

PINPOINT TEST E: THE ROOF OPENING PANEL DOES NOT OPEN OR CLOSE

CONDITIONS	DETAILS/RESULTS/ACTIONS
E1 VERIFY THE ROOF OPENING PANEL ADJUSTMENT	<p data-bbox="781 359 1365 457">1 Verify the roof opening panel is adjusted correctly.</p> <ul style="list-style-type: none"> <li data-bbox="841 531 1357 615">• Is the roof opening panel adjusted correctly? <p data-bbox="781 674 935 758">→ Yes GO to E2.</p> <p data-bbox="781 810 1511 1129">→ No ADJUST the roof opening panel. REFER to Roof Opening Panel Alignment — Horizontal Adjustment or Roof Opening Panel Alignment — Height Adjustment in this section. TEST the system for normal operation.</p>
E2 CHECK THE ROOF OPENING PANEL LIFTER ASSEMBLIES FOR OBSTRUCTIONS OR DAMAGE	<p data-bbox="781 1270 1451 1360">1 Check the roof opening panel lifter assemblies for obstructions and damage.</p> <ul style="list-style-type: none"> <li data-bbox="841 1440 1487 1524">• Are the roof opening panel lifter assemblies OK? <p data-bbox="781 1583 935 1667">→ Yes GO to E3.</p> <p data-bbox="781 1719 1463 1892">→ No REMOVE all obstructions and REPAIR any damage. TEST the system for normal operation.</p>
E3 VERIFY POWER WINDOWS ARE OPERATIONAL	

1 Operate the power windows.

• Do the power windows operate?

→ **Yes**
GO to [E4](#).

→ **No**
REFER to [Section 501-11](#).

E4 CHECK CIRCUIT 400 (LB/BK) FOR VOLTAGE

1



2

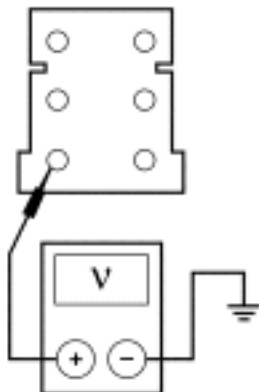


Roof opening panel motor assembly C917

3



4



GR3934-A

4 Measure the voltage between roof opening panel motor assembly C917 pin 4, circuit 400 (LB/BK), harness side and ground.

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

→ **Yes**

GO to [E5](#).

→ **No**

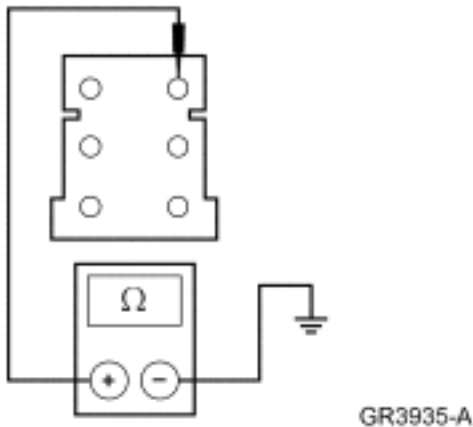
REPAIR the circuit. TEST the system for normal operation.

E5 CHECK CIRCUIT 57 (BK) FOR AN OPEN

1



2



- 2 Measure the resistance between roof opening panel motor assembly C917 pin 1, circuit 57 (BK), harness side and ground.

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

→ **Yes**

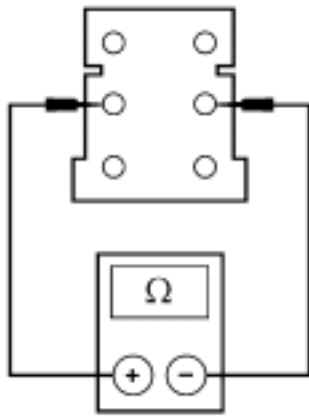
GO to [E6](#).

→ **No**

REPAIR the circuit. TEST the system for normal operation.

E6 CHECK CIRCUIT 1173 (BN/OG) FOR AN OPEN

1



GR3936-A

1 Measure the resistance between roof opening panel motor assembly C917 pin 5, circuit 1173 (BN/OG), harness side and C917 pin 2, circuit 1174 (WH/RD), harness side while depressing the open button.

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

→ **Yes**

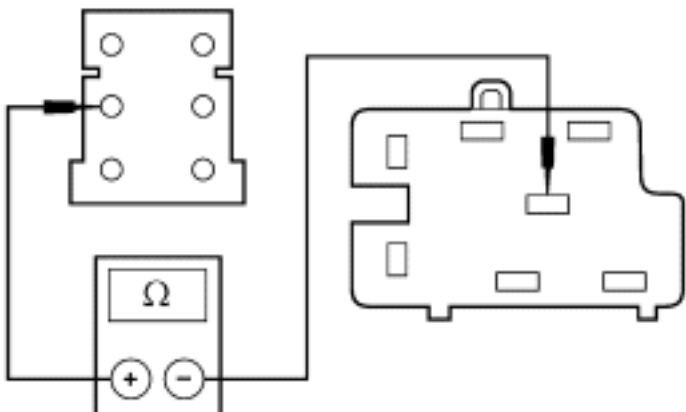
INSTALL a new roof opening panel motor assembly. REFER to [Module — Roof Opening Panel](#) and [Motor — Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

GO to [E7](#).

E7 CHECK CIRCUIT 1173 (BN/OG) FOR OPEN

2



GR3937-A

1 Disconnect roof opening panel switch C915.

2 Measure the resistance between roof opening panel motor assembly C917 pin 5, circuit 1173 (BN/OG), harness side and roof opening panel switch C915 pin 4, circuit 1173 (BN/OG), harness side.

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

→ **Yes**

GO to [E8](#).

→ **No**

REPAIR the circuit. TEST the system for normal operation.

E8 CHECK THE ROOF OPENING PANEL SWITCH

1 Test the roof opening panel switch; go to Component Test in this section.

- **Is the roof opening panel switch OK?**

→ **Yes**

INSTALL a new roof opening panel motor assembly. REFER to [Motor — Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

INSTALL a new roof opening panel switch. TEST the system for normal operation.

PINPOINT TEST F: THE ROOF OPENING PANEL DOES NOT OPEN OR CLOSE — ONE DIRECTION ONLY

CONDITIONS	DETAILS/RESULTS/ACTIONS
F1 CHECK THE ROOF OPENING PANEL SWITCH	
	1 Test the roof opening panel switch; go to Component Test in this section.

- **Is the roof opening panel switch OK?**

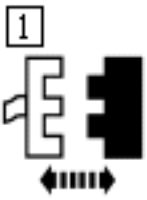
→ **Yes**

GO to [F2](#).

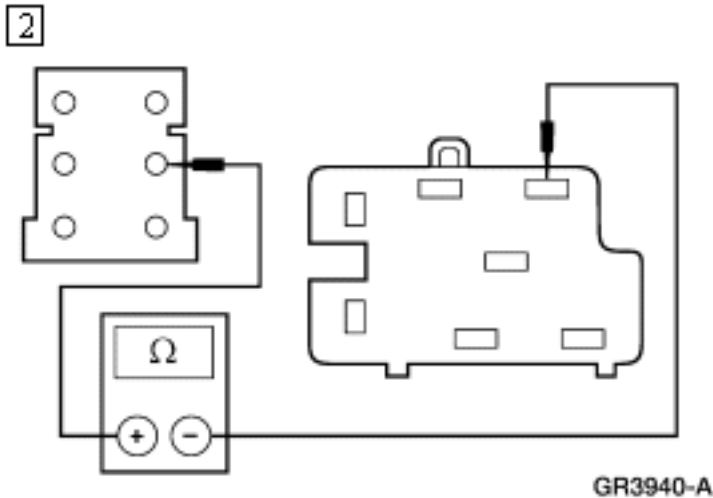
→ **No**

INSTALL a new roof opening panel switch.
TEST the system for normal operation.

F2 CHECK CIRCUIT 1174 (WH/RD) FOR AN OPEN



Roof opening panel motor assembly C917



- 2** Measure the resistance between roof opening panel motor assembly C917 pin 2, circuit 1174 (WH/RD), harness side and roof opening panel switch C915 pin 3, circuit 1174 (WH/RD), harness side.

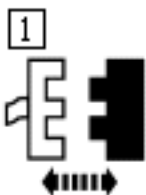
- **Is the resistance less than 5 ohms?**

→ **Yes**

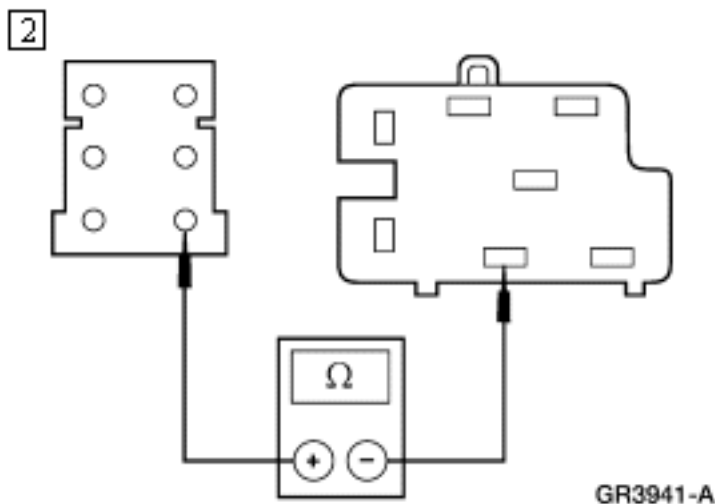
GO to [F3](#).

→ **No**

REPAIR the circuit. TEST the system for normal operation.

F3 CHECK CIRCUIT 1175 (TN/RD) FOR AN OPEN

Roof opening panel motor assembly C917



2 Measure the resistance between roof opening panel motor assembly C917 pin 1, circuit 1175 (TN/RD), harness side and roof opening panel switch C915 pin 6, circuit 1175 (TN/RD), harness side.

• Is the resistance less than 5 ohms?

→ **Yes**

INSTALL a new roof opening panel motor assembly. REFER to [Module — Roof Opening Panel](#) and [Motor — Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

REPAIR the circuit. TEST the system for normal operation.

Component Test**Switch**

1. Measure the resistance between the following roof opening panel switch pins


(component side) as follows:

Switch Position	Pin	Resistance Value
Off	3 and 4, 4 and 6	Greater than 10,000 ohms.
Up or Closed	4 and 6	Less than 5 ohms.
Down or Open	3 and 4	Less than 5 ohms.

Roof Opening Panel

Refer to Wiring Diagrams Cell [101](#), Roof Opening Panel for schematic and connector information.

Special Tool(s)

 <p>ST1137-A</p>	<p>73III Automotive Meter or equivalent 105-R0057</p>
---	---

Inspection and Verification

1. Verify the customer concern by operating the system.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none"> • Roof opening panel • Roof opening panel frame • Roof opening panel drain hoses • Roof opening panel lifter assemblies • Roof opening panel water trough • Roof opening panel air deflector assembly • Roof opening panel seal • Roof opening panel shield 	<ul style="list-style-type: none"> • Battery junction box (BJB) circuit breaker 601 (30A) • Circuitry • Accessory delay relay • Loose or corroded connections • Roof opening panel switch

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

4. If the concern is not visually evident, verify the symptom. GO to [Symptom Chart](#)

Symptom Chart


Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none"> The roof opening panel has excessive wind noise 	<ul style="list-style-type: none"> Roof opening panel adjustment. Roof opening panel seal. 	<ul style="list-style-type: none"> Go To Pinpoint Test A.
<ul style="list-style-type: none"> The roof opening panel leaks 	<ul style="list-style-type: none"> Roof opening panel adjustment. Front rail seal. Drain tube attachment points. Roof opening panel water trough and seal. Roof opening panel drain hose. Roof opening panel seal. Roof opening panel. 	<ul style="list-style-type: none"> Go To Pinpoint Test B.
<ul style="list-style-type: none"> The roof opening panel rattles 	<ul style="list-style-type: none"> Roof opening panel. Roof opening panel tracks. Roof opening panel air deflector assembly. Roof opening panel water trough. Roof opening panel lifter assemblies. Roof opening panel water trough guide. Headliner. Motor pad. Rear side brackets. 	<ul style="list-style-type: none"> Go To Pinpoint Test C.

<ul style="list-style-type: none"> • The roof opening panel is noisy during operation 	<ul style="list-style-type: none"> • Roof opening panel. • Roof opening panel tracks. • Roof opening panel lifter assemblies. • Roof opening panel adjustment. • Roof opening panel motor assembly. 	<ul style="list-style-type: none"> • Go To Pinpoint Test D.
<ul style="list-style-type: none"> • The roof opening panel does not open or close 	<ul style="list-style-type: none"> • Roof opening panel adjustment. • Battery junction box (BJB) Circuit Breaker 601 (30A). • Circuitry. • Roof opening panel switch. • Roof opening panel motor assembly. • Roof opening panel lifter assemblies. 	<ul style="list-style-type: none"> • Go To Pinpoint Test E.
<ul style="list-style-type: none"> • The express open is inoperative 	<ul style="list-style-type: none"> • Circuitry. • Roof opening panel switch. • Roof opening panel motor assembly. 	<ul style="list-style-type: none"> • Go To Pinpoint Test F.
<ul style="list-style-type: none"> • The roof opening panel does not have soft stop 	<ul style="list-style-type: none"> • Circuitry. • Roof opening panel switch. • Roof opening panel motor assembly. 	<ul style="list-style-type: none"> • INSTALL a new roof opening panel motor assembly. REFER to Module — Roof Opening Panel and Motor — Roof Opening Panel in this section.
<ul style="list-style-type: none"> • The roof opening panel does not open or close — one direction only 	<ul style="list-style-type: none"> • Circuitry. • Roof opening panel switch. • Roof opening panel motor assembly. 	<ul style="list-style-type: none"> • Go To Pinpoint Test F.

Pinpoint Tests

PINPOINT TEST A: THE ROOF OPENING PANEL HAS EXCESSIVE WIND NOISE

CONDITIONS	DETAILS/RESULTS/ACTIONS
A1 CHECK THE ROOF OPENING PANEL SEAL	
	<p data-bbox="402 573 1393 659">1 NOTE: Make sure the seals are not loose, cracked, pinched or obstructed.</p> <p data-bbox="423 716 938 751">Check the roof opening panel seal.</p> <hr/> <p data-bbox="391 877 974 913">. Is the roof opening panel seal OK?</p> <p data-bbox="326 972 527 1052">→ Yes GO to A2.</p> <p data-bbox="326 1098 1445 1178">→ No REPAIR or INSTALL a new seal. TEST the system for normal operation.</p>
A2 CHECK THE ROOF OPENING PANEL ADJUSTMENT	
<p data-bbox="151 1268 188 1304">1</p> 	
	<p data-bbox="407 1488 1052 1539">2 Open and close the roof opening panel.</p>
	<p data-bbox="407 1568 1333 1619">3 Check the adjustment when the roof opening panel closes.</p>

• **Is the adjustment OK?**

→ **Yes**

CHECK for correct installation of the roof opening panel motor. REFER to [Motor — Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

ADJUST the roof opening panel. REFER to [Roof Opening Panel Alignment — Horizontal Adjustment](#) or [Roof Opening Panel Alignment — Height Adjustment](#) in this section. TEST the system for normal operation.

PINPOINT TEST B: THE ROOF OPENING PANEL LEAKS

CONDITIONS	DETAILS/RESULTS/ACTIONS
B1 CHECK THE ADJUSTMENT OF THE ROOF OPENING PANEL	
	<p>1 NOTE: Make sure the roof opening panel seal are not cracked or loose.</p> <p>Check the roof opening panel seal.</p>
	<p>• Does the roof opening panel seal correctly?</p> <p>→ Yes GO to B2.</p> <p>→ No ADJUST the roof opening panel. REFER to Roof Opening Panel Alignment — Horizontal Adjustment or Roof Opening Panel Alignment — Height Adjustment in this section. TEST the system for normal operation.</p>
B2 CHECK THE ROOF OPENING PANEL DRAIN HOSES	
	<p>1 NOTE: Make sure the roof opening panel drain hoses are not cracked, slit, pinched or obstructed.</p> <p>Check the four roof opening panel drain hoses for correct operation.</p>

• **Are the roof opening panel drain hoses OK?**

→ **Yes**

GO to [B3](#).

→ **No**

REPAIR the roof opening panel drain hose(s). TEST the system for normal operation.

B3 CHECK THE ROOF OPENING PANEL DRAIN HOSE ATTACHMENT POINTS

1 **NOTE:** Make sure the roof opening panel drain hose attachment points are not damaged or obstructed.

Check the roof opening panel drain hose attachment points for correct attachment.

• **Are the roof opening panel drain hose attachment points OK?**

→ **Yes**

GO to [B4](#).

→ **No**

REPAIR or INSTALL a new roof opening panel. TEST the system for normal operation.

B4 CHECK THE ROOF OPENING PANEL WATER TROUGH CONDITION

1 Check the roof opening panel water trough and the roof opening panel water trough seal for damage.

• **Are the roof opening panel water trough and seal OK?**

→ **Yes**

GO to [B5](#).

→ **No**

REPAIR the roof opening panel water trough and seal. TEST the system for normal operation.

B5 CHECK THE CONDITION OF THE ROOF SLIDING GLASS PANEL

1 Check the roof opening panel frame for damage that may cause the roof opening panel seal to seat incorrectly.

. Is the roof opening panel frame OK?

→ **Yes**

INSTALL a new roof opening panel. REFER to [Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

REPAIR or INSTALL a new roof opening panel frame. REFER to [Roof Opening Panel Frame](#) in this section. TEST the system for normal operation.

PINPOINT TEST C: THE ROOF OPENING PANEL RATTLES

CONDITIONS	DETAILS/RESULTS/ACTIONS
C1 CHECK THE ROOF OPENING PANEL OPERATION	
	<p>1 Check the roof opening panel during operation.</p> <p>. Is the roof opening panel loose?</p> <p>→ Yes ADJUST the roof opening panel. REFER to Roof Opening Panel Alignment — Horizontal Adjustment or Roof Opening Panel Alignment — Height Adjustment in this section. TEST the system for normal operation.</p> <p>→ No GO to C2.</p>
C2 CHECK THE ROOF OPENING PANEL TRACKS	
	<p>1 Open the roof opening panel.</p>
	<p>2 Check the roof opening panel tracks for obstructions and damage.</p>

• **Are the roof opening panel tracks OK?**

→ **Yes**

GO to [C3](#).

→ **No**

REMOVE all the roof opening panel track obstructions and REPAIR the roof opening panel tracks. TEST the system for normal operation.

C3 CHECK THE ROOF OPENING PANEL WATER TROUGH AND TROUGH GUIDES

1 Check the water roof opening panel water trough and trough guides for any loose fasteners or obstructions.

• **Are the roof opening panel water trough and trough guides installed securely and free from obstructions?**

→ **Yes**

GO to [C4](#).

→ **No**

REMOVE all obstructions from the roof opening panel water trough and install securely. SECURE the trough guides or INSTALL new roof opening panel water trough guides if damaged. TEST the system for normal operation.

C4 CHECK THE ROOF OPENING PANEL SHIELD

1 Check the roof opening panel shield for correct installation.

• **Is the roof opening panel shield installed correctly?**

→ **Yes**

GO to [C5](#).

→ **No**

INSTALL the roof opening panel shield correctly. TEST the system for normal operation.

C5 CHECK THE ROOF OPENING PANEL MOTOR PAD

1 Check the motor pad for correct installation and damage.

• **Is the motor pad installed correctly and not damaged?**

→ **Yes**

GO to [C6](#).

→ **No**

INSTALL the motor pad correctly or INSTALL a new motor pad. TEST the system for normal operation.

C6 CHECK THE ROOF OPENING PANEL AIR DEFLECTOR ASSEMBLY

1 Check the roof opening panel air deflector assembly for obstructions and damage.

• **Is the roof opening panel air deflector assembly OK?**

→ **Yes**

GO to [C7](#).

→ **No**

REMOVE all obstructions and REPAIR or INSTALL a new roof opening panel air deflector assembly. TEST the system for normal operation.

C7 CHECK THE ROOF OPENING PANEL

1 Verify the roof opening panel is free from obstruction and damage, and is securely fastened.

• **Is the roof opening panel OK?**

→ **Yes**

GO to [C8](#).

→ **No**

REPAIR or INSTALL a new roof opening panel. REFER to [Roof Opening Panel](#) in this section. TEST the system for normal operation.

C8 CHECK THE ROOF OPENING PANEL LIFTER ASSEMBLIES

1 Verify the roof opening panel lifter assemblies are free from obstructions and damage.

• **Are the roof opening panel lifter assemblies OK?**

→ **Yes**

INSTALL a new roof opening panel frame. REFER to [Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

REMOVE all obstructions from the roof opening panel lifter assemblies and REPAIR any damage. TEST the system for normal operation.

PINPOINT TEST D: THE ROOF OPENING PANEL IS NOISY DURING OPERATION

CONDITIONS	DETAILS/RESULTS/ACTIONS
D1 CHECK THE ROOF OPENING PANEL FOR OBSTRUCTIONS OR DAMAGE	
	<p>1 Check the roof opening panel for any obstructions and damage.</p> <p>• Are there any obstructions and/or damage?</p> <p>→ Yes REMOVE all obstructions. REPAIR any damage or INSTALL a new roof opening panel. TEST the system for normal operation.</p> <p>→ No GO to D2.</p>
D2 CHECK THE ROOF OPENING PANEL OPERATION	
	<p>1 Check the roof opening panel during operation.</p> <p>• Is the roof opening panel loose or incorrectly adjusted?</p> <p>→ Yes ADJUST the roof opening panel. REFER to Roof Opening Panel Alignment — Horizontal Adjustment or Roof Opening Panel Alignment — Height Adjustment in this section. TEST the system for normal operation.</p> <p>→ No GO to D3.</p>

D3 CHECK THE ROOF OPENING PANEL TRACKS

1 Open the roof.

2 Check the roof opening panel tracks for obstructions and damage.

. Are the roof opening panel tracks OK?

→ **Yes**

GO to [D4](#).

→ **No**

REMOVE all obstructions and REPAIR any damage. TEST the system for normal operation.

D4 CHECK THE ROOF OPENING PANEL SHIELD

1 Check the roof opening panel shield for correct movement.

. Is the roof opening panel shield moving correctly?

→ **Yes**

GO to [D5](#).

→ **No**

REMOVE and REINSTALL the roof opening panel shield. TEST the system for normal operation.

D5 CHECK THE ROOF OPENING PANEL LIFTER ASSEMBLIES

1 Check the roof opening panel lifter assemblies for obstructions and damage.

. Are the roof opening panel lifter assemblies OK?

→ **Yes**

GO to [D6](#).

→ **No**

REMOVE all obstructions and REPAIR any damage. TEST the system for normal operation.

D6 CHECK THE ROOF OPENING PANEL MOTOR

1 Gain access to the roof opening panel motor.

2 Open the roof opening panel.

. Does the motor make excessive noise?

→ **Yes**

INSTALL a new roof opening panel motor. REFER to [Motor — Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

ADJUST the roof opening panel. REFER to [Roof Opening Panel Alignment — Horizontal Adjustment](#) or [Roof Opening Panel Alignment — Height Adjustment](#) in this section. TEST the system for normal operation.

PINPOINT TEST E: THE ROOF OPENING PANEL DOES NOT OPEN OR CLOSE

CONDITIONS	DETAILS/RESULTS/ACTIONS
E1 VERIFY THE ROOF OPENING PANEL ADJUSTMENT	
	<p>1 Verify the roof opening panel is adjusted correctly.</p> <p>. Is the roof opening panel adjusted correctly?</p> <p>→ Yes GO to E2.</p> <p>→ No ADJUST the roof opening panel. REFER to Roof Opening Panel Alignment — Horizontal Adjustment or Roof Opening Panel Alignment — Height Adjustment in this section. TEST the system for normal operation.</p>
E2 CHECK THE ROOF OPENING PANEL LIFTER ASSEMBLIES FOR OBSTRUCTIONS OR DAMAGE	

1 Check the roof opening panel lifter assemblies for obstructions and damage.

• Are the roof opening panel lifter assemblies OK?

→ **Yes**
GO to [E3](#).

→ **No**
REMOVE all obstructions and REPAIR any damage. TEST the system for normal operation.

E3 VERIFY POWER WINDOWS ARE OPERATIONAL

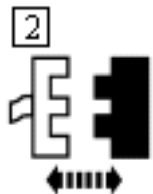
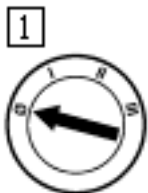
1 Operate the power windows.

• Do the power windows operate?

→ **Yes**
GO to [E4](#).

→ **No**
REFER to [Section 501-11](#).

E4 CHECK CIRCUIT 400 (LB/BK) FOR VOLTAGE

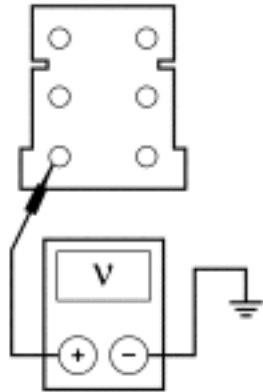


Roof opening panel motor assembly C917

3



4



GR3934-A

4

Measure the voltage between roof opening panel motor assembly C917 pin 4, circuit 400 (LB/BK), harness side and ground.

• Is the voltage greater than 10 volts?

→ **Yes**
GO to [E5](#).

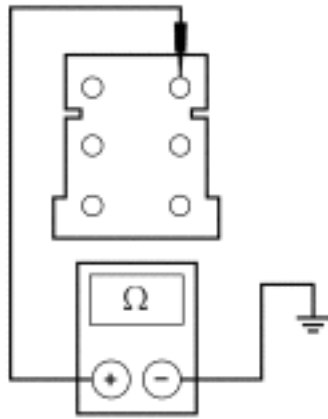
→ **No**
REPAIR the circuit. TEST the system for normal operation.

E5 CHECK CIRCUIT 57 (BK) FOR AN OPEN

1



2



GR3935-A

2 Measure the resistance between roof opening panel motor assembly C917 pin 1, circuit 57 (BK), harness side and ground.

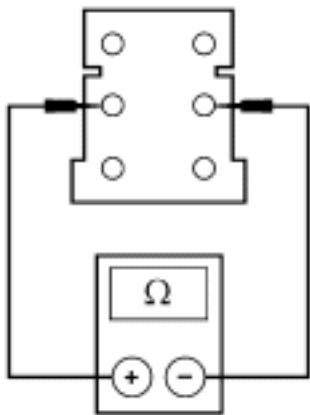
• **Is the resistance less than 5 ohms?**

→ **Yes**
GO to [E6](#).

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

E6 CHECK CIRCUIT 1173 (BN/OG) FOR AN OPEN

1



GR3936-A

1 Measure the resistance between roof opening panel motor assembly C917 pin 5, circuit 1173 (BN/OG), harness side and C917 pin 2, circuit 1174 (WH/RD), harness side while depressing the open button.

• Is the resistance less than 5 ohms?

→ **Yes**

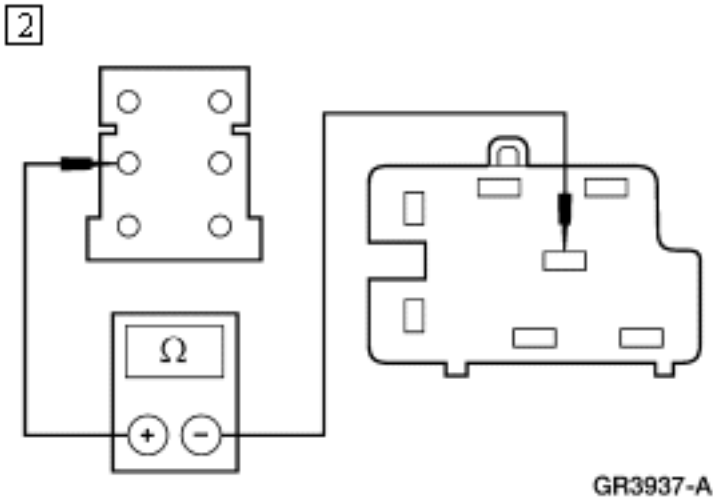
INSTALL a new roof opening panel motor assembly. REFER to [Module — Roof Opening Panel](#) and [Motor — Roof Opening Panel](#) in this section. TEST the system for normal operation.

→ **No**

GO to [E7](#).

E7 CHECK CIRCUIT 1173 (BN/OG) FOR OPEN

1 Disconnect roof opening panel switch C915.



2 Measure the resistance between roof opening panel motor assembly C917 pin 5, circuit 1173 (BN/OG), harness side and roof opening panel switch C915 pin 4, circuit 1173 (BN/OG), harness side.

• Is the resistance less than 5 ohms?

→ **Yes**

GO to [E8](#).

→ **No**

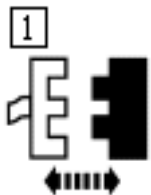
REPAIR the circuit. TEST the system for normal operation.

E8 CHECK THE ROOF OPENING PANEL SWITCH

	<p>1 Test the roof opening panel switch; go to Component Test in this section.</p> <p>. Is the roof opening panel switch OK?</p> <p>→ Yes INSTALL a new roof opening panel motor assembly. REFER to Motor — Roof Opening Panel in this section. TEST the system for normal operation.</p> <p>→ No INSTALL a new roof opening panel switch. TEST the system for normal operation.</p>
--	--

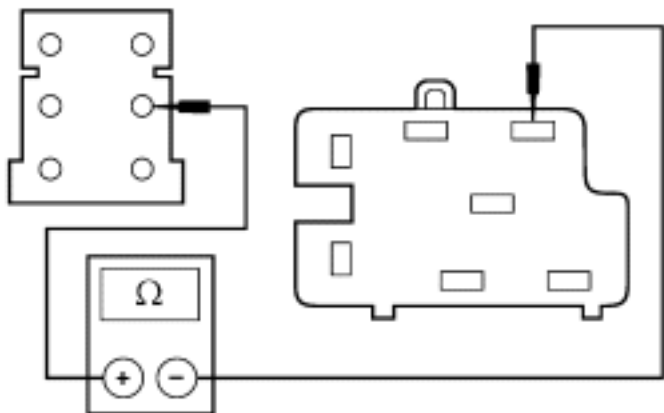
PINPOINT TEST F: THE ROOF OPENING PANEL DOES NOT OPEN OR CLOSE — ONE DIRECTION ONLY

CONDITIONS	DETAILS/RESULTS/ACTIONS
<p>F1 CHECK THE ROOF OPENING PANEL SWITCH</p>	<p>1 Test the roof opening panel switch; go to Component Test in this section.</p> <p>. Is the roof opening panel switch OK?</p> <p>→ Yes GO to F2.</p> <p>→ No INSTALL a new roof opening panel switch. TEST the system for normal operation.</p>
<p>F2 CHECK CIRCUIT 1174 (WH/RD) FOR AN OPEN</p>	



Roof opening panel motor assembly C917

2



GR3940-A

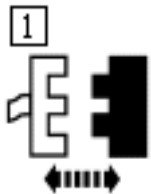
2 Measure the resistance between roof opening panel motor assembly C917 pin 2, circuit 1174 (WH/RD), harness side and roof opening panel switch C915 pin 3, circuit 1174 (WH/RD), harness side.

• Is the resistance less than 5 ohms?

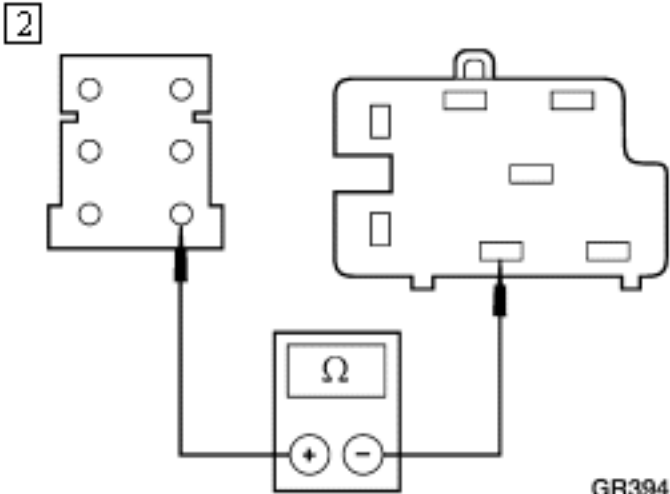
→ **Yes**
GO to [F3](#).

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

F3 CHECK CIRCUIT 1175 (TN/RD) FOR AN OPEN



Roof opening panel motor assembly C917

 <p>2</p> <p>GR3941-A</p>	<p>2 Measure the resistance between roof opening panel motor assembly C917 pin 1, circuit 1175 (TN/RD), harness side and roof opening panel switch C915 pin 6, circuit 1175 (TN/RD), harness side.</p>
	<p>• Is the resistance less than 5 ohms?</p> <p>→ Yes INSTALL a new roof opening panel motor assembly. REFER to Module — Roof Opening Panel and Motor — Roof Opening Panel in this section. TEST the system for normal operation.</p> <p>→ No REPAIR the circuit. TEST the system for normal operation.</p>

Component Test

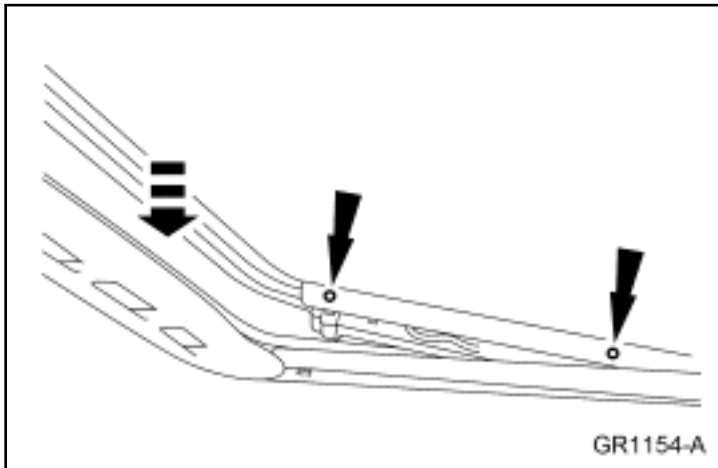
Switch

1. Measure the resistance between the following roof opening panel switch pins (component side) as follows:

Switch Position	Pin	Resistance Value
Off	3 and 4, 4 and 6	Greater than 10,000 ohms.
Up or Closed	4 and 6	Less than 5 ohms.
Down or Open	3 and 4	Less than 5 ohms.

Roof Opening Panel Alignment — Horizontal Adjustment

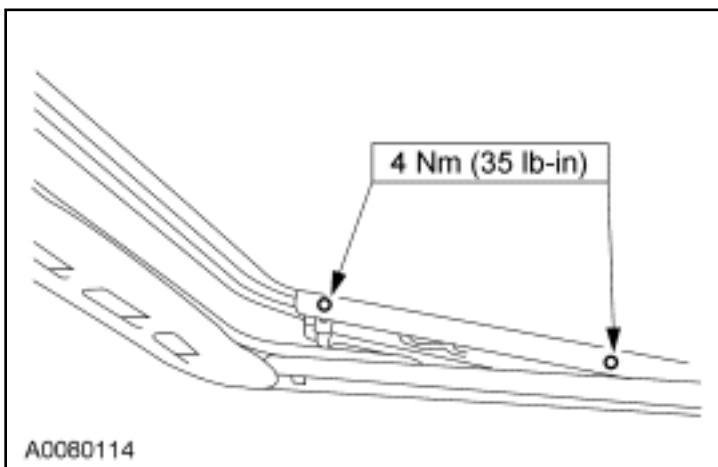
1. Loosen the roof opening panel bolts on the driver side.



2.  **CAUTION:** Use care to avoid scratching the roof or damaging the roof opening panel seal.

Insert a plastic bar (or similar tool) between the rear of the roof opening panel seal and the roof opening panel.

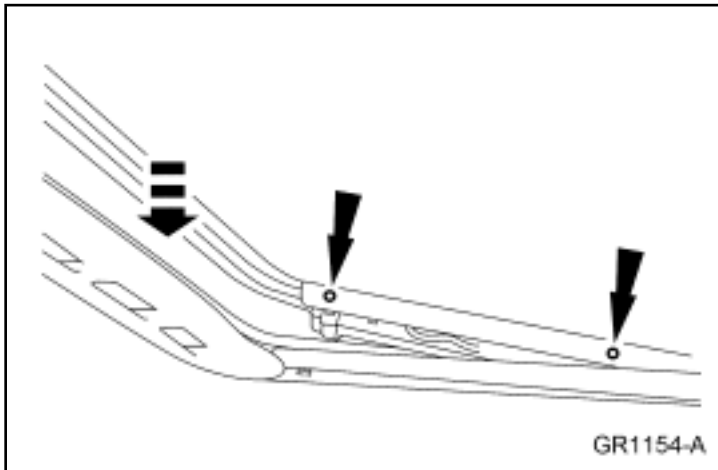
3. Gently move the roof opening panel forward.
4. Tighten the roof opening panel bolts.



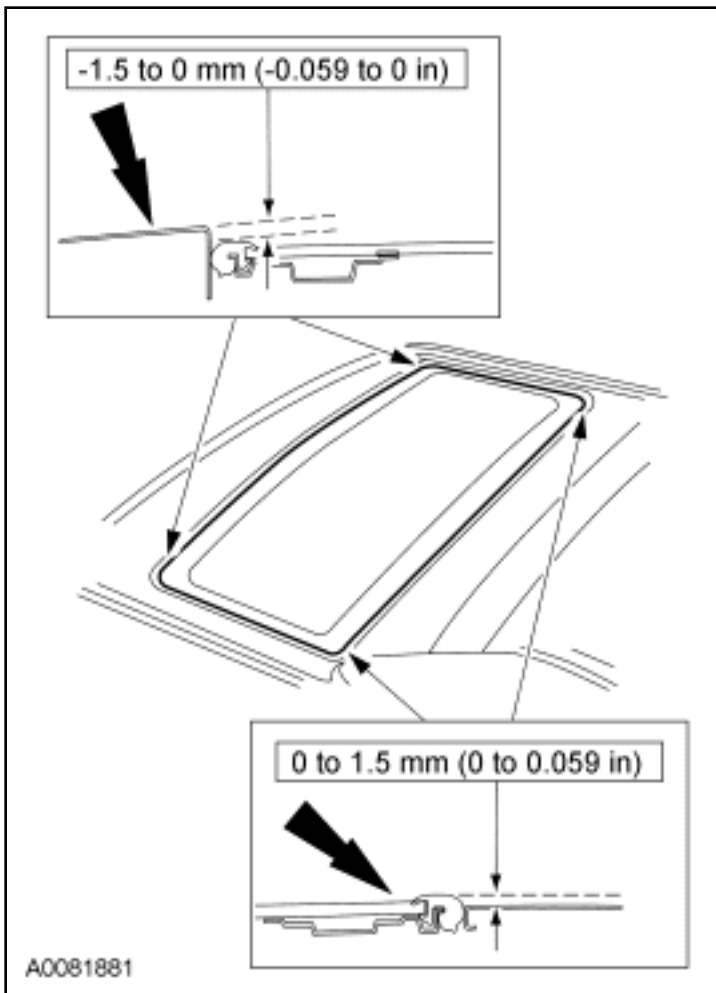
5. Repeat for the passenger side.

Roof Opening Panel Alignment — Height Adjustment

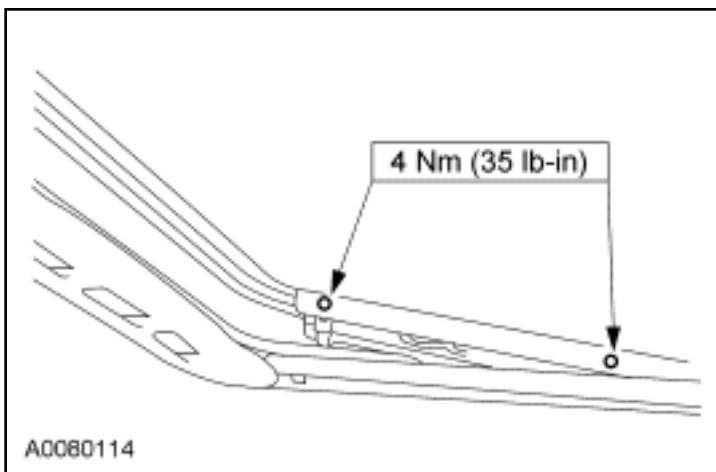
1. Loosen the four roof opening panel bolts.



2. Position the roof opening panel to the roof panel as specified.



3. Maintain the roof opening panel position and tighten the four roof opening panel bolts.





← 2000 Expedition/
Navigator
Contents/Index

← GROUP 01:
Body

**SECTION 501-11:
Glass, Frames and
Mechanisms**

SPECIFICATIONS

DESCRIPTION AND
OPERATION

[Glass, Frames and
Mechanisms](#)

DIAGNOSIS AND TESTING

[Glass, Frames and
Mechanisms](#)

[Inspection and
Verification](#)

[GEM Diagnostic
Trouble Code \(DTC\)
Index](#)

[GEM Parameter
Identification \(PID\)
Index](#)

[GEM Active
Command Index](#)

[Symptom Chart](#)

[Pinpoint Tests](#)

GENERAL PROCEDURES

[Heated Window Grid
Wire Repair](#)

[Lead Terminal Repair](#)

REMOVAL AND
INSTALLATION

SECTION 501-11:

Glass, Frames and Mechanisms

Choose an item on the left side to display section contents.

[Switch—Rear Window Defrost](#)

[Window Glass—Front Door](#)

[Window Glass—Rear Door](#)

[Window Glass—Rear Quarter, Fixed](#)

[Window Glass—Rear Quarter, Vented](#)

[Window Glass—Frame, Rear Quarter, Vented](#)

[Window Glass—Liftgate](#)

[Moulding—Liftgate Window Glass, Navigator](#)

[Front Door Window Regulator Motor](#)

[Motor—Rear Door](#)

[Motor—Rear Quarter](#)

[Window Regulator—Front Door](#)

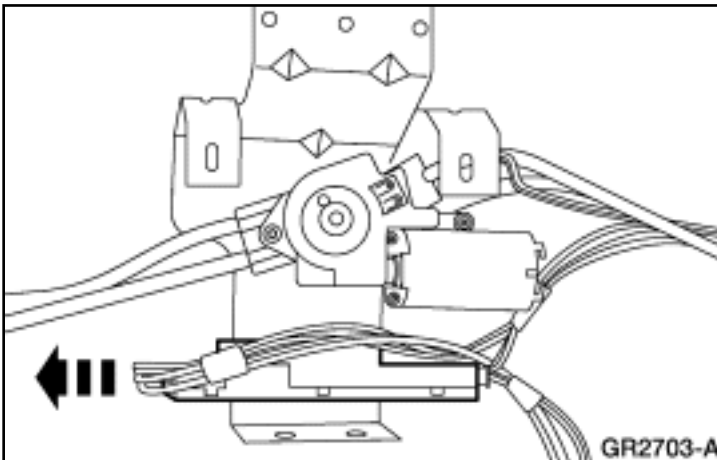
[Window Regulator—Rear Door](#)

[Windshield Glass](#)

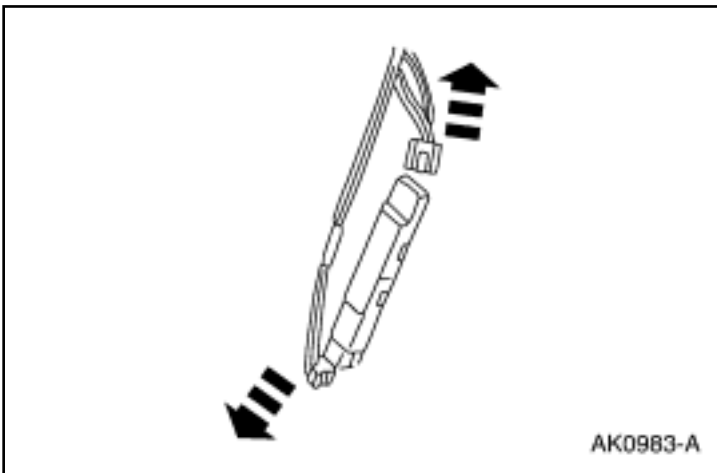
Module — Roof Opening Panel

Removal

1. Close the roof opening panel.
2. Disconnect the battery ground cable (14301). For additional information, refer to [Section 414-01](#).
3. Remove the headliner. For additional information, refer to [Section 501-05](#).
4. Slide the roof opening panel module from the retaining bracket.



5. Disconnect the electrical connectors and remove the roof opening panel module.



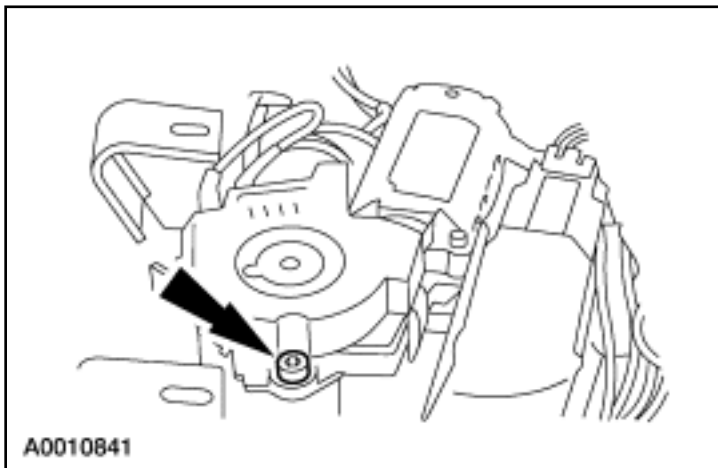
Installation

1. To install, reverse the removal procedure.
-

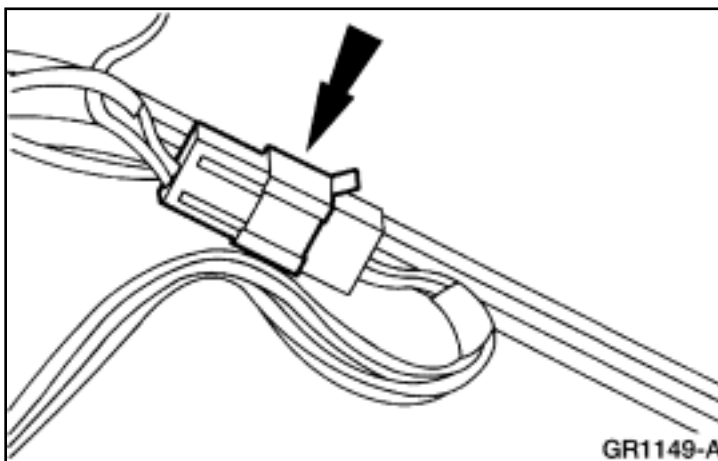
Motor — Roof Opening Panel

Removal

1. Make sure the roof opening panel is in the closed position. If the roof opening panel is in the open position and cannot be closed using the control switch, manually close the roof opening panel. For additional information, refer to [Manual Operation](#) in this section.
2. Remove the headliner. For additional information, refer to [Section 501-05](#).
3. Remove the three roof opening panel motor bolts.



4. Disconnect the electrical connector and remove the roof opening panel motor (15790).

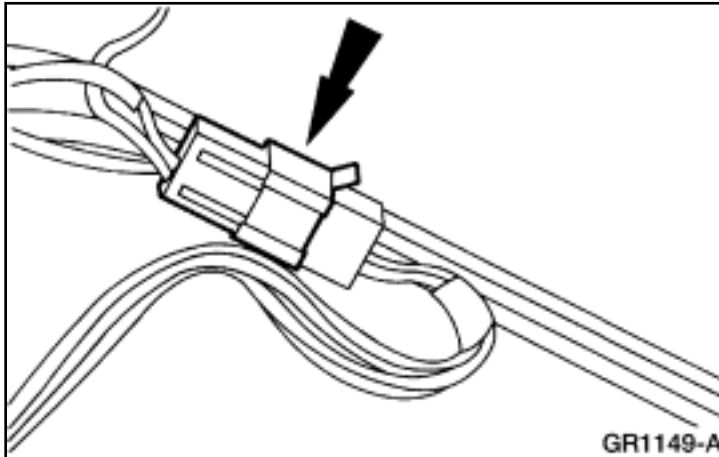


Installation

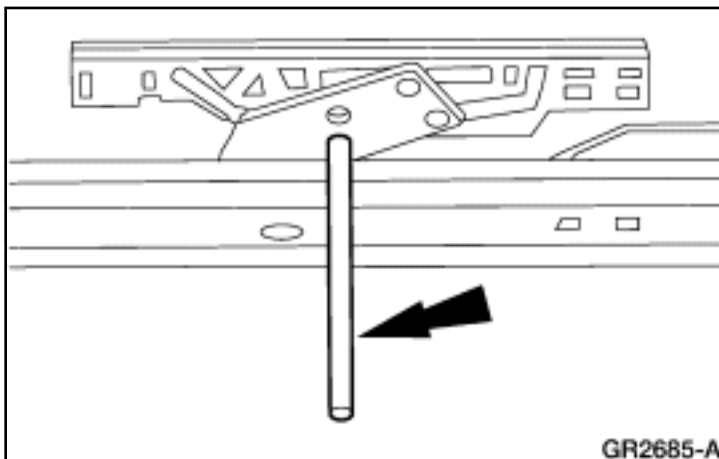
NOTE: The roof opening panel module must be installed prior to motor installation. For additional information, refer to [Module — Roof Opening Panel](#) in this section.

1. **NOTE:** The roof opening panel should be in the closed position.

Connect the electrical connector.



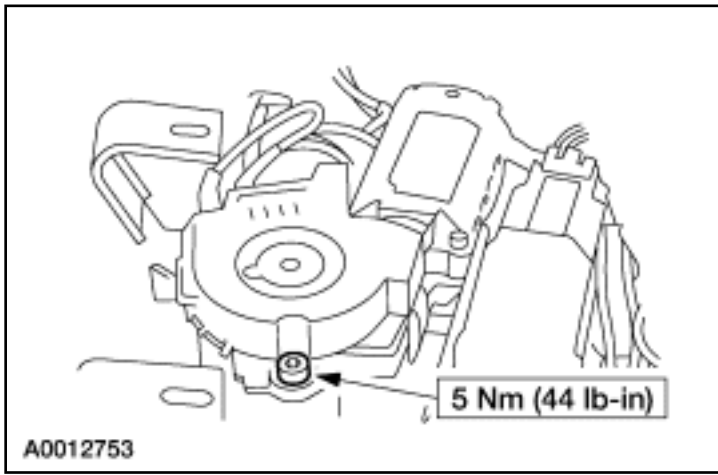
2. Cycle the roof opening panel motor until it stops in the closed position.
3. Remove the roof opening panel. For additional information, refer to [Roof Opening Panel](#) in this section.
4. Insert two 1/8 inch diameter pins through both portions of the roof opening panel lifter assemblies.



5. **NOTE:** It may be necessary to rotate the roof opening panel motor slightly to engage the drive splines.

Install the roof opening panel motor.

- Install the three bolts.

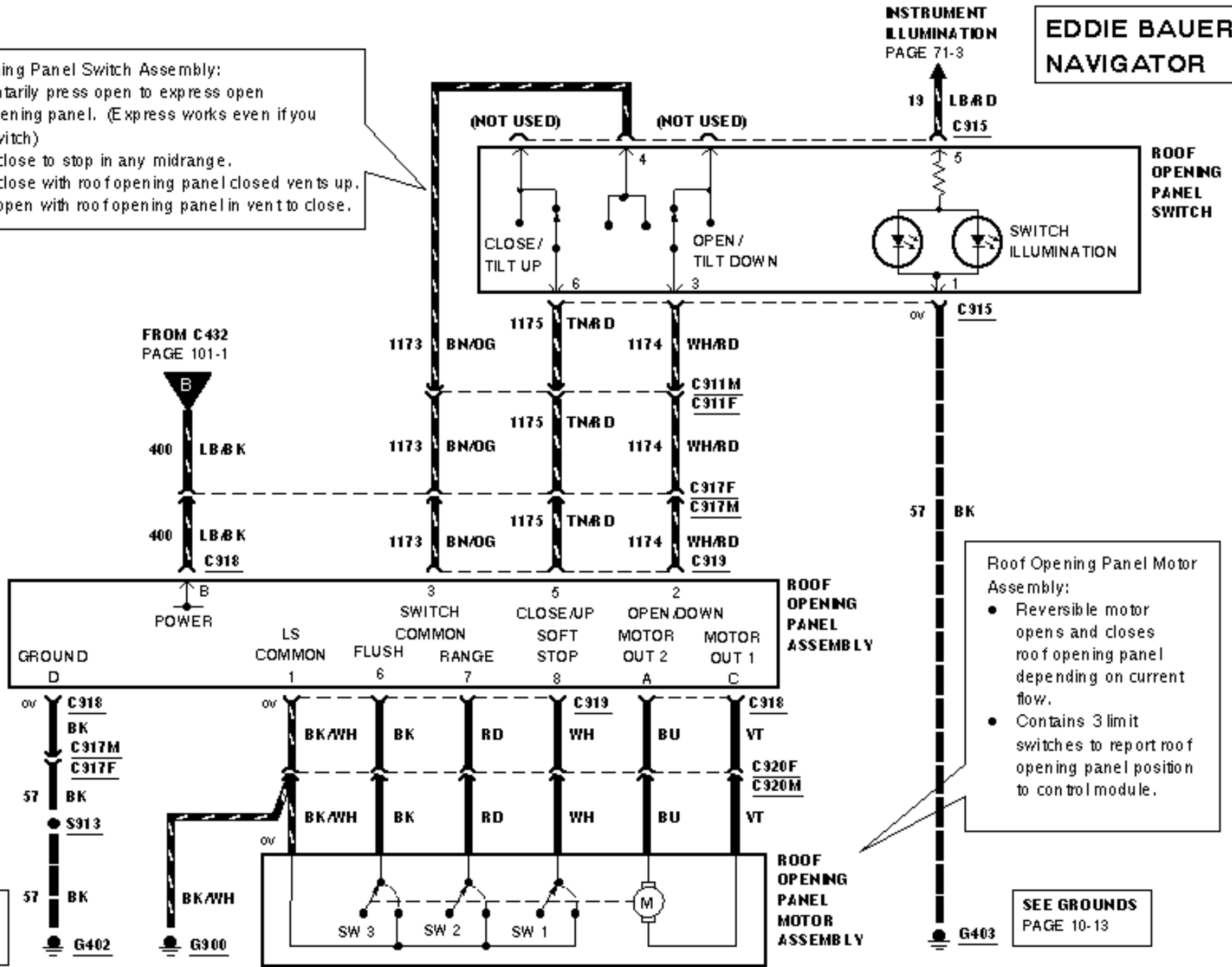


6. Remove the pins.
 7. Install the roof opening panel. For additional information, refer to [Roof Opening Panel](#).
 8. Install the headliner. For additional information, refer to [Section 501-05](#).
-

**EDDIE BAUER/
NAVIGATOR**

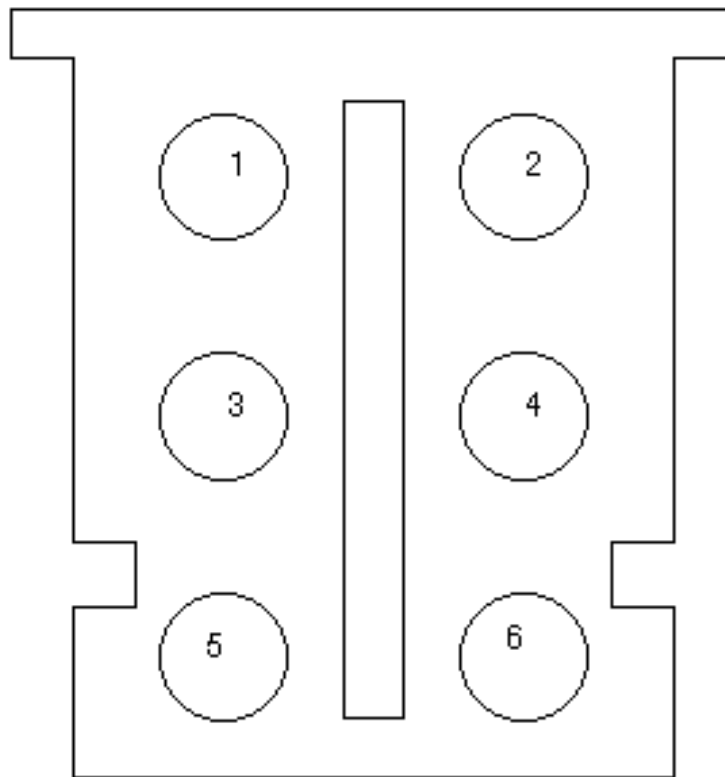
Roof Opening Panel Switch Assembly:

- Momentarily press open to express open roof opening panel. (Express works even if you hold switch)
- Press close to stop in any midrange.
- Press close with roof opening panel closed vents up.
- Press open with roof opening panel in vent to close.



SEE GROUNDS
PAGES 10-14,
10-15

SEE GROUNDS
PAGE 10-13



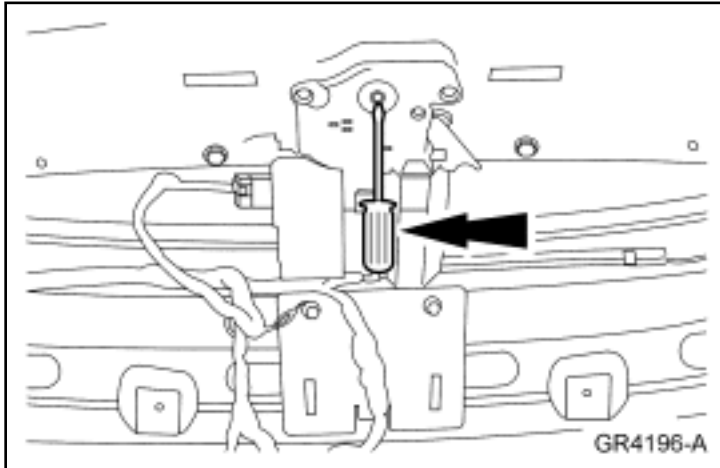
C920 (BROWN)

ROOF OPENING PANEL MOTOR ASSEMBLY

PIN	CIRCUIT	CIRCUIT FUNCTION
1	(BK)	Control Unit to Limit Switch 3
2	(WH)	Control Unit to Limit Switch 1
3	(RD)	Control Unit to Limit Switch 2
4	(VT)	Control Unit to Roof Opening Panel Motor
5	(BK/WH)	Limit Switch Common
6	(BU)	Control Unit to Roof Opening Panel Motor

Manual Operation

1. Lower the headliner. For additional information, refer to [Section 501-05](#).
2. Insert a G5/32 allen wrench in the center of the manual drive slot. Rotate clockwise until the roof opening panel is closed.

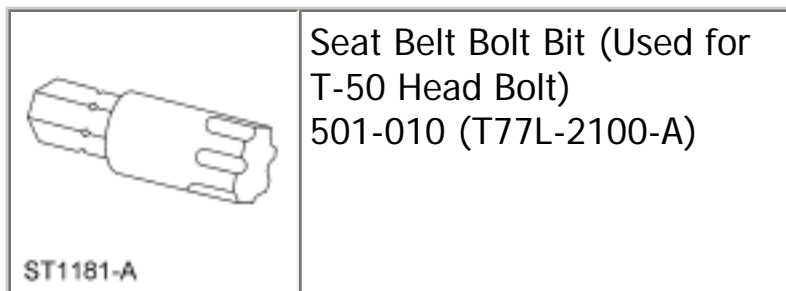


SECTION 501-05: Interior Trim and
Ornamentation

REMOVAL AND INSTALLATION

[Procedure revision date: 06/17/1999](#)**Headliner**

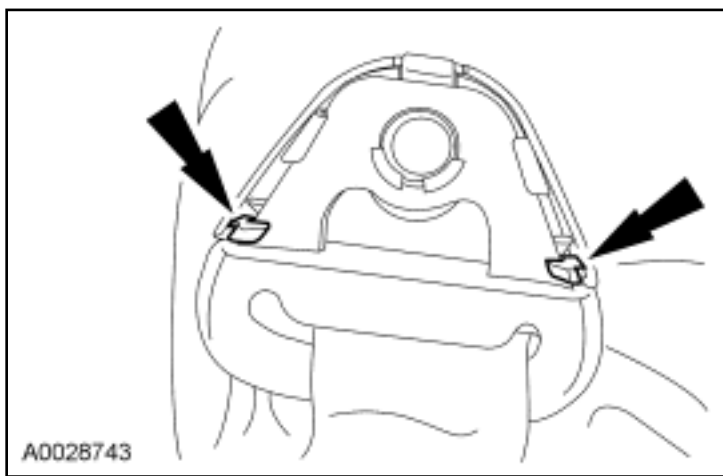
Special Tool(s)

**Removal and Installation**

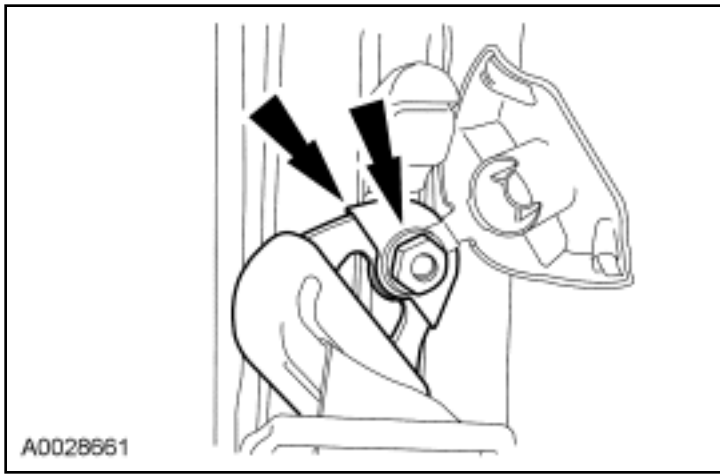
1. **NOTE:** Inspect the shoulder safety belt guide and cover for damage. If the shoulder safety belt guide or cover is damaged or cover does not remain closed, install a new shoulder safety belt guide.

NOTE: Shoulder safety belt guide cover shown removed for clarity.

From behind the front shoulder safety belt guide cover, release the retaining tab and open the cover.

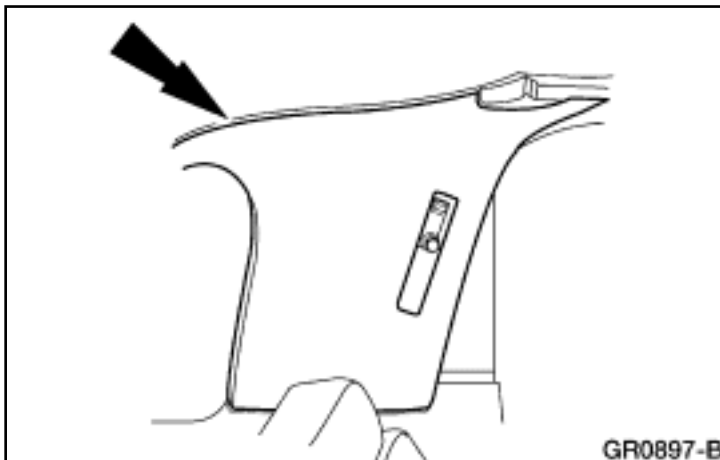


2. Remove the nut and shoulder safety belt guide.

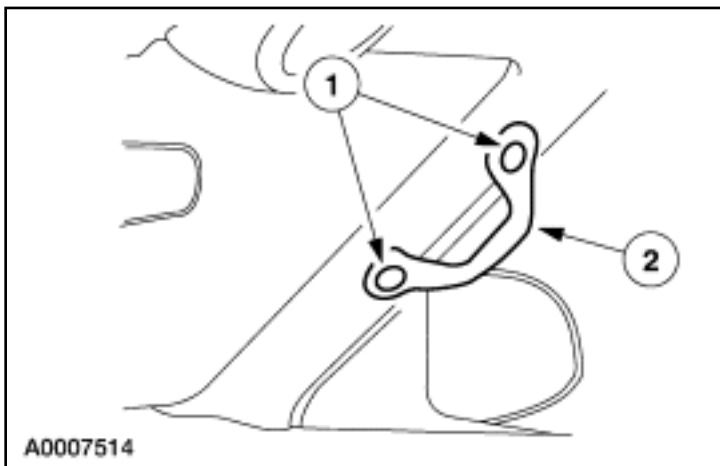


3. **NOTE:** Remove the upper attachments first, followed by the front lower attachment and the lower rear hook.

Remove the two C-pillar trim panels.



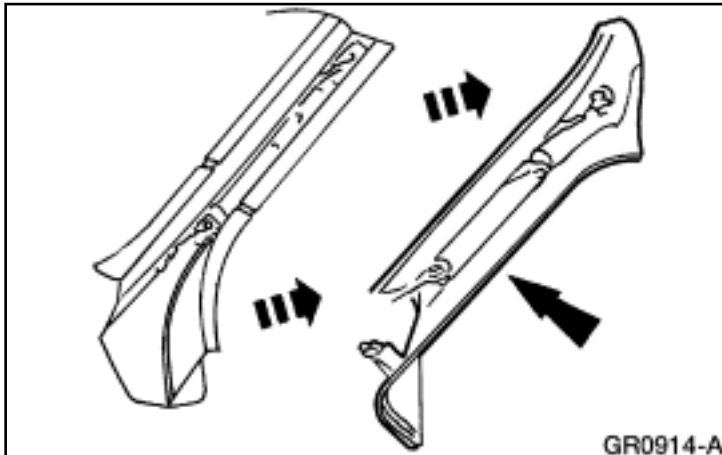
4. Remove the LH and RH A-pillar assist handles.
 1. Remove the four screw covers and four screws.
 2. Remove the two A-pillar assist handles.



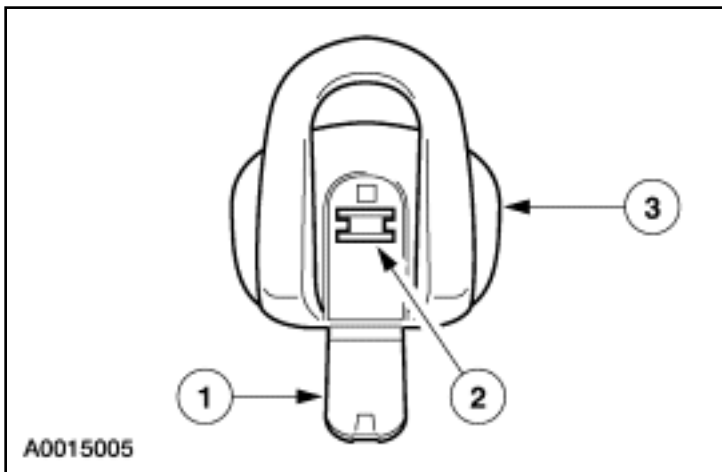
5. **NOTE:** Release the top attachments by pulling inboard first and then upward to release the lower hook.

Remove the two windshield side garnish mouldings.

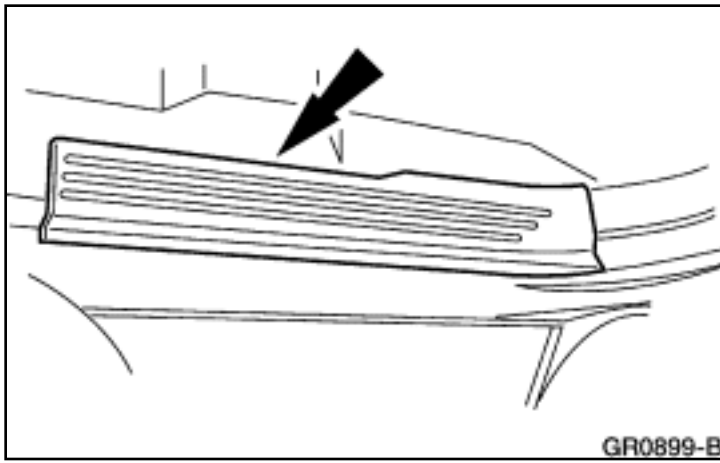
- If equipped, on the LH windshield side garnish moulding, disconnect the cellular phone hands-free microphone electrical connector.



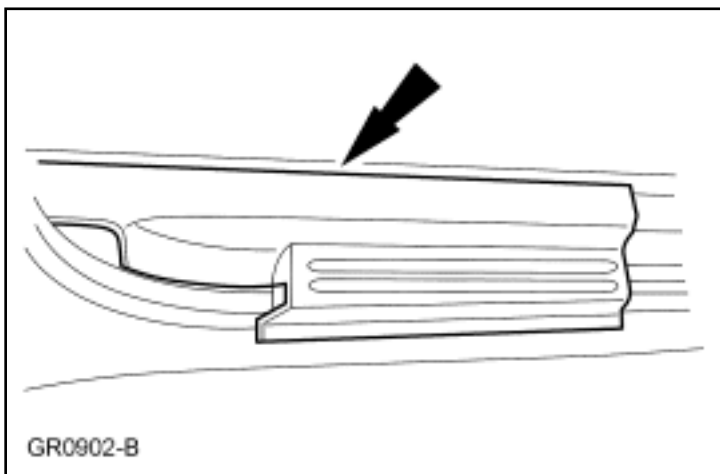
6. Remove the coat hooks.
 1. Open the access cover.
 2. Insert a screwdriver into the slot and rotate.
 3. Remove the coat hooks.



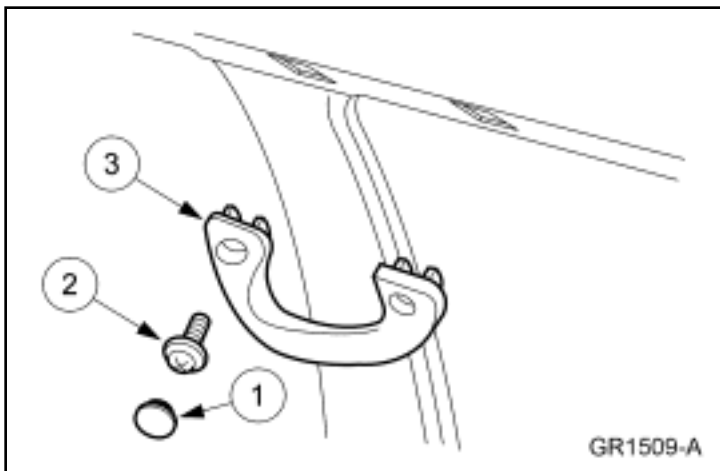
7. Remove the two front door scuff plates (13208).



8. Remove the two rear door scuff plates (13228).



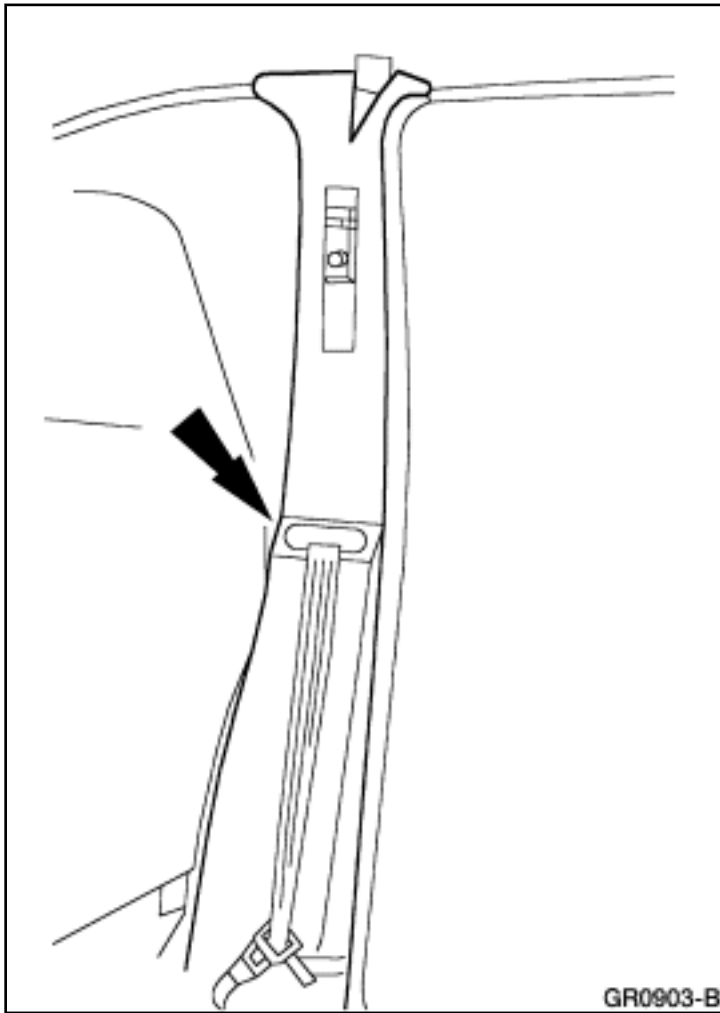
9. Remove the two B-pillar assist handles.
1. Remove the four covers (two on each handle).
 2. Remove the four screws (two on each handle).
 3. Remove the two B-pillar assist handles.



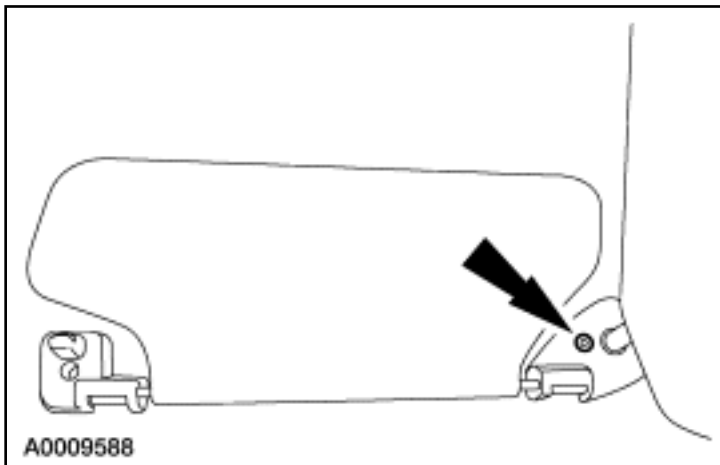
10. **NOTE:** Remove the upper attachments first and then the lower attachments.

Position the two B-pillar trim panels aside.

- Remove the two front and two rear door weather seals.

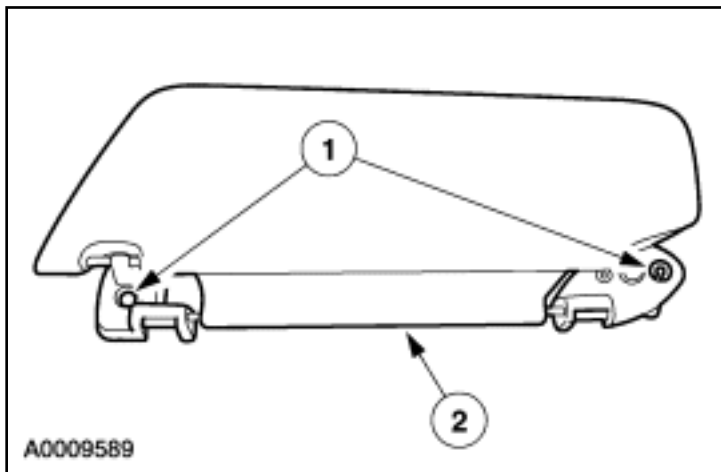


11. Position the two sun visors into the side window position and remove the two inside screws.

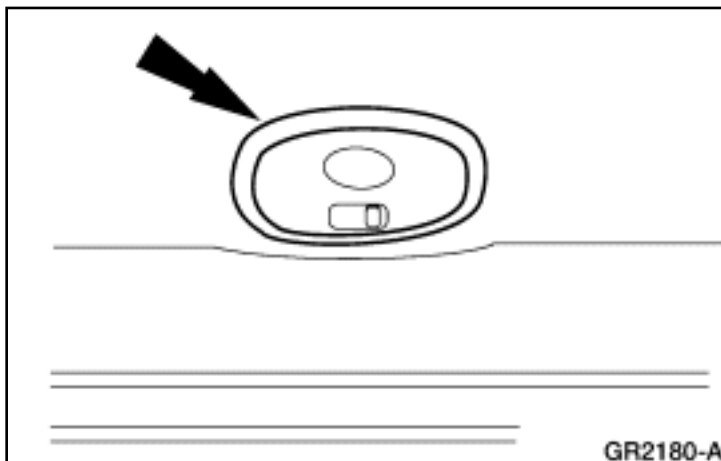


12. Position the two sun visors into the stored position.

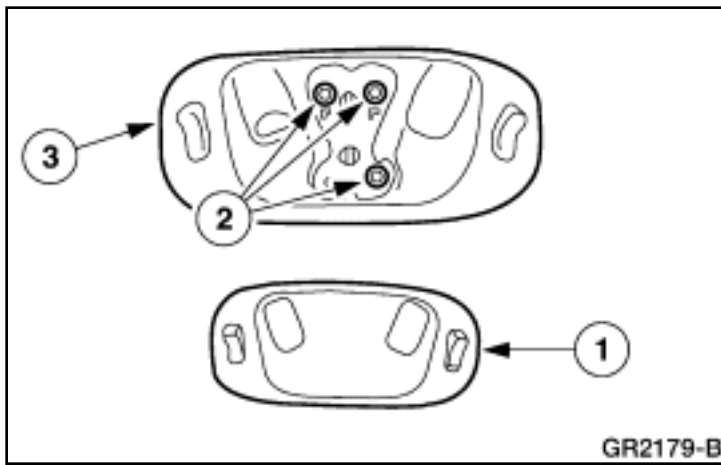
13. Remove the two sun visors and visor arm clips.
 1. Remove the four screws.
 2. Remove the two sun visors and visor arm clips.
 - If equipped, disconnect the sun visor electrical connectors.



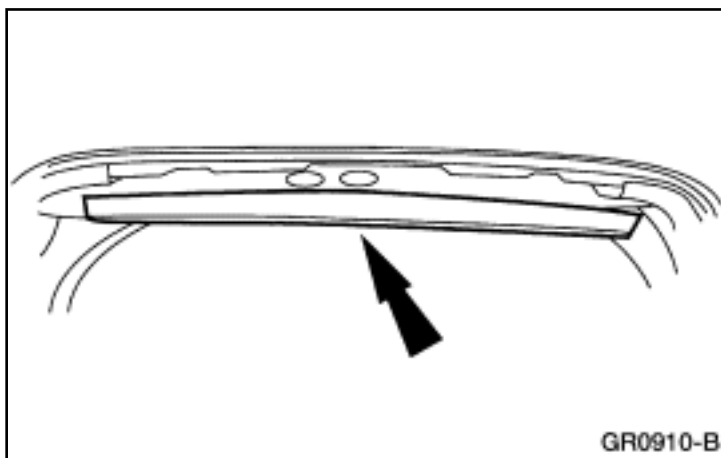
14. Remove the rear courtesy lamps.



15. If equipped, remove the second row seat dome lamp assembly.
 1. Remove the lens cover.
 2. Remove the screws.
 3. Remove the second row seat dome lamp assembly.



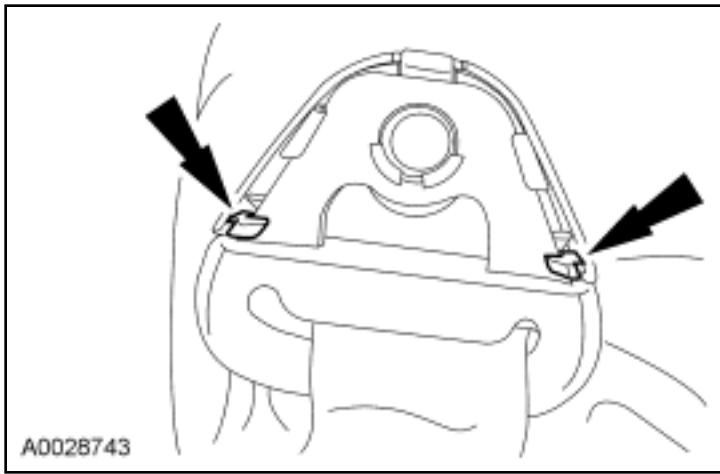
16. Remove the rear header garnish trim panel.



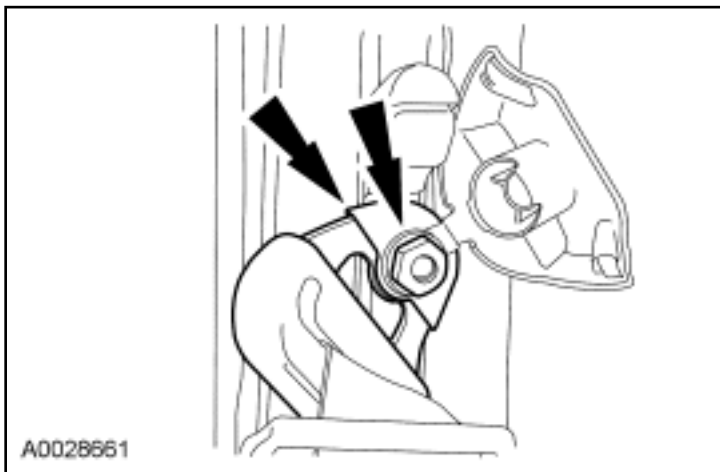
17. **NOTE:** Inspect the shoulder safety belt guide and cover for damage. If the shoulder safety belt guide or cover is damaged or cover does not remain closed, install a new shoulder safety belt guide.

NOTE: Shoulder safety belt guide cover shown removed for clarity.

From behind the front shoulder safety belt guide cover, release the retaining tab and open the cover.



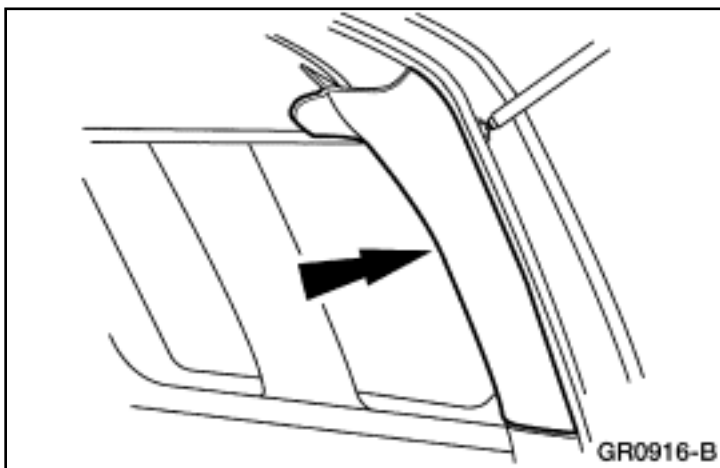
18. Remove the nut and shoulder safety belt guide.



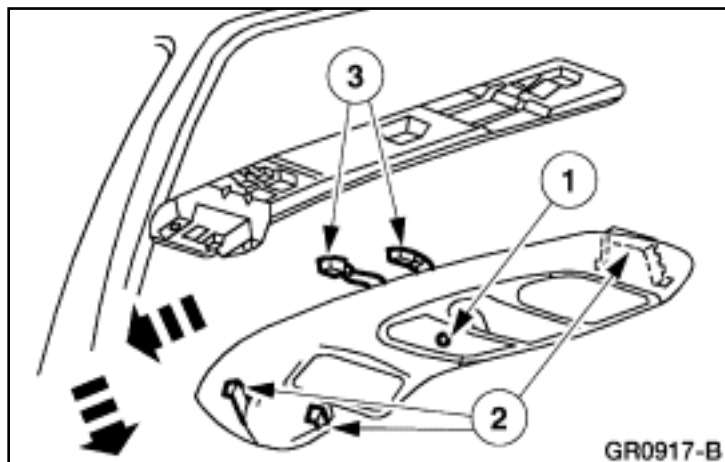
19. **NOTE:** Remove the lower hook attached to the quarter trim panel, followed by the top attachment, and then the lower rear attachment.

Remove the two D-pillar trim panels.

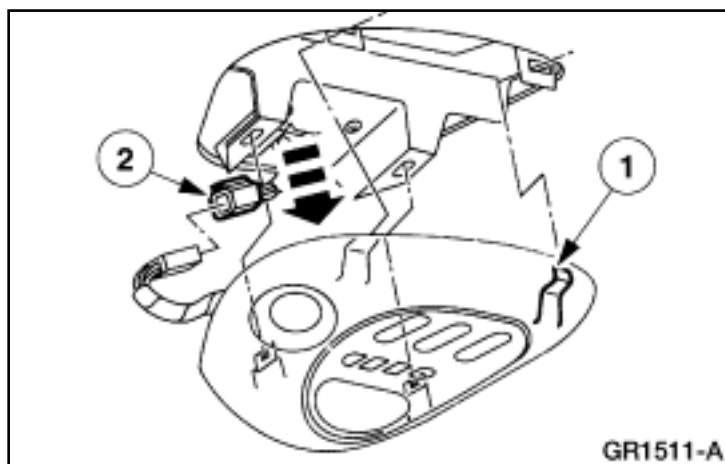
- Remove the liftgate door opening weather seal.



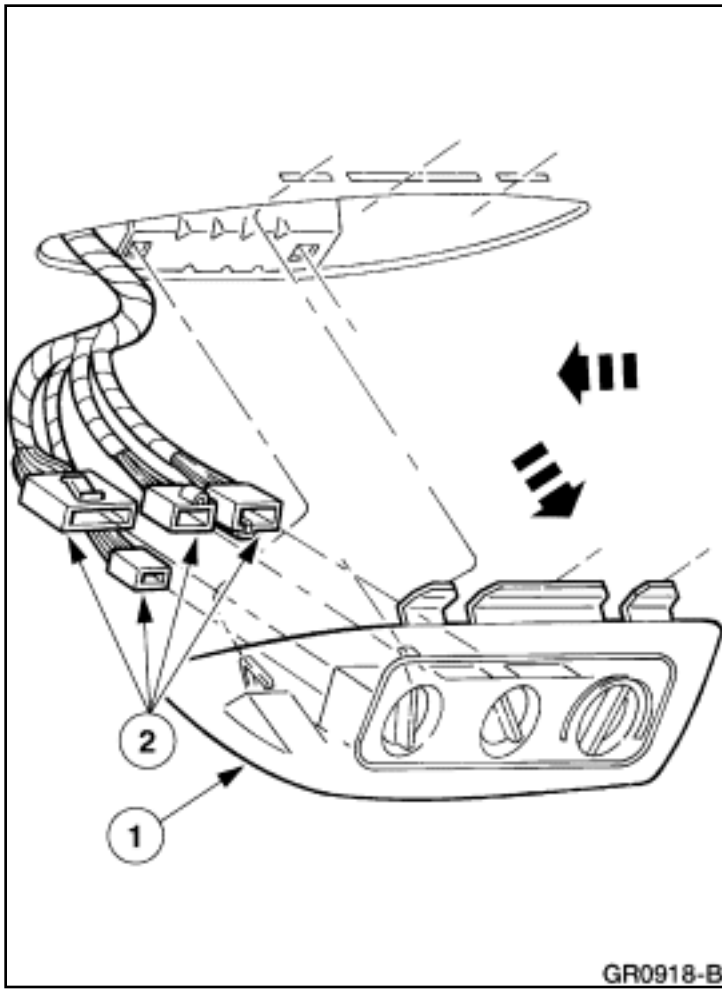
20. If equipped, remove the full overhead console (without roof opening panel).
 1. Remove the screw from the inside of the sunglass storage bin.
 2. Release the three clips and slide the roof console forward and then down.
 3. Disconnect the electrical connectors.



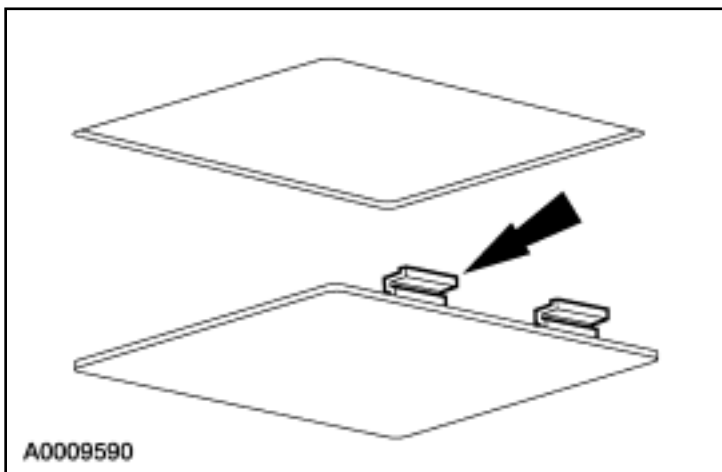
21. If equipped, remove the mini overhead console (with roof opening panel).
 1. Release the four mounting clips by pulling the roof console straight down.
 2. Disconnect the electrical connectors.



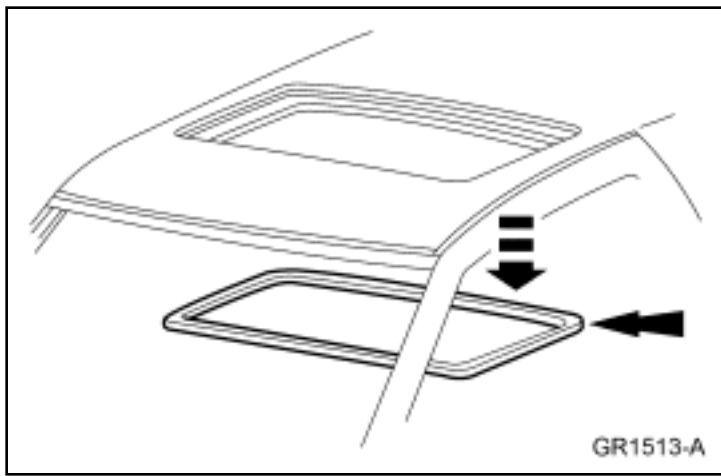
22. If equipped, remove the rear auxiliary climate control head assembly.
 1. Slide the assembly forward and then downward.
 2. Disconnect the electrical connectors.



23. If equipped, remove the roof opening panel motor access cover.



24. If equipped, remove the roof opening panel trim from the headliner.



25. **NOTE:** If equipped, remove the auxiliary A/C duct on the LH C-pillar.

Remove the headliner.

- Remove the retainers.

26. To install, reverse the removal procedure.