

## SECTION 412-00: Climate Control System - General Information

## 1999 Explorer/Mountaineer Workshop Manual







### DIAGNOSIS AND TESTING

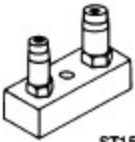



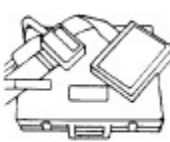
### Climate Control System

Refer to Wiring Diagrams Cell 54, Air Conditioner/Heater for schematic and connector information.

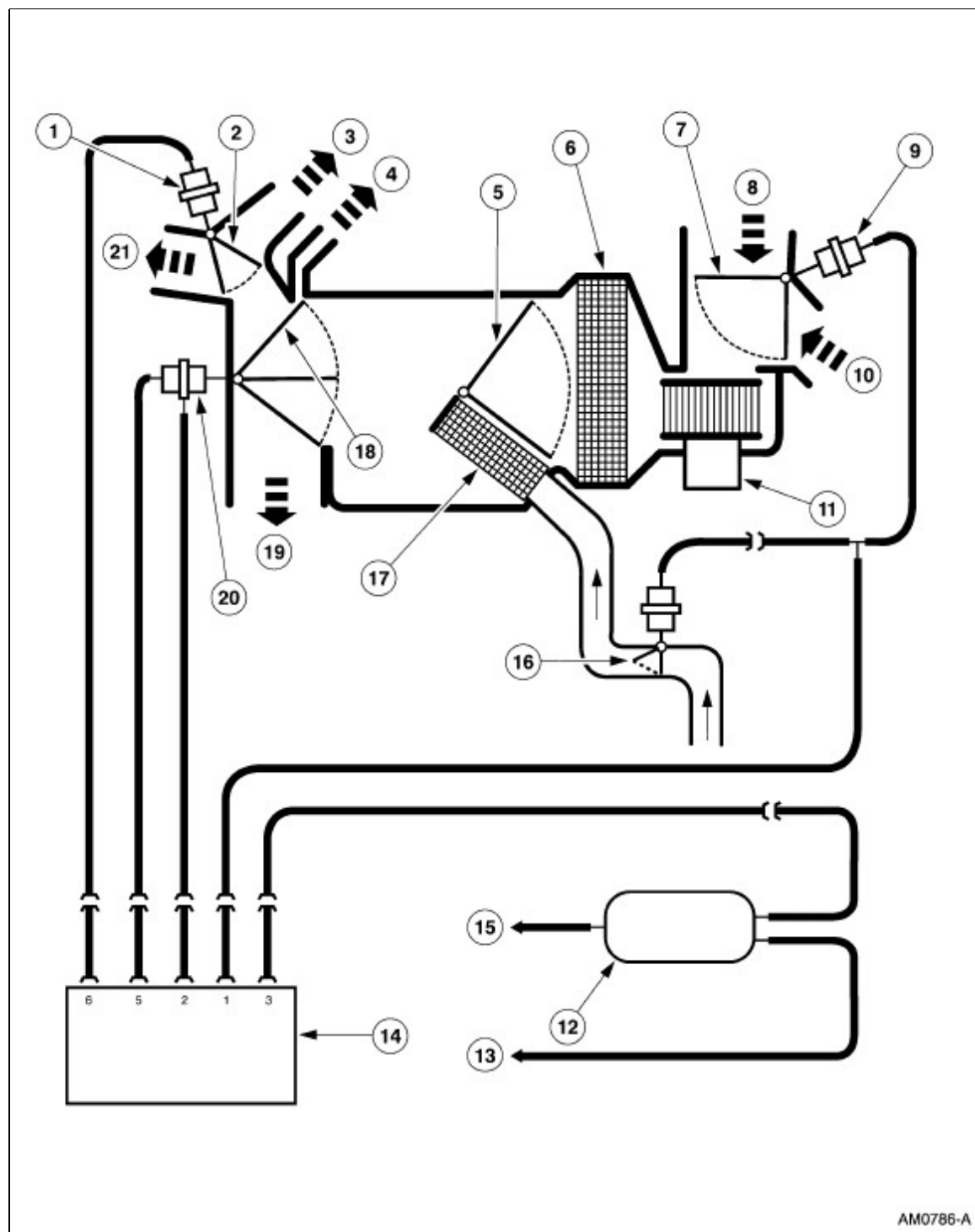
Refer to Wiring Diagrams Cell 55, Electronic Automatic Temperature Control (EATC) for schematic and connector information.

### Special Tool(s)

 <p>ST1179-A</p>	<p>Alternator, Regulator, Battery and Starter Tester (ARBST) 010-00725 or equivalent</p>
 <p>ST2173-A</p>	<p>Starter, Alternator, Battery Regulator, Electrical Tester 010-00730 or equivalent</p>
 <p>ST1137-A</p>	<p>Rotunda 73 Digital Multimeter 105-R0051 or equivalent</p>
 <p>ST1217-A</p>	<p>New Generation Star (NGS) Tester 418-F048 (007-00500) or equivalent</p>
 <p>ST1176-A</p>	<p>Vacuum Pump 416-D002 (D95L-7559-A) or equivalent</p>
 <p>ST1928-A</p>	<p>R-134a Manifold Gauge Set 176-R032A or equivalent</p>

 ST1501-A	A/C Pressure Test Adapter 412-093 (T94P-19623-E)
 ST1252-A	R-12/R-134a Air Conditioning Test Fitting Set 412-DS028 (014-00333) or equivalent
 ST2351-A	Refrigerant Leak Detector 216-00001 or equivalent
 ST1474-A	Radiator/Heater Core Pressure Tester 014-R1072 or equivalent
 ST1391-A	EEC-V 104-Pin Breakout Box 418-049 (014-00950) or equivalent

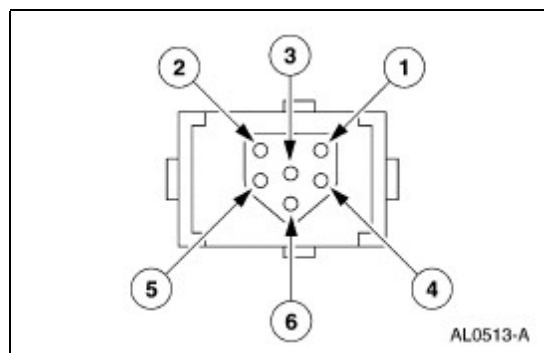
## Vacuum Schematic — Manual A/C



Item	Part Number	Description
1	18A318	Vacuum control motor— — panel/defrost door
2	18A478	Panel/defrost door (full vacuum position)
3	—	Defrost airflow
4	—	Side window demister airflow
5	18B545	Temperature blend door (full heat position)
6	19860	A/C evaporator core
7	19A813	Air inlet duct door (full vacuum position)

8	—	Outside air inlet
9	18A318	Vacuum control motor— — air inlet duct door
10	—	Recirculated air inlet
11	19805	A/C blower motor
12	19A566	A/C vacuum reservoir tank and bracket
13	—	Vacuum from the engine intake manifold
14	19B888	A/C — heater function selector switch
15	—	Vacuum to the 4x4 hub solenoids
16	18495	Water diverter valve
17	18476	Heater core
18	18A559	Floor/panel door (full vacuum position)
19	—	Floor airflow
20	18A318	Vacuum control motor— — floor/panel door
21	—	Panel vent airflow

### Vacuum Connector End View — Manual A/C



Port No.	Hose Color	Function
1	White	Air inlet duct door and water diverter valve
2	Yellow	Floor/panel door
3	Black	Vacuum source
4	—	Not used
5	Blue	Floor/panel door
6	Red	Panel/defrost door

### VACUUM APPLICATION CHART—MANUAL A/C

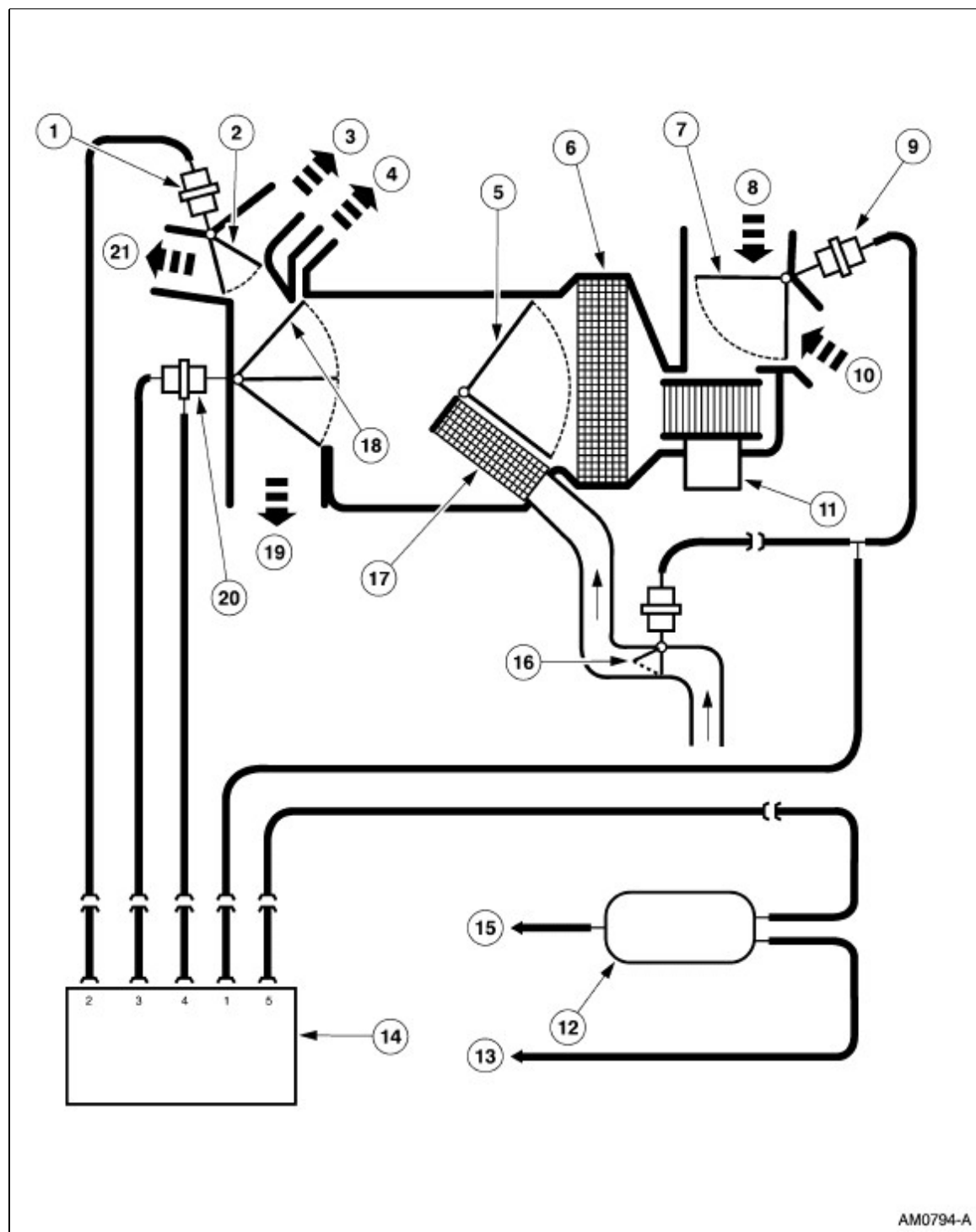
Switch Port	Color	Function	Function Selector Switch Position							
			MAX A/C	A/C	PNL/ VENT	OFF	FLR/ PNL	FLR	FLR/ DEF	DEF

1	White	Outside/recirc, water diverter	V	NV	NV	V	NV	NV	NV	NV
2	Yellow	Floor/panel	NV	NV	NV	V	NV	V	NV	NV
3	Black	Vacuum source	V	V	V	V	V	V	V	V
5	Blue	Full floor	NV	NV	NV	V	V	V	V	NV
6	Red	Panel/defrost	V	V	V	NV	V	NV	NV	NV

V = Vacuum

NV= No Vacuum

### **Vacuum Schematic — Electronic Automatic Climate Control System**

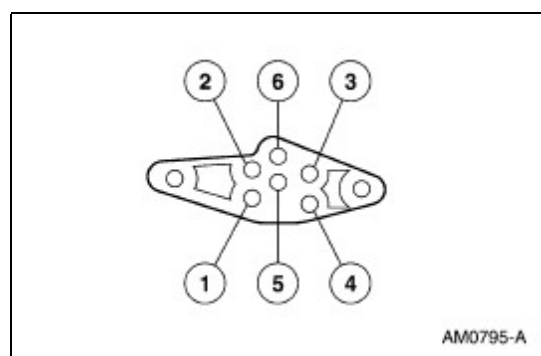


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Item	Part Number	Description
1	18A318	Vacuum control motor— — panel/defrost door
2	18A478	Panel/defrost door (full vacuum position)
3	—	Defrost airflow
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6	19860	A/C evaporator core
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9	18A318	Vacuum control motor— — air inlet duct door
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21	—	Panel vent airflow

### Vacuum Connector End View — Electronic Automatic Climate Control



Port No.	Hose Color	Function
1	White	Air inlet duct door
2	Red	Panel/defrost door
3	Blue	Floor/panel door
4	Yellow	Floor/panel door
5	Black	Source vacuum
6	—	Not used

### VACUUM APPLICATION CHART—ELECTRONIC AUTOMATIC CLIMATE CONTROL

Vacuum Harness Hose Color	Function	Manual Override Selector Buttons						
		OFF	MAX A/C	VENT	PNL & FLR	FLOOR	FLR & DEF	DEFROST

White	Outside/recirc, water diverter	V	V	NV	NV	NV	NV	NV
Yellow	Full floor	NV	NV	NV	NV	V	NV	NV
Blue	Floor-panel (partial)	NV	NV	NV	V	V	V	NV
Red	Panel-defrost	NV	V	V	V	NV	NV	NV
Black	Source	V	V	V	V	V	V	V

V = Vacuum

NV = No Vacuum

## Inspection and Verification

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

### Visual Inspection Chart

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

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

3. If the inspection reveals obvious concern(s) that can be readily identified, repair as required.
4. If the concern remains after the inspection, connect the New Generation Star (NGS) Tester to the data link connector (DLC) located beneath the instrument panel and select the vehicle to be tested from the NGS menu. If the vehicle selection cannot be entered:
  - check that the program card is correctly installed.
  - check the connections to the vehicle.
  - check the ignition switch position.

If the NGS still does not allow with the vehicle selection to be entered, refer to the New Generation Star Tester manual.



5. Perform the DATA LINK DIAGNOSTIC TEST using the NGS. If the NGS responds with:
  - CKT 914 and CKT 915 = ALL MODULE NO RESPONSE/NOT EQUIPPED, go to Communication System Diagnostics in [Section 418-00](#) to diagnose network concern.
  - If the powertrain control module (PCM) is not listed for a communication concern, turn the A/C controls to OFF and execute self-test diagnostics for the PCM.
  - If equipped with EATC, and the EATC module is not listed for a communication concern, execute self-test diagnostics for the EATC module.
6. If any PCM or EATC DTCs are retrieved, and 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 to continue diagnostics.
7. If no DTCs related to the concern are retrieved, go to the Symptom Chart to continue diagnostics.
8. If the electronic automatic temperature control module cannot be accessed by the NGS, GO to Pinpoint Test A.

### Electronic Automatic Temperature Control Module Self-Test

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

DTC	Description	Action
P1460	WOT A/C cutout circuit malfunction	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

P1464	A/C demand out of self test range	GO to DTC P1464.
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## ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC) MODULE DIAGNOSTIC TROUBLE CODE (DTC) INDEX

NGS DTC	EATC		Description	Action to Take
	(Hard) Self-Test Faults	(Intermittent) Run-Time Faults		
B1249	024	022 025	Blend door short Blend door failure	GO to DTC B1249.
B1251	031	N/A	A/C in-car temperature sensor open circuit	GO to DTC B1251.
B1253	030	N/A	A/C in-car temperature sensor short to ground	GO to DTC B1253.
B1255	041	043	A/C ambient temperature sensor open circuit	GO to DTC B1255.
B1257	040	042	A/C ambient temperature sensor short to ground	GO to DTC B1257.
B1261	050	052	A/C solar radiation sensor circuit short to ground	GO to DTC B1261.
U1073	N/A	N/A	SCP invalid or missing data for engine coolant	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
U1341	N/A	N/A	SCP invalid data for vehicle speed	REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

## Symptom Chart

### SYMPTOM CHART

Condition	Possible Sources	Action
<ul style="list-style-type: none"> <li>No communication with the electronic automatic temperature control module</li> </ul>	<ul style="list-style-type: none"> <li>Circuitry short/open.</li> <li>EATC module communication network.</li> </ul>	<ul style="list-style-type: none"> <li><u>Go To Pinpoint Test A.</u></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 open/shorted.</li> <li>Input sensor(s)/erratic input signals.</li> </ul>	<ul style="list-style-type: none"> <li><u>Go To Pinpoint Test B.</u></li> </ul>

- |  |  |  |
|--|--|--|
|  | <ul style="list-style-type: none"><li>• Charging system.</li><li>• Automatic temperature control sensor hose and elbow.</li></ul>  |  |
| <ul style="list-style-type: none"><li>• Incorrect/erratic direction of airflow from outlet - manual A/C</li></ul>  | <ul style="list-style-type: none"><li>• Function selector switch.</li><li>• A/C vacuum check valve.</li><li>• Vacuum hose.</li><li>• A/C vacuum reservoir tank and bracket.</li><li>• Vacuum control motor.</li><li>• Vacuum actuator arm.</li></ul>   | <ul style="list-style-type: none"><li>• <a href="#"><u>Go To Pinpoint Test C .</u></a></li></ul> |
| <ul style="list-style-type: none"><li>• Incorrect/erratic direction of airflow from outlet - EATC</li></ul>        | <ul style="list-style-type: none"><li>• No vacuum to the A/C control.</li><li>• A/C control leaks vacuum.</li><li>• Kinked/pinched vacuum hose.</li><li>• Vacuum control motor.</li><li>• A/C vacuum check valve.</li><li>• A/C vacuum reservoir tank and bracket</li><li>• Vacuum actuator arm not connected to the door crank.</li></ul> | <ul style="list-style-type: none"><li>• <a href="#"><u>Go To Pinpoint Test D .</u></a></li></ul> |
| <ul style="list-style-type: none"><li>• Insufficient, erratic, or no heat</li></ul>                                | <ul style="list-style-type: none"><li>• Low engine coolant level.</li><li>• Engine overheating.</li><li>• Plugged or partially plugged heater core.</li><li>• Temperature blend door binding/stuck.</li><li>• A/C electric blend door actuator.</li></ul>  | <ul style="list-style-type: none"><li>• <a href="#"><u>Go To Pinpoint Test E .</u></a></li></ul> |
| <ul style="list-style-type: none"><li>• The A/C does not operate/does not operate correctly - manual A/C</li></ul> | <ul style="list-style-type: none"><li>• Fuse.</li><li>• Circuitry short/open.</li><li>• A/C cycling switch.</li><li>• A/C system.</li><li>• Function selector switch.</li><li>• A/C refrigerant.</li></ul>   | <ul style="list-style-type: none"><li>• <a href="#"><u>Go To Pinpoint Test F .</u></a></li></ul> |
| <ul style="list-style-type: none"><li>• The A/C does not operate/does not operate correctly - EATC</li></ul>       | <ul style="list-style-type: none"><li>• Open fuse.</li><li>• Circuitry short/open.</li><li>• A/C cycling switch.</li><li>• A/C system discharged/low charge.</li><li>• A/C pressure cutoff switch.</li><li>• A/C control.</li></ul>  | <ul style="list-style-type: none"><li>• <a href="#"><u>Go To Pinpoint Test G .</u></a></li></ul> |

• The A/C is always on — manual A/C	• Circuit short/open. • A/C cycling switch. • A/C control.	• <a href="#">Go To Pinpoint Test H.</a>
• The A/C is always on — EATC	• Circuit short/open. • A/C cycling switch. • A/C control.	• <a href="#">Go To Pinpoint Test J.</a>
• No operation in all temperature settings - manual A/C	• Temperature blend door. • Temperature blend door actuator control. • A/C electronic blend door actuator motor. • Circuitry short/open.	• <a href="#">Go To Pinpoint Test K.</a>
• The blower motor does not operate - manual A/C	• Fuse. • Circuitry short/open. • A/C blower motor switch. • A/C blower motor resistor. • A/C blower motor.	• <a href="#">Go To Pinpoint Test L.</a>
• The blower motor does not operate - EATC	• Circuitry open/shorted. • A/C blower motor. • A/C blower motor speed control. • Blower motor relay.	• <a href="#">Go To Pinpoint Test M.</a>
• The blower motor does not operate correctly - manual A/C	• Circuitry short/open. • A/C blower motor resistor. • A/C blower motor switch.	• <a href="#">Go To Pinpoint Test N.</a>
• The blower does not operate correctly - EATC	• Circuitry short/open. • A/C blower motor speed control. • EATC module.	• <a href="#">Go To Pinpoint Test P.</a>
• No operation in high blower setting - manual A/C	• A/C blower motor resistor. • A/C blower motor switch.	• <a href="#">Go To Pinpoint Test Q.</a>
• The temperature set point does not repeat after turning the ignition switch off	• Open fuse. • Circuitry short/open. • EATC module.	• <a href="#">Go To Pinpoint Test R.</a>
• The temperature display will not switch between Celsius and Fahrenheit	• Circuitry short/open. • EATC module.	• <a href="#">Go To Pinpoint Test S.</a>
• One or more steering wheel	• Circuitry short/open.	• <a href="#">Go To</a>

control switches is inoperative	<ul style="list-style-type: none"> <li>Steering wheel control switch.</li> <li>EATC module.</li> <li>Clock spring.</li> </ul>	<a href="#">Pinpoint Test T.</a>
<ul style="list-style-type: none"> <li>The console blower motor does not operate</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>Console blower motor.</li> <li>Console blower resistor.</li> <li>Rear integrated control panel.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Go To Pinpoint Test U.</a></li> </ul>
<ul style="list-style-type: none"> <li>The panel/floor switch does not operate, the console blower does operate</li> </ul>	<ul style="list-style-type: none"> <li>Fuse.</li> <li>Circuitry short/open.</li> <li>Console door actuator.</li> <li>Rear integrated control panel.</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Go To Pinpoint Test V.</a></li> </ul>

## Pinpoint Tests

### PINPOINT TEST P1464: DTC P1464: A/C DEMAND OUT OF SELF TEST RANGE

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>P14641</b> VERIFY THE CLIMATE CONTROL SYSTEM	
	<p>① Check the climate control head installed in the vehicle.</p> <p>• <b>Is the vehicle equipped with EATC?</b></p> <p>→ <b>Yes</b> GO to <a href="#">P14645</a>.</p> <p>→ <b>No</b> GO to <a href="#">P14642</a>.</p>
<b>P14642</b> RECHECK FOR THE DTC	
①	① Make sure the function selector switch is in the OFF position.



AM0577-A

2



3



PCM Self-Test

**• Is DTC P1464 retrieved?**→ **Yes**GO to P14643.→ **No**

The system is functioning correctly. This DTC will set if the A/C is turned on when carrying out the PCM self-test.

**P14643 CHECK PID ACCS WITH THE A/C CONTROL DISCONNECTED**

1



2



Function Selector Switch C231

3



4



PCM PID ACCS

- **Does PID ACCS read ON?**

→ **Yes**

GO to P14644.

→ **No**

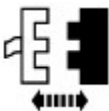
INSTALL a new function selector switch. REFER to Section 412-04. REPEAT the PCM self-test and verify DTC P1464 is no longer retrieved.

**P14644** CHECK CIRCUIT 348 (P) FOR A SHORT TO B+

1



2

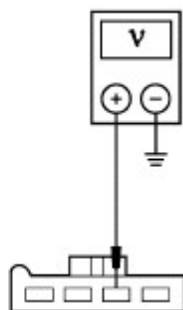


PCM C202

3



4



AM0582-A

4 Measure the voltage at the function selector switch pin C231, circuit 348 (P).

- **Is there voltage present?**

→ **Yes**

REPAIR circuit 348 (P) for a short to B+. REPEAT the PCM self-test and verify DTC P1464 is no longer retrieved.

→ **No**

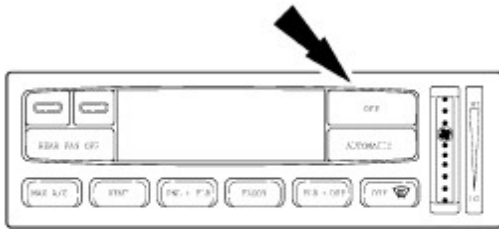
INSTALL a new powertrain control module.  
REFER to [Section 303-14](#) . REPEAT the PCM self-test and verify DTC P1464 is no longer retrieved.

**P14645** RECHECK FOR THE DTC

1



2



AM0852-A

3



PCM Self-Test

2

Press the OFF button on the electronic automatic temperature control module.

**• Is DTC P1464 retrieved?**→ **Yes**

GO to [P14646](#) .

→ **No**

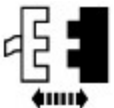
The system is functioning correctly. This DTC will set if the A/C is turned on when carrying out the PCM self-test.

**P14646** CHECK PID ACCS WITH THE A/C CONTROL DISCONNECTED

1



2



EATC Module C297



3



4



PCM PID ACCS

- Does PID ACCS read ON?

→ **Yes**GO to P14647.→ **No**

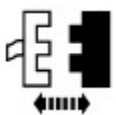
INSTALL a new EATC module. REFER to Section 412-04. REPEAT the PCM self-test and verify DTC P1464 is no longer retrieved.

**P14647** CHECK CIRCUIT 348 (P) FOR A SHORT TO B+

1



2

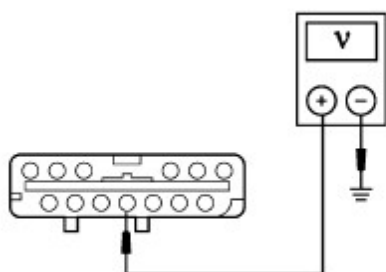


PCM C202

3



4



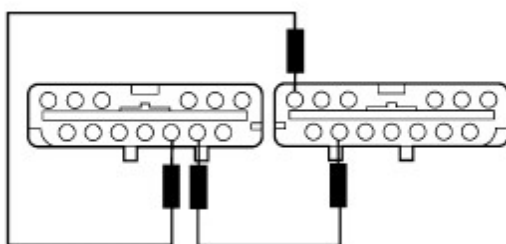


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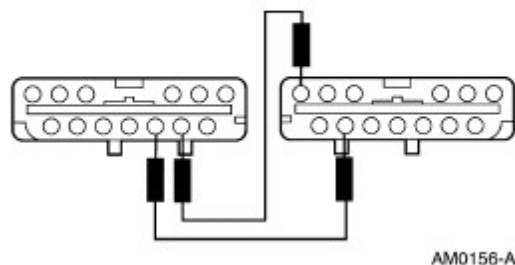
4 Measure the voltage at the EATC module connector pin C297-11, circuit 348 (P).

	<ul style="list-style-type: none"> <li>• <b>Is there voltage present?</b></li> </ul> <p>→ <b>Yes</b> REPAIR circuit 348 (P) for a short to B+. REPEAT the PCM self-test and verify DTC P1464 is no longer retrieved.</p> <p>→ <b>No</b> INSTALL a new powertrain control module. REFER to <a href="#">Section 303-14</a> . REPEAT the PCM self-test and verify DTC P1464 is no longer retrieved.</p>
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## PINPOINT TEST B1249: DTC B1249: BLEND DOOR FAILURE

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>B12491</b> CHECK THE ACTUATOR CLOCKWISE OPERATION (FULL COOL)	
<p>1 </p> <p>2  EATC Module C297 &amp; C298</p> <p>3  AM0155-A</p>	<p>3 Connect a jumper lead between the EATC module connector pins C297-13, circuit 250 (O) and C298-2, circuit 54 (LG/Y). Connect a second jumper lead between the EATC module connector pins C297-26, circuit 249 (DB/LG) and C297-3, circuit 57 (BK).</p> <ul style="list-style-type: none"> <li>• <b>Does the blend door actuator motor drive clockwise?</b></li> </ul> <p>→ <b>Yes</b> GO to <a href="#">B12492</a> .</p> <p>→ <b>No</b> GO to <a href="#">B12493</a> .</p>
<b>B12492</b> CHECK THE ACTUATOR COUNTERCLOCKWISE OPERATION (FULL HOT)	

1



1

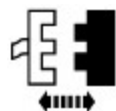
Connect a jumper lead between the EATC module connector pins C297-26, circuit 249 (DB/LG) and C298-2, circuit 54 (LG/Y). Connect a second jumper lead between the EATC module connector pins C297-13, circuit 250 (O) and C297-3, circuit 57 (BK).

- **Does the blend door actuator motor drive counterclockwise?**

→ **Yes**GO to B12498.→ **No**GO to B12493.

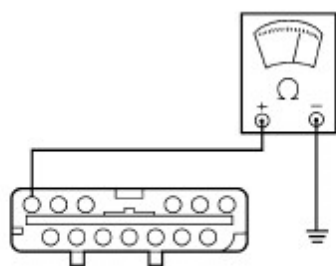
### **B12493** CHECK CIRCUIT 249 (DB/LG) FOR A SHORT

1



Electric Blend Door Actuator C270

2



AL0041-B

2

Measure the resistance between the EATC module connector pin C270-26, circuit 249 (DB/LG) and ground.

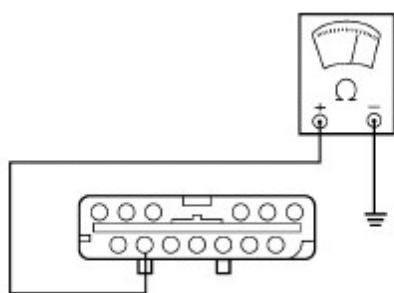
- **Is the resistance greater than 10,000 ohms?**

→ **Yes**GO to B12494.→ **No**

REPAIR circuit 249 (DB/LG) for a short to ground. TEST the system for normal operation.

### **B12494** CHECK CIRCUIT 250 (O) FOR A SHORT

1



AL0042-B

1

Measure the resistance between the EATC module connector pin C297-13, circuit 250 (O) and ground.

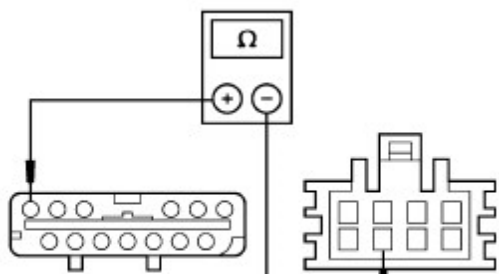
- **Is the resistance greater than 10,000 ohms?**

→ **Yes**GO to B12495 .→ **No**

REPAIR circuit 250 (O) for a short to ground.  
TEST the system for normal operation.

**B12495** CHECK CIRCUIT 249 (DB/LG) FOR AN OPEN

1



AM0846-A

1

Measure the resistance between the EATC module connector pin C297-26, circuit 249 (DB/LG) and the electric blend door actuator connector pin C270-7.

- **Is the resistance less than 5 ohms?**

→ **Yes**GO to B12496 .→ **No**

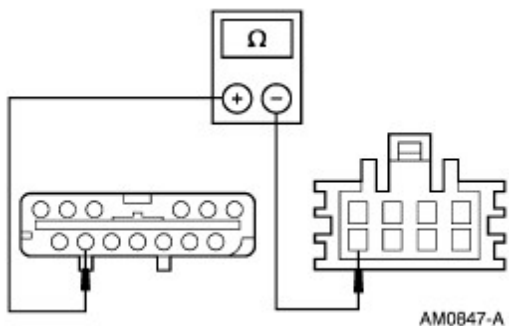
REPAIR circuit 249 (DB/LG) for an open. TEST the system for normal operation.

**B12496** CHECK CIRCUIT 250 (O) FOR AN OPEN

1

1

Measure the resistance between the EATC connector pin C297-13, circuit 250 (O) and the electric blend door actuator connector pin C270-8.



• **Is the resistance less than 5 ohms?**

→ **Yes**

GO to B12497.

→ **No**

REPAIR circuit 250 (O) for an open. TEST the system or normal operation.

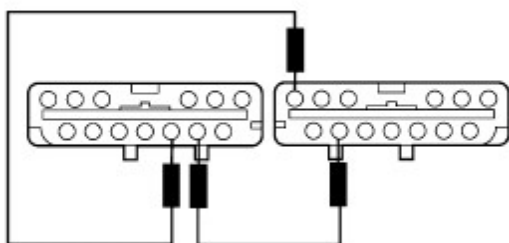
**B12497** CHECK THE ACTUATOR OPERATION

2



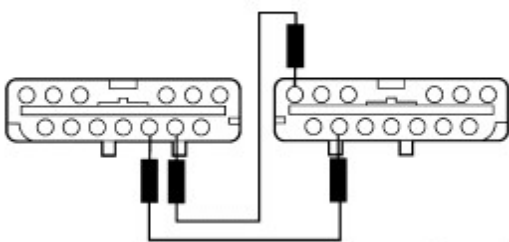
Electric Blend Door Actuator C270

3



AM0155-A

4



AM0156-A

1 Remove the electronic blend door actuator. For additional information, refer to Section 412-04.

3 With the actuator drive shaft disengaged from the temperature blend door, drive the electronic blend door actuator full clockwise. For additional information, refer to Step B1249-1.

4 With the actuator drive shaft disengaged from the temperature blend door, drive the electronic blend door actuator full counterclockwise. For additional information, refer to Step B1249-2.

- **Does the blend door actuator drive both clockwise and counterclockwise?**

→ **Yes**

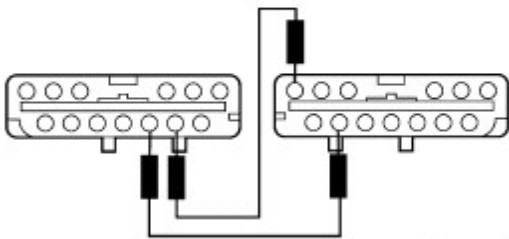
REPAIR the temperature blend door for a blocked or binding condition. TEST the system for normal operation.

→ **No**

INSTALL a new A/C electronic blend door actuator. TEST the system for normal operation.

### **B12498** CHECK THE FEEDBACK POTENTIOMETER TOTAL RESISTANCE

1

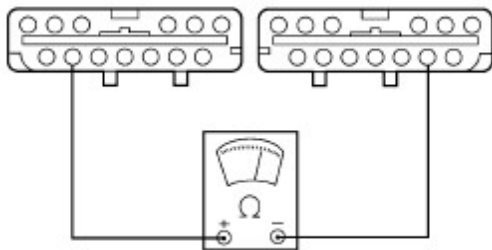


AM0156-A

1

Drive the electric blend door actuator full counterclockwise. For additional information, refer to Step B1249-2.

2



AM0159-A

2

Measure the resistance between the EATC module connector pins C298-6, circuit 243 (LG/O) and C297-9 circuit 776 (O/BK).

- **Is the resistance between 5,000 and 7,000 ohms?**

→ **Yes**

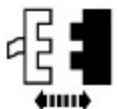
GO to B124913.

→ **No**

GO to B12499.

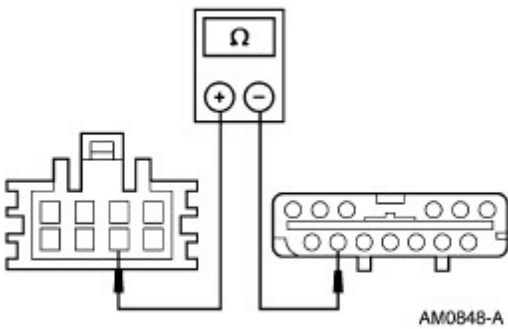
### **B12499** CHECK CIRCUIT 243 (LG/O) FOR AN OPEN

1



## Electric Blend Door Actuator C270

2



2

Measure the resistance between the EATC module connector pin C298-6, circuit 243 (LG/O) and the electric blend door actuator connector pin C270-6.

• Is the resistance less than 5 ohms?

→ **Yes**

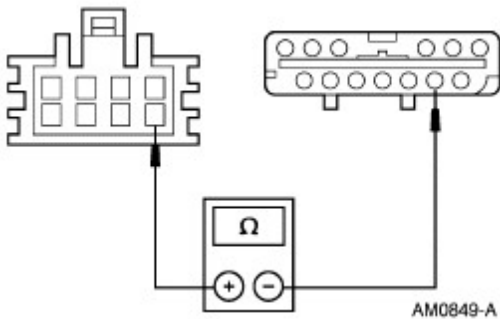
GO to B124910.

→ **No**

REPAIR circuit 243 (LG/O) for an open. TEST the system for normal operation.

**B124910** CHECK CIRCUIT 776 (O/BK) FOR AN OPEN

1



1

Measure the resistance between the EATC connector pin C297-9, circuit 776 (O/BK) and the electric blend door actuator connector pin C270-5.

• Is the resistance less than 5 ohms?

→ **Yes**

GO to B124911.

→ **No**

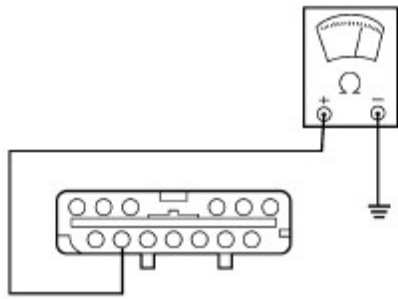
REPAIR circuit 776 (O/BK) for an open. TEST the system for normal operation.

**B124911** CHECK CIRCUIT 243 (LG/O) FOR A SHORT

1

1

Measure the resistance between the EATC module connector pin C298-6, circuit 243 (LG/O) and ground.



AM0166-A

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

→ **Yes**

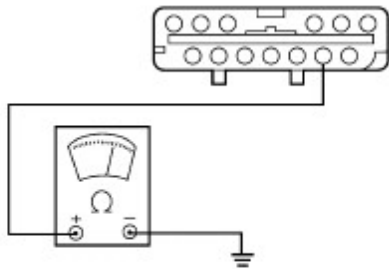
GO to B124912 .

→ **No**

REPAIR circuit 243 (LG/O) for a short to ground.  
TEST the system for normal operation.

#### **B124912** CHECK CIRCUIT 776 (O/BK) FOR A SHORT

1



AL0579-A

1

Measure the resistance between the EATC module connector pin C297-9, circuit 776 (O/BK) and ground.

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

→ **Yes**

INSTALL a new A/C electronic blend door actuator. TEST the system for normal operation.

→ **No**

REPAIR circuit 776 (O/BK) for a short to ground.  
TEST the system for normal operation.

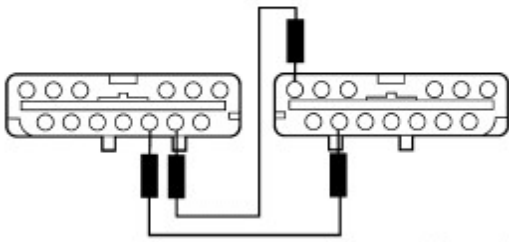
#### **B124913** CHECK THE FEEDBACK POTENTIOMETER LOW SIDE RESISTANCE

1

1

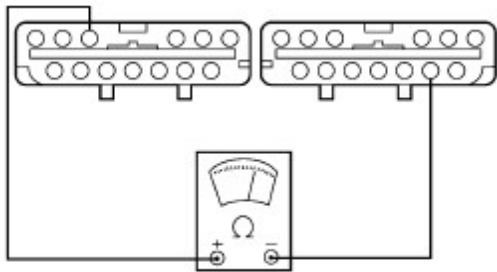
Drive the electric blend door actuator full counterclockwise. For additional information, refer to Step B1249-2.





AM0156-A

2



AL0577-A

2

Measure the resistance between the EATC module connector pins C298-18, circuit 351 (BR/W) and C279-9, circuit 776 (O/BK).

• **Is the resistance between 250 and 1,500 ohms?**

→ **Yes**GO to B124916.→ **No**GO to B124914.

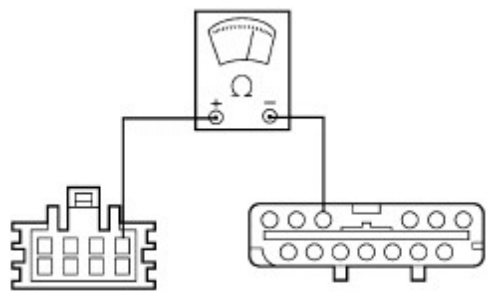
### **B124914** CHECK CIRCUIT 351 (BR/W) FOR AN OPEN

1



Electric Blend Door Actuator C270

2



AM0163-A

2

Measure the resistance between the EATC module connector pin C298-18, circuit 351 (BR/W) and the electric blend door actuator connector pin C270-1.

- **Is the resistance less than 5 ohms?**

→ **Yes**

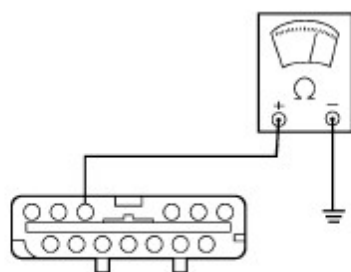
GO to B124915.

→ **No**

REPAIR circuit 351 (BR/W) for an open. TEST the system for normal operation.

**B124915** CHECK CIRCUIT 351 (BR/W) FOR A SHORT

1



AM0167-A

1

Measure the resistance between the EATC module connector pin C298-18, circuit 351 (BR/W) and ground.

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

→ **Yes**

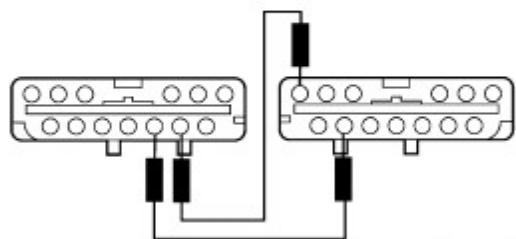
INSTALL a new A/C electronic blend door actuator. TEST the system for normal operation.

→ **No**

REPAIR circuit 351 (BR/W) for a short to ground. TEST the system for normal operation.

**B124916** CHECK THE FEEDBACK POTENTIOMETER HIGH SIDE RESISTANCE

1



AM0156-A

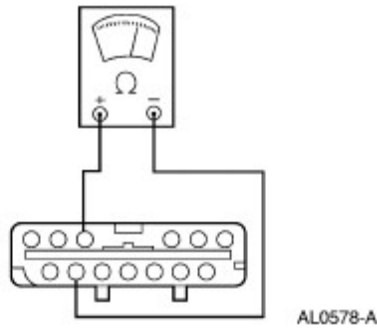
1

Drive the electric blend door actuator full counterclockwise. For additional information, refer to Step B1249-2.

2

2

Measure the resistance between the EATC module connector pins C298-6, circuit 243 (LG/O) and C298-18, circuit 351 (BR/W).



- **Is the resistance between 3,500 and 6,000 ohms?**

→ **Yes**

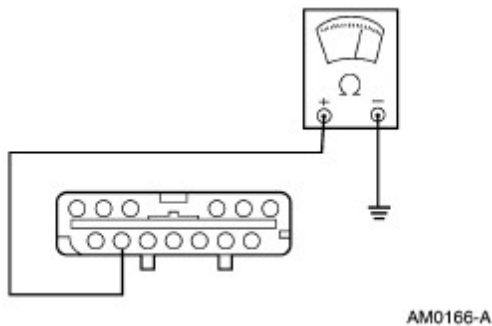
GO to [B124917](#) .

→ **No**

INSTALL a new A/C electric blend door actuator.  
TEST the system for normal operation.

#### **B124917** CHECK CIRCUIT 243 (LG/O) FOR A SHORT TO GROUND

1



- 1 Measure the resistance between the EATC module connector pin C298-6, circuit 243 (LG/O) and ground.

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

→ **Yes**

GO to [B124918](#) .

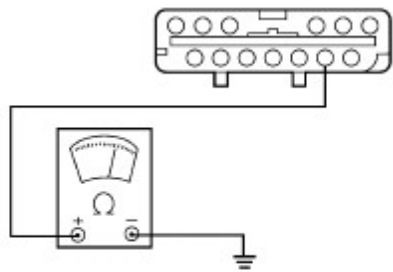
→ **No**

REPAIR circuit 243 (LG/O) for a short to ground.  
TEST the system for normal operation.

#### **B124918** CHECK CIRCUIT 776 (O/BK) FOR A SHORT TO GROUND

1

- 1 Measure the resistance between the EATC module connector pin C297-9, circuit 776 (O/BK) and ground.



AL0579-A

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

→ **Yes**

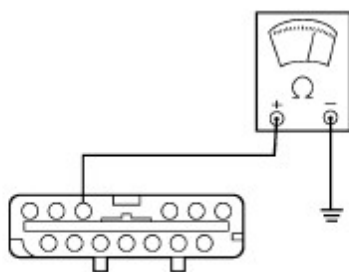
GO to B124919 .

→ **No**

REPAIR circuit 776 (O/BK) for a short to ground.  
TEST the system for normal operation.

### **B124919** CHECK CIRCUIT 351 (BR/W) FOR A SHORT TO GROUND

1



AM0167-A

1

Measure the resistance between the EATC module connector pin C298-18, circuit 351 (BR/W) and ground.

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

→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.

→ **No**

REPAIR circuit 351 (BR/W) for a short to ground.  
TEST the system for normal operation.

### **PINPOINT TEST B1251: DTC B1251: A/C IN-CAR TEMPERATURE SENSOR OPEN CIRCUIT**

CONDITIONS	DETAILS/RESULTS/ACTIONS
------------	-------------------------

**B12511 CHECK THE SENSOR RESISTANCE**

1

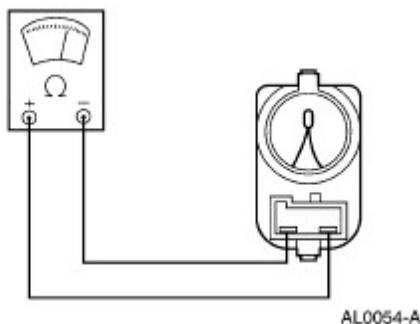


2



In-Car Temperature Sensor C296

3



3 Measure the resistance between the in-car temperature sensor terminals.

- **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?**

→ **Yes**  
GO to B12512.

→ **No**  
INSTALL a new in-car temperature sensor. TEST the system for normal operation.

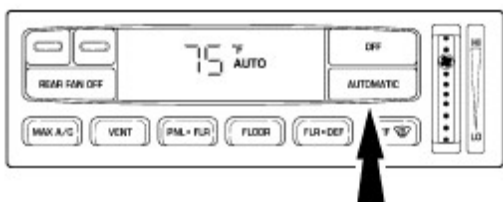
**B12512 CHECK THE EATC SENSOR OUTPUT VOLTAGE**

1



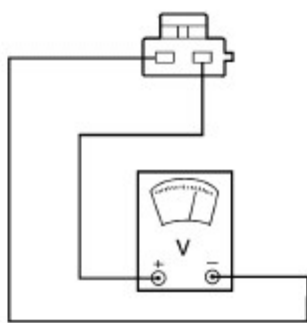
2

2 Press the AUTOMATIC button.



AM0811-B

3



AL0580-A

3

Measure the voltage between the in-car temperature sensor connector C296, Circuits 790 (W/O) and 470 (PK/BK).

• **Is the voltage between 4.7 and 5.1 volts?**

→ **Yes**

GO to B12515.

→ **No**

GO to B12513.

### **B12513** CHECK CIRCUIT 790 (W/O) FOR AN OPEN

1



2

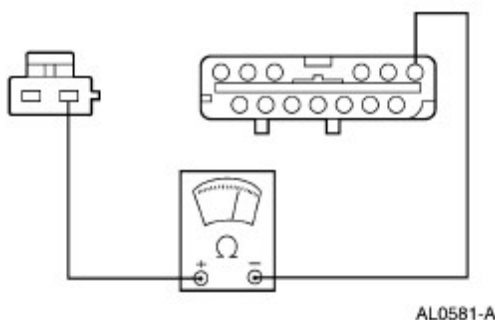


EATC Module C297

3

3

Measure the resistance between the EATC module connector pin C297-21, circuit 790 (W/O) and the in-car temperature sensor connector C296.



• **Is the resistance less than 5 ohms?**

→ **Yes**

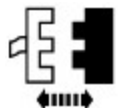
GO to B12514.

→ **No**

REPAIR circuit 790 (W/O) for an open. TEST the system for normal operation.

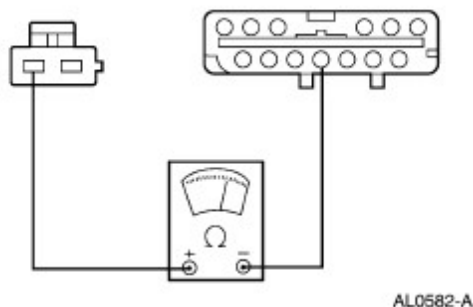
**B12514** CHECK CIRCUIT 470 (PK/BK) FOR AN OPEN

1



EATC Module C298

2



2

Measure the resistance between the EATC connector pin C298-4, circuit 470 (PK/BK) and the in-car temperature sensor connector C296.

• **Is the resistance less than 5 ohms?**

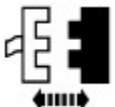
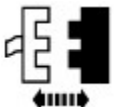
→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.



→ **No**

REPAIR circuit 470 (PK/BK) for an open. TEST the system for normal operation.

**B12515** INSPECT THE CONNECTIONS

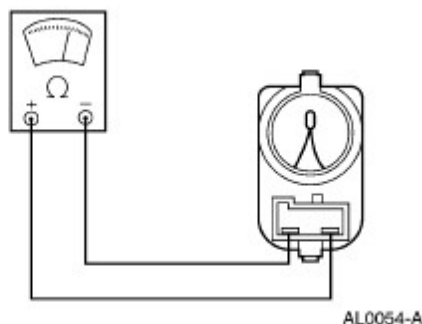
<div data-bbox="142 100 175 142">1</div>  <p>EATC Module 298</p> <div data-bbox="142 331 175 373">2</div>  <p>EATC Module 297</p>	<div data-bbox="747 562 779 604">3</div> <p>Inspect the in-car temperature sensor connector pins and the EATC connector pins C298-4, circuit 470 (PK/BK) and C297-21, circuit 790 (W/O) for signs of damage, loose fits, or incorrect installation.</p> <ul style="list-style-type: none"> <li>• <b>Are the connector pins undamaged and installed correctly?</b></li> </ul> <p>→ <b>Yes</b> INSTALL a new EATC module. TEST the system for normal operation.</p> <p>→ <b>No</b> REPAIR damaged or loose connector pins. TEST the system for normal operation.</p>
---	--

## PINPOINT TEST B1253: DTC B1253: A/C IN-CAR TEMPERATURE SENSOR SHORT TO GROUND

CONDITIONS	DETAILS/RESULTS/ACTIONS
<p><b>B12531</b> CHECK THE IN-CAR TEMPERATURE SENSOR RESISTANCE</p> <div data-bbox="142 1522 175 1564">1</div>  <div data-bbox="142 1680 175 1722">2</div>  <p>In-Car Temperature Sensor C296</p>	



3



3

Measure the resistance between the in-car temperature sensor terminals.

- **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?**

→ **Yes**GO to B12532 .→ **No**

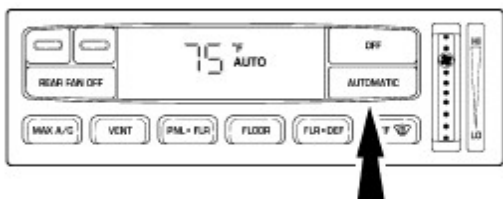
INSTALL a new in-car temperature sensor. TEST the system for normal operation.

### **B12532** CHECK THE IN-CAR TEMPERATURE SENSOR OUTPUT VOLTAGE

1



2



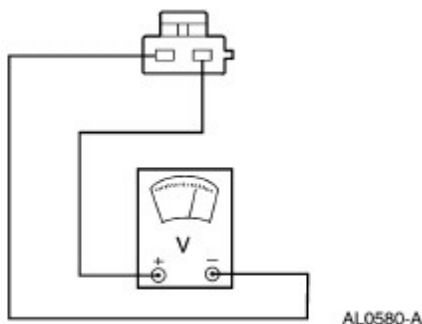
2

Press the AUTOMATIC button.

3

3

Measure the voltage between the in-car temperature sensor connector C296 pins at circuits 790 (W/O) and 470 (PK/BK).



- **Is the voltage between 4.7 and 5.1 volts?**

→ **Yes**

GO to B12534.

→ **No**

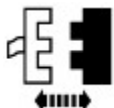
GO to B12533.

### **B12533** CHECK CIRCUIT 790 (W/O) FOR A SHORT TO GROUND

1

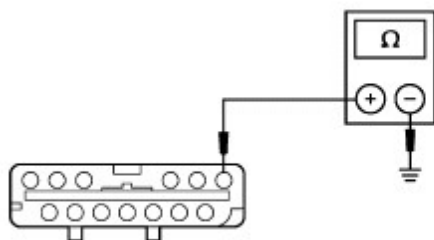


2



EATC Module C297

3





AM0720-A

- 3 Measure the resistance between the EATC module connector pin C297-21, circuit 790 (W/O) and ground.



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

→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.

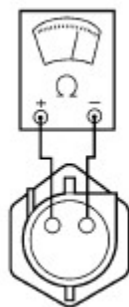
	<p>→ <b>No</b> REPAIR circuit 790 (W/O) for a short to ground. TEST the system for normal operation.</p>
<b>B12534 INSPECT THE CONNECTIONS</b>	
<p>1 </p> <p>EATC Module C298</p> <p>2 </p> <p>EATC Module C297</p>	<p>3 Inspect the in-car temperature sensor connector pins and the EATC connector pins C298-4, circuit 470 (PK/BK) and C297-21, circuit 790 (W/O) for signs of damage, loose fits, or incorrect installation.</p> <p>• <b>Are the connector pins undamaged and installed correctly?</b></p> <p>→ <b>Yes</b> INSTALL a new EATC module. TEST the system for normal operation.</p> <p>→ <b>No</b> REPAIR the damaged or loose connector pins. TEST the system for normal operation.</p>

**PINPOINT TEST B1255: DTC B1255: A/C AMBIENT TEMPERATURE SENSOR OPEN CIRCUIT**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>B12551</b> CHECK THE AMBIENT TEMPERATURE SENSOR RESISTANCE	
<p>1 </p> <p>2 </p>	

## Ambient Temperature Sensor C196

3



AL0061-A

3 Measure the resistance between the ambient temperature sensor terminals.

- **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?**

→ **Yes**  
GO to [B12552](#).

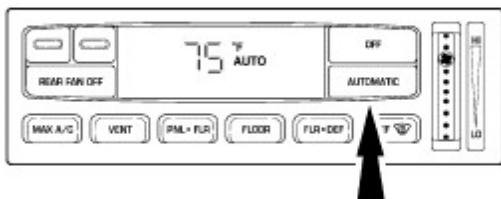
→ **No**  
INSTALL a new A/C ambient air temperature sensor and bracket (19E702). TEST the system for normal operation.

**B12552** CHECK THE EATC SENSOR OUTPUT VOLTAGE

1



2

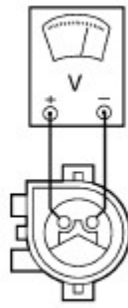


AM0811-B

2 Press the AUTOMATIC button.

3

3 Measure the voltage between the ambient temperature sensor connector C196 pins at circuits 788 (R/O) and 470 (PK/BK).



AL0062-A

- **Is the voltage between 4.7 and 5.1 volts?**

→ **Yes**

GO to B12555.

→ **No**

GO to B12553.

### **B12553** CHECK CIRCUIT 788 (R/O) FOR AN OPEN

1

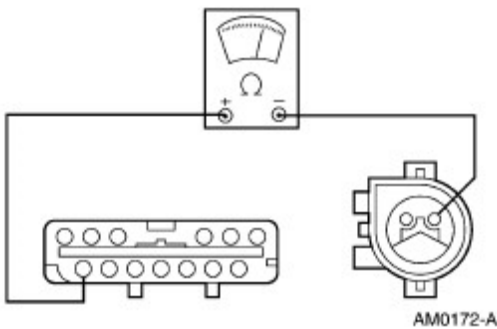


2



EATC Module C298

3



AM0172-A

- 3 Measure the resistance between the EATC module connector pin C298-7, circuit 788 (R/O) and the ambient temperature sensor connector C196.

- **Is the resistance less than 5 ohms?**

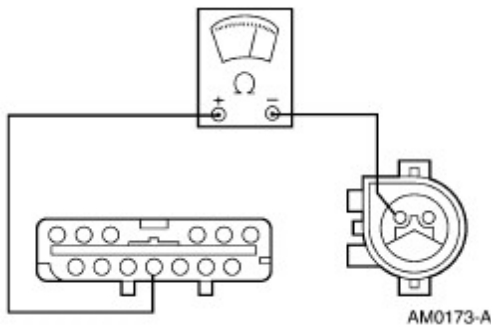
→ **Yes**

GO to B12554.

→ **No**

REPAIR circuit 788 (R/O) for an open. TEST the

system for normal operation.

**B12554 CHECK CIRCUIT 470 (PK/BK) FOR AN OPEN****1****1**

Measure the resistance between the EATC module connector pin C298-4, circuit 470 (PK/BK) and the ambient temperature sensor connector C196.

- **Is the resistance less than 5 ohms?**

→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.

→ **No**

REPAIR circuit 470 (PK/BK) for an open. TEST the system for normal operation.

**B12555 INSPECT THE CONNECTIONS****1**

EATC Module C298

**2**

Inspect the A/C ambient temperature sensor connector pins and the EATC connector pins C298-4, circuit 470 (PK/BK) and C298-7, circuit 788 (R/O) for signs of damage, loose fits, or incorrect installation.

- **Are the connector pins undamaged and installed correctly?**



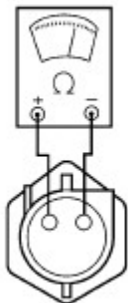

→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.

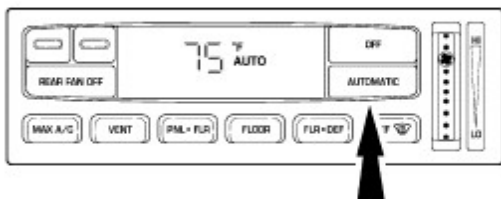
→ **No**

REPAIR the damaged or loose connector pins. TEST the system for normal operation.

**PINPOINT TEST B1257: DTC B1257: A/C AMBIENT TEMPERATURE SENSOR SHORT TO GROUND**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>B12571</b> CHECK THE AMBIENT TEMPERATURE SENSOR RESISTANCE	
<p>1 </p> <p>2  Ambient Temperature Sensor C196</p> <p>3 </p> <p>AL0061-A</p>	<p>3 Measure the resistance between the ambient temperature sensor terminals.</p> <ul style="list-style-type: none"><li>• <b>Is the resistance within the specified values for these temperature ranges:</b> <b>10-20°C (50-68°F) 37,000-58,000 ohms,</b> <b>20-30°C (68-86°F) 24,000-37,000 ohms,</b> <b>30-40°C (86-104°F) 16,000-24,000 ohms?</b></li></ul> <p>→ <b>Yes</b> GO to <u>B12572</u> .</p> <p>→ <b>No</b> INSTALL a new A/C ambient air temperature sensor and bracket. TEST the system for normal operation.</p>
<b>B12572</b> CHECK THE AMBIENT TEMPERATURE SENSOR OUTPUT VOLTAGE	
<p>1 </p>	

2

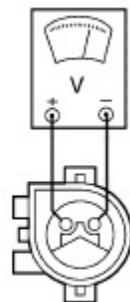


AM0811-B

2

Press the AUTOMATIC button.

3



AL0062-A

3

Measure the voltage between the ambient temperature sensor connector C196 pins at circuits 788 (R/O) and 470 (PK/BK).

• **Is the voltage between 4.7 and 5.1 volts?**

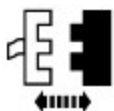
→ **Yes**GO to B12574.→ **No**GO to B12573.

### **B12573** CHECK CIRCUIT 788 (R/O) FOR A SHORT

1



2



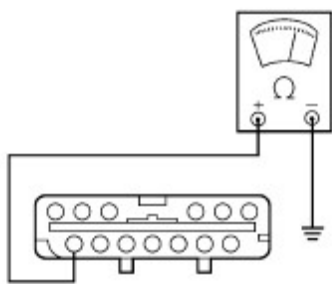
EATC Module C298

3

3

Measure the resistance between the EATC module connector pin C298-7, circuit 788 (R/O) and ground.





AM0174-A

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

→ **Yes**

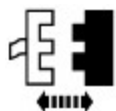
INSTALL a new EATC module. TEST the system for normal operation.

→ **No**

REPAIR circuit 788 (R/O) for a short to ground. TEST the system for normal operation.

### **B12574 INSPECT THE CONNECTIONS**

1



EATC Module C298

2

Inspect the A/C ambient temperature sensor connector pins and the EATC connector Pins C280-4, circuit 470 (PK/BK) and C298-7, circuit 788 (R/O) for signs of damage, loose fits, or incorrect installation.

- **Are the connector pins undamaged and installed correctly?**



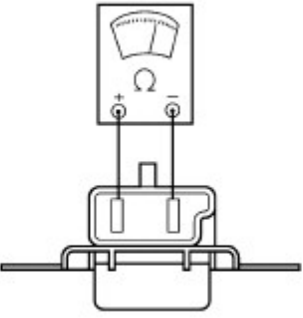

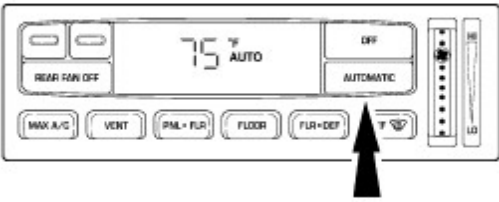
→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.

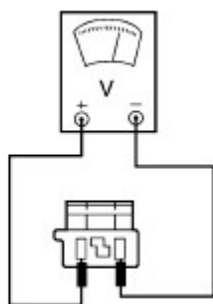
→ **No**

REPAIR the damaged or loose connector pins. TEST the system for normal operation.

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

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>B12611</b> CHECK THE SUNLOAD SENSOR RESISTANCE	
<div data-bbox="142 205 175 237">1</div>  <div data-bbox="142 363 175 394">2</div>  <p data-bbox="289 520 573 552">Sunload Sensor C294</p> <div data-bbox="142 594 175 625">3</div>  <p data-bbox="630 945 719 966">AL0067-A</p>	<div data-bbox="748 594 781 625">3</div> <p data-bbox="792 604 1425 709"><b>NOTE:</b> Connect the ground lead of the multimeter to ground on the sensor, circuit 470 (PK/BK).</p> <p data-bbox="816 741 1409 814">Measure the resistance between the sunload sensor terminals.</p> <p data-bbox="784 1056 1401 1087">• <b>Is the resistance greater than 0 ohms?</b></p> <p data-bbox="740 1129 987 1203">→ <b>Yes</b> GO to <u>B12612</u>.</p> <p data-bbox="740 1245 1385 1350">→ <b>No</b> INSTALL a new A/C sunload sensor (19E663). TEST the system for normal operation.</p>
<b>B12612</b> CHECK THE SUNLOAD SENSOR OUTPUT VOLTAGE	
<div data-bbox="142 1409 175 1440">1</div>  <div data-bbox="142 1566 175 1598">2</div>  <p data-bbox="613 1917 711 1938">AM0811-B</p>	<div data-bbox="748 1566 781 1598">2</div> <p data-bbox="792 1577 1198 1608">Press the AUTOMATIC button.</p>

3



AL0068-A

3

Measure the voltage between the sunload sensor connector C294 pins at circuits 468 (BR) and 470 (PK/BK).

- **Is the voltage between 4.7 and 5.1 volts?**

→ **Yes**  
GO to B12616.

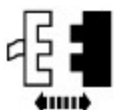
→ **No**  
GO to B12613.

### **B12613** CHECK CIRCUIT 468 (BR) FOR A SHORT TO GROUND

1

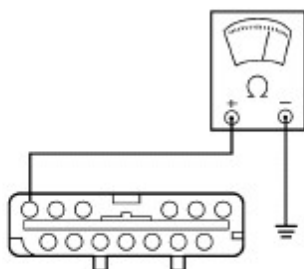


2



EATC Module C298

3



AM0175-A

3

Measure the resistance between the EATC module connector pin C298-20, circuit 468 (BR) and ground.

- **Is the resistance greater than 10 K ohms?**

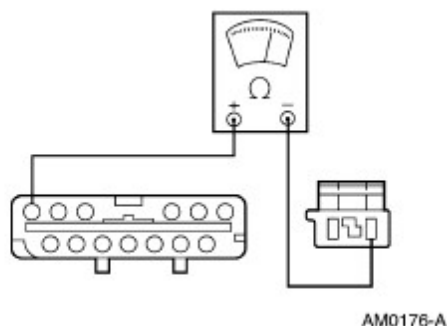
→ **Yes**  
GO to B12614.

→ **No**

REPAIR circuit 468 (BR) for a short to ground.  
TEST the system for normal operation.

**B12614** CHECK CIRCUIT 468 (BR) FOR AN OPEN

1



1

Measure the resistance between the EATC module connector pin C298-20, circuit 468 (BR) and the sunload sensor connector C294.

• **Is the resistance less than 5 ohms?**

→ **Yes**

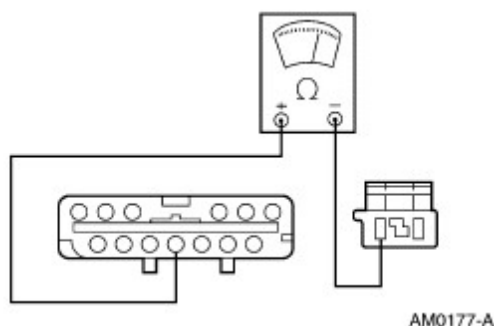
GO to B12615.

→ **No**

REPAIR circuit 468 (BR) for an open. TEST the system for normal operation.

**B12615** CHECK CIRCUIT 470 (PK/BK) FOR AN OPEN

1



1

Measure the resistance between the EATC module connector pin C298-4, circuit 470 (PK/BK) and the sunload sensor connector C294.

• **Is the resistance less than 5 ohms?**

→ **Yes**

INSTALL a new EATC module. TEST the system for normal operation.

→ **No**

REPAIR circuit 470 (PK/BK) for an open. TEST the system for normal operation.

**B12616** INSPECT THE CONNECTIONS

1



EATC Module C298


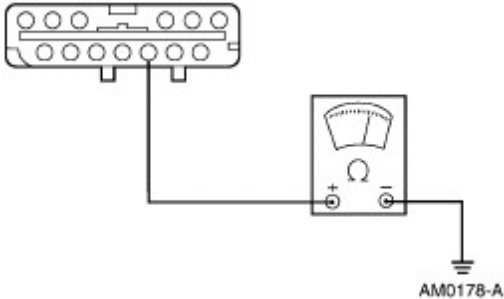
2 Inspect the sunload sensor connector pins and the EATC connector pins C298-4, circuit 470 (PK/BK) and C298-20, circuit 468 (BR) for signs of damage, loose fits, or incorrect installation.

• **Are the connector pins undamaged and installed correctly?**

→ **Yes**  
INSTALL a new EATC module. TEST the system for normal operation.

→ **No**  
REPAIR the damaged or loose connector pins. TEST the system for normal operation.

**PINPOINT TEST A: NO COMMUNICATION WITH THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL MODULE**

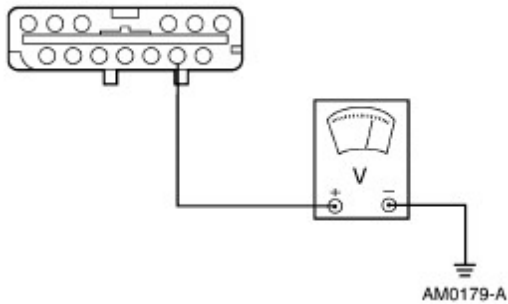
CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>A1</b> CHECK CIRCUIT 57 (BK) FOR AN OPEN	
<div>1</div> <div><p>EATC Module C298</p></div>	<div>2 Measure the resistance between the EATC module connector pin C298-3, circuit 57 (BK) and ground.</div> <div>• <b>Is the resistance less than 5 ohms?</b></div>
<div>2</div> <div><p>AMD178-A</p></div>	

→ **Yes**  
GO to A2.

→ **No**  
REPAIR circuit 57 (BK) for an open. TEST the system for normal operation.

## **A2** CHECK CIRCUIT 54 (LG/Y) FOR B+

1



1 Measure the voltage between the EATC module connector pin C298-2, circuit 54 (LG/Y) and ground.

• **Is the voltage B+?**

→ **Yes**  
GO to A3.

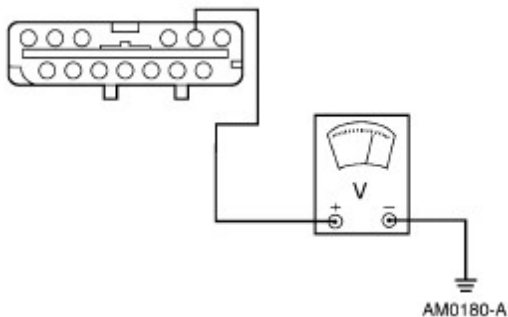
→ **No**  
REPAIR circuit 54 (LG/Y) for an open. TEST the system for normal operation.

## **A3** CHECK CIRCUIT 364 (BK/LG) FOR B+

1



2



2 Measure the voltage between the EATC module connector pin C298-16, circuit 364 (BK/LG) and ground.

• **Is the voltage B+?**

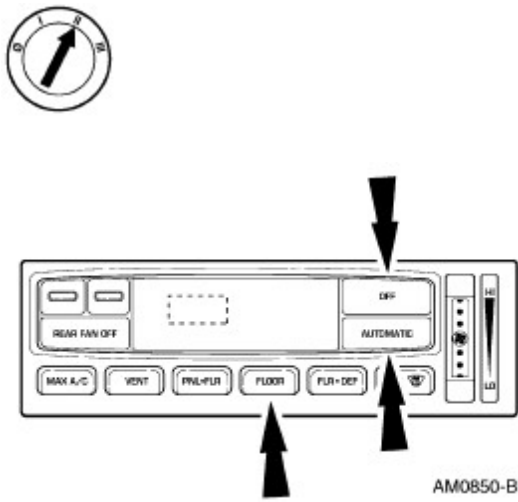
→ **Yes**  
GO to Section 418-00 to diagnose a network

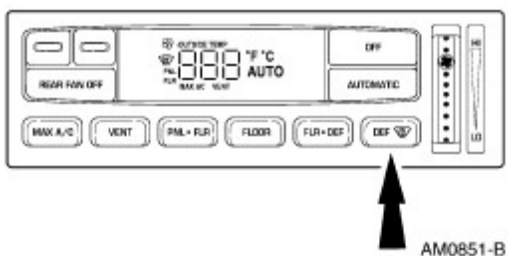
concern.

→ **No**

REPAIR circuit 364 (BK/LG) for an open. TEST the system for normal operation.

## PINPOINT TEST B: THE EATC SYSTEM IS INOPERATIVE, INTERMITTENT OR IMPROPER OPERATION

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>B1 CARRY OUT THE EATC MODULE SELF-TEST</b>	
<p>1</p>  <p>2</p> <p>AM0850-B</p>	<p>2</p> <p>Carry out the EATC module self-test. Refer to Electronic Automatic Temperature Control Module Self-Test in this section. Record the DTCs displayed, if any.</p> <ul style="list-style-type: none"> <li>• <b>Were any DTCs displayed as a result of the EATC self-test?</b></li> </ul> <p>→ <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.</p> <p>→ <b>No</b> GO to <u>B2</u>.</p>
<b>B2 CHECK THE VACUUM FLUORESCENT DISPLAY</b>	
<p>1</p>	<p>1</p> <p>Exit self-test by pressing the DEFROST button. Observe the function symbols displayed on the vacuum fluorescent display.</p>



- **Is the display correct and complete without any missing elements?**

→ **Yes**

GO to B3 .

→ **No**

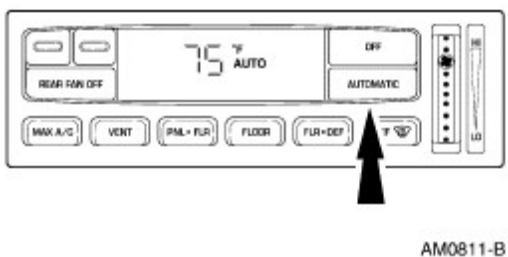
INSTALL a new EATC module. TEST the system for normal operation.

### **B3** VERIFY AUTOMATIC OPERATION

1



2



2 Press the AUTOMATIC button.

- **Does AUTO and the selected temperature appear in the display window?**

→ **Yes**

GO to B4 .

→ **No**

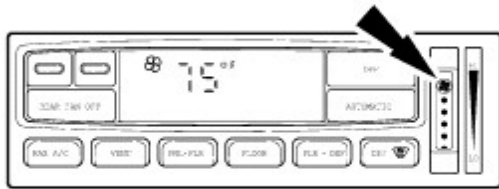
Go To Pinpoint Test R .

### **B4** CHECK THE BLOWER MANUAL OVERRIDE HIGH SPEED OPERATION

1

1 Adjust the blower motor speed override to maximum speed.





AM0812-A

- Does the blower motor speed increase smoothly and go to high speed?

→ **Yes**

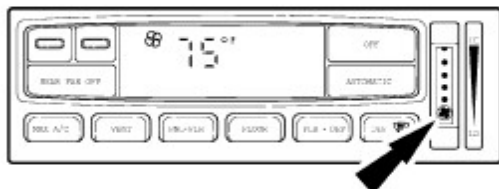
GO to B5.

→ **No**

Go To Pinpoint Test P.

#### **B5** CHECK THE BLOWER MANUAL OVERRIDE LOW SPEED OPERATION

1



AM0813-A

1

- Adjust the blower motor speed override control to minimum speed.

- Does the blower motor remain in high speed?

→ **Yes**

Go To Pinpoint Test P.

→ **No**

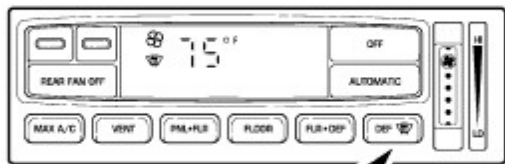
GO to B6.

#### **B6** VERIFY THE DEFROST OVERRIDE OPERATION

1

1

- Press the override button for DEFROST operation.



AM0814-B

- Is outside air being discharged from the windshield defroster nozzle and the side window demisters?

→ **Yes**

GO to B7.

→ **No**

GO to Pinpoint Test D.

## **B7** VERIFY THE FLOOR OVERRIDE OPERATION

1



AM0815-B

1 Press the override button for FLOOR operation.

- Is outside air being discharged from the floor duct?

→ **Yes**

GO to B8.

→ **No**

GO to Pinpoint Test D.

## **B8** VERIFY THE VENT OVERRIDE OPERATION

1

1 Press the override button for VENT operation.



AM0B16-B

- **Is outside air being discharged from the instrument panel registers?**

→ **Yes**

GO to B9 .

→ **No**

GO to Pinpoint Test D .

### **B9** VERIFY THE A/C CLUTCH DOES NOT ENGAGE IN THE VENT MODE

1



AM0B16-B

1 Press the override button for VENT operation.

- **Does the A/C clutch engage when the VENT override button is pressed?**

→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

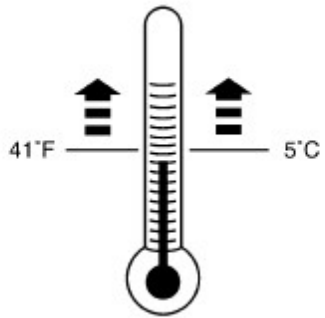
→ **No**

GO to B10 .

### **B10** VERIFY THE MAX A/C OVERRIDE OPERATION

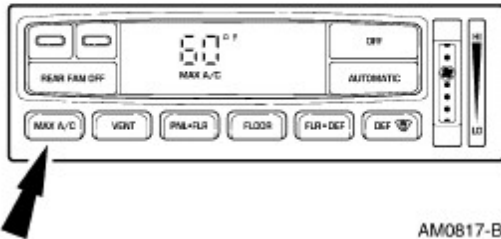
1

1 Make sure the ambient air temperature is above 5°C (41°F).



AL0108-B

2



AM0817-B

2

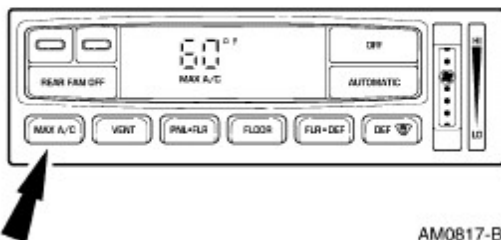
Press the override button for MAX A/C operation.

- Is recirculated air being discharged from the instrument panel registers?

→ **Yes**GO to B11.→ **No**GO to Pinpoint Test D.

### **B11** VERIFY A/C CLUTCH ENGAGEMENT IN THE MAX A/C MODE

1



AM0817-B

1

Press the override button for MAX A/C operation.




- Does the A/C clutch engage when the MAX A/C override button is pressed?

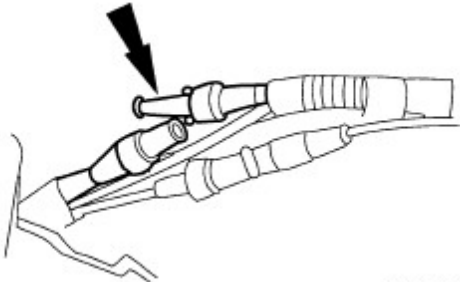
→ **Yes**

The test is complete. The system is functioning normally.

→ **No**  
GO to Pinpoint Test G.

## PINPOINT TEST C: IMPROPER/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET — MANUAL A/C

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>C1 CHECK SYSTEM AIRFLOW</b>	
<p><b>1</b></p>  <p><b>2</b></p>  <p>L10527-A</p> <p><b>3</b></p>  <p>AM0416-A</p>	<p><b>2</b> Turn the blower motor speed to maximum.</p> <p><b>3</b> Check for correct airflow in each function selector switch position at engine idle and during engine speed acceleration.</p> <p><b>• Is there airflow from defroster outlets under all conditions?</b></p> <p>→ <b>Yes</b> GO to <u>C2</u>.</p> <p>→ <b>No</b> If airflow is from the defroster outlets in all switch positions only under engine speed acceleration, GO to <u>C5</u>.</p> <p>If airflow is incorrect under one or more conditions, GO to <u>C2</u>.</p>

**C2 CHECK VACUUM SUPPLY HOSE CONNECTIONS****1****2**

AM0336-A

- 2** Check for a disconnected vacuum supply hose between the engine manifold and the vacuum reservoir tank.

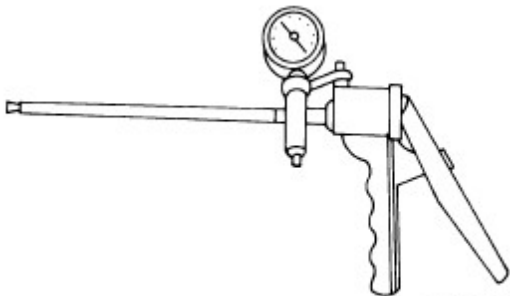
- **Is the hose connected?**

→ **Yes**  
GO to C3.

→ **No**  
RECONNECT the hose. TEST the system for normal operation.

**C3 LEAK TEST VACUUM SUPPLY HOSE****1**

Vacuum Supply Hose

**2**

L10528-A

- 2** Plug one end of the hose and leak test with a vacuum pump.

- **Does the hose leak?**

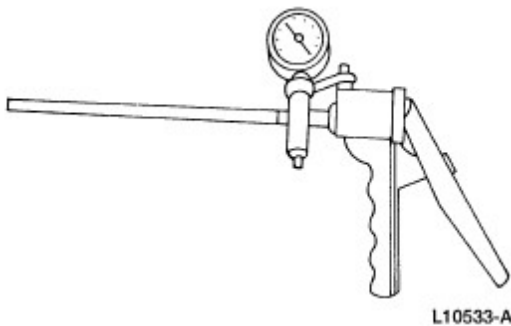
→ **Yes**  
REPAIR or INSTALL a new vacuum hose. TEST the system for normal operation.

→ **No**

DISCONNECT the plug. GO to C4.

#### **C4 CHECK VACUUM SUPPLY HOSE FOR BLOCKAGE**

1



1

Leak test the vacuum supply hose with a vacuum pump.

• **Does the vacuum pump pull a vacuum?**

→ **Yes**

INSTALL a new vacuum hose. TEST the system for normal operation.

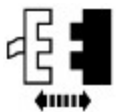
→ **No**

GO to C5.

#### **C5 CHECK THE VACUUM RESERVOIR TANK**

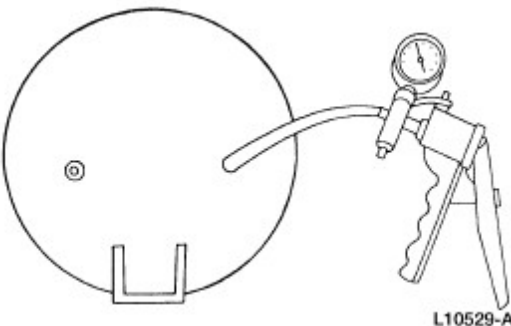
**NOTE:** The reservoir has two vacuum hoses going to it. These hoses are not interchangeable. The A/C check valve is built into the vacuum reservoir tank.

1



Vacuum Reservoir Tank

2



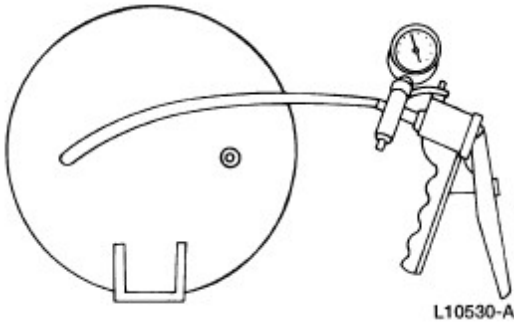
2

Leak test the vacuum reservoir tank from the engine manifold side with a vacuum pump.

3

3

Apply 51 kPa (15 in) vacuum on the vacuum reservoir tank with a vacuum pump and observe the gauge reading.



- **Does the vacuum drop exceed 3.37 kPa (1 in) per minute?**

→ **Yes**

INSTALL a new vacuum reservoir tank. TEST the system for normal operation.

→ **No**

GO to C6.

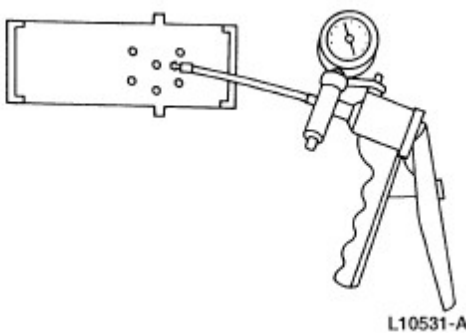
#### **C6 LEAK TEST THE A/C FUNCTION SWITCH SUPPLY HOSE**

2



Vacuum Harness

3



- 1 Plug the A/C function switch supply hose at the vacuum reservoir tank.

- 3 Connect a vacuum pump to the black supply hose port #3 of the vacuum harness connector and try to pull a vacuum.

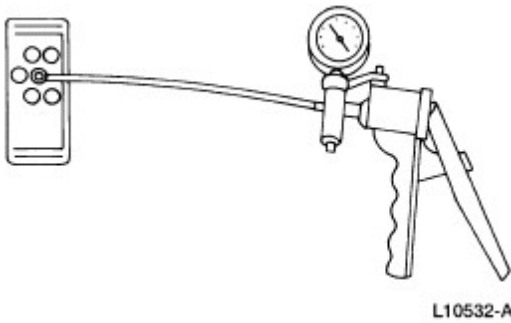
- **Does the A/C function switch supply hose leak?**

→ **Yes**

REPAIR or INSTALL a new A/C function switch supply hose.

→ **No**



GO to C7.**C7 LEAK TEST A/C FUNCTION SWITCH****1****1**

Connect a vacuum pump to the black hose vacuum port #3 of the A/C function switch and plug all the other vacuum ports.

**2**

At each A/C function switch position, apply 51 kPa (15 in) of vacuum and check for vacuum drop.

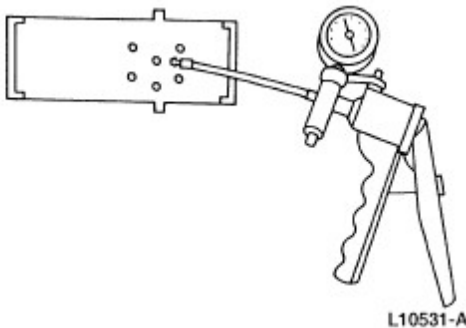
- **Does the vacuum drop exceed 3.37 kPa (1 in) per minute?**

→ **Yes**

INSTALL a new A/C function switch. TEST the system for normal operation.

→ **No**

GO to C8.

**C8 CHECK THE A/C FUNCTION SWITCH SUPPLY HOSE FOR BLOCKAGE****1****1**

With the hose disconnected from the vacuum reservoir tank, connect a vacuum pump to the supply hose port #3 of the vacuum harness connector and try to pull a vacuum.

- **Is hose plugged or restricted?**

→ **Yes**

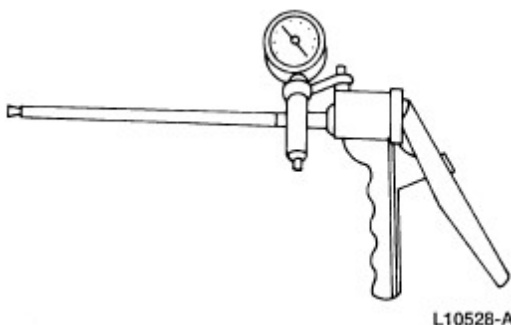
INSTALL a new supply hose. TEST the system for normal operation.

→ **No**

RECONNECT all of the vacuum hoses. GO to C9.

**C9 LEAK TEST SUSPECT HOSE**

2



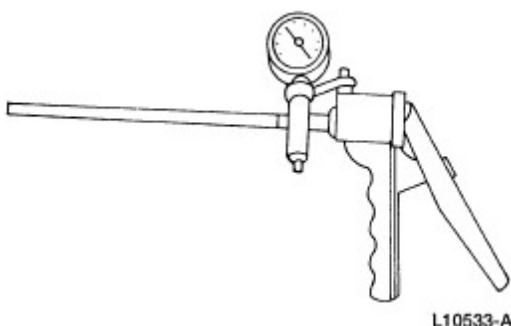
- 1 Disconnect the suspect hose(s).
- 2 Plug one end of the suspect hose and attach a vacuum pump to the other end. Apply 51 kPa (15 in) of vacuum to hose.

• **Does the vacuum drop?**

- **Yes**  
REPAIR or INSTALL a new affected hose. TEST the system for normal operation.
- **No**  
GO to C10.

**C10** CHECK VACUUM HOSES TO DAMPER DOORS FOR RESTRICTIONS

1



- 1 Connect a vacuum pump to each hose and try to pull a vacuum.

• **Does the vacuum pump pull a vacuum?**

- **Yes**  
INSTALL a new vacuum hose. TEST the system for normal operation.
- **No**  
RECONNECT the vacuum hoses. GO to C11.

**C11** LEAK TEST SUSPECT VACUUM CONTROL MOTOR

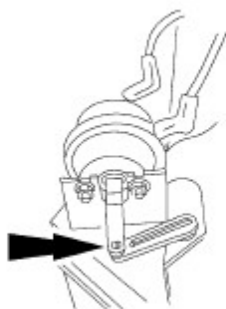
1



Suspect Vacuum Control Motor

## C12 CHECK THE VACUUM CONTROL MOTOR INSTALLATION

1



AL0158-A

1

Check the attachment of the vacuum control motor arm to damper door.

• **Is the vacuum control motor arm attached to the door or door crank arm?**


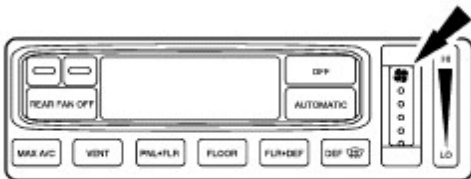
→ **Yes**

REPAIR or INSTALL a new damper door. TEST the system for normal operation.

→ **No**

RECONNECT the vacuum control motor arm to the door and/or crank arm. TEST the system for normal operation.

## PINPOINT TEST D: INCORRECT/ERRATIC DIRECTION OF AIRFLOW FROM OUTLET — EATC

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>D1 CHECK SYSTEM airflow</b>	
<p>1</p>  <p>2</p>  <p>GL1254-B</p>	<p>2 Rotate the blower motor switch to the HI position.</p> <p>3 Verify correct airflow from each manual override button at engine idle and during engine speed acceleration.</p>

- **Is there airflow from defroster outlets under all conditions?**

→ **Yes**

GO to D2.

→ **No**

If airflow is incorrect under one or more conditions, GO to D12.

## **D2 CHECK VACUUM SUPPLY HOSE CONNECTIONS**

1



2

Verify the vacuum supply hose is connected to the engine manifold and the vacuum reservoir tank.

- **Is the hose connected?**

→ **Yes**

GO to D3.

→ **No**

RECONNECT the hose. TEST the system for normal operation.

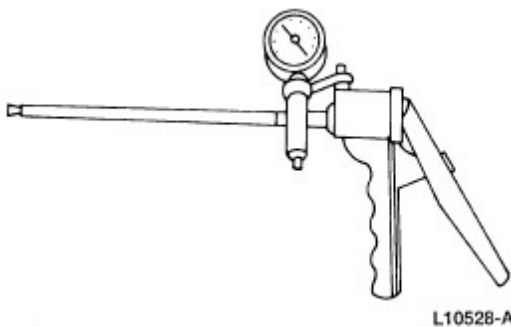
## **D3 LEAK TEST VACUUM SUPPLY HOSE**

1



Vacuum Supply Hose

2



2

Plug one end of the hose and leak test with a vacuum pump.

- **Does the hose leak?**

→ **Yes**

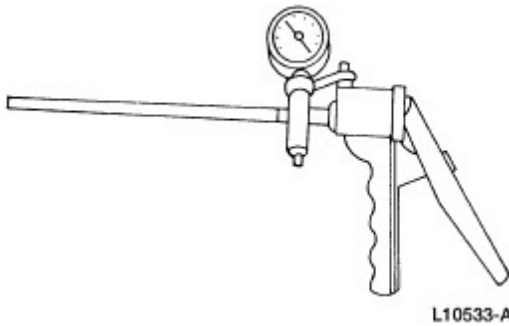
REPAIR or INSTALL a new vacuum hose. TEST the system for normal operation.

→ **No**

DISCONNECT the plug. GO to D4.

#### **D4 CHECK VACUUM SUPPLY HOSE FOR BLOCKAGE**

1



1

Leak test the vacuum supply hose with a vacuum pump.

- **Does the vacuum pump pull a vacuum?**

→ **Yes**

INSTALL a new vacuum hose. TEST the system for normal operation.

→ **No**

GO to D5.

#### **D5 CHECK THE VACUUM RESERVOIR TANK**

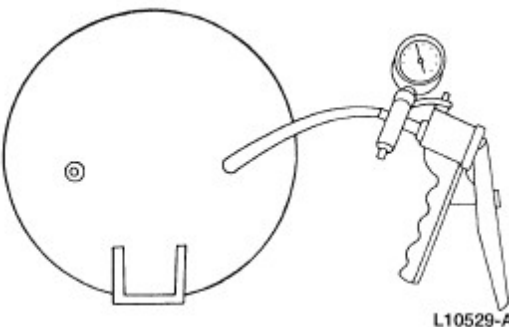
**NOTE:** The reservoir has two vacuum hoses going to it. These hoses are not interchangeable. The A/C check valve is built into the vacuum reservoir tank.

1



Vacuum Reservoir Tank

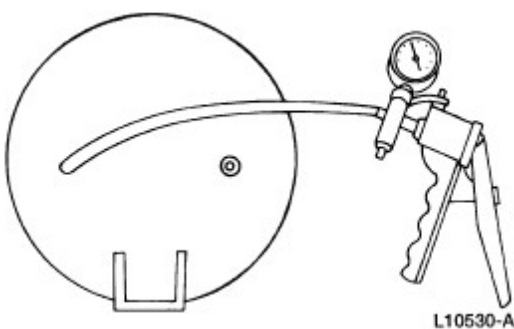
2



2

Leak test the vacuum reservoir tank from the engine manifold side with a vacuum pump.

3



3

Pump a 51 kPa (15 in) vacuum on the vacuum reservoir tank with a vacuum pump and observe the gauge reading.

- **Does the vacuum drop exceed 3.37 kPa (1 in) per minute?**

→ **Yes**

INSTALL a new vacuum reservoir tank. TEST the system for normal operation.

→ **No**

GO to D6.

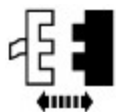
## D6 LEAK TEST THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL SUPPLY HOSE

1



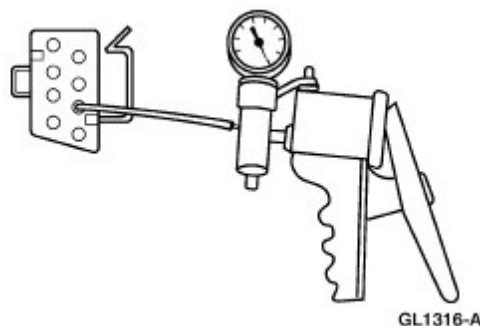
A/C Vacuum Reservoir Tank

2



In-Line Vacuum Harness

3



3

Plug the electronic automatic temperature control (EATC) supply hose at the vacuum reservoir tank.

4

Connect a vacuum pump to the black supply hose in the plenum vacuum harness.

- **Does the vacuum harness leak?**

→ **Yes**

REPAIR or INSTALL a new plenum vacuum harness. TEST the system for normal operation.

→ **No**

GO to D7.

**D7 CHECK THE EATC SUPPLY HOSE**

1



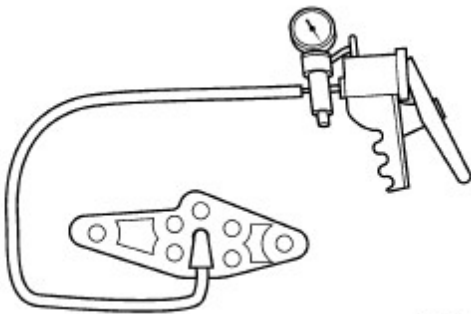
Inline Vacuum Harness

2



EATC Vacuum Harness

3



AL0135-A

3

Use a vacuum pump to leak test the black hose in the vacuum harness.

- **Does the vacuum harness leak?**

→ **Yes**

REPAIR or INSTALL a new vacuum harness. TEST the system for normal operation.

→ **No**

GO to D8.

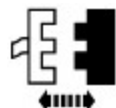
**D8 CHECK THE CONTROL ASSEMBLY FOR A LEAK**

1



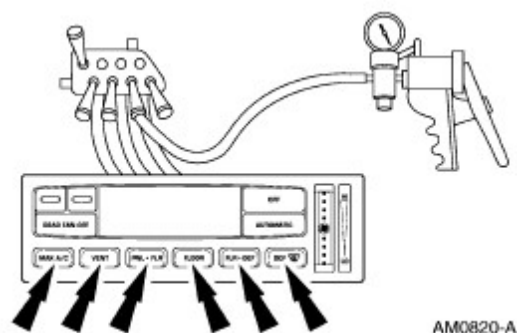
## EATC Vacuum Harness

2



## Inline Vacuum Harness

4



3 Start the engine and run at idle.

4 Connect a vacuum pump to the black hose and plug the other hoses.

- At each manual override mode, apply 51 kPa (15 inches-Hg) of vacuum and check for vacuum leakage.

• **Does the vacuum leakage exceed 3.37 kPa (1 inch-Hg) per minute?**

→ **Yes**

NOTE the manual override selection where the vacuum leaks and GO to D9.

→ **No**

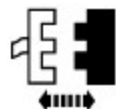
GO to D10.

**D9 TEST THE VACUUM HARNESS FOR A LEAK**

1



2

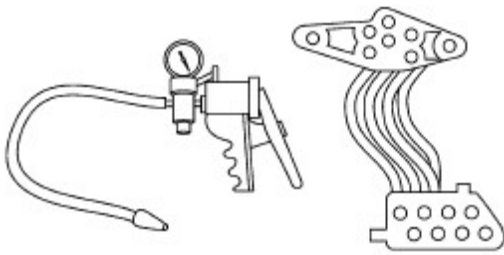


## EATC Vacuum Harness

3

3 Plug one end of the hose(s) that corresponds to the manual override selection indicating a leak and attach a vacuum pump to the other end. Apply 51 kPa (15 inches-Hg) of vacuum to each hose.





AM0821-A

- **Is there vacuum leakage?**

→ **Yes**

REPAIR or INSTALL a new vacuum harness.  
TEST the system for normal operation.

→ **No**

INSTALL a new EATC module. TEST the system for normal operation.

### **D10** CHECK THE PLENUM VACUUM HARNESS FOR BLOCKAGE

1

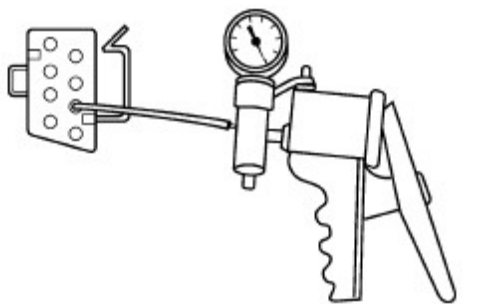


2



Vacuum Reservoir Tank

3



GL1316-A

3 Connect a vacuum pump to the black hose in the plenum vacuum harness and try to pull a vacuum. If the vacuum pump can pull a vacuum, the hose is plugged. If the vacuum pump pulls a partial vacuum, the hose is restricted.

- **Is the hose plugged or restricted?**

→ **Yes**

REPAIR or INSTALL a new plenum vacuum harness. TEST the system for normal operation.

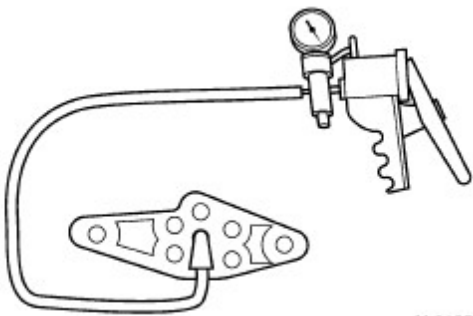
→ **No**  
GO to D11.

**D11 CHECK THE EATC VACUUM HARNESS FOR BLOCKAGE****1**

Inline Vacuum Harness

**2**

EATC Vacuum Harness

**3**

AL0135-A

**3** Connect a vacuum pump to the black hose and try to pull a vacuum. If the vacuum pump can pull a vacuum, the hose is plugged. If the vacuum pump pulls a partial vacuum, the hose is restricted.

- **Is the hose plugged or restricted?**

→ **Yes**  
INSTALL a new vacuum harness. TEST the system for normal operation.

→ **No**  
RECONNECT the EATC vacuum harness. GO to D15.

**D12 EVALUATE THE SYSTEM airflow**

**1** Evaluate the system airflow. For additional information, refer to Climate Control System, System Airflow Description in Description and Operation in this section.

- **Is the airflow in Step D1 correct for each manual override button pressed?**

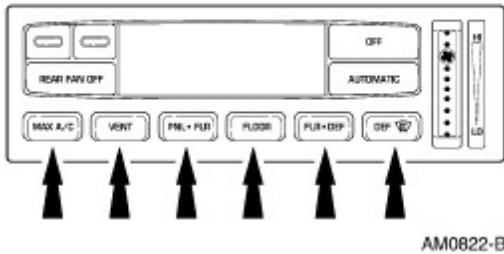
→ **Yes**  
GO to D13.

→ **No**

Note the manual override selection that does not function correctly. GO to D19.

### D13 ISOLATE THE VACUUM CIRCUIT

1



1

Check for correct airflow from each manual override button during engine speed acceleration.

- Does the airflow go to the defroster outlets during acceleration for all override selections?

→ **Yes**

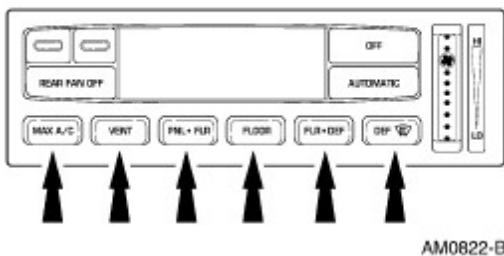
GO to D2.

→ **No**

GO to D14.

### D14 ISOLATE THE LEAKING VACUUM CIRCUIT

1



1

Check for correct airflow from each manual override button during engine speed acceleration.

- Is the airflow correct for each manual override button pressed?

→ **Yes**

The system is functioning correctly. TEST the system for normal operation.

→ **No**

GO to D19.

**D15 REVIEW THE VEHICLE'S HISTORY****1****2** Review the vehicle's history.

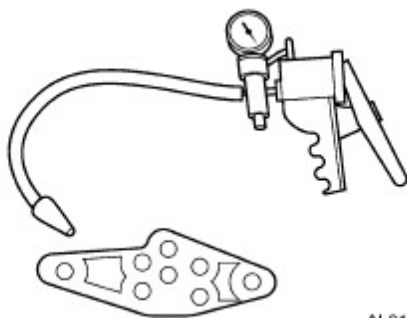
- **Did the climate control system function correctly prior to this concern?**

→ **Yes**GO to D18.→ **No**GO to D16.**D16 CHECK THE VACUUM HARNESS****1** Compare the vacuum hose color in each vacuum harness to the electronic automatic temperature control vacuum connector end view.

- **Does the hose color agree with the chart?**

→ **Yes**GO to D17.→ **No**

INSTALL a new vacuum harness. TEST the system for normal operation.

**D17 CHECK THE VACUUM HOSE****2**

AL0157-A

**1** Disconnect the suspect hose.**2** Plug one end of the hose and attach a vacuum pump to the other end. Check for a leak in the hose.

- **Does the vacuum hose leak?**

→ **Yes**

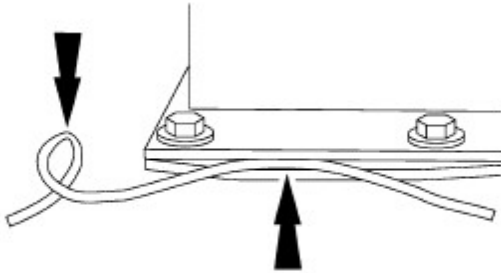
REPAIR or INSTALL a new hose. TEST the system for normal operation.

→ **No**

GO to D18.

### **D18** CHECK THE A/C VACUUM CIRCUIT

**1**



AM0351-B

**1**

Check the A/C vacuum circuit for indications of a pinched or kinked vacuum hose.

• **Are there indications that the hose is pinched or kinked?**

→ **Yes**

REPOSITION the vacuum hose. TEST the system for normal operation.

→ **No**

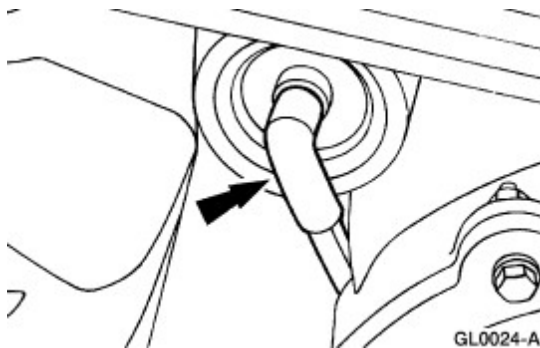
The system is functioning correctly. TEST the system for normal operation.

### **D19** CHECK THE VACUUM CIRCUIT CONNECTIONS

**1**



**2**



**2**

Check each vacuum hose connection corresponding to the manual override selection noted in the previous step to determine if it is partially connected or disconnected.

• **Is a vacuum hose disconnected or partially connected?**

→ **Yes**

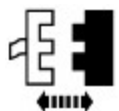
RECONNECT the hose. TEST the system for normal operation.

→ **No**

GO to D20.

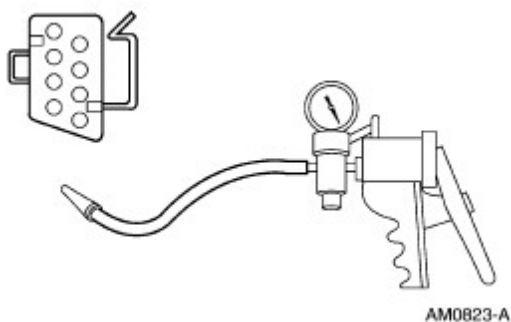
## **D20** CHECK THE PLENUM HOSES

1



Inline Vacuum Harness

2



2

Use a vacuum pump to leak test the vacuum hose corresponding to the manual override selection noted in the previous steps.

• **Does the vacuum hose leak?**

→ **Yes**

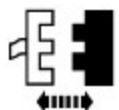
GO to D21.

→ **No**

GO to D22.

## **D21** CHECK THE VACUUM CONTROL MOTOR

1

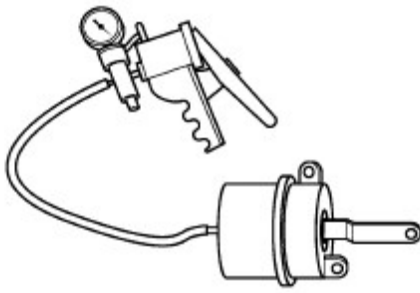


Vacuum Control Motor

2

2

Check the vacuum control motor corresponding to the manual override selection noted in the previous steps for leaks with a vacuum pump.



AL0136-A

- **Does the vacuum control motor hold a vacuum?**

→ **Yes**

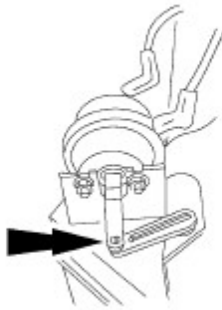
INSTALL a new plenum vacuum harness. TEST the system for normal operation.

→ **No**

INSTALL a new vacuum control motor. TEST the system for normal operation.

## **D22 CHECK THE VACUUM CONTROL MOTOR INSTALLATION**

1



AL0158-A

1

Check the attachment of the vacuum control motor arm to the damper door.

- **Is the vacuum control motor arm attached to the door or door crank arm?**

→ **Yes**

GO to D23.

→ **No**

CONNECT the vacuum control motor arm to the door crank arm. TEST the system for normal operation.

## **D23 CHECK THE DAMPER DOOR MOVEMENT**

1



Vacuum Control Motor

- 2 Check the travel and movement effort of the door(s) corresponding to the manual override selection noted in the previous steps.

• **Does the door move smoothly through its full travel?**

→ **Yes**

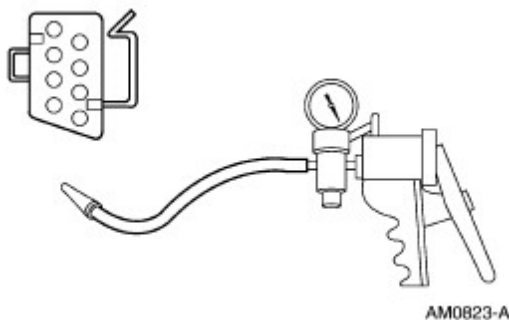
GO to D24.

→ **No**

REPAIR the damper door. TEST the system for normal operation.

**D24 CHECK THE VACUUM MOTOR HOSES**

1



- 1 Connect a vacuum pump to each hose and try to pull a vacuum. If the vacuum pump can pull a vacuum, the hose is plugged. If the vacuum pump pulls a partial vacuum, the hose is restricted.

• **Is the hose plugged or restricted?**

→ **Yes**

INSTALL a new plenum vacuum harness. TEST the system for normal operation.

→ **No**

GO to D25.

**D25 CHECK THE VACUUM HARNESS HOSES**

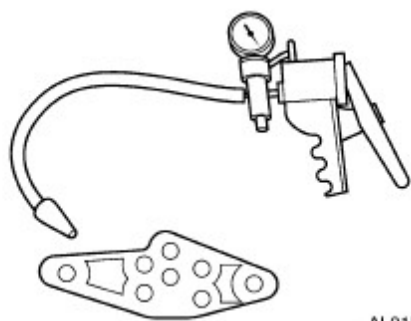
1



Inline Vacuum Harness



2



AL0157-A

2

Connect a vacuum pump to each hose and try to pull a vacuum. If the vacuum pump can pull a vacuum, the hose is plugged. If the vacuum pump pulls a partial vacuum, the hose is restricted.

• **Is the hose plugged or restricted?**

→ **Yes**

INSTALL a new vacuum harness. TEST the system for normal operation.

→ **No**

GO to D26.

**D26 CHECK THE CONTROL ASSEMBLY**

1



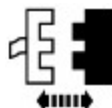
Vacuum Motors

2



EATC Vacuum Harness

3



Inline Vacuum Harness

5

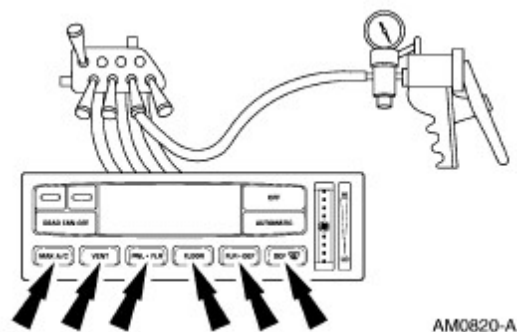
4

Start the engine and run at idle.

5

Connect a vacuum pump to the black hose and plug the other hoses.

- At each manual override mode, apply 51 kPa (15 inches-Hg) of vacuum and check for vacuum leakage.



- **Does the vacuum leakage exceed 3.37 kPa (1 inch-Hg) per minute?**

→ **Yes**

NOTE the manual override selection where the vacuum leaks and GO to D27.

→ **No**

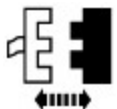
The system is functioning correctly. RESTORE the vehicle. TEST the system for normal operation.

## D27 LEAK TEST THE VACUUM HARNESS

1

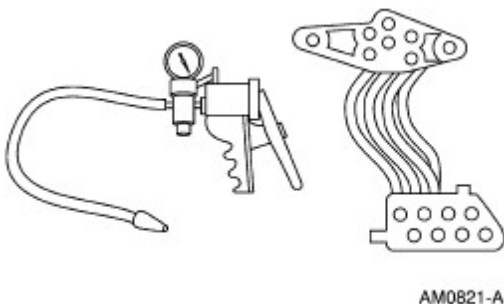


2



EATC Vacuum Harness

3



- 3 Plug one end of the hose(s) that corresponds to the manual override selection indicating a leak and attach a vacuum pump to the other end. Apply 51 kPa (15 inches-Hg) of vacuum to each hose.

- **Is there vacuum leakage?**


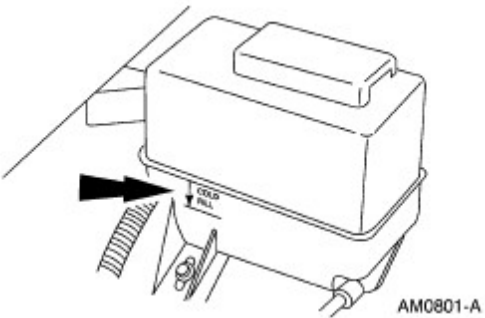
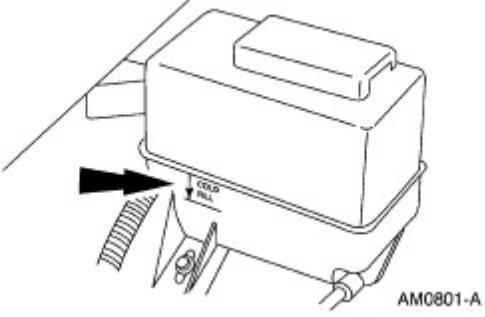
→ **Yes**

REPAIR or INSTALL a new vacuum harness. TEST the system for normal operation.

→ **No**

INSTALL a new EATC module. TEST the system for normal operation.

**PINPOINT TEST E: INSUFFICIENT, ERRATIC OR NO HEAT**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>E1 CHECK FOR CORRECT ENGINE COOLANT LEVEL</b>	
<div><div>1</div><div></div><div>2</div><div></div></div>	<div><div>2</div><div>Check the engine coolant level.</div></div> <div><ul style="list-style-type: none"><li>• <b>Is the engine coolant at the correct level in the coolant reservoir?</b></li></ul></div> <div>→ <b>Yes</b> GO to <u>E3</u>.</div> <div>→ <b>No</b> GO to <u>E2</u>.</div>
<b>E2 CHECK COOLANT SYSTEM INCLUDING RADIATOR CAP FOR LEAKS</b>	
<div><div>1</div><div></div></div>	<div><div>1</div><div>Fill the coolant system to the specified "COLD FILL" level.</div></div> <div><div>2</div><div>Pressure check the engine cooling system. Refer to <u>Section 303-03</u>.</div></div>

- **Does the engine cooling system, including the radiator cap, hold pressure?**

→ **Yes**  
GO to E3.

→ **No**  
PRESSURE TEST the heater core.

---

**E3 CHECK THE HEATER CORE INLET HOSE FOR HOT WATER**

---

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

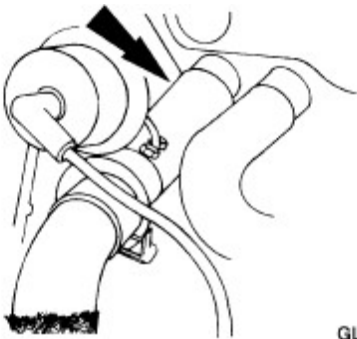
1



Ignition Start

2 Run the engine until it reaches normal operation temperature. Select the FLOOR position on the control assembly. Set the temperature control to full WARM.

3



GL0432-A

3 Feel the heater core inlet hose.

- **Is the heater core inlet hose hot?**

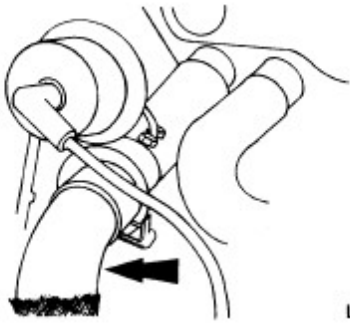
→ **Yes**  
GO to E5.

→ **No**  
GO to E4.

**E4 CHECK FOR HOT WATER TO THE HEATER CONTROL VALVE INLET HOSE**

1

1 Feel the heater control valve inlet hose.



L10536-A

- **Is the heater control valve inlet hose too hot to handle?**

→ **Yes**

GO to E6.

→ **No**

GO to Section 303-03.

### **E5 CHECK THE HEATER CORE OUTLET HOSE**

1



L10537-A

1 Feel the heater core outlet hose.

- **Is the heater core outlet hose hot?**

→ **Yes**


Go To Pinpoint Test K (Manual A/C). GO to DTC B1249 (EATC).

→ **No**

TEST the heater core for a plugged or partial-plugged condition.

### **E6 CHECK VACUUM SUPPLY TO THE HEATER CONTROL VALVE**

- 1 Disconnect the heater control valve vacuum supply hose at the heater control valve.
- 2 Check for presence of vacuum at the heater control valve vacuum supply hose connector.

	<ul style="list-style-type: none"> <li>• <b>Is there vacuum present?</b></li> </ul> <p>→ <b>Yes</b> GO to <u>E7</u> .</p> <p>→ <b>No</b> INSTALL a new heater control valve. TEST the system for normal operation.</p>
<b>E7 CHECK FOR INCORRECT VACUUM LINE PLACEMENT</b>	
<p><b>1</b></p> 	<p><b>2</b> Inspect the heater control valve and A/C vacuum lines for correct placement.</p> <ul style="list-style-type: none"> <li>• <b>Is the vacuum line placement correct?</b></li> </ul> <p>→ <b>Yes</b> INSTALL a new climate control assembly. REFER to <u>Section 412-04</u> . TEST the system for normal operation.</p> <p>→ <b>No</b> CORRECT the vacuum line placement. TEST the system for normal operation.</p>

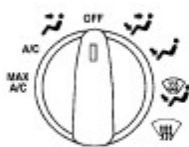
## PINPOINT TEST F: THE A/C DOES NOT OPERATE/DOES NOT OPERATE CORRECTLY — MANUAL A/C

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>F1</b> CHECK PID WACF WITH A/C OFF	

**NOTE:** When PCM PID WACF is YES, this is the same fault as DTC P1460.

**1**

**1** Turn the function selector switch to the OFF position.



AM0577-A

2



3



PCM PID WACF

• **Does the PCM PID WACF read YES?**

→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue the diagnosis.

→ **No**

GO to F2.

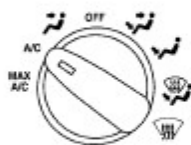
**F2 CHECK PID WACF WITH A/C ON**

**NOTE:** When PCM PID WACF is YES, this is the same fault as DTC P1460.

1 Start the engine and run at idle.

2

2 Turn the function selector switch to the A/C position.



AM0576-A

3



PCM PID WACF

• **Does the PCM PID WACF read YES?**

→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue the diagnosis.

→ **No**  
GO to F3.

### F3 CHECK PID ACCS WITH A/C ON

2



AM0576-A

3



PCM PID ACCS

- 1 Make sure the engine is at idle.
- 2 Turn the function selector switch to the A/C position.

#### • Does the PCM PID ACCS read ON?

→ **Yes**  
GO to F4.

→ **No**  
GO to F6.

### F4 CHECK PID ACP WITH A/C ON

**NOTE:** Diagnosis for vehicles equipped with 4.0L engines do not contain the PCM PID ACP.

2

- 1 If equipped with 5.0L engine, make sure the engine is at idle.
- 2 If equipped with 5.0L engine, turn the function selector switch to the A/C position.



AM0576-A

3





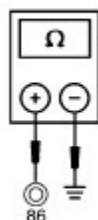
PCM PID ACP 5.0L Engine

4



4.0L Engine (if equipped)

6



AM0951-A

- 5 If equipped with 4.0L engine, connect the Rotunda EEC V 104-Pin Breakout Box.
- 6 If equipped with 4.0L engine, measure the resistance to ground at breakout box pin 86.

• If equipped with 5.0 engine, does the PCM PID ACP read CLOSED?

If equipped with 4.0L engine, is the resistance less than 5 ohms (4.0L)?

→ **Yes**  
GO to F5.

→ **No**  
GO to F15.

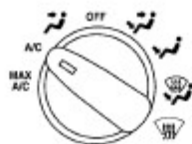
## F5 CHECK PID WAC WITH A/C ON

1



2

- 2 Turn the function selector switch to the A/C position.



AM0576-A

3



PCM PID WAC

**• Does the PID WAC read ON?**→ **Yes**GO to F23.→ **No**

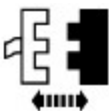
REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue the diagnosis.

**F6 CHECK THE INPUT SIGNAL TO THE PCM****NOTE:** Do not directly probe the PCM wire harness connector.

1



2



PCM C202

3 Connect the Rotunda EEC-V 104-Pin Breakout Box to the wire harness connector C202. Do not connect the breakout box to the PCM.

4



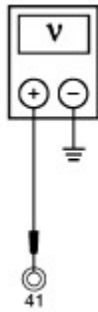
5

5 Turn the function selector switch to the A/C position.



AM0576-A

6



AM0584-A

- 6 Measure the voltage at the breakout box pin 41, circuit 348 (P).

• Is the voltage reading B+?

→ **Yes**

INSTALL a new powertrain control module.  
REFER to [Section 303-14](#) . TEST the system for normal operation.

→ **No**

GO to [F7](#) .

**F7** CHECK THE SUPPLY TO THE FUNCTION SELECTOR SWITCH

1



2



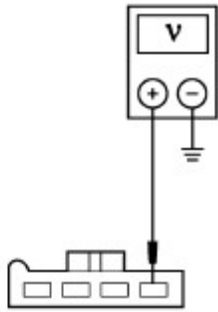
Function Selector Switch C231

3



4

- 4 Measure the voltage at the function selector switch connector pin C231, circuit 1003 (GY/Y).



AM0585-A

- **Is the voltage reading B+?**

→ **Yes**  
GO to F13.

→ **No**  
GO to F8.

**F8 CHECK FUSE 10 (7.5A)****1****2**

Fuse Junction Panel Fuse 10 (7.5A)

**3**

Fuse Junction Panel Fuse 10 (7.5A)

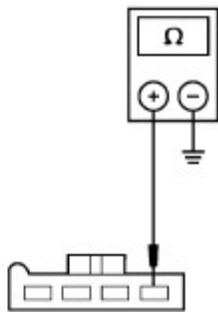
- **Is fuse 10 (7.5A) OK?**

→ **Yes**  
REPAIR circuit 1003 (GY/Y) for an open. TEST the system for normal operation.

→ **No**  
GO to F9.

**F9 CHECK CIRCUIT 1003 (GY/Y) FOR A SHORT TO GROUND****1**

**1** Measure the resistance between the function selector switch connector pin C231, circuit 1003



AM0586-A

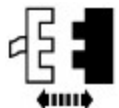
(GY/Y) and ground.

- **Is the resistance reading 10,000 ohms or less?**

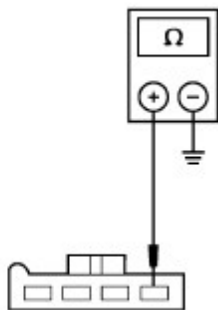
→ **Yes**  
GO to F10 .

→ **No**  
GO to F11 .

## **F10** CHECK THE BLEND DOOR ACTUATOR

**1**

Blend Door Actuator C270

**2**

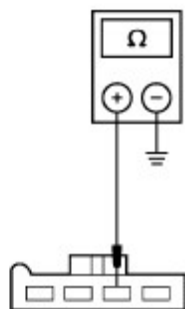
AM0586-A

- 2** Measure the resistance between the function selector switch connector pin C231, circuit 1003 (GY/Y) and ground.

- **Is the resistance reading 10,000 ohms or less?**

→ **Yes**  
REPAIR circuit 1003 (GY/Y) for a short to ground.  
TEST the system for normal operation.

→ **No**  
INSTALL a new A/C electronic door actuator motor (19E616). REFER to Section 412-04 . TEST the system for normal operation.

**F11 CHECK CIRCUIT 348 (P) FOR A SHORT TO GROUND****1**

AM0587-A

**1**

Measure the resistance between the function selector switch connector pin C231, circuit 348 (P) and ground.

• **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

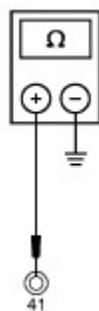
REPAIR circuit 348 (P) for a short to ground.  
TEST the system for normal operation.

→ **No**

GO to F12.

**F12 CHECK FOR A SHORTED FUNCTION SELECTOR SWITCH****1**

Function Selector Switch C231

**2**

AM0588-A

**2**

**NOTE:** Make sure fuse 10 (7.5A) is still removed.

Measure the resistance between the breakout box pin 41, circuit 348 (P) and ground.

**3**

Turn the function selector switch to each of the following positions and note the resistance reading.

- MAX A/C
- A/C
- PNL/FLR
- FLR/DEF
- DEF

- **Are any of the resistance readings 10,000 ohms or less?**

→ **Yes**

INSTALL a new function selector switch. REFER to Section 412-04 . TEST the system for normal operation.

→ **No**

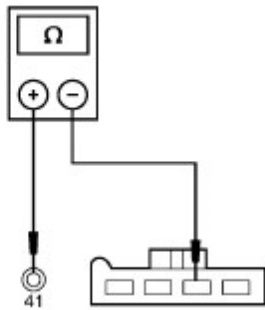
INSTALL a new fuse 10 (7.5A). TEST the system for normal operation. If fuse 10 (7.5A) opens again, INSTALL a new powertrain control module. REFER to Section 303-14 . TEST the system for normal operation.

### **F13** CHECK CIRCUIT 348 (P) FOR AN OPEN

1



2



AM0589-A

2

- Measure the resistance of circuit 348 (P) between the PCM breakout box pin 41 and the function selector switch connector pin C231.

- **Is the resistance reading 5 ohms or less?**

→ **Yes**

GO to F14 .

→ **No**

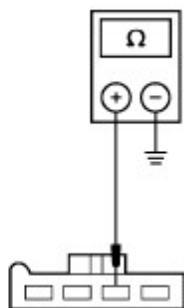
REPAIR circuit 348 (P) for an open. TEST the system for normal operation.

### **F14** CHECK FOR A SHORTED INPUT

1

1

- Measure the resistance between the function selector switch connector pin C231, circuit 348 (P) and ground.



AM0587-A

- **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

REPAIR circuit 348 (P) for a short to ground.  
TEST the system for normal operation.

→ **No**

INSTALL a new function selector switch. REFER to Section 412-04 . TEST the system for normal operation.

### F15 CHECK THE REFRIGERANT SYSTEM PRESSURE

1



- 2 Connect the manifold set to the service ports.  
For additional information, refer to Manifold Gauge Set Connection in this section.

- **Is the pressure between 345 kPa (50 psi) and 1,724 kPa (250 psi)?**

→ **Yes**

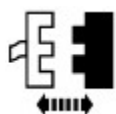
GO to F16 .

→ **No**

CHECK the system for refrigerant system leaks.  
REFER to Leak Detection—Using Refrigerant Leak Detector or Leak Detection—Using Tracer Dye in this section.

### F16 CHECK CIRCUIT 570 (BK/W)

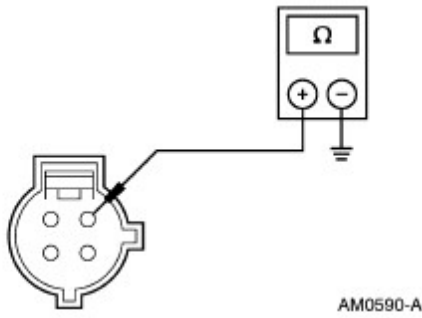
1





## A/C Pressure Cut-Off Switch C195

2



2

Measure the resistance between the A/C pressure cut-off switch connector C195, circuit 570 (BK/W) and ground.

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

GO to F17.

→ **No**

REPAIR circuit 570 (BK/W) for an open. TEST the system for normal operation.

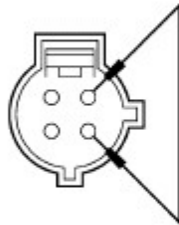
**F17** CHECK THE A/C PRESSURE CUT-OFF SWITCH

**NOTE:** Diagnostics for vehicles with 4.0L engines do not contain the PCM PID ACP.

1

1

Connect a jumper wire across the A/C pressure switch connector C195, circuit 570 (BK/W) and circuit 441 (R/Y).



AM0591-A

2



5.0L Engine

3

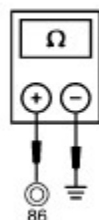


PCM PID ACP 5.0L Engine

4

If equipped with 4.0L engine, connect the Rotunda EEC-V 104 Pin Breakout Box.

5



AM0951-A

5

If equipped with 4.0L engine, measure the resistance to ground of breakout box pin 86.

- If equipped with 5.0L engine, does the PID ACP read **CLOSED**?

**If equipped with 4.0L engine, is the resistance less than 5 ohms?**

→ **Yes**

INSTALL a new A/C pressure cut-off switch (19D594). REFER to [Section 412-03](#). TEST the system for normal operation.

→ **No**

GO to [F18](#).

## F18 CHECK THE A/C CYCLING SWITCH

**NOTE:** Diagnostics for vehicles with 4.0L engines do not contain the PCM PID ACP.

1

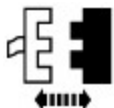


2



A/C Pressure Cut-Off Switch C195

3

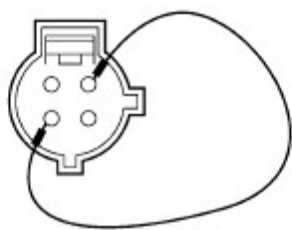


A/C Cycling Switch C151

4

4

Connect a jumper wire across the A/C cycling switch connector C151, circuit 347 (BK/Y) and circuit 441 (R/Y).



AL0112-A

5



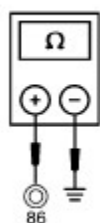
5.0L Engine

6



PCM PID ACP 5.0L Engine

7



AM0951-A

- 7 If equipped with 4.0L engine, measure the resistance to ground of breakout box pin 86.

- If equipped with 5.0L engine, does the PID ACP read CLOSED?

If equipped with 4.0L engine, is the resistance less than 5 ohms?

→ **Yes**

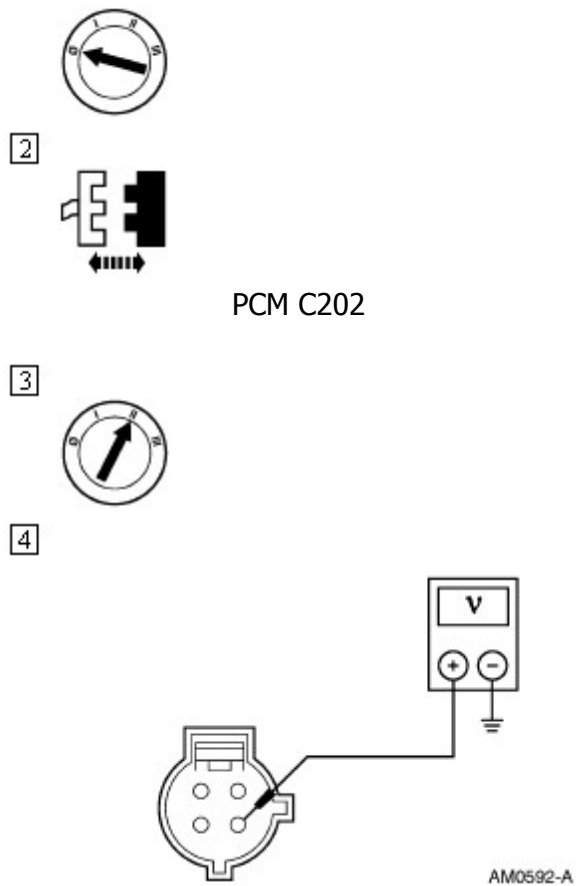
INSTALL a new A/C cycling switch (19E561).  
REFER to Section 412-03 . TEST the system for normal operation.

→ **No**

GO to F19 .

## **F19** CHECK CIRCUIT 347 (BK/Y) FOR A SHORT TO B+

1



- 4 Measure for voltage at the A/C cycling switch connector C151, circuit 347 (BK/Y).

• **Is there voltage present?**

→ **Yes**

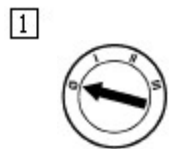
REPAIR circuit 347 (BK/Y) for a short to B+.  
TEST the system for normal operation.

→ **No**

GO to F20.

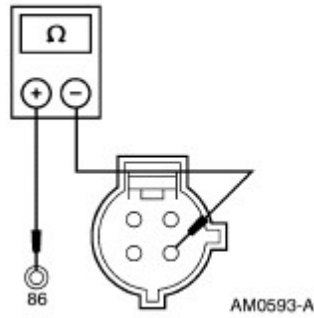
## F20 CHECK CIRCUIT 347 (BK/Y) FOR AN OPEN

**NOTE:** Do not directly probe the PCM wire harness connector.



3

- 2 Connect the Rotunda EEC-V 104-Pin Breakout Box.
- 3 Measure the resistance of circuit 347 (BK/Y) between the breakout box pin 86 and the A/C cycling switch Connector C151.



- **Is the resistance reading 5 ohms or less?**

→ **Yes**

GO to F21.

→ **No**

REPAIR circuit 347 (BK/Y) for an open. TEST the system for normal operation.

**F21** CHECK CIRCUITY 441 (R/Y) FOR A SHORT TO B+

1

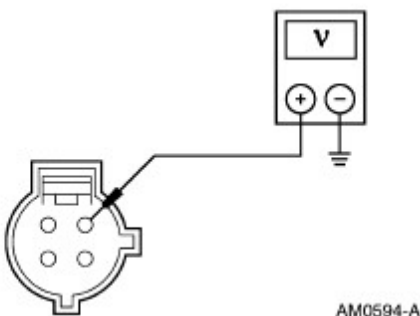


A/C Pressure Cut-Off Switch C195

2



3



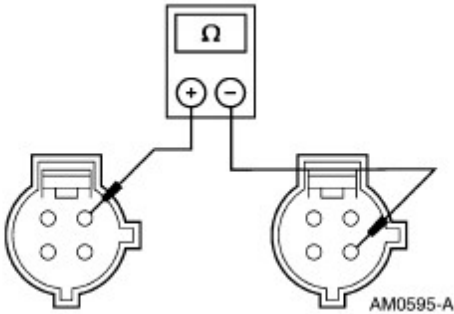
3 Measure for voltage at the A/C cycling switch connector C151, circuit 441 (R/Y).

- **Is there voltage present?**

→ **Yes**

REPAIR circuit 441 (R/Y) for a short to B+. TEST the system for normal operation.

→ **No**

GO to **F22** .**F22 CHECK CIRCUIT 441 (R/Y) FOR AN OPEN****1****2**

- 2** Measure the resistance of circuit 441 (R/Y) between the A/C cycling switch connector C151 and the A/C pressure cut-off switch connector C195.

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue diagnosis.

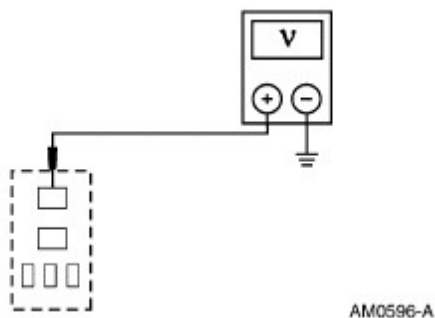
→ **No**

REPAIR circuit 441 (R/Y) for an open. TEST the system for normal operation.

**F23 CHECK THE INPUT TO THE A/C CLUTCH RELAY****1****3****4**

- 2** Remove the A/C clutch relay from the power distribution box.

- 4** Measure the voltage at the A/C clutch relay connector pin 3, circuit 883 (PK/LB).



• **Is the voltage reading B+?**

→ **Yes**  
GO to F27.

→ **No**  
GO to F24.

**F24 CHECK THE A/C FUSE**

1



2



Power Distribution Box A/C Fuse (10A)

3



Power Distribution Box A/C Fuse (10A)

• **Is the A/C fuse (10A) OK?**

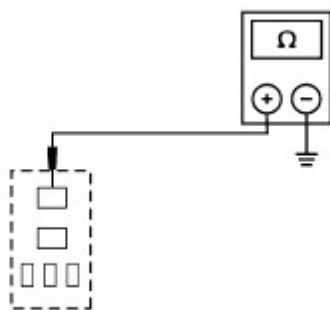
→ **Yes**  
REPAIR circuit 883 (PK/LB) for an open. TEST the system for normal operation.

→ **No**  
GO to F25.

**F25 CHECK CIRCUIT 883 (PK/LB) FOR A SHORT TO GROUND**

1

1 Measure the resistance between the A/C clutch relay connector pin 3, circuit 883 (PK/LB) and



AM0597-A

ground.

- **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

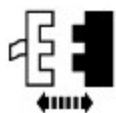
REPAIR circuit 883 (PK/LB) for a short to ground.  
TEST the system for normal operation.

→ **No**

GO to F26.

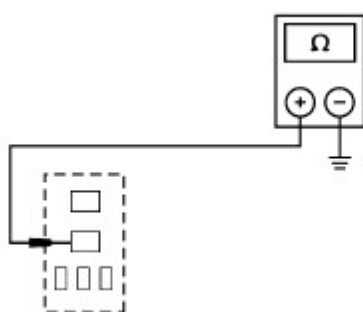
## **F26** CHECK CIRCUIT 321 (GY/W) FOR A SHORT TO GROUND

1



A/C Clutch C152

2



AM0598-A

- 2 Measure the resistance between the A/C clutch relay connector pin 5, circuit 321 (GY/W) and ground.

- **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

REPAIR circuit 321 (GY/W) for a short to ground.  
TEST the system for normal operation.

→ **No**

INSTALL a new A/C clutch field coil (2987).  
REFER to Section 412-03 . TEST the system for



normal operation.

## F27 CHECK THE A/C CLUTCH INPUT

1



3



A/C Clutch C152

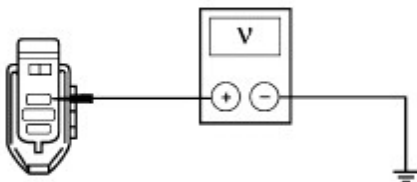
4



5



6



GL0225-A

2

Install the A/C clutch relay in the power distribution box.

5

In Active Command Mode, command the PCM outputs ON.

6

Measure for voltage at the A/C clutch connector C152, circuit 321 (GY/W).

7

Command the PCM outputs OFF.

### • Is the voltage reading B+?

→ **Yes**

GO to [F30](#).

→ **No**

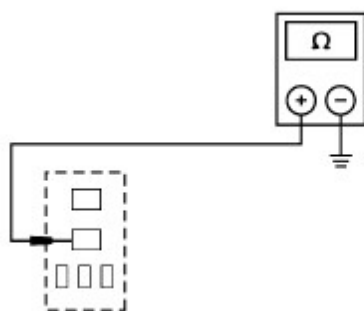
GO to [F28](#).

## F28 CHECK FOR A SHORTED OUTPUT

1



3



AM0598-A

- 2 Remove the A/C clutch relay from the power distribution box.
- 3 Measure the resistance between the A/C clutch relay connector pin 5, circuit 321 (GY/W) and ground.

• **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

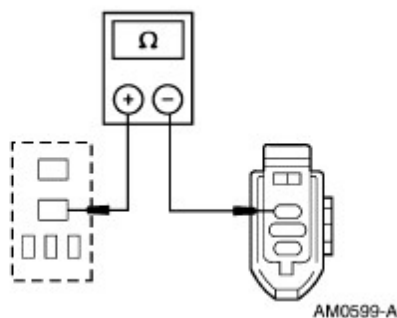
REPAIR circuit 321 (GY/W) for a short to ground. TEST the system for normal operation.

→ **No**

GO to F29.

### F29 CHECK CIRCUIT 321 (GY/W) FOR AN OPEN

1



AM0599-A

- 1 Measure the resistance of circuit 321 (GY/W) between the A/C clutch relay connector pin 5 and the A/C clutch connector C152.

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

INSTALL a new A/C clutch relay. TEST the system for normal operation.

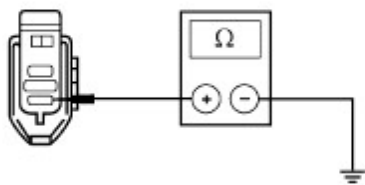
→ **No**

REPAIR circuit 321 (GY/W) for an open. TEST the system for normal operation.

### F30 CHECK CIRCUIT 57 (BK) FOR AN OPEN

1

- 1 Measure the resistance between the A/C clutch connector C152, circuit 57 (BK) and ground.



GL0227-A

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

INSTALL a new A/C clutch field coil. REFER to Section 412-03 . TEST the system for normal operation.

→ **No**

REPAIR circuit 57 (BK) for an open. TEST the system for normal operation.

**PINPOINT TEST G: THE A/C DOES NOT OPERATE/DOES NOT OPERATE CORRECTLY — EATC**

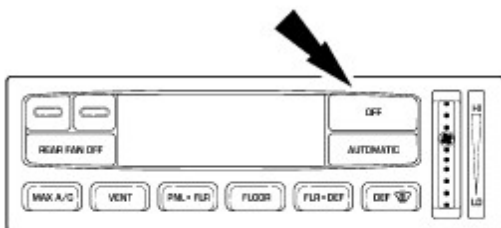
CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>G1</b> CHECK PID WACF WITH A/C OFF	

**NOTE:** When PCM PID WACF is YES, this is the same fault as DTC P1460.

1



2



2

Press the OFF button on the electronic automatic temperature control module.

AM0852-B

3



PCM PID WACF

**• Does the PCM PID WACF read YES?**→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue the diagnosis.

→ **No**

GO to G2.

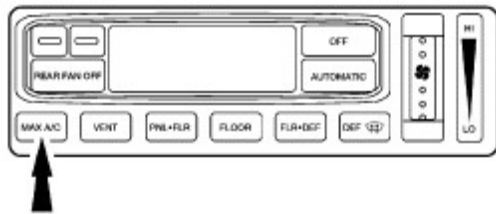
**G2 CHECK PID WACF WITH A/C ON**

**NOTE:** When PCM PID WACF is YES, this is the same fault as DTC P1460.

1 Start the engine and run at idle.

2 Press the EATC MAX A/C button.

2



GL1257-B

3



PCM PID WACF

**• Does the PCM PID WACF read YES?**→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue the diagnosis.

→ **No**

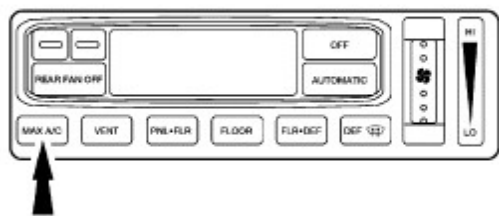
GO to G3.

**G3 CHECK PID ACCS WITH A/C ON**

1 Make sure the engine is at idle.

2 Press the EATC MAX A/C button.

2



GL1257-B

3



PCM PID ACCS

- Does the PCM PID ACCS read ON?

→ **Yes**  
GO to G4.

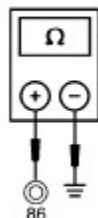
→ **No**  
GO to G6.

#### G4 CHECK A/C PRESSURE SWITCH CIRCUIT

1



3



AM0951-A

- 2 Connect the Rotunda EEC-V 104 pin breakout box.
- 3 Measure the resistance to ground of breakout box pin 86.

- Is the resistance less than 5 ohms?

→ **Yes**  
GO to G5.

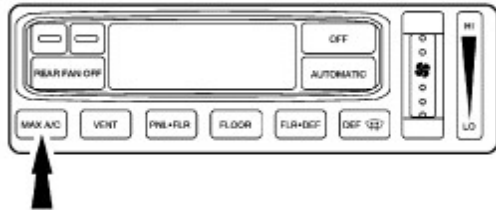
→ **No**

GO to G13.**G5 CHECK PID WAC WITH A/C ON**

1



2



GL1257-B

3



PCM PID WAC

2 Press the EATC MAX A/C button.

- **Does the PID WAC read ON?**

→ **Yes**GO to G21.→ **No**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue the diagnosis.

**G6 CHECK THE INPUT SIGNAL TO THE PCM****NOTE:** Do not directly probe the PCM wire harness connector.

1



2



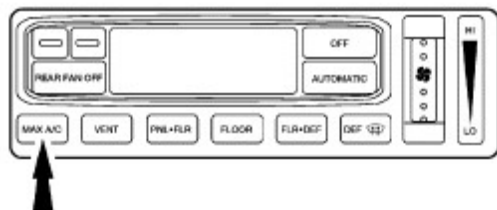
PCM C202

3 Connect the Rotunda EEC-V 104-Pin Breakout Box to the wire harness connector C202. Do not connect the breakout box to the PCM.

4

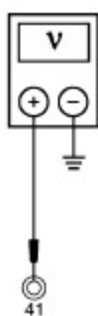


5



GL1257-B

6



AM0584-A

5 Press the EATC MAX A/C button.

6 Measure the voltage at the breakout box pin 41, circuit 348 (P).

• **Is the voltage reading B+?**

→ **Yes**

INSTALL a new powertrain control module.  
REFER to [Section 303-14](#) . TEST the system for normal operation.

→ **No**

GO to [G7](#) .

**G7** CHECK THE SUPPLY TO THE EATC MODULE

1



2

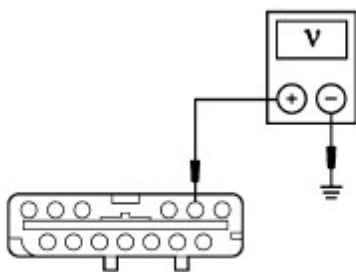


EATC Module C298

3



4



AM0857-A

- 4 Measure the voltage at the EATC module connector pin C298-16, circuit 364 (BK/LG).

• **Is the voltage reading B+?**

→ **Yes**  
GO to G11.

→ **No**  
GO to G8.

**G8 CHECK FUSE 2 (7.5A)**

1



2



Fuse Junction Panel Fuse 2 (7.5A)

3



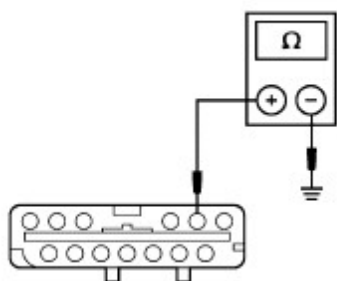
Fuse Junction Panel Fuse 2 (7.5A)

• **Is fuse 2 (7.5A) OK?**

→ **Yes**  
REPAIR circuit 364 (BK/LG) for an open. TEST the system for normal operation.

→ **No**  
GO to G9.



**G9 CHECK CIRCUIT 364 (BK/LG) FOR A SHORT TO GROUND****1**

AM0825-A

**1**

Measure the resistance between the EATC module connector pin C298-16, circuit 364 (BK/LG) and ground.

• **Is the resistance reading 100 ohms or less?**

→ **Yes**

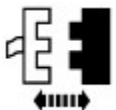
REPAIR circuit 364 (BK/LG) for a short to ground.  
TEST the system for normal operation.

→ **No**

GO to G10.

**G10 CHECK THE AIR BAG DIAGNOSTIC MODULE****1**

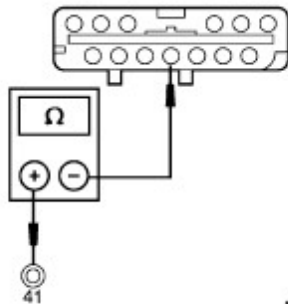
Fuse Junction Panel Fuse 2 (7.5A)

**2****3****4**

Fuse Junction Panel Fuse 2 (7.5A)

**5**

Fuse Junction Panel Fuse 2 (7.5A)

**G11 CHECK CIRCUIT 348 (P) FOR AN OPEN****1****2**

- 2** Measure the resistance of circuit 348 (P) between the breakout box pin 41 and the EATC module connector pin C297-11.

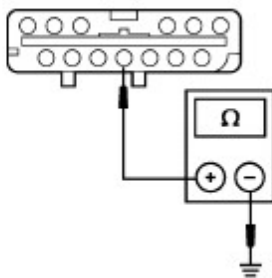
• **Is the resistance reading 5 ohms or less?**

→ **Yes**

GO to G12 .

→ **No**

REPAIR circuit 348 (P) for an open. TEST the system for normal operation.

**G12 CHECK FOR A SHORTED INPUT****1**

- 1** Measure the resistance between the EATC module connector pin C297-11, circuit 348 (P) and ground.

• **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

REPAIR circuit 348 (P) for a short to ground. TEST the system for normal operation.

→ **No**

INSTALL a new EATC module. REFER to Control Assembly — Electronic Automatic Temperature

Control in [Section 412-04](#) . TEST the system for normal operation.

### G13 CHECK THE REFRIGERANT SYSTEM PRESSURE

1



2 Connect the manifold set to the service ports. For additional information, refer to [Manifold Gauge Set Connection](#) in this section.

- **Is the pressure between 345 kPa (50 psi) and 1,724 kPa (250 psi)?**

→ **Yes**

GO to [G14](#) .

→ **No**

CHECK the system for refrigerant leaks. REFER to [Leak Detection—Using Refrigerant Leak Detector](#) or [Leak Detection—Using Tracer Dye](#) in this section.

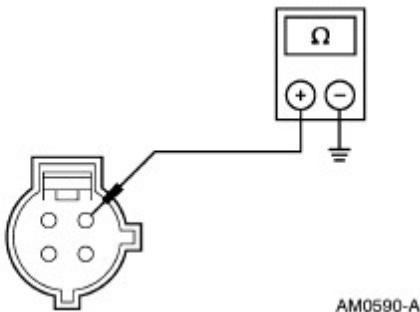
### G14 CHECK CIRCUIT 570 (BK/W)

1



A/C Pressure Cut-Off Switch C195

2



2 Measure the resistance between the A/C pressure cut-off switch connector C195, circuit 570 (BK/W) and ground.

- **Is the resistance reading 5 ohms or less?**

→ **Yes**

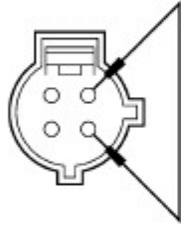
GO to [G15](#) .

→ **No**

REPAIR circuit 570 (BK/W) for an open. TEST the system for normal operation.

### G15 CHECK THE A/C PRESSURE CUT-OFF SWITCH

1



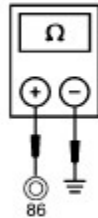
AM0591-A

1 Connect a jumper wire across the A/C pressure switch connector C195, circuit 570 (BK/W) and circuit 441 (R/Y).

2 Connect the Rotunda EEC-V 104 pin breakout box.

3 Measure the resistance to ground of breakout box pin 86.

3



AM0951-A

#### • Is the resistance less than 5 ohms?

→ **Yes**

INSTALL a new A/C pressure cut-off switch. REFER to [Section 412-03](#) . TEST the system for normal operation.

→ **No**

GO to [G16](#) .

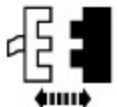
### G16 CHECK THE A/C CYCLING SWITCH

1



A/C Pressure Cut-Off Switch C195

2



A/C Cycling Switch C151

**G17** CHECK CIRCUIT 347 (BK/Y) FOR A SHORT TO B+

1



2

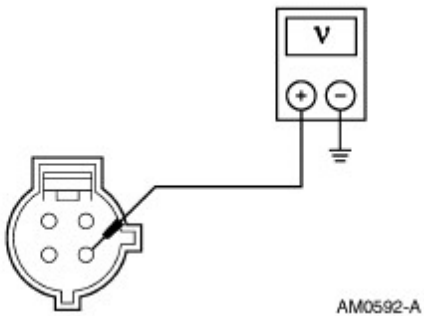


PCM C202

3



4



- 4 Measure for voltage at the A/C cycling switch connector C151, circuit 347 (BK/Y).

• **Is there voltage present?**

→ **Yes**

REPAIR circuit 347 (BK/Y) for a short to B+.  
TEST the system for normal operation.

→ **No**

GO to G18.

**G18** CHECK CIRCUIT 347 (BK/Y) FOR AN OPEN

**NOTE:** Do not directly probe the PCM wire harness connector.

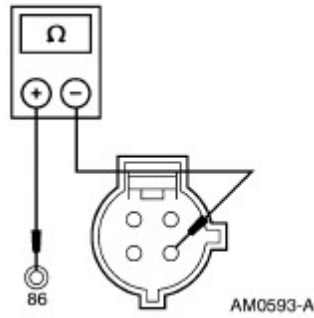
1



3

- 2 Connect the Rotunda EEC-V 104-Pin Breakout Box.

- 3 Measure the resistance of circuit 347 (BK/Y) between the breakout box pin 86 and the A/C cycling switch connector C151.



- **Is the resistance reading 5 ohms or less?**

→ **Yes**

GO to G19.

→ **No**

REPAIR circuit 347 (BK/Y) for an open. TEST the system for normal operation.

### **G19** CHECK CIRCUITY 441 (R/Y) FOR A SHORT TO B+

1

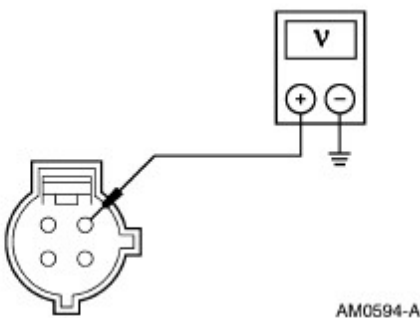


A/C Pressure Cut-Off Switch C195

2



3



3 Measure for voltage at the A/C cycling switch connector C151, circuit 441 (R/Y).

- **Is there voltage present?**

→ **Yes**

REPAIR circuit 441 (R/Y) for a short to B+. TEST the system for normal operation.

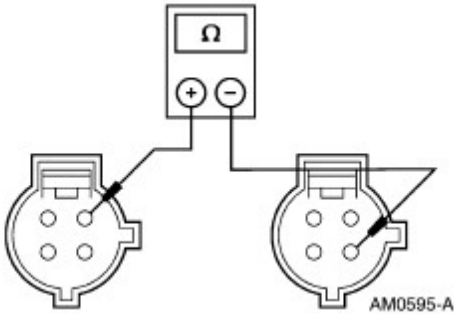
→ **No**

GO to G20.**G20 CHECK CIRCUIT 441 (R/Y) FOR AN OPEN**

1



2



- 2 Measure the resistance of circuit 441 (R/Y) between the A/C cycling switch connector C151 and the A/C pressure cut-off switch connector C195.

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual to continue diagnosis.

→ **No**

REPAIR circuit 441 (R/Y) for an open. TEST the system for normal operation.

**G21 CHECK THE INPUT TO THE A/C CLUTCH RELAY**

1



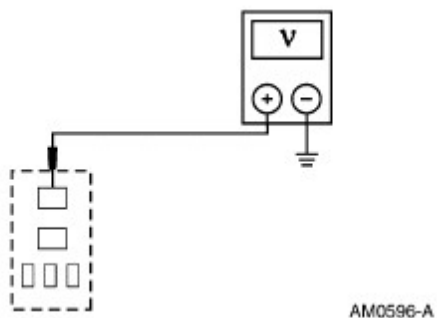
3



4

- 2 Remove the A/C clutch relay from the power distribution box.

- 4 Measure the voltage at the A/C clutch relay connector pin 3, circuit 883 (PK/LB).



• **Is the voltage reading B+?**

→ **Yes**  
GO to G25.

→ **No**  
GO to G22.

**G22 CHECK THE A/C FUSE**

1



2



Power Distribution Box A/C Fuse (10A)

3



Power Distribution Box A/C Fuse (10A)

• **Is the A/C fuse (10A) OK?**

→ **Yes**  
REPAIR circuit 883 (PK/LB) for an open. TEST the system for normal operation.

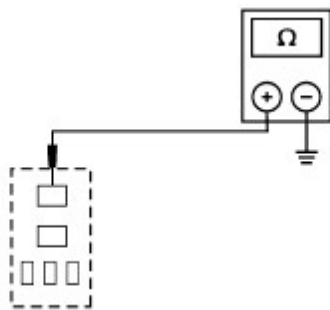
→ **No**  
GO to G23.

**G23 CHECK CIRCUIT 883 (PK/LB) FOR A SHORT TO GROUND**

1

1 Measure the resistance between the A/C clutch relay connector pin 3, circuit 883 (PK/LB) and





AM0597-A

ground.

- **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

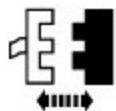
REPAIR circuit 883 (PK/LB) for a short to ground.  
TEST the system for normal operation.

→ **No**

GO to G24.

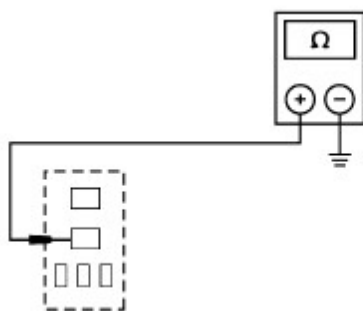
#### **G24 CHECK CIRCUIT 321 (GY/W) FOR A SHORT TO GROUND**

1



A/C Clutch C152

2



AM0598-A

- 2 Measure the resistance between the A/C clutch relay connector pin 5, circuit 321 (GY/W) and ground.





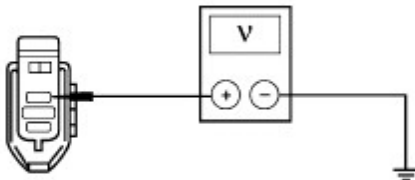

- **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

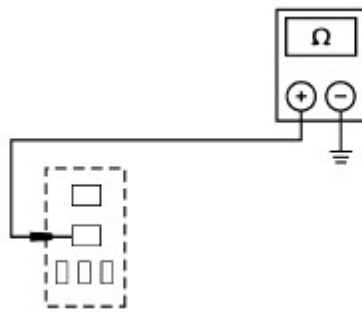
REPAIR circuit 321 (GY/W) for a short to ground.  
TEST the system for normal operation.

→ **No**

INSTALL a new A/C clutch field coil. REFER to Section 412-03 . TEST the system for normal

		operation.
<b>G25 CHECK THE A/C CLUTCH INPUT</b>		
<div><div>1</div><div></div></div> <div><div>3</div><div></div><div>A/C Clutch C152</div></div> <div><div>4</div><div></div></div> <div><div>5</div><div></div></div> <div><div>6</div><div></div><div>GL0225-A</div></div>	<div><div>2</div><div>Install the A/C clutch relay in the power distribution box.</div></div> <div><div>5</div><div>In Active Command Mode, command the PCM outputs ON.</div></div> <div><div>6</div><div>Measure for voltage at the A/C clutch connector C152, circuit 321 (GY/W).</div></div> <div><div>7</div><div>Command the PCM outputs OFF.</div></div> <div><div>• Is the voltage reading B+?</div><div>→ <b>Yes</b> GO to <u>G28</u>.</div><div>→ <b>No</b> GO to <u>G26</u>.</div></div>	
<b>G26 CHECK FOR A SHORTED OUTPUT</b>		
<div><div>1</div><div></div></div>		

3



- 2 Remove the A/C clutch relay from the power distribution box.
- 3 Measure the resistance between the A/C clutch relay connector pin 5, circuit 321 (GY/W) and ground.

• **Is the resistance reading 10,000 ohms or less?**

→ **Yes**

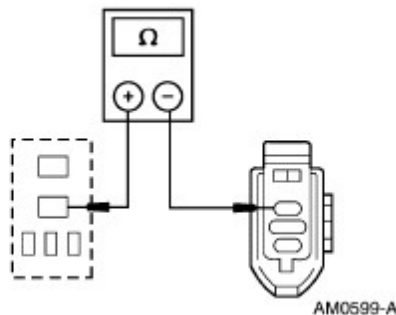
REPAIR circuit 321 (GY/W) for a short to ground.  
TEST the system for normal operation.

→ **No**

GO to G27.

#### **G27** CHECK CIRCUIT 321 (GY/W) FOR AN OPEN

1



- 1 Measure the resistance of circuit 321 (GY/W) between the A/C clutch relay connector pin 5 and the A/C clutch connector C152.

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

INSTALL a new A/C clutch relay. TEST the system for normal operation.

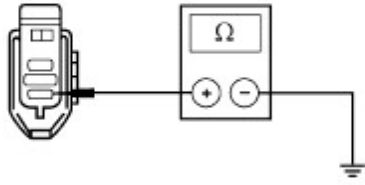
→ **No**

REPAIR circuit 321 (GY/W) for an open. TEST the system for normal operation.

#### **G28** CHECK CIRCUIT 57 (BK) FOR AN OPEN

1

- 1 Measure the resistance between the A/C clutch connector C152, circuit 57 (BK) and ground.



GL0227-A

• **Is the resistance reading 5 ohms or less?**




→ **Yes**

INSTALL a new A/C clutch field coil. REFER to Section 412-03 . TEST the system for normal operation.

→ **No**

REPAIR circuit 57 (BK) for an open. TEST the system for normal operation.

**PINPOINT TEST H: THE A/C IS ALWAYS ON — MANUAL A/C**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<p><b>H1</b> CHECK PID WACF WITH THE A/C OFF</p> <div data-bbox="142 1176 175 1207">1</div>  <p>AM0577-A</p> <div data-bbox="142 1564 175 1596">2</div>  <div data-bbox="142 1722 175 1753">3</div>  <p>PCM PID WACF</p>	
	<div data-bbox="748 1176 781 1207">1</div> Turn the function selector switch to the OFF position.

- **Does the PCM PID WACF read YES?**

→ **Yes**

REPAIR circuit 331 (PK/Y) for a short to ground.  
TEST the system for normal operation.

→ **No**

GO to H2.

## **H2 CHECK PID ACCS WITH A/C OFF**

1



PCM PID ACCS

- **Does the PCM PID ACCS read ON?**

→ **Yes**

GO to H3.

→ **No**

GO to H5.

## **H3 CHECK FOR A FALSE INPUT SIGNAL TO THE PCM**

**NOTE:** Do not directly probe the PCM wire harness connector.

1



2



PCM C111

3

Connect the Rotunda EEC-V 104-Pin Breakout Box to the wire harness connector C111. Do not connect the breakout box to the PCM.

4



5

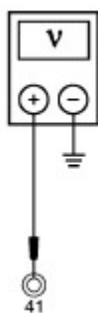
5

Turn the function selector switch to the OFF position.



AM0577-A

6



AM0584-A

- 6 Measure the voltage at the breakout box pin 41, circuit 348 (P).

• Is the voltage reading B+?

→ **Yes**

GO to H4.

→ **No**

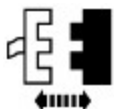
INSTALL a new powertrain control module.  
REFER to Section 303-14 . TEST the system for normal operation.

**H4** CHECK CIRCUIT 348 (P) FOR A SHORT TO B+

1



2



Function Selector Switch C234

3

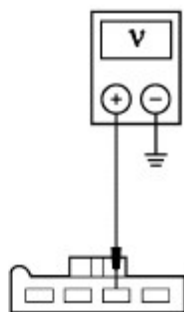


PCM C111

4



5



AM0582-A

- 5 Measure the voltage at the function selector switch connector pin C234-3, circuit 348 (P).

• **Is there voltage present?**

→ **Yes**

REPAIR circuit 348 (P) for a short to B+. TEST the system for normal operation.

→ **No**

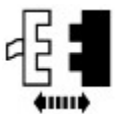
INSTALL a new function selector switch. REFER to Section 412-04. TEST the system for normal operation.

## H5 CHECK FOR A SHORTED CLUTCH INPUT

1



2



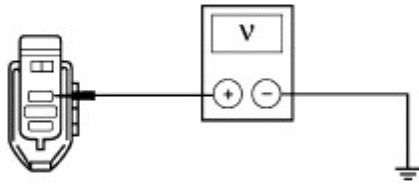
A/C Clutch Connector C166

3



4

- 4 Measure for voltage at the A/C clutch connector C166, circuit 321 (GY/W).



GL0225-A

• **Is there voltage present?**

→ **Yes**

GO to H6.

→ **No**

CHECK the clutch air gap. REFER to A/C Clutch Air Gap Adjustment in this section.

**H6 CHECK FOR A SHORTED A/C CLUTCH RELAY**

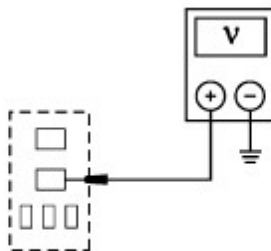
1



3



4



AM0600-A

2 Remove the A/C clutch relay from the power distribution box.

4 Measure the voltage at the A/C clutch relay connector pin 5, circuit 321 (GY/W).

• **Is there voltage present?**

→ **Yes**


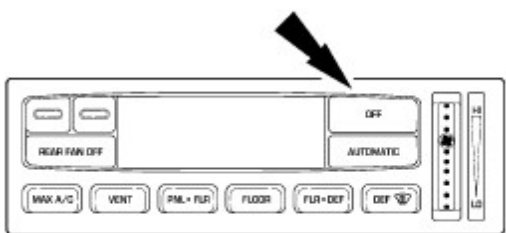


REPAIR circuit 321 (GY/W) for a short to B+.  
TEST the system for normal operation.



→ **No**

INSTALL a new A/C clutch relay. TEST the system for normal operation.

## PINPOINT TEST J: THE A/C IS ALWAYS ON — EATC

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>J1</b> CHECK PID WACF WITH THE A/C OFF	
<p>1 </p> <p>2 </p> <p>3 </p> <p>PCM PID WACF</p>	<p>2 Push the EATC off button.</p> <p>• <b>Does the PCM PID WACF read YES?</b></p> <p>→ <b>Yes</b> REPAIR circuit 331 (PK/Y) for a short to ground. TEST the system for normal operation.</p> <p>→ <b>No</b> GO to <u>J2</u>.</p>
<b>J2</b> CHECK PID ACCS WITH A/C OFF	
<p>1 </p> <p>PCM PID ACCS</p>	

- Does the PCM PID ACCS read ON?

→ **Yes**  
GO to J3.

→ **No**  
GO to J5.

### J3 CHECK FOR A FALSE INPUT SIGNAL TO THE PCM

**NOTE:** Do not directly probe the PCM wire harness connector.

1



2



PCM C111

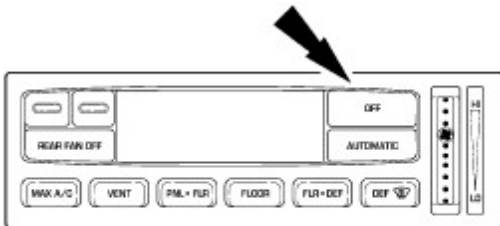
3 Connect the Rotunda EEC-V 104-Pin Breakout Box to the wire harness connector C111. Do not connect the breakout box to the PCM.

4



5

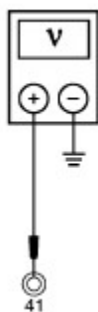
5 Push the EATC off button.



AM0852-B

6

6 Measure the voltage at the breakout box pin 41, circuit 348 (P).



AM0584-A

- **Is the voltage reading B+?**

→ **Yes**

GO to J4.

→ **No**

INSTALL a new powertrain control module.

REFER to Section 303-14. TEST the system for normal operation.

#### **J4** CHECK CIRCUIT 348 (P) FOR A SHORT TO B+

1



2



EATC Module C297

3

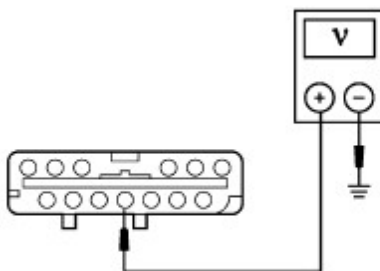


PCM C111

4



5



AM0856-A

5 Measure the voltage at the EATC module connector pin C297-11, circuit 348 (P).

- **Is there voltage present?**

→ **Yes**

REPAIR circuit 348 (P) for a short to B+. TEST the system for normal operation.

→ **No**

INSTALL a new EATC module. REFER to [Section 412-04](#). TEST the system for normal operation.

**J5 CHECK FOR A SHORTED CLUTCH INPUT**

1



2

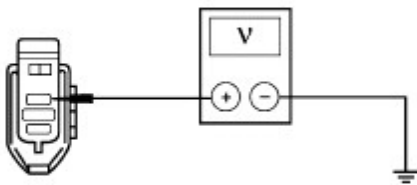


A/C Clutch Connector C166

3



4



GL0225-A

4 Measure for voltage at the A/C clutch connector C166, circuit 321 (GY/W).

• **Is there voltage present?**

→ **Yes**

GO to [J6](#).

→ **No**

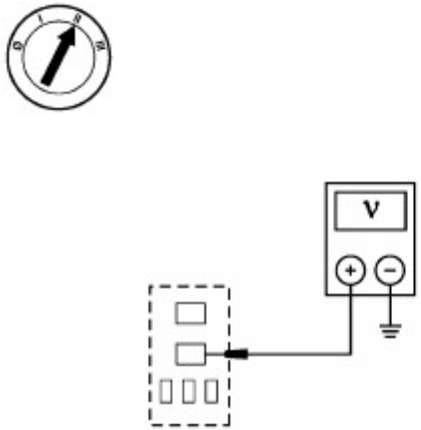
CHECK the clutch air gap. REFER to [A/C Clutch Air Gap Adjustment](#) in this section.

**J6 CHECK FOR A SHORTED A/C CLUTCH RELAY**


1

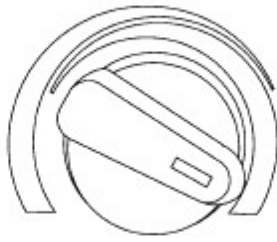


2 Remove the A/C clutch relay from the power distribution box.

<p>3</p>  <p>4</p> <p>AM0600-A</p>	<p>4 Measure the voltage at the A/C clutch relay connector pin 5, circuit 321 (GY/W).</p> <p>• <b>Is there voltage present?</b></p> <p>→ <b>Yes</b> REPAIR circuit 321 (GY/W) for a short to B+. TEST the system for normal operation.</p> <p>→ <b>No</b> INSTALL a new A/C clutch relay. TEST the system for normal operation.</p>
---	---

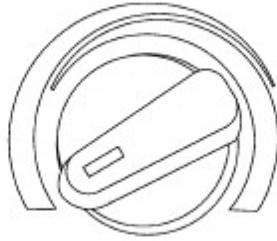
### PINPOINT TEST K: NO OPERATION IN ALL TEMPERATURE SETTINGS — MANUAL A/C

CONDITIONS	DETAILS/RESULTS/ACTIONS
<p><b>K1</b> CHECK TEMPERATURE CONTROL</p> <p>2</p>  <p>L10572-A</p> <p>3</p>	<p>1 Start the engine and run at idle. Allow the engine to reach normal operating temperature.</p> <p>2 Place the function selector switch in the FLOOR position.</p> <p>3 Adjust the temperature control to full warm position, and physically feel discharge air temperature at the heater outlet floor duct.</p>



L10573-A

4



L10574-A

- 4 Rotate temperature control to full cool position, and physically feel discharge air temperature at the heater outlet floor duct.

• **Does the discharge air temperature vary?**

→ **Yes**

Condition may be intermittent. ATTEMPT to RECREATE condition by WIGGLING all connectors, splices, crimps, etc. REPAIR as necessary.

→ **No**

GO to K2.

**K2 CHECK FUSE 10 (7.5A)**

1



2



Fuse 10 (7.5A)

• **Is fuse 10 (7.5A) OK?**

→ **Yes**

GO to K4.

→ **No**

INSTALL a new fuse 10 (7.5A). TEST the system for normal operation. If the fuse fails again, GO to K3.

**K3 CHECK CIRCUIT 1003 (GY/Y) FOR SHORT TO GROUND**

1

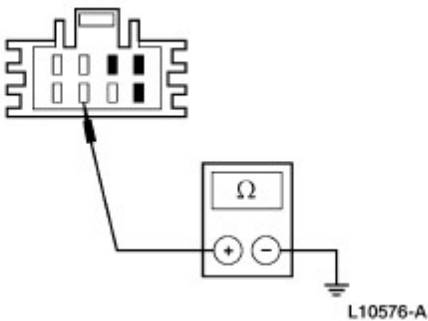


2



Blend Door Actuator C270

3



3

Measure the resistance between the blend door actuator C270-7, circuit 1003 (GY/Y), and ground.

• **Is the resistance greater than 10,000 ohms?**

→ **Yes**

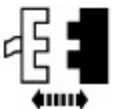
INSTALL a new fuse. INSTALL a new blend door actuator. TEST the system for normal operation.

→ **No**

REPAIR circuit 1003 (GY/Y). TEST the system for normal operation.

**K4 CHECK CIRCUIT 1003 (GY/Y) FOR OPEN**

1

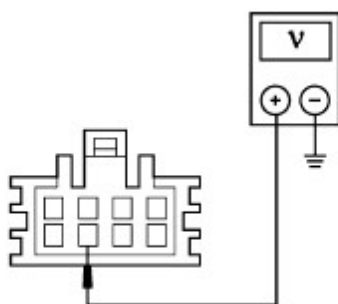


Blend Door Actuator C270

2



3



AM0622-A

- 3 Measure the voltage between the blend door actuator C270-7, circuit 1003 (GY/Y), and ground.

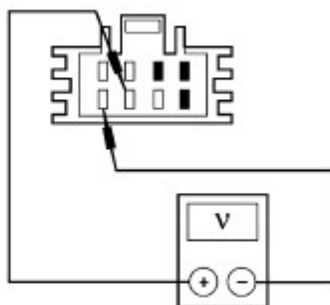
• Is the voltage greater than 10 volts?

→ **Yes**  
GO to K5.

→ **No**  
REPAIR circuit 1003 (GY/Y). TEST the system for normal operation.

#### K5 CHECK CIRCUIT 57 (BK) FOR OPEN

1



L10670-A

- 1 Measure the voltage between the blend door actuator C270-7, circuit 1003 (GY/Y), and the blend door actuator C270-8, circuit 57 (BK).

• Is the voltage greater than 10 volts?

→ **Yes**  
GO to K6.

→ **No**  
REPAIR circuit 57 (BK). TEST the system for normal operation.

#### K6 CHECK THE TEMPERATURE BLEND CONTROL SWITCH OPERATION

1



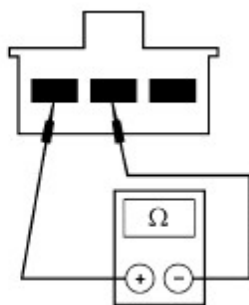


2



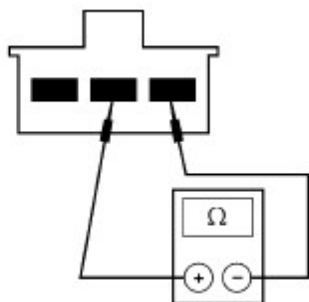
Temperature Blend Control Switch C277

3



GL1226-A

4



GL1227-A

- 3 Measure the resistance between the temperature blend control switch terminal 1 and terminal 2, while rotating the temperature control knob from full warm to full cool.

- 4 Measure the resistance between the temperature blend control switch terminal 3 and terminal 2 while rotating the temperature control knob from full warm to full cool.

- **Do the resistances vary from 150 ohms to 4700 ohms?**

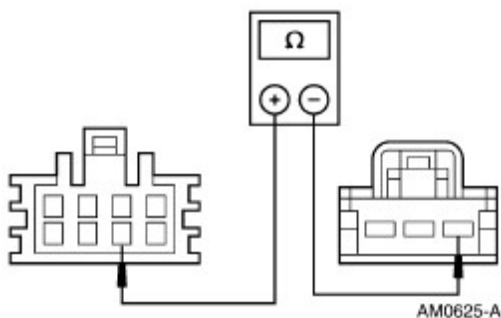
→ **Yes**  
GO to K7.

→ **No**  
INSTALL a new temperature blend control switch. TEST the system for normal operation.

**K7 CHECK CIRCUIT 359 (GY/R) FOR OPEN**

1

- 1 Measure the resistance between the temperature blend control switch C277-3, circuit 359 (GY/R), and the blend door actuator C270-6, circuit 359 (GY/R).



- **Is the resistance less than 5 ohms?**

→ **Yes**

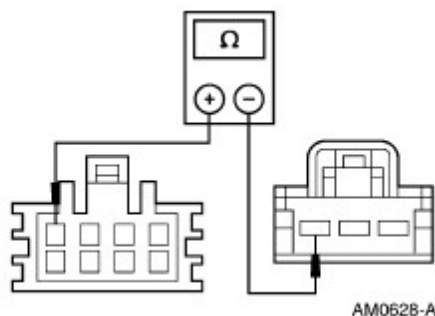
GO to K8.

→ **No**

REPAIR circuit 359 (GY/R). TEST the system for normal operation.

### **K8** CHECK CIRCUIT 660 (Y/LG) FOR OPEN

1



1

Measure the resistance between the temperature blend control switch C277-1, circuit 660 (Y/LG), and the blend door actuator C270-4, circuit 660 (Y/LG).

- **Is the resistance less than 5 ohms?**

→ **Yes**

GO to K9.

→ **No**

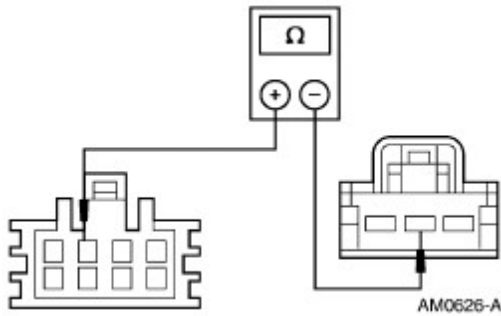
REPAIR circuit 660 (Y/LG). TEST the system for normal operation.

### **K9** CHECK CIRCUIT 773 (DG/O) FOR OPEN

1

1

Measure the resistance between the temperature blend control switch C277-2, circuit 773 (DG/O), and the blend door actuator C270-3, circuit 773 (DG/O).



- **Is the resistance less than 5 ohms?**

→ **Yes**

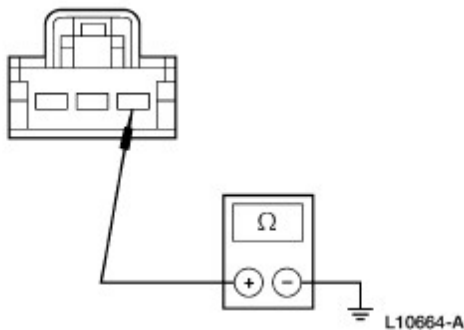
GO to K10.

→ **No**

REPAIR circuit 773 (DG/O). TEST the system for normal operation.

### **K10** CHECK CIRCUIT 359 (GY/R) FOR SHORT

1



1

Measure the resistance between the temperature blend control switch C277-3, circuit 359 (GY/R), and ground.

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

→ **Yes**

GO to K11.

→ **No**

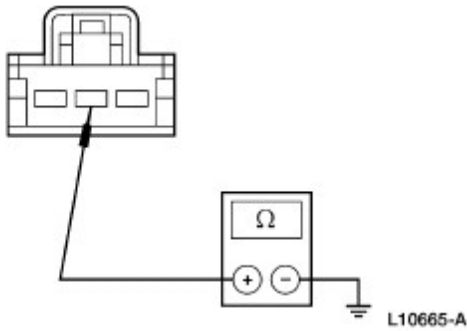
REPAIR circuit 359 (GY/R). TEST the system for normal operation.

### **K11** CHECK CIRCUIT 773 (DG/O) FOR SHORT TO GROUND

1

1

Measure the resistance between the temperature blend control switch C277-2, circuit 773 (DG/O), and ground.



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

→ **Yes**

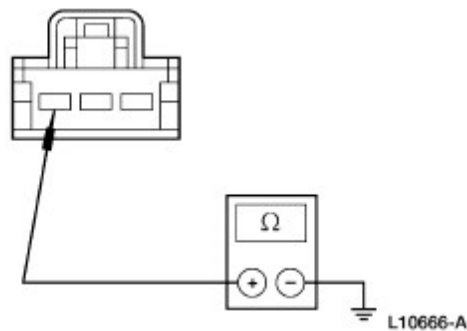
GO to K12.

→ **No**

REPAIR circuit 773 (DG/O). TEST the system for normal operation.

#### **K12 CHECK CIRCUIT 660 (Y/LG) FOR SHORT TO GROUND**

1



1

Measure the resistance between the temperature blend control switch C277-1, circuit 660 (Y/LG), and ground.

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

→ **Yes**

INSTALL a new A/C electronic door actuator motor. TEST the system for normal operation.

→ **No**

REPAIR circuit 660 (Y/LG). TEST the system for normal operation.

#### **PINPOINT TEST L: THE BLOWER MOTOR DOES NOT OPERATE — MANUAL A/C**

CONDITIONS	DETAILS/RESULTS/ACTIONS
------------	-------------------------

**L1 CHECK BLOWER MOTOR OPERATION****1****2**

L10572-A

**3**

L10527-A

**4**

GL0437-A

**2** Turn the A/C function switch to the FLOOR position.

**3** Turn the blower motor switch to the high position.

**4** Turn the blower motor switch to the low position.

**• Does the blower motor operate?**

→ **Yes**

WIGGLE the wires and CHECK for intermittent operation. REPAIR as necessary. TEST the system for normal operation.

→ **No**

If the blower motor operates in high only, Go To Pinpoint Test N.

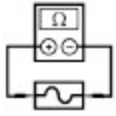
If the blower motor operates in all settings

except high, Go To Pinpoint Test Q.

If the blower motor does not operate at all, GO to L2.

## L2 CHECK I/P FUSE 6 (7.5A)

1



I/P Fuse 6 (7.5A)

### • Is fuse 6 (7.5A) OK?

→ **Yes**  
GO to L4.

→ **No**  
INSTALL a new fuse 6 (7.5A). TEST the system for normal operation. If the fuse fails again, GO to L3.

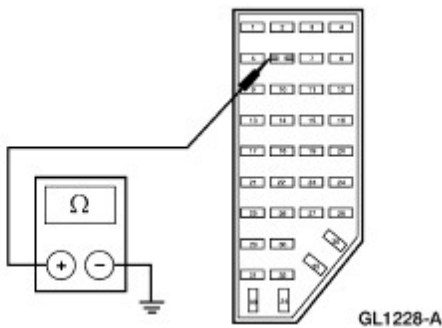
## L3 CHECK CIRCUIT 364 (BK/LG) FOR SHORT TO GROUND

1



Blower Motor Relay

2

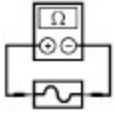






2 Measure the resistance between I/P fuse panel fuse 6 (7.5A), pin 1, and ground.

### • Is the resistance greater than 10,000 ohms?

→ **Yes**  
INSTALL a new blower motor relay. TEST the system for normal operation.

→ **No**

REPAIR circuit 364 (BK/LG). TEST the system for normal operation.	
<b>L4 CHECK MAXI-FUSE 9 (50A)</b>	
<div><div>1</div><div></div><div>maxi-fuse 9 (50A)</div></div>	<ul style="list-style-type: none"><li>• <b>Is the maxi-fuse 9 (50A) OK?</b></li></ul> <p>→ <b>Yes</b> GO to <u>L7</u>.</p> <p>→ <b>No</b> INSTALL a new maxi-fuse 9 (50A). TEST the system for normal operation. If the fuse fails again, GO to <u>L5</u>.</p>
<b>L5 CHECK BLOWER MOTOR FOR SHORT TO GROUND</b>	
<div><div>1</div><div></div></div> <div><div>2</div><div></div><div>Blower Motor C154</div></div> <div><div>4</div><div></div></div> <div><div>5</div><div></div></div> <div>L10527-A</div>	<div><div>3</div><div>Replace maxi-fuse 9 (50A).</div></div> <div><div>5</div><div>Rotate the blower motor switch to the high position.</div></div>

- **Is the maxi-fuse 9 (50A) OK?**

→ **Yes**

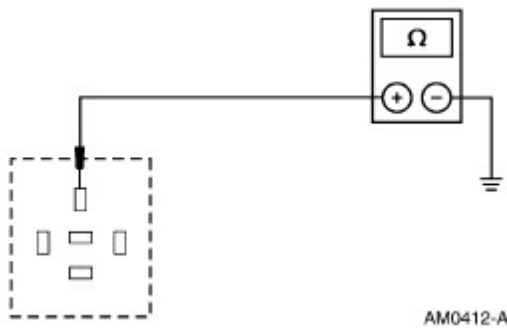
INSTALL a new blower motor. TEST the system for normal operation.

→ **No**

GO to L6.

### **L6** CHECK CIRCUIT 371 (PK/W) FOR SHORT TO GROUND

1



1

Measure the resistance between blower motor relay connector pin 30, circuit 371 (PK/W), and ground.

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

→ **Yes**

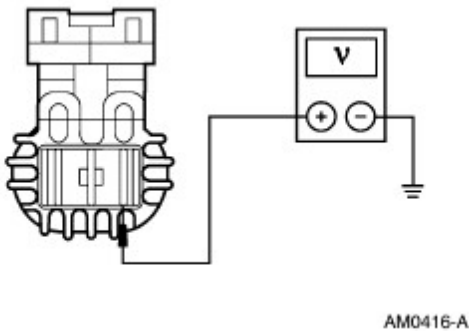
REPAIR circuit 364 (BK/LG) between the power distribution box and blower motor relay. TEST the system for normal operation.

→ **No**

REPAIR circuit 371 (PK/W). TEST the system for normal operation.

### **L7** CHECK CIRCUIT 371 (PK/W) FOR VOLTAGE

1



1

Measure the voltage between blower motor C154, circuit 371 (PK/W), and ground.

- **Is the voltage greater than 10 volts?**

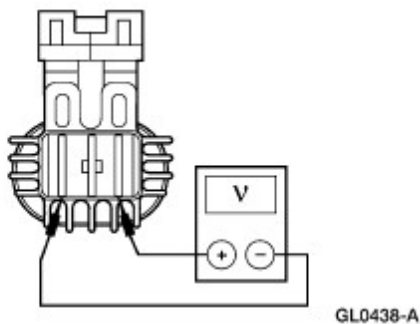


→ **Yes**  
GO to L8.

→ **No**  
GO to L9.

### **L8** CHECK CIRCUIT 181 (BR/O)

1



1 Measure the voltage between blower motor C154, circuit 371 (PK/W), and blower motor C154, circuit 181 (BR/O).

• **Is the voltage greater than 10 volts?**

→ **Yes**  
INSTALL a new blower motor. TEST the system for normal operation.

→ **No**  
GO to L15.

### **L9** CHECK CIRCUIT 364 (BK/LG) FOR OPEN

1

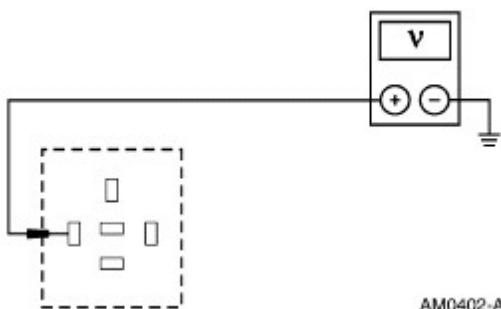


2



Blower Motor Relay

3



3 Measure the voltage between blower motor relay connector pin 86, circuit 364 (BK/LG), and ground.

- **Is the voltage greater than 10 volts?**

→ **Yes**

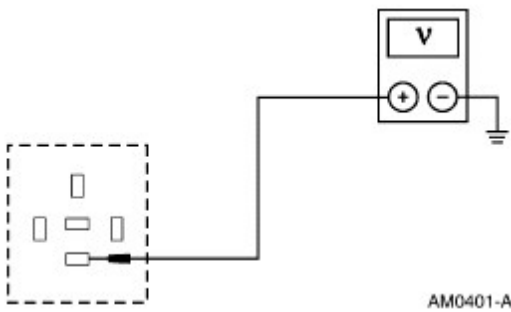
GO to L10.

→ **No**

REPAIR circuit 364 (BK/LG) between the I/P fuse panel and blower motor relay. TEST the system for the normal operation.

### **L10** CHECK VOLTAGE AT THE BLOWER MOTOR RELAY

1



1

Measure the voltage between blower motor relay connector pin 87, circuit 364 (BK/LG), and ground.

- **Is the voltage greater than 10 volts?**

→ **Yes**

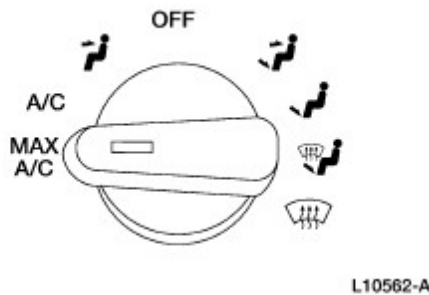
GO to L11.

→ **No**

REPAIR circuit 364 (BK/LG) between the power distribution box and the blower motor relay. TEST the system for normal operation.

### **L11** CHECK CIRCUIT 260 (R/O) FOR OPEN

1



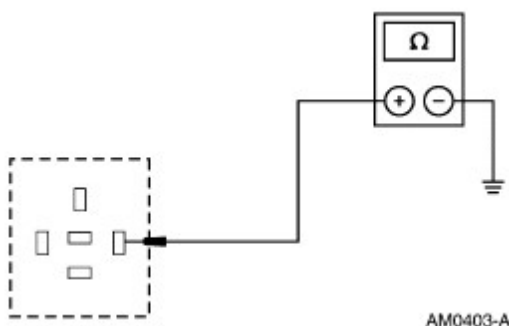
1

Turn the A/C function switch to MAX A/C.

2

2

Measure the resistance between blower motor relay connector pin 85, circuit 260 (R/O), and ground.



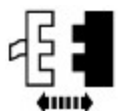
- **Is the resistance less than 5 ohms?**

→ **Yes**  
GO to L14.

→ **No**  
GO to L12.

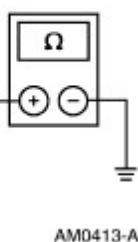
### **L12** CHECK CIRCUIT 57 (BK) FOR OPEN

1



A/C Function Switch C231

2



- 2 Measure the resistance between A/C function switch C231-3, circuit 57 (BK), and ground.

- **Is the resistance less than 5 ohms?**

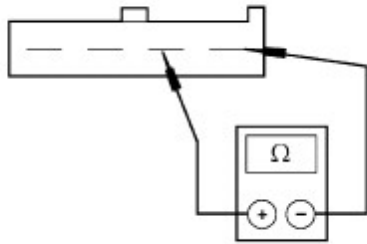
→ **Yes**  
GO to L13.

→ **No**  
REPAIR circuit 57 (BK). TEST the system for normal operation.

### **L13** CHECK A/C FUNCTION SWITCH

1

- 1 Measure the resistance between A/C function switch terminal 1 and terminal 2, in all A/C



GL1229-A

function switch positions, except OFF.

• **Is the resistance less than 5 ohms?**

→ **Yes**

REPAIR circuit 260 (R/O). TEST the system for normal operation.

→ **No**

INSTALL a new A/C function switch. TEST the system for normal operation.

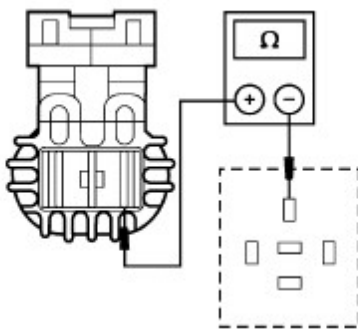
**L14 CHECK CIRCUIT 371 (PK/W) FOR OPEN**

1



Blower Motor C154

2



AM0404-A

2

Measure the resistance between blower motor relay connector pin 30, circuit 371 (PK/W), and blower motor C154, circuit 371 (PK/W).

• **Is the resistance less than 5 ohms?**

→ **Yes**

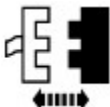
INSTALL a new blower motor relay. TEST the system for normal operation.

→ **No**

REPAIR circuit 371 (PK/W). TEST the system for normal operation.

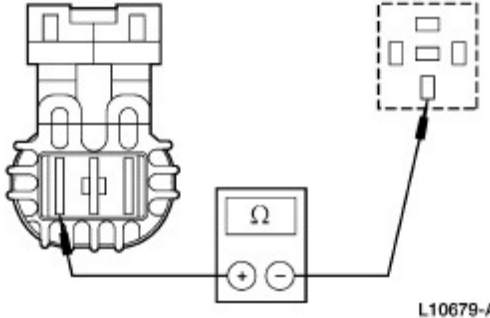
**L15 CHECK CIRCUIT 181 (BR/O) FOR OPEN**

**1**



High Speed Blower Motor Relay

**2**



L10679-A


**2** Measure the resistance between blower motor C154, circuit 181 (BR/O), and high speed blower motor relay connector pin 30, circuit 181 (BR/O).

**• Is the resistance less than 5 ohms?**

→ **Yes**  
INSTALL a new high speed blower motor relay.  
TEST the system for normal operation.

→ **No**  
REPAIR circuit 181 (BR/O) for open. TEST the system for normal operation.

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

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>M1</b> VERIFY THE BLOWER MOTOR OPERATION	
<p><b>1</b></p> 	<p><b>2</b> Press the VENT button on the EATC module. Adjust the blower motor setting to LO and then to HI.</p> <p><b>• Is the blower motor inoperative in all settings?</b></p> <p>→ <b>Yes</b> GO to <u>M2</u>.</p>

→ **No**  
Go To Pinpoint Test P.

**M2 CHECK FOR VOLTAGE TO THE BLOWER MOTOR**

1



2

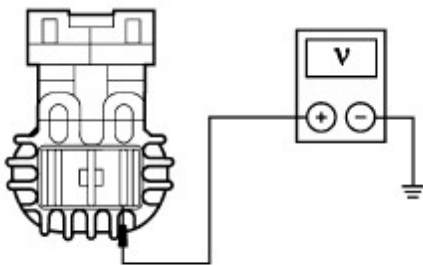


Blower Motor C154

3



4



AM0416-A

4 Measure the voltage between the blower motor C154, circuit 371 (PK/WH) and ground.

• Is the voltage greater than 10 volts?

→ **Yes**  
GO to M3.

→ **No**  
GO to M8.

**M3 CHECK CIRCUIT 57 (BK)**

1



2

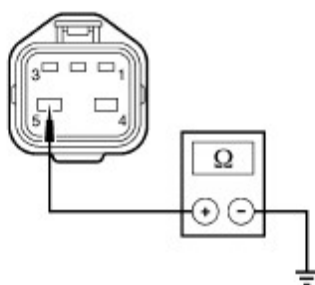


Blower Motor Speed Control C179

3



4



A0032576

- 4 Measure the resistance between the blower motor speed control C179 pin 5, circuit 57 (BK) and ground.

• **Is the resistance less than 5 ohms?**

→ **Yes**  
GO to M4 .

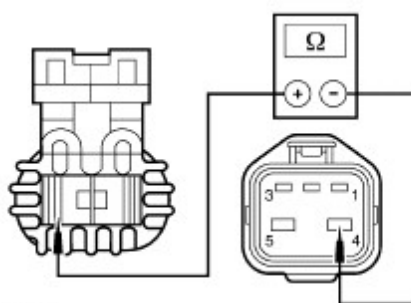
→ **No**  
REPAIR circuit 57 (BK). TEST the system for normal operation.

#### M4 CHECK CIRCUIT 261 (OG/BK)

1



2



A0032577

- 2 Measure the resistance between the blower motor C154, circuit 261 (OG/BK) and the blower motor speed control C179 pin 4, circuit 261 (OG/BK).

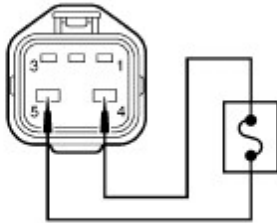
• **Is the resistance less than 5 ohms?**

→ **Yes**  
GO to M5 .

→ **No**  
REPAIR circuit 261 (OG/BK). TEST the system for normal operation.

**M5 CHECK THE BLOWER MOTOR****1**

Blower Motor C154

**2**

A0032579

**3**

- 2** Connect a fused jumper lead between the blower motor speed control C179 pin 4, circuit 261 (OG/BK) and ground.

**• Does the blower motor operate?**→ **Yes**GO to M6.→ **No**

INSTALL a new blower motor. TEST the system for normal operation.

**M6 CHECK CIRCUIT 775 (BN/OG)****1****3**

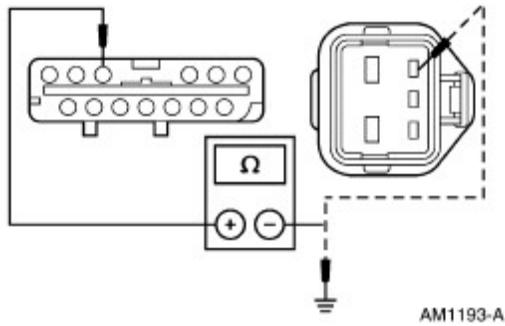
EATC Module C298

**4**

- 2** Remove the fused jumper lead from the blower motor speed control C179.

- 4** Measure the resistance between the EATC module C298 pin 24, circuit 775 (BN/OG) and the blower motor speed control C179 pin 3, circuit 775 (BN/OG), and measure the





resistance between the EATC module C298 pin 24, circuit 775 (BN/OG) and ground.

- **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?**

→ **Yes**

GO to M7.

→ **No**

REPAIR circuit 775 (BN/OG). TEST the system for normal operation.

## M7 CHECK THE EATC MODULE OUTPUT

1



EATC Module C298

2



Blower Motor Speed Control C179

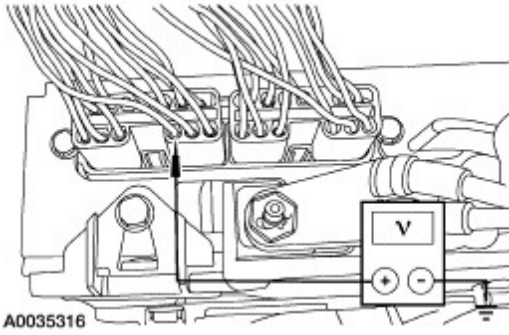
3



5

4 Adjust the blower motor speed to HI (7 bars).

5 Measure the voltage between the EATC module C298 pin 24, circuit 775 (BN/OG) and ground by back-probing the EATC module C298.



- **Is the voltage within 2 volts of battery voltage?**

→ **Yes**

INSTALL a new blower motor speed control.  
TEST the system for normal operation.

→ **No**

INSTALL a new EATC module. TEST the system for normal operation.

### M8 CHECK CIRCUIT 371 (PK/WH)

1

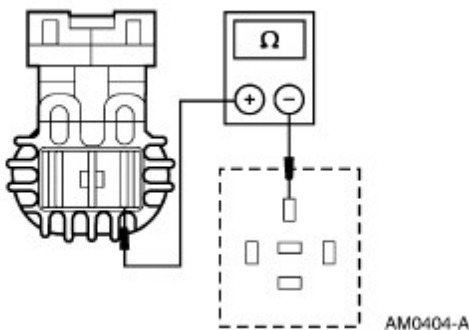


2



Blower Motor Relay

3



- 3 Measure the resistance between the blower motor C154, circuit 371 (PK/WH) and the blower motor relay socket pin 30, circuit 371 (PK/WH).

- **Is the resistance less than 5 ohms?**

→ **Yes**

GO to M9.

→ **No**

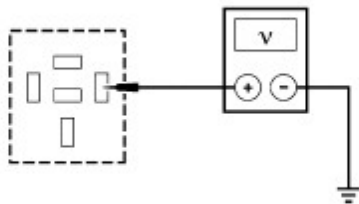
REPAIR circuit 371 (PK/WH). TEST the system for normal operation.

**M9** CHECK CIRCUIT 364 (BK/LG), COIL SIDE

1



2



A0020210

2

Measure the voltage between the blower motor relay socket pin 86, circuit 364 (BK/LG) and ground.

• **Is the voltage greater than 10 volts?**

→ **Yes**

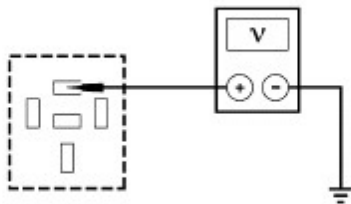
GO to M10.

→ **No**

REPAIR circuit 364 (BK/LG). TEST the system for normal operation.

**M10** CHECK CIRCUIT 364 (BK/LG), SWITCH SIDE

1



A0013861

1

Measure the voltage between the blower motor relay socket pin 87, circuit 364 (BK/LG) and ground.

• **Is the voltage greater than 10 volts?**

→ **Yes**

GO to M11.

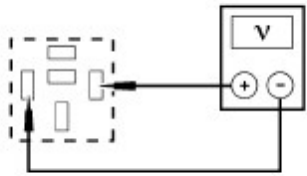
→ **No**

REPAIR circuit 364 (BK/LG). TEST the system for

normal operation.

### M11 CHECK THE EATC MODULE OUTPUT

1



A0034149

- 1 Measure the voltage between the blower motor relay socket pin 86, circuit 364 (BK/LG) and socket pin 85, circuit 575 (VT/BK).

- **Is the voltage greater than 10 volts?**

→ **Yes**

INSTALL a new blower motor relay. TEST the system for normal operation.

→ **No**

GO to M12.

### M12 CHECK CIRCUIT 575 (VT/BK) FOR A SHORT TO VOLTAGE

1

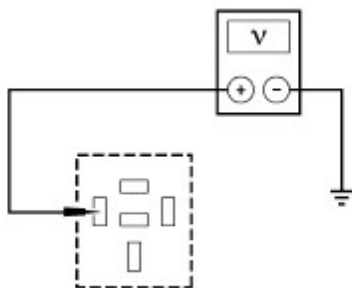


EATC Module C297

2



3

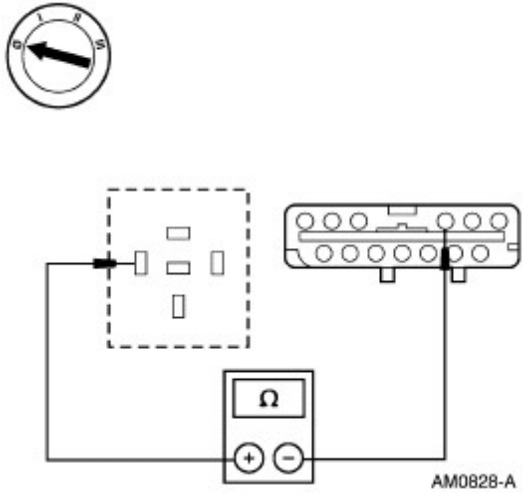


A0013862


- 3 Measure the voltage between the blower motor relay socket pin 85, circuit 575 (VT/BK) and ground.

- **Is voltage present?**

→ **Yes**

	<p>REPAIR circuit 575 (VT/BK). TEST the system for normal operation.</p> <p>→ <b>No</b> GO to <u>M13</u>.</p>
<b>M13 CHECK CIRCUIT 575 (VT/BK)</b>	
<p>1</p>  <p>2</p>	<p>2 Measure the resistance between the EATC module C297 pin 17, circuit 575 (VT/BK) and the blower motor relay socket pin 85, circuit 575 (VT/BK).</p> <p>• <b>Is the resistance less than 5 ohms?</b></p> <p>→ <b>Yes</b> INSTALL a new EATC module. TEST the system for normal operation.</p> <p>→ <b>No</b> REPAIR circuit 575 (VT/BK). TEST the system for normal operation.</p>

**PINPOINT TEST N: THE BLOWER MOTOR DOES NOT OPERATE CORRECTLY — MANUAL A/C**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>N1 CHECK BLOWER LOW SPEED OPERATION</b>	
<p>1</p>  <p>2</p>	<p>2 Turn the A/C function switch to the FLOOR position.</p>



L10572-A

**3**

GL0437-A

**3** Turn the blower motor switch to low.**• Does the blower motor operate?**

→ **Yes**  
GO to N5.

→ **No**  
GO to N2.

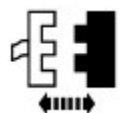
**N2 CHECK BLOWER MEDIUM/LOW OPERATION****1**

GL1231-A

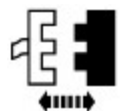
**1** Turn the blower motor switch to medium/low.**• Does the blower motor operate?**

→ **Yes**  
GO to N4.

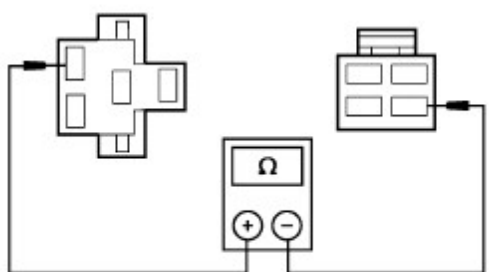
→ **No**  
GO to N3.

**N3 CHECK CIRCUIT 752 (Y/R) FOR OPEN****1**

Blower Motor Switch C230

**2**

Blower Motor Resistor C153

**3**

AM0376-B

- 3** Measure the resistance between blower motor switch C230-4, circuit 752 (Y/R), and blower motor resistor C153-3, circuit 752 (Y/R).

• **Is the resistance less than 5 ohms?**

→ **Yes**  
GO to N4.

→ **No**  
REPAIR circuit 752 (Y/R). TEST the system for normal operation.

**N4 CHECK BLOWER MEDIUM/HIGH OPERATION****1**

GL1234-A

- 1** Turn the blower motor switch to medium/high.

• **Does the blower motor operate?**

→ **Yes**

GO to N6.

→ **No**  
GO to N5.

### **N5** CHECK CIRCUIT 754 (LG/W) FOR OPEN

1



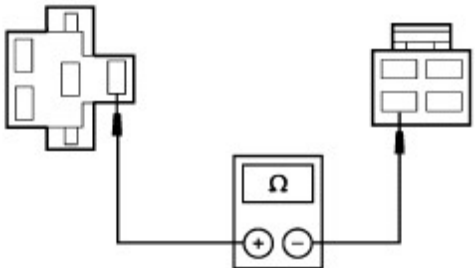
Blower Motor Switch C230

2



Blower Motor Resistor C153

3



AM0378-B

3 Measure the resistance between blower motor switch C230-3, circuit 754 (LG/W), and blower motor resistor C153-1, circuit 754 (LG/W).

• **Is the resistance less than 5 ohms?**

→ **Yes**  
GO to N6.

→ **No**  
REPAIR circuit 754 (LG/W). TEST the system for normal operation.

### **N6** CHECK THE HIGH SPEED BLOWER MOTOR RELAY FOR VOLTAGE

1

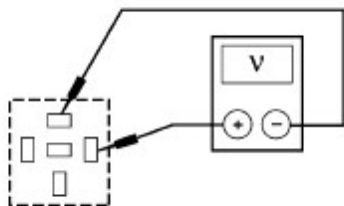


High Speed Blower Motor Relay

2

2 Measure the voltage between high speed blower motor relay connector pin 87, circuit 261 (O/BK), and high speed blower motor relay connector pin 86, circuit 371 (PK/W).





GL1513-A

- **Is the voltage greater than 10 volts?**

→ **Yes**

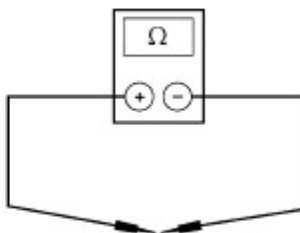
INSTALL a new high speed blower motor relay.  
TEST the system for normal operation.

→ **No**

GO to N7.

### **N7 CHECK A/C BLOWER MOTOR RESISTOR**

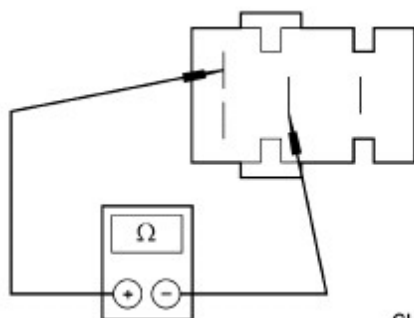
1



L10681-A

1 Zero the multimeter by touching the leads together and recording the resistance value.

2



GL1232-A

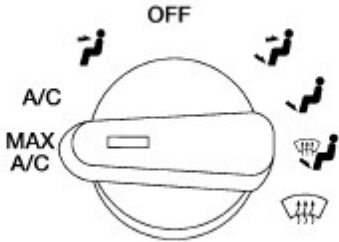
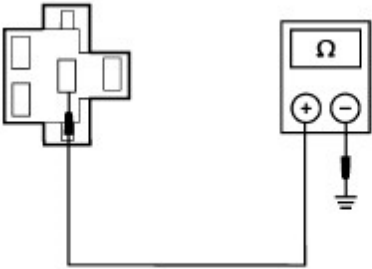


2 Measure the resistance between A/C blower motor resistor terminal 2 and A/C blower motor resistor terminal 4. Subtract the resistance value found when zeroing the multimeter.

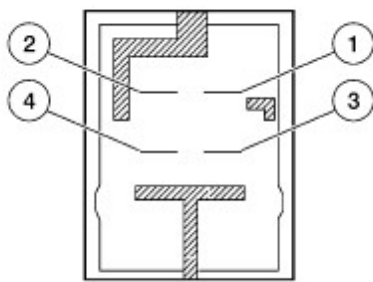
- **Is the resistance between 3.375 and 4.125 ohms?**

→ **Yes**

GO to N8.

→ **No**

INSTALL a new A/C blower motor resistor. TEST the system for normal operation.	
<b>N8 CHECK CIRCUIT 260 (R/O) FOR OPEN</b>	
<p>1</p>  <p>L10562-A</p> <p>2</p>  <p>AM0374-B</p>	<p>1 Turn the A/C function switch to MAX A/C.</p> <p>2 Measure the resistance between blower motor resistor C153-2, circuit 260 (R/O), and ground.</p> <p>• <b>Is the resistance less than 5 ohms?</b></p> <p>→ <b>Yes</b> GO to <u>N9</u>.</p> <p>→ <b>No</b> REPAIR circuit 260 (R/O). TEST the system for normal operation.</p>
<b>N9 CHECK BLOWER MOTOR SWITCH</b>	
<p>1</p>  <p>2</p>  <p>Blower Motor Switch</p> <p>3</p>	<p>3 Measure the resistance of the blower motor switch. Refer to the chart shown.</p>



GL1230-A

**Blower Switch Resistance Test**

Switch Position	Resistance Between Terminals
Low	None
Medium/Low	2 and 3 only
Medium/High	2, 3 and 4 only
High	1, 2 and 4 only

- **Is the resistance less than 5 ohms?**

→ **Yes**

REPAIR circuit 261 (O/BK). TEST the system for normal operation.

→ **No**

INSTALL a new blower motor switch. TEST the system for normal operation.

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

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>P1</b> VERIFY THE BLOWER MOTOR OPERATION	
<b>1</b>	<b>2</b> Press the VENT button on the EATC module. Adjust the blower motor setting to LO and then to HI. <ul style="list-style-type: none"> <li>• <b>Does the blower motor operate at any setting?</b></li> </ul> → <b>Yes</b> GO to <u>P2</u> . → <b>No</b> <u>Go To Pinpoint Test M.</u>
<b>P2</b> CHECK THE STEERING WHEEL CONTROLS	
<b>1</b>	



2



Clockspring C220

3



- 4 Adjust the blower motor setting to LO and then to HI.

- Does the blower motor speed decrease to LO, then increase to HI?

→ **Yes**

Go To Pinpoint Test T.

→ **No**

GO to P3.

### P3 CHECK CIRCUIT 261 (OG/BK)

1



2



Blower Motor Speed Control C179

3



- Does the blower motor operate?

→ **Yes**

REPAIR circuit 261 (O/BK). TEST the system for normal operation.

→ **No**  
GO to P4.

**P4 CHECK BLOWER MOTOR SPEED CONTROL**

1



2



Blower Motor Speed Control C176

3



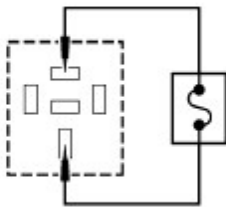
EATC Module C297 and C298

4



Blower Motor Relay

5



A0032587

5 Connect a fused jumper lead between the blower motor relay socket pin 30, circuit 371 (PK/WH) and socket pin 87, circuit 364 (BK/LG).

• **Does the blower motor operate?**

→ **Yes**  
INSTALL a new blower motor speed control.  
TEST the system for normal operation.

→ **No**  
GO to P5.

**P5 CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR AN OPEN**

1



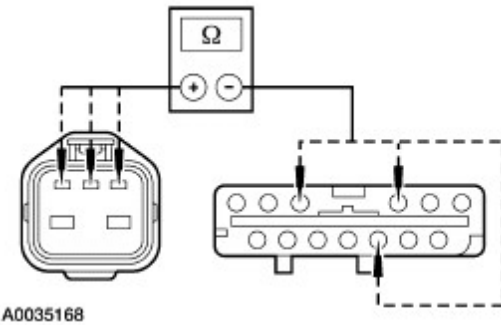
Blower Motor Relay

2



Blower Motor Speed Control C179

3



3 Measure the resistance between the blower motor speed control C179:

- pin 1, circuit 184 (TN/OG) and the EATC module C298 pin 10, circuit 184 (TN/OG).
- pin 2, circuit 181 (BN/OG) and the EATC module C298 pin 23, circuit 181 (BN/OG).
- pin 3, circuit 775 (WH/PK) and the EATC module C298 pin 24, circuit 775 (WH/PK).

• **Are the resistances less than 5 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 A SHORT TO VOLTAGE

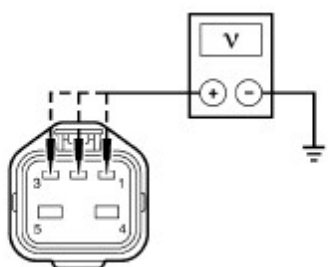
1



2

2 Measure the voltage between the blower motor speed control C179:

- pin 1, circuit 184 (TN/OG) and ground.
- pin 2, circuit 181 (BN/OG) and ground.
- pin 3, circuit 775 (WH/PK) and ground.



A0033862

• **Is voltage present?**

→ **Yes**

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

→ **No**

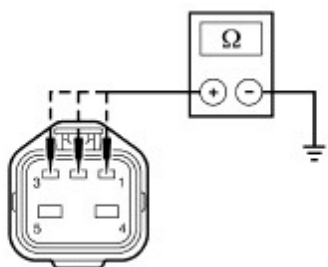
GO to P7.

**P7** CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR A SHORT TO GROUND

1



2



A0033863

2

Measure the resistance between the blower motor speed control C179:

- pin 1, circuit 184 (TN/OG) and ground.
- pin 2, circuit 181 (BN/OG) and ground.
- pin 3, circuit 775 (WH/PK) and ground.

• **Are the resistances greater than 10,000 ohms?**

→ **Yes**

GO to P8.

→ **No**

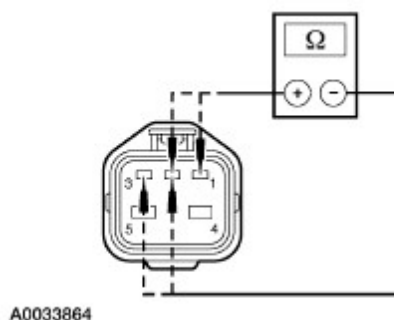
REPAIR the affected circuit. TEST the system for normal operation.

**P8** CHECK THE BLOWER MOTOR SPEED CONTROL CIRCUITS FOR A SHORT

1

1

Measure the resistance between the blower motor speed control C179:



- pin 1, circuit 184 (TN/OG) and pin 2, circuit 181 (BN/OG).
- pin 1, circuit 184 (TN/OG) and pin 3, circuit 775 (WH/PK).
- pin 2, circuit 181 (BN/OG) and pin 3, circuit 775 (WH/PK).

• **Are the resistances greater than 10,000 ohms?**

→ **Yes**

GO to P9.

→ **No**

REPAIR the affected circuits. TEST the system for normal operation.

## **P9** CHECK THE EATC MODULE HIGH BLOWER OUTPUT

1



EATC Module C297 and C298

2



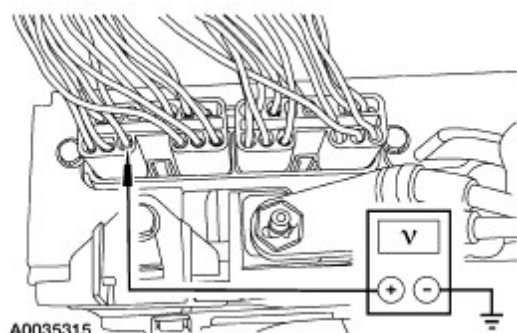
Blower Motor Speed Control C179

3



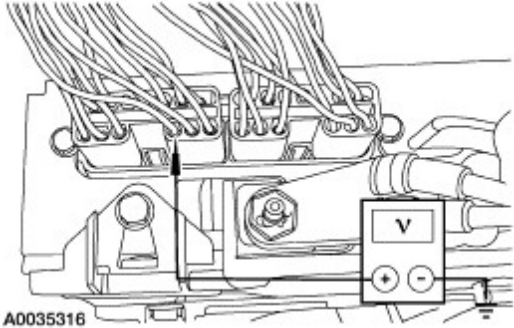
3 Adjust the blower motor speed to HI (7 bars).

4




4 Measure the voltage between the EATC module C298 pin 24, circuit 775 (WH/PK) and ground by back-probing the EATC module C298.



	<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 <u>P10</u>.</p> <p>→ <b>No</b> INSTALL a new EATC module. TEST the system for normal operation.</p>
<b>P10 CHECK THE EATC MODULE BLOWER CONTROL OUTPUT</b>	
<p><b>2</b></p>  <p>A0035316</p>	<p><b>1</b> Adjust the blower motor speed to LO (1 bar).</p> <p><b>2</b> Measure the voltage between the EATC module C298 pin 23, circuit 181 (BN/OG) and ground by back-probing the EATC module C298.</p> <ul style="list-style-type: none"> <li>• <b>Is the voltage greater than 1 volt?</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> INSTALL a new EATC module. TEST the system for normal operation.</p>

### PINPOINT TEST Q: NO OPERATION IN HIGH BLOWER SETTING — MANUAL A/C

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>Q1 CHECK BLOWER MOTOR SPEED</b>	
<p><b>1</b></p>  <p><b>2</b></p>	<p><b>2</b> Turn the A/C function switch to the FLOOR position.</p>



L10572-A

3



L10527-A

3 Turn the blower motor switch to high.

• Does the blower motor operate in high?

→ **Yes**

CYCLE blower motor switch from high to low several times. If blower operates each time, advise owner of system operation. If blower does not operate in high each time, INSTALL a new blower motor switch.

→ **No**

GO to Q2.

**Q2** CHECK BLOWER MOTOR SWITCH

1



2



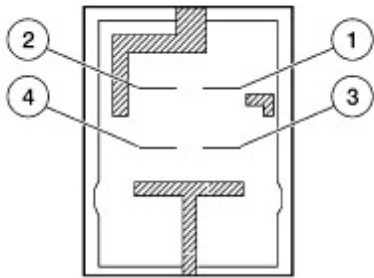
Blower Motor Switch C230

3

3 Measure the resistance of the blower motor switch. Refer to the chart shown.

**Blower Switch Resistance Test**

Switch	Resistance Between
--------	--------------------



GL1230-A

Position	Terminals
Low	None
Medium/Low	2 and 3 only
Medium/High	2, 3 and 4 only
HIGH	1, 2 and 4 only

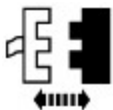
• Is the resistance less than 5 ohms?

→ **Yes**  
GO to Q3.

→ **No**  
INSTALL a new blower motor switch. TEST the system for normal operation.

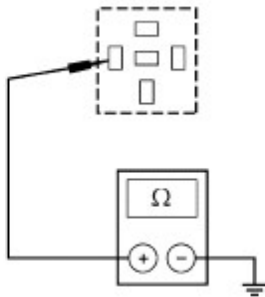
**Q3** CHECK CIRCUIT 261 (O/BK) FOR OPEN

1



High Speed Blower Motor Relay

2



L10691-A

2 Measure the resistance between high speed blower motor relay connector pin 85, circuit 261 (O/BK), and ground.

• Is the resistance 5 ohms or less?

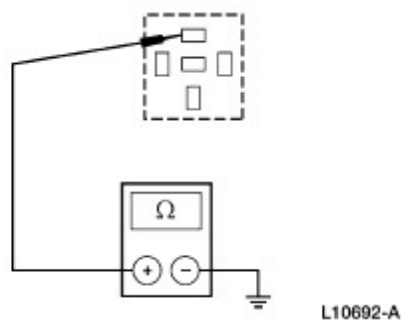
→ **Yes**  
GO to Q4.

→ **No**  
REPAIR circuit 261 (O/BK). TEST the system for normal operation.

**Q4** CHECK CIRCUIT 57 (BK) FOR OPEN

1

1 Measure the resistance between high speed



blower motor relay connector pin 87, circuit 57 (BK), and ground.

- **Is the resistance 5 ohms or less?**

→ **Yes**  
GO to Q5.

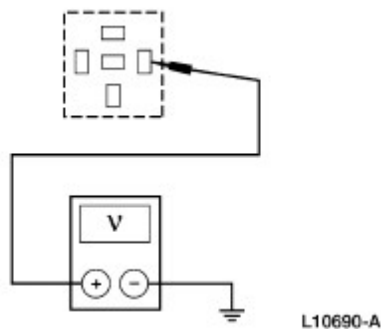
→ **No**  
REPAIR circuit 57 (BK). TEST the system for normal operation.

#### **Q5 CHECK CIRCUIT 371 (PK/W) FOR BATTERY VOLTAGE**

1



2





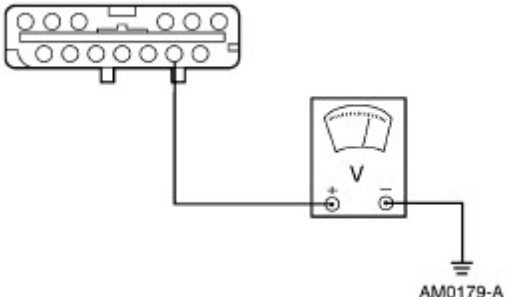
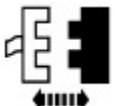
2 Turn the A/C function switch to any position except OFF. Measure the voltage between the high speed blower motor relay connector pin 86, circuit 371 (PK/W), and the ground.

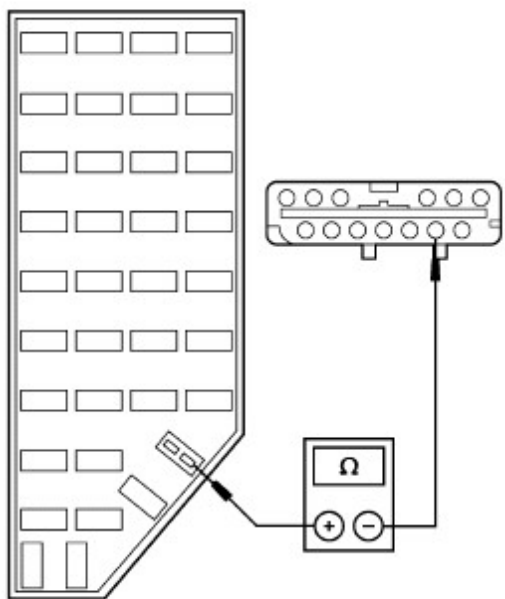
- **Is the voltage greater than 10 volts?**

→ **Yes**  
INSTALL a new high speed blower motor relay.  
TEST the system for normal operation.

→ **No**  
REPAIR circuit 371 (PK/W). TEST the system for normal operation.

### **PINPOINT TEST R: THE TEMPERATURE SET POINT DOES NOT REPEAT AFTER TURNING THE IGNITION SWITCH OFF**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>R1</b> CHECK THE MEMORY BACKUP SUPPLY TO THE EATC MODULE	
<p>1 </p> <p>2  EATC Module C298</p> <p>3 </p>	<p>3 Measure the voltage between the EATC module connector pin C298-2, circuit 54 (LG/Y) and ground.</p> <p>• <b>Is the voltage greater than 10 volts?</b></p> <p>→ <b>Yes</b> INSTALL a new EATC module. TEST the system for normal operation.</p> <p>→ <b>No</b> GO to <u>R2</u>.</p>
<b>R2</b> CHECK CIRCUIT 54 (LG/Y) FOR AN OPEN	
<p>1  Fuse Junction Panel Fuse 36 (7.5A)</p> <p>2</p>	<p>2 Measure the resistance between the fuse junction panel fuse 36 socket at circuit 54 (LG/Y) and the EATC connector pin C298-2.</p>



AM0835-A

• **Is the resistance less than 5 ohms?**


→ **Yes**

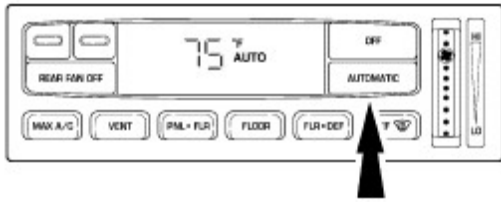
INSTALL a new EATC module. TEST the system for normal operation.

→ **No**

REPAIR circuit 54 (LG/Y) for an open. TEST the system for normal operation.

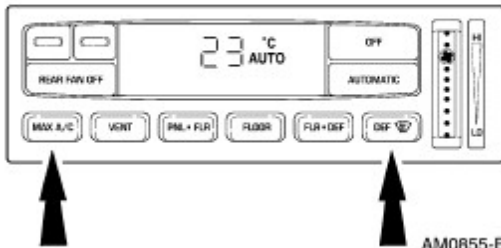
**PINPOINT TEST S: THE TEMPERATURE DISPLAY WILL NOT SWITCH BETWEEN CELSIUS AND FAHRENHEIT**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>S1</b> CHECK THE EATC °C TO °F DISPLAY	
<div><div>1</div><div></div></div> <div><div>2</div></div>	<div><div>2</div> Press the AUTOMATIC button.</div>



AM0811-B

3



AM0855-B

- 3 Press the MAX A/C and DEFROST buttons simultaneously for at least 0.75 second.

- Did the display alternate between °C and °F?

→ **Yes**  
GO to S2.

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

## S2 CHECK CIRCUIT 506 (R)

1



EATC C298

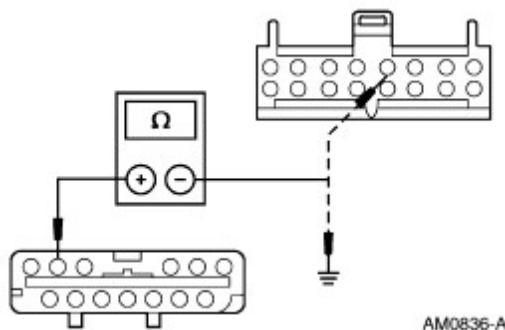
2



Message Center Indicator C2009

3

- 3  **CAUTION:** Accidentally shorting the incorrect pin could destroy the electronic automatic temperature control (EATC) module.



Measure the resistance between EATC C298-25, circuit 506 (R), and message center indicator C2009-24, circuit 506 (R); and between EATC C298-25, circuit 506 (R), and ground.

- **Is the resistance less than 5 ohms between the EATC and the message center indicator, and greater than 10,000 ohms between the EATC and ground?**

→ **Yes**  
GO to S3.

→ **No**  
REPAIR circuit 506 (R). TEST the system for normal operation.

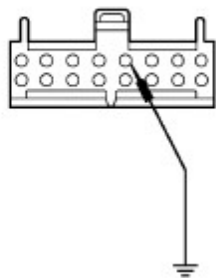
### S3 CHECK EATC OPERATION

1



EATC C298

2



GL1314-A

2



**CAUTION: Accidentally shorting the incorrect pin could destroy the electronic automatic temperature control (EATC) module**

Connect a jumper between message center indicator C2009-24, circuit 506 (R), and ground.

3



- **Does the display alternate?**

→ **Yes**



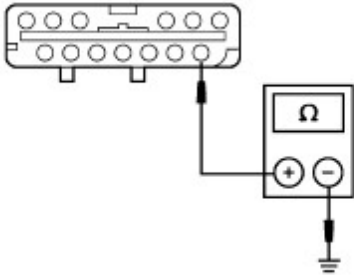


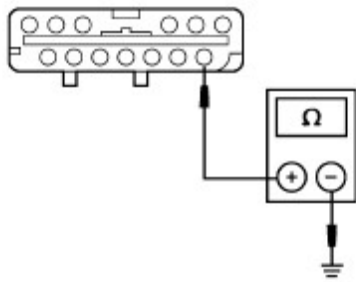
REFER to Section 413-08.

→ **No**

INSTALL a new EATC module. TEST the system for normal operation.

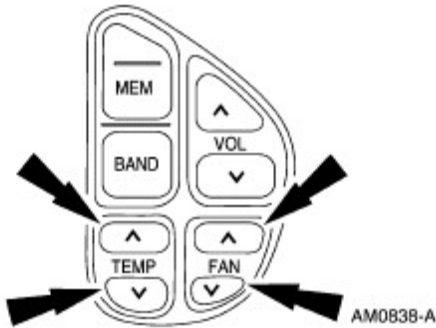
## PINPOINT TEST T: ONE OR MORE STEERING WHEEL CONTROL SWITCHES IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>T1</b> CHECK THE INPUT TO THE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC)	
<p>1</p> 	
<p>2</p>  <p>EATC C297</p>	
<p>3</p>  <p>AM0837-A</p>	
	<p>3 Measure the resistance between the EATC module connector pin C297-8, circuit 583 (Y) and ground.</p> <p>• Is the resistance reading between 4,500 and 5,000 ohms?</p> <p>→ <b>Yes</b> GO to <u>T2</u>.</p> <p>→ <b>No</b> GO to <u>T3</u>.</p>
<b>T2</b> CHECK THE STEERING WHEEL CONTROL SWITCH OUTPUT	
<p>1</p>	<p>1 Measure the resistance between the EATC module connector pin C297-8, circuit 583 (Y) and ground.</p>



AM0837-A

2



AM0838-A

2

Press each steering wheel control switch and compare the resistance reading to the chart below.

Switch	Resistance
TEMP UP	336-376 ohms
TEMP DOWN	1,620-1,810 ohms
FAN UP	736-821 ohms
FAN DOWN	123-138 ohms

• **Are the resistances within range?**

→ **Yes**

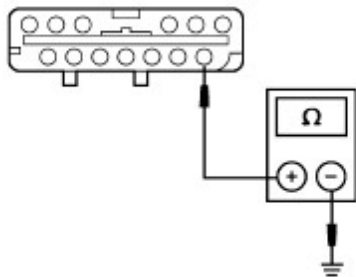
INSTALL a new EATC module. TEST the system for normal operation.

→ **No**

INSTALL a new steering column switch assembly. TEST the system for normal operation.

**T3** CHECK THE SYSTEM FOR AN OPEN

1



AM0837-A

1

Measure the resistance between the EATC module connector pin C297-8, circuit 583 (Y) and ground.

• **Is the resistance reading less than 4,500 ohms?**

→ **Yes**

GO to T4.

→ **No**  
GO to T7.

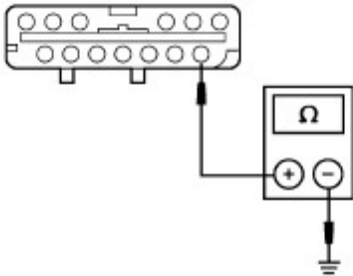
#### **T4** CHECK CIRCUIT 583 (Y) FOR A SHORT TO GROUND

1



Clock Spring C220

2



AM0837-A

2 Measure the resistance between the EATC module connector pin C297-8, circuit 583 (Y) and ground.

• **Is the resistance reading less than 10,000 ohms?**

→ **Yes**  
REPAIR circuit 583 (Y) for a short to ground.  
TEST the system for normal operation.

→ **No**  
GO to T5.

#### **T5** CHECK THE CLOCK SPRING FOR A SHORT TO GROUND

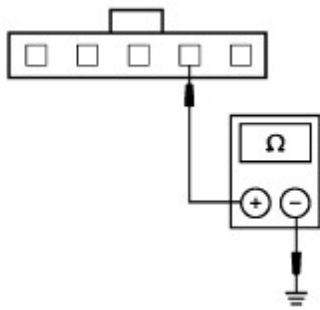
1



Climate Control Steering Wheel Switch

2

2 Measure the resistance between the climate control steering wheel switch connector circuit (LB/R) and ground.



AM0840-A

• **Is the resistance 10,000 ohms or less?**

→ **Yes**

GO to T6.

→ **No**

INSTALL a new climate control steering wheel switches. TEST the system for normal operation.

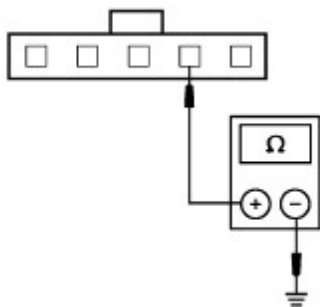
#### **T6** CHECK THE STEERING WHEEL SWITCH HARNESS FOR A SHORT TO GROUND

2



Steering Wheel Switch In-Line Connector

3



AM0840-A

1 Remove the driver air bag. For additional information, refer to Section 501-20B.

3 Measure the resistance between the climate control steering wheel switch connector, circuit (LB/R) and ground.

• **Is the resistance 10,000 ohms or less?**

→ **Yes**

REPAIR the steering wheel switch harness. TEST the system for normal operation.

→ **No**

INSTALL a new clock spring. REFER to Section

501-20B. TEST the system for normal operation.

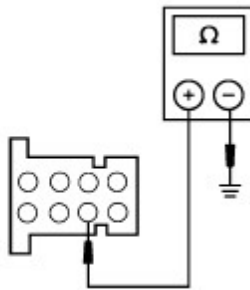
**T7 CHECK THE GROUND SUPPLY TO THE STEERING COLUMN SWITCHES**

1



Clock Spring C220

2



AM0841-A

- 2 Measure the resistance between the clock spring connector pin C220-4, circuit 848 (DG/O) and ground.

• Is the resistance reading 5 ohms or less?

→ **Yes**  
GO to T9.

→ **No**  
GO to T8.

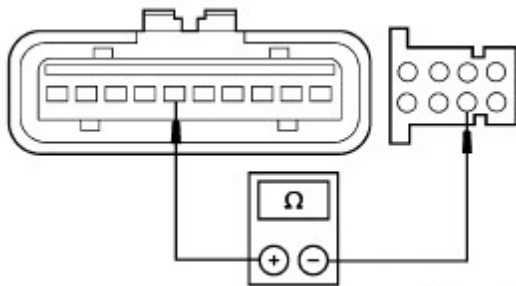
**T8 CHECK CIRCUIT 848 (DG/O) FOR AN OPEN**

1



Speed Control Module C171

2



AM0842-A

- 2 Measure the resistance of circuit 848 (DG/O) between the clock spring connector pin C220-4 and the speed control module connector pin C171-6.

• Is the resistance 5 ohms or less?

→ **Yes**

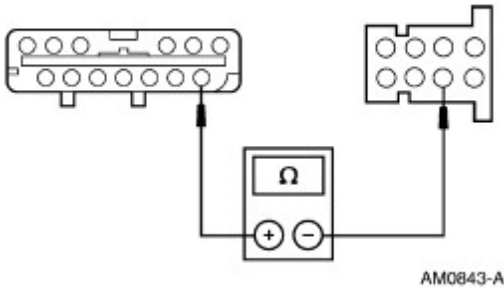
INSTALL a new speed control module. REFER to Section 310-03.

→ **No**

REPAIR circuit 848 (DG/O) for an open. TEST the system for normal operation.

### **T9** CHECK CIRCUIT 583 (Y) FOR AN OPEN

1



1

Measure the resistance of circuit 583 (Y) between the clock spring connector pin C220-5 and the EATC connector pin C297-8.

• **Is the resistance reading 5 ohms or less?**

→ **Yes**

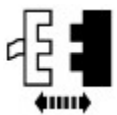
GO to T10.

→ **No**

REPAIR circuit 583 (Y) for an open. TEST the system for normal operation.

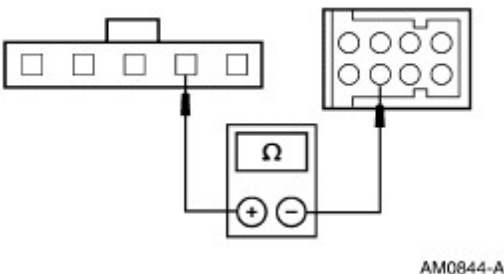
### **T10** CHECK THE STEERING COLUMN SWITCH FOR AN OPEN

1




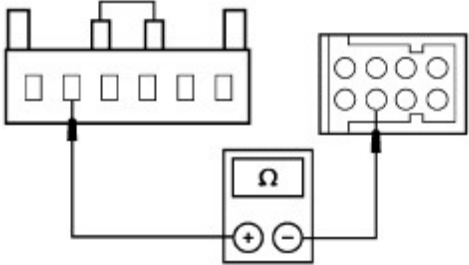
Climate Control Steering Wheel Switch

2



2

Measure the resistance between the clock spring connector terminal C220-5, circuit (W/LB) and the steering wheel switch connector, circuit (LB/R).

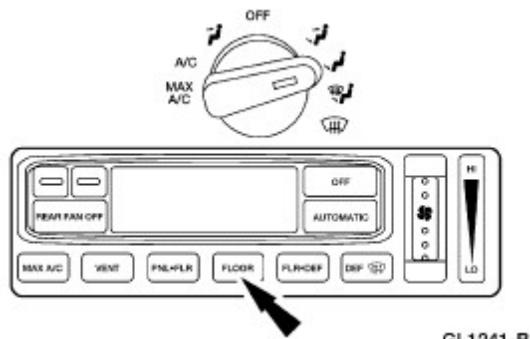
	<ul style="list-style-type: none"> <li>• <b>Is the resistance reading 5 ohms or less?</b></li> </ul> <p>→ <b>Yes</b> INSTALL a new steering wheel switch assembly. TEST the system for normal operation.</p> <p>→ <b>No</b> GO to <u>T11</u>.</p>
<b>T11 CHECK THE CLOCK SPRING FOR AN OPEN</b>	
<p><b>2</b></p>  <p>Steering Wheel Switch In-Line Connector</p> <p><b>3</b></p>  <p>AM0839-A</p>	<p><b>1</b> Remove the driver air bag. For additional information, refer to <u>Section 501-20B</u>.</p> <p><b>3</b> Measure the resistance of circuit (W/LB) between the clock spring connector terminal C220-5 and the clock spring to steering wheel switch in-line harness connector.</p> <ul style="list-style-type: none"> <li>• <b>Is the resistance reading 5 ohms or less?</b></li> </ul> <p>→ <b>Yes</b> REPAIR the steering wheel switch harness. TEST the system for normal operation.</p> <p>→ <b>No</b> INSTALL a new clock spring. REFER to <u>Section 501-20B</u>.</p>

**PINPOINT TEST U: THE CONSOLE BLOWER MOTOR DOES NOT OPERATE**

CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>U1 CHECK BLOWER MOTOR OPERATION</b>	
<b>1</b>	



2



- 2 Place the front A/C function switch to FLR (manual A/C); or select the electronic automatic temperature control (EATC) FLOOR button.

- 3 Rotate the rear blower switch to MED, and then to HIGH.

• Does the rear blower operate?

→ **Yes**

If the blower operates in all speeds, WIGGLE the wires and CHECK for an intermittent condition.

If the rear blower operates in one speed only, GO to U6.

→ **No**

GO to U2.

**U2** CHECK I/P FUSE 31 (7.5A)

1



I/P Fuse 31 (7.5A)

• Is fuse 31 (7.5A) OK?

→ **Yes**

GO to U3.

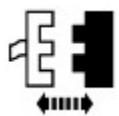
→ **No**

INSTALL a new fuse 31 (7.5A). TEST the system for normal operation. If the fuse fails again, GO to U14.

**U3** CHECK CIRCUIT 371 (PK/W) FOR VOLTAGE

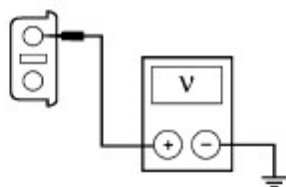
1





Rear Blower Motor C2012

2



GL1069-A

2

Measure the voltage between rear blower motor C2012, circuit 371 (PK/W), and ground.

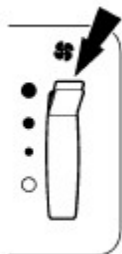
• **Is the voltage greater than 10 volts?**

→ **Yes**  
GO to U4.

→ **No**  
GO to U10.

#### U4 CHECK REAR BLOWER MOTOR OPERATION

1

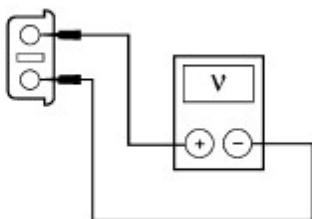


GL1238-A

1

Place the rear blower switch to HIGH.

2



GL1071-A

2

Measure the voltage between rear blower motor C2012, circuit 371 (PK/W), and rear blower motor C2012, circuit 515 (O/R).

• **Is the voltage greater than 10 volts?**

- **Yes**  
INSTALL a new rear blower motor. TEST the system for normal operation.
- **No**  
GO to U5.

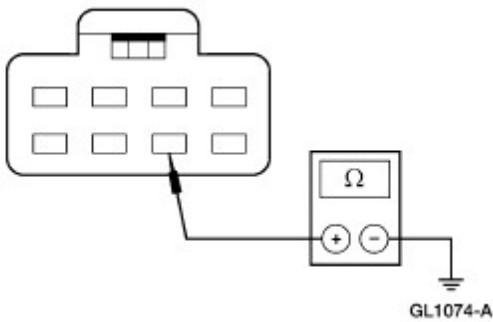
### U5 CHECK CIRCUIT 57 (BK) FOR OPEN

1



Rear Blower Switch C2004

2



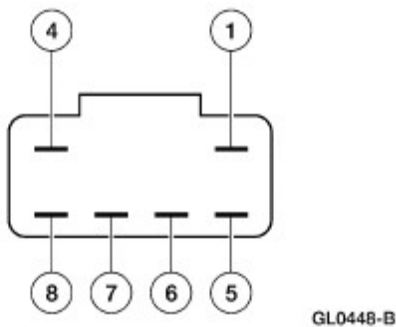
- 2 Measure the resistance between rear blower switch C2004-7, circuit 57 (BK), and ground.

• **Is the resistance less than 5 ohms?**

- **Yes**  
GO to U6.
- **No**  
REPAIR circuit 57 (BK). TEST the system for normal operation.

### U6 CHECK REAR BLOWER SWITCH

1



- 1 Measure the resistance of the rear blower switch. Refer to the chart shown.

#### Blower Switch Resistance Test

Switch Position	Resistance Between Terminals
OFF	None
LOW	None
MED	6 and 7
HIGH	5 and 7

- **Is the resistance less than 5 ohms?**

→ **Yes**

GO to U7.

→ **No**

INSTALL a new rear blower switch. TEST the system for normal operation.

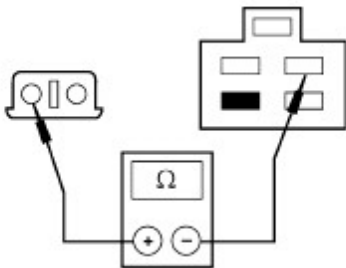
### **U7** CHECK CIRCUIT 515 (O/R) FOR OPEN

1



Rear Blower Motor Resistor C2014

2



GL0449-A

2

Measure the resistance between rear blower motor C2012, circuit 515 (O/R), and rear blower motor resistor C2014-2, circuit 515 (O/R).

- **Is the resistance less than 5 ohms?**

→ **Yes**

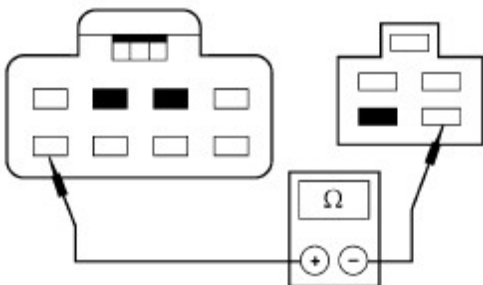
GO to U8.

→ **No**

REPAIR circuit 515 (O/R). TEST the system for normal operation.

### **U8** CHECK CIRCUIT 261 (O/BK) FOR OPEN

1



GL0450-A

1

Measure the resistance between rear blower motor resistor C2014-4, circuit 261 (O/BK), and rear blower switch C2014-5, circuit 261 (O/BK).

- **Is the resistance less than 5 ohms?**

→ **Yes**

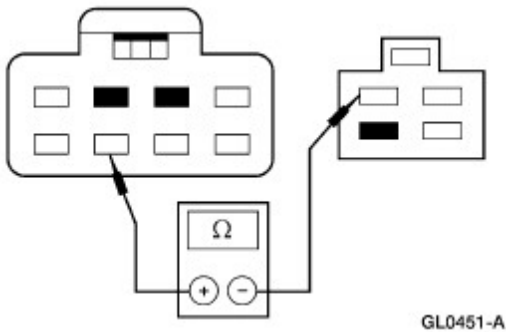
GO to U9.

→ **No**

REPAIR circuit 261 (O/BK). TEST the system for normal operation.

### **U9** CHECK CIRCUIT 269 (LB/O) FOR OPEN

1



1

Measure the resistance between rear blower motor resistor C2014-1, circuit 269 (LB/O), and rear blower switch C2014-6, circuit 269 (LB/O).

- **Is the resistance less than 5 ohms?**

→ **Yes**

INSTALL a new rear blower motor resistor. TEST the system for normal operation.

→ **No**

REPAIR circuit 269 (LB/O) for open. TEST the system for normal operation.

### **U10** CHECK CIRCUIT 181 (BR/O) FOR OPEN

1



Rear Blower Relay

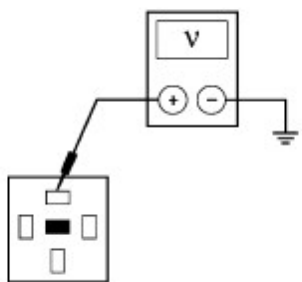
2



3

3

Measure the voltage between rear blower relay pin 87, circuit 181 (BR/O), and ground.



GL0452-A

- **Is the voltage greater than 10 volts?**

→ **Yes**

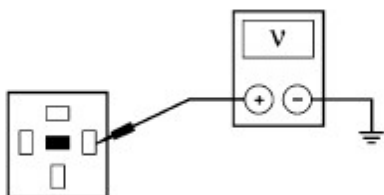
GO to U11.

→ **No**

REPAIR circuit 181 (BR/O). TEST the system for normal operation.

### **U11** CHECK CIRCUIT 1003 (GY/Y) FOR OPEN

1



GL0453-A

1

Measure the voltage between rear blower relay connector pin 85, circuit 1003 (GY/Y), and ground.

- **Is the voltage greater than 10 volts?**

→ **Yes**

GO to U12.

→ **No**

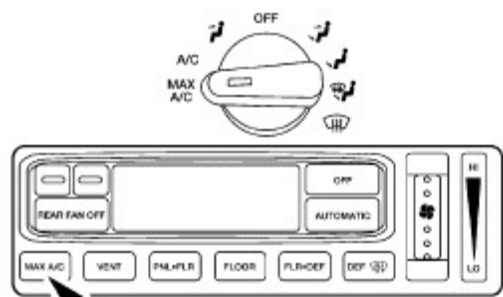
REPAIR circuit 1003 (GY/Y). TEST the system for normal operation.

### **U12** CHECK CIRCUIT 260 (R/O) FOR OPEN

1

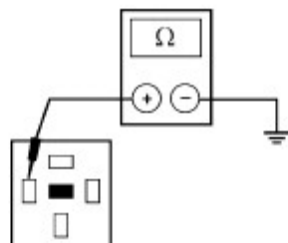
1

Turn the A/C function switch to MAX A/C (manual A/C); or select the electronic automatic temperature control (EATC) MAX A/C button.



GL1242-B

2



GL0454-A

- 2 Measure the resistance between the rear blower relay connector pin 86, circuit 260 (R/O), and ground.

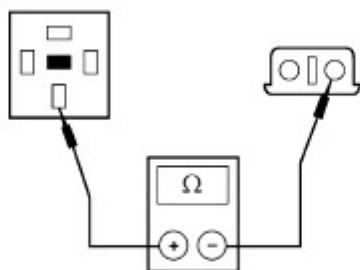
• **Is the resistance less than 5 ohms?**

→ **Yes**  
GO to U13.

→ **No**  
REPAIR circuit 260 (R/O). TEST the system for normal operation.

### U13 CHECK CIRCUIT 371 (PK/W) FOR OPEN

1





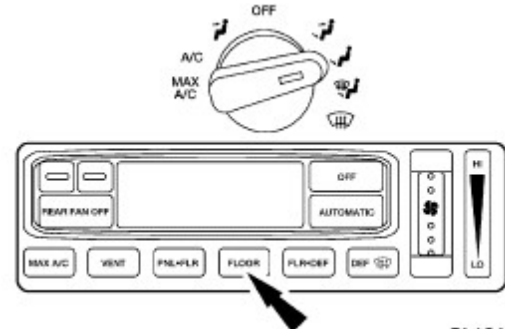


GL0455-A

- 1 Measure the resistance between the rear blower relay connector pin 30, circuit 371 (PK/W), and rear blower motor C2012, circuit 371 (PK/W).

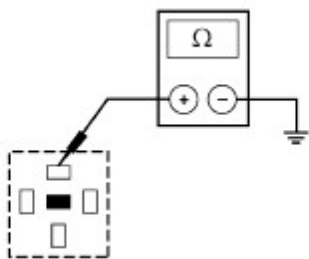
• **Is the resistance less than 5 ohms?**

→ **Yes**  
INSTALL a new rear blower relay. TEST the system for normal operation.

→ **No**

	REPAIR circuit 371 (PK/W). TEST the system for normal operation.
<b>U14</b> CHECK FOR SHORTED REAR BLOWER MOTOR	
<div data-bbox="144 239 172 277">1</div>  <p>Rear Blower Motor C2012</p> <div data-bbox="144 518 172 554">3</div>  <div data-bbox="144 676 172 711">4</div>  <p>GL1241-B</p> <div data-bbox="144 1056 172 1092">5</div>  <p>Fuse 31 (7.5A)</p>	<div data-bbox="753 462 779 499">2</div> <p>Install a new I/P fuse 31 (7.5A).</p> <div data-bbox="753 676 779 711">4</div> <p>Turn the A/C function switch to the FLR (manual A/C) position; or select the electronic automatic temperature control (EATC) FLOOR button.</p> <p>• <b>Is fuse 31 (7.5A) OK?</b></p> <p>→ <b>Yes</b> INSTALL a new rear blower motor. TEST the system for normal operation.</p> <p>→ <b>No</b> GO to <u>U15</u>.</p>
<b>U15</b> CHECK CIRCUIT 181 (BR/O) FOR SHORT TO GROUND	
<div data-bbox="144 1722 172 1759">1</div>  <p>Rear Blower Relay</p>	

2



GL0440-A

2

Measure the resistance between rear blower relay connector pin 87, circuit 181 (BR/O), and ground.

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

→ **Yes**

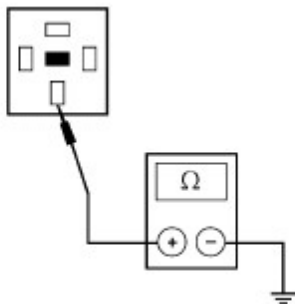
GO to U16.

→ **No**

REPAIR circuit 181 (BR/O). TEST the system for normal operation.

#### **U16 CHECK CIRCUIT 371 (PK/W) FOR SHORT TO GROUND**

1



GL1225-A

1

Measure the resistance between rear blower relay connector pin 30, circuit 371 (PK/W), and ground.

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

→ **Yes**


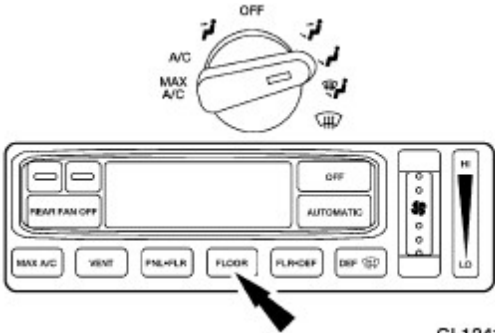
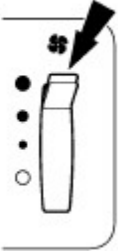
INSTALL a new rear blower relay. TEST the system for normal operation.

→ **No**

REPAIR circuit 371 (PK/W). TEST the system for normal operation.

#### **PINPOINT TEST V: THE PANEL/FLOOR SWITCH DOES NOT OPERATE, THE CONSOLE BLOWER DOES OPERATE**



CONDITIONS	DETAILS/RESULTS/ACTIONS
<b>V1 CHECK THE CONDITION</b>	
<p><b>1</b></p>  <p><b>2</b></p>  <p>GL1241-B</p> <p><b>3</b></p>  <p>GL1238-A</p>	<p><b>2</b> Turn the A/C function switch to the FLR position (manual A/C); or select the electronic automatic temperature control (EATC) FLOOR button.</p> <p><b>3</b> Place rear blower switch to HIGH.</p> <p>• <b>Is the rear blower motor operating?</b></p> <p>→ <b>Yes</b> GO to <u>V2</u> .</p> <p>→ <b>No</b> <u>Go To Pinpoint Test U</u> .</p>
<b>V2 CHECK AIRFLOW</b>	
	<p><b>1</b> Verify the airflow through the rear console vents.</p> <p>• <b>Is the airflow present?</b></p> <p>→ <b>Yes</b> WIGGLE the wires to CHECK for an intermittent condition.</p> <p>→ <b>No</b> CHECK rear vent control mechanism. REPAIR as</p>

necessary. If the mechanism is OK, GO to V3.

**V3 CHECK I/P FUSE 10 (7.5A)****1****2**

I/P Fuse 10 (7.5A)

- **Is fuse 10 (7.5A) OK?**

→ **Yes**

REINSTALL fuse 10 (7.5A). GO to V8.

→ **No**

INSTALL a new fuse 10 (7.5A). TEST the system for normal operation. If the fuse fails again, GO to V4.

**V4 CHECK CIRCUIT 1003 (GY/Y) FOR SHORT TO GROUND****1**

Rear Blower Switch C2004

**3****4**

I/P Fuse 10 (7.5A)

**2** Install a new I/P fuse 10 (7.5A).

- **Is the I/P fuse 10 (7.5A) OK?**

→ **Yes**

GO to V5.

→ **No**

REPAIR circuit 1003 (GY/Y). TEST the system for normal operation.

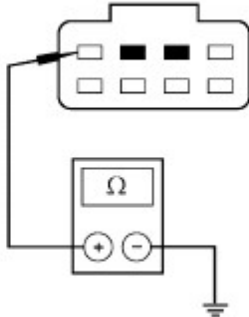
**V5 CHECK CIRCUIT 660 (Y/LG) FOR SHORT TO GROUND**

1



Rear Blend Door Actuator Motor C2013

2



GL1236-A

2

Measure the resistance between rear blower switch C2004-1, circuit 660 (Y/LG), and ground.

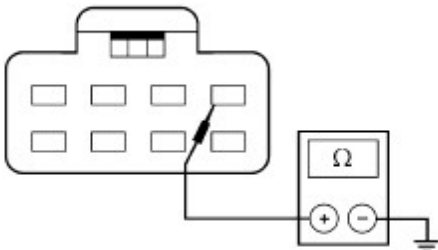
- **Is the resistance greater than 10,000 ohms?**

→ **Yes**GO to V6.→ **No**

REPAIR circuit 660 (Y/LG). TEST the system for normal operation.

**V6 CHECK CIRCUIT 438 (R/W) FOR SHORT TO GROUND**

1



GL1080-A

1

Measure the resistance between rear blower switch C2004-4, circuit 438 (R/W), and ground.

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

→ **Yes**

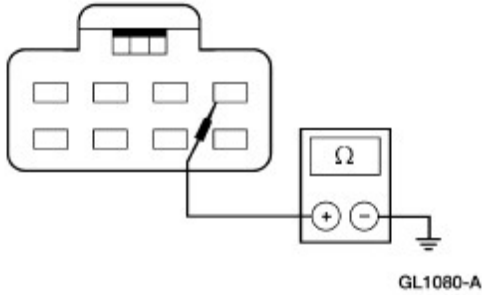
RECONNECT the rear blend door actuator motor;  
GO to V7.

→ **No**

REPAIR circuit 438 (R/W). TEST the system for  
normal operation.

### **V7** CHECK THE REAR BLEND DOOR ACTUATOR MOTOR FOR SHORT TO GROUND

1



1

Measure the resistance between rear blower  
switch C2004-4, circuit 438 (R/W), and ground.

• **Is the resistance greater than 10,000  
ohms?**

→ **Yes**

INSTALL a new rear blower switch. TEST the  
system for normal operation.

→ **No**

INSTALL a new rear blend door actuator motor.  
TEST the system for normal operation.

### **V8** CHECK CIRCUIT 1003 (GY/Y) FOR OPEN

1



Rear Blower Switch C2004

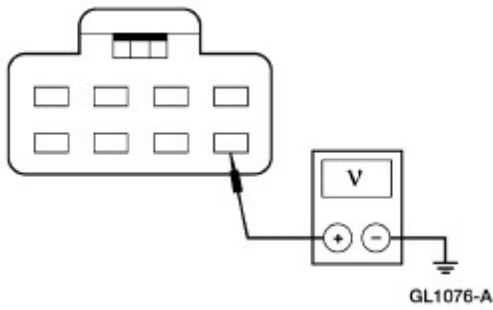
2



3

3

Measure the voltage between rear blower switch  
C2004-8, circuit 1003 (GY/Y), and ground.



• **Is the voltage greater than 10 volts?**

→ **Yes**

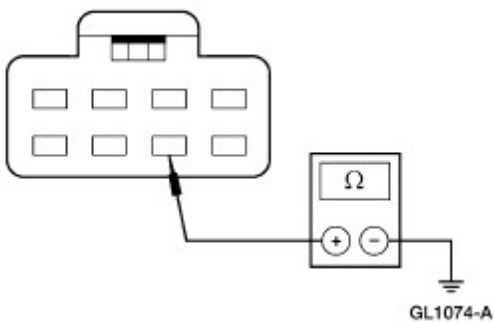
GO to V9.

→ **No**

REPAIR circuit 1003 (GY/Y). TEST the system for normal operation.

**V9** CHECK CIRCUIT 57 (BK) FOR OPEN

1



1

Measure the resistance between rear blower switch C2004-7, circuit 57 (BK), and ground.

• **Is the resistance less than 5 ohms?**

→ **Yes**

GO to V10.

→ **No**

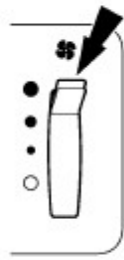
REPAIR circuit 57 (BK). TEST the system for normal operation.

**V10** CHECK REAR BLOWER SWITCH

1

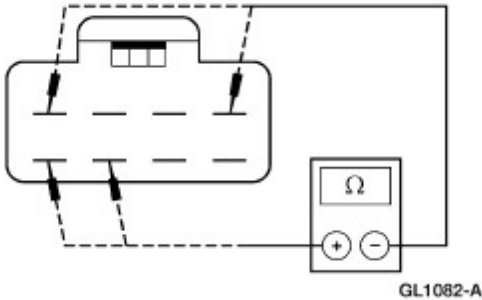
1

Set the rear blower switch to HIGH.



GL1238-A

2



2

Measure the resistance between rear blower switch terminal 7 and terminal 4; and between terminal 8 and terminal 1.

• **Is the resistance less than 5 ohms?**

→ **Yes**

GO to V11 .

→ **No**

INSTALL a new rear blower switch. TEST the system for normal operation.

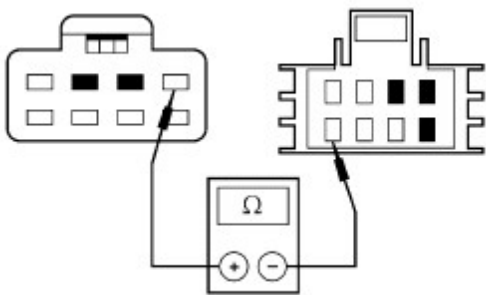
### V11 CHECK CIRCUIT 438 (R/W) FOR OPEN

1



Rear Blend Door Actuator Motor C2013

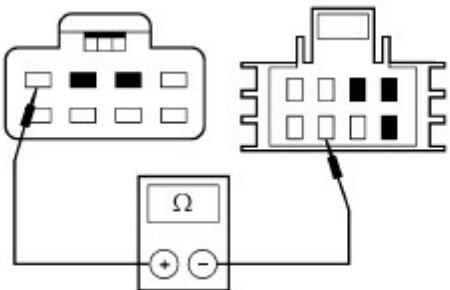
2



GL0457-A

2

Measure the resistance between rear blend door actuator motor C2013-8, circuit 438 (R/W) and rear blower switch C2004-4, circuit 438 (R/W).

	<ul style="list-style-type: none"> <li>• <b>Is the resistance less than 5 ohms?</b></li> </ul> <p>→ <b>Yes</b> GO to <u>V12</u> .</p> <p>→ <b>No</b> REPAIR circuit 438 (R/W). TEST the system for normal operation.</p>
<b>V12 CHECK CIRCUIT 660 (Y/LG) FOR OPEN</b>	
<p>1</p>  <p>GL0458-A</p>	<p>1 Measure the resistance between rear blend door actuator motor C2013-7, circuit 660 (Y/LG) and rear blower switch C2004-1, circuit 660 (Y/LG).</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 rear blend door actuator motor. TEST the system for normal operation.</p> <p>→ <b>No</b> REPAIR circuit 660 (Y/LG). TEST the system for normal operation.</p>

## Component Tests

### 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 are good and did not require installation of a new heater core. If a heater core leak is suspected, the heater core must be tested by following 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 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.

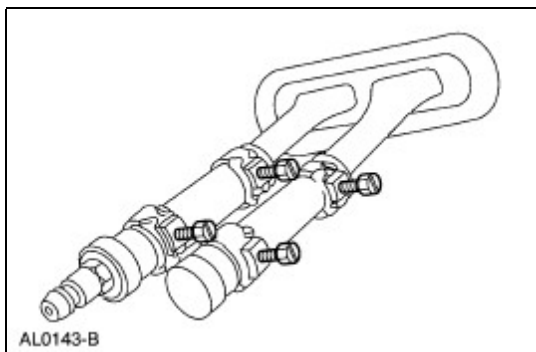
### Heater Core—Pressure Test

Use Radiator/Heater Core Pressure Tester to carry out 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. For additional information, refer to [Section 303-03](#).

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.



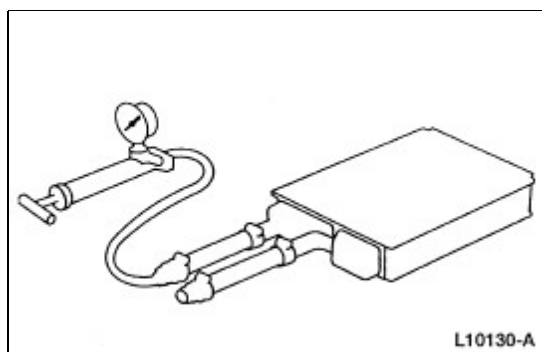
5. Attach the pump and gauge assembly from the Radiator/Heater Core Pressure Tester to the adapter.



6. Close the bleed valve at the base of the gauge. Pump 241 kPa (35 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 carry out 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 241 kPa (35 psi) of air pressure to the heater core. Submerge the heater core in water.
5. If a leak is observed, install a new heater core.



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

1. Discharge and recover the refrigerant. For additional information, refer to [Discharging and Recovery](#) 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 installing a new 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 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 Refrigerant Leak Detector, check for leaks at the compressor shaft seal and the compressor center seal.
7. If a shaft seal leak is found, install a new shaft seal. For additional information, refer to [Section 412-03](#). If an external leak is found at the center joint of the A/C compressor, install a new A/C

compressor.

8. When the leak test is complete, recover the refrigerant from the compressor.
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