









**Climate Control System**[Printable View \(916 KB\)](#)

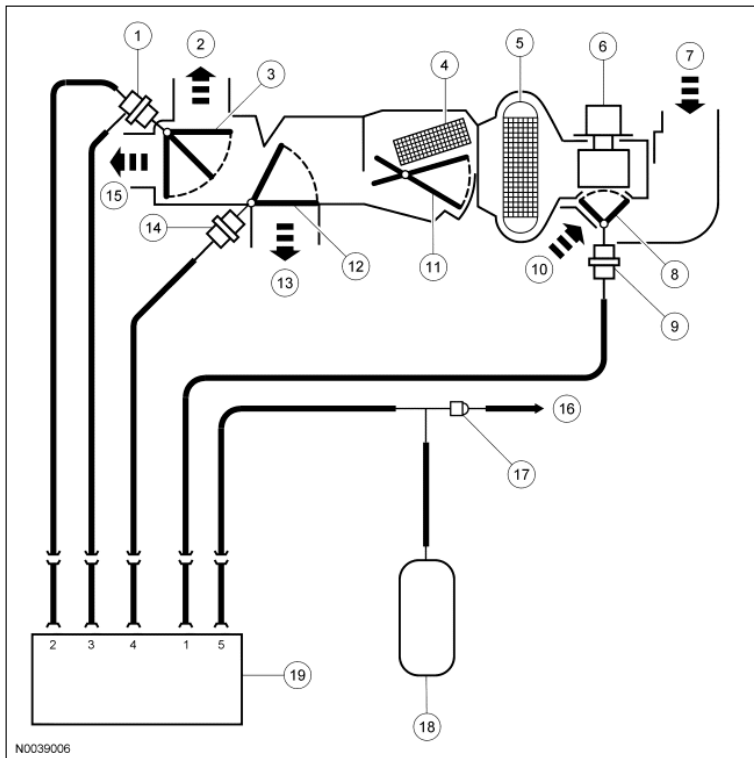
Refer to Wiring Diagrams Cell [55](#), Electronic Automatic Temperature Control (EATC) for schematic and connector information.

Refer to Wiring Diagrams Cell [54](#), Air Conditioner/Heater for schematic and connector information.

**Special Tool(s)**

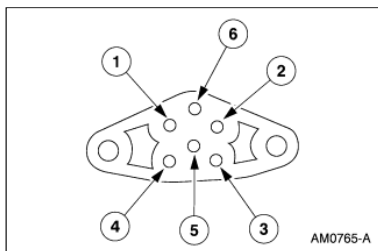
 ST1501-A	Connector, Refrigerant Pressure Line 412-093 (T94P-19623-E)
 ST1252-A	Set, A/C Fittings 412-DS028 (014-00333, D93L-19703-B) or equivalent
 ST1176-A	Vacuum Pump Kit 416-D002 (D95L-7559-A) or equivalent
 ST2332-A	Worldwide Diagnostic System (WDS) 418-F224,  New Generation STAR (NGS) Tester 418-F052, or equivalent diagnostic tool
 ST1474-A	Pressure Test Kit 014-R1072 or equivalent
 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST1928-A	R-134a Manifold Gauge Set 176-R032A or equivalent
 ST2351-A	Refrigerant Leak Detector 216-00001 or equivalent

**Vacuum Schematic—Manual A/C**



Item	Part Number	Description
1	18A318	Vacuum control motor—floor/defrost door
2	—	Defrost air flow
3	18A478	Floor/defrost door
4	18476	Heater core
5	19860	Evaporator core
6	19805	Blower motor
7	—	Outside air inlet
8	19A813	Air inlet door
9	18A318	Vacuum control motor—air inlet door
10	—	Recirculated air inlet
11	18B545	Temperature blend door
12	18A559	Panel door
13	—	Panel air flow
14	18A318	Vacuum control motor—panel door
15	—	Floor air flow
16	—	Vacuum from the engine intake manifold
17	19A563	A/C vacuum check valve
18	19A566	Vacuum reservoir tank and bracket
19	19B888	Function selector switch

Vacuum Connector End View — Manual A/C



Port	Hose Color	Function
1	White	Air inlet door
2	Red	Floor door
3	Yellow	Floor/Defrost door

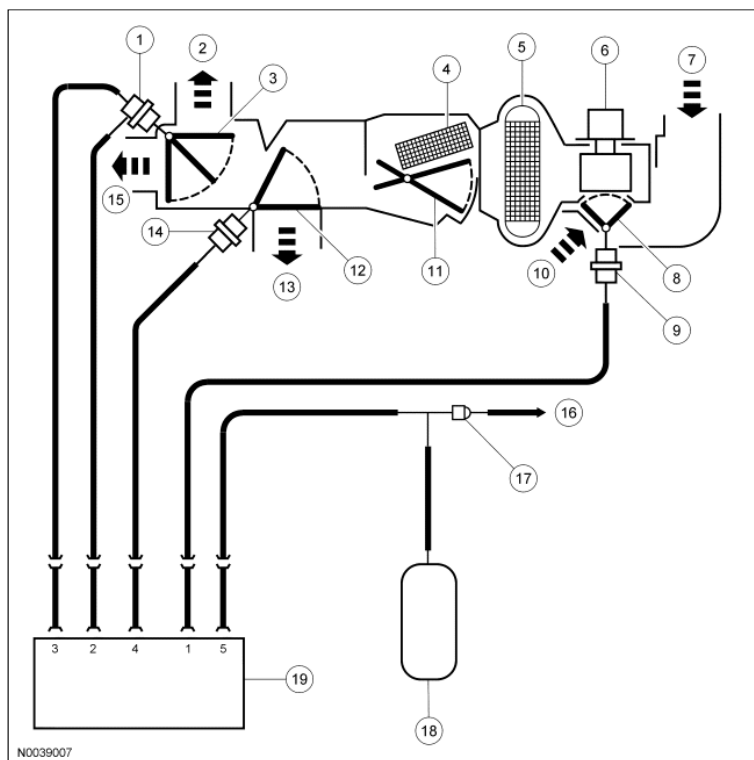
4	Blue	Panel door
5	Black	Vacuum source
6	—	Not used

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

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

V = Vacuum

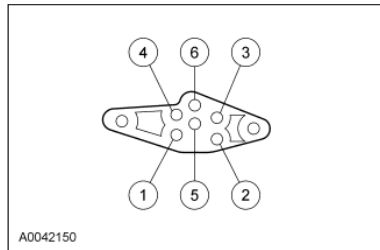
NV= No Vacuum

**Vacuum Schematic—Electronic Automatic Temperature Control**

N0039007

Item	Part Number	Description
1	18A318	Vacuum control motor—floor/defrost door
2	—	Defrost air flow
3	18A478	Floor/defrost door
4	18476	Heater core
5	19860	Evaporator core
6	19805	Blower motor
7	—	Outside air inlet
8	19A813	Air inlet door
9	18A318	Vacuum control motor—air inlet door
10	—	Recirculated air inlet
11	18B545	Temperature blend door
12	18A559	Panel door
13	—	Panel air flow
14	18A318	Vacuum control motor—panel door
15	—	Floor air flow
16	—	Vacuum from the engine intake manifold
17	19A563	A/C vacuum check valve

18	19A566	Vacuum reservoir tank and bracket
19	19980	EATC control

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

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

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

Switch Port	Vacuum Harness Hose Color	Func- tion	Manual Override Selector Buttons						
			OFF	MAX A/C	NORM A/C	VENT	FLOOR	FLOOR/ DEF	DEF
1	White	Air inlet	V	V	NV	NV	NV	NV	NV
2	Yellow	Floor/ panel (partial)	V	V	V	V	V	V	NV
3	Red	Full floor	V	V	V	V	V	NV	NV
4	Blue	Panel	NV	V	V	V	NV	NV	NV
5	Black	Source	V	V	V	V	V	V	V

V = Vacuum

NV = No Vacuum

**Inspection and Verification**

1. Verify the customers concern by operating the climate control system to duplicate the condition.
2. Visually inspect for obvious signs of mechanical or electrical damage.

**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>Broken or leaking refrigerant lines.</li> <li>Obstructed in-car temperature sensor.</li> <li>Disconnected in-car temperature aspirator hose.</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, loose fitting, or incorrectly installed electrical connectors and pins.</li> <li>Cooling fan inoperative.</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. As pinpoint tests are being carried out, be sure to inspect for any disconnected, loose fitting, or incorrectly installed component, module and in-line electrical connectors and pins.
4. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
5. If the cause is not visually evident, connect the diagnostic tool to the data link connector (DLC) and select the vehicle to be tested from the diagnostic tool menu. If the diagnostic tool does not communicate with the vehicle:
  - check that the program card is correctly installed.
  - check the connections to the vehicle.
  - check the ignition switch position.
6. If the diagnostic tool still does not communicate with the vehicle, refer to the diagnostic tool operating manual.
7. Carry out the DATA LINK DIAGNOSTICS test. If the diagnostic tool responds with:
  - CKT 914 or CKT 915 = ALL ECUS NO RESP/NOT EQUIP, refer to [Section 418-00](#).
  - SYSTEM PASSED, retrieve and record continuous diagnostic trouble codes (DTCs), erase the continuous DTCs, and carry out the self-test diagnostics for the EATC module.
  - If the electronic automatic temperature control module cannot be accessed by the diagnostic tool, [GO to Pinpoint Test E](#).
8. If the DTCs retrieved are related to the concern, go to the Powertrain Control Module Diagnostic Trouble Code (DTC) Index or the Electronic Automatic Temperature Control (EATC)

## Module Diagnostic Trouble Code (DTC) Index.

9. If no DTCs related to the concern are retrieved, GO to [Symptom Chart](#).

**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 diagnostic tool 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 carrying out 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, GO to [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) button. The control will exit self-test, retain all intermittent diagnostic trouble codes and then turn OFF (display blank).
- To exit the 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.

**Powertrain Control Module (PCM) Diagnostic Trouble Code (DTC) Index**

DTC	Description	Action
P1460	WOT A/C cutout internal driver malfunction	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
P1469	Low A/C cycling period	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
P1474	Low speed fan internal driver failure	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
P1479	High speed fan internal driver failure	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
P1464	A/C demand out of self-test range	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

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

DTC	EATC (Hard) Self-Test Faults	EATC (Intermittent) Run-Time Faults	Description	Action to Take
B1249	024	025	Blend door short or failure	<a href="#">GO to Pinpoint Test A.</a>
B1251	031	N/A	In-car temperature sensor open circuit	<a href="#">GO to Pinpoint Test B.</a>
B1253	030	N/A	In-car temperature sensor short to ground	<a href="#">GO to Pinpoint Test B.</a>
B1255	041	043	Ambient temperature sensor open circuit	<a href="#">GO to Pinpoint Test C.</a>
B1257	040	042	Ambient temperature sensor short to ground	<a href="#">GO to Pinpoint Test C.</a>
B1260	053	051	A/C solar radiation sensor open circuit	<a href="#">GO to Pinpoint Test D.</a>
B1261	050	052	Solar radiation sensor circuit short to ground	<a href="#">GO to Pinpoint Test D.</a>
U1073	N/A	N/A	SCP invalid or missing data for engine coolant	If DTCs are present in the instrument cluster, diagnose those codes first. Clear the DTCs. If the EATC DTC returns, INSTALL a new EATC module. Refer to <a href="#">Section 412-01</a> . TEST the system for normal operation. If no DTCs are present in the instrument cluster, clear the DTCs. If the EATC DTC returns, INSTALL a new EATC module. Refer to <a href="#">Section 412-01</a> . TEST the system for normal operation.
U1341	N/A	N/A	SCP invalid or missing data for function read vehicle speed	If DTCs are present in the instrument cluster, diagnose those codes first. Clear the DTCs. If the EATC DTC returns, INSTALL a new EATC module. Refer to <a href="#">Section 412-01</a> . TEST the system for normal operation. If no DTCs are present in the instrument cluster, clear the DTCs. If the EATC DTC returns, INSTALL a new EATC module. Refer to <a href="#">Section 412-01</a> . TEST the system for normal operation.

**Symptom Chart****Symptom Chart**

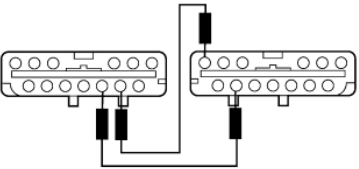
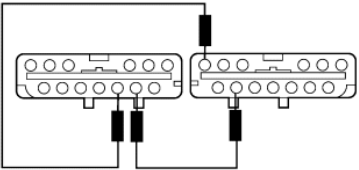
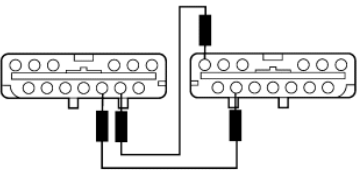
Condition	Possible Sources	Action
<ul style="list-style-type: none"> <li>• No communication with the electronic automatic temperature control (EATC) module (19980)</li> </ul>	<ul style="list-style-type: none"> <li>• Circuitry short/open.</li> <li>• EATC module communication network.</li> </ul>	<ul style="list-style-type: 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>• EATC module.</li> <li>• Automatic temperature control sensor hose and elbow (19D888).</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 — manual climate control</li> </ul>	<ul style="list-style-type: none"> <li>• No vacuum to the A/C control (19980).</li> <li>• Function selector switch (19B888).</li> <li>• Vacuum hose</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test G.</a></li> </ul>

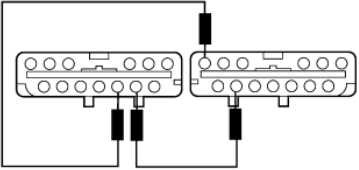
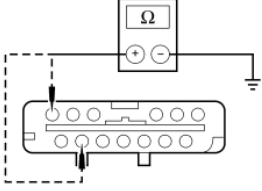
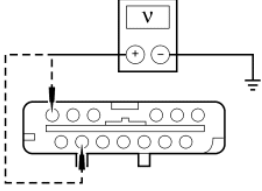
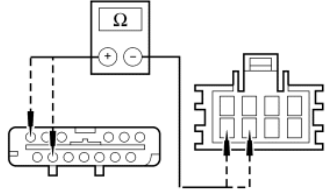
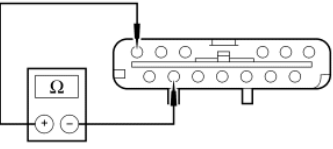
	<ul style="list-style-type: none"> <li>kinked/pinched.</li> <li>Airflow door binding/stuck.</li> <li>Vacuum control motor (18A318).</li> <li>A/C vacuum check valve (19A563).</li> <li>A/C vacuum reservoir tank and bracket (19A566).</li> <li>Vacuum actuator arm not connected to the door crank.</li> </ul>	
<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 (19980).</li> <li>Function selector switch (19B888).</li> <li>Vacuum hose kinked/pinched.</li> <li>Airflow door binding/stuck.</li> <li>Vacuum control motor (18A318).</li> <li>A/C vacuum check valve (19A563).</li> <li>A/C vacuum reservoir tank and bracket (19A566).</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 H.</a></li> </ul>
<ul style="list-style-type: none"> <li>Insufficient, erratic, or no heat — EATC and manual climate control</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 (18476).</li> <li>Temperature blend door binding/stuck.</li> <li>Temperature blend door actuator (19E616).</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 air conditioning (A/C) is inoperative/does not operate correctly</li> </ul>	<ul style="list-style-type: none"> <li>Fuse(s).</li> <li>Circuitry short/open.</li> <li>A/C cycling switch (19E561).</li> <li>A/C system discharged/low charge.</li> <li>A/C pressure cutoff switch (19D594).</li> <li>EATC module.</li> <li>Function selector switch.</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>The air conditioning (A/C) is always on</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>A/C cycling switch (19E561).</li> <li>EATC module.</li> <li>Function selector switch.</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>Insufficient air conditioning (A/C) cooling</li> </ul>	<ul style="list-style-type: none"> <li>Low refrigerant level.</li> <li>Temperature blend door actuator.</li> </ul>	<ul style="list-style-type: none"> <li>CARRY OUT the refrigerant system tests. REFER to <a href="#">Refrigerant System Tests</a> in this section.</li> <li>If OK, <a href="#">GO to Pinpoint Test A</a> for vehicles equipped with EATC or if equipped with manual climate control, <a href="#">GO to Pinpoint Test L.</a></li> </ul>
<ul style="list-style-type: none"> <li>Temperature control is inoperative/does not operate correctly — manual climate control</li> </ul>	<ul style="list-style-type: none"> <li>Temperature blend door actuator control (19D816).</li> <li>Temperature blend door.</li> <li>Temperature blend door actuator motor (19E616).</li> <li>Circuitry open/shorted.</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 blower motor is inoperative — manual climate control</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry open/shorted.</li> <li>A/C blower motor switch (19986).</li> <li>A/C blower motor resistor (19A706).</li> <li>A/C blower motor (19805).</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>The blower motor is inoperative — EATC</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Blower motor relay (14N089).</li> <li>A/C blower motor (19805).</li> <li>A/C blower motor speed control (19E624).</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 blower motor does not operate correctly — manual climate control</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>A/C blower motor resistor (19A706).</li> <li>A/C blower motor switch (19986).</li> </ul>	<ul style="list-style-type: none"> <li>CARRY OUT the blower motor resistor component test in this section. If the blower motor resistor tests good, <a href="#">GO to Pinpoint Test O.</a></li> </ul>
<ul style="list-style-type: none"> <li>The blower motor does not operate correctly — EATC</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>A/C blower motor speed control (19E624).</li> <li>EATC module (19980).</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>The steering wheel control switch is inoperative/does not operate correctly</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>Steering wheel control switch.</li> <li>EATC module.</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 temperature set point does not repeat after turning the</li> </ul>	<ul style="list-style-type: none"> <li>Fuse(s).</li> <li>Circuitry short/open.</li> </ul>	<ul style="list-style-type: none"> <li>CHECK circuit 298 (VT/OG) for a short or open and repair as necessary. If okay, INSTALL a new EATC module.</li> </ul>

ignition switch OFF — EATC	<ul style="list-style-type: none"> <li>EATC module (19980).</li> </ul>	
<ul style="list-style-type: none"> <li>The temperature display will not switch between Celsius and Fahrenheit — EATC</li> </ul>	<ul style="list-style-type: none"> <li>EATC module.</li> </ul>	<ul style="list-style-type: none"> <li>PRESS the MAX A/C and DEFROST buttons simultaneously for at least 0.75 second. If the temperature display does not switch between Celsius and Fahrenheit, INSTALL a new EATC module.</li> </ul>
<ul style="list-style-type: none"> <li>Inaccurate external temperature display</li> </ul>	<ul style="list-style-type: none"> <li>EATC module.</li> </ul>	<ul style="list-style-type: none"> <li>REFER to Description and Operation — External Temperature Display. If the external temperature display is not operating as described and no DTC is present, CARRY OUT the ambient temperature sensor component test in this section. If the sensor tests OK, INSTALL a new EATC module. Refer to <a href="#">Section 412-01</a>. TEST the system for normal operation.</li> </ul>

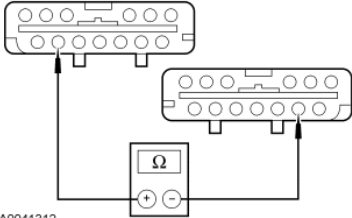
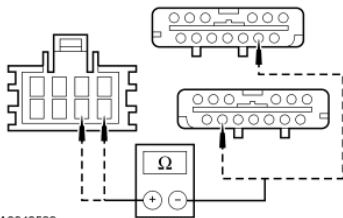
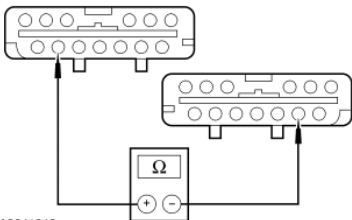
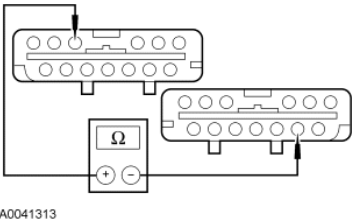
## Pinpoint Tests

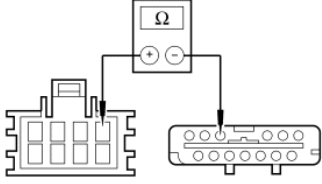
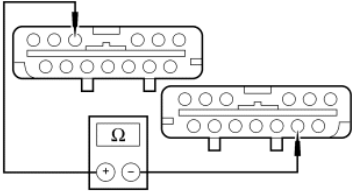
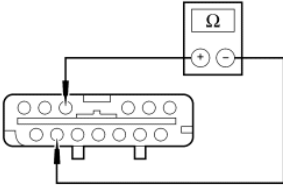
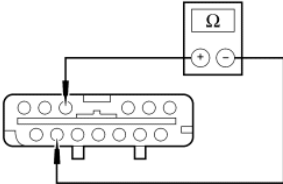
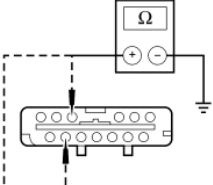
## PINPOINT TEST A: DTC B1249 — BLEND DOOR FAILURE OR SHORT

Test Step	Result / Action to Take
<b>A1 CHECK THE BLEND DOOR ACTUATOR CLOCKWISE OPERATION</b> <ul style="list-style-type: none"> <li>Disconnect: EATC Module C228a and C228b.</li> <li>Ignition ON.</li> <li>Connect a fused jumper wire between EATC module C228b-26, circuit 246 (VT) and EATC module C228a-2, circuit 54 (LG/YE). Connect a second fused jumper wire between EATC module C228b-13, circuit 245 (BN/LG) and EATC module C228a-3, circuit 676 (PK/OG).</li> </ul>  <p>AM0156-A</p> <ul style="list-style-type: none"> <li>Does the actuator motor move in the clockwise direction?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A2</a>.</p> <p><b>No</b> GO to <a href="#">A3</a>.</p>
<b>A2 CHECK THE BLEND DOOR ACTUATOR COUNTERCLOCKWISE OPERATION</b> <ul style="list-style-type: none"> <li>Connect a fused jumper wire between EATC module C228b-13, circuit 245 (BN/LG) and EATC module C228a-2, circuit 54 (LG/YE). Connect a second fused jumper wire between EATC module C228b-26, circuit 246 (VT) and EATC module C228a-3, circuit 676 (PK/OG).</li> </ul>  <p>AM0155-A</p> <ul style="list-style-type: none"> <li>Does the air bypass door actuator motor move in the closed direction?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A9</a>.</p> <p><b>No</b> GO to <a href="#">A3</a>.</p>
<b>A3 CHECK THE ACTUATOR CLOCKWISE OPERATION</b> <ul style="list-style-type: none"> <li>Remove the door actuator and disengage the actuator drive shaft from the actuator door. Refer to <a href="#">Section 412-04</a>.</li> <li>Connect a fused jumper wire between EATC module C228b-26, circuit 246 (VT) and EATC module C228a-2, circuit 54 (LG/YE). Connect a second fused jumper wire between EATC module C228b-13, circuit 245 (BN/LG) and EATC module C228a-3, circuit 676 (PK/OG).</li> </ul>  <p>AM0156-A</p> <ul style="list-style-type: none"> <li>Does the actuator motor move in the clockwise direction?</li> </ul>	<p><b>Yes</b> INSPECT for binding or broken door or linkage. If no condition is found, INSTALL a new door actuator. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">A4</a>.</p>
<b>A4 CHECK THE ACTUATOR COUNTERCLOCKWISE OPERATION</b> <ul style="list-style-type: none"> <li>Connect a fused jumper wire between EATC module C228b-13, circuit 245 (BN/LG) and EATC module C228a-2, circuit 54 (LG/YE). Connect a second fused jumper wire between EATC module C228b-26, circuit 246 (VT) and EATC module C228a-3, circuit 676 (PK/OG).</li> </ul>	<p><b>Yes</b> INSPECT for binding, broken door or linkage. If no condition is found, INSTALL a new door actuator. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">A5</a>.</p>

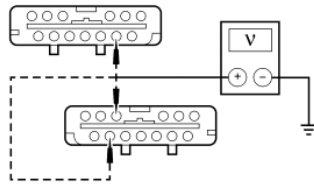
 <p style="text-align: center;">A00155-A</p> <ul style="list-style-type: none"> <li>Does the air bypass door actuator motor move in the closed direction?</li> </ul>	
<p><b>A5 CHECK CIRCUITS 246 (VT) AND 298 (VT/OG) AND CIRCUITS 245 (BN/LG) AND 208 (GY) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228b-26, circuit 246 (VT) and ground. Measure the resistance between EATC module C228b-13, circuit 245 (BN/LG) and ground.</li> </ul>  <p style="text-align: center;">A0042517</p> <ul style="list-style-type: none"> <li>Are the resistances greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A6</a>.</p> <p><b>No</b> REPAIR the affected circuit for a short to ground. TEST the system for normal operation.</p>
<p><b>A6 CHECK CIRCUIT 246 (VT) AND 298 (VT/OG) AND CIRCUITS 245 (BN/LG) AND 208 (GY) FOR A SHORT TO POWER</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Measure the voltage between EATC module C228b-26, circuit 246 (VT) and ground. Measure the voltage between EATC module C228b-13, circuit 245 (BN/LG) and ground.</li> </ul>  <p style="text-align: center;">A0042518</p> <ul style="list-style-type: none"> <li>Is voltage present?</li> </ul>	<p><b>Yes</b> REPAIR the affected circuit for a short to power. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">A7</a>.</p>
<p><b>A7 CHECK CIRCUITS 246 (VT) AND 298 (VT/OG) AND CIRCUITS 245 (BN/LG) AND 208 (GY) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between EATC module C228a-26, circuit 246 (VT) and the temperature blend door actuator C289-7, circuit 298 (VT/OG). Measure the resistance between EATC module C228b-13, circuit 245 (BN/LG) and the temperature blend door actuator C289-8, circuit 208 (GY).</li> </ul>  <p style="text-align: center;">A0042519</p> <ul style="list-style-type: none"> <li>Are the resistances less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A8</a>.</p> <p><b>No</b> REPAIR the affected circuit for an open. TEST the system for normal operation.</p>
<p><b>A8 CHECK CIRCUIT 245 (BN/LG) AND 246 (VT) FOR A SHORT TOGETHER</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between EATC module C228b-13, circuit 245 (BN/LG) and EATC module C228b-26, circuit 246 (VT).</li> </ul>  <p style="text-align: center;">A0042121</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new door actuator. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 245 (BN/LG) and circuit 246 (VT) for a short together. TEST the system for normal operation.</p>



<p><b>A9 CHECK THE FEEDBACK POTENTIOMETER TOTAL RESISTANCE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between EATC module C228a-6, circuit 436 (RD/LG) and EATC module C228b-9, circuit 438 (RD/WH).</li> </ul>  <p>A0041312</p> <ul style="list-style-type: none"> <li>Is the resistance between 5,000 and 6,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A12</a>.</p> <p><b>No</b> If the resistance is greater than 6,000 ohms, GO to <a href="#">A10</a> . If the resistance is less than 5,000 ohms, GO to <a href="#">A11</a> .</p>
<p><b>A10 CHECK CIRCUITS 436 (RD/LG) AND 600 (DB) AND CIRCUIT 438 (RD/WH) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228a-6, circuit 436 (RD/LG) and the temperature blend door actuator C289-6, circuit 600 (DB). Measure the resistance between EATC module C228b-9, circuit 438 (RD/WH) and the temperature blend door actuator C289-5, circuit 438 (RD/WH).</li> </ul>  <p>A0042522</p> <ul style="list-style-type: none"> <li>Are the resistances less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new temperature blend door actuator. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR the affected circuit for an open. TEST the system for normal operation.</p>
<p><b>A11 CHECK CIRCUIT 438 (RD/WH) FOR A SHORT TO CIRCUITS 436 (RD/LG) OR 600 (DB)</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228a-9, circuit 438 (RD/WH) and EATC module C228b-6, circuit 436 (RD/LG).</li> </ul>  <p>A0041312</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new temperature blend door actuator (19E616). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuits 438 (RD/WH) for a short to circuits 436 (RD/LG) or 600 (DB). TEST the system for normal operation.</p>
<p><b>A12 CHECK POTENTIOMETER LOW SIDE RESISTANCE</b></p> <ul style="list-style-type: none"> <li>Drive the actuator to the full clockwise position. Refer to A1.</li> <li>Measure the resistance between EATC module C228a-18, circuit 437 (YE/LG) and EATC module C228b-9, circuit 438 (RD/WH).</li> </ul>  <p>A0041313</p> <ul style="list-style-type: none"> <li>Is the resistance between 250 and 3,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A15</a>.</p> <p><b>No</b> If the resistance is greater than 3,000 ohms, GO to <a href="#">A13</a> . If the resistance is less than 250 ohms, GO to <a href="#">A14</a> .</p>
<p><b>A13 CHECK CIRCUIT 437 (YE/LG) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228a-18, circuit 437 (YE/LG) and the temperature blend door actuator C289-1, circuit 437 (YE/LG).</li> </ul>	<p><b>Yes</b> INSTALL a new temperature blend door actuator (19E616). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 437 (YE/LG) for an open. TEST the system for normal operation.</p>

 <p>A0042524</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	
<p><b>A14 CHECK CIRCUIT 438 (RD/WH) AND CIRCUIT 437 (YE/LG) FOR A SHORT TOGETHER</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228b-9, circuit 438 (RD/WH) and EATC module C228a-18, circuit 437 (YE/LG).</li> </ul>  <p>A0041313</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new temperature blend door actuator (19E616). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuits 438 (RD/WH) and circuit 437 (YE/LG) for a short together. TEST the system for normal operation.</p>
<p><b>A15 CHECK POTENTIOMETER HIGH SIDE RESISTANCE</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between EATC module C228a-6, circuit 436 (RD/LG) and EATC module C228a-18, circuit 437 (YE/LG).</li> </ul>  <p>A0041314</p> <ul style="list-style-type: none"> <li>Is the resistance between 3,000 and 6,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A17</a>.</p> <p><b>No</b> If the resistance is greater than 6,000 ohms, INSTALL a new temperature blend door actuator. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation. If the resistance is less than 3,000 ohms, GO to <a href="#">A16</a>.</p>
<p><b>A16 CHECK CIRCUIT 437 (YE/LG) FOR A SHORT TO CIRCUITS 436 (RD/LG) OR 600 (DB)</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228a-6, circuit 436 (RD/LG) and EATC module C228a-18, circuit 437 (YE/LG).</li> </ul>  <p>A0041314</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new temperature blend door actuator (19E616). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuits 437 (YE/LG) for a short to circuits 436 (RD/LG) or 600 (DB). TEST the system for normal operation.</p>
<p><b>A17 CHECK CIRCUITS 436 (RD/LG) AND 600 (DB) AND CIRCUIT 437 (YE/LG) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Blend Door Actuator C289.</li> <li>Measure the resistance between EATC module C228a-6, circuit 436 (RD/LG) and ground. Measure the resistance between EATC module C228a-18, circuit 437 (YE/LG) and ground.</li> </ul>  <p>A0042526</p> <ul style="list-style-type: none"> <li>Are the resistances greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A18</a>.</p> <p><b>No</b> REPAIR the affected circuit 436 (RD/LG), 600 (DB) or circuit 437 (YE/LG) for a short to ground. TEST the system for normal operation.</p>
<p><b>A18 CHECK CIRCUITS 436 (RD/LG), 437 (YE/LG) AND 438 (RD/WH) FOR A SHORT TO POWER</b></p>	

- Ignition ON.
- Measure the voltage between EATC module C228a-6, circuit 436 (RD/LG), EATC module C228a-18, circuit 437 (YE/LG) and EATC module C228b-9, circuit 438 (RD/WH) and ground.



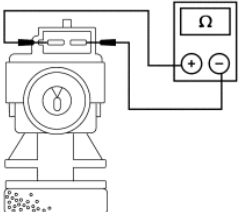
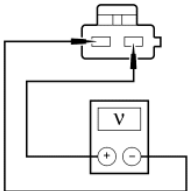
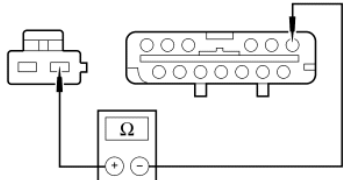
A0042527

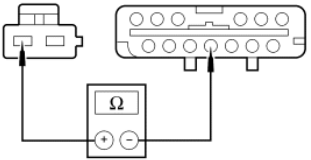
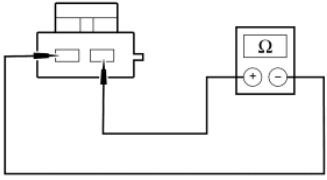
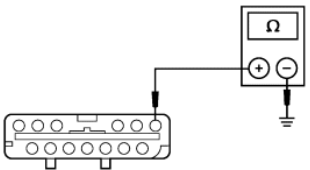
- Is voltage present?

**Yes**  
REPAIR the affected circuit for a short to power. TEST the system for normal operation.

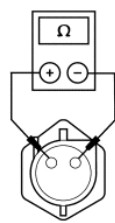
**No**  
INSPECT for a broken door or linkage. If no condition is found, INSTALL a new EATC module. REFER to [Section 412-04](#). TEST the system for normal operation.

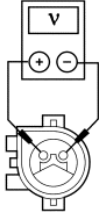
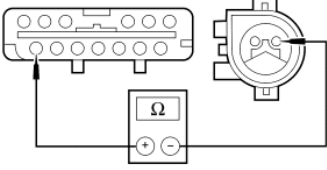
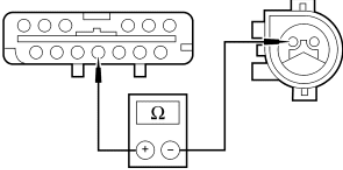
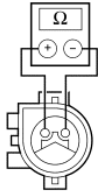
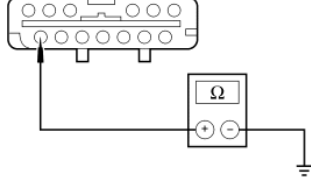
#### PINPOINT TEST B: DTC B1251 OR DTC B1253 — A/C IN-CAR TEMPERATURE SENSOR OPEN CIRCUIT OR SHORT TO GROUND

Test Step	Result / Action to Take
<b>B1 CHECK THE SENSOR RESISTANCE</b>	
<ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: In-Car Temperature Sensor C233.</li> <li>• Measure the resistance between the in-car temperature sensor terminals.</li> </ul>  <p>AM1393-A</p> <ul style="list-style-type: none"> <li>• Is the resistance within the specified values for these temperature ranges: 10-20 °C (50-68 °F), 37,000-58,000 ohms; 20-30 °C (68-86 °F), 24,000-37,000 ohms; 30-40 °C (86-104 °F), 16,000-24,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">B2</a>.</p> <p><b>No</b> INSTALL a new in-car temperature sensor (19D888). TEST the system for normal operation.</p>
<b>B2 CHECK THE EATC SENSOR OUTPUT VOLTAGE</b>	
<ul style="list-style-type: none"> <li>• Ignition ON.</li> <li>• Press the AUTOMATIC button.</li> <li>• Measure the voltage between the in-car temperature sensor C233, circuit 790 (WH/OG) and circuit 470 (PK/BK).</li> </ul>  <p>A0041321</p> <ul style="list-style-type: none"> <li>• Is the voltage between 4.7 and 5.1 volts?</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> If diagnosing DTC B1251, GO to <a href="#">B3</a>. If diagnosing DTC B1253, GO to <a href="#">B5</a>.</p>
<b>B3 CHECK CIRCUIT 790 (WH/OG) FOR AN OPEN</b>	
<ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: EATC Module C228b.</li> <li>• Measure the resistance between the EATC module C228b-21, circuit 790 (WH/OG) and the in-car temperature sensor C233, circuit 790 (WH/OG).</li> </ul>  <p>A0041322</p> <ul style="list-style-type: none"> <li>• Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">B4</a>.</p> <p><b>No</b> REPAIR circuit 790 (WH/OG) for an open. TEST the system for normal operation.</p>
<b>B4 CHECK CIRCUIT 470 (PK/BK) FOR AN OPEN</b>	
<ul style="list-style-type: none"> <li>• Disconnect: EATC Module C228a.</li> <li>• Measure the resistance between the EATC module C228a-4, circuit 470 (PK/BK) and the in-car temperature sensor C233, circuit 470 (PK/BK).</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 470 (PK/BK) for an open. TEST the system for normal operation.</p>

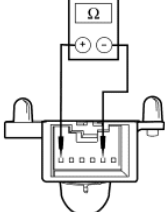
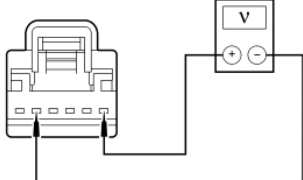
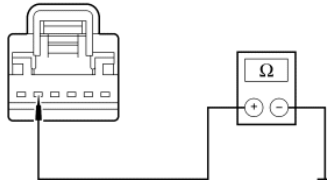
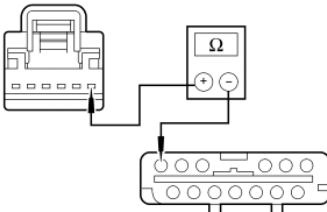
 <p>A0041323</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	
<p><b>B5 CHECK CIRCUIT 790 (WH/OG) FOR A SHORT TO CIRCUIT 470 (PK/BK)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228b.</li> <li>Measure the resistance between the in-car temperature sensor C233, circuit 790 (WH/OG) and circuit 470 (PK/BK).</li> </ul>  <p>A0038067</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">B6</a>.</p> <p><b>No</b> REPAIR circuit 790 (WH/OG) for a short to circuit 470 (PK/BK). TEST the system for normal operation.</p>
<p><b>B6 CHECK CIRCUIT 790 (WH/OG) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the EATC module C228b-21, circuit 790 (WH/OG) and ground.</li> </ul>  <p>AM0720-A</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 790 (WH/OG) for a short to ground. TEST the system for normal operation.</p>

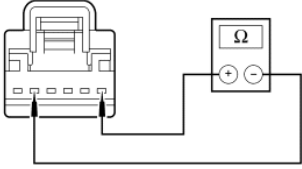
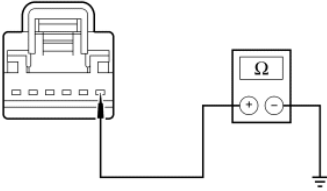
## PINPOINT TEST C: DTC B1255 OR DTC B1257 — A/C AMBIENT TEMPERATURE SENSOR OPEN CIRCUIT OR SHORT TO GROUND

Test Step	Result / Action to Take
<p><b>C1 CHECK THE AMBIENT TEMPERATURE SENSOR RESISTANCE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Ambient Temperature Sensor C132.</li> <li>Measure the resistance between the ambient temperature sensor terminals.</li> </ul>  <p>A0002817</p> <ul style="list-style-type: none"> <li>Is the resistance within the specified values for these temperature ranges: 10-20°C (50-68°F), 37,000-58,000 ohms; 20-30°C (68-86°F), 24,000-37,000 ohms; 30-40°C (86-104°F), 16,000-24,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">C2</a>.</p> <p><b>No</b> INSTALL a new ambient air temperature sensor (19E702). TEST the system for normal operation.</p>
<p><b>C2 CHECK THE EATC MODULE OUTPUT VOLTAGE</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Press the AUTOMATIC button.</li> <li>Measure the voltage between the ambient temperature sensor C132, circuit 767 (LB/OG) and circuit 470 (PK/BK).</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> If diagnosing DTC B1255, GO to <a href="#">C3</a>. If diagnosing DTC B1257, GO to <a href="#">C5</a>.</p>

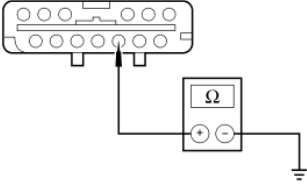
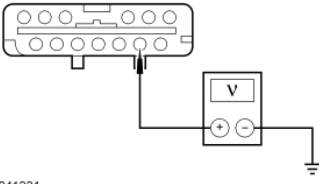
 <p>A0002818</p> <ul style="list-style-type: none"> <li>Is the voltage between 4.7 and 5.1 volts?</li> </ul>	
<p><b>C3 CHECK CIRCUIT 767 (LB/OG) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228a.</li> <li>Measure the resistance between the EATC module C228a-7, circuit 767 (LB/OG) and the ambient temperature sensor C132, circuit 767 (LB/OG).</li> </ul>  <p>A0041324</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">C4</a>.</p> <p><b>No</b> REPAIR circuit 767 (LB/OG) for an open. TEST the system for normal operation.</p>
<p><b>C4 CHECK CIRCUIT 470 (PK/BK) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the EATC module C228a-4, circuit 470 (PK/BK) and the ambient temperature sensor C132, circuit 470 (PK/BK).</li> </ul>  <p>A0041325</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 470 (PK/BK) for an open. TEST the system for normal operation.</p>
<p><b>C5 CHECK CIRCUIT 767 (LB/OG) FOR A SHORT TO CIRCUIT 470 (PK/BK)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228a.</li> <li>Measure the resistance between the ambient temperature sensor C132, circuit 767 (LB/OG) and circuit 470 (PK/BK).</li> </ul>  <p>A0038068</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">C6</a>.</p> <p><b>No</b> REPAIR circuit 767 (LB/OG) for a short to circuit 470 (PK/BK). TEST the system for normal operation.</p>
<p><b>C6 CHECK CIRCUIT 767 (LB/OG) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the EATC module C228a-7, circuit 767 (LB/OG) and ground.</li> </ul>  <p>A0041326</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 767 (LB/OG) for a short to ground. TEST the system for normal operation.</p>

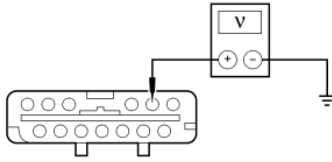
## PINPOINT TEST D: DTC B1261 — A/C SOLAR RADIATION SENSOR CIRCUIT SHORT TO GROUND

Test Step	Result / Action to Take
<b>D1 CHECK THE SOLAR RADIATION SENSOR RESISTANCE</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Solar Radiation Sensor C286.</li> <li>Measure the resistance between the solar radiation sensor terminals 1 and 5, component side.</li> </ul>  <p>A0015934</p> <ul style="list-style-type: none"> <li>Is continuity present and the resistance greater than 0 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">D2</a>.</p> <p><b>No</b> INSTALL a new solar radiation sensor (19E663). TEST the system for normal operation.</p>
<b>D2 CHECK THE SOLAR RADIATION SENSOR REFERENCE VOLTAGE</b> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Press the AUTOMATIC button.</li> <li>Measure the voltage between the solar radiation sensor C286, circuit 476 (BN/YE) and circuit 676 (PK/OG).</li> </ul>  <p>A0015935</p> <ul style="list-style-type: none"> <li>Is the voltage between 4.7 and 5.1 volts?</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> If diagnosing DTC 1260, GO to <a href="#">D3</a>. If diagnosing DTC 1261, GO to <a href="#">D5</a>.</p>
<b>D3 CHECK CIRCUIT 676 (PK/OG) FOR AN OPEN</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between the solar radiation sensor C286, circuit 676 (PK/OG) and ground.</li> </ul>  <p>A0015937</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">D4</a>.</p> <p><b>No</b> REPAIR circuit 676 (PK/OG) for an open. TEST the system for normal operation.</p>
<b>D4 CHECK CIRCUIT 476 (BN/YE) FOR AN OPEN</b> <ul style="list-style-type: none"> <li>Disconnect: DATC/EATC Module C228a.</li> <li>Measure the resistance between the DATC/EATC module C228a-20, circuit 476 (BN/YE) and the solar radiation sensor C286, circuit 476 (BN/YE).</li> </ul>  <p>A0051239</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new DATC/EATC module. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 476 (BN/YE) for an open. TEST the system for normal operation.</p>
<b>D5 CHECK CIRCUIT 476 (BN/YE) FOR A SHORT TO CIRCUIT 676 (PK/OG).</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228a.</li> <li>Measure the resistance between the solar radiation sensor C286, circuit 476 (BN/YE) and circuit 676 (PK/OG).</li> </ul>	<p><b>Yes</b> GO to <a href="#">D6</a>.</p> <p><b>No</b> REPAIR circuit 476 (BN/YE) for a short to circuit 676 (PK/OG).</p>

 <p>A0042617</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	
<p><b>D6 CHECK CIRCUIT 476 (BN/YE) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228a.</li> <li>Measure the resistance between the solar radiation sensor C286, circuit 476 (BN/YE) and ground.</li> </ul>  <p>A0015938</p> <ul style="list-style-type: none"> <li>Is the resistance greater than 10,000 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 476 (BN/YE) for a short to ground. TEST the system for normal operation.</p>

## PINPOINT TEST E: NO COMMUNICATION WITH THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC) MODULE

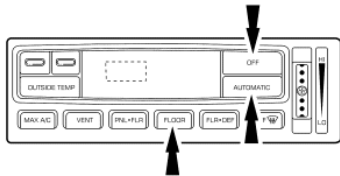
Test Step	Result / Action to Take
<p><b>E1 CHECK CIRCUIT 676 (PK/OG) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Disconnect: EATC Module C228a.</li> <li>Measure the resistance between the EATC module C228a-3, circuit 676 (PK/OG) and ground.</li> </ul>  <p>A0041330</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">E2</a>.</p> <p><b>No</b> REPAIR circuit 676 (PK/OG). TEST the system for normal operation.</p>
<p><b>E2 CHECK CIRCUIT 54 (LG/YE) FOR B+</b></p> <ul style="list-style-type: none"> <li>Measure the voltage between the EATC module C228a-2, circuit 54 (LG/YE) and ground.</li> </ul>  <p>A0041331</p> <ul style="list-style-type: none"> <li>Is the voltage reading B+?</li> </ul>	<p><b>Yes</b> GO to <a href="#">E3</a>.</p> <p><b>No</b> REPAIR circuit 54 (LG/YE). TEST the system for normal operation.</p>
<p><b>E3 CHECK CIRCUIT 298 (VT/OG) FOR B+</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Measure the voltage between the EATC module C228a-16, circuit 298 (VT/OG) and ground.</li> </ul>	<p><b>Yes</b> REFER to Module Communication Network Diagnostics in <a href="#">Section 418-00</a> to diagnose the network concern.</p> <p><b>No</b> REPAIR circuit 298 (VT/OG). TEST the system for normal operation.</p>



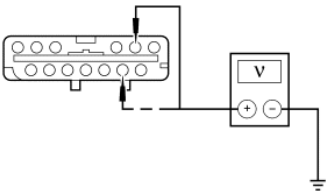
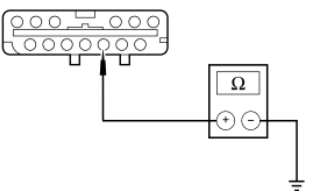
A0041332

- Is the voltage reading B+?

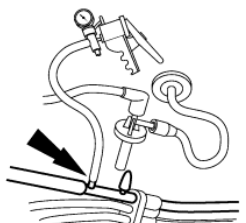
## PINPOINT TEST F: THE EATC SYSTEM IS INOPERATIVE, INTERMITTENT OR INCORRECT OPERATION

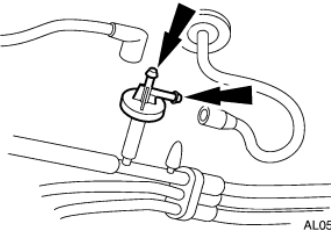
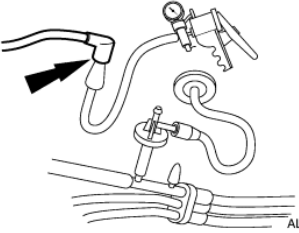
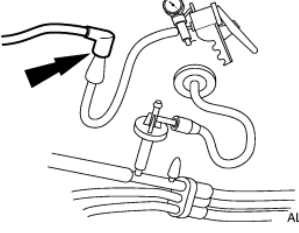
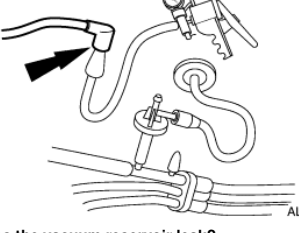
Test Step	Result / Action to Take
<b>F1 VERIFY AUTOMATIC OPERATION</b> <ul style="list-style-type: none"> <li>• Ignition ON.</li> <li>• With the engine running, press the AUTOMATIC button.</li> <li>• Does AUTO and the selected temperature appear in the display window?</li> </ul>	<b>Yes</b> GO to <a href="#">F2</a> .  <b>No</b> GO to <a href="#">F11</a> .
<b>F2 CARRY OUT THE EATC MODULE SELF-TEST</b> <ul style="list-style-type: none"> <li>• Ignition ON.</li> <li>• Carry out the EATC module self-test. Refer to the Electronic Automatic Temperature Control Module Self-Test in this section. Record the DTCs displayed, if any.</li> </ul>  <p style="text-align: center;">AL0101-A</p> <ul style="list-style-type: none"> <li>• Were any DTCs displayed as a result of the EATC self-test?</li> </ul>	<b>Yes</b> REFER to the Electronic Automatic Temperature Control (EATC) Module Diagnostic Trouble Code (DTC) Index. CARRY OUT the necessary diagnosis and REPAIR as required.  <b>No</b> GO to <a href="#">F3</a> .
<b>F3 CHECK THE VACUUM FLUORESCENT DISPLAY</b> <ul style="list-style-type: none"> <li>• Exit self-test by pressing the DEFROST button. Observe the function symbols displayed on the vacuum fluorescent display.</li> <li>• Is the display correct and complete without any missing elements?</li> </ul>	<b>Yes</b> GO to <a href="#">F4</a> .  <b>No</b> INSTALL a new EATC module (19980). TEST the system for normal operation.
<b>F4 CHECK THE BLOWER MANUAL OVERRIDE OPERATION</b> <ul style="list-style-type: none"> <li>• Slowly rotate the blower motor speed override control from LO to HI.</li> <li>• Does the blower motor speed increase smoothly from low speed to high speed?</li> </ul>	<b>Yes</b> GO to <a href="#">F5</a> .  <b>No</b> If the blower motor is inoperative, <a href="#">GO to Pinpoint Test N</a> .  If the blower motor operates continuously in one speed, <a href="#">GO to Pinpoint Test P</a> .  If the blower motor is inoperative only in some speeds, <a href="#">GO to Pinpoint Test P</a> .
<b>F5 VERIFY THE DEFROST OVERRIDE OPERATION</b> <ul style="list-style-type: none"> <li>• Press the override button for DEFROST operation.</li> <li>• Is outside air being discharged from the windshield defroster nozzle and the side window demisters?</li> </ul>	<b>Yes</b> GO to <a href="#">F6</a> .  <b>No</b> <a href="#">GO to Pinpoint Test H</a> .
<b>F6 VERIFY THE FLOOR OVERRIDE OPERATION</b> <ul style="list-style-type: none"> <li>• Press the override button for FLOOR operation.</li> <li>• Is outside air being discharged from the floor duct?</li> </ul>	<b>Yes</b> GO to <a href="#">F7</a> .  <b>No</b> <a href="#">GO to Pinpoint Test H</a> .
<b>F7 VERIFY THE VENT OVERRIDE OPERATION</b> <ul style="list-style-type: none"> <li>• Press the override button for VENT operation.</li> <li>• Is outside air being discharged from the instrument panel registers?</li> </ul>	<b>Yes</b> GO to <a href="#">F8</a> .  <b>No</b> <a href="#">GO to Pinpoint Test H</a> .
<b>F8 VERIFY THE A/C CLUTCH DOES NOT ENGAGE IN THE VENT MODE</b> <ul style="list-style-type: none"> <li>• Press the override button for VENT operation.</li> <li>• Does the A/C clutch engage when the VENT override button is pressed?</li> </ul>	<b>Yes</b> REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.  <b>No</b> GO to <a href="#">F9</a> .
<b>F9 VERIFY THE MAX A/C OVERRIDE OPERATION</b> <ul style="list-style-type: none"> <li>• Make sure the ambient air temperature is above 2°C (35°F).</li> </ul>	<b>Yes</b>

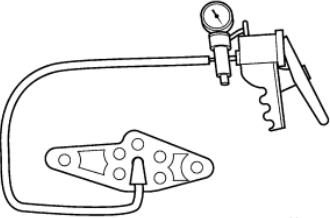
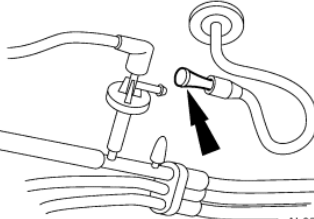
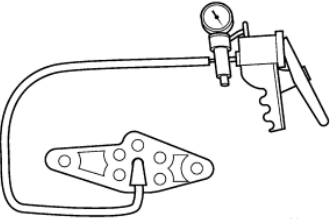
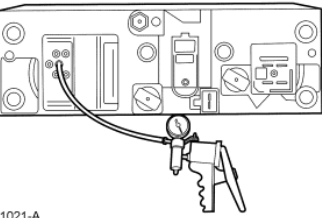
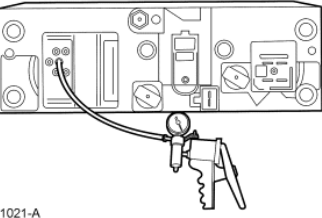


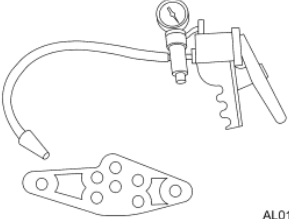
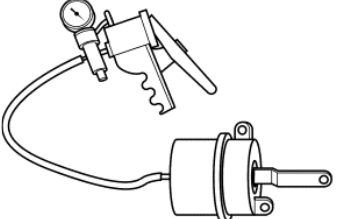
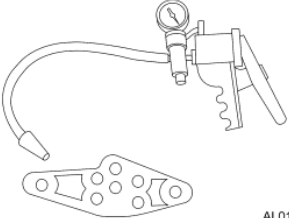
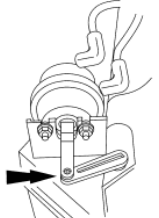
<ul style="list-style-type: none"> <li>Press the override button for MAX A/C operation.</li> <li>Is recirculated air being discharged from the instrument panel registers?</li> </ul>	GO to <a href="#">F10</a> .  <b>No</b> GO to <a href="#">Pinpoint Test H</a> .
<b>F10 VERIFY A/C CLUTCH ENGAGEMENT IN THE MAX A/C MODE</b>	
<ul style="list-style-type: none"> <li>Press the override button for MAX A/C operation.</li> <li>Does the A/C clutch engage when the MAX A/C override button is pressed?</li> </ul>	<b>Yes</b> The test is complete. The system is functioning normally.  <b>No</b> GO to <a href="#">Pinpoint Test J</a> .
<b>F11 CHECK THE EATC MODULE FUNCTIONS</b>	
<ul style="list-style-type: none"> <li>Press each function button and observe the display.</li> <li>Does the EATC carry out and display any functions?</li> </ul>	<b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.  <b>No</b> GO to <a href="#">F12</a> .
<b>F12 CHECK THE VOLTAGE TO THE EATC</b>	
<ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228a.</li> <li>Ignition ON.</li> <li>Measure the voltage between ground and:               <ul style="list-style-type: none"> <li>EATC module C228a-2, circuit 54 (LG/YE)</li> <li>EATC module C228a-16, circuit 298 (VT/OG)</li> </ul> </li> </ul>  <p>A0038636</p> <ul style="list-style-type: none"> <li>Are the voltages greater than 10 volts?</li> </ul>	<b>Yes</b> GO to <a href="#">F13</a> .  <b>No</b> REPAIR the affected circuit. TEST the system for normal operation.
<b>F13 CHECK THE GROUND CIRCUIT TO THE EATC</b>	
<ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between the EATC module C228a-3, circuit 676 (PK/OG) and ground.</li> </ul>  <p>A0038714</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<b>Yes</b> INSTALL a new EATC module (19980). TEST the system for normal operation.  <b>No</b> REPAIR circuit 676 (PK/OG) for an open. TEST the system for normal operation.

## PINPOINT TEST G: INCORRECT/ERRATIC DIRECTION OF AIR FLOW FROM OUTLET — MANUAL CLIMATE CONTROL

Test Step	Result / Action to Take
<b>G1 CHECK THE AIR FLOW IN EACH SETTING</b>	
<ul style="list-style-type: none"> <li>Ignition ON.</li> <li>With the engine running, set the blower motor speed to maximum.</li> <li>Check the air flow in each function selector switch setting at engine idle and under acceleration.</li> <li>Is the air flow from only the defroster outlets in each function selector switch setting?</li> </ul>	<b>Yes</b> GO to <a href="#">G2</a> .  <b>No</b> NOTE the non-functional setting. GO to <a href="#">G10</a> .
<b>G2 CHECK FOR VACUUM AT THE CHECK VALVE</b>	
<ul style="list-style-type: none"> <li>Disconnect the vacuum check valve vacuum source line and check for manifold vacuum and connect the vacuum pump.</li> </ul>  <p>AL0585-A</p> <ul style="list-style-type: none"> <li>Is manifold vacuum present at the check valve vacuum source line?</li> </ul>	<b>Yes</b> GO to <a href="#">G3</a> .  <b>No</b> REPAIR or INSTALL a new check valve vacuum source line. TEST the system for normal operation.
<b>G3 CHECK THE VACUUM CHECK VALVE FOR BLOCKAGE</b>	

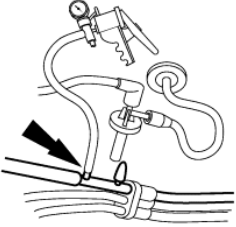
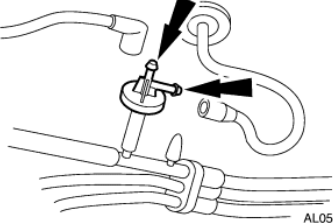
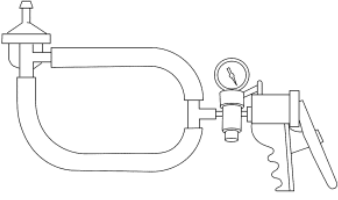
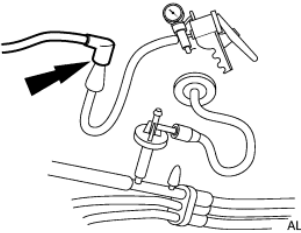
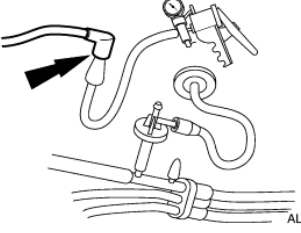
<ul style="list-style-type: none"> <li>Reconnect the vacuum source line to the vacuum check valve.</li> <li>Disconnect the vacuum reservoir line and the EATC module vacuum line from the vacuum check valve and plug one port.</li> </ul>  <p>AL0586-A</p> <ul style="list-style-type: none"> <li>Check for manifold vacuum at the open port on the vacuum check valve.</li> <li><b>Is manifold vacuum present at the open port on the vacuum check valve?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">G4</a>.</p> <p><b>No</b> INSTALL a new vacuum check valve (19A563). TEST the system for normal operation.</p>
<p><b>G4 CHECK THE VACUUM CHECK VALVE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Connect the vacuum pump to the open port on the vacuum check valve and attempt to pull a vacuum.</li> <li><b>Can a vacuum be pulled on the vacuum check valve?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">G5</a>.</p> <p><b>No</b> INSTALL a new vacuum check valve (19A563). TEST the system for normal operation.</p>
<p><b>G5 CHECK THE VACUUM RESERVOIR LINE FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Disconnect the vacuum reservoir line at the vacuum reservoir.</li> <li>Connect the vacuum pump to the vacuum reservoir line at the vacuum check valve connection and attempt to pull a vacuum.</li> </ul>  <p>AL0587-A</p> <ul style="list-style-type: none"> <li><b>Can a vacuum be pulled on the vacuum reservoir line?</b></li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum reservoir line. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G6</a>.</p>
<p><b>G6 CHECK THE VACUUM RESERVOIR LINE FOR LEAKS</b></p> <ul style="list-style-type: none"> <li>Plug the vacuum reservoir line at the vacuum reservoir connection.</li> <li>Leak test the vacuum reservoir line using the vacuum pump.</li> </ul>  <p>AL0587-A</p> <ul style="list-style-type: none"> <li><b>Does the vacuum reservoir line leak?</b></li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum reservoir line. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G7</a>.</p>
<p><b>G7 CHECK THE VACUUM RESERVOIR FOR A LEAK</b></p> <ul style="list-style-type: none"> <li>Connect the vacuum pump reservoir line to the vacuum reservoir.</li> <li>With the vacuum pump connected to the vacuum reservoir line, leak test the vacuum reservoir.</li> </ul>  <p>AL0587-A</p> <ul style="list-style-type: none"> <li><b>Does the vacuum reservoir leak?</b></li> </ul>	<p><b>Yes</b> INSTALL a new vacuum reservoir (19A566). TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G8</a>.</p>
<p><b>G8 CHECK THE FUNCTION SELECTOR SWITCH VACUUM SOURCE LINE FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Disconnect the function selector switch vacuum connector.</li> <li>Connect the vacuum pump to the function selector switch vacuum source line and attempt to pull a vacuum.</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new function selector switch vacuum source line. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G9</a>.</p>

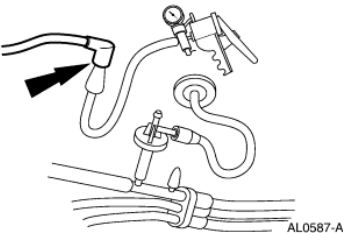
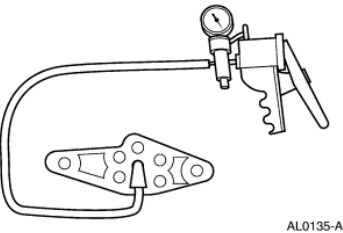
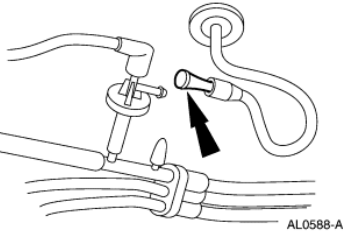
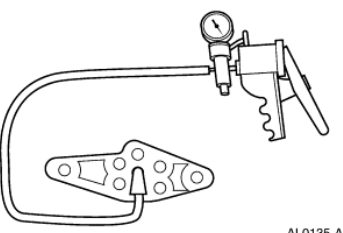
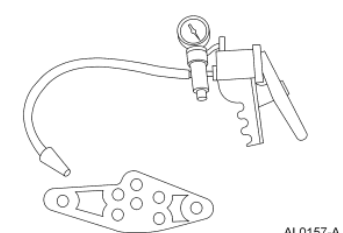
 <p>AL0135-A</p> <ul style="list-style-type: none"> <li>Can a vacuum be pulled on the function selector switch vacuum source line?</li> </ul>	
<p><b>G9 CHECK THE FUNCTION SELECTOR SWITCH VACUUM SOURCE LINE FOR LEAKS</b></p> <ul style="list-style-type: none"> <li>Plug the function selector switch vacuum source line at the vacuum check valve connection.</li> </ul>  <p>AL0588-A</p> <ul style="list-style-type: none"> <li>Leak test the function selector switch vacuum source line using the vacuum pump.</li> </ul>  <p>AL0135-A</p> <ul style="list-style-type: none"> <li>Does the function selector switch vacuum source line leak?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new function selector switch vacuum source line. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new function selector switch (19B888). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p>
<p><b>G10 CHECK THE FUNCTION SELECTOR SWITCH FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Disconnect: Function Selector Switch Vacuum Harness.</li> <li>Connect a vacuum pump to the function selector switch vacuum supply port and try to pull a vacuum in each function selector switch position. If the vacuum pump can pull and hold a vacuum, the switch is plugged. If the vacuum pump pulls a vacuum that slowly decays, the hose is restricted.</li> </ul>  <p>GL1021-A</p> <ul style="list-style-type: none"> <li>Is the switch plugged or restricted?</li> </ul>	<p><b>Yes</b> INSTALL a new function selector switch (19B888). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G11</a>.</p>
<p><b>G11 LEAK TEST THE FUNCTION SELECTOR SWITCH</b></p> <ul style="list-style-type: none"> <li>Connect a vacuum pump to the function selector switch vacuum supply port and plug each control port.</li> </ul>  <p>GL1021-A</p> <ul style="list-style-type: none"> <li>At each function selector switch position apply 51 kPa (15 in-Hg) of vacuum.</li> <li>Does the vacuum drop exceed 3.37 kPa (1 in-Hg) per minute?</li> </ul>	<p><b>Yes</b> INSTALL a new function selector switch (19B888). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G12</a>.</p>
<p><b>G12 CHECK THE VACUUM HOSE</b></p> <ul style="list-style-type: none"> <li>Disconnect the vacuum line from the appropriate vacuum control motor noted in step G1.</li> <li>Connect the vacuum pump to the appropriate vacuum control motor line noted in step G1 and attempt to pull and hold a vacuum.</li> </ul>	<p><b>Yes</b> GO to <a href="#">G13</a>.</p> <p><b>No</b> GO to <a href="#">G14</a>.</p>

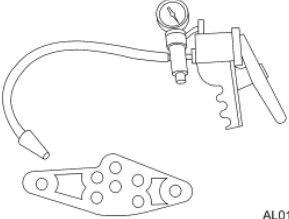
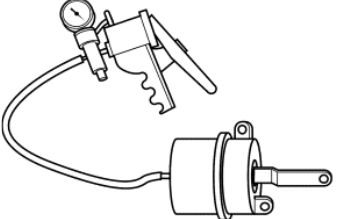
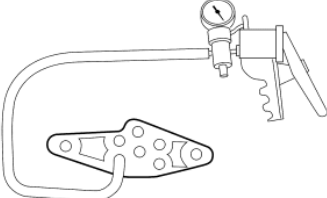
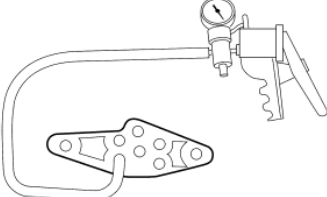
 <p>AL0157-A</p> <ul style="list-style-type: none"> <li>Does the vacuum in the line drop exceed 3.37 kPa (1 in-Hg) per minute?</li> </ul>	
<p><b>G13 CHECK THE VACUUM CONTROL MOTOR</b></p> <ul style="list-style-type: none"> <li>Disconnect: Vacuum Control Motor.</li> <li>Connect a vacuum pump to the affected vacuum control motor. Apply 51 kPa (15 in-Hg) of vacuum.</li> </ul>  <p>AL0136-A</p> <ul style="list-style-type: none"> <li>Does the vacuum drop exceed 1.68 kPa (0.5 in-Hg) per minute?</li> </ul>	<p><b>Yes</b> INSTALL a new vacuum control motor (18A318). REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR or INSTALL a new vacuum harness (19C827). TEST the system for normal operation.</p>
<p><b>G14 CHECK THE VACUUM CONTROL MOTOR HOSES FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Disconnect: Vacuum Control Motors.</li> <li>Connect a vacuum pump to each hose and try to pull a vacuum. If the vacuum pump can pull and hold a vacuum, the hose is plugged. If the vacuum pump pulls a vacuum that slowly decays, the hose is restricted.</li> </ul>  <p>AL0157-A</p> <ul style="list-style-type: none"> <li>Is the hose plugged or restricted?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum harness (19C827). TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">G15</a>.</p>
<p><b>G15 CHECK THE VACUUM CONTROL MOTOR INSTALLATION</b></p> <ul style="list-style-type: none"> <li>Check the attachment of the vacuum control motor arm to the damper door.</li> </ul>  <p>AL0158-A</p> <ul style="list-style-type: none"> <li>Is the vacuum control motor arm attached to the door or door crank arm?</li> </ul>	<p><b>Yes</b> REPAIR the damper door. TEST the system for normal operation.</p> <p><b>No</b> CONNECT the vacuum control motor arm to the door crank arm. TEST the system for normal operation.</p>

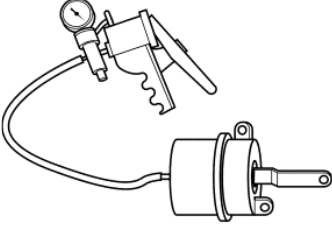
## PINPOINT TEST H: INCORRECT/ERRATIC DIRECTION OF AIR FLOW FROM OUTLET — EATC

Test Step	Result / Action to Take
<p><b>H1 CHECK THE AIR FLOW IN EACH SETTING</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>With the engine running, check the air flow in each manual override setting on the EATC module during engine idle and under acceleration.</li> <li>Is the air flow correct in each manual override setting?</li> </ul>	<p><b>Yes</b> The system is operating normally.</p> <p><b>No</b> If the air flow is from the defrost outlet only in all settings, GO to <a href="#">H2</a>. If the air flow is incorrect in one setting only, NOTE the non-functional setting. GO to <a href="#">H10</a>. If the air flow is incorrect in MAX only, GO to <a href="#">H14</a>.</p>
<p><b>H2 CHECK FOR VACUUM AT THE CHECK VALVE</b></p> <ul style="list-style-type: none"> <li>Disconnect the vacuum check valve vacuum source line and connect the vacuum pump.</li> </ul>	<p><b>Yes</b> GO to <a href="#">H3</a>.</p> <p><b>No</b> REPAIR or INSTALL a new check valve vacuum source line. TEST the system for normal operation.</p>


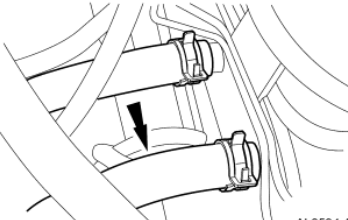
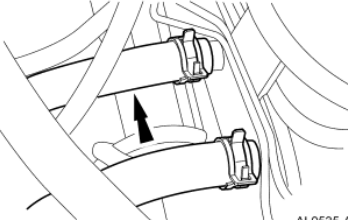
 <p>AL0585-A</p> <ul style="list-style-type: none"> <li>Is manifold vacuum present at the check valve vacuum source line?</li> </ul>	
<p><b>H3 CHECK THE VACUUM CHECK VALVE FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Reconnect the vacuum source line to the vacuum check valve.</li> <li>Disconnect the vacuum reservoir line and the EATC module vacuum line from the vacuum check valve and plug one port.</li> </ul>  <p>AL0586-A</p> <ul style="list-style-type: none"> <li>Check for manifold vacuum at the open port on the vacuum check valve.</li> <li>Is manifold vacuum present at the open port on the vacuum check valve?</li> </ul>	<p><b>Yes</b> GO to <a href="#">H4</a>.</p> <p><b>No</b> INSTALL a new vacuum check valve. TEST the system for normal operation.</p>
<p><b>H4 CHECK THE VACUUM CHECK VALVE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: A/C Vacuum Check Valve.</li> <li>Connect the vacuum pump to the vacuum check valve and attempt to pull a vacuum.</li> </ul>  <p>AL0547-A</p> <ul style="list-style-type: none"> <li>Can a vacuum be pulled on the vacuum check valve?</li> </ul>	<p><b>Yes</b> GO to <a href="#">H5</a>.</p> <p><b>No</b> INSTALL a new vacuum check valve. TEST the system for normal operation.</p>
<p><b>H5 CHECK THE VACUUM RESERVOIR LINE FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Disconnect the vacuum reservoir line at the vacuum reservoir.</li> <li>Connect the vacuum pump to the vacuum reservoir line at the vacuum check valve connection and attempt to pull a vacuum.</li> </ul>  <p>AL0587-A</p> <ul style="list-style-type: none"> <li>Can a vacuum be pulled on the vacuum reservoir line?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum reservoir line. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H6</a>.</p>
<p><b>H6 CHECK THE VACUUM RESERVOIR LINE FOR LEAKS</b></p> <ul style="list-style-type: none"> <li>Plug the vacuum reservoir line at the vacuum reservoir connection.</li> <li>Leak test the vacuum reservoir line using the vacuum pump.</li> </ul>  <p>AL0587-A</p> <ul style="list-style-type: none"> <li>Does the vacuum reservoir line leak?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum reservoir line. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H7</a>.</p>

<p><b>H7 CHECK THE VACUUM RESERVOIR FOR A LEAK</b></p> <ul style="list-style-type: none"> <li>Connect the vacuum pump reservoir line to the vacuum reservoir.</li> <li>With the vacuum pump connected to the vacuum reservoir line, leak test the vacuum reservoir.</li> </ul>  <p>AL0587-A</p> <ul style="list-style-type: none"> <li>Does the vacuum reservoir leak?</li> </ul>	<p><b>Yes</b> INSTALL a new vacuum reservoir. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H8</a>.</p>
<p><b>H8 CHECK THE EATC MODULE VACUUM SOURCE LINE FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Disconnect the EATC module vacuum connector.</li> <li>Connect the vacuum pump to the EATC module vacuum source line and attempt to pull a vacuum.</li> </ul>  <p>AL0135-A</p> <ul style="list-style-type: none"> <li>Can a vacuum be pulled on the EATC module vacuum source line?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new EATC module vacuum source line. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H9</a>.</p>
<p><b>H9 CHECK THE EATC MODULE VACUUM SOURCE LINE FOR LEAKS</b></p> <ul style="list-style-type: none"> <li>Plug the EATC module vacuum source line at the vacuum check valve connection.</li> </ul>  <p>AL0588-A</p> <ul style="list-style-type: none"> <li>Leak test the EATC module vacuum source line using the vacuum pump.</li> </ul>  <p>AL0135-A</p> <ul style="list-style-type: none"> <li>Does the EATC module vacuum source line leak?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new EATC module vacuum source line. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p>
<p><b>H10 CHECK THE VACUUM CONTROL MOTOR LINE FOR BLOCKAGE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect the EATC module vacuum connector.</li> <li>Disconnect the vacuum line from the appropriate vacuum control motor noted in step H1.</li> <li>Connect the vacuum pump to the appropriate vacuum control motor line noted in step H1, and attempt to pull a vacuum.</li> </ul>  <p>AL0157-A</p>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum harness. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H11</a>.</p>

<ul style="list-style-type: none"> <li>Can a vacuum be pulled on the vacuum control motor line?</li> </ul>	
<b>H11 CHECK THE VACUUM CONTROL MOTOR LINE FOR LEAKS</b> <ul style="list-style-type: none"> <li>Plug the vacuum control motor line at the vacuum control motor connection.</li> <li>Leak test the vacuum control motor line using the vacuum pump.</li> </ul>  <p>AL0157-A</p> <ul style="list-style-type: none"> <li>Does the vacuum control motor line leak?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum harness. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H12</a>.</p>
<b>H12 CHECK THE VACUUM CONTROL MOTOR FOR LEAKS AND CORRECT OPERATION</b> <ul style="list-style-type: none"> <li>Connect the vacuum pump to the appropriate vacuum control motor and pull a vacuum.</li> </ul>  <p>AL0136-A</p> <ul style="list-style-type: none"> <li>Does the vacuum control motor operate and hold vacuum?</li> </ul>	<p><b>Yes</b> GO to <a href="#">H13</a>.</p> <p><b>No</b> INSTALL a new vacuum control motor (18A318). TEST the system for normal operation.</p>
<b>H13 CHECK THE MODE DOOR LINKAGE AND MOVEMENT</b> <ul style="list-style-type: none"> <li>Inspect the mode door linkage and verify correct movement of the mode door.</li> <li>Is the mode door or mode door linkage broken, binding or otherwise obstructed?</li> </ul>	<p><b>Yes</b> REPAIR the mode door or mode door linkage as necessary. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new EATC module. TEST the system for normal operation.</p>
<b>H14 CHECK THE AIR INLET DOOR VACUUM CONTROL MOTOR LINE FOR BLOCKAGE</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect the air inlet door vacuum control motor vacuum connector.</li> <li>Disconnect the EATC module vacuum connector and attempt to pull a vacuum on the RECIRC vacuum control motor line using the vacuum pump.</li> </ul>  <p>A0036133</p> <ul style="list-style-type: none"> <li>Can a vacuum be pulled on the air inlet door vacuum control motor line?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new plenum vacuum harness (19C827). TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H15</a>.</p>
<b>H15 CHECK THE AIR INLET DOOR VACUUM CONTROL MOTOR LINE FOR LEAKS.</b> <ul style="list-style-type: none"> <li>Plug the air inlet door vacuum control motor line at the RECIRC vacuum control motor connection.</li> <li>Leak test the air inlet door vacuum control motor line using the vacuum pump.</li> </ul>  <p>A0036133</p> <ul style="list-style-type: none"> <li>Does the air inlet door vacuum control motor line leak?</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new vacuum harness (19C827). TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">H16</a>.</p>
<b>H16 CHECK THE AIR INLET DOOR VACUUM CONTROL MOTOR FOR LEAKS AND CORRECT OPERATION</b> <ul style="list-style-type: none"> <li>Connect the vacuum pump to the air inlet door vacuum control motor and pull a vacuum.</li> </ul>	<p><b>Yes</b> GO to <a href="#">H17</a>.</p> <p><b>No</b> INSTALL a new air inlet door vacuum control motor (18A318). TEST the system</p>

 <p>AL0136-A</p> <ul style="list-style-type: none"> <li>Does the air inlet door vacuum control motor operate and hold a vacuum?</li> </ul>	<p>for normal operation.</p>
<p><b>H17 INSPECT THE AIR INLET DOOR LINKAGE AND MOVEMENT</b></p> <ul style="list-style-type: none"> <li>Inspect the air inlet door linkage and verify correct movement of the door.</li> <li>Is the air inlet door or air inlet door linkage broken, binding or otherwise obstructed?</li> </ul>	<p><b>Yes</b> REPAIR the air inlet door or air inlet door linkage as needed. TEST the system for correct operation.</p> <p><b>No</b> INSTALL a new EATC module (19980). TEST the system for normal operation.</p>

#### PINPOINT TEST I: INSUFFICIENT, ERRATIC, OR NO HEAT—EATC AND MANUAL CLIMATE CONTROL

Test Step	Result / Action to Take
<p><b>I1 CHECK FOR CORRECT ENGINE COOLANT LEVEL</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Check the engine coolant level when hot and when cold.</li> <li>Is the engine coolant at correct level (hot and cold) as indicated on the engine coolant recovery reservoir?</li> </ul>	<p><b>Yes</b> GO to <a href="#">I3</a>.</p> <p><b>No</b> GO to <a href="#">I2</a>.</p>
<p><b>I2 CHECK THE COOLANT SYSTEM INCLUDING THE RADIATOR CAP FOR LEAKS</b></p> <ul style="list-style-type: none"> <li>Fill the engine cooling system to the specified level.</li> <li>Pressure check the engine cooling system. Refer to <a href="#">Section 303-03</a>. It is not necessary to check the components separately at this time.</li> <li>Does the engine cooling system, including the radiator cap, hold pressure?</li> </ul>	<p><b>Yes</b> GO to <a href="#">I3</a>.</p> <p><b>No</b> REPAIR the engine coolant leak. REFER to <a href="#">Section 303-03</a>. TEST the system for normal information.</p>
<p><b>I3 CHECK FOR HOT WATER TO THE HEATER CORE INLET HOSE</b></p> <p> <b>WARNING:</b> The heater core inlet hose will become too hot to handle and may cause serious burns if the system is working correctly.</p> <ul style="list-style-type: none"> <li>Allow the engine to reach normal operating temperature.</li> <li>Feel the heater core inlet hose.</li> </ul>  <p>AL0534-A</p> <ul style="list-style-type: none"> <li>Is the heater core inlet hose too hot to handle?</li> </ul>	<p><b>Yes</b> GO to <a href="#">I4</a>.</p> <p><b>No</b> REFER to <a href="#">Section 303-03</a> to check cooling system function.</p>
<p><b>I4 CHECK THE HEATER CORE OUTLET HOSE FOR HOT WATER</b></p> <ul style="list-style-type: none"> <li>Feel the heater core outlet hose.</li> </ul>  <p>AL0535-A</p> <ul style="list-style-type: none"> <li>Is the heater core outlet hose cool or cold?</li> </ul>	<p><b>Yes</b> CARRY OUT the Heater Core Component Test. REFER to Heater Core under Component Tests in this section to determine whether a plugged or partial plugged condition exists.</p> <p><b>No</b> Vehicles with manual climate control, <a href="#">GO to Pinpoint Test L</a>. Vehicles with EATC, <a href="#">GO to Pinpoint Test A</a>.</p>

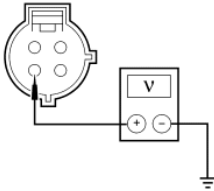
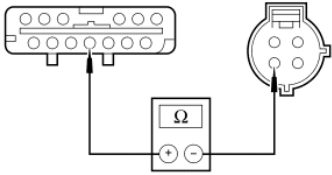
#### PINPOINT TEST J: THE AIR CONDITIONING (A/C) IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

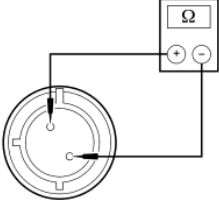
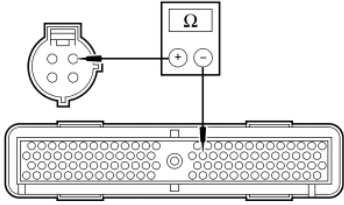
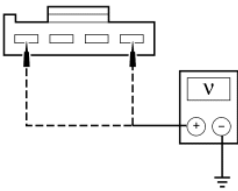
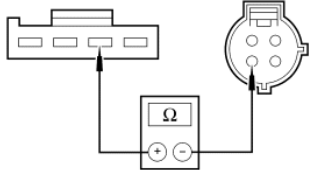
**NOTE:** Before carrying out the following test, diagnose any PCM or instrument cluster DTCs.

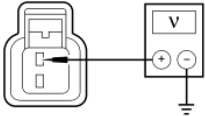
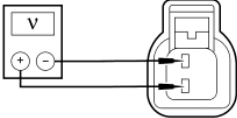
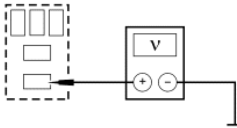
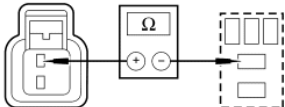
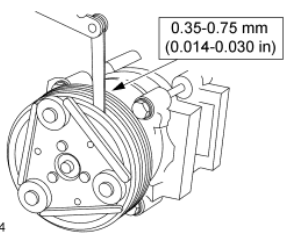
**NOTE:** Before carrying out the following test, check that the A/C system pressure is above 290 kPa (42 psi). If the pressure is below 290 kPa (42 psi), Refer to [Fluorescent Dye Leak Detection](#) in this section.

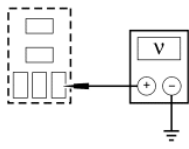
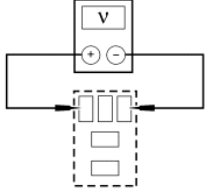
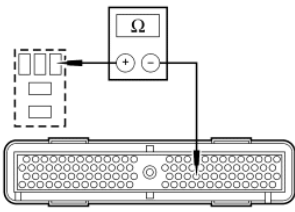
Test Step	Result / Action to Take
<p><b>J1 CHECK THE A/C PRESSURE PCM PID</b></p>	



<ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Enter the following diagnostic mode on the scan tool: A/C Pressure PCM PID.</li> <li>With the manifold gauge set connected, compare the pressure readings of the manifold gauge set and the A/C pressure PID.</li> <li><b>Are the pressure values of the manifold gauge set and the A/C pressure PID similar?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">J2</a>.</p> <p><b>No</b> INSTALL a new A/C pressure transducer. TEST the system for normal operation.</p>
<p><b>J2 CHECK THE A/C EVAPORATOR TEMPERATURE PID</b></p> <ul style="list-style-type: none"> <li>Allow the vehicle exterior and interior to stabilize to an ambient temperature above 16°C (60°F).</li> <li>Enter the following diagnostic mode on the diagnostic tool: A/C Evaporator Discharge Temperature PCM PID.</li> <li><b>Does the A/C evaporator discharge temperature PID read similar to the ambient temperature?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">J3</a>.</p> <p><b>No</b> INSTALL a new A/C evaporator discharge temperature sensor. TEST the system for normal operation.</p>
<p><b>J3 CHECK PID ACCS WITH THE A/C OFF</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>With the engine running, place the function selector switch to the OFF position or press the OFF manual override button on the EATC module.</li> <li>Enter the following diagnostic mode on the scan tool: PCM PID ACCS.</li> <li><b>Does the PCM PID ACCS read ON?</b></li> </ul>	<p><b>Yes</b> REFER to Powertrain Control/Emissions Diagnosis (PC/ED) manual.</p> <p><b>No</b> GO to <a href="#">J4</a>.</p>
<p><b>J4 CHECK PID WAC WITH THE A/C OFF</b></p> <ul style="list-style-type: none"> <li>Enter the following diagnostic mode on the scan tool: PCM PID WAC.</li> <li><b>Does the PCM PID WAC read ON?</b></li> </ul>	<p><b>Yes</b> REFER to Powertrain Control/Emissions Diagnosis (PC/ED) manual.</p> <p><b>No</b> GO to <a href="#">J5</a>.</p>
<p><b>J5 CHECK THE PID ACCS WITH THE A/C ON</b></p> <ul style="list-style-type: none"> <li>Enter the following diagnostic mode on the scan tool: PCM PID ACCS.</li> <li>Place the function selector switch in the MAX A/C position or press the PANEL and A/C manual override buttons on the EATC module.</li> <li><b>Does the PCM PID ACCS read ON?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">J6</a>.</p> <p><b>No</b> GO to <a href="#">J7</a>.</p>
<p><b>J6 CHECK THE PID WAC WITH THE A/C ON</b></p> <ul style="list-style-type: none"> <li>Enter the following diagnostic mode on the scan tool: PCM PID WAC.</li> <li><b>Does the PCM PID WAC read ON?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">J13</a>.</p> <p><b>No</b> REFER to Powertrain Control/Emissions Diagnosis (PC/ED) manual.</p>
<p><b>J7 CHECK A/C LOW PRESSURE SWITCH VOLTAGE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: A/C Low Pressure Switch C130.</li> <li>Ignition ON.</li> <li>Measure the voltage between the A/C low pressure switch C130, circuit 1040 (RD/BK) and ground.</li> </ul>  <p>A0040571</p> <ul style="list-style-type: none"> <li><b>Is the voltage greater than 10 volts?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">J9</a>.</p> <p><b>No</b> EATC system, GO to <a href="#">J8</a>. Manual climate control system, GO to <a href="#">J11</a>.</p>
<p><b>J8 CHECK CIRCUIT 1040 (RD/BK) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228b.</li> <li>Measure the resistance between the A/C low pressure switch C130, circuit 1040 (RD/BK) and the EATC module C228b-11, circuit 1040 (RD/BK).</li> </ul>  <p>A0051599</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> INSTALL a new EATC module. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 1040 (RD/BK) for an open. TEST the system for normal operation.</p>
<p><b>J9 CHECK A/C LOW PRESSURE SWITCH</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between the A/C low pressure switch terminals.</li> </ul>	<p><b>Yes</b> GO to <a href="#">J10</a>.</p> <p><b>No</b> INSTALL a new A/C low pressure switch. TEST the system for normal operation.</p>

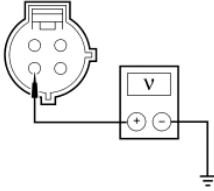
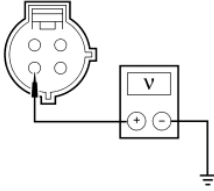
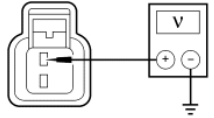
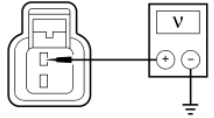
 <p>N0029346</p> <ul style="list-style-type: none"> <li>Is the resistance less than 21 ohms?</li> </ul>	
<p><b>J10 CHECK CIRCUIT 883 (PK/LB) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: PCM C175.</li> <li>Measure the resistance between the A/C pressure switch C130, circuit 883 (PK/LB) and the PCM C175-86, circuit 883 (PK/LB).</li> </ul>  <p>A0048580</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new PCM. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 883 (PK/LB) for an open. TEST the system for normal operation.</p>
<p><b>J11 CHECK CIRCUIT 298 (VT/OG) FOR VOLTAGE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Function Selector Switch C294c.</li> <li>Ignition ON.</li> <li>Measure the voltage between the function selector switch C294c, circuit 298 (VT/OG) and ground.</li> </ul>  <p>A0051600</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">J12</a>.</p> <p><b>No</b> REPAIR circuit 298 (VT/OG) for an open. TEST the system for normal operation.</p>
<p><b>J12 CHECK CIRCUIT 1040 (RD/BK)</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the selector switch C294c, circuit 1040 (RD/BK) and the A/C low pressure switch C130, circuit 1040 (RD/BK).</li> </ul>  <p>A0051601</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new function selector switch. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 1040 (RD/BK). TEST the system for normal operation.</p>
<p><b>J13 CHECK THE VOLTAGE AT THE A/C COMPRESSOR CLUTCH FIELD COIL</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: A/C Compressor Clutch Field Coil C100.</li> <li>Ignition ON.</li> <li>Measure the voltage between the A/C compressor clutch field coil C100, circuit 321 (GY/WH) and ground.</li> </ul>	<p><b>Yes</b> GO to <a href="#">J14</a>.</p> <p><b>No</b> GO to <a href="#">J15</a>.</p>

 <p>A0048576</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	
<p><b>J14 CHECK THE GROUND AT THE A/C COMPRESSOR CLUTCH FIELD COIL</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the voltage between the A/C compressor clutch field coil C100, circuit 57 (BK) and A/C compressor clutch field coil C100, circuit 321 (GY/WH).</li> </ul>  <p>A0034113</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">J17</a>.</p> <p><b>No</b> REPAIR circuit 57 (BK). TEST the system for normal operation.</p>
<p><b>J15 CHECK CIRCUIT 1040 (RD/BK)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: A/C Clutch Relay.</li> <li>Ignition ON.</li> <li>Measure the voltage between the A/C control relay socket pin 3, circuit 1040 (RD/BK) and ground.</li> </ul>  <p>A0013810</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">J16</a>.</p> <p><b>No</b> REPAIR circuit 1040 (RD/BK). TEST the system for normal operation.</p>
<p><b>J16 CHECK CIRCUIT 321 (GY/WH)</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the A/C control relay socket pin 5, circuit 321 (GY/WH) and the A/C compressor clutch field coil C100, circuit 321 (GY/WH).</li> </ul>  <p>A0048577</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">J18</a>.</p> <p><b>No</b> REPAIR circuit 321 (GY/WH). TEST the system for normal operation.</p>
<p><b>J17 CHECK THE A/C COMPRESSOR CLUTCH AIR GAP</b></p> <ul style="list-style-type: none"> <li>Measure the A/C compressor clutch air gap at three equally spaced locations between the clutch hub and the A/C compressor clutch pulley.</li> </ul>  <p>A0031504</p> <ul style="list-style-type: none"> <li>Is the A/C compressor clutch air gap greater than 0.030 in (0.75 mm)?</li> </ul>	<p><b>Yes</b> ADJUST the A/C compressor clutch gap. REFER to <a href="#">A/C Clutch Air Gap Adjustment</a> in this section. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new A/C compressor clutch field coil. REFER to <a href="#">Section 412-03</a>. TEST the system for normal operation.</p>
<p><b>J18 CHECK CIRCUIT 68 (OG/BK)</b></p>	

<ul style="list-style-type: none"> <li>• Disconnect: PCM C175.</li> <li>• Ignition ON.</li> <li>• Measure the voltage between the A/C control relay socket pin 2, circuit 68 (OG/BK) and ground.</li> </ul>  <p>A0048578</p> <ul style="list-style-type: none"> <li>• Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">J19</a>.</p> <p><b>No</b> REPAIR circuit 68 (OG/BK). TEST the system for normal operation.</p>
<p><b>J19 CHECK THE WAC OUTPUT FROM THE PCM</b></p> <ul style="list-style-type: none"> <li>• Ignition ON.</li> <li>• With the engine running, measure the voltage between the A/C control relay socket pin 1, circuit 73 (OG/LB) and pin 2, circuit 68 (OG/BK).</li> </ul>  <p>A0048579</p> <ul style="list-style-type: none"> <li>• Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> INSTALL a new A/C control relay. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">J20</a>.</p>
<p><b>J20 CHECK CIRCUIT 73 (OG/LB)</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: PCM C175.</li> <li>• Measure the resistance between the A/C control relay socket pin 1, circuit 73 (OG/LB) and the PCM C175-69 circuit 73 (OG/LB).</li> </ul>  <p>A0043904</p> <ul style="list-style-type: none"> <li>• Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new PCM. REFER to <a href="#">Section 303-14</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 73 (OG/LB). CLEAR the DTCs. TEST the system for normal operation.</p>

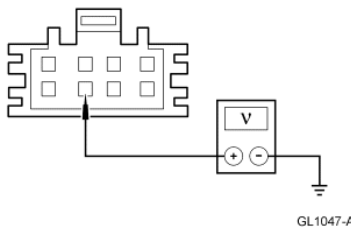
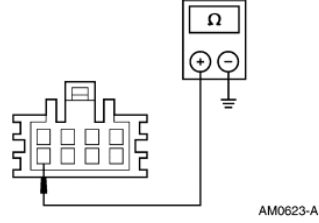
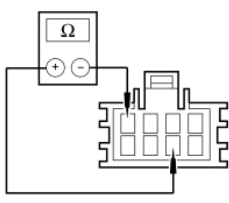
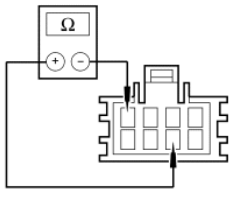
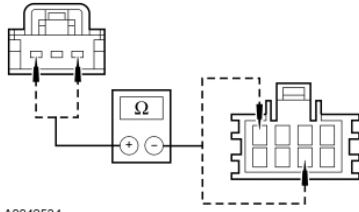
## PINPOINT TEST K: THE AIR CONDITIONING (A/C) IS ALWAYS ON

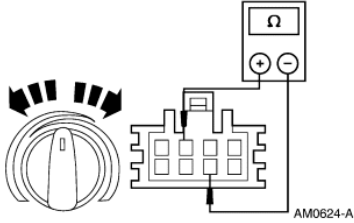
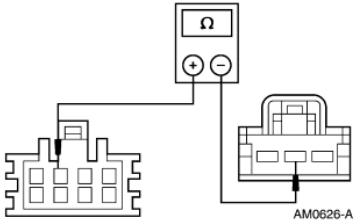
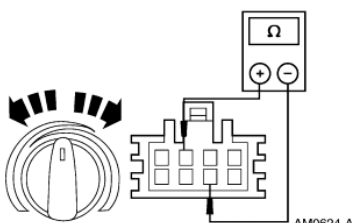
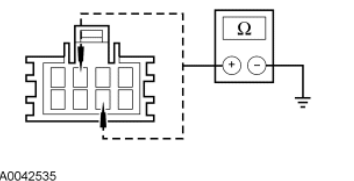
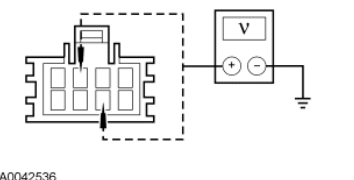
Test Step	Result / Action to Take
<p><b>K1 CHECK PID WACF WITH THE A/C OFF</b></p> <ul style="list-style-type: none"> <li>• Ignition ON.</li> <li>• Place the function selector switch to the OFF position or press the OFF manual override button on the EATC module.</li> <li>• Enter the following diagnostic mode on the scan tool: PCM PID WACF.</li> <li>• Does the PCM PID WACF read YES?</li> </ul>	<p><b>Yes</b> REPAIR circuit 73 (OG/LB). TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">K2</a>.</p>
<p><b>K2 CHECK PID ACCS WITH THE A/C OFF</b></p> <ul style="list-style-type: none"> <li>• Enter the following diagnostic mode on the scan tool: PCM PID ACCS.</li> <li>• Does the PCM PID ACCS read ON?</li> </ul>	<p><b>Yes</b> GO to <a href="#">K3</a>.</p> <p><b>No</b> GO to <a href="#">K5</a>.</p>
<p><b>K3 CHECK CIRCUIT 1040 (RD/BK) FOR VOLTAGE</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: A/C Pressure Switch C130.</li> <li>• Ignition ON.</li> <li>• Measure the voltage between the A/C pressure switch C130, circuit 1040 (RD/BK) and ground.</li> </ul>	<p><b>Yes</b> GO to <a href="#">K4</a>.</p> <p><b>No</b> GO to <a href="#">K5</a>.</p>

 <p>A0040571</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	
<p><b>K4 CHECK CIRCUIT 1040 (RD/BK) FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228b.</li> <li>Ignition ON.</li> <li>Measure the voltage between the A/C pressure switch C130, circuit 1040 (RD/BK) and ground.</li> </ul>  <p>A0040571</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> REPAIR circuit 1040 (RD/BK). TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new EATC module. TEST the system for normal operation.</p>
<p><b>K5 CHECK FOR VOLTAGE TO THE A/C COMPRESSOR CLUTCH FIELD COIL</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: A/C Compressor Clutch Field Coil C100.</li> <li>Ignition ON.</li> <li>Measure the voltage between the A/C compressor clutch field coil C100, circuit 321 (GY/WH) and ground.</li> </ul>  <p>A0048576</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">K6</a>.</p> <p><b>No</b> ADJUST the A/C compressor clutch gap. REFER to <a href="#">A/C Clutch Air Gap Adjustment</a> in this section. TEST the system for normal operation.</p>
<p><b>K6 CHECK CIRCUIT 321 (GY/WH) FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: A/C Control Relay.</li> <li>Ignition ON.</li> <li>Measure the voltage between the A/C compressor clutch field coil C100, circuit 321 (GY/WH) and ground.</li> </ul>  <p>A0048576</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> REPAIR circuit 321 (GY/WH). TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new A/C control relay. TEST the system for normal operation.</p>

## PINPOINT TEST L: TEMPERATURE CONTROL IS INOPERATIVE/DOES NOT OPERATE CORRECTLY—MANUAL CLIMATE CONTROL

Test Step	Result / Action to Take
<p><b>L1 CHECK THE VOLTAGE TO THE TEMPERATURE BLEND DOOR ACTUATOR MOTOR</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Temperature Blend Door Actuator Motor C289.</li> <li>Ignition ON.</li> <li>Measure the voltage between the temperature blend door actuator C289-7, circuit 298 (VT/OG) and ground.</li> </ul>	<p><b>Yes</b> GO to <a href="#">L2</a>.</p> <p><b>No</b> REPAIR circuit 298 (VT/OG). TEST the system for normal operation.</p>

 <p>GL1047-A</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	
<p><b>L2 CHECK THE GROUND TO THE BLEND DOOR ACTUATOR</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between the blend door actuator C289-8, circuit 208 (GY) and ground.</li> </ul>  <p>AM0623-A</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">L3</a>.</p> <p><b>No</b> REPAIR circuit 208 (GY). TEST the system for normal operation.</p>
<p><b>L3 CHECK THE TEMPERATURE CONTROL POTENTIOMETER TOTAL RESISTANCE</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between temperature blend door actuator C289-4, circuit 436 (RD/LG) and C289-6, circuit 600 (DB).</li> </ul>  <p>A0042533</p> <ul style="list-style-type: none"> <li>Is the resistance between 8,000 and 12,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">L6</a>.</p> <p><b>No</b> If the resistance is less than 8,000 ohms, GO to <a href="#">L4</a>. If the resistance is greater than 12,000 ohms, GO to <a href="#">L5</a>.</p>
<p><b>L4 CHECK CIRCUITS 436 (RD/LG) AND 600 (DB) FOR A SHORT TOGETHER</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Control Potentiometer C294A.</li> <li>Measure the resistance between temperature blend door actuator C289-4, circuit 436 (RD/LG) and C289-6, circuit 600 (DB).</li> </ul>  <p>A0042533</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> REPAIR circuits 436 (RD/LG) and 600 (DB) for a short together. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new temperature control potentiometer. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p>
<p><b>L5 CHECK CIRCUITS 436 (RD/LG) AND 600 (DB) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Control Potentiometer C294A.</li> <li>Measure the resistance between temperature blend door actuator C289-4, circuit 436 (RD/LG) and temperature control potentiometer C294a-3, circuit 436 (RD/LG), and between temperature blend door actuator C289-6, circuit 600 (DB) and temperature control potentiometer C294a-1, circuit 600 (DB).</li> </ul>  <p>A0042534</p> <ul style="list-style-type: none"> <li>Are the resistances less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new temperature control potentiometer. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR the affected circuit. TEST the system for normal operation.</p>
<p><b>L6 CHECK THE TEMPERATURE CONTROL POTENTIOMETER OPERATION</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between temperature blend door actuator C289-3, circuit 437 (YE/LG) and C289-6, circuit 600 (DB) while rotating the temperature control potentiometer from full WARM to full COOL.</li> </ul>	<p><b>Yes</b> GO to <a href="#">L9</a>.</p>

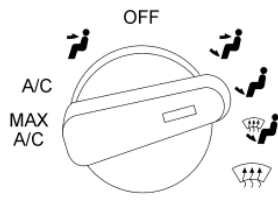

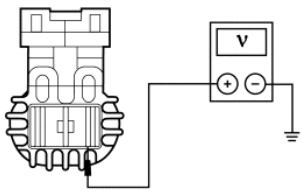
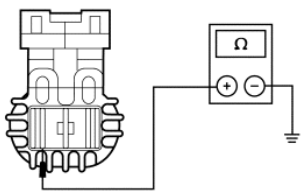
 <p>AM0624-A</p> <ul style="list-style-type: none"> <li>Does the resistance vary between 0 and 12,000 ohms?</li> </ul>	<p><b>No</b> GO to <a href="#">L7</a>.</p>
<p><b>L7 CHECK CIRCUIT 437 (YE/LG) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Control Potentiometer C294A.</li> <li>Measure the resistances between actuator C289-3, circuit 437 (YE/LG) and temperature control potentiometer C294a-2, circuit 437 (YE/LG).</li> </ul>  <p>AM0626-A</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">L8</a>.</p> <p><b>No</b> REPAIR circuit 437 (YE/LG) for an open. TEST the system for normal operation.</p>
<p><b>L8 CHECK CIRCUITS 437 (YE/LG) AND 600 (DB) FOR A SHORT TOGETHER</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between temperature blend door actuator C289-3, circuit 437 (YE/LG) and C289-6, circuit 600 (DB).</li> </ul>  <p>AM0624-A</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> REPAIR circuits 437 (YE/LG) and 600 (DB) for a short together. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new temperature control potentiometer. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p>
<p><b>L9 CHECK CIRCUITS 437 (YE/LG) AND 600 (DB) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Disconnect: Temperature Control Potentiometer C294A.</li> <li>Measure the resistances between temperature blend door actuator C289-3, circuit 437 (YE/LG) and ground, and between temperature blend door actuator C289-6, circuit 600 (DB) and ground.</li> </ul>  <p>A0042535</p> <ul style="list-style-type: none"> <li>Are the resistances less than 5 ohms?</li> </ul>	<p><b>Yes</b> REPAIR the affected circuit for a short to ground. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">L10</a>.</p>
<p><b>L10 CHECK CIRCUITS 437 (YE/LG) AND 600 (DB) FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Measure the voltages between temperature blend door actuator C289-4, circuit 436 (RD/LG) and ground, and between temperature blend door actuator C289-3, circuit 437 (YE/LG) and ground.</li> </ul>  <p>A0042536</p> <ul style="list-style-type: none"> <li>Is voltage present?</li> </ul>	<p><b>Yes</b> REPAIR the affected circuit for a short to power. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">L11</a>.</p>
<p><b>L11 CHECK FOR A BINDING, STUCK OR BROKEN BLEND DOOR</b></p>	

- Ignition OFF.
- Remove the actuator. Refer to [Section 412-04](#).
- Inspect for a binding, stuck or broken blend door or linkage.
- **Is there a binding, stuck or broken blend door or linkage condition?**

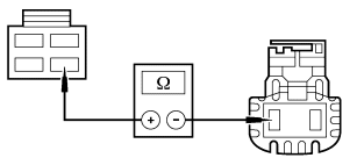
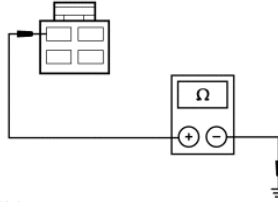
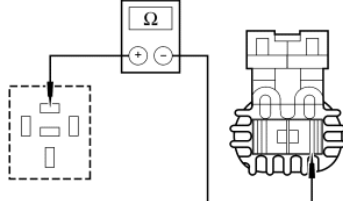
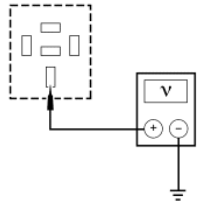
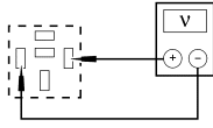
**Yes**  
REPAIR the blend door/linkage. TEST the system for normal operation.

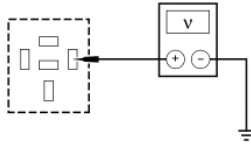
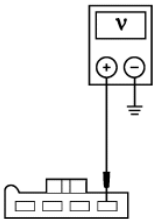
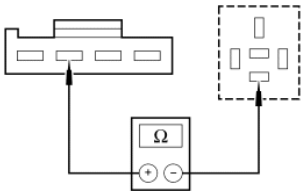
**No**  
INSTALL a new temperature blend door actuator. REFER to [Section 412-04](#). TEST the system for normal operation.

#### PINPOINT TEST M: THE BLOWER MOTOR IS INOPERATIVE — MANUAL CLIMATE CONTROL

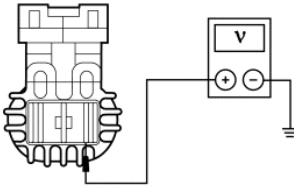
Test Step	Result / Action to Take
<b>M1 CHECK THE VOLTAGE TO THE A/C BLOWER MOTOR</b> <ul style="list-style-type: none"> <li>• Disconnect: A/C Blower Motor C1227.</li> <li>• Ignition ON.</li> <li>• Turn the function selector switch to the FLOOR position.</li> </ul>  <p>L10572-A</p> <ul style="list-style-type: none"> <li>• Turn the blower motor switch to the HI position.</li> </ul>  <p>L10527-A</p> <ul style="list-style-type: none"> <li>• Measure the voltage between A/C blower motor C1227, circuit 371 (PK/WH), and ground.</li> </ul>  <p>AM0416-A</p> <ul style="list-style-type: none"> <li>• <b>Is the voltage greater than 10 volts?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">M2</a>.</p> <p><b>No</b> GO to <a href="#">M5</a>.</p>
<b>M2 CHECK THE BLOWER MOTOR GROUND</b> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Measure the resistance between the A/C blower motor C1227, circuit 261 (OG/BK) and ground.</li> </ul>  <p>AM0420-A</p> <ul style="list-style-type: none"> <li>• <b>Is the resistance less than 10 ohms?</b></li> </ul>	<p><b>Yes</b> INSTALL a new blower motor (19805). TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">M3</a>.</p>
<b>M3 CHECK CIRCUIT 261 (OG/BK)</b> <ul style="list-style-type: none"> <li>• Disconnect: A/C Blower Motor Switch C294b.</li> <li>• Measure the resistance between the A/C blower motor C1227, circuit 261 (OG/BK), and the A/C blower motor switch C294b circuit 261 (OG/BK).</li> </ul>	<p><b>Yes</b> GO to <a href="#">M4</a>.</p> <p><b>No</b> REPAIR circuit 261 (OG/BK) for an open. TEST the system for normal operation.</p>

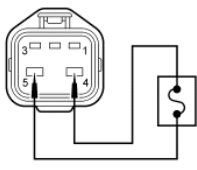
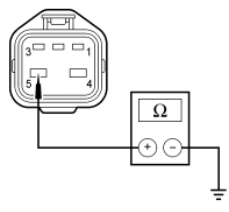
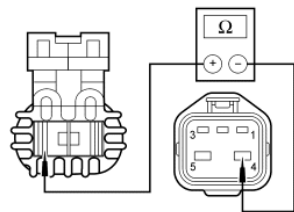
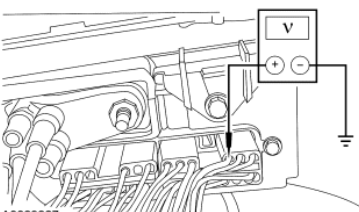


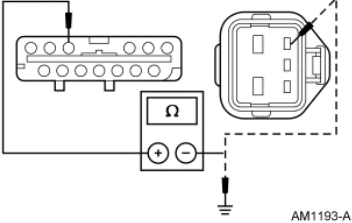
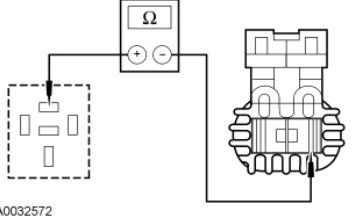
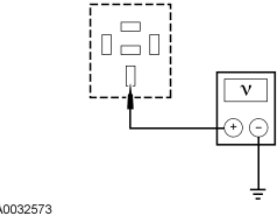
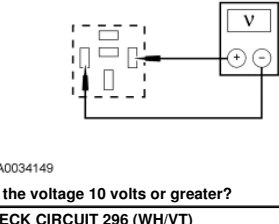
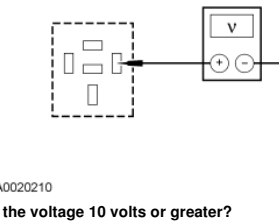
 <p>A0042078</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	
<p><b>M4 CHECK CIRCUIT 57 (BK) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between blower motor switch C294b circuit 57 (BK) and ground.</li> </ul>  <p>AM1606-A</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new blower motor switch (19986). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 57 (BK) for an open. TEST the system for normal operation.</p>
<p><b>M5 CHECK CIRCUIT 371 (PK/WH)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Relay.</li> <li>Measure the voltage between the blower motor relay socket pin 87, circuit 371 (PK/WH), and the blower motor C1227, circuit 371 (PK/WH).</li> </ul>  <p>A0032572</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">M6</a>.</p> <p><b>No</b> REPAIR circuit 371 (PK/WH) for an open. TEST the system for normal operation.</p>
<p><b>M6 CHECK CIRCUIT 181 (BN/OG)</b></p> <ul style="list-style-type: none"> <li>Measure the voltage between the blower motor relay socket pin 30, circuit 181 (BN/OG), and ground.</li> </ul>  <p>A0032573</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p><b>Yes</b> GO to <a href="#">M7</a>.</p> <p><b>No</b> REPAIR circuit 181 (BN/OG) for an open. TEST the system for normal operation.</p>
<p><b>M7 CHECK THE BLOWER MOTOR RELAY</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Measure the voltage between the blower motor relay socket pin 86, circuit 249 (DB/LG), and blower motor relay socket pin 85, circuit 57 (BK).</li> </ul>  <p>A0034149</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p><b>Yes</b> INSTALL a new blower motor relay. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">M8</a>.</p>
<p><b>M8 CHECK CIRCUIT 249 (DB/LG)</b></p> <ul style="list-style-type: none"> <li>Measure the voltage between the blower motor relay socket pin 86, circuit 249 (DB/LG), and ground.</li> </ul>	<p><b>Yes</b> REPAIR circuit 57 (BK). TEST the system for normal</p>

 <p>A0020210</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p>operation.</p> <p><b>No</b> GO to <a href="#">M9</a>.</p>
<p><b>M9 CHECK THE VOLTAGE TO THE FUNCTION SELECTOR SWITCH</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Function Selector Switch C294c.</li> <li>Ignition ON.</li> <li>Measure the voltage between function selector switch C294c circuit 298 (VT/OG), and ground.</li> </ul>  <p>AM0585-A</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p><b>Yes</b> GO to <a href="#">M10</a>.</p> <p><b>No</b> REPAIR circuit 298 (VT/OG). TEST the system for normal operation.</p>
<p><b>M10 CHECK CIRCUIT 249 (DB/LG) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between the function selector switch C294c circuit 249 (DB/LG) and the blower motor relay, circuit 249 (DB/LG).</li> </ul>  <p>A0046128</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new function selector switch (19B888). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 249 (DB/LG). TEST the system for normal operation.</p>

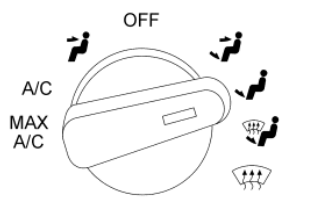
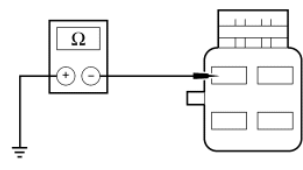
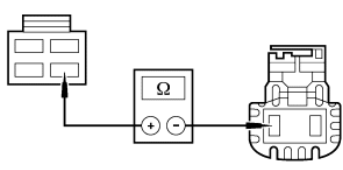
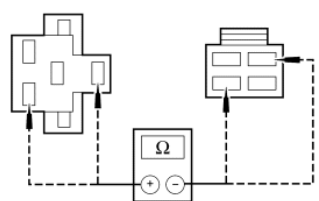
## PINPOINT TEST N: THE BLOWER MOTOR IS INOPERATIVE — EATC

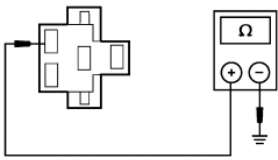
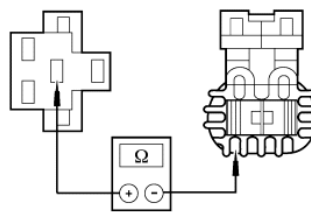
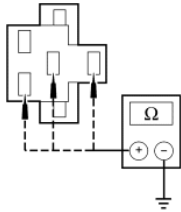
Test Step	Result / Action to Take
<p><b>N1 VERIFY THE BLOWER MOTOR OPERATION</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Press the PANEL button on the EATC module. Adjust the blower motor setting to LO and then to HI.</li> <li>Is the blower motor inoperative in all settings?</li> </ul>	<p><b>Yes</b> GO to <a href="#">N2</a>.</p> <p><b>No</b> <a href="#">GO to Pinpoint Test P.</a></p>
<p><b>N2 CHECK FOR VOLTAGE TO THE BLOWER MOTOR</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor C1227.</li> <li>Ignition ON.</li> <li>Measure the voltage between the blower motor C1227, circuit 371 (PK/WH) and ground.</li> </ul>  <p>AM0416-A</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">N3</a>.</p> <p><b>No</b> GO to <a href="#">N8</a>.</p>
<p><b>N3 CHECK THE BLOWER MOTOR</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Connect: Blower Motor C1227.</li> <li>Disconnect: Blower Motor Speed Control C1308.</li> <li>Connect a fused jumper lead between the blower motor speed control C1308-4, circuit 515 (OG/RD) and C1308-5, circuit 57 (BK).</li> </ul>	<p><b>Yes</b> GO to <a href="#">N6</a>.</p> <p><b>No</b> GO to <a href="#">N4</a>.</p>

 <p>A0032579</p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li><b>Does the blower motor operate?</b></li> </ul>	
<p><b>N4 CHECK CIRCUIT 57 (BK)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Remove the fused jumper lead from the blower motor speed control C1308.</li> <li>Measure the resistance between the blower motor speed control C1308-5, circuit 57 (BK) and ground.</li> </ul>  <p>A0032576</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">N5</a>.</p> <p><b>No</b> REPAIR circuit 57 (BK). TEST the system for normal operation.</p>
<p><b>N5 CHECK CIRCUIT 515 (OG/RD)</b></p> <ul style="list-style-type: none"> <li>Disconnect: Blower Motor C1227.</li> <li>Measure the resistance between the blower motor C1227, circuit 515 (OG/RD) and the blower motor speed control C1308-4, circuit 515 (OG/RD).</li> </ul>  <p>A0032577</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> INSTALL a new blower motor. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 515 (OG/RD). TEST the system for normal operation.</p>
<p><b>N6 CHECK THE EATC MODULE OUTPUT</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Remove the fused jumper lead from the blower motor speed control C1308.</li> <li>Connect: Blower Motor Speed Control C1308.</li> <li>Ignition ON.</li> <li>Adjust the blower motor speed to HI.</li> <li>Measure the voltage between the EATC module C228b-24, circuit 754 (LG/WH) and ground by back-probing the EATC module C228b.</li> </ul>  <p>A0029287</p> <ul style="list-style-type: none"> <li><b>Is the voltage within 2 volts of battery voltage?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">N7</a>.</p> <p><b>No</b> INSTALL a new EATC module. TEST the system for normal operation.</p>
<p><b>N7 CHECK CIRCUIT 754 (LG/WH) FOR AN OPEN OR SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Speed Control C1308.</li> <li>Disconnect: EATC Module C228b.</li> <li>Measure the resistance between the EATC module C228b-24, circuit 754 (LG/WH) and the blower motor speed control C1308-3, circuit 754 (LG/WH), and measure the resistance between the EATC module C228b-24, circuit 754 (LG/WH) and ground.</li> </ul>	<p><b>Yes</b> INSTALL a new blower motor speed control. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 754 (LG/WH). TEST the system for normal operation.</p>

 <p>AM1193-A</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms between the EATC module and the blower motor speed control and greater than 10,000 ohms between the EATC module and ground?</li> </ul>	
<p><b>N8 CHECK CIRCUIT 371 (PK/WH)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Relay.</li> <li>Measure the resistance between the blower motor relay socket pin 87, circuit 371 (PK/WH), and the blower motor C1227, circuit 371 (PK/WH).</li> </ul>  <p>A0032572</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">N9</a>.</p> <p><b>No</b> REPAIR circuit 371 (PK/WH) for an open. TEST the system for normal operation.</p>
<p><b>N9 CHECK CIRCUIT 181 (BN/OG)</b></p> <ul style="list-style-type: none"> <li>Measure the voltage between the blower motor relay socket pin 30, circuit 181 (BN/OG), and ground.</li> </ul>  <p>A0032573</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p><b>Yes</b> GO to <a href="#">N10</a>.</p> <p><b>No</b> REPAIR circuit 181 (BN/OG) for an open. TEST the system for normal operation.</p>
<p><b>N10 CHECK THE BLOWER MOTOR RELAY</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Measure the voltage between the blower motor relay socket pin 86, circuit 296 (WH/VT), and blower motor relay socket pin 85, circuit 57 (BK).</li> </ul>  <p>A0034149</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p><b>Yes</b> INSTALL a new blower motor relay. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">N11</a>.</p>
<p><b>N11 CHECK CIRCUIT 296 (WH/VT)</b></p> <ul style="list-style-type: none"> <li>Measure the voltage between the blower motor relay socket pin 86, circuit 296 (WH/VT), and ground.</li> </ul>  <p>A0020210</p> <ul style="list-style-type: none"> <li>Is the voltage 10 volts or greater?</li> </ul>	<p><b>Yes</b> REPAIR circuit 57 (BK). TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 296 (WH/VT). TEST the system for normal operation.</p>

## PINPOINT TEST O: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — MANUAL CLIMATE CONTROL

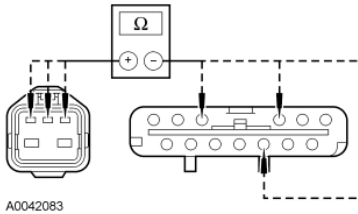
Test Step	Result / Action to Take
<b>O1 CHECK THE BLOWER MOTOR OPERATION</b> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Turn the function selector switch to the FLOOR position.</li> </ul>  <p>L10572-A</p> <ul style="list-style-type: none"> <li>Select all blower speed positions.</li> <li><b>Does the blower motor operate in any position?</b></li> </ul>	<p><b>Yes</b> If the blower motor does not operate in HI, GO to <a href="#">O2</a> .</p> <p>If the blower motor does not operate in MED-HI or MED-LO, GO to <a href="#">O4</a> .</p> <p>If the blower motor does not operate in LO, GO to <a href="#">O5</a> .</p> <p>All other symptoms, GO to <a href="#">O8</a></p> <p><b>No</b> <a href="#">GO to Pinpoint Test M.</a></p>
<b>O2 CHECK CIRCUIT 57 (BK)</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Switch C294b.</li> <li>Measure the resistance between the blower motor switch C294b, circuit 57 (BK) and ground.</li> </ul>  <p>A0013882</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">O3</a>.</p> <p><b>No</b> REPAIR circuit 57 (BK). TEST the system for normal operation.</p>
<b>O3 CHECK CIRCUIT 261 (OG/BK)</b> <ul style="list-style-type: none"> <li>Disconnect: Blower Motor C1227.</li> <li>Measure the resistance between the blower motor switch C294b, circuit 261 (OG/BK) and the blower motor C1227, circuit 261 (OG/BK).</li> </ul>  <p>A0042078</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> INSTALL a new blower motor switch. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 261 (OG/BK). TEST the system for normal operation.</p>
<b>O4 CHECK CIRCUIT 752 (YE/RD) AND CIRCUIT 754 (LG/WH)</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Switch C294b.</li> <li>Disconnect: Blower Motor Resistor C1308.</li> <li>Measure the resistance between the blower motor switch C294b:             <ul style="list-style-type: none"> <li>circuit 752 (YE/RD) and the blower motor Resistor C1308, circuit 752 (YE/RD)</li> <li>circuit 754 (LG/WH) and the blower motor Resistor C1308, circuit 754 (LG/WH).</li> </ul> </li> </ul>  <p>A0051251</p> <ul style="list-style-type: none"> <li><b>Are the resistances less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">O7</a>.</p> <p><b>No</b> REPAIR the affected circuit. TEST the system for normal operation.</p>
<b>O5 CHECK BLOWER MOTOR RESISTOR GROUND CIRCUIT 57 (BK)</b> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Resistor C1308.</li> </ul>	<p><b>Yes</b> GO to <a href="#">O6</a>.</p> <p><b>No</b> REPAIR circuit 57 (BK). TEST the system for normal operation.</p>

 <p style="text-align: center;">A0471-B</p> <ul style="list-style-type: none"> <li>Measure the resistance between the blower motor resistor C1308, circuit 57 (BK) and ground.</li> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	
<p><b>O6 CHECK THE BLOWER MOTOR RESISTOR CIRCUIT 261 (OG/BK)</b></p> <ul style="list-style-type: none"> <li>Disconnect: Blower Motor C1227.</li> <li>Measure the resistance between the blower motor resistor C1308, circuit 261 (OG/BK) and blower motor C1227, circuit 261 (OG/BK).</li> </ul>  <p style="text-align: center;">A0051252</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">O7</a>.</p> <p><b>No</b> REPAIR circuit 261 (OG/BK). TEST the system for normal operation.</p>
<p><b>O7 CHECK THE BLOWER MOTOR RESISTOR</b></p> <ul style="list-style-type: none"> <li>Carry out the blower motor resistor component test in this section.</li> <li><b>Does the blower motor resistor test good?</b></li> </ul>	<p><b>Yes</b> INSTALL a new blower motor switch. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new blower motor resistor. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p>
<p><b>O8 CHECK CIRCUITS 261 (OG/BK), 752 (YE/RD) AND 754 (LG/WH) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor C1227.</li> <li>Disconnect: Blower Motor Switch C294b.</li> <li>Disconnect: Blower Motor Resistor C1308.</li> <li>Measure the resistance between ground and the blower motor resistor C1308:             <ul style="list-style-type: none"> <li>circuit 261 (OG/BK)</li> <li>circuit 752 (YE/RD)</li> <li>circuit 754 (LG/WH)</li> </ul> </li> </ul>  <p style="text-align: center;">A0051253</p> <ul style="list-style-type: none"> <li><b>Are the resistances less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> INSTALL a new blower motor switch. REFER to <a href="#">Section 412-04</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR the affected circuit. TEST the system for normal operation.</p>

**PINPOINT TEST P: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — EATC**

Test Step	Result / Action to Take
<p><b>P1 CHECK CIRCUIT 515 (OG/RD) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Speed Control C1308.</li> <li>Ignition ON.</li> <li>Press the PANEL button on the EATC module.</li> <li><b>Does the blower motor operate?</b></li> </ul>	<p><b>Yes</b> REPAIR circuit 515 (OG/RD) for a short to ground. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">P2</a>.</p>
<p><b>P2 CHECK THE BLOWER MOTOR SPEED CONTROL</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Connect: Blower Motor Speed Control C1308.</li> <li>Disconnect: EATC Module C228b.</li> <li>Ignition ON.</li> <li><b>Does the blower motor operate?</b></li> </ul>	<p><b>Yes</b> INSTALL a new blower motor speed control. TEST the system for normal operation.</p> <p><b>No</b> GO to <a href="#">P3</a>.</p>
<p><b>P3 CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Blower Motor Speed Control C1308.</li> <li>Measure the resistance between the blower motor speed control C1308:</li> </ul>	<p><b>Yes</b> GO to <a href="#">P4</a>.</p>

- pin 1, circuit 269 (LB/OG) and the EATC module C228b-10.
- pin 2, circuit 752 (YE/RD) and the EATC module C228b-23.
- pin 3, circuit 754 (LG/WH) and the EATC module C228b-24.



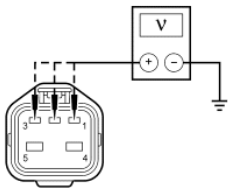
A0042083

- Are the resistances less than 5 ohms?

**No**  
REPAIR the affected circuit. TEST the system for normal operation.

#### P4 CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure the voltage between the blower motor speed control C1308:
  - pin 1, circuit 269 (LB/OG) and ground.
  - pin 2, circuit 752 (YE/RD) and ground.
  - pin 3, circuit 754 (LG/WH) and ground.



A0033862

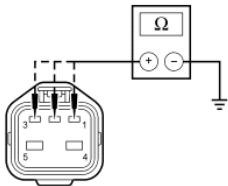
- Is voltage present?

**Yes**  
REPAIR the affected circuit. TEST the system for normal operation.

**No**  
GO to [P5](#).

#### P5 CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure the resistance between the blower motor speed control C1308:
  - pin 1, circuit 269 (LB/OG) and ground.
  - pin 2, circuit 752 (YE/RD) and ground.
  - pin 3, circuit 754 (LG/WH) and ground.



A0033863

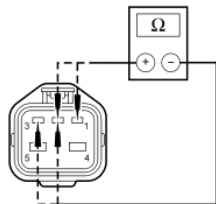
- Are the resistances greater than 10,000 ohms?

**Yes**  
GO to [P6](#).

**No**  
REPAIR the affected circuit. TEST the system for normal operation.

#### P6 CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR SHORTS

- Measure the resistance between the blower motor speed control C1308:
  - pin 2, circuit 752 (YE/RD) and C1308-3, circuit 754 (LG/WH).
  - pin 2, circuit 752 (YE/RD) and C1308-1, circuit 269 (LB/OG).
  - pin 3, circuit 754 (LG/WH) and C1308-1, circuit 269 (LB/OG).



A0033864

- Are the resistances greater than 10,000 ohms?

**Yes**  
GO to [P7](#).

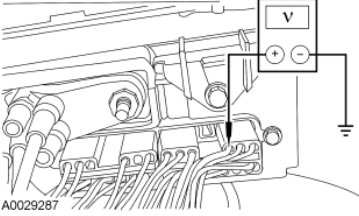
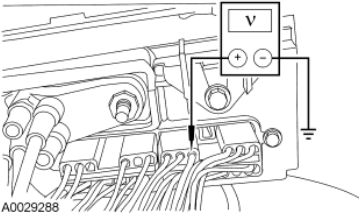
**No**  
REPAIR the affected circuits. TEST the system for normal operation.

#### P7 CHECK THE EATC MODULE HIGH BLOWER OUTPUT

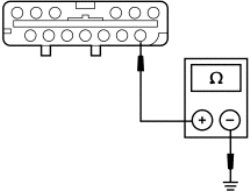
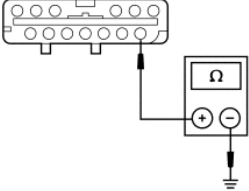
- Connect: EATC C228b.
- Connect: Blower Motor Speed Control C1308.
- Ignition ON.
- Adjust the blower motor speed to HI.
- Measure the voltage between the EATC module C228b-24, circuit 754 (LG/WH) and ground by back-probing the EATC module C228b.

**Yes**  
GO to [P8](#).

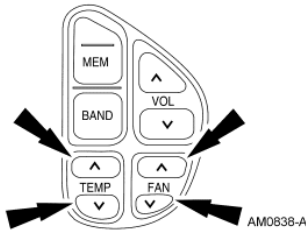
**No**  
INSTALL a new EATC module. TEST the system for normal operation.

 <p>A0029287</p> <ul style="list-style-type: none"> <li>Is the voltage within 2 volts of battery voltage?</li> </ul>	
<p><b>P8 CHECK THE EATC MODULE BLOWER CONTROL OUTPUT</b></p> <ul style="list-style-type: none"> <li>Adjust the blower motor speed to LO.</li> <li>Measure the voltage between the EATC module C228b-23, circuit 752 (YE/RD) and ground by back-probing the EATC module C228b.</li> </ul>  <p>A0029288</p> <ul style="list-style-type: none"> <li>Is the voltage greater than 1 volt?</li> </ul>	<p><b>Yes</b> INSTALL a new blower motor speed control. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new EATC module. TEST the system for normal operation.</p>

## PINPOINT TEST Q: THE STEERING WHEEL CONTROL SWITCH IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

Test Step	Result / Action to Take										
<p><b>Q1 CHECK THE INPUT TO THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC)</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: EATC Module C228b.</li> <li>Measure the resistance between the EATC module C228b-8, circuit 1070 (BN/LB) and ground.</li> </ul>  <p>AM0837-A</p> <ul style="list-style-type: none"> <li>Is the resistance reading between 4,500 and 5,000 ohms?</li> </ul>	<p><b>Yes</b> GO to <a href="#">Q2</a>.</p> <p><b>No</b> If the resistance is less than 4,500 ohms, GO to <a href="#">Q3</a>. If the resistance is greater than 5,000 ohms, GO to <a href="#">Q5</a>.</p>										
<p><b>Q2 CHECK THE STEERING WHEEL CONTROL SWITCH OUTPUT</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the EATC module C228b-8, circuit 1070 (BN/LB) and ground.</li> </ul>  <p>AM0837-A</p> <ul style="list-style-type: none"> <li>Press each steering wheel control switch and compare the resistance reading to the chart below.</li> </ul> <table border="1" data-bbox="212 1627 466 1759"> <thead> <tr> <th>Switch</th><th>Resistance (ohms)</th></tr> </thead> <tbody> <tr> <td>TEMP UP</td><td>336-375</td></tr> <tr> <td>TEMP DOWN</td><td>1620-1810</td></tr> <tr> <td>FAN UP</td><td>736-821</td></tr> <tr> <td>FAN DOWN</td><td>123-138</td></tr> </tbody> </table>	Switch	Resistance (ohms)	TEMP UP	336-375	TEMP DOWN	1620-1810	FAN UP	736-821	FAN DOWN	123-138	<p><b>Yes</b> INSTALL a new EATC module. TEST the system for normal operation.</p> <p><b>No</b> INSTALL a new steering wheel control switch. TEST the system for normal operation.</p>
Switch	Resistance (ohms)										
TEMP UP	336-375										
TEMP DOWN	1620-1810										
FAN UP	736-821										
FAN DOWN	123-138										

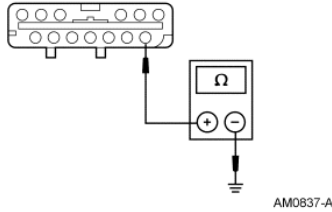




- Are the resistance readings within the range?

### Q3 CHECK CIRCUIT 1070 (BN/LB) FOR A SHORT TO GROUND

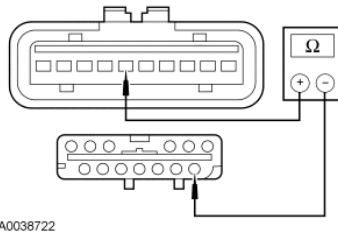
- Disconnect: Steering Wheel Control Switch.
- Measure the resistance between the EATC module C228b-8, circuit 1070 (BN/LB) and ground.



- Is the resistance reading less than 10,000 ohms?

### Q4 CHECK CIRCUIT 1070 (BN/LB) FOR A SHORT TO CIRCUIT 848 (DG/OG)

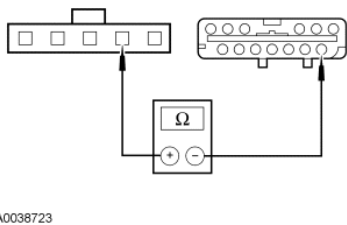
- Disconnect: Steering Wheel Control Switch.
- Measure the resistance between the EATC module C228b-8, circuit 1070 (BN/LB) and the speed control module C122-6, circuit 848 (DG/OG).



- Is the resistance reading greater than 10,000 ohms?

### Q5 CHECK CIRCUIT 1070 (BN/LB) FOR AN OPEN

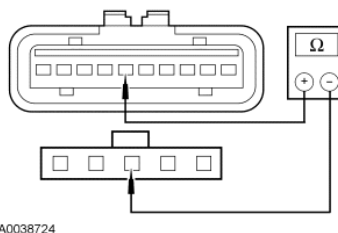
- Disconnect: Steering Wheel Control Switch.
- Measure the resistance between the EATC module C228b-8, circuit 1070 (BN/LB) and the steering wheel control switch connector (LB/RD).



- Is the resistance less than 5 ohms?

### Q6 CHECK CIRCUIT 848 (DG/OG) FOR AN OPEN

- Disconnect: Clockspring C234.
- Measure the resistance between the speed control module C122-6, circuit 848 (DG/OG) and the steering wheel control switch connector.



- Is the resistance less than 5 ohms?

**Yes**  
REPAIR circuit 1070 (BN/LB) for a short to ground. TEST the system for normal operation.

**No**  
GO to [Q4](#).

**Yes**  
INSTALL a new steering wheel control switch. TEST the system for normal operation.

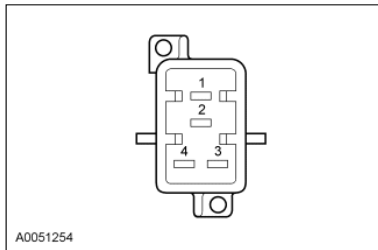
**No**  
REPAIR circuit 1070 (BN/LB) for a short to circuit 848 (DG/OG). TEST the system for normal operation.

**Yes**  
GO to [Q6](#).

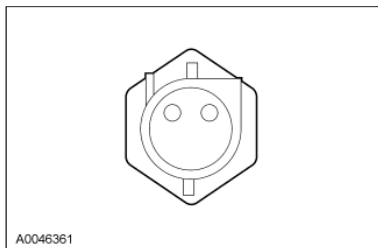
**No**  
REPAIR circuit 1070 (BN/LB) for an open. TEST the system for normal operation.

**Yes**  
INSTALL a new steering wheel control switch. TEST the system for normal operation.

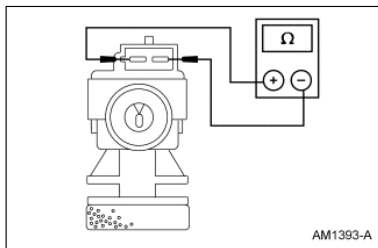
**No**  
REPAIR circuit 848 (DG/OG) for an open. TEST the system for normal operation.

**Component Tests****Blower Motor Resistor**

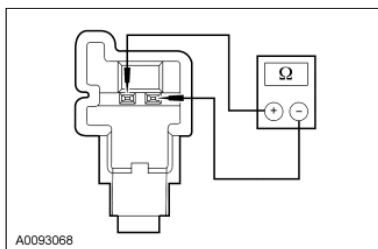
Blower Motor Resistor Pins	Resistance
3 and 4	0.4-0.6 ohms
3 and 1	0.9-1.1 ohms
3 and 2	2.1-2.5 ohms

**Ambient Temperature Sensor**

Ambient Temperature	Resistance
10-20 °C (50-68 °F)	37,000-58,000 ohms
20-30 °C (68-86 °F)	24,000-37,000 ohms
30-40 °C (86-104 °F)	16,000-24,000 ohms

**In-Vehicle Temperature Sensor — EATC**

Temperature	Resistance
10-20 °C (50-68 °F)	37,000-58,000 ohms
20-30 °C (68-86 °F)	24,000-37,000 ohms
30-40 °C (86-104 °F)	16,000-24,000 ohms

**A/C Evaporator Discharge Temperature Sensor**

Temperature	Resistance
-40 °C (-40 °F)	832,500-1,017,500 ohms
-20 °C (-4 °F)	263,100-290,800 ohms
0 °C (32 °F)	91,050-100,600 ohms

20°C (68°F)	35,500-39,000 ohms
25°C (77°F)	28,500-31,500 ohms
40°C (104°F)	15,300-16,900 ohms
60°C (140°F)	7,170-7,930 ohms
100°C (212°F)	1,975-2,185 ohms
120°C (248°F)	1,130-1,250 ohms

#### Heater Core



**WARNING:** Carbon monoxide is colorless, odorless and dangerous. If it is necessary to operate the engine with the vehicle in a closed area such as a garage, always use an exhaust collector to vent the exhaust gases outside the closed area.

1. **NOTE:** Testing of returned heater cores reveals that a large percentage of heater cores were good and did not require replacement. If a heater core leak is suspected, the heater core must be tested by carrying out the plugged heater core component test before the heater core pressure test. Carry out a system inspection by checking the heater system thoroughly as follows:

Inspect for evidence of coolant leakage at the heater water hose to heater core attachments. A coolant leak in the heater water hose could follow the heater core tube to the heater core (18476) and appear as a leak in the heater core.

2. **NOTE:** Spring-type clamps are installed as original equipment. Installation and overtightening of non-specification clamps can cause leakage at the heater water hose connection and damage the heater core.

Check the integrity of the heater water hose clamps.

#### Heater Core — Plugged



**WARNING:** The heater core inlet hose will become too hot to handle if the system is working correctly.

1. Check to see that the engine coolant is at the correct level.
2. Start the engine and turn on the heater.
3. When the engine coolant reaches operating temperature, feel the heater core outlet hose to see if it is hot.

If it is not hot:

- the heater core may have an air pocket.
- the heater core may be plugged.
- the thermostat is not working correctly.

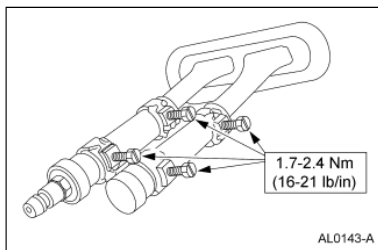
#### Heater Core — Pressure Test

Use the Radiator/Heater Core Pressure Tester to perform the pressure test.

1. **NOTE:** Due to space limitations, a bench test may be necessary for pressure testing.

Drain the coolant from the cooling system.

2. Disconnect the heater water hoses from the heater core. For additional information, refer to [Section 412-02](#).
3. Install a short piece of heater water hose, approximately 101 mm (4 inches) long on each heater core tube.
4. Fill the heater core and heater water hoses with water and install Plug BT-7422-B and adapter BT-7422-A from the Radiator/Heater Core Pressure Tester in the heater water hose ends. Secure the heater water hoses, plug and adapter with hose clamps.

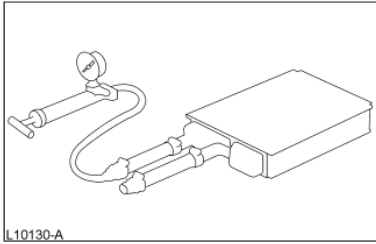


5. Attach the pump and gauge assembly from the Radiator/Heater Core Pressure Tester to the adapter.
6. Close the bleed valve at the base of the gauge. Pump 138 kPa (20 psi) of air pressure into the heater core.
7. Observe the pressure gauge for a minimum of three minutes.
8. If the pressure drops, check the heater water hose connections to the core tubes for leaks. If the heater water hoses do not leak, remove the heater core from the vehicle and perform the bench test.

#### Heater Core — Bench Test

1. Remove the heater core from the vehicle. For additional information, refer to [Section 412-02](#).
2. Drain all of the coolant from the heater core.
3. Connect the 101 mm (4 inch) test heater water hoses with plug and adapter to the core tubes. Then connect the Radiator/Heater Core Pressure Tester to the adapter.
4. Apply 138 kPa (20 psi) of air pressure to the heater core. Submerge the heater core in water.

5. If a leak is observed, replace the heater core.



#### A/C Evaporator/Condenser Core — On Vehicle Leak Test

1. Recover the refrigerant. For additional information, refer to [Air Conditioning \(A/C\) System Recovery, Evacuation and Charging](#) in this section.
2. **NOTE:** DO NOT leak test an A/C evaporator core with the suction accumulator/drier (19C836) attached to the core tubes.

Disconnect the suspect A/C evaporator core or A/C condenser core from the A/C system. For additional information, refer to [Section 412-03](#).

3. Clean the spring lock couplings. For additional information, refer to [Spring Lock Coupling](#) in this section.
4. Connect the appropriate test fittings from the R-12/R-134a Air Conditioning Test Fitting Set to the evaporator or condenser tube connections.
5. **NOTE:** The automatic shut-off valves on some gauge set hoses do not open when connected to the test fittings. If available, use hoses without shut-off valves. If hoses with shut-off valves are used, make sure the valve opens when attached to the test fittings or install an adapter which will activate the valve. The test is not valid if the shut-off valve does not open.  
  
Connect the red and blue hoses from the R-134a Manifold Gauge Set to the test fittings on the A/C evaporator core or A/C condenser core. Connect the yellow hose to a known good vacuum pump.
6. Open both gauge set valves and start the vacuum pump. Allow the vacuum pump to operate for a minimum of 45 minutes after the gauge set low pressure gauge indicates 101 kPa (30 in-Hg). The 45 minute evacuation is necessary to remove any refrigerant from oil left in the A/C evaporator core or A/C condenser core. If the refrigerant is not completely removed from the oil, outgassing will degrade the vacuum and appear as a refrigerant leak.
7. If the low pressure gauge reading will not drop to 101 kPa (30 in-Hg) when the valves on the gauge and manifold set are open and the vacuum pump is operating, close the gauge set valves and observe the low pressure gauge. If the pressure rises rapidly to zero, a large leak is indicated. Recheck the test fitting connections and gauge set connections before replacing the A/C evaporator core or A/C condenser core.
8. After evacuating for 45 minutes, close the gauge set valves and stop the vacuum pump. Observe the low pressure gauge; it should remain at the 101 kPa (30 in-Hg) mark.
  - If the low pressure gauge reading rises 34 or more kPa (10 or more in-Hg) of vacuum from the 101 kPa (30 in-Hg) position in 10 minutes, a leak is indicated.
  - If a very small leak is suspected, wait 30 minutes and observe the vacuum gauge.
  - If a small amount of vacuum is lost, operate the vacuum pump with gauge valves open for an additional 30 minutes to remove any remaining refrigerant from the oil in the A/C evaporator core or A/C condenser core. Then recheck for loss of vacuum.
  - If a very small leak is suspected, allow the system to set overnight with vacuum applied and check for vacuum loss.
9. If the A/C evaporator core or A/C condenser core does leak, as verified by the above procedure, install a new A/C evaporator core or A/C condenser core. For additional information, refer to [Section 412-03](#).

#### A/C Compressor — External Leak Test

1. Install the A/C Pressure Test Adapter on the rear head of the A/C compressor, using the existing manifold retaining bolt.
2. Connect the high and low pressure lines of a manifold gauge set or a refrigerant recovery/recycling station such as the R-134a A/C Service Center to the corresponding fittings on the A/C Pressure Test Adapter.
3. Attach the center hose of the manifold gauge set to a refrigerant container standing in an upright position.
4. Hand-rotate the compressor shaft 10 complete revolutions to distribute the oil inside the A/C compressor.
5. Open the low pressure gauge valve, the high pressure gauge valve and the valve on the refrigerant container to allow the refrigerant vapor to flow into the A/C compressor.
6. Using the Automatic Calibration Halogen Leak Detector, check the entire A/C compressor for leaks.
7. If an external leak is found, install a new A/C compressor. For additional information, refer to [Section 412-03](#).
8. When the leak test is complete, recover the refrigerant from the compressor.

