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2005 FORD Ranger Super Cab OEM Service and Repair Workshop Manual

[Go to manual page](#)

There is a communication circuit between the shield motor (sunshade) and the sunroof motor for back and fourth communication between the 2 motors only, and not for diagnostics. If the communication circuit between the sunroof motor and shield motor is open or shorted the sunroof motor will operate only to fully close the sliding glass, and the shield motor will not operate at all.

Possible Sources

- Fuses
- Wiring, terminals or connectors
- Roof opening panel motor/module assembly
- Roof opening panel control switch

Visual Inspection and Pre-checks

- BCM (body control module) fuse F2 (10A)
- BCM (body control module) fuse F24 (30A)

E1 CHECK THE POWER WINDOW OPERATION

- Ignition ON.
- Attempt to operate the power windows.

Do the power windows operate properly?

Yes	GO to E2
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No	Diagnose the accessory delay relay circuit. REFER to: Glass, Frames and Mechanisms - Vehicles With: One-Touch Open and Close Front Windows (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
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E2 CHECK THE SHIELD (SUNSHADE) OPERATION

- Press and hold the shield (sunshade) open switch until the shield (sunshade) is fully opened.
- Press and hold the shield (sunshade) close switch until the shield (sunshade) is fully closed.

Does the shield (sunshade) operate as expected?

Yes	The shield (sunshade) is operate correctly at this time. Check operate of the roof opening panel glass. GO to E3
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C921-2		Ground
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Are the voltages greater than 11 volts?

Yes	GO to E5
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No	VERIFY BCM (body control module) fuses F2 (10A) and F24 (30A) are OK. If the fuses are OK, REPAIR the affected circuit for high resistance or an open. If the fuses are not OK, REFER to the Wiring Diagrams manual to identify the cause of the circuit short.
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E5 CHECK THE ROOF OPENING PANEL GROUND CIRCUITS

Sample

C921-5	Ω	Ground
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Is the resistance less than 3 ohms between C921-5 and C930-4; and greater than 10,000 ohms between C921-5 and ground?

Yes	GO to E7
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No	REPAIR the circuit.
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E7 CHECK CIRCUIT CPR31 (VT/BN) FOR AN OPEN OR SHORT TO GROUND

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C921-6	Ω	C930-5

Positive Lead	Measurement / Action	Negative Lead
C921-6	Ω	Ground

Is the resistance less than 3 ohms between C921-6 and C930-5; and greater than 10,000 ohms between C921-6 and ground?

Yes	GO to E8
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No	REPAIR the circuit.
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E8 CHECK THE ROOF OPENING PANEL JUMPER HARNESS

- Ignition OFF.
- Disconnect All sunroof system and related in-line connectors.
- Check for:
 - corrosion – install new connector or terminals and clean module pins
 - damaged or bent pins – install new terminals or pins
 - pushed-out pins – install new pins as necessary
- Connect all sunroof system and related in-line connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

<p>Yes</p>	<p>CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new roof opening panel motor and shield motor.</p> <p>REFER to: Roof Opening Panel Motor (501-17 Roof Opening Panel, Removal and Installation).</p> <p>TEST the system for normal operation. If the concern still exists, INSTALL a new roof opening panel control switch. REFER to: Roof Opening Panel Control Switch (501-17 Roof Opening Panel, Removal and Installation).</p>
<p>No</p>	<p>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

PINPOINT TEST F : THE SHIELD (SUNSHADE) DOES NOT OPEN OR CLOSE

Refer to Wiring Diagrams Cell 101 for schematic and connector information.

Normal Operation and Fault Conditions The shield (sunshade) motor receives battery voltage at all times from BCM (body control module) fuse F24 (30A), and receives ignition voltage (accessory delay) from BCM (body control module) fuse F2 (10A). The roof opening panel motor and switch is grounded through circuit G303 and G302 respectively. When the shield (sunshade) open switch is pressed, a signal is sent to the shield (sunshade) motor on sunshade open circuit which causes the shield (sunshade) to open. When the shield (sunshade) close switch is pressed, a signal is sent to the shield (sunshade) motor on the sunshade close circuit which causes the shield (sunshade) to close. If the K bus (communication) circuit between the sunroof motor and shield (sunshade) motor is open or shorted the sunroof motor will only fully close the sunroof one time, then not operate. Also, if the K bus circuit is open or shorted the shield (sunshade) motor will not operate but the roof opening panel close to the fully closed position 1 time. If the shield is not open

Is any voltage present?

Yes	Repair the circuit.
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No	GO to F3
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F3 CHECK THE SHIELD CONTROL CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C9040-6	Ω	Ground
C9040-5	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to F4
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No	REPAIR the circuit.
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F4 CHECK THE SHIELD CONTROL CIRCUITS FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C9040-6	Ω	C930-13

C9040-5	Ω	C9040-10
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Are the resistances greater than 10,000 ohms?

Yes	GO to F6
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No	REPAIR the circuit.
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F6 CHECK THE ROOF OPENING PANEL MOTOR/MODULES AND SWITCH FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect All sunroof system and related in-line connectors.
- Check for:
 - corrosion – install new connector or terminals and clean module pins
 - damaged or bent pins – install new terminals or pins
 - pushed-out pins – install new pins as necessary
- Connect all sunroof system and related in-line connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	<p>CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new roof opening panel motor and shield motor.</p> <p>REFER to: Roof Opening Panel Motor (501-17 Roof Opening Panel, Removal and Installation).</p> <p>TEST the system for normal operation. If the concern still exists, INSTALL a new roof opening panel control switch. REFER to: Roof Opening Panel Control Switch (501-17 Roof Opening Panel, Removal and Installation).</p>
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No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
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- Carry out the roof opening panel motor initialization procedure for the sunroof and shield (sunshade). REFER to: [Power Roof Opening Panel Initialization](#)(501-17 Roof Opening Panel, General Procedures).
- Operate the system using one-touch.

Is the concern still present?

Yes	GO to G2
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No	The system is operating normally at this time. The roof opening panel motor was not initialized.
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G2 CHECK THE ROOF OPENING PANEL MOTOR/MODULES AND SWITCH FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect All sunroof system and related in-line connectors.
- Check for:
 - corrosion – install new connector or terminals and clean module pins
 - damaged or bent pins – install new terminals or pins
 - pushed-out pins – install new pins as necessary
- Connect all sunroof system and related in-line connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	<p>CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB (Technical Service Bulletin) exists for this concern, DISCONTINUE this test and FOLLOW TSB (Technical Service Bulletin) instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new roof opening panel motor and shield motor.</p> <p>REFER to: Roof Opening Panel Motor (501-17 Roof Opening Panel, Removal and Installation).</p> <p>TEST the system for normal operation. If the concern still exists, INSTALL a new roof opening panel control switch. REFER to: Roof Opening Panel Control Switch (501-17 Roof Opening Panel, Removal and Installation).</p>
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No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
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Power Roof Opening Panel Initialization

<i>501-17 Roof Opening Panel</i>	<i>2022 F-150</i>
<i>General Procedures</i>	<i>Procedure revision date: 11/13/2022</i>

Power Roof Opening Panel Initialization

Initialization

WARNING

Keep objects and body parts clear of the glass panel when carrying out the initialization procedure. During the initialization procedure, the glass panel closes with high force and cannot detect objects in its path. Failure to follow this instruction may result in serious personal injury.

NOTE

The roof opening panel motor must be initialized when repairs are carried out on the roof opening panel system, including: any time the roof opening panel motor has been removed, the roof opening panel glass (fixed panoramic or front sliding) has been removed or adjusted, or if the roof opening panel frame has been removed.

NOTE

If the roof opening panel motors are removed and then reinstalled, they must be returned to the same location (driver side or passenger side) they were removed from, with the roof opening panel in the same state (opened or closed) they were in when the motors were removed, or the system will not function correctly and re-initialization may not be possible.

NOTE

5. Press and hold the Sliding Glass Close switch again. The Shield will open fully and then close where it will remain while the sliding glass moves from FULL VENT to FULL OPEN to FULL CLOSE. Do not release the switch until all movements are complete.
6. Verify successful initialization by opening the shield with the Shield Open switch. Repeat the procedure if the One Touch Open and One Touch Close features are not available.

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