 45 Ft-Lb.
Adjusting Bolts – 7.5L (460 CID) Engine	30 to 45 Ft-Lb.
Liquid Hose To Condenser	8 to 13 Ft-Lb.
Suction Hose To STV	30 to 35 Ft-Lb.
Discharge Hose To Condenser	24 to 29 Ft-Lb.
Liquid Hose To Expansion Valve	15 to 20 Ft-Lb.
Suction and Discharge To Compressor (bolt)	20 to 25 Ft-Lb.