

Hydraulic Brake Actuation

For hydraulic brake diagnosis and testing,

REFER to: Brake System (206-00 Brake System - General Information, Diagnosis and Testing).

DTC Chart: Driver Seat Module (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
B1368:11	Adjustable Pedal Position Feedback Sensor: Circuit Short To Ground	GO to Pinpoint Test D
B1368:12	Adjustable Pedal Position Feedback Sensor: Circuit Short To Battery	GO to Pinpoint Test D
B137D:09	Pedal Adjustment Motor: Component Failure	GO to Pinpoint Test B
B137D:11	Pedal Adjustment Motor: Circuit Short To Ground	GO to Pinpoint Test B
B137D:12	Pedal Adjustment Motor: Circuit Short To Battery	GO to Pinpoint Test B
B137D:13	Pedal Adjustment Motor: Circuit Open	GO to Pinpoint Test B
B137D:1A	Pedal Adjustment Motor: Circuit Resistance Below Threshold	GO to Pinpoint Test B
B137D:31	Pedal Adjustment Motor: No Signal	GO to Pinpoint Test B
B14C7:24	Adjustable Pedal Forward Switch: Signal Stuck High	GO to Pinpoint Test B
B14C8:24	Adjustable Pedal Rearward Switch: Signal Stuck High	GO to Pinpoint Test B
â€”	All Other DSM Diagnostic Trouble Codes (DTCs)	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).

Symptom Charts

Symptom Chart â€” Adjustable Pedals Without Memory Feature

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	Possible Sources	Action
Adjustable pedals are inoperative or do not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test A

Symptom Chart â€” Adjustable Pedals With Memory Feature

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	Possible Sources	Action
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• A module does not respond to the diagnostic scan tool	• Fuse • Wiring, terminals or connectors • DSM concern	• REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
• Adjustable pedals are inoperative or do not operate correctly “ using the adjustable pedal control switch	• Refer to the Pinpoint Test	• GO to Pinpoint Test B
• Adjustable pedals are inoperative or do not operate correctly “ using the memory SET switch buttons	• Refer to the Pinpoint Test	• GO to Pinpoint Test C
• Adjustable pedals are inoperative or do not operate correctly “ using the RKE transmitter	• Refer to the Pinpoint Test	• GO to Pinpoint Test C
• Adjustable pedals only move for 2 seconds regardless of how long the adjustable pedal control switch is pressed	• Diagnostic Trouble Codes (DTCs) present in the DSM	• RETRIEVE and DIAGNOSE all DSM Diagnostic Trouble Codes (DTCs)

Pinpoint Tests

Adjustable Pedals are Inoperative or Do Not Operate Correctly “ Without Memory Feature

Refer to Wiring Diagrams Cell [127](#) for schematic and connector information.

Normal Operation and Fault Conditions

BCM fuse 29 (15A) provides voltage to the adjustable pedal switch. When pressed, the adjustable pedal sends voltage to the adjustable pedal motor. The motor continues to operate as long as the switch is pressed until the motor reaches the end of travel. An open fuse, circuit or motor, a short to ground in the circuit or motor, foreign material blocking the pedal assembly, a damaged cable or damaged pedal assembly prevents the adjustable pedals from operating correctly.

Possible Causes

- Foreign material
- Fuses
- Wiring, terminals or connectors
- Adjustable pedal cable
- Adjustable pedal control switch
- Adjustable pedal motor
- Adjustable brake pedal assembly
- Adjustable accelerator pedal assembly
- Adjustable pedal relays

Visual Inspection and Diagnostic Pre-checks

- Make sure BCM fuse 29 (15A) is OK.

PINPOINT TEST A : ADJUSTABLE PEDALS ARE INOPERATIVE OR DO NOT OPERATE CORRECTLY “ WITHOUT MEMORY FEATURE

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

A1 CHECK THE ADJUSTABLE PEDAL MOTOR OPERATION

NOTICE: The following step uses a test light to simulate normal circuit loads. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

- Ignition OFF.
- Disconnect the adjustable pedal motor [C2003](#).
- Press the adjustable pedal control switch in both directions with a test light connected as indicated:

ADJUSTABLE PEDAL MOTOR

Positive Lead	Measurement / Action	Negative Lead
C2003-1		C2003-2

- Press the adjustable pedals control switch in the forward position and verify the test light illuminates.
- Press the adjustable pedals control switch in the rearward position and verify the test light illuminates.

Does the test light illuminate when the adjustable pedals control switch is pressed in each direction?

Yes	GO to A9
No	GO to A2

A2 CHECK ADJUSTABLE PEDAL CONTROL SWITCH VOLTAGE INPUT CIRCUIT FOR AN OPEN

- Disconnect BCM [C2280A](#).
- Measure:

ADJUSTABLE PEDAL SWITCH	BODY CONTROL MODULE (BCM)
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Positive Lead	Measurement / Action	Negative Lead
C2089-2	Ω	C2280A-21

Is the resistance less than 3 ohms?

Yes	GO to A3
No	VERIFY BCM fuse 29 (15A) is OK. If the fuse is OK, REPAIR the circuit. If the fuse is not OK, REFER to the Wiring Diagrams manual to determine the cause of the circuit short.

A3 CHECK ADJUSTABLE PEDAL CONTROL SWITCH VOLTAGE INPUT CIRCUIT FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE PEDAL SWITCH	
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Positive Lead	Measurement / Action	Negative Lead
C2089-2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A4
No	REPAIR the circuit.

A4 CHECK THE ADJUSTABLE PEDAL CONTROL SWITCH GROUND CIRCUIT FOR AN OPEN

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2089-6	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to A5
No	REPAIR the circuit.

A5 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR AN OPEN

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2089-1	Ω	C2003-2
C2089-5	Ω	C2003-1

Are the resistances less than 3 ohms?

Yes	GO to A6
No	REPAIR the circuit.

A6 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE PEDAL SWITCH	
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Positive Lead	Measurement / Action	Negative Lead
C2089-1	Ω	Ground
C2089-5	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to A7
No	REPAIR the circuit.

A7 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR A SHORT TOGETHER

- Measure:

ADJUSTABLE PEDAL SWITCH

Positive Lead	Measurement / Action	Negative Lead
C2089-1	Ω	C2089-5

Is the resistance greater than 10,000 ohms?

Yes	GO to A8
No	REPAIR the circuit.

A8 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR A SHORT TO VOLTAGE

- Connect BCM [C2280A](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2089-1		Ground
C2089-5		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	INSTALL a new adjustable pedal control switch. REFER to: Brake Pedal Control Switch (206-06 Hydraulic Brake Actuation, Removal and Installation).

A9 CHECK THE ADJUSTABLE PEDAL MOTOR AND CABLE INSTALLATION

- Check the adjustable pedal motor and cable for correct installation.

Are the motor and cable correctly installed?

Yes	GO to A10
No	CORRECT the adjustable pedal motor or cable installation.

A10 INSPECT FOR FOREIGN MATERIAL

- Inspect the adjustable brake and accelerator pedal assemblies for foreign material causing a binding condition.

Are the pedal assemblies free from foreign material?

Yes	GO to A11
No	REMOVE the foreign material.

A11 CHECK THE ADJUSTABLE BRAKE PEDAL CABLE OPERATION

- Connect adjustable pedal motor [C2003](#).
- Disconnect the adjustable brake pedal cable from the adjustable brake pedal worm gear.
- Operate the adjustable pedal control switch in both directions and observe the cable in the conduit.

Does the adjustable brake pedal cable turn in the conduit when the switch is pressed?

Yes	INSTALL a new brake pedal assembly. REFER to: Brake Pedal and Bracket (206-06 Hydraulic Brake Actuation, Removal and Installation).
No	INSTALL a new accelerator pedal assembly (the adjustable pedal motor is part of the accelerator pedal assembly). REFER to: Accelerator Pedal (310-02 Acceleration Control, Removal and Installation).

Adjustable Pedals are Inoperative or Do Not Operate Correctly – Using the Adjustable Pedal Control Switch (With Memory Feature)

Refer to Wiring Diagrams Cell [127](#) for schematic and connector information.

Normal Operation and Fault Conditions

The adjustable pedal control switch receives fused battery voltage from BCM fuse 29 (15A). When the switch is pressed, the voltage is sent to the DSM which responds by sending a voltage to the adjustable pedal motor. The voltage returns to the DSM where it is grounded.

An open fuse or circuit, a short to ground in the circuit, an open in the adjustable pedal motor, foreign material blocking the pedal assembly, a damaged cable, damaged pedal assembly or an internal failure of the DSM prevents the adjustable pedals from operating correctly.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B137D:09	Pedal Adjustment Motor: Component Failure	This DTC sets in continuous memory or on-demand if the DSM when a condition other than a short to battery, open circuit or low resistance is detected in the adjustable pedal motor or circuits.
B137D:11	Pedal Adjustment Motor: Circuit Short to Ground	This DTC sets in continuous memory if the DSM detects a short to ground on 1 or both of the adjustable pedal motor circuits or the motor.
B137D:12	Pedal Adjustment Motor: Circuit Short to Battery	This DTC sets in continuous memory or on-demand if the DSM detects a short to voltage on 1 or both of the adjustable pedal motor circuits or the motor.
B137D:13	Pedal Adjustment Motor: Circuit Open	This DTC sets in continuous memory or on-demand if the DSM detects an open on 1 or both of the adjustable pedal motor circuits or the motor.

DTC	Description	Fault Trigger Conditions
B137D:1A	Pedal Adjustment Motor: Circuit Resistance Below Threshold	This DTC sets in continuous memory or on-demand if the DSM detects low circuit resistance on 1 or both of the adjustable pedal motor circuits or the motor.
B137D:31	Pedal Adjustment Motor: No Signal	This DTC only sets on-demand during a DSM self-test. The DSM activates the adjustable pedal motor in the forward direction for 2 seconds and monitors the motor feedback current and motor position count. If the motor current is above a pre-determined limit and the motor position count is 0 then motor stall is detected and the motor is moved in the opposite direction. If the motor stalls twice in either of the directions then the DTC sets.
B14C7:24	Adjustable Pedal Forward Switch: Signal Stuck High	This DTC sets in continuous memory or on-demand if the adjustable pedal switch forward position is active for more than 120 seconds. This can be due to a short to battery on the switch circuit, a mechanically stuck switch or something resting against the switch.
B14C8:24	Adjustable Pedal Rearward Switch: Signal Stuck High	This DTC sets in continuous memory or on-demand if the adjustable pedal switch rearward position is active for more than 120 seconds. This can be due to a short to battery on the switch circuit, a mechanically stuck switch or something resting against the switch.

Possible Causes

- Foreign material
- Fuses
- Wiring, terminals or connectors
- Adjustable pedal cable
- Adjustable pedal control switch
- Adjustable pedal motor
- Adjustable brake pedal assembly
- Adjustable accelerator pedal assembly
- DSM

Visual Inspection and Diagnostic Pre-checks

- Make sure BCM fuse 29 (15A) is OK.

PINPOINT TEST B : ADJUSTABLE PEDALS ARE INOPERATIVE OR DO NOT OPERATE CORRECTLY – USING THE ADJUSTABLE PEDAL CONTROL SWITCH (WITH MEMORY FEATURE)

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

B1 CHECK THE DSM (DRIVER FRONT SEAT MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

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

Are any of the Diagnostic Trouble Codes (DTCs) listed in the DTC Fault Trigger Conditions table present?

Yes	For DTC B14C7:24 or B14C8:24, GO to B5 For DTC B137D:09, B137D:13 or B137D:31, GO to B12 For DTC B137D:11 or B137D:1A, GO to B13 For DTC B137D:12, GO to B15
No	GO to B2

B2 CHECK THE ADJUSTABLE PEDAL MOTOR AND CABLE INSTALLATION

- Check the adjustable pedal motor and cable for correct installation.

Are the motor and cable correctly installed?

Yes	GO to B3
No	CORRECT the adjustable pedal motor or cable installation.

B3 INSPECT FOR FOREIGN MATERIAL

- Inspect the adjustable brake and accelerator pedal assemblies for foreign material causing a binding condition.

Are the pedal assemblies free from foreign material?

Yes	GO to B4
No	REMOVE the foreign material.

B4 CHECK THE DSM (DRIVER FRONT SEAT MODULE) ADJUSTABLE PEDAL CONTROL SWITCH (PEDPOSSW) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, monitor the DSM PEDPOSSW PID while activating the adjustable pedal control switch in both directions.

Does the PID display match the switch position within one second of pressing the switch?

Yes	GO to B11
No	GO to B5

B5 CHECK ADJUSTABLE PEDAL CONTROL SWITCH VOLTAGE INPUT CIRCUIT FOR AN OPEN

- Disconnect BCM [C2280A](#).
- Measure:

ADJUSTABLE PEDAL SWITCH	BODY CONTROL MODULE (BCM)
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Positive Lead	Measurement / Action	Negative Lead
C2089-2	Ω	C2280A-21

Is the resistance less than 3 ohms?

Yes	GO to B6
No	VERIFY BCM fuse 29 (15A) is OK. If the fuse is OK, REPAIR the circuit. If the fuse is not OK, REFER to the Wiring Diagrams manual to determine the cause of the circuit short.

B6 CHECK ADJUSTABLE PEDAL CONTROL SWITCH VOLTAGE INPUT CIRCUIT FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE PEDAL SWITCH	
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Positive Lead	Measurement / Action	Negative Lead
C2089-2	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B7
No	REPAIR the circuit.

B7 CHECK THE ADJUSTABLE PEDAL CONTROL SWITCH OUTPUT CIRCUITS FOR AN OPEN

- Disconnect DSM [C341C](#).
- Measure:

ADJUSTABLE PEDAL SWITCH	DRIVER SEAT MODULE (DSM)
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Positive Lead	Measurement / Action	Negative Lead
C2089-1	Ω	C341C-21
C2089-5	Ω	C341C-9

Are the resistances less than 3 ohms?

Yes	GO to B8
No	REPAIR the circuit.

B8 CHECK THE ADJUSTABLE PEDAL CONTROL SWITCH OUTPUT CIRCUITS FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE PEDAL SWITCH	
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Positive Lead	Measurement / Action	Negative Lead
C2089-1	Ω	Ground
C2089-5	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to B9
No	REPAIR the circuit.

B9 CHECK THE ADJUSTABLE PEDAL CONTROL SWITCH OUTPUT CIRCUITS FOR A SHORT TOGETHER

- Measure:

ADJUSTABLE PEDAL SWITCH

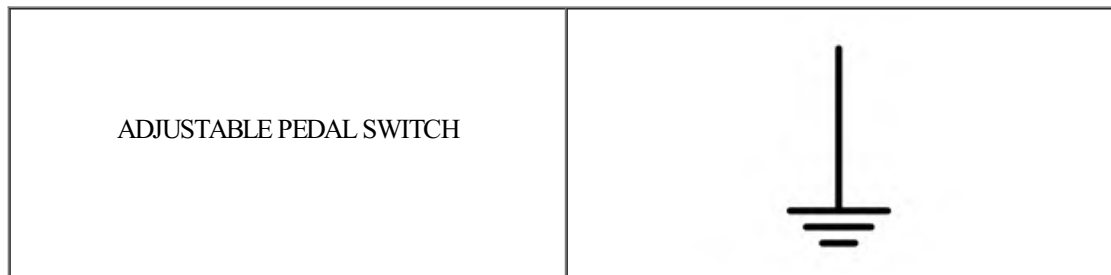
Positive Lead	Measurement / Action	Negative Lead
C2089-1	Ω	C2089-5

Is the resistance greater than 10,000 ohms?

Yes	GO to B10
No	REPAIR the circuit.

B10 CHECK THE ADJUSTABLE PEDAL CONTROL SWITCH OUTPUT CIRCUITS FOR A SHORT TO VOLTAGE

- Connect BCM [C2280A](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2089-1		Ground
C2089-5		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	SET the ignition to OFF. DISCONNECT all in-line electrical connectors between the DSM and the adjustable pedal control switch. INSPECT DSM C341C , adjustable pedal control switch C2089 and in-line electrical connectors for corrosion, bent pins and pushed-out pins. REPAIR the connectors as necessary. If the connectors are OK, INSTALL a new adjustable pedal control switch. REFER to: Brake Pedal Control Switch (206-06 Hydraulic Brake Actuation, Removal and Installation).

B11 CHECK THE DSM (DRIVER FRONT SEAT MODULE) ADJUSTABLE PEDAL OUTPUT PARAMETER IDENTIFICATIONS (PIDS)

- Select PARK.
- Ignition ON.
- Using a diagnostic scan tool, locate the following DSM Parameter Identifications (PIDs):
 - Pedal Forward (PEDAL_FWD)
 - Pedal Rearward (PEDAL_RWD)
- Activate the PEDAL_FWD PID, observe the pedal movement and then deactivate the PEDAL_FWD PID.
- Activate the PEDAL_RWD PID, observe the pedal movement and then deactivate the PEDAL_RWD PID.

Did the adjustable pedals respond correctly to the corresponding PID?

Yes	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. SET the ignition to OFF. DISCONNECT DSM C341C , adjustable pedal control switch C2089 and any in-line electrical connectors. INSPECT the electrical connectors for corrosion, bent pins and pushed-out pins. REPAIR the connectors as necessary.
No	GO to B12

B12 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect DSM [C341C](#).
- Disconnect adjustable pedal motor [C2159](#).
- Measure:

ADJUSTABLE PEDAL MOTOR	DRIVER SEAT MODULE (DSM)
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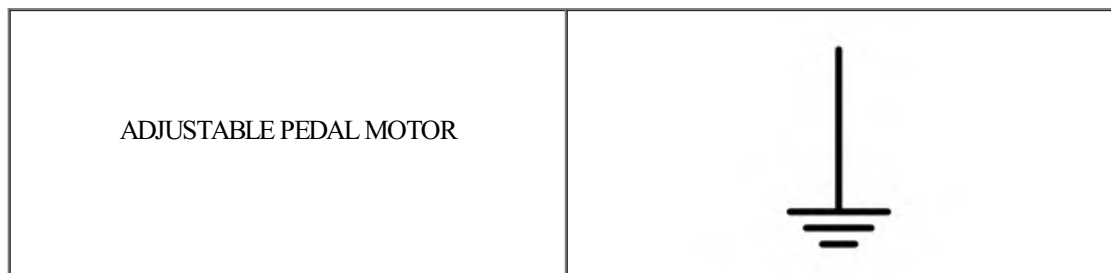
Positive Lead	Measurement / Action	Negative Lead
C2159-1	Ω	C341C-24
C2159-2	Ω	C341C-12

Are the resistances less than 3 ohms?

Yes	If sent here because DTC B137D:13 is present, INSTALL a new accelerator pedal (the adjustable pedal motor is part of the adjustable pedal assembly). REFER to: Accelerator Pedal (310-02 Acceleration Control, Removal and Installation). If DTC B137D:13 is not present, GO to B13
No	REPAIR the circuit.

B13 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect DSM [C341C](#) (if not previously disconnected).
- Disconnect adjustable pedal motor [C2159](#) (if not previously disconnected).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2159-1	Ω	Ground
C2159-2	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	If sent here because DTC B137D:11 is present, INSTALL a new accelerator pedal (the adjustable pedal motor is part of the adjustable pedal assembly). REFER to: Accelerator Pedal (310-02 Acceleration Control, Removal and Installation). If DTC B137D:11 is not present, GO to B14
No	REPAIR the circuit.

B14 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR A SHORT TOGETHER

- Measure:

ADJUSTABLE PEDAL MOTOR

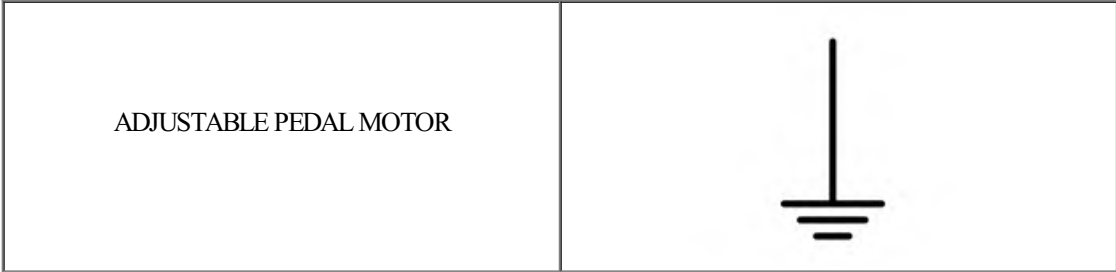
Positive Lead	Measurement / Action	Negative Lead
C2159-1	Ω	C2159-2

Are the resistances greater than 10,000 ohms?

Yes	GO to B15
No	REPAIR the circuit.

B15 CHECK THE ADJUSTABLE PEDAL MOTOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect DSM [C341C](#) (if not previously disconnected).
- Disconnect adjustable pedal motor [C2159](#) (if not previously disconnected).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2159-1		Ground
C2159-2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to B16

B16 CHECK THE DSM (DRIVER FRONT SEAT MODULE) OUTPUT

NOTICE: The following step uses a test light to simulate normal circuit loads. To avoid connector terminal damage, use the correct probe adapter(s) for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

NOTE: This test step causes Diagnostic Trouble Codes (DTCs) to set in the DSM.

NOTE: When the adjustable pedal motor connector is disconnected on vehicles with the memory feature, the DSM provides voltage in 2 seconds intervals only, due to the open circuit in the Hall-effect sensor circuit.

- Ignition OFF.
- Connect DSM [C341C](#).
- Ignition ON.
- Press the adjustable pedal control switch in both directions with a test light connected as indicated:

ADJUSTABLE PEDAL MOTOR

Positive Lead	Measurement / Action	Negative Lead
C2159-1		C2159-2

Does the test light illuminate when the adjustable pedal switch is pressed in each direction?

Yes	GO to B17
No	GO to B18

B17 CHECK THE ADJUSTABLE BRAKE PEDAL CABLE INSTALLATION

- Disconnect the adjustable brake pedal cable from the adjustable brake pedal worm gear.
- Operate the adjustable pedal control switch in both directions and observe the cable in the conduit.

Does the adjustable brake pedal cable turn in the conduit when the switch is pressed?

Yes	INSTALL a new brake pedal assembly. REFER to: Brake Pedal and Bracket (206-06 Hydraulic Brake Actuation, Removal and Installation).
No	INSTALL a adjustable pedal motor (the adjustable pedal motor is part of the accelerator pedal assembly). REFER to: Accelerator Pedal (310-02 Acceleration Control, Removal and Installation).

B18 VERIFY ALL DSM (DRIVER FRONT SEAT MODULE) WIRING CONNECTIONS

- Ignition OFF.
- Disconnect DSM [C341C](#) (if not previously disconnected).
- Disconnect all in-line electrical connectors between the DSM and the adjustable pedal motor.
- Using a good light source, inspect all disconnected electrical connectors for the following conditions:
 - corrosion - install new connector or terminal and clean the module pins
 - damaged or bent pins - install new terminals or pins
 - pushed-out pins - install new pins as necessary
 - spread terminals - install new terminals as necessary

Are the connectors free of corrosion, damaged pins, bent pins, pushed-out pins and spread terminals?

Yes	GO to B19
No	REPAIR the affected connectors or terminals. Refer to Wiring Diagrams Cell 5 for schematic and connector information.

B19 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Connect adjustable pedal motor [C2159](#). Make sure it seats and latches correctly.
- Connect all in-line electrical connectors between the DSM and the adjustable pedal motor. Make sure they seat and latch correctly.
- Connect DSM [C341C](#). Make sure it seats and latches correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DSM. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).
No	The condition that caused the concern is not present at this time. The concern is intermittent and may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

Adjustable Pedals are Inoperative or Do Not Operate Correctly – Using the Memory SET Switch Buttons or the RKE Transmitter

Refer to Wiring Diagrams Cell [127](#) for schematic and connector information.

Normal Operation and Fault Conditions

Refer to Adjustable Pedal – with Memory Feature,

REFER to: Hydraulic Brake Actuation - System Operation and Component Description (206-06 Hydraulic Brake Actuation, Description and Operation).

An open in the adjustable pedal motor, foreign material blocking the pedal assembly, a damaged cable, damaged pedal assembly, a CAN failure, or an internal failure of the modules listed below prevents the adjustable pedals from operating correctly.

Possible Causes

- Foreign material
- Wiring, terminals or connectors
- CAN concern
- Adjustable pedal motor
- Adjustable brake pedal assembly

- Adjustable accelerator pedal assembly
- RKE transmitter
- RTM
- DDM
- BCM
- DSM

PINPOINT TEST C : ADJUSTABLE PEDALS ARE INOPERATIVE OR DO NOT OPERATE CORRECTLY “ USING THE MEMORY SET SWITCH BUTTONS OR THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER

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

C1 CHECK THE ADJUSTABLE PEDAL OPERATION WITH THE ADJUSTABLE PEDAL CONTROL SWITCH

- Press the adjustable pedal control switch in each direction for more than one second and observe the adjustable pedals.

Do the adjustable pedals operate for more than one second in the direction selected using the switch?

Yes	GO to C3
No	If the pedals do not move at all using the switch, GO to Pinpoint Test B If the pedals only move in 2 second intervals regardless of switch operation, GO to Pinpoint Test D

C2 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the self test on the following modules:
 - BCM
 - DDM
 - DSM
 - RTM

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

Yes	DIAGNOSE all Diagnostic Trouble Codes (DTCs) before continuing with this pinpoint test. For BCM Diagnostic Trouble Codes (DTCs), REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing). For DDM Diagnostic Trouble Codes (DTCs), REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing). For DSM Diagnostic Trouble Codes (DTCs), REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing). For RTM Diagnostic Trouble Codes (DTCs), REFER to: Tire Pressure Monitoring System (TPMS) (204-04B Tire Pressure Monitoring System (TPMS), Diagnosis and Testing).
No	If a module does not communicate with the diagnostic scan tool, REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing). If all modules communicate with the diagnostic scan tool and no Diagnostic Trouble Codes (DTCs) are present, GO to C3

C3 CHECK THE MEMORY SYSTEM OPERATION

- Set a memory position for the driver seat, exterior mirrors, steering column and adjustable pedals to memory SET switch button 1. Refer to the Owner's Literature for additional instructions for programming a memory position.
- Using the control switches, move the driver seat, exterior mirror, steering column and adjustable pedals to another position.
- Select PARK.
- Press the memory SET switch button 1 and observe the following items:
 - driver seat
 - exterior mirrors
 - steering column
 - brake and accelerator pedals

Do all items move when the button is pressed?

Yes	GO to C4
No	If all items do not move, DIAGNOSE the memory feature. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing). If only the adjustable pedals do not move, GO to C5 If only the driver seat does not move, REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing). If only the exterior mirrors do not move, REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing). If only the steering column does not move, REFER to: Steering Column (211-04 Steering Column, Diagnosis and Testing).

C4 CHECK THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER OR PASSIVE KEY OPERATION

- Set a memory position for the driver seat, exterior mirrors, steering column and adjustable pedals to a RKE transmitter or passive key. Refer to the Owner's Literature for additional instructions for programming a memory position to a RKE transmitter or passive key.
- Using the control switches, move the driver seat, exterior mirror, steering column and adjustable pedals to another position.
- Select PARK.
- Press the unlock button on the RKE transmitter or passive key and observe the following items:
 - driver seat
 - exterior mirrors
 - steering column
 - brake and accelerator pedals

Do all items move when the button is pressed?

Yes	The system is operating correctly at this time. The concern may have been caused due to high network traffic or an intermittent fault condition.
No	If all items do not move, DIAGNOSE the memory feature. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing). If only the adjustable pedals do not move, GO to C5 If only the driver seat does not move, REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing). If only the exterior mirrors do not move, REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing). If only the steering column does not move, REFER to: Steering Column (211-04 Steering Column, Diagnosis and Testing).

C5 CHECK THE ADJUSTABLE PEDAL MOTOR AND CABLE INSTALLATION

- Check the adjustable pedal motor and cable for correct installation.

Are the motor and cable correctly installed?

Yes	GO to C6
No	CORRECT the adjustable pedal motor or cable installation.

C6 INSPECT FOR FOREIGN MATERIAL

- Inspect the adjustable brake pedal and accelerator assemblies for foreign material causing a binding condition.

Are the pedal assemblies free from foreign material?

Yes	GO to C7
No	REMOVE the foreign material.

C7 CHECK THE ADJUSTABLE PEDAL MOTOR AND HALL-EFFECT CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect DSM [C341C](#).
- Disconnect adjustable pedal motor [C2159](#).
- Measure:

ADJUSTABLE PEDAL MOTOR	DRIVER SEAT MODULE (DSM)
------------------------	--------------------------

Positive Lead	Measurement / Action	Negative Lead
C2159-1	Ω	C341C-24
C2159-2	Ω	C341C-12
C2159-3	Ω	C341C-15
C2159-4	Ω	C341C-3

Are the resistances less than 3 ohms?

Yes	GO to C8
No	REPAIR the circuit.

C8 CHECK THE ADJUSTABLE PEDAL MOTOR AND HALL-EFFECT CIRCUITS FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE PEDAL MOTOR	
------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2159-1	Ω	Ground
C2159-2	Ω	Ground
C2159-3	Ω	Ground
C2159-4	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to C9
No	REPAIR the circuit.

C9 CHECK THE ADJUSTABLE PEDAL MOTOR AND HALL-EFFECT CIRCUITS FOR A SHORT TOGETHER

- Measure:

ADJUSTABLE PEDAL MOTOR

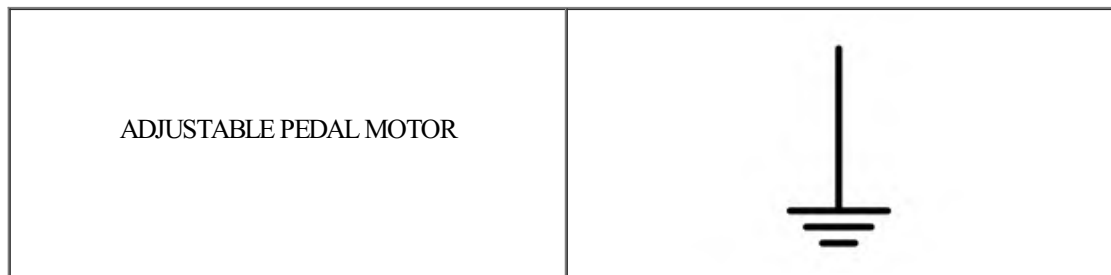
Positive Lead	Measurement / Action	Negative Lead
C2159-1	Ω	C2159-2
C2159-1	Ω	C2159-3
C2159-1	Ω	C2159-4
C2159-2	Ω	C2159-3
C2159-2	Ω	C2159-4
C2159-3	Ω	C2159-4

Are the resistances greater than 10,000 ohms?

Yes	GO to C10
No	REPAIR the circuit.

C10 CHECK THE ADJUSTABLE PEDAL MOTOR AND HALL-EFFECT CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2159-1		Ground
C2159-2		Ground
C2159-3		Ground
C2159-4		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	INSTALL a new adjustable pedal motor (the adjustable pedal motor is part of the accelerator pedal assembly). REFER to: Accelerator Pedal (310-02 Acceleration Control, Removal and Installation).

B1368:11, B1368:12

Refer to Wiring Diagrams Cell [127](#) for schematic and connector information.

Normal Operation and Fault Conditions

The adjustable pedal motor contains a Hall-effect sensor allowing the DSM to monitor the adjustable pedal position. The DSM stores the sensor information and uses this information when a memory position is recalled using the memory SET switch, a RKE transmitter or a passive ignition key.

When 1 or more of the following Diagnostic Trouble Codes (DTCs) is set, the adjustable pedals enter a "jog mode". When the pedals are in jog mode, the memory system recall does not function from the memory SET switch, RKE transmitter or passive ignition key. When in jog mode and the adjustable pedal control switch is pressed, the motor moves the pedals for 2 seconds in the direction selected regardless of the length of time the switch is actually pressed.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1368:11	Adjustable Pedal Position Feedback Sensor: Circuit Short To Ground	This DTC sets in continuous memory or on demand if the Hall-effect feedback voltage is less than 3.5 volts or the Hall-effect monitor voltage is greater than or equal to 6.85 volts.

DTC	Description	Fault Trigger Conditions
B1368:12	Adjustable Pedal Position Feedback Sensor: Circuit Short To Battery	This DTC sets in continuous memory or on demand if the DSM detects battery voltage on the Hall-effect switch feedback circuit.

Possible Causes

- Foreign material
- Wiring, terminals or connectors
- Adjustable pedal motor

PINPOINT TEST D : B1368:11, B1368:12

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

D1 CHECK THE HALL-EFFECT CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect adjustable pedal motor [C2159](#).
- Disconnect DSM [C341C](#).
- Measure:

ADJUSTABLE PEDAL MOTOR	DRIVER SEAT MODULE (DSM)
------------------------	--------------------------

Positive Lead	Measurement / Action	Negative Lead
C2159-3	Ω	C341C-15
C2159-4	Ω	C341C-3

Are the resistances less than 3 ohms?

Yes	GO to D2
No	REPAIR the circuit.

D2 CHECK THE HALL-EFFECT CIRCUITS FOR A SHORT TO GROUND

- Measure:

ADJUSTABLE PEDAL MOTOR	
------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2159-3	Ω	Ground
C2159-4	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to D3
No	REPAIR the circuit.

D3 CHECK THE HALL-EFFECT CIRCUITS FOR A SHORT TOGETHER

- Measure:

ADJUSTABLE PEDAL MOTOR

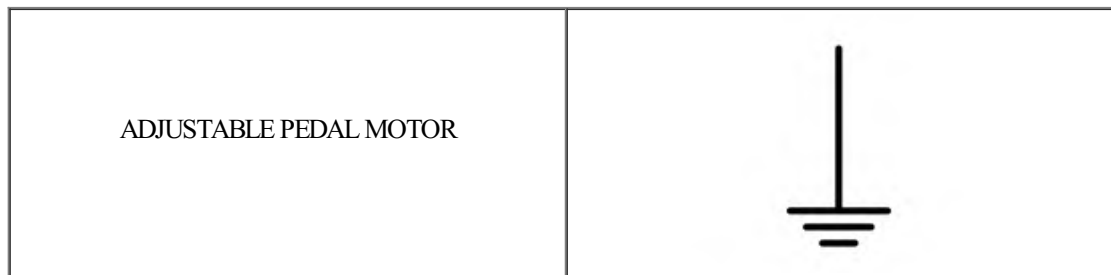
Positive Lead	Measurement / Action	Negative Lead
C2159-3	Ω	C2159-4

Is the resistance greater than 10,000 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 CHECK THE HALL-EFFECT CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2159-3		Ground
C2159-4		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	CHECK for other DSM Diagnostic Trouble Codes (DTCs). If other Diagnostic Trouble Codes (DTCs) are present, GO to the DTC Chart: DSM. If no other DSM Diagnostic Trouble Codes (DTCs) are present, the system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. SET the ignition to OFF. DISCONNECT all in-line electrical connectors between the DSM and the adjustable pedal motor. INSPECT DSM C341C, adjustable pedal motor C2159 and in-line electrical connectors for corrosion, bent pins and pushed-out pins. REPAIR the connectors as necessary.