

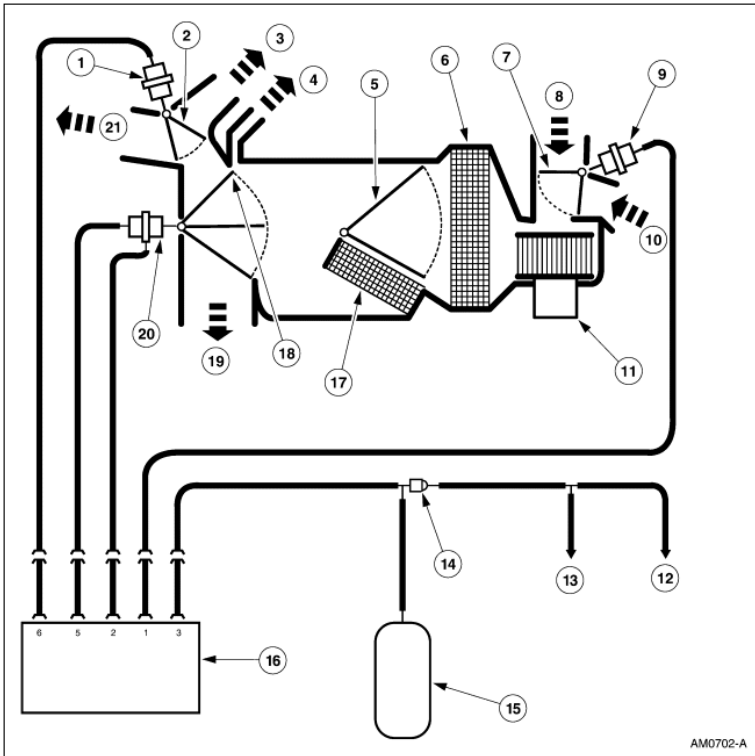
**Climate Control System**

Refer to Wiring Diagrams Cell [55](#), Electronic Automatic Temperature Control (EATC) for schematic and connector information.

**Special Tool(s)**

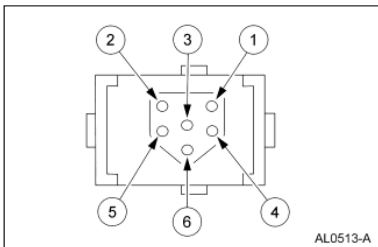
<p>ST2173-A</p>	<p>Starter, Alternator, Battery, Regulator, Electrical Tester (SABRE) 010-00736 or equivalent</p>
<p>ST1137-A</p>	<p>73 Digital Multimeter 105-R0051 or equivalent</p>
<p>ST1217-A</p>	<p>New Generation Star (NGS) Tester 418-F048 (007-00500) or equivalent</p>
<p>ST1176-A</p>	<p>Vacuum Pump 416-D002 (D95L-7559-A) or equivalent</p>
<p>ST1928-A</p>	<p>R-134a Manifold Gauge Set 176-R032A or equivalent</p>
<p>ST1501-A</p>	<p>A/C Pressure Test Adapter 412-093 (T94P-19623-E)</p>
<p>ST1252-A</p>	<p>A/C Fitting Set 412-DS028 (014-00333) or equivalent</p>
<p>ST2351-A</p>	<p>Refrigerant Leak Detector 216-00001 or equivalent</p>
<p>ST1474-A</p>	<p>Radiator/Heater Core Pressure Tester 014-R1072 or equivalent</p>
<p>ST1391-A</p>	<p>EEC-V 104-Pin Breakout Box 418-049 (014-00950) or equivalent</p>

**Vacuum Schematic—Manual A/C**



Item	Part Number	Description
1	18A318	Vacuum Control motor — panel/defrost door
2	18A478	Panel/Defrost door (full vacuum position)
3	—	Defrost airflow
4	—	Side window demister airflow
5	18B545	Temperature blend door (full heat position)
6	19860	A/C evaporator core
7	19A813	Air inlet duct door (full vacuum position)
8	—	Outside air inlet
9	18A318	Vacuum control motor — air inlet duct door
10	—	Recirculated air inlet
11	19805	Blower motor
12	—	Vacuum to emission control
13	—	Vacuum from the engine intake manifold
14	19A563	A/C vacuum check valve
15	19A566	A/C vacuum reservoir tank and bracket
16	19B888	A/C-heater function selector switch
17	18476	Heater core
18	18A559	Floor/panel door (full vacuum position)
19	—	Floor airflow
20	18A318	Vacuum control motor — floor/panel door
21	—	Panel vent airflow

Vacuum Connector End View — Manual A/C



Port	Hose Color	Function
1	White	Air inlet duct door

2	Yellow	Floor/panel door
3	Black	Vacuum source
4	—	Not used
5	Blue	Floor/panel door
6	Red	Panel/defrost door

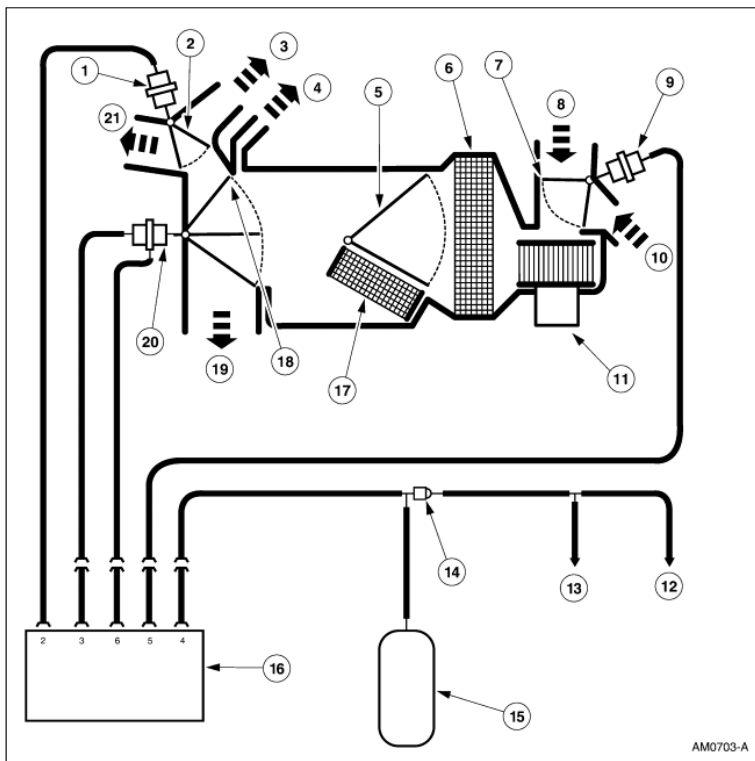
**VACUUM APPLICATION CHART—MANUAL A/C**

Switch Port	Color	Function	Function Selector Switch Position							
			MAX A/C	A/C	PNL/ VENT	OFF	FLR/ PNL	FLOOR	FLR/ DEF	DEF
1	White	Recirc/ fresh	V	NV	NV	V	NV	NV	NV	NV
2	Yellow	Floor/ panel	NV	NV	NV	V	NV	V	NV	NV
3	Black	Vacuum source	V	V	V	V	V	V	V	V
5	Blue	Full floor	NV	NV	NV	V	V	V	V	NV
6	Red	Panel/ defrost	V	V	V	NV	V	NV	NV	NV

V = Vacuum

NV= No Vacuum

**Vacuum Schematic—Electronic Automatic Temperature Control**

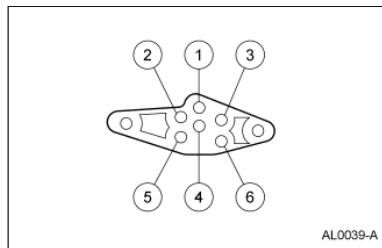


AM0703-A

Item	Part Number	Description
1	18A318	Vacuum control motor — panel/defrost door
2	18A478	Panel/defrost door (full vacuum position)
3	—	Defrost airflow
4	—	Side window demister airflow
5	18B545	Temperature blend door (full heat position)
6	19860	A/C evaporator core
7	19A813	Air inlet duct door (full vacuum position)
8	—	Outside air inlet
9	18A318	Vacuum control motor — air inlet duct door
10	—	Recirculated air inlet
11	19805	Blower motor
12	—	Vacuum to emission control
13	—	Vacuum from the engine intake manifold
14	19A563	A/C vacuum check valve

15	19A566	A/C vacuum reservoir tank and bracket
16	19980	Electronic automatic temperature control module
17	18476	Heater core
18	18A559	Floor/panel door (full vacuum position)
19	—	Floor airflow
20	18A318	Vacuum control motor — floor/panel door
21	—	Panel vent airflow

**Vacuum Connector End View—Electronic Automatic Temperature Control**



Item	Part Number	Description
1	—	Not used
2	Red	Panel/defrost door
3	Blue	Floor/panel door
4	Black	Source vacuum
5	White	Air inlet duct door
6	Yellow	Floor/panel door

**VACUUM APPLICATIONS CHART—ELECTRONIC AUTOMATIC TEMPERATURE CONTROL**

Vacuum Harness Hose Color	Function	Manual Override Selector Buttons						
		OFF	MAX A/C	VENT	PNL/ FLR	FLR	FLR/ DEF	DEF
White	Outside- recirc	V	V	NV	NV	NV	NV	NV
Yellow	Full floor	NV	NV	NV	NV	V	NV	NV
Blue	Floor- panel (partial)	NV	NV	NV	V	V	V	NV
Red	Panel- defrost	NV	V	V	V	NV	NV	NV
Black	Source	V	V	V	V	V	V	V

V = vacuum

NV = no vacuum

**Inspection and Verification**

1. Verify the customer's concern by operating the climate control system to duplicate the condition.
2. Inspect to determine if one of the following mechanical or electrical concerns apply:

**Visual Inspection Chart**

Mechanical	Electrical
<ul style="list-style-type: none"> <li>Loose, missing or damaged A/C compressor drive belt.</li> <li>Loose or disconnected A/C clutch.</li> <li>Loose, misrouted or damaged vacuum lines.</li> <li>Broken or leaking vacuum control motor<sup>a</sup></li> <li>Discharged A/C system.</li> <li>Broken or leaking refrigerant lines.</li> </ul>	<ul style="list-style-type: none"> <li>Open fuses.</li> <li>Blower motor inoperative.</li> <li>A/C compressor inoperative.</li> <li>Circuitry open/shorted.</li> <li>Disconnected electrical connectors.</li> </ul>

<sup>a</sup> A leak in the vacuum control circuit may occur during acceleration (slow leak), may exist at all times (large leak), and may exist only when specific functions are selected (indicating a leak in that portion of the circuit). The vacuum hoses used in the passenger compartment control circuit are constructed from PVC plastic material. The vacuum hoses used in the engine compartment are constructed of Hytrel®. Because of the materials used, never pinch the vacuum hoses off during diagnosis to locate a leak. A wood golf tee can be used as a plug when it is necessary to plug one end of the vacuum hose for leak test purposes.

3. If the inspection reveals obvious concern(s) that can be readily identified, service as required.
4. If equipped with the electronic automatic temperature control system, go to Step 6.
5. If equipped with a manual A/C system, determine the symptom and go to the Symptom Chart.
6. If the concern remains after the inspection, connect the Rotunda New Generation Star (NGS) Tester to the data link connector (DLC) located beneath the instrument panel to carry out the DATA LINK DIAGNOSTICS test. If the NGS responds with NO RESPONSE/NOT EQUIPPED for the electronic automatic temperature control module, [GO to Pinpoint Test A](#). If the DATA LINK DIAGNOSTICS test is passed for the electronic automatic temperature control module, retrieve the continuous DTCs and execute the Self-Test Diagnostics for the electronic automatic temperature control module to retrieve the current DTCs.

7. If the self-test is passed and no DTCs are retrieved, go to the Symptom Chart to continue diagnostics.
8. If DTCs are retrieved, go to the Electronic Automatic Temperature Control (EATC) Module Diagnostic Trouble Code (DTC) Index to continue diagnostics.
9. If the electronic automatic temperature control module cannot be accessed by the NGS, [GO to Pinpoint Test A.](#)

**Electronic Automatic Temperature Control Module Self-Test**

- The EATC module self-test will not detect concerns associated with data link messages like engine coolant temperature or vehicle speed signals. A NGS tester must be used to retrieve these concerns.
- The EATC module self-test will detect concerns in the system control functions and will display hard diagnostic trouble codes (DTCs) in addition to intermittent diagnostic trouble codes for concerns that occur during system operation. The vehicle interior temperature should be between 4-32°C (40-90°F) when performing the self-test. If the temperatures are not within the specified ranges, false in-car temperature sensor DTCs will be displayed.
- The self-test can be initiated at any time. Normal operation of the system stops when the self-test is activated.
- To enter the self-test, press the OFF and FLOOR buttons simultaneously and then press the AUTOMATIC button within two seconds. The display will show a pulse tracer going around the center of the display window. The test may run as long as 30 seconds. Record all DTCs displayed.
- If any DTCs appear during the self-test, follow the diagnostics procedure given under ACTION for each DTC given.
- If a condition exists but no DTCs appear during the self-test, refer to the Symptom Chart Condition: The EATC System Is Inoperative, Intermittent or Improper Operation.
- To exit self-test and retain all intermittent DTCs, push the blue (cooler temperature) button. The control will exit self-test, retain all intermittent DTCs and then turn OFF (display blank).
- To exit self-test and clear all DTCs, press the DEFROST button. The vacuum fluorescent display window will show 888 and all function symbols for one second. Then, the EATC control assembly will turn OFF (display blank) and all DTCs will be cleared.
- Always exit the self-test before powering the system down (system turned OFF).
- Intermittent DTCs will be deleted after 80 ignition switch ON cycles after the intermittent condition occurs.

**ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC) MODULE DIAGNOSTIC TROUBLE CODE (DTC) INDEX**

NGS DTC	EATC		Description	Action to Take
	(Hard) Self-Test Faults	(Intermittent) Run-Time Faults		
B1249	024	022 025	Blend Door Short Blend Door Failure	<a href="#">GO to Pinpoint Test A.</a>
B1251	031	N/A	A/C In-Car Temperature Sensor Open Circuit	<a href="#">GO to Pinpoint Test B.</a>
B1253	030	N/A	A/C In-Car Temperature Sensor Short to Ground	<a href="#">GO to Pinpoint Test B.</a>
B1255	041	043	A/C Ambient Temperature Sensor Open Circuit	<a href="#">GO to Pinpoint Test C.</a>
B1257	040	042	A/C Ambient Temperature Sensor Short to Ground	<a href="#">GO to Pinpoint Test C.</a>
B1261	050	052	A/C Solar Radiation Sensor Circuit Short to Ground	<a href="#">GO to Pinpoint Test D.</a>
U1073	N/A		SCP Invalid or Missing Data for Engine Coolant	Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
U1341	N/A	N/A	SCP Invalid Data for Vehicle Speed	Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

**Symptom Chart**

**Symptom Chart**

Condition	Possible Sources	Action
<ul style="list-style-type: none"> <li>• No communication with the electronic automatic temperature control module</li> </ul>	<ul style="list-style-type: none"> <li>• Circuitry short/open.</li> <li>• EATC module communication network.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test E.</a></li> </ul>
<ul style="list-style-type: none"> <li>• The EATC system is inoperative, intermittent or incorrect operation</li> </ul>	<ul style="list-style-type: none"> <li>• Circuitry short/open.</li> <li>• Input sensor(s)/erratic input signals.</li> <li>• Charging system.</li> <li>• Automatic temperature control sensor hose and elbow.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test F.</a></li> </ul>
<ul style="list-style-type: none"> <li>• Incorrect/Erratic direction of airflow from outlet — EATC</li> </ul>	<ul style="list-style-type: none"> <li>• No vacuum to the A/C control.</li> <li>• A/C control leaks vacuum.</li> <li>• Vacuum hose/kinked/pinched.</li> <li>• Airflow door binding/stuck.</li> <li>• Vacuum control motor.</li> <li>• A/C vacuum check valve.</li> <li>• A/C vacuum reservoir tank and bracket.</li> <li>• Vacuum actuator arm not connected to the door crank.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test G.</a></li> </ul>
<ul style="list-style-type: none"> <li>• The A/C does not operate/does not operate correctly — EATC</li> </ul>	<ul style="list-style-type: none"> <li>• Open fuse.</li> <li>• Circuitry short/open.</li> <li>• A/C cycling switch.</li> <li>• A/C system discharged/low charge.</li> <li>• A/C pressure cut-off switch.</li> <li>• A/C control.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test H.</a></li> </ul>
<ul style="list-style-type: none"> <li>• The blower motor does not operate — EATC</li> </ul>	<ul style="list-style-type: none"> <li>• Circuitry short/open.</li> <li>• A/C blower motor.</li> <li>• A/C blower motor speed control.</li> <li>• Blower motor relay.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test I.</a></li> </ul>
<ul style="list-style-type: none"> <li>• The blower motor operates continuously in high speed — EATC</li> </ul>	<ul style="list-style-type: none"> <li>• Circuitry short/open.</li> <li>• A/C blower motor speed control.</li> <li>• EATC module.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test J.</a></li> </ul>
<ul style="list-style-type: none"> <li>• No operation in some blower settings — EATC</li> </ul>	<ul style="list-style-type: none"> <li>• A/C blower motor speed control.</li> <li>• A/C blower motor.</li> <li>• EATC module.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test K.</a></li> </ul>
<ul style="list-style-type: none"> <li>• The temperature set point does not repeat after turning the ignition switch OFF</li> </ul>	<ul style="list-style-type: none"> <li>• Open fuse.</li> <li>• Circuitry short/open.</li> <li>• EATC module.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test L.</a></li> </ul>

<ul style="list-style-type: none"> <li>The temperature display will not switch between Celsius and Fahrenheit</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>EATC module.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test M.</a></li> </ul>
<ul style="list-style-type: none"> <li>One or more steering wheel control switch is inoperative</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Steering wheel control switch.</li> <li>EATC module.</li> <li>Redundant steering control module.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test N.</a></li> </ul>
<ul style="list-style-type: none"> <li>The auxiliary blower motor does not operate — EATC</li> </ul>	<ul style="list-style-type: none"> <li>Fuses.</li> <li>Circuitry short/open.</li> <li>EATC.</li> <li>Auxiliary blower motor relay.</li> <li>Front/rear auxiliary blower motor switch.</li> <li>Auxiliary blower motor.</li> <li>Auxiliary blower motor resistor.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test O.</a></li> </ul>
<ul style="list-style-type: none"> <li>The console blower motor does not operate — EATC</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>Console blower motor.</li> <li>Console blower resistor.</li> <li>Rear integrated control panel.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test P.</a></li> </ul>
<ul style="list-style-type: none"> <li>Incorrect/Erratic direction of airflow from outlet — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Function selector switch.</li> <li>A/C vacuum check valve.</li> <li>Vacuum hose.</li> <li>A/C vacuum reservoir tank and bracket.</li> <li>Vacuum control motor.</li> <li>Vacuum actuator arm.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test Q.</a></li> </ul>
<ul style="list-style-type: none"> <li>The A/C does not operate/does not operate correctly — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>A/C cycling switch.</li> <li>A/C system.</li> <li>Function selector switch.</li> <li>A/C refrigerant.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test R.</a></li> </ul>
<ul style="list-style-type: none"> <li>No operation in all the temperature settings — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Temperature blend door.</li> <li>Temperature blend door actuator control.</li> <li>A/C electronic blend door actuator motor.</li> <li>Circuitry short/open.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test S.</a></li> </ul>
<ul style="list-style-type: none"> <li>The Blower Motor Does Not Operate — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>A/C blower motor switch.</li> <li>A/C blower motor resistor.</li> <li>A/C blower motor.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test T.</a></li> </ul>
<ul style="list-style-type: none"> <li>The blower motor does not operate correctly — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>A/C blower motor resistor.</li> <li>A/C blower motor switch.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test U.</a></li> </ul>
<ul style="list-style-type: none"> <li>No operation in high blower setting — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>A/C blower motor resistor.</li> <li>A/C blower motor switch.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test V.</a></li> </ul>
<ul style="list-style-type: none"> <li>The auxiliary blower motor does not operate — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Fuses.</li> <li>Circuitry short/open.</li> <li>Function selector switch.</li> <li>Auxiliary blower motor relay.</li> <li>Front/rear auxiliary blower motor switch.</li> <li>Auxiliary blower motor.</li> <li>Auxiliary blower motor resistor.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test W.</a></li> </ul>
<ul style="list-style-type: none"> <li>The console blower motor does not operate — Manual A/C</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>Console blower motor.</li> <li>Console blower resistor.</li> <li>Rear integrated control panel.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test X.</a></li> </ul>
<ul style="list-style-type: none"> <li>Insufficient, erratic, or no heat</li> </ul>	<ul style="list-style-type: none"> <li>Low engine coolant level.</li> <li>Engine overheating.</li> <li>Plugged or partially plugged heater core.</li> <li>Temperature blend door binding/stuck.</li> <li>A/C electric blend door actuator.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test Y.</a></li> </ul>
<ul style="list-style-type: none"> <li>The A/C is always on</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>A/C cycling switch.</li> <li>A/C control.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test Z.</a></li> </ul>
<ul style="list-style-type: none"> <li>The auxiliary blower motor does not operate correctly</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Function selector switch.</li> <li>Front/rear auxiliary blower motor switch.</li> <li>Auxiliary blower motor resistor.</li> <li>Auxiliary blower motor relay.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test AA.</a></li> </ul>
<ul style="list-style-type: none"> <li>The auxiliary blower motor does not operate using the rear auxiliary blower motor switch</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Rear auxiliary blower motor switch.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test AB.</a></li> </ul>
<ul style="list-style-type: none"> <li>The panel/floor control does not operate using the front/rear auxiliary climate controls</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Front/rear auxiliary potentiometer.</li> <li>Auxiliary blend door actuator.</li> <li>Auxiliary climate control module.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test AC.</a></li> </ul>
<ul style="list-style-type: none"> <li>The temperature control does not operate using the front/rear auxiliary climate controls</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Front/rear auxiliary mode potentiometer.</li> <li>Auxiliary mode actuator.</li> <li>Auxiliary climate control module.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test AD.</a></li> </ul>
<ul style="list-style-type: none"> <li>The panel/floor and cool/warm controls do not operate using the front/rear auxiliary controls</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Auxiliary climate control module.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test AE.</a></li> </ul>
<ul style="list-style-type: none"> <li>The panel/floor switch does not operate, the console blower does operate</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>Console door actuator.</li> <li>Rear integrated control panel.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test AF.</a></li> </ul>
<ul style="list-style-type: none"> <li>The auxiliary controls are operational with the function selector OFF</li> </ul>	<ul style="list-style-type: none"> <li>Auxiliary blower motor relay.</li> </ul>	<ul style="list-style-type: none"> <li>INSTALL a new auxiliary blower motor relay.</li> </ul>
<ul style="list-style-type: none"> <li>The rear auxiliary blower motor switch operates only in HI</li> </ul>	<ul style="list-style-type: none"> <li>Auxiliary blower motor resistor thermal limiter.</li> </ul>	<ul style="list-style-type: none"> <li>INSTALL a new auxiliary blower motor resistor.</li> </ul>