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2017 FORD Fusion North American OEM Service and Repair Workshop Manual

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module to set a DTC (diagnostic trouble code) . REFER to: [Parking Brake - System Operation and Component Description](#)

(206-05 Parking Brake and Actuation, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) C060A:00	Park Brake Switch Stuck: No Sub Type Information	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if the test voltage sent to the parking brake switch from the ABS (anti-lock brake system) module does not return or returns along an incorrect path.
ABS (anti-lock brake system) C0609:01	Park Brake Switch Circuit: General Electrical Failure	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if the test voltage sent to the parking brake switch from the ABS (anti-lock brake system) module does not return or returns along an incorrect path.
ABS (anti-lock brake system) C0609:13	Park Brake Switch Circuit: Circuit Open	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if the test voltage sent to the parking brake switch from the ABS (anti-lock brake system) module does not return or returns along an incorrect path.
ABS (anti-lock brake system) U2002:47	Switch: Watchdog/Safety µC Failure	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if the test voltage sent to the parking brake switch from the ABS (anti-lock brake system) module does not return or returns along an incorrect path.

Possible Sources

- Wiring, terminals or connectors
- Parking brake switch
- ABS (anti-lock brake system) module

B1 TEST THE PARKING BRAKE SWITCH IN THE APPLIED POSITION

- Ignition OFF.
- Disconnect parking brake switch C2015.
- With the parking brake switch in the applied position (switch pulled up), measure:

Positive Lead	Measurement / Action	Negative Lead

C2015-6 Component side	Ω	C2015-3 Component side
C2015-5 Component side	Ω	C2015-8 Component side

Are the resistances less than 3 ohms?

Yes	GO to B3
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No	<p>INSTALL a new parking brake switch. REFER to: Parking Brake Switch (206-05 Parking Brake and Actuation, Removal and Installation).</p> <p>To restore parking brake switch functionality, CARRY OUT the following procedure; CYCLE the ignition from ON to OFF and back to ON.</p> <p>PLACE the parking brake switch in the APPLY position, then RELEASE the switch to the NEUTRAL position. PLACE the switch in the RELEASE position, then RELEASE the switch to the NEUTRAL position.</p> <p>REPEAT the procedure 1 time: PLACE the parking brake switch in the APPLY position, then RELEASE the switch to the NEUTRAL position. PLACE the switch in the RELEASE position, then RELEASE the switch to the NEUTRAL position.</p>
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B3 CHECK THE PARKING BRAKE SWITCH CIRCUITS FOR A SHORT TO GROUND

- Disconnect ABS (anti-lock brake system) module C135.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2015-3	Ω	Ground
C2015-4	Ω	Ground

C2015-6	Ω	C135-8
C2015-7	Ω	C135-6
C2015-8	Ω	C135-5

Are the resistances less than 3 ohms?

Yes	GO to B5
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No	REPAIR the circuit.
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B5 CHECK THE PARKING BRAKE SWITCH CIRCUITS FOR A SHORT TOGETHER

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2015-3	Ω	C2015-4
C2015-3	Ω	C2015-5
C2015-3	Ω	C2015-6
C2015-3	Ω	C2015-7

Are the resistances greater than 10,000 ohms?

Yes GO to [B6](#)







No REPAIR the circuit.

B6 CHECK THE PARKING BRAKE SWITCH CIRCUITS FOR A SHORT TO VOLTAGE

NOTE

Performing this step sets Diagnostic Trouble Codes (DTCs) in the ABS (anti-lock brake system) module.

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2015-3		Ground
C2015-4		Ground
C2015-5		Ground
C2015-6		Ground
C2015-7		Ground
C2015-8		Ground

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) 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 ABS (anti-lock brake system) module.
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.

PINPOINT TEST C : C2005:77 OR C2006:77

Refer to Wiring Diagrams Cell 42 for schematic and connector information.

Normal Operation and Fault Conditions When the ABS (anti-lock brake system) module receives a parking brake apply or release request, the ABS (anti-lock brake system) module sends voltage to the parking brake actuator motors. The ABS (anti-lock brake system) module also monitors the current draw of the actuator motors to determine when the brake pads contact the brake disc, to determine when the appropriate amount of clamping force is being applied to the brake disc and to determine when the brake pads are retracted to their start position. The actuator motors have a serviceable jumper harness connecting the actuator motors to the body harness at C422. REFER to: [Parking Brake - System Operation and Component Description](#) (206-05 Parking Brake and Actuation, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) C2005:77	Right Actuator: Commanded Position Not Reachable	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if during an apply or release command, the ABS (anti-lock brake system) module detects an irregular current draw.
ABS (anti-lock brake system) C2006:77	Left Actuator: Commanded Position Not Reachable	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if during an apply or release

- For the LH (left-hand) actuator motor, measure:

Positive Lead	Measurement / Action	Negative Lead
C4478-1	Ω	Ground
C4478-2	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to C3
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No	<p>INSPECT the actuator motor jumper harness and connectors for correct routing, damaged connectors, spread terminals, bent or pushed-out pins or any signs of corrosion. INSTALL a new jumper harness as necessary.</p> <p>If the jumper harness is OK, REPAIR the circuit.</p>
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C3 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TOGETHER

- For the RH (right-hand) actuator motor, measure:

Positive Lead	Measurement / Action	Negative Lead
C4479-1	Ω	C4479-2

- For the LH (left-hand) actuator motor, measure:

Positive Lead	Measurement / Action	Negative Lead
C4478-1	Ω	C4478-2

Yes	GO to C5
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No	<p>INSPECT the actuator motor jumper harness and connectors for correct routing, damaged connectors, spread terminals, bent or pushed-out pins or any signs of corrosion. INSTALL a new jumper harness as necessary.</p> <p>If the jumper harness is OK, REPAIR the circuit.</p>
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C5 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TO VOLTAGE



NOTE

Performing this step sets Diagnostic Trouble Codes (DTCs) in the ABS (anti-lock brake system) module.

- Ignition ON.
- For the RH (right-hand) actuator motor, measure:

Positive Lead	Measurement / Action	Negative Lead
C4479-1		Ground
C4479-2		Ground

- For the LH (left-hand) actuator motor, measure:

Positive Lead	Measurement / Action	Negative Lead
C4478-1		Ground
C4478-2		Ground

(206-04 Rear Disc Brake, Removal and Installation).

No

INSTALL a new parking brake actuator motor.
REFER to: [Parking Brake Actuator Motor](#)
(206-05 Parking Brake and Actuation, Removal and Installation).

PINPOINT TEST D : THE PARKING BRAKE DOES NOT HOLD THE VEHICLE, DOES NOT APPLY, DOES NOT RELEASE USING THE AUTOMATIC RELEASE FUNCTION

Refer to Wiring Diagrams Cell 42 for schematic and connector information.

Normal Operation and Fault Conditions When the ABS (anti-lock brake system) module receives a parking brake apply or release request, the ABS (anti-lock brake system) module sends voltage to the parking brake actuator motors. The ABS (anti-lock brake system) module also monitors the current draw of the actuator motors to determine when the brake pads contact the brake disc, to determine when the appropriate amount of clamping force is being applied to the brake disc and to determine when the brake pads are retracted to their start position. An FD-CAN (Flexible Data Rate Controller Area Network) issue or concern results in a failure to release the parking brake. The ABS (anti-lock brake system) module runs self-tests before, during and after an apply or release request. These self-tests are done to determine parking brake system functionality. High actuator motor circuit resistance, a short to ground, a short to voltage, an open circuit, a mechanical or electrical failure of the actuator motor or an internal failure of the ABS (anti-lock brake system) module may cause one or more of these self-tests to fail resulting in the ABS (anti-lock brake system) module setting one or more Diagnostic Trouble Codes (DTCs). The actuator motors have a serviceable jumper harness connecting the actuator motor to the body harness at C422. REFER to: [Parking Brake - System Operation and Component Description](#) (206-05 Parking Brake and Actuation, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) C1A43:98	Motor Supply: Component Or System Over Temperature	This DTC (diagnostic trouble code) sets when the temperature of the ABS (anti-lock brake system) module Field Effect Transistor reaches a preset limit.
ABS (anti-lock brake system) C2005:18	Right Actuator: Circuit Current Below Threshold	This DTC (diagnostic trouble code) sets in continuous memory and on-demand if the ABS (anti-lock brake system)

- ABS (anti-lock brake system) module
- EPB (electric parking brake) switch

D1 CHECK FOR ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE

An FD-CAN (Flexible Data Rate Controller Area Network) issue or concern results in a failure to release the parking brake.

- Ignition ON.
- Using a diagnostic scan tool, carry out the ABS (anti-lock brake system) module self-test.

Are any of the Diagnostic Trouble Codes (DTCs) listed in the DTC (diagnostic trouble code) Fault Trigger Conditions table present in the ABS (anti-lock brake system) module?

Yes	GO to D4
No	<p>If there are any "invalid data" or "no communication" Diagnostic Trouble Codes (DTCs) present, GO to the DTC (diagnostic trouble code) Chart: ABS (anti-lock brake system) Module.</p> <p>If there are no "invalid data" or "no communication" Diagnostic Trouble Codes (DTCs) present, GO to D2</p>

D2 VERIFY AUTOMATIC RELEASE FUNCTIONALITY

- With the transmission in PARK, apply the parking brake.
- Fasten the driver seat belt.
- Close the driver door.
- Start the engine.
- Select DRIVE.

NOTE

When the accelerator pedal is pressed, the parking brake releases automatically.

Press the accelerator pedal until the parking brake releases and the vehicle begins to move.

Does the parking brake automatically release when the accelerator pedal is pressed?

Yes	The system is operating correctly at this time. The concern may have been due to the automatic release functional requirements not being met. EXPLAIN the automatic release functional
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