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2004 FORD Freestar OEM Service and Repair Workshop Manual

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No	GO to B6
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B6 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Disconnect and inspect all DSM (driver front seat module) electrical connectors.
- Repair:
 - corrosion (install new connector or terminal - clean module pins)
 - damaged or bent pins - install new terminals or pins
 - pushed-out pins - install new pins as necessary
- Connect the DSM (driver front seat module) electrical connectors.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	<p>CHECK OASIS for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new DSM (driver front seat module) .</p> <p>REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).</p>
No	<p>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.</p>

PINPOINT TEST C : THE ADJUSTABLE STEERING COLUMN OPERATES IN ONE SECOND INTERVALS WHEN USING THE STEERING COLUMN CONTROL SWITCH (JOG MODE)

Refer to Wiring Diagrams Cell 128 for schematic and connector information.

Normal Operation and Fault Conditions REFER to: [Steering Column - System Operation and Component Description](#)

(211-04 Steering Column, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition

Positive Lead	Measurement / Action	Negative Lead
C341E-8	\bar{V}	Ground
C341E-17	\bar{V}	Ground
C341E-20	\bar{V}	Ground

Is any voltage present?

Yes	REPAIR the circuit. TEST the system for normal operation.
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No	GO to C2
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C2 CHECK THE TILT AND TELESCOPIC SENSOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C341E-8	Ω	Ground
C341E-17	Ω	Ground
C341E-20	Ω	Ground

C341E-8	Ω	C2600-4
C341E-20	Ω	C2600-3

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C341E-17	Ω	C2601-4
C341E-20	Ω	C2601-3

Are the resistances less than 3 ohms?

Yes	GO to C5
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No	REPAIR the circuit. TEST the system for normal operation.
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C5 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Disconnect and inspect all DSM (driver front seat module) electrical connectors.
- Repair:
 - corrosion (install new connector or terminal - clean module pins)
 - damaged or bent pins - install new terminals or pins
 - pushed-out pins - install new pins as necessary
- Connect the DSM (driver front seat module) electrical connectors.
- Connect Adjustable Steering Column Tilt Motor C2600.
- Connect Adjustable Steering Column Telescope Motor C2601.
- Connect Adjustable Pedal Motor C2159.
- Operate the system and determine if the concern is still present.

Is the concern is still present?

module) B1375:12		
DSM (driver front seat module) B1375:13	Steering Column Tilt Motor: Circuit Open	This DTC (diagnostic trouble code) sets when the DSM (driver front seat module) senses the tilt motor circuit voltage current draw is less than a specified threshold when the driver is active. When this DTC sets, the DSM (driver front seat module) disables the circuit until the ignition is cycled.
DSM (driver front seat module) B137E:11	Steering Column Telescope Motor: Circuit Short To Ground	This DTC (diagnostic trouble code) sets when the DSM (driver front seat module) senses the telescope motor current draw has exceeded a specified threshold. When this DTC sets, the DSM (driver front seat module) disables the circuit until the ignition is cycled.
DSM (driver front seat module) B137E:12	Steering Column Telescope Motor: Circuit Short To Battery	This DTC (diagnostic trouble code) sets when the DSM (driver front seat module) senses the telescope motor circuit voltage is above a specified threshold when the driver is active.
DSM (driver front seat module) B137E:13	Steering Column Telescope Motor: Circuit Open	This DTC (diagnostic trouble code) sets when the DSM (driver front seat module) senses the telescope motor circuit current draw is less than a specified threshold when the driver is active. When this DTC sets, the DSM (driver front seat module) disables the circuit until the ignition is cycled.

Possible Sources

- Wiring, terminals or connectors
- Adjustable steering column tilt motor
- Adjustable steering column telescopic motor (serviced with steering column)
- DSM (driver front seat module)

NOTICE

Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

D1 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C341B-2	Ω	C2600-1
C341B-4	Ω	C2600-2

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C341A-2	Ω	C2601-1
C341A-6	Ω	C2601-2

Are the resistances less than 3 ohms?

Yes	GO to D3
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No	REPAIR the circuit. TEST the system for normal operation.
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D3 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR A SHORT TO GROUND

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2600-1	Ω	Ground

C2600-2	Ω	C2601-3
C2601-1	Ω	C2600-1
C2601-1	Ω	C2600-3
C2600-1	Ω	C2601-3

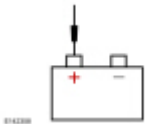

Are the resistances greater than 10,000 ohms?

Yes	GO to D5
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No	REPAIR the circuit. TEST the system for normal operation.
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D5 CHECK THE ADJUSTABLE STEERING COLUMN TILT MOTOR OPERATION

- Connect Adjustable Steering Column Tilt Motor C2600.
- Connect a fused jumper wire:

Positive Lead	Measurement / Action	Negative Lead
 <p>Positive battery terminal</p>		C341B-2

- Momentarily connect a fused jumper wire:

Positive Lead	Measurement / Action	Negative Lead
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Yes	GO to D7
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No	<p>INSTALL a new adjustable steering column telescopic motor.</p> <p>REFER to: Steering Column Telescopic Motor (211-04 Steering Column, Removal and Installation).</p>
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D7 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Disconnect and inspect all DSM (driver front seat module) electrical connectors.
- Repair:
 - corrosion (install new connector or terminal - clean module pins)
 - damaged or bent pins - install new terminals or pins
 - pushed-out pins - install new pins as necessary
- Connect the DSM (driver front seat module) electrical connectors.
- Operate the system and determine if the concern is still present.

Is the concern is still present?

Yes	<p>CHECK OASIS for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new DSM (driver front seat module) .</p> <p>REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).</p>
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No	<p>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.</p>
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PINPOINT TEST E : B1C36:9E, B1298:24, B1299:24, B12A1:24, B12A2:24

Refer to Wiring Diagrams Cell 128 for schematic and connector information.

Normal Operation and Fault Conditions REFER to: [Steering Column - System Operation and Component Description](#)

(211-04 Steering Column, Description and Operation).

DTC Fault Trigger Conditions

- Ignition ON.
- Using a diagnostic scan tool, carry out a self-test for the following modules:
 - SCCM (steering column control module) and DSM (driver front seat module)

Are B1C36:9E, B1298:24, B1299:24, B12A1:24, B12A2:24 present?

Yes	<p>INSTALL a new steering column control switch.</p> <p>REFER to: Steering Column Control Switch (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).</p> <p>TEST the system for normal operation. If the B1C36:9E, B1298:24, B1299:24, B12A1:24, B12A2:24 return, GO to E2</p>
No	<p>GO to E2 The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.</p>

E2 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Disconnect and inspect all SCCM (steering column control module) electrical connectors.
- Repair:
 - corrosion (install new connector or terminal - clean module pins)
 - damaged or bent pins - install new terminals or pins
 - pushed-out pins - install new pins as necessary
- Connect the SCCM (steering column control module) electrical connectors.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	<p>CHECK OASIS for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new steering column control switch.</p> <p>REFER to: Steering Column Control Switch (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).</p> <p>CLEAR the SCCM (steering column control module) and DSM (driver front seat module) Diagnostic Trouble Codes (DTCs). Using a diagnostic scan tool, CARRY OUT a SCCM (steering column control module) and DSM (driver front seat module) self-test. If DTC returns, INSTALL a new SCCM (steering column control module) .</p> <p>REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).</p> <p>REFER to: Steering Column Control Module (SCCM) - Vehicles With: Adaptive Steering</p>
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Steering Wheel Cover Repair

211-04 Steering Column	2022 F-150
General Procedures	Procedure revision date: 06/8/2020

Steering Wheel Cover Repair

Repair

1. **NOTE**

If re-adhering leather to the front side of the steering wheel only, it will not be necessary to remove the steering wheel. Steering wheel removal is necessary only when repairing loose leather on the backside of the steering wheel.

If necessary, remove the steering wheel.

Refer to: [Steering Wheel](#)(211-04 Steering Column, Removal and Installation).

2. Position the loose leather out of the way.

3. **NOTE**

Avoid sanding the grooved area, if applicable.

Sand steering wheel structure intended to be adhered.

4. **NOTE**

Avoid applying adhesive in the grooved area, if applicable

Apply the specified adhesive evenly over the wheel area to be adhered.