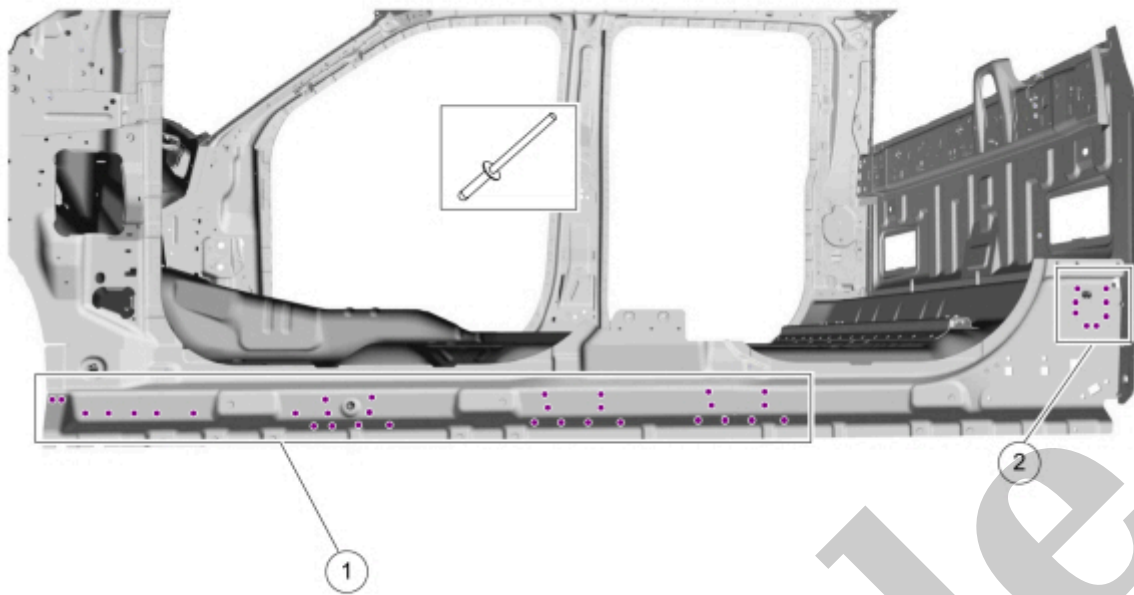


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2003 FORD Ranger Regular Cab OEM Service and Repair Workshop Manual

[Go to manual page](#)



E340265

[Click here to learn about symbols, color coding, and icons used in this manual.](#)

9. Refinish using a Ford approved paint system and typical refinishing techniques.

10. Regular cab and SuperCab.

Install the rocker panel inner reinforcement.

Refer to: [Rocker Panel Inner Reinforcement - SuperCab](#)(501-29 Side Panel Sheet Metal Repairs, Removal and Installation).

Refer to: [Rocker Panel Inner Reinforcement - Regular Cab](#)(501-29 Side Panel Sheet Metal Repairs, Removal and Installation).

11. Install the A-pillar reinforcement.

Refer to: [A-Pillar Outer Panel Section and Reinforcement](#)(501-29 Side Panel Sheet Metal Repairs, Removal and Installation).

12. Install the B-pillar reinforcement.

Refer to: [B-Pillar and Reinforcement - SuperCrew](#)(501-29 Side Panel Sheet Metal Repairs, Removal and Installation).

13. Install the C-pillar reinforcement.

Refer to: [C-Pillar Reinforcement](#)(501-29 Side Panel Sheet Metal Repairs, Removal and Installation).

Rear Seats - Overview

501-10B Rear Seats	2022 F-150
Description and Operation	Procedure revision date: 09/21/2020

Rear Seats - Overview

Overview

If equipped with the heated seat system, the rear seat cushions and backrests can be heated at one of two levels on demand. Each time a heated seat switch is activated, the heated seats operate in a sequence of high, low and off. When a heated seat is set to high, 2 LED (light emitting diode) indicators on that heated seat's control button illuminate. When a heated seat is set to low, only one LED (light emitting diode) indicator on that switch illuminates. When off, no indicators illuminate.

The components of the rear heated seat system include:

- Seat cushion heater mats
- Seat backrest heater mats
- Heated seat module (located on the LH (left-hand) side, behind the rear seat backrest foam)
- Heated seat switch assembly (located on the rear of the front floor console)

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- heated seat switch stuck closed to ground.

After the fault is corrected, the heated seat module needs to be reset by cycling the ignition off and then on. After the heated seat module has been reset, the module returns to an off state.

Component Description

Heated Seat Switch

The heated seat switch is a momentary contact switch that, when pressed, completes a circuit to chassis ground.

Heated Seat Module

When commanded by the heated seat switch, the heated seat module monitors the appropriate seat cushion temperature sensor(s) and supplies heater current to the seat cushion and backrest heater mats until the desired setpoint temperature is reached. Once the setpoint temperature is reached, the heated seat module cycles the heater circuits on/off as required to maintain the setpoint temperature. The heated seat module does not report Diagnostic Trouble Codes (DTCs) and does not communicate on any network. If the heated seat module detects a fault, the affected seat system is disabled.

Seat Heater Mat

Each seat cushion heater mat is equipped with a temperature sensor (thermistor) which provides feedback to the heated seat module. The cushion and backrest heater mats are connected in series.

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Symptom Chart: Rear Seats

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Symptom Chart

Condition	Actions
Both heated rear seats are inoperative	<ul style="list-style-type: none">• GO to Pinpoint Test A
The left heated rear seat is inoperative	<ul style="list-style-type: none">• GO to Pinpoint Test B
The right heated rear seat is inoperative	<ul style="list-style-type: none">• GO to Pinpoint Test C
The left heated rear seat heats correctly but the indicator does not illuminate when activated	<ul style="list-style-type: none">• GO to Pinpoint Test D
The right heated rear seat heats correctly but the indicator does not illuminate when activated	<ul style="list-style-type: none">• GO to Pinpoint Test E
The left heated rear seat indicator is always on	<ul style="list-style-type: none">• GO to Pinpoint Test F
The right heated rear seat indicator is always on	<ul style="list-style-type: none">• GO to Pinpoint Test G

Pinpoint Tests

PINPOINT TEST A : BOTH HEATED REAR SEATS ARE INOPERATIVE

Refer to Wiring Diagrams Cell 119 for schematic and connector information.

Normal Operation and Fault Conditions The rear heated seat module receives power through the normally closed contacts of the snowplow relay (integral to the BJB (battery junction box)). When the LH (left-hand) or RH (right-hand) heated rear seat control switch is activated with the ignition ON, a momentary ground signal is supplied to the heated seat module to operate the system. The system cycles through high heat mode, low heat mode or OFF, each time the switch is pressed. The heated seat module supplies voltage to the LH (left-hand) or RH (right-hand) rear seat cushion and backrest heater mats, which

A2 CHECK FOR IGNITION VOLTAGE TO THE HEATED REAR SEAT MODULE

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3304B-2	\bar{V}	Ground

Is the voltage greater than 11 volts?

Yes	GO to A3
------------	--------------------------

No	VERIFY BCM (body control module) fuse 36 (15A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.
-----------	---

A3 CHECK THE HEATED REAR SEAT MODULE GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3304B-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to A4
------------	--------------------------

No	REPAIR the circuit.
-----------	---------------------

- Disconnect Heated Rear Seat Switch C3182 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3182-8	Ω	Ground

Is the resistance less than 3 ohms?

Yes	<p>INSTALL a new heated rear seat switch.</p> <p>REFER to: Heated Rear Seat Switch - SuperCrew (501-10B Rear Seats, Removal and Installation).</p>
------------	--

No	REPAIR the circuit.
-----------	---------------------

A6 CHECK THE TEMPERATURE SENSOR RETURN CIRCUIT FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3304A-3	Ω	C3304A-12

Is the resistance between 300 and 300K ohms?

Yes	<p>INSTALL a new heated rear seat module.</p> <p>REFER to: Heated Rear Seat Module - SuperCrew (501-10B Rear Seats, Removal and Installation).</p>
------------	--

No	REPAIR the circuit.
-----------	---------------------

the switch indicator. The heated seat module also supplies voltage to the LH (left-hand) rear seat cushion and backrest heater mats, which are connected in series. Temperature is maintained by the heated seat module using a sensor contained within the cushion heater mat. The heated seat module supplies a reference voltage to the temperature sensor and monitors the return signal from the temperature sensor for controlling current flow to the heater mats. The heated seat module remains ON, heating the seat and maintaining temperature until switched OFF or the ignition voltage is switched OFF. REFER to: [Rear Seats - System Operation and Component Description](#) (501-10B Rear Seats, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- Heater mat
- Heated rear seat switch
- Heated rear seat module

B1 CHECK THE HEATED SEAT SWITCH INPUT

- Ignition OFF.
- Disconnect Heated Rear Seat Module C3304A .
- While pressing and releasing the left heated rear seat switch, measure:

Positive Lead	Measurement / Action	Negative Lead
C3304A-2	Ω	Ground

Is the resistance less than 3 ohms when the switch is pressed and greater than 10,000 ohms when released?

Yes	GO to B3
------------	--------------------------

No	GO to B2
-----------	--------------------------

B2 CHECK THE HEATED SEAT SWITCH CIRCUIT FOR AN OPEN OR SHORT TO GROUND

- Disconnect Heated Rear Seat Switch C3182 .
- Measure:

B4 CHECK THE HEATER CIRCUITS AND HEATER MATS FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3304B-4	Ω	Ground

Is the resistance between 2.5 and 4.5 ohms?

Yes	GO to B9
------------	--------------------------

No	GO to B5
-----------	--------------------------

B5 CHECK THE HEATER MAT GROUND CIRCUIT FOR AN OPEN

- Disconnect Left Rear Backrest Heater Mat C3168 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3168-2	Ω	Ground

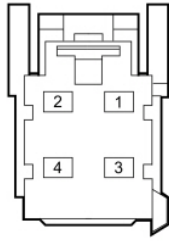
Is the resistance less than 3 ohms?

Yes	GO to B6
------------	--------------------------

No	REPAIR the circuit.
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B6 CHECK THE HEATER CIRCUIT FOR AN OPEN OR SHORT TO GROUND

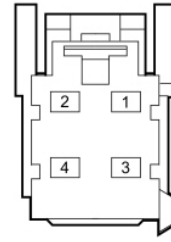
- Disconnect Left Rear Cushion Heater Mat C3167 .



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C3167-1, Component Side

Ω



E190244

C3167-4, Component Side

Is the resistance between 1.5 and 2.5 ohms?

Yes	GO to B8
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No	<p>INSTALL a new cushion heater mat. REFER to: Seat Heater Mat Removal (501-10A Front Seats, General Procedures).</p>
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B8 CHECK FOR AN OPEN OR A SHORT TO GROUND BETWEEN THE HEATER MATS

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3167-4	Ω	C3168-1

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C3167-4	Ω	Ground