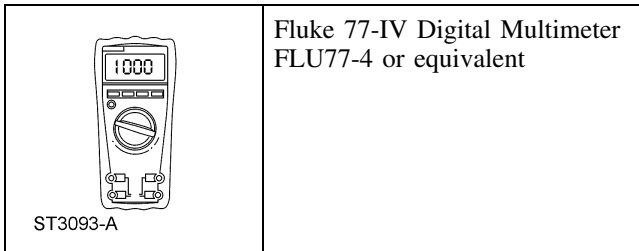


DIAGNOSIS AND TESTING

Roof Opening Panel

Special Tool(s)



Principles of Operation

Roof Opening Panel

The roof opening panel assembly uses an integrated motor and module to operate the roof opening panel. The roof opening panel motor and module are installed new as an assembly. The roof opening panel is an electronically operated glass panel that can be opened or closed by the roof opening panel switch. Actuating the switch in either a forward or rearward motion supplies a ground to the roof opening panel motor/module. The roof opening panel has 4 modes of operation, manual mode, one-touch open, one-touch close and one-touch vent. These functions are controlled by the roof opening panel motor/module. The one-touch open/close features are activated when the roof opening panel control switch is pressed to the second detent. The roof opening panel will only function when the accessory delay relay is active. For information about the accessory delay relay, refer to Section 501-11.

The roof opening panel motor receives a ground signal from the transmission floor shifter assembly whenever the gear selector is in the PARK position. When the transmission is not in PARK, closing force is incrementally increased to close the glass panel to prevent false reversals while driving at road speed.

A new roof opening panel motor will only open and must be initialized. The roof opening panel motor initialization procedure must be done when repairs are carried out on any part of the roof opening panel system, including: any time the roof opening panel motor has been removed from the roof opening panel assembly, a new roof opening panel motor has been installed or when a new roof opening panel assembly has been installed.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical and electrical damage.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none"> • Roof opening panel control switch • Roof opening panel motor • Roof opening panel glass • Roof opening panel shield • Roof opening panel drain hoses • Lifting arm • Roof opening panel drain trough 	<ul style="list-style-type: none"> • Smart Junction Box (SJB) fuse(s): <ul style="list-style-type: none"> — 4 (30A) — 41 (15A) • Accessory delay relay • Roof opening panel switch • Roof opening panel motor

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 cause is not visually evident, GO to [Symptom Chart — Roof Opening Panel](#) or GO to [Symptom Chart — NVH](#).

DIAGNOSIS AND TESTING (Continued)**Symptom Chart — Roof Opening Panel****Symptom Chart — Roof Opening Panel**

Condition	Possible Sources	Action
<ul style="list-style-type: none"> The roof opening panel leaks 	<ul style="list-style-type: none"> Incorrect roof opening panel glass alignment Roof opening panel drain hose Roof opening panel glass seals 	<ul style="list-style-type: none"> GO to Pinpoint Test B.
<ul style="list-style-type: none"> The roof opening panel does not open or close 	<ul style="list-style-type: none"> Fuse(s) Circuitry Roof opening panel switch Roof opening panel motor 	<ul style="list-style-type: none"> GO to Pinpoint Test E.
<ul style="list-style-type: none"> The roof opening panel does not stop in flush from any position 	<ul style="list-style-type: none"> Incorrect roof opening panel glass alignment 	<ul style="list-style-type: none"> ALIGN the roof opening glass panel. REFER to Roof Opening Panel Alignment in this section.
<ul style="list-style-type: none"> The express open/close is inoperative 	<ul style="list-style-type: none"> Circuitry Roof opening panel switch Roof opening panel motor 	<ul style="list-style-type: none"> GO to Pinpoint Test F.
<ul style="list-style-type: none"> The roof opening panel shows unexpected bounce back at high speed 	<ul style="list-style-type: none"> Circuitry Roof opening panel initialization 	<ul style="list-style-type: none"> CHECK circuit CDC41 (WH/BN) for an open. REPAIR the circuit. TEST the system for normal operation. REINITIALIZE the roof opening panel motor. REFER to Roof Opening Panel Motor Initialization in this section. TEST the system for normal operation.

Symptom Chart — NVH**Symptom Chart — NVH**

NOTE: NVH symptoms should be identified using diagnostic tools that are available. For a list of these tools, an explanation of their uses and a glossary of common terms, refer to Section 100-04. Since it is possible any one of multiple systems may be the cause of a symptom, it may be necessary to use a process of elimination type of diagnostic approach to pinpoint the responsible system. If this is not the causal system for the symptom, refer back to Section 100-04 for the next likely system and continue diagnosis.

Condition	Possible Sources	Action
<ul style="list-style-type: none"> The roof opening panel has excessive wind noise 	<ul style="list-style-type: none"> Incorrect roof opening panel glass alignment Roof opening panel glass seals 	<ul style="list-style-type: none"> GO to Pinpoint Test A.

DIAGNOSIS AND TESTING (Continued)**Symptom Chart — NVH (Continued)**

Condition	Possible Sources	Action
<ul style="list-style-type: none"> The roof opening panel rattles 	<ul style="list-style-type: none"> Incorrect roof opening panel glass alignment Roof opening panel lifter assemblies Roof opening panel tracks Roof opening panel drain channels and guides Roof opening panel shield Roof opening panel assembly 	<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"> Incorrect roof opening panel glass alignment Roof opening panel tracks Roof opening panel shield Roof opening panel motor 	<ul style="list-style-type: none"> GO to Pinpoint Test D.

Pinpoint Tests**Pinpoint Test A: The Roof Opening Panel Has Excessive Wind Noise****Normal Operation**

When the roof opening panel glass is completely closed, it is flush with the roof panel and correctly sealed.

This pinpoint test is intended to diagnose the following:

- Incorrect roof opening panel glass alignment
- Roof opening panel glass seals

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

Test Step		Result / Action to Take
A1	CHECK THE ROOF OPENING PANEL GLASS SEALS	Yes GO to A2 . No REPAIR as necessary. TEST the system for normal operation.
	<ul style="list-style-type: none"> Check the roof opening panel glass seals for: <ul style="list-style-type: none"> looseness. cracking. pinching. obstructions. Are the seals OK? 	
A2	CHECK THE ROOF OPENING PANEL GLASS ALIGNMENT	Yes If wind noise is still present, ALIGN the roof opening panel glass to closer tolerance within specification. REFER to Roof Opening Panel Alignment in this section. TEST the system for normal operation. No ALIGN the roof opening panel glass. REFER to Roof Opening Panel Alignment in this section. TEST the system for normal operation.
	<ul style="list-style-type: none"> Ignition ON. Open and close the roof opening panel glass. Check the alignment when the roof opening panel glass closes. Is the alignment OK? 	

Pinpoint Test B: The Roof Opening Panel Leaks**Normal Operation**

When the roof opening panel glass is completely closed, it is flush with the roof panel and correctly sealed. The drain channel collects water and drains it through the front drain hose located in the A-pillar and the rear drain hose located in the C-pillar.

This pinpoint test is intended to diagnose the following:

- Incorrect roof opening panel glass alignment
- Roof opening panel drain hoses
- Roof opening panel glass seals

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST B: THE ROOF OPENING PANEL LEAKS**

Test Step		Result / Action to Take
B1	VERIFY CUSTOMER OPERATION OF THE ROOF OPENING PANEL WHEN PARKED	
	<ul style="list-style-type: none"> Make sure the customer is parking with the roof opening panel correctly in the closed position. Is the customer parking with the roof opening panel in the closed position? 	<p>Yes GO to B2.</p> <p>No Instruct the customer to REFER to the Owner's Literature for correct operation of the roof opening panel.</p>
B2	CHECK THE ALIGNMENT OF THE ROOF OPENING PANEL	
	<ul style="list-style-type: none"> Make sure the roof opening panel glass is centered and flush with the roof line. Is the roof opening panel aligned correctly? 	<p>Yes GO to B3.</p> <p>No ALIGN the roof opening panel. REFER to Roof Opening Panel Alignment in this section. TEST the system for normal operation.</p>
B3	CHECK THE WEATHERSTRIP CONDITION	
	<p>NOTE: The seal has a bonded joint located on the passenger side or rear edge. This is not a defect.</p> <ul style="list-style-type: none"> Make sure the roof opening panel seal is not cracked, torn or loose. Check the roof opening panel seal. Is the roof opening panel seal in good condition and free from damage? 	<p>Yes GO to B4.</p> <p>No INSTALL a new roof opening panel seal. TEST the system for normal operation.</p>
B4	CHECK THE WATER TROUGH CONDITION	
	<ul style="list-style-type: none"> Check the water trough and guides for damage and/or correct attachment and function. Is the water trough OK? 	<p>Yes GO to B5.</p> <p>No REPAIR the water trough or INSTALL new as necessary. TEST the system for normal operation.</p>
B5	CHECK THE DRAIN HOSES	
	<p>NOTE: Drain hoses can be viewed with a flashlight by removing the headliner lace around the inside opening and gently pulling down on the headliner. (On some vehicles, new trim lace has been installed with Velcro®-style attachments.)</p> <ul style="list-style-type: none"> Make sure the drain hoses are all connected and not cracked, slit, pinched or obstructed. Are all the drain hoses present and attached correctly? 	<p>Yes GO to B6.</p> <p>No REPAIR or INSTALL a new drain hose(s). TEST the system for normal operation.</p>
B6	CHECK THE DRAIN HOSES FOR CORRECT FLOW	
	<p>NOTE: Drain hoses must flow downhill and cannot be pinched or restricted by headliner or any other trim components.</p> <ul style="list-style-type: none"> With the panel open, slowly pour water into the water trough area and make sure that the same amount of water exits the vehicle at the bottom of the A- and C-pillars. Check drain hoses for obstructions by blowing compressed air through the drain spouts in the water trough area, then retest with water. Are the drain hoses operating correctly? 	<p>Yes INSPECT other areas of the vehicle that may cause water to enter the roof area such as the windshield or luggage rack, if equipped. If no problem is found, GO to B7.</p> <p>No LOWER the headliner and INSPECT the drain hoses for correct routing. REPAIR or INSTALL a new drain hose(s). TEST the system for normal operation.</p>
B7	CHECK THE CONDITION OF THE ROOF OPENING PANEL FRAME	
	<ul style="list-style-type: none"> 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? 	<p>Yes INSTALL a new roof opening panel glass. REFER to Roof Opening Panel Glass in this section. TEST the system for normal operation.</p> <p>No REPAIR the roof opening panel frame as necessary. TEST the system for normal operation.</p>

DIAGNOSIS AND TESTING (Continued)**Pinpoint Test C: The Roof Opening Panel Rattles****Normal Operation**

When the roof opening panel glass is completely closed, it is flush with the roof panel. All components should be secured correctly.

This pinpoint test is intended to diagnose

the following:

- Incorrect roof opening panel glass alignment
- Roof opening panel lifter assemblies
- Roof opening panel tracks
- Roof opening panel drain channels and guides
- Roof opening panel shield
- Roof opening panel assembly

PINPOINT TEST C: THE ROOF OPENING PANEL RATTLES

Test Step		Result / Action to Take
C1	CHECK THE ROOF OPENING PANEL GLASS OPERATION	
	<ul style="list-style-type: none"> • Check the roof opening panel glass during operation. • Is the roof opening panel glass loose? 	<p>Yes ALIGN the roof opening panel. REFER to Roof Opening Panel Alignment in this section. VERIFY all bolts are tightened to specification. TEST the system for normal operation.</p> <p>No GO to C2.</p>
C2	CHECK THE ROOF OPENING PANEL TRACKS	
	<ul style="list-style-type: none"> • Open the roof opening panel glass. • Check the tracks for obstructions or signs of damage. • Are the tracks OK? 	<p>Yes GO to C3.</p> <p>No REMOVE any obstructions. REPAIR the roof opening panel tracks as necessary. TEST the system for normal operation.</p>
C3	CHECK THE DRAIN CHANNELS AND GUIDES	
	<ul style="list-style-type: none"> • Check the drain channel and channel guides for any loose fasteners or obstructions. • Is the drain channel installed securely and free from foreign material? 	<p>Yes GO to C4.</p> <p>No REMOVE all foreign material from the drain channel and INSTALL securely. TEST the system for normal operation.</p>
C4	CHECK THE ROOF OPENING PANEL SHIELD	
	<ul style="list-style-type: none"> • Check the roof opening panel shield for correct installation. • Is the roof opening panel shield installed correctly? 	<p>Yes GO to C5.</p> <p>No INSTALL the opening shield correctly. REFER to Roof Opening Panel Shield in this section. TEST the system for normal operation.</p>
C5	CHECK THE ROOF OPENING PANEL	
	<ul style="list-style-type: none"> • Make sure the roof opening panel frame, drain tubes and wire harnesses are free from obstructions and damage, and are securely fastened. • Is the roof opening panel assembly OK? 	<p>Yes The system is operating normally.</p> <p>No REPAIR as necessary. TEST the system for normal operation.</p>

Pinpoint Test D: The Roof Opening Panel is Noisy During Operation**Normal Operation**

The roof opening panel operates smoothly while opening and closing.

This pinpoint test is intended to diagnose

the following:

- Incorrect roof opening panel glass alignment
- Roof opening panel tracks
- Roof opening panel shield
- Roof opening panel motor

DIAGNOSIS AND TESTING (Continued)**PINPOINT TEST D: THE ROOF OPENING PANEL IS NOISY DURING OPERATION**

Test Step		Result / Action to Take
D1	CHECK THE ROOF OPENING PANEL GLASS FOR OBSTRUCTIONS OR DAMAGE	
	<ul style="list-style-type: none"> Check the roof opening panel glass for any obstructions or damage from the following: <ul style="list-style-type: none"> — sand. — dirt. — leaves. Are there any obstructions or damage? 	<p>Yes REMOVE all obstructions. REPAIR the roof opening panel as necessary. TEST the system for normal operation.</p> <p>No GO to D2.</p>
D2	CHECK THE ROOF OPENING PANEL GLASS OPERATION	
	<ul style="list-style-type: none"> Check the roof opening panel glass during operation. Is the roof opening panel glass loose or not correctly aligned? 	<p>Yes ALIGN the roof opening panel. REFER to Roof Opening Panel Alignment in this section. VERIFY all bolts are tightened to specification. TEST the system for normal operation.</p> <p>No GO to D3.</p>
D3	CHECK THE ROOF OPENING PANEL TRACKS	
	<ul style="list-style-type: none"> Open the roof opening panel glass. Check the tracks for obstructions or signs of damage. Are the tracks OK? 	<p>Yes GO to D4.</p> <p>No REMOVE all obstructions. REPAIR any damage as necessary. TEST the system for normal operation.</p>
D4	CHECK THE ROOF OPENING PANEL SHIELD	
	<ul style="list-style-type: none"> Check the roof opening panel shield for correct movement. Is the shield moving correctly? 	<p>Yes GO to D5.</p> <p>No REPAIR or INSTALL a new roof opening panel shield. REFER to Roof Opening Panel Shield in this section. TEST the system for normal operation.</p>
D5	CHECK THE ROOF OPENING PANEL MOTOR	
	<ul style="list-style-type: none"> Gain access to the roof opening panel motor. Open the roof opening panel. Does the motor make excessive noise? 	<p>Yes INSTALL a new roof opening panel motor. REFER to Roof Opening Panel Motor in this section. TEST the system for normal operation.</p> <p>No ALIGN the roof opening panel glass. REFER to Roof Opening Panel Alignment in this section. TEST the system for normal operation.</p>

Pinpoint Test E: The Roof Opening Panel Does Not Open or Close

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

DIAGNOSIS AND TESTING (Continued)

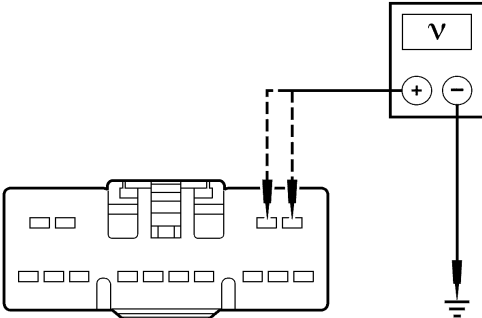
Normal Operation

The roof opening panel motor receives voltage at all times through circuit SBP04 (GN/RD) and voltage from circuit CBP41 (BU) when the ignition switch is in the ACC or ON position. The roof opening panel module is grounded through circuit GD182 (BK/GY). The roof opening panel motor supplies a common ground circuit to the roof opening panel control switch through circuit CPR39 (VT/WH). When the rear portion of the roof opening panel switch is pressed, a ground signal is sent to the roof opening panel motor through circuit CPR40 (YE/OG) which causes the roof opening panel to open. When the front portion of the roof opening panel switch is pressed, a ground signal is sent to the roof opening panel motor through circuit CPR31 (VT/BN) which causes the roof opening panel to close (or tilt if roof opening panel glass is already in the fully CLOSED position).

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- Roof opening panel switch
- Roof opening panel motor

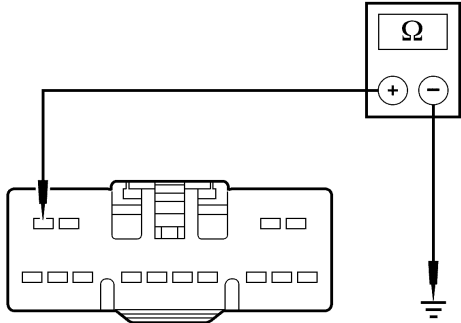
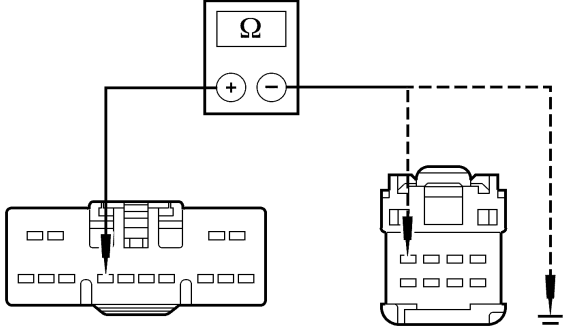
PINPOINT TEST E: THE ROOF OPENING PANEL DOES NOT OPEN OR CLOSE

Test Step		Result / Action to Take
E1	CHECK THE POWER WINDOW OPERATION	<p>Yes GO to E2.</p> <p>No REFER to Section 501-11 to diagnose the accessory delay relay circuit.</p>
	<ul style="list-style-type: none"> • Ignition ON. • Verify the power windows operate. • Do the power windows operate? 	
E2	CHECK THE ROOF OPENING PANEL SWITCH	
	<ul style="list-style-type: none"> • Ignition OFF. • Disconnect: Roof Opening Panel Switch C912. • Carry out the roof opening panel control switch component test. Refer to Wiring Diagrams Cell 149 for component testing. • Did the roof opening panel control switch pass the component test? 	<p>Yes GO to E3.</p> <p>No INSTALL a new roof opening panel switch. TEST the system for normal operation.</p>
E3	CHECK VOLTAGE TO THE ROOF OPENING PANEL MOTOR	
	<ul style="list-style-type: none"> • Ignition OFF. • Disconnect: Roof Opening Panel Module C921. • Ignition ON. • Measure the voltage between the roof opening panel motor C921-1, circuit SBP04 (GN/RD), harness side and ground; and between roof opening panel motor C921-2, circuit CBP41 (BU), harness side and ground. <div style="text-align: center;">  </div> <p>N0089653</p> <ul style="list-style-type: none"> • Are the voltages greater than 10 volts? 	

(Continued)

DIAGNOSIS AND TESTING (Continued)

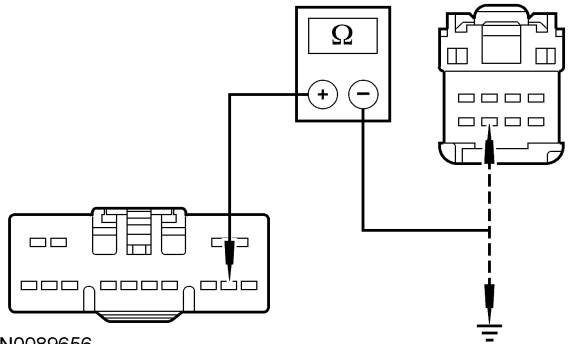
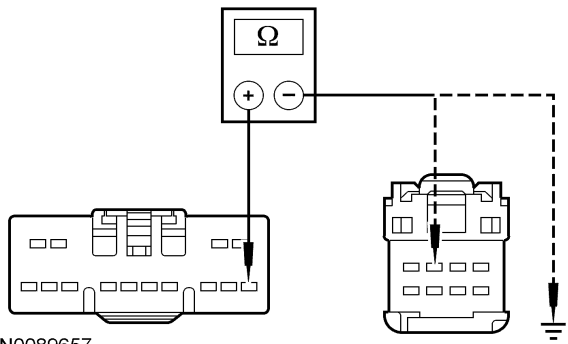
PINPOINT TEST E: THE ROOF OPENING PANEL DOES NOT OPEN OR CLOSE (Continued)

Test Step		Result / Action to Take
E4	<p>CHECK THE ROOF OPENING PANEL MOTOR GROUND CIRCUIT</p> <ul style="list-style-type: none"> Ignition OFF. Measure the resistance between the roof opening panel motor C921-4, circuit GD182 (BK/GY), harness side and ground.  <p>N0089654</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? 	<p>Yes GO to E5.</p> <p>No REPAIR the circuit. TEST the system for normal operation.</p>
E5	<p>CHECK CIRCUIT CPR39 (VT/WH) FOR AN OPEN OR SHORT TO GROUND</p> <ul style="list-style-type: none"> Measure the resistance between the roof opening panel motor C921-11, circuit CPR39 (VT/WH), harness side and roof opening panel switch C912-4, circuit CPR39 (VT/WH), harness side; and between roof opening panel motor C921-11, circuit CPR39 (VT/WH), harness side and ground.  <p>N0089655</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms between the roof opening panel motor and roof opening panel switch; and greater than 10,000 ohms between the roof opening panel motor and ground? 	

(Continued)

DIAGNOSIS AND TESTING (Continued)

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

Test Step		Result / Action to Take
E6	CHECK CIRCUIT CPR40 (YE/OG) FOR AN OPEN OR SHORT TO GROUND	
	<ul style="list-style-type: none"> Measure the resistance between the roof opening panel motor C921-6, circuit CPR40 (YE/OG), harness side and roof opening panel switch C912-7, circuit CPR40 (YE/OG), harness side; and between roof opening panel motor C921-6, circuit CPR40 (YE/OG), harness side and ground.  <p>N0089656</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms between the roof opening panel motor and roof opening panel switch; and greater than 10,000 ohms between the roof opening panel motor and ground? 	<p>Yes GO to E7.</p> <p>No REPAIR the circuit. TEST the system for normal operation.</p>
E7	CHECK CIRCUIT CPR31 (VT/BN) FOR AN OPEN OR SHORT TO GROUND	
	<ul style="list-style-type: none"> Measure the resistance between the roof opening panel motor C921-5, circuit CPR31 (VT/BN), harness side and roof opening panel switch C912-3, circuit CPR31 (VT/BN), harness side; and between roof opening panel motor C921-5, circuit CPR31 (VT/BN), harness side and ground.  <p>N0089657</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms between the roof opening panel motor and roof opening panel switch; and greater than 10,000 ohms between the roof opening panel motor and ground? 	<p>Yes GO to E8.</p> <p>No REPAIR the circuit. TEST the system for normal operation.</p>
E8	CHECK THE ROOF OPENING PANEL MOTOR FOR CORRECT OPERATION	
	<ul style="list-style-type: none"> Check all roof opening panel motor and switch electrical connectors. Check for: <ul style="list-style-type: none"> — corrosion. — bent pins. — pushed-out pins. Connect all roof opening panel motor and switch electrical connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	<p>Yes INSTALL a new roof opening panel motor. REFER to Roof Opening Panel Motor in this section. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. TEST the system for normal operation.</p>

DIAGNOSIS AND TESTING (Continued)**Pinpoint Test F: The Express Open/Close is Inoperative**

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

Normal Operation

When the rear portion of the roof opening panel switch is pressed to the second detent position, a ground signal is sent to the roof opening panel motor through circuit CPR40 (YE/OG) and CPR38 (WH/BU) which causes the roof opening panel to perform a one-touch open operation. When the front portion of the roof opening panel switch is pressed to the second detent position, a ground signal is sent to the roof opening panel motor through circuit CPR31 (VT/BN) and CPR38 (WH/BU) which causes the roof opening panel to perform a one-touch close operation (or tilt if roof opening panel glass is already in the fully CLOSED position).

This pinpoint test is intended to diagnose the following:

- Roof opening panel motor initialization
- Wiring, terminals or connectors
- Roof opening panel motor
- Roof opening panel module

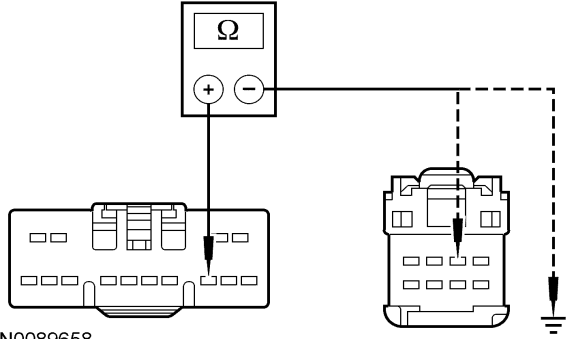
PINPOINT TEST F: THE EXPRESS OPEN/CLOSE IS INOPERATIVE

Test Step		Result / Action to Take
F1	CHECK THE ROOF OPENING PANEL MOTOR FOR INITIALIZATION	
	<ul style="list-style-type: none"> • Carry out the roof opening panel motor initialization procedure. Refer to Roof Opening Panel Motor Initialization in this section. • Is the concern still present? 	<p>Yes GO to F2.</p> <p>No The system is operating normally at this time. The roof opening panel motor was not initialized.</p>
F2	CHECK THE ROOF OPENING PANEL SWITCH	
	<ul style="list-style-type: none"> • Ignition OFF. • Disconnect: Roof Opening Panel Switch C912. • Carry out the roof opening panel control switch component test. Refer to Wiring Diagrams Cell 149 for component testing. • Did the roof opening panel control switch pass the component test? 	<p>Yes GO to F3.</p> <p>No INSTALL a new roof opening panel switch. TEST the system for normal operation.</p>
F3	CHECK CIRCUIT CPR38 (WH/BU) FOR AN OPEN OR SHORT TO GROUND	
	<ul style="list-style-type: none"> • Disconnect: Roof Opening Panel Module C921. 	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE EXPRESS OPEN/CLOSE IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
F3	<p>CHECK CIRCUIT CPR38 (WH/BU) FOR AN OPEN OR SHORT TO GROUND (Continued)</p> <ul style="list-style-type: none"> Measure the resistance between the roof opening panel motor C921-7, circuit CPR38 (WH/BU), harness side and roof opening panel switch C912-2, circuit CPR38 (WH/BU), harness side; and between roof opening panel motor C921-7, circuit CPR38 (WH/BU), harness side and ground.  <p style="text-align: center;">N0089658</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms between the roof opening panel motor and roof opening panel switch; and greater than 10,000 ohms between the roof opening panel motor and ground? 	<p>Yes GO to F4.</p> <p>No REPAIR the circuit. TEST the system for normal operation.</p>
F4	<p>CHECK THE ROOF OPENING PANEL MOTOR FOR CORRECT OPERATION</p> <ul style="list-style-type: none"> Check all roof opening panel motor and switch electrical connectors. Check for: <ul style="list-style-type: none"> — corrosion. — bent pins. — pushed-out pins. Connect all roof opening panel motor and switch electrical connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	<p>Yes INSTALL a new roof opening panel motor. REFER to Roof Opening Panel Motor in this section. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. TEST the system for normal operation.</p>