# Front Seat Cushion Ventilation Blower Replacement (Cadillac)

## Preliminary Procedure
Remove the front seat. Refer to [Front Seat Removal and Installation - Bucket](#).

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
</table>
| 1       | Front Seat Adjuster Outer Finish Cover  
Refer to [Front Seat Cushion Outer Trim Panel Replacement](#). |
| 2       | Front Seat Adjuster Inner Finish Cover  
Refer to [Front Seat Cushion Inner Trim Panel Replacement](#). |
| 3       | Front Seat Riser Finish Cover  
**Tip:** Pull rearward to disengage the cover from the seat riser. |
| 4       | Seat Cushion Cover and Pad  
Refer to [Seat Cushion Trim Cover and Pad Replacement](#). |
| 5       | Front Seat Adjuster Assembly  
Refer to [Front Seat Adjuster Replacement](#). |
| 6       | Seat Cushion Blower Nuts (Qty: 3) |

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<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notice:</strong> Refer to Fastener Notice.</td>
<td></td>
</tr>
<tr>
<td><strong>Tighten</strong></td>
<td></td>
</tr>
<tr>
<td>3 N•m (25 lb in)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Seat Cushion Blower</td>
</tr>
<tr>
<td><strong>Tip:</strong> Disconnect the electrical connector.</td>
<td></td>
</tr>
</tbody>
</table>
Front Seat Removal and Installation - Bucket (without HP2)

1. Remove the front seat adjuster covers. Refer to Front Seat Adjuster Track Finish Cover Replacement.

2. Disconnect the seat belt from the seat. Refer to Seat Belt Retractor Pretensioner Replacement - Front.

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front Seat Assembly Nut (Qty: 2)</td>
</tr>
<tr>
<td></td>
<td><strong>Notice:</strong> Refer to Fastener Notice.</td>
</tr>
<tr>
<td></td>
<td><strong>Tip:</strong> Adjust the seat rearward to access to the nuts.</td>
</tr>
<tr>
<td></td>
<td><strong>Tighten</strong> 55 N·m (41 lb ft)</td>
</tr>
<tr>
<td>2</td>
<td>Front Seat Assembly Bolt (Qty: 2)</td>
</tr>
<tr>
<td></td>
<td><strong>Tip:</strong> Adjust the seat forward to access the bolts.</td>
</tr>
<tr>
<td></td>
<td><strong>Tighten</strong> 90 N·m (66 lb ft)</td>
</tr>
<tr>
<td>Callout</td>
<td>Component Name</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>Tip:</td>
<td></td>
</tr>
<tr>
<td>• Disconnect the electrical connector.</td>
<td></td>
</tr>
<tr>
<td>• If removing and installing seat the center seat or floor console do not need to be removed.</td>
<td></td>
</tr>
</tbody>
</table>
Front Seat Removal and Installation - Bucket (with HP2)

**Preliminary Procedure**

1. Remove the front seat adjuster covers.
2. Disconnect the seat belt anchor from the seat. Refer to Seat Belt Retractor Pretensioner Replacement - Front.

**Callout Component Name**

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
</table>
| 1       | Front Seat Assembly Bolt (Qty: 2)  
**Notice:** Refer to Fastener Notice.  
**Tighten**  
90 N•m (66 lb ft) |
| 2       | Front Seat Assembly Nut (Qty: 2)  
**Tighten**  
55 N•m (41 lb ft) |
| 3       | Front Seat Assembly  
**Procedure**  
Disconnect the electrical connector. |
# Front Seat Cushion Outer Trim Panel Replacement

## Manual Seat without HP2

### Callout Component Name

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front Seat Recliner Lever</td>
</tr>
<tr>
<td></td>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td></td>
<td>Using a flat-bladed tool, push the retainer clip downward and pull outward to release the lever.</td>
</tr>
<tr>
<td>2</td>
<td>Front Seat Manual Lumbar Knob</td>
</tr>
<tr>
<td></td>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td></td>
<td>Using a flat-bladed tool, push the retainer clip downward and pull outward to release the knob.</td>
</tr>
<tr>
<td>3</td>
<td>Front Seat Adjuster Outer Finish Cover</td>
</tr>
<tr>
<td></td>
<td><strong>Notice:</strong> Refer to Fastener Notice.</td>
</tr>
<tr>
<td></td>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td></td>
<td>1. Remove the screw from front of the cover.</td>
</tr>
<tr>
<td></td>
<td>2. Squeeze the tabs in the rear of the cover together to disengage the outer trim cover from the rear trim cover.</td>
</tr>
<tr>
<td></td>
<td>3. Pull outward to release the retainers from the seat assembly.</td>
</tr>
<tr>
<td></td>
<td>4. Disconnect the electrical connectors.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tighten</td>
<td>2 N•m (18 lb in)</td>
</tr>
</tbody>
</table>
## Front Seat Cushion Outer Trim Panel Replacement (Power Seat without HP2)

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front Seat Adjuster Outer Finish Cover Screw</td>
</tr>
<tr>
<td></td>
<td><strong>Notice:</strong> Refer to Fastener Notice.</td>
</tr>
<tr>
<td></td>
<td><strong>Tighten</strong> 2 N·m (18 lb in)</td>
</tr>
<tr>
<td>2</td>
<td>Front Seat Adjuster Outer Finish Cover</td>
</tr>
<tr>
<td></td>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td></td>
<td>1. Squeeze the tabs in the rear of the cover together to disengage the outer trim cover from the rear trim cover.</td>
</tr>
<tr>
<td></td>
<td>2. Pull outward to release the retainers from the seat assembly.</td>
</tr>
<tr>
<td></td>
<td>3. Disconnect the electrical connectors.</td>
</tr>
<tr>
<td></td>
<td>4. If replacing the finish cover, remove the switches and install on new finish cover.</td>
</tr>
</tbody>
</table>
# Front Seat Cushion Outer Trim Panel Replacement (with HP2)

## Preliminary Procedures

1. Disconnect the lower portion of the seat back finish panel from the seat frame and lift upward to gain access to the screws.
2. Remove the front seat lumbar actuator knob, if equipped. Refer to Driver or Passenger Seat Lumbar Support Actuator Knob Replacement.
3. Remove Recliner Handle If equipped. Refer to Front Seat Back Recliner Handle Replacement.

## Callout Component Name

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front Seat Cushion Outer Finish Panel Cover Screw (Qty: 2)</td>
</tr>
<tr>
<td></td>
<td><strong>Notice:</strong> Refer to Fastener Notice.</td>
</tr>
<tr>
<td></td>
<td><strong>Tighten</strong></td>
</tr>
<tr>
<td></td>
<td>2N·m (18 lb in)</td>
</tr>
<tr>
<td>2</td>
<td>Front Seat Cushion Outer Finish Panel Cover</td>
</tr>
<tr>
<td></td>
<td><strong>Procedure</strong></td>
</tr>
<tr>
<td></td>
<td>1. Disengage the outer trim cover from the inner recliner cover.</td>
</tr>
<tr>
<td></td>
<td>2. Pull outward to disengage the retainer clips.</td>
</tr>
<tr>
<td></td>
<td>3. Pull finish panel in middle to remove from lumbar knob area.</td>
</tr>
<tr>
<td>Callout</td>
<td>Component Name</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>4.</td>
<td>Slide front edge of finish panel forward to disengage from bracket.</td>
</tr>
<tr>
<td>5.</td>
<td>Disconnect the seat switch electrical connector.</td>
</tr>
<tr>
<td>6.</td>
<td>If replacing the cover, transfer necessary components.</td>
</tr>
</tbody>
</table>
Front Seat Cushion Inner Trim Panel Replacement (without HP2)

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preliminary Procedure</strong></td>
<td></td>
</tr>
<tr>
<td>Remove the front seat. Refer to Front Seat Removal and Installation - Bucket.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Disengage the bezel around the seat belt buckle.</td>
</tr>
<tr>
<td>2. Squeeze the tabs in the rear of the cover together to disengage the outer trim cover from the rear trim cover.</td>
</tr>
<tr>
<td>3. Pull outward to release the retainers from the seat assembly.</td>
</tr>
</tbody>
</table>
Front Seat Cushion Inner Trim Panel Replacement (with HP2)

### Preliminary Procedure

1. Remove the front seat back cushion lower finish panel by pulling the panel rearward to disengage the retainers.
2. Remove the front seat belt buckle. Refer to [Front Seat Belt Buckle Replacement](#).

### Callout Component Name

<table>
<thead>
<tr>
<th>Callout</th>
<th>Component Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front Seat Cushion Inner Trim Panel Screw (Qty: 2) <strong>Notice:</strong> Refer to Fastener Notice. <strong>Tighten</strong> 2 N•m (18 lb in)</td>
</tr>
<tr>
<td>2</td>
<td>Front Seat Cushion Inner Trim Panel</td>
</tr>
</tbody>
</table>
Heated/Cooled Seats Inoperative (Cadillac, KB6)

Diagnostic Instructions

- Perform the Diagnostic System Check - Vehicle prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions provides an overview of each diagnostic category.

Diagnostic Fault Information

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Short to Ground</th>
<th>Open/High Resistance</th>
<th>Short to Voltage</th>
<th>Signal Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Control Seat Module B+</td>
<td>1</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Climate Control Seat Module Ignition Voltage</td>
<td>1</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Climate Control Seat Module Ground</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Left Heated/Cooled Seat Mode Control</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Right Heated/Cooled Seat Mode Control</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Temperature Sensor Signal</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Temperature Sensor Low Reference</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Blower Control</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Blower Speed Control</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Blower Low Reference</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Ventilation Heating and Cooling Module Cool Control</td>
<td>2</td>
<td>2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Seat Back Ventilation Heating and Cooling Module Heat Control</td>
<td>2</td>
<td>2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Seat Cushion Temperature Sensor Signal</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Circuit</td>
<td>Short to Ground</td>
<td>Open/High Resistance</td>
<td>Short to Voltage</td>
<td>Signal Performance</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
<td>----------------------</td>
<td>------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Seat Cushion Temperature Sensor Low Reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seat Cushion Blower Control</td>
<td>2</td>
<td>2, 4</td>
<td>3</td>
<td>—</td>
</tr>
<tr>
<td>Seat Cushion Blower Speed Control</td>
<td>2, 4</td>
<td>2, 4</td>
<td>3</td>
<td>—</td>
</tr>
<tr>
<td>Seat Cushion Blower Low Reference</td>
<td>—</td>
<td>2, 4</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Seat Cushion Ventilation Heating and Cooling Module Cool Control</td>
<td>2</td>
<td>2, 4</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>Seat Cushion Ventilation Heating and Cooling Module Heat Control</td>
<td>2, 4</td>
<td>2, 4</td>
<td></td>
<td>—</td>
</tr>
</tbody>
</table>

1. Driver and passenger heated/cooled seats are inoperative
2. Seat back and cushion heat and cool modes are inoperative
3. The blower runs at high speed all the time and the seat temperature adjustment is inoperative
4. The seat back only heat mode operates OK

**Circuit/System Description**

The heat and cool seat functions for both the driver and passenger seats is controlled by the seat climate control module (SCCM) located under the passenger seat. The heated and cooled seat switches are located in the HVAC control module. When a heated or cooled seat switch is pressed a serial data message from the HVAC control module is sent to the memory seat module (MSM) indicating the heat/cool seat request. The MSM then sends a pulse width modulation (PWM) signal through the appropriate heated/cooled seat mode control circuit to the SCCM to activate the heated or cooled seat function. The SCCM then applies battery voltage to the seat cushion and seat back thermal electronic devices (TEDs) and a pre-determined voltage to the blower motors. To determine seat temperature, the SCCM supplies a 5 V signal and a low reference to the temperature sensors that are attached to each TED. The temperature sensors are variable resistors, their resistance changes as the temperature of the seat changes. Then based on the seat temperature, the SCCM controls the voltage level that it applies to the TEDs and blower motors.

**Diagnostic Aids**

It is important to review the harness connector end views for the seat ventilation heating and cooling modules before proceeding with Circuit/System Testing. The terminal numbers may not be positioned as expected and could cause a misdiagnosis of the system.

The following conditions must be met when diagnosing the climate control seat system:

- The engine may need to be running in order to supply the SCCM with the amount of current needed to operate the heated/cool seat system.
- The ignition must be cycled OFF then ON between each test in order to reset the SCCM.
- The seat cushion ventilation heating and cooling module must be connected when testing the seat back ventilation heat and cool control circuits. The SCCM will not apply power to
the seat back cool control circuit without the seat cushion ventilation module connected. Or if the SCCM detects an internal fault in the seat cushion ventilation heating and cooling module it will not apply power to the seat back cool control circuit.

- Examine the seat-to-body inline harness connector under affected seat for loose, bent, or backed out terminals.

**Reference Information**

**Schematic Reference**

[Heated/Cooled Seat Schematics](#)

**Connector End View Reference**

[Component Connector End Views](#)

**Description and Operation**

[Heated/Cooled Seats Description and Operation](#)

**Electrical Information Reference**

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

**Scan Tool Reference**

[Control Module References](#) for scan tool information

**Circuit/System Verification**

1. Ignition ON.
2. Verify the heated or cooled seat symbol illuminates on the HVAC control panel after pressing and releasing the appropriate heated or cooled seat switch.
   ⇒ *If the symbol is not displayed*
   Replace the HVAC control module.
   ‡ *If the symbol is displayed*
3. Engine ON.
4. Verify the driver and passenger heated and cooled seats operate in all three modes of operation listed below:
   - Seat back and cushion heat mode
   - Back only heat mode
   - Cool mode
   ⇒ *If both heated and cooled seats are inoperative*
   Refer to Circuit/System Testing – Both Driver and Passenger Heated/Cooled Seats are Inoperative.
   ⇒ *If just one of the heated and cooled seat is inoperative*
   Refer to Circuit/System Testing – Only One Heated/Cooled Seat is Inoperative.
   ‡ *If both the driver and passenger heated and cooled seats operate*
5. All OK.

**Circuit/System Testing**

**Both Driver and Passenger Heated/Cooled Seats are Inoperative**

1. Ignition OFF and all vehicle systems OFF, disconnect the X1 harness connector at the SCCM. It may take up to 2 minutes for all vehicle systems to power down.

2. Test for less than 10 Ω between the ground circuit terminal M and ground.

   ⇒ **If 10 Ω or greater**
   
   2.1. Ignition OFF.
   
   2.2. Test for less than 2 Ω in the ground circuit end to end.
   
   ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit
   
   ⇒ If less than 2 Ω, repair the open/high resistance in the ground connection.

   ↓ **If less than 10 Ω**

3. Verify a test lamp illuminates between the B+ circuit terminal E and ground.

   ⇒ **If the test lamp does not illuminate and the circuit fuse is good**

   3.1. Ignition OFF.

   3.2. Test for less than 2 Ω in the B+ circuit end to end.

   ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
   
   ⇒ If less than 2 Ω, verify the fuse is OK and there is voltage at the fuse.

   ⇒ **If the test lamp does not illuminate and the circuit fuse is open**

   3.1. Ignition OFF.

   3.2. Test for infinite resistance between the B+ circuit and ground.

   ⇒ If less than infinite resistance, repair the short to ground on the circuit.
   
   ⇒ If infinite resistance, replace the SCCM.

   ↓ **If the test lamp illuminates**

4. Ignition OFF, disconnect the X2 harness connector at the SCCM, ignition ON.

5. Verify a test lamp illuminates between the ignition circuit terminal 1 and ground.

   ⇒ **If the test lamp does not illuminate and the circuit fuse is good**

   5.1. Ignition OFF.

   5.2. Test for less than 2 Ω in the ignition circuit end to end.

   ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
   
   ⇒ If less than 2 Ω, verify the fuse is OK and there is voltage at the fuse.

   ⇒ **If the test lamp does not illuminate and the circuit fuse is open**

   5.1. Ignition OFF.

   5.2. Test for infinite resistance between the ignition circuit and ground.

   ⇒ If less than infinite resistance, repair the short to ground on the circuit.
   
   ⇒ If infinite resistance, replace the SCCM.

   ↓ **If the test lamp illuminates**

6. Ignition OFF, disconnect the X3 harness connector at the SCCM, ignition ON.

7. Connect a test lamp between each control circuit terminal listed below and B+, one at a time.

   ◦ Driver seat terminal 14
   
   ◦ Passenger seat terminal 6

8. Verify the test lamp turns ON when pressing either the HEAT or COOL seat switch through the high, medium, and low positions then turns OFF when the off position is reached.

   ⇒ **If the test lamp is always OFF**
8.1. Ignition OFF, disconnect the X6 harness connector at the MSM, ignition ON.
8.2. Test for less than 1 V between the control circuit and ground.
   ⇒ If 1 V or greater, repair the short to voltage on the circuit.
   ⇧ If less than 1 V
8.3. Test for less than 2 Ω in the control circuit end to end.
   ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
   ⇒ If less than 2 Ω, replace the MSM.

⇒ If the test lamp is always ON
   8.1. Ignition OFF, disconnect the X6 harness connector at the MSM,
   8.2. Test for infinite resistance between the control circuit and ground.
      ⇒ If less than infinite resistance, repair the short to ground on the circuit.
      ⇒ If infinite resistance, replace the MSM.

⇓ If the test lamp turns ON and OFF
9. Replace the SCCM.

Only One Heated/Cooled Seat is Inoperative
1. Ignition OFF, disconnect the X3 harness connector at the SCCM, ignition ON.
2. Connect a test lamp between the appropriate control circuit terminal listed below and B+:
   ◦ Driver seat terminal 14
   ◦ Passenger seat terminal 6
3. Verify the test lamp turns ON when pressing either the HEAT or COOL seat switch through the high, medium, and low positions then turns OFF when the off position is reached.

⇒ If the test lamp is always OFF
   3.1. Ignition OFF, disconnect the X6 harness connector at the MSM, ignition ON.
   3.2. Test for less than 1 V between the control circuit and ground.
      ⇒ If 1 V or greater, repair the short to voltage on the circuit.
      ⇧ If less than 1 V
   3.3. Test for less than 2 Ω in the control circuit end to end.
      ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
      ⇒ If less than 2 Ω, replace the MSM.

⇒ If the test lamp is always ON
   3.1. Ignition OFF, disconnect the X6 harness connector at the MSM,
   3.2. Test for infinite resistance between the control circuit and ground.
      ⇒ If less than infinite resistance, repair the short to ground on the circuit.
      ⇒ If infinite resistance, replace the MSM.

⇓ If the test lamp turns ON and OFF
4. Ignition OFF, connect the X3 harness connector to the SCCM.
5. Disconnect the harness connector at both modules listed below:
   ◦ Seat cushion ventilation heating and cooling module
   ◦ Seat back ventilation heating and cooling module

Note: Review the harness connector end views for the seat ventilation heating and cooling modules before proceeding with this step. The terminal numbers may not be positioned as expected and could cause a misdiagnosis of the circuit.
6. Test for less than 10 Ω between each low reference circuit terminal listed below and ground:
   - Seat cushion terminal 4
   - Seat cushion terminal 8
   - Seat back terminal 4
   - Seat back terminal 8
   ⇒ **If 10 Ω or greater**
     6.1. Ignition OFF, disconnect the appropriate X2 or X3 harness connector at the SCCM.
     6.2. Test for less than 2 Ω in the low reference circuit end to end.
        ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
        ⇒ If less than 2 Ω, replace the SCCM.
   ↓ **If less than 10 Ω**

7. Ignition ON.

8. Test for 4.8–5.2 V between each signal circuit terminal listed below and ground:
   - Seat cushion terminal 5
   - Seat back terminal 5
   ⇒ **If less than 4.8 V**
     8.1. Ignition OFF, disconnect the X2 harness connector at the SCCM.
     8.2. Test for infinite resistance between the signal circuit and ground.
        ⇒ If less than infinite resistance, repair the short to ground on the circuit.
        ↓ If infinite resistance
     8.3. Test for less than 2 Ω in the signal circuit end to end.
        ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
        ⇒ If less than 2 Ω, replace the SCCM.
   ⇒ **If greater than 5.2 V**
     8.1. Ignition OFF, disconnect the X2 harness connector at the SCCM, ignition ON.
     8.2. Test for less than 1 V between the signal circuit and ground.
        ⇒ If 1 V or greater, repair the short to voltage on the circuit.
        ⇒ If less than 1 V, replace the SCCM.
   ↓ **If between 4.8–5.2 V**

   **Note:** The ignition must be cycled OFF for 5 seconds then ON between each test in order to reset the SCCM. This step also requires using a GM approved test lamp (J-35616–210) or equivalent, failure to do so may result in a misdiagnosis of the module. Also verify the bulb has not been changed or it has the correct replacement bulb (6614F). Using a low impedance test lamp may cause the control module to temporarily shut down and not illuminate the test lamp.

9. Connect a test lamp between each control circuit terminal listed below and ground, one at a time. Turn the ignition OFF for 5 seconds then ignition ON between each test.
   - Seat cushion blower control circuit terminal 2
   - Seat cushion blower speed control circuit terminal 7
   - Seat back blower control circuit terminal 2
   - Seat back blower speed control circuit terminal 7

10. Verify the test lamp illuminates or slowly and dimly illuminates for approximately 5 seconds after pressing the HEAT switch.
    ⇒ **If the test lamp does not illuminate**
10.1. Ignition OFF, disconnect the X3 harness connector at the SCCM.
10.2. Test for infinite resistance between the control circuit and ground.
   ⇒ If less than infinite resistance, repair the short to ground on the circuit.
   ⇩ If infinite resistance
10.3. Test for less than 2Ω in the control circuit end to end.
   ⇒ If 2Ω or greater, repair the open/high resistance in the circuit.
   ⇒ If less than 2Ω, replace the SCCM.

⇒ If the test lamp is always ON
10.1. Ignition OFF, disconnect the X3 harness connector at the SCCM, ignition ON.
10.2. Test for less than 1 V between each of the control circuits and ground.
   ⇒ If 1 V or greater, repair the short to voltage on the circuit.
   ⇒ If less than 1 V, replace the SCCM.

⇓ If the test lamp turns ON and OFF
11. Connect a test lamp between the seat cushion heat control circuit terminal 1 and ground.
12. Ignition OFF for 5 seconds, ignition ON.
13. Verify the test lamp illuminates or slowly illuminates for approximately 2–4 seconds after pressing the HEAT switch. The test lamp may exhibit a 4 second delay before it starts to illuminate.

⇒ If the test lamp does not illuminate
13.1. Ignition OFF, disconnect the X1 harness connector at the SCCM.
13.2. Test for infinite resistance between the control circuit and ground.
   ⇒ If less than infinite resistance, repair the short to ground on the circuit.
   ⇩ If infinite resistance
13.3. Test for less than 2Ω in the control circuit end to end
   ⇒ If 2Ω or greater, repair the open/high resistance in the circuit.
   ⇒ If less than 2Ω, replace the SCCM.

⇓ If the test lamp illuminates
14. Connect a test lamp between the seat cushion cool control circuit terminal 3 ground.
15. Ignition OFF for 5 seconds, ignition ON.
16. Verify the test lamp illuminates or slowly illuminates for approximately 2–4 seconds after pressing the COOL switch. The test lamp may exhibit a 4 second delay before it starts to illuminate.

⇒ If the test lamp does not illuminate
16.1. Ignition OFF, disconnect the X1 harness connector at the SCCM.
16.2. Test for infinite resistance between the control circuit and ground.
   ⇒ If less than infinite resistance, repair the short to ground on the circuit.
   ⇩ If infinite resistance
16.3. Test for less than 2Ω in the control circuit end to end
   ⇒ If 2Ω or greater, repair the open/high resistance in the circuit.
   ⇒ If less than 2Ω, replace the SCCM.

⇓ If the test lamp illuminates
17. Ignition OFF, connect the harness connector at the seat cushion ventilation heating and cooling module.
18. Connect a test lamp between the seat back heat control circuit terminal 1 and ground.
19. Ignition OFF for 5 seconds, ignition ON.
20. Verify the test lamp illuminates or slowly illuminates for approximately 2–4 seconds after pressing the HEAT switch. The test lamp may exhibit a 4 second delay before it starts to illuminate.

⇒ **If the test lamp does not illuminate**

20.1. Ignition OFF, disconnect the X1 harness connector at the SCCM.
20.2. Test for infinite resistance between the control circuit and ground.
⇒ If less than infinite resistance, repair the short to ground on the circuit.
↓ If infinite resistance
20.3. Test for less than 2 \( \Omega \) in the control circuit end to end
⇒ If 2 \( \Omega \) or greater, repair the open/high resistance in the circuit.
⇒ If less than 2 \( \Omega \), replace the SCCM.

↓ **If the test lamp illuminates**

21. Connect a test lamp between the seat back cool control circuit terminal 3 ground.
22. Ignition OFF for 5 seconds, ignition ON,
23. Verify the test lamp illuminates or slowly illuminates for approximately 2–4 seconds after pressing the COOL switch. The test lamp may exhibit a 4 second delay before it starts to illuminate.

⇒ **If the test lamp does not illuminate**

23.1. Ignition OFF, disconnect the X1 harness connector at the SCCM.
23.2. Test for infinite resistance between the control circuit and ground.
⇒ If less than infinite resistance, repair the short to ground on the circuit.
↓ If infinite resistance
23.3. Test for less than 2 \( \Omega \) in the control circuit end to end
⇒ If 2 \( \Omega \) or greater, repair the open/high resistance in the circuit.
⇒ If less than 2 \( \Omega \), replace the seat cushion ventilation heating and cooling module.
↓ If less than 2 \( \Omega \)

**Note:** The functionality of the SCCM does not allow for a clear determination if the seat cushion ventilation heating and cooling module or the SCCM is at fault. Replace the seat cushion ventilation heating and cooling module first then continue testing.

23.4. Replace the seat cushion ventilation heating and cooling module.
23.5. Connect the harness connector at the SCCM.
23.6. Connect a test lamp between the seat back cool control circuit terminal 3 ground.
23.7. Ignition OFF for 5 seconds, ignition ON,
23.8. Verify the test lamp illuminates or slowly illuminates for approximately 2–4 seconds after pressing the COOL switch. The test lamp may exhibit a 4 second delay before it starts to illuminate.
⇒ If the test lamp does not illuminate, replace the SCCM.
↓ If the test lamp illuminates
23.9. All OK.

↓ **If the test lamp illuminates**

**Note:** The functionality of the climate control seat system does not allow for a clear determination for which ventilation heating and cooling module is at fault.
24. Ignition OFF, replace the seat cushion or seat back ventilation heating and cooling module that is suspected to be inoperative.

25. Connect all of the system components.

26. Verify that both the seat cushion and the seat back ventilation heating and cooling modules are operating.

⇒ **If any module is inoperative**
   Replace the other ventilation heating and cooling module.

⇓ **If both modules are operating**

27. All OK.

**Repair Instructions**

Perform the [Diagnostic Repair Verification](#) after completing the repair.

- Driver or Passenger Seat Back Ventilation Heating and Cooling Blower Replacement
- Front Seat Cushion Ventilation Blower Replacement
- Control Module References for the HVAC control module, seat climate control module, and memory seat module replacement, programming and setup