

Steering Column

DTC Chart: SCCM

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).

SCCM DTC Chart

DTC	Description	Action
B1298:09	Steering Column Adjust Up Switch: Component Failure	GO to Pinpoint Test E
B1299:09	Steering Column Adjust Down Switch: Component Failure	GO to Pinpoint Test E
B12A1:09	Steering Column Adjust Out Switch: Component Failure	GO to Pinpoint Test E
B12A2:09	Steering Column Adjust In Switch: Component Failure	GO to Pinpoint Test E
All other SCCM Diagnostic Trouble Codes (DTCs)	â€”	REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).

DTC Chart: DSM

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).

DSM DTC Chart

DTC	Description	Action
B1298:24	Steering Column Adjust Up Switch: Signal Stuck High	GO to Pinpoint Test E
B1299:24	Steering Column Adjust Down Switch: Signal Stuck High	GO to Pinpoint Test E
B12A1:24	Steering Column Adjust Out Switch: Signal Stuck High	GO to Pinpoint Test E
B12A2:24	Steering Column Adjust In Switch: Signal Stuck High	GO to Pinpoint Test E
B12A7:11	Steering Column Tilt Sensor A: Circuit Short To Ground	GO to Pinpoint Test C
B12A7:12	Steering Column Tilt Sensor A: Circuit Short To Battery	GO to Pinpoint Test C
B12A8:11	Steering Column Telescope Sensor A: Circuit Short To Ground	GO to Pinpoint Test C
B12A8:12	Steering Column Telescope Sensor A: Circuit Short To Battery	GO to Pinpoint Test C

DTC	Description	Action
B1375:09	Steering Column Tilt Motor: Component Failure	GO to Pinpoint Test D
B1375:11	Steering Column Tilt Motor: Circuit Short To Ground	GO to Pinpoint Test D
B1375:12	Steering Column Tilt Motor: Circuit Short To Battery	GO to Pinpoint Test D
B1375:13	Steering Column Tilt Motor: Circuit Open	GO to Pinpoint Test D
B1375:1A	Steering Column Tilt Motor Circuit Resistance Below Threshold	GO to Pinpoint Test D
B1375:31	Steering Column Tilt Motor: No Signal	GO to Pinpoint Test C
B137E:09	Steering Column Telescope Motor: Component Failure	GO to Pinpoint Test D
B137E:11	Steering Column Telescope Motor: Circuit Short To Ground	GO to Pinpoint Test D
B137E:12	Steering Column Telescope Motor: Circuit Short To Battery	GO to Pinpoint Test D
B137E:13	Steering Column Telescope Motor: Circuit Open	GO to Pinpoint Test D
B137E:1A	Steering Column Telescope Motor: Circuit Resistance Below Threshold	GO to Pinpoint Test D
B137E:31	Steering Column Telescope Motor: No Signal	GO to Pinpoint Test C
All other DSM Diagnostic Trouble Codes (DTCs)	â€”	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).

Symptom Chart

Symptom Chart: Power Adjustable Steering Column

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).

Condition	Possible Sources	Actions
A module does not respond to the diagnostic scan tool	• Fuse • Wiring, terminals or connectors • SCCM concern • DSM concern	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
The adjustable steering column is inoperative in one or more directions using the steering column control switch	• Refer to the Pinpoint Test	GO to Pinpoint Test A
The adjustable steering column is inoperative in one or more directions using the memory position switch	• Refer to the Pinpoint Test	GO to Pinpoint Test B
The adjustable steering column is inoperative in one or more directions using the RKE transmitter	• Refer to the Pinpoint Test	GO to Pinpoint Test B
The adjustable steering column is inoperative in one or more directions using the easy entry/easy exit feature	• Refer to the Pinpoint Test	GO to Pinpoint Test B

Condition	Possible Sources	Actions
The adjustable steering column operates in one second intervals when using the steering column control switch (jog mode)	Refer to the Pinpoint Test	GO to Pinpoint Test C

Pinpoint Tests

The Adjustable Steering Column is Inoperative in One or More Directions Using the Steering Column Control Switch

Refer to Wiring Diagrams Cell [128](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Steering Column - Overview (211-04 Steering Column, Description and Operation).

Possible Sources

- Wiring, terminals or connectors
- Adjustable steering column tilt motor
- Adjustable steering column telescopic motor
- DSM
- SCCM
- GWM

PINPOINT TEST A : THE ADJUSTABLE STEERING COLUMN IS INOPERATIVE IN ONE OR MORE DIRECTIONS USING THE STEERING COLUMN CONTROL SWITCH

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

A1 CHECK THE COMMUNICATION NETWORK

- Ignition ON.
- Using a diagnostic scan tool, carry out the Network Test.

Do the GWM, SCCM and DSM all pass the Network Test?

Yes	GO to A2
No	DIAGNOSE the no communication concern for the GWM, SCCM or DSM. REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

A2 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) IN THE GWM (GATEWAY MODULE A)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present in the GWM?

Yes	DIAGNOSE the GWM Diagnostic Trouble Codes (DTCs). REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to A3

A3 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) IN THE SCCM (STEERING COLUMN CONTROL MODULE)

- Using a diagnostic scan tool, carry out the SCCM self-test.

Are any SCCM Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE the SCCM Diagnostic Trouble Codes (DTCs). REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).
No	GO to A4

A4 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs) IN THE DSM (DRIVER FRONT SEAT MODULE)

- Using a diagnostic scan tool, carry out the DSM self-test.

Are any Diagnostic Trouble Codes (DTCs) present in the DSM?

Yes	For DSM DTC B1375:11, B1375:12, B1375:13, B1375:1A, B137E:11, B137E:12, B137E:13, or B137E:1A, GO to Pinpoint Test D For all other DSM Diagnostic Trouble Codes (DTCs), REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
No	GO to A5

A5 CHECK THE SCCM (STEERING COLUMN CONTROL MODULE) STEERING COLUMN ADJUST SWITCH (STRCOL_ADJ) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, monitor the SCCM STRCOL_ADJ PID while activating the steering column control switch in all 4 directions.

Does the PID display match each steering column control switch position?

Yes	GO to A6
No	If the PID displays "No Movement" or "Invalid", or if the PID display does not match one or more switch positions, INSTALL a new steering column control switch. REFER to: Steering Column Control Switch (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. If the adjustable steering column is still inoperative, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).

A6 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect DSM [C341C](#).
- Disconnect Adjustable Steering Column Tilt Motor [C2600](#).
- Disconnect Adjustable Steering Column Telescope Motor [C2601](#).
- Measure:

DRIVER SEAT MODULE (DSM)	ADJUSTABLE STEERING COLUMN MOTOR, TILT
--------------------------	---

Positive Lead	Measurement / Action	Negative Lead
C341C-22	Ω	C2600-2
C341C-10	Ω	C2600-1

- Measure:

DRIVER SEAT MODULE (DSM)	ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE
--------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C341C-11	Ω	C2601-1
C341C-23	Ω	C2601-2

Are the resistances less than 3 ohms?

Yes	GO to A7
No	REPAIR the circuit.

A7 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TILT	
---	--

Positive Lead	Measurement / Action	Negative Lead
C2600-1	Ω	Ground
C2600-2	Ω	Ground

- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE	
--	---

Positive Lead	Measurement / Action	Negative Lead
C2601-1	Ω	Ground
C2601-2	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to A8
No	REPAIR the circuit.

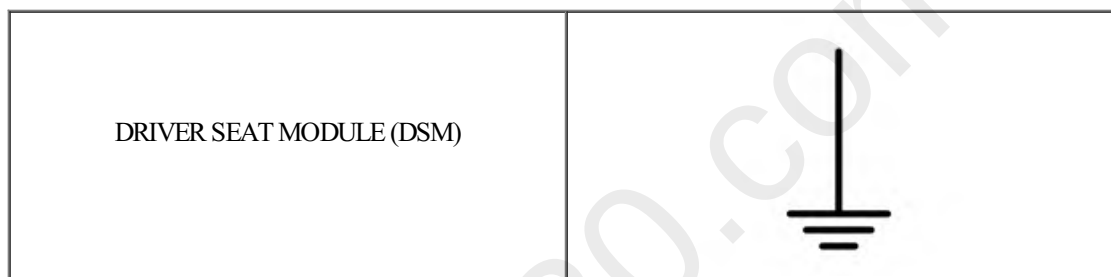
A8 CHECK THE ADJUSTABLE STEERING COLUMN TILT MOTOR OPERATION

- Connect Adjustable Steering Column Tilt Motor [C2600](#).
- Connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
Positive battery terminal		C341C-22

- Momentarily connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
C341C-10		Ground

Does the tilt motor move the steering column when the fused jumper wire is connected to ground?

Yes	GO to A9
No	INSTALL a new adjustable steering column tilt motor. REFER to: Steering Column Tilt Motor (211-04 Steering Column, Removal and Installation).

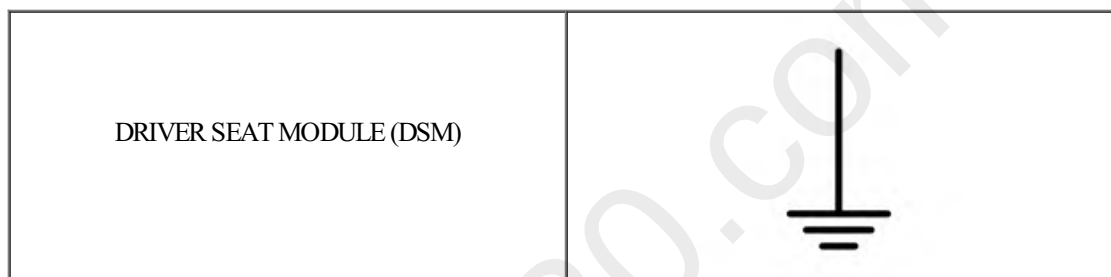
A9 CHECK THE ADJUSTABLE STEERING COLUMN TELESCOPIC MOTOR OPERATION

- Connect Adjustable Steering Column Telescope Motor [C2601](#).
- Connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
Positive battery terminal		C341C-23

- Momentarily connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
C341C-11		Ground

Does the telescopic motor move the steering column when the fused jumper wire is connected to ground?

Yes	GO to A10
No	INSTALL a new telescopic motor. REFER to: Steering Column Telescopic Motor (211-04 Steering Column, Removal and Installation).

A10 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Inspect DSM [C341C](#).
- 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 DSM [C341C](#).
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. 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. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).
No	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.

The Adjustable Steering Column Is Inoperative In One Or More Directions Using The Memory Position Switch, RKE Transmitter or Easy Entry/Easy Exit Feature

Refer to Wiring Diagrams Cell [128](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Steering Column - Overview (211-04 Steering Column, Description and Operation).

REFER to: Front Seats - Overview (501-10A Front Seats, Description and Operation).

Possible Sources

- Easy entry/easy exit feature disabled
- Memory position recall concern
- RKE feature
- DSM

PINPOINT TEST B : THE ADJUSTABLE STEERING COLUMN IS INOPERATIVE IN ONE OR MORE DIRECTIONS USING THE MEMORY POSITION SWITCH, THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER OR THE EASY ENTRY/EASY EXIT FEATURE

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

B1 CHECK THE OPERATION OF THE ADJUSTABLE COLUMN USING THE STEERING COLUMN CONTROL SWITCH

- Operate the adjustable column in all directions using the steering column control switch.

Does the steering column move for more than one second in each direction using the steering column control switch?

Yes	If the adjustable steering column is inoperative using the easy entry/exit feature, GO to B2 If the adjustable steering column is inoperative using the memory position switch, GO to B3 If the adjustable steering column is inoperative using an RKE transmitter, GO to B4
No	If the steering column does not move at all in one or more directions using the steering column switch, GO to Pinpoint Test A If the steering column only moves in one second intervals (jog mode) in one or more directions using the steering column switch, GO to Pinpoint Test C

B2 VERIFY THE EASY ENTRY/EXIT FEATURE IS ENABLED

- Using the message center, enable the easy entry/exit feature. Refer to the Owner's Literature for additional instructions for using the message center.
- Activate the easy entry/easy exit feature by turning the ignition on and then off.

Does the adjustable steering column operate using the easy entry/easy exit feature?

Yes	The repair is complete. INFORM the customer that the easy entry/easy exit feature was disabled and RETURN the vehicle to the customer.
No	GO to B5

B3 CHECK THE OPERATION OF THE MEMORY SEATS AND MEMORY MIRRORS USING THE MEMORY POSITION SWITCH

- Check the operation of the seats and memory mirrors using the memory position switch. If necessary, refer to the Owner's Literature for additional instructions for programming a memory position.

Do the seats and mirrors operate correctly using the memory position switch?

Yes	GO to B5
No	DIAGNOSE the memory seat function. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).

B4 CHECK THE OPERATION OF THE MEMORY SEATS AND MEMORY MIRRORS USING THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER

- Check the operation of the seats and mirrors using a RKE transmitter. If necessary, refer to the Owner's Literature for additional instructions for programming a memory position to a RKE transmitter.

Do the seats and mirrors operate correctly using the RKE transmitter?

Yes	GO to B5
No	DIAGNOSE the RKE seat position recall function. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).

B5 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) IN THE BCM (BODY CONTROL MODULE) , GWM (GATEWAY MODULE A) AND DSM (DRIVER FRONT SEAT MODULE)

- Ignition ON.
- Using a diagnostic scan tool, carry out a self-test for the following modules:
 - BCM
 - GWM
 - DSM
- Record all Diagnostic Trouble Codes (DTCs) retrieved from the modules.

Are there any Diagnostic Trouble Codes (DTCs) present in any of the 3 modules?

Yes	DIAGNOSE the BCM, GWM or DSM Diagnostic Trouble Codes (DTCs). REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation). REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing). REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
No	GO to B6

B6 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Disconnect and inspect all DSM 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 electrical connectors.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. 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. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).
No	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.

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

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B12A7:11	Steering Column Tilt Sensor A: Circuit Short To Ground	This DTC sets in continuous memory and on-demand if the DSM detects a short to battery voltage on the telescopic sensor feedback circuit.
B12A7:12	Steering Column Tilt Sensor A: Circuit Short To Battery	This DTC sets in continuous memory and on-demand if the DSM detects a short to ground on the telescopic sensor feedback circuit.
B12A8:11	Steering Column Telescope Sensor A: Circuit Short To Ground	This DTC sets in continuous memory and on-demand if the DSM detects a short to battery voltage on the tilt sensor feedback circuit.
B12A8:12	Steering Column Telescope Sensor A: Circuit Short To Battery	This DTC sets in continuous memory and on-demand if the DSM detects a short to ground on the tilt sensor feedback circuit.
B1375:31	Steering Column Tilt Motor: No Signal	This DTC sets when the DSM senses the tilt motor circuit current draw is above a specified threshold when the driver is active.
B137E:31	Steering Column Telescope Motor: No Signal	This DTC sets when the DSM senses the telescope motor circuit current draw is above a specified threshold when the driver is active.

Possible Sources

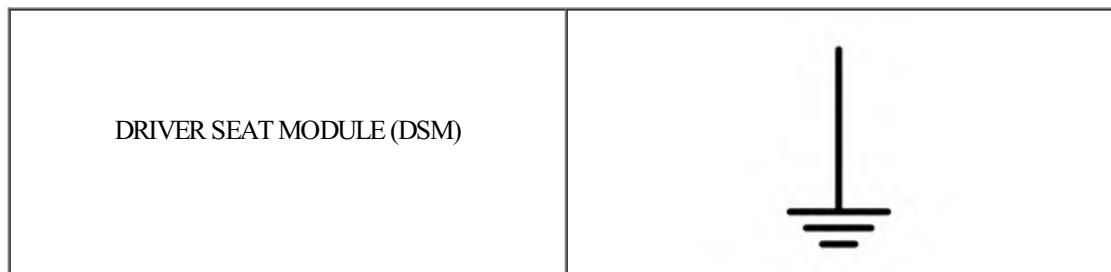
- Wiring, terminals or connectors
- Adjustable steering column tilt motor sensor (serviced with tilt motor)
- Adjustable steering column telescopic motor sensor (serviced with steering column)
- DSM

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

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

C1 CHECK THE TILT AND TELESCOPIC SENSOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect DSM [C341C](#).
- Disconnect Adjustable Steering Column Tilt Motor [C2600](#).
- Disconnect Adjustable Pedal Motor [C2159](#).
- Ignition ON.
- Measure:



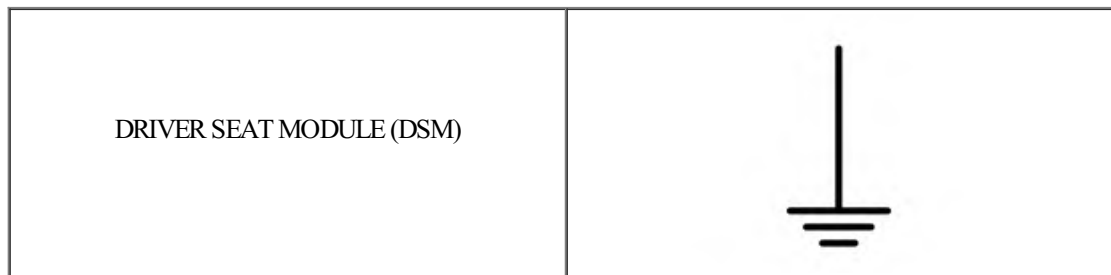
Positive Lead	Measurement / Action	Negative Lead
C341C-4		Ground
C341C-5		Ground
C341C-15		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to C2

C2 CHECK THE TILT AND TELESCOPIC SENSOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C341C-4	Ω	Ground
C341C-5	Ω	Ground
C341C-15	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to C3
No	REPAIR the circuit.

C3 CHECK THE TILT AND TELESCOPIC SENSOR CIRCUITS FOR A SHORT TOGETHER

- Measure:

DRIVER SEAT MODULE (DSM)

Positive Lead	Measurement / Action	Negative Lead
C341C-4	Ω	C341C-5
C341C-4	Ω	C341C-15
C341C-5	Ω	C341C-15

Are the resistances greater than 10,000 ohms?

Yes	GO to C4
No	REPAIR the circuits.

C4 CHECK THE TILT AND TELESCOPIC SENSOR CIRCUITS FOR AN OPEN

- Measure:

DRIVER SEAT MODULE (DSM)	ADJUSTABLE STEERING COLUMN MOTOR, TILT
--------------------------	---

Positive Lead	Measurement / Action	Negative Lead
C341C-5	Ω	C2600-4
C341C-15	Ω	C2600-3

- Measure:

DRIVER SEAT MODULE (DSM)	ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE
--------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C341C-4	Ω	C2601-4
C341C-15	Ω	C2601-3

Are the resistances less than 3 ohms?

Yes	GO to C5
No	REPAIR the circuit.

C5 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Disconnect and inspect all DSM 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 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?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. 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. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).
No	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.

The Adjustable Steering Column is Inoperative in One or More Directions

Refer to Wiring Diagrams Cell [128](#) for schematic and connector information.

Normal Operation and Fault Conditions

To protect the power tilt and telescopic motors, motor circuits and the electronics internal to the DSM, the DSM continually monitors both motor and driver circuits for a fault condition whenever the motors are activated. If the DSM detects a fault on the driver circuits for one or both motors, the DSM stops applying power to the motors until the next time it receives a command to move the motor. If this condition is detected during a DSM on-demand self test of the DSM, a power tilt or power telescopic motor driver circuit DTC is set.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1375:09	Steering Column Tilt Motor: Component Failure	This DTC sets in continuous memory during an attempt to change the position of the adjustable steering column if there is high resistance in the connections between the DSM and the adjustable steering column tilt motor. This DTC will also set if there is an internal failure of the adjustable steering column tilt motor.
B1375:11	Steering Column Tilt Motor: Circuit Short To Ground	This DTC sets when the DSM senses the tilt motor current draw has exceeded a specified threshold. When this DTC sets, the DSM disables the circuit until the ignition is cycled.
B1375:12	Steering Column Tilt Motor: Circuit Short To Battery	This DTC sets when the DSM senses the tilt motor circuit voltage is above a specified threshold when the driver is active.
B1375:13	Steering Column Tilt Motor: Circuit Open	This DTC sets when the DSM 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 disables the circuit until the ignition is cycled.

DTC	Description	Fault Trigger Conditions
B1375:1A	Steering Column Tilt Motor: Circuit Resistance Below Threshold	A fault is indicated when the DSM measures less than the desired resistance range between the tilt motor circuits when the driver is active.
B137E:09	Steering Column Telescope Motor: Component Failure	This DTC sets in continuous memory during an attempt to change the position of the adjustable steering column if there is high resistance in the connections between the DSM and the adjustable steering column telescope motor. This DTC will also set if there is an internal failure of the adjustable steering column telescope motor.
B137E:11	Steering Column Telescope Motor: Circuit Short To Ground	This DTC sets when the DSM senses the telescope motor current draw has exceeded a specified threshold. When this DTC sets, the DSM disables the circuit until the ignition is cycled.
B137E:12	Steering Column Telescope Motor: Circuit Short To Battery	This DTC sets when the DSM senses the telescope motor circuit voltage is above a specified threshold when the driver is active.
B137E:13	Steering Column Telescope Motor: Circuit Open	This DTC sets when the DSM senses the telescope motor circuit current draw is less than a specified threshold when the driver is active. When this DTC sets, the DSM disables the circuit until the ignition is cycled.
B137E:1A	Steering Column Telescope Motor: Circuit Resistance Below Threshold	A fault is indicated when the DSM measures less than the desired resistance range between the tilt motor circuits when the driver is active.

Possible Sources

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

PINPOINT TEST D : THE ADJUSTABLE STEERING COLUMN IS INOPERATIVE IN ONE OR MORE DIRECTIONS

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.
- Disconnect DSM [C341C](#).
- Disconnect Adjustable Steering Column Tilt Motor [C2600](#).
- Disconnect Adjustable Steering Column Telescope Motor [C2601](#).
- Ignition ON.
- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TILT	
---	--

Positive Lead	Measurement / Action	Negative Lead
C2600-1		Ground
C2600-2		Ground

- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE	
--	--

Positive Lead	Measurement / Action	Negative Lead
C2601-1		Ground
C2601-2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to D2

D2 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

DRIVER SEAT MODULE (DSM)	ADJUSTABLE STEERING COLUMN MOTOR, TILT
--------------------------	---

Positive Lead	Measurement / Action	Negative Lead
C341C-10	Ω	C2600-1
C341C-22	Ω	C2600-2

- Measure:

DRIVER SEAT MODULE (DSM)	ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE
--------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C341C-11	Ω	C2601-1
C341C-23	Ω	C2601-2

Are the resistances less than 3 ohms?

Yes	GO to D3
No	REPAIR the circuit.

D3 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TILT	
---	--

Positive Lead	Measurement / Action	Negative Lead
C2600-1	Ω	Ground
C2600-2	Ω	Ground

- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE	
--	---

Positive Lead	Measurement / Action	Negative Lead
C2601-1	Ω	Ground
C2601-2	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 CHECK THE ADJUSTABLE STEERING COLUMN MOTOR CIRCUITS FOR A SHORT TOGETHER

- Measure:

ADJUSTABLE STEERING COLUMN MOTOR, TILT	ADJUSTABLE STEERING COLUMN MOTOR, TELESCOPE
---	--

Positive Lead	Measurement / Action	Negative Lead
C2600-2	Ω	C2601-1
C2600-2	Ω	C2600-1
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
No	REPAIR the circuits.

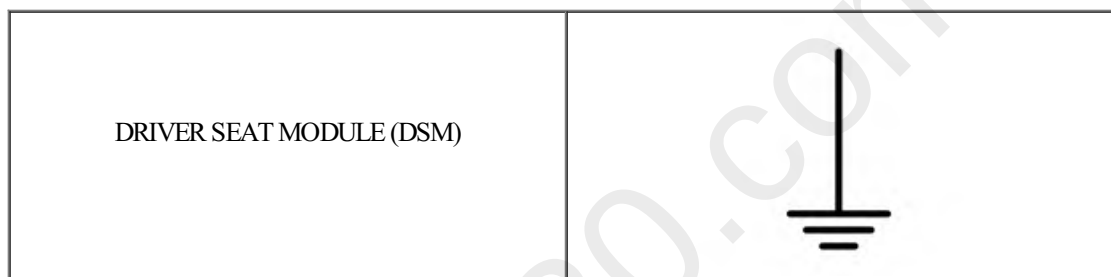
D5 CHECK THE ADJUSTABLE STEERING COLUMN TILT MOTOR OPERATION

- Connect Adjustable Steering Column Tilt Motor [C2600](#).
- Connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
Positive battery terminal		C341C-22

- Momentarily connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
C341C-10		Ground

Does the tilt motor move the steering column when the fused jumper wire is connected to ground?

Yes	GO to D6
No	INSTALL a new adjustable steering column tilt motor. REFER to: Steering Column Tilt Motor (211-04 Steering Column, Removal and Installation).

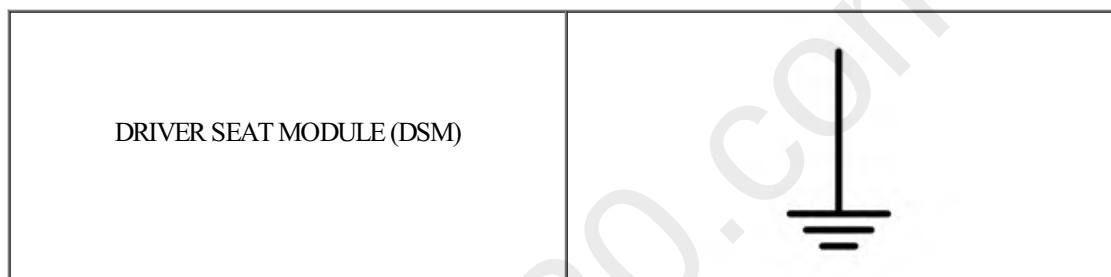
D6 CHECK THE ADJUSTABLE STEERING COLUMN TELESCOPIC MOTOR OPERATION

- Connect Adjustable Steering Column Telescope Motor [C2601](#).
- Connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
Positive battery terminal		C341C-23

- Momentarily connect a fused jumper wire:



Positive Lead	Measurement / Action	Negative Lead
C341C-11		Ground

Does the telescopic motor move the steering column when the fused jumper wire is connected to ground?

Yes	GO to D7
No	INSTALL a new power adjustable steering column. REFER to: Steering Column (211-04 Steering Column, Removal and Installation).

D7 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Disconnect and inspect all DSM 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 electrical connectors.
- Operate the system and determine if the concern is still present.

Is the concern is still present?

Yes	CHECK OASIS for any applicable service articles: TSB, GSB, SSM or FSA. 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. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).
No	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.

SCCM or DSM DTC B1298, B1299, B12A1 or B12A2

Refer to Wiring Diagrams Cell [128](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set in the SCCM and DSM.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1298:09	Steering Column Adjust Up Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.
B1299:09	Steering Column Adjust Down Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.
B12A1:09	Steering Column Adjust Out Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.
B12A2:09	Steering Column Adjust In Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.
B1298:24	Steering Column Adjust Up Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.
B1299:24	Steering Column Adjust Down Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.
B12A1:24	Steering Column Adjust Out Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.

DTC	Description	Fault Trigger Conditions
B12A2:24	Steering Column Adjust In Switch: Component Failure	The SCCM continually monitors the steering column control switch input. With battery voltage between 10 and 15.5 volts and with the ignition set to ON, if the SCCM receives switch input for more than 2 minutes, a DTC is set.

Possible Sources

- Steering Column Adjust Switch
- SCCM

PINPOINT TEST E : SCCM (STEERING COLUMN CONTROL MODULE) OR DSM (DRIVER FRONT SEAT MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B1298, B1299, B12A1 OR B12A2.

E1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs) IN THE SCCM (STEERING COLUMN CONTROL MODULE)

- Using a diagnostic scan tool, carry out the SCCM self-test.

Are SCCM Diagnostic Trouble Codes (DTCs) B1298:24, B1299:24, B12A1:24, B12A2:24, B1298:09, B1299:09, B12A1:09 or B12A2:09 present?

Yes	INSTALL a new steering column control switch. REFER to: Steering Column Control Switch (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). CLEAR the SCCM and DSM Diagnostic Trouble Codes (DTCs). Using a diagnostic scan tool, CARRY OUT a SCCM and DSM self-test. If DTC returns, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	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.