

Parking Brake

DTC Chart: Anti-Lock Brake System (ABS) Module

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).

NOTE: *If present, diagnose DTC C2007:13 Right Motor: Circuit Open or C2008:13 Left Motor: Circuit Open **before** diagnosing all other Diagnostic Trouble Codes (DTCs).*

ABS Module DTC Chart

DTC	Description	Action
B1111:46	Electric Park Brake Enable: Calibration/Parameter Memory Failure	• This DTC is only present when a new ABS module is installed, the ABS module is flashed or the ABS module is reconfigured. • CLEAR the DTC and CARRY OUT the ABS module reset. CARRY OUT the EPB APPLY and Release routine. • If the DTC returns, INSTALL a new ABS module. REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).

B1111:49	Electric Park Brake Enable: Internal Electronic Failure	• This DTC sets when an apply or release request is pending, but the ABS module cannot proceed with the request due to an internal failure. • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • If the DTC returns, INSTALL a new ABS module. REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).
B1111:53	Electric Park Brake Enable: Deactivated	• This DTC is only present when the EPB is in service mode.
B1111:54	Electric Park Brake Enable: Missing Calibration	• This DTC is only present when a new ABS module is installed, the ABS module is flashed or the ABS module is reconfigured. This DTC can be cleared after the EPB Apply and Release routine is carried out using a diagnostic scan tool. • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • If the DTC returns, INSTALL a new ABS module. REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).

C1034:44	Park Brake: Data Memory Failure	• This DTC sets in continuous memory if the park brake component software sends the indication that the actuator position written in EEPROM is not valid. • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • Using a diagnostic scan tool, RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). If C1034:44 returns, INSTALL a new ABS. REFER to: REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).
C1034:49	Park Brake: Internal Electronic Failure	• This DTC sets in continuous memory if the park brake component software sends the indication that the actuator position is not valid. • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • Using a diagnostic scan tool, RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). If C1034:49 returns, INSTALL a new ABS. REFER to: REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).

C1034:76	Park Brake: Wrong Mounting Position	• This DTC sets in continuous memory if the park brake component software sends the indication that the actuator position is not valid. • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • Using a diagnostic scan tool, RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). If C1034:76 returns, INSTALL a new ABS. REFER to: REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).
C1034:78	Park Brake: Alignment or Adjustment Incorrect	• This DTC sets in continuous memory if current parking brake state (applied, released, in progress, etc.) is unknown or invalid. This can be caused by leaving a diagnostic session with an incoherent parking brake state, an unexpected power off during parking brake actuation, a weak battery, an invalid parking brake state set in memory or another system failure such as after a parking brake apply with an open motor circuit (does not release). • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • If the DTC returns or if the parking brake does not cycle, RETRIEVE and DIAGNOSE all other ABS module Diagnostic Trouble Codes (DTCs).

C1034:9A	Park Brake: Component or System Operating Conditions	• This DTC sets in continuous memory if the park brake is commanded to actuate the park brake when the vehicle is not at a standstill. • RETRIEVE and RECORD all ABS module Diagnostic Trouble Codes (DTCs). Using the diagnostic scan tool, Clear the DTC. Carry Out an ABS module reset. Carry Out the EPB and Apply and Release routine. • If the DTC returns or if the parking brake does not cycle, RETRIEVE and DIAGNOSE all other ABS module Diagnostic Trouble Codes (DTCs).
C1D00:16	Switch: Circuit Voltage Below Threshold	GO to Pinpoint Test B
C1D00:17	Switch: Circuit Voltage Above Threshold	GO to Pinpoint Test B
C1D00:71	Park Brake Apply Switch: Actuator Stuck	GO to Pinpoint Test B
C2005:18	Right Actuator: Circuit Current Below Threshold	GO to Pinpoint Test E
C2005:19	Right Actuator: Circuit Current Above Threshold	GO to Pinpoint Test A
C2005:71	Right Actuator: Actuator Stuck	GO to Pinpoint Test E
C2005:74	Right Actuator: Actuator Slipping	GO to Pinpoint Test C
C2005:77	Right Actuator: Commanded Position Not Reachable	GO to Pinpoint Test D
C2006:18	Left Actuator: Circuit Current Below Threshold	GO to Pinpoint Test E
C2006:19	Left Actuator: Circuit Current Above Threshold	GO to Pinpoint Test A
C2006:71	Left Actuator: Actuator Stuck	GO to Pinpoint Test E
C2006:74	Left Actuator: Actuator Slipping	GO to Pinpoint Test C
C2006:77	Left Actuator: Commanded Position Not Reachable	GO to Pinpoint Test D

C2007:11	Right Motor: Circuit Short to Ground	GO to Pinpoint Test E
C2007:12	Right Motor: Circuit Short to Battery	GO to Pinpoint Test E
C2007:13	Right Motor: Circuit Open	GO to Pinpoint Test E
C2007:19	Right Motor: Circuit Above Threshold	GO to Pinpoint Test E
C2007:74	Right Actuator: Actuator Slipping	GO to Pinpoint Test C
C2008:11	Left Motor: Circuit Short to Ground	GO to Pinpoint Test E
C2008:12	Left Motor: Circuit Short to Battery	GO to Pinpoint Test E
C2008:13	Left Motor: Circuit Open	GO to Pinpoint Test E
C2008:19	Left Motor: Circuit Above Threshold	GO to Pinpoint Test E
C2008:74	Left Actuator: Actuator Slipping	GO to Pinpoint Test C
C2008:96	Left Motor: Component Internal Failure	GO to Pinpoint Test E
P05E6:92	Park Brake Sensor/Switch Circuit Range/Performance: Performance or Incorrect Operation	GO to Pinpoint Test B
—	All other ABS module Diagnostic Trouble Codes (DTCs)	REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control) .

Symptom Chart(s)

Symptom Chart: Parking Brake and Actuation

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 • ABS module concern	• REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
The red brake warning indicator is always on, never on or flashes	• Low brake fluid level • Wiring, terminals or connectors • Brake fluid level sensor • Parking brake applied • Brake booster vacuum sensor • IPC concern • ABS concern	• RETRIEVE all ABS module Diagnostic Trouble Codes (DTCs) and GO to the DTC Chart: Anti-Lock Brake System (ABS) Module. • If there are no Diagnostic Trouble Codes (DTCs) present in the module, DIAGNOSE the red brake warning indicator. REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
The yellow parking brake indicator is always or never on	• Parking brake concern • Parking brake switch • ABS module	RETRIEVE all ABS module Diagnostic Trouble Codes (DTCs) and GO to the DTC Chart: Anti-Lock Brake System (ABS) Module.
Message center displays Park Brake Malfunction Service Now	• Parking brake concern • Diagnostic Trouble Codes (DTCs) present in the ABS module • ABS module concern	RETRIEVE all ABS module Diagnostic Trouble Codes (DTCs) and GO to the DTC Chart: Anti-Lock Brake System (ABS) Module.
Message center displays Park Brake Limited Function Service Required	Diagnostic Trouble Codes (DTCs) present in the ABS module	RETRIEVE all ABS module Diagnostic Trouble Codes (DTCs) and GO to the DTC Chart: Anti-Lock Brake System (ABS) Module.

Message center displays Maintenance Mode	Parking brake system is in maintenance mode (service mode)	EXIT maintenance mode (service mode). REFER to: Electronic Parking Brake (EPB) Service Mode Activation and Deactivation (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), General Procedures).
Rear brakes drag	Refer to the Pinpoint Test	GO to Pinpoint Test E
The parking brake does not apply or does not hold the vehicle	Refer to the Pinpoint Test	GO to Pinpoint Test E
The parking brake does not release using the park brake switch	Refer to the Pinpoint Test	GO to Pinpoint Test E
The parking brake automatic release function does not operate	Refer to the Pinpoint Test	GO to Pinpoint Test E

Pinpoint Tests

C2005:92, C2006:92

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

Normal Operation and Fault Conditions

The ABS module measures the current draw of both actuator motors during each parking brake apply request. Current draw measurement for these 2 Diagnostic Trouble Codes (DTCs) starts when the caliper piston and brake pad start moving and stops when the brake pad contacts the brake disc, this is known as free run. If the free run current draw exceeds the programmed limit, the ABS module sets a DTC.

This is most likely caused by high mechanical resistance in the actuator or motor, a shorted motor, a blocked motor or a seized motor.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
C2005:19	Right Actuator: Circuit Current Above Threshold	This DTC sets in continuous memory and on-demand if the actuator motor free run current draw exceeds a predetermined value.
C2006:19	Left Actuator: Circuit Current Above Threshold	This DTC sets in continuous memory and on-demand if the actuator motor free run current draw exceeds a predetermined value.

Possible Sources

- High mechanical friction in the actuator
- Shorted motor
- Seized motor

PINPOINT TEST A : C2005:19, C2006:19

A1 CHECK ACTUATOR MOTOR OPERATION

- Make sure the parking brakes are released.
- Remove the parking brake actuator motor, **do not** disconnect the electrical connector.
REFER to: [Electronic Parking Brake \(EPB\) Service Mode Activation and Deactivation](#) (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), General Procedures).
- **NOTE:** *Performing this step sets DTC C2005:74 or C2006:74 in the ABS module.*

Observe the actuator motor and, using the parking brake switch, apply and release the parking brake.

Does the actuator motor operate?

Yes	GO to A2
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No	INSTALL a new actuator motor. REFER to: Parking Brake Actuator Motor (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).
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A2 CHECK THE MECHANICAL RESISTANCE

- Make sure the parking brakes are released.
- Using a torque wrench, turn the ball screw drive approximately 30 degrees either left or right. Note the amount of torque required to turn the ball screw drive.

Is the torque required to turn the ball screw drive greater than 5 Nm (44 lb-in)?

Yes	INSTALL a new brake caliper. REFER to: Brake Caliper - Vehicles With: Electronic Parking Brake (EPB) (206-04 Rear Disc Brake) .
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No	INSTALL a new actuator motor. REFER to: Parking Brake Actuator Motor (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).
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C1D00:16, C1D00:17,C1D00:71 or P05E6:92

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

Normal Operation and Fault Conditions

The parking brake switch has 3 positions; APPLY (pulled up), RELEASE (pushed down) and NEUTRAL. The ABS module sends voltage to the parking brake switch and this voltage returns along 1 of 3 circuits. An open, excessive resistance or a short in the parking brake switch circuits or the parking brake switch causes the ABS module to set a DTC.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
C1D00:16	Switch: Circuit Voltage Below Threshold	This DTC sets in continuous memory and on-demand if parking brake switch voltage supply falls below 8 volts while system undervoltage is detected.
C1D00:17	Switch: Circuit Voltage Above Threshold	This DTC sets in continuous memory and on-demand if the parking brake switch voltage supply falls below 8 volts.
C1D00:71	Park Brake Apply Switch: Actuator Stuck	This DTC sets in continuous memory and on-demand if the parking brake switch is pushed or pulled for a too long time.
P05E6:92	Park Brake Sensor/Switch Circuit Range/ Performance: Performance or Incorrect Operation	This DTC sets in continuous memory and on-demand if the parking brake switch or wiring is shorted or open.

Possible Sources

- Wiring, terminals or connectors
- Parking brake switch
- ABS module

PINPOINT TEST B : C1D00:16, C1D00:17, C1D00:71 OR P05E6:92

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
C2015-5Component side	Ω	C2015-7Component side

C2015-6 Component side		C2015-8 Component side
C2015-4 Component side		C2015-3 Component side

Are the resistances less than 5 ohms?

Yes	GO to B2
No	INSTALL a new parking brake switch. REFER to: Parking Brake Switch (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation). To restore parking brake switch functionality, CARRY OUT the following procedure; CYCLE the ignition from ON to OFF and back to ON. 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. 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.

B2 TEST THE PARKING BRAKE SWITCH IN THE RELEASED POSITION

- With the parking brake switch in the released position (switch pushed down), measure:

Positive Lead	Measurement / Action	Negative Lead
C2015-4 (Component side)	Ω	C2015-7 (Component side)
C2015-6 (Component side)		C2015-3 (Component side)
C2015-5 (Component side)		C2015-8 (Component side)

Are the resistances less than 5 ohms?

Yes	GO to B3
No	INSTALL a new parking brake switch. REFER to: Parking Brake Switch (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation). To restore parking brake switch functionality, CARRY OUT the following procedure; CYCLE the ignition from ON to OFF and back to ON. 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. 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.

B3 CHECK THE PARKING BRAKE SWITCH CIRCUITS FOR A SHORT TO GROUND

- Disconnect ABS module C135.

Are the resistances greater than 10,000 ohms?

Yes	GO to B4
No	REPAIR the circuit.

B4 CHECK THE PARKING BRAKE SWITCH CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to B5
No	REPAIR the circuit.

B5 CHECK THE PARKING BRAKE SWITCH CIRCUITS FOR A SHORT TOGETHER

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 module.

- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to B7

B7 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect in-line connectors between the ABS module and the parking brake switch.
- Using a good light source, inspect ABS module C135, parking brake switch C2015 and all related in-line connectors for the following:
 - 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 B8
No	REPAIR the connector or terminals. Refer to Wiring Diagrams Cell 5 for schematic and connector information.

B8 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

- Connect ABS module C135 and all related in-line connectors. Make sure they seat and latch correctly.
- Connect parking brake switch C2015. Make sure it seats and latches correctly.
- Ignition ON.
- Perform the following steps to restore parking brake switch functionality:
 - Place the switch in the APPLY position.
 - Release the switch to the NEUTRAL position.
 - Place the switch in the RELEASE position.
 - Release the switch to the NEUTRAL position.
 - Repeat the 4 steps.
- Operate the system and determine if 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) exist for this concern, INSTALL a new ABS module. REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, 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.

C2005:74, C2006:74, C2007:74, C2008:74

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

Normal Operation and Fault Conditions

When the ABS module receives a parking brake apply request, the ABS module sends voltage to the parking brake actuator motors. The ABS module also monitors the current draw of the actuator motors

to determine when the brake pads contact the brake disc and to determine when the appropriate amount of clamping force is being applied to the brake disc. If the actuator motors are unable to apply the appropriate amount of clamping force for a predetermined amount of time, the ABS module sets a DTC. The most likely cause of this is a broken actuator motor shaft, a missing or severely worn brake pad or a damaged or severely worn brake disc.

Once the root cause of the DTC has been repaired, the parking brake system must be enabled. To enable the parking brake system, cycle the ignition from ON to OFF and back to ON, then apply and release the parking brake.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
C2005:74	Right Actuator: Actuator Slipping	This DTC sets in continuous memory and on-demand when the clamp request from the ABS module takes longer than 1 second to perform.
C2006:74	Left Actuator: Actuator Slipping	This DTC sets in continuous memory and on-demand when the clamp request from the ABS module takes longer than 1 second to perform.
C2007:74	Right Actuator: Actuator Slipping	This DTC sets in continuous memory and on-demand when the clamp request from the ABS module takes longer than 1 second to perform.
C2008:74	Left Actuator: Actuator Slipping	This DTC sets in continuous memory and on-demand when the clamp request from the ABS module takes longer than 1 second to perform.

Possible Sources

- Brake pads
- Brake disc
- Parking brake actuator motor
- Rear brake caliper

PINPOINT TEST C : C2005:74, C2006:74, C2007:74, C2008:74

C1 CHECK THE REAR BRAKE PADS

- With the transmission in NEUTRAL, position the vehicle on a hoist.
REFER to: [Jacking and Lifting - Overview](#) (100-02 Jacking and Lifting, Description and Operation).
- Inspect the minimum thickness of the rear brake pads.
REFER to: Specifications (206-00 Brake System - General Information) .

Are the brake pads present and do the brake pads meet the minimum thickness specification?

Yes	GO to C2
No	INSTALL new rear brake pads. REFER to: Brake Pads - Vehicles With: Electronic Parking Brake (EPB) (206-04 Rear Disc Brake) .

C2 CHECK THE REAR BRAKE DISCS

- Inspect the minimum thickness of the rear brake discs
REFER to: Specifications (206-00 Brake System - General Information) .
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Do the brake discs meet the minimum thickness specification?

Yes	GO to C3
No	INSTALL new rear brake discs. REFER to: Brake Disc (206-04 Rear Disc Brake) .

C3 CHECK THE ACTUATOR PISTON OPERATION

- Remove the parking brake actuator motor.
REFER to: [Parking Brake Actuator Motor](#) (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).
- Using hand force, turn the ball screw drive on the brake caliper counterclockwise and observe the piston for movement.

Does the piston move when the ball screw drive is turned?

Yes	INSTALL a new actuator motor. REFER to: Parking Brake Actuator Motor (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).
No	INSTALL a new rear brake caliper. REFER to: Brake Caliper - Vehicles With: Electronic Parking Brake (EPB) (206-04 Rear Disc Brake) .

C2005:77, C2006:77

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

Normal Operation and Fault Conditions

When the ABS module receives a parking brake apply or release request, the ABS module sends voltage to the parking brake actuator motors. The ABS 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.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

C2005:77	Right Actuator: Commanded Position Not Reachable	This DTC sets in continuous memory and on-demand if during an apply or release command, the ABS module detects an irregular current draw.
C2006:77	Left Actuator: Commanded Position Not Reachable	This DTC sets in continuous memory and on-demand if during an apply or release command, the ABS module detects an irregular current draw.

Possible Sources

- Wiring, terminals or connectors
- Brake fluid leak
- Parking brake actuator motor
- Rear brake caliper

PINPOINT TEST D : C2005:77, C2006:77

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

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

Is DTC C2005:74 or C2006:74 present?

Yes	DIAGNOSE DTC C2005:74 or C2006:74 before diagnosing DTC C2005:77 or C2006:77. GO to Pinpoint Test C
No	If DTC C2005:77 or C2006:77 is present, GO to D2 For all other ABS module Diagnostic Trouble Codes (DTCs), GO to the DTC Chart: Anti-Lock Brake System (ABS) Module.

D2 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect ABS module C135.
- Disconnect the suspect parking brake actuator motor electrical connector.

Are the resistances greater than 10,000 ohms?

Yes	GO to D3
No	REPAIR the circuit.

D3 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TOGETHER

Is the resistance greater than 10,000 ohms?

Yes	GO to D4
No	REPAIR the circuit.

D4 CHECK THE ACTUATOR MOTOR CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to D5
No	REPAIR the circuit.

D5 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TO VOLTAGE

NOTE: Performing this step sets Diagnostic Trouble Codes (DTCs) in the ABS module.

- Ignition ON.

Is any voltage present?

Yes	GO to D6
No	REPAIR the circuit.

D6 INSPECT THE ACTUATOR MOTOR FOR EVIDENCE OF BRAKE FLUID OR WATER LEAKS

- Ignition OFF.
- Remove the parking brake actuator motor.
REFER to: [Parking Brake Actuator Motor](#) (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).
- Inspect the actuator motor and brake caliper for evidence of brake fluid leaks or water egress.

Is there any evidence of brake fluid leaks or water egress?

Yes	If evidence of water egress is found, IDENTIFY and REPAIR the root cause. If evidence of a brake fluid leak is found, INSTALL a new brake caliper and parking brake actuator motor assembly. REFER to: Brake Caliper - Vehicles With: Electronic Parking Brake (EPB) (206-04 Rear Disc Brake) .
No	GO to D7

D7 INSPECT THE BRAKE CALIPER FOR BRAKE FLUID LEAKS

- Clean any dirt or residue from the brake caliper.
- Apply and release the brake pedal.
- Inspect the brake caliper for signs of brake fluid leaks.

Are there any signs of brake fluid leaks?

Yes	INSTALL a new rear brake caliper and parking brake actuator motor. REFER to: Brake Caliper - Vehicles With: Electronic Parking Brake (EPB) (206-04 Rear Disc Brake) .
No	INSTALL a new parking brake actuator motor. REFER to: Parking Brake Actuator Motor (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).

The Parking Brake Does Not Hold The Vehicle, Does Not Apply, Does Not Release Using The Parking Brake Switch Or Automatic Release Function

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

Normal Operation and Fault Conditions

When the ABS module receives a parking brake apply or release request, the ABS module sends voltage to the parking brake actuator motors. The ABS 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.

A HS-CAN issue or concern results in a failure to release the parking brake.

The ABS 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 module may cause one or more of these self-tests to fail resulting in the ABS module setting one or more Diagnostic Trouble Codes (DTCs).

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
C2005:18, C2006:18	Right Actuator, Left Actuator: Circuit Resistance Below Threshold	This DTC sets in continuous memory and on-demand if during an apply (clamping) command, the measured current in the motor circuit is lower than a predetermined threshold.
C2005:71, C2006:71	Right Actuator, Left Actuator: Actuator Stuck	This DTC sets in continuous memory and on-demand if during an apply or release command, the ABS module detects no movement of the actuator motor.
C2007:13, C2008:13	Right Motor, Left Motor: Circuit Open	This DTC sets in continuous memory and on-demand if the ABS module detects a difference in the current between the positive side and the negative side of the actuator motor.
C2007:11, C2008:11, C2007:12, C2008:12	Right Motor, Left Motor: Circuit Voltage Out Of Range	This DTC sets in continuous memory and on-demand if the ABS module detects a short to ground or a short to voltage on the actuator motor circuits.
C2007:19, C2008:19	Right Motor, Left Motor: Performance Or Incorrect Operation	This DTC sets in continuous memory and on-demand if the ABS module detects a current greater than 10 amps after an apply or release request. The affected actuator is than switched off.
C2008:96	Left Motor, Component Internal Failure	The ABS module tests the parking brake actuator motors by sending a voltage pulse through the circuits and the motors. This DTC sets when the test results are out of the expected range.

Possible Sources

- Automatic release functional requirements not met
- BCM concern
- PCM concern
- Wiring, terminals or connectors
- Brake caliper
- Parking brake actuator motor
- ABS module

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

E1 CHECK FOR ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE: A HS-CAN issue or concern results in a failure to release the parking brake.

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

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

Yes	GO to E4
No	If there are any "invalid data" or "no communication" Diagnostic Trouble Codes (DTCs) present, GO to the DTC Chart: ABS Module. If there are no "invalid data" or "no communication" Diagnostic Trouble Codes (DTCs) present, GO to E2

E2 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 requirements to the customer. REFER to: Parking Brake - System Operation and Component Description (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Description and Operation).
No	GO to E3

E3 CHECK THE BCM (BODY CONTROL MODULE) AND PCM (POWERTRAIN CONTROL MODULE) FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Select PARK.
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM self-test.
- Retrieve and record all BCM Diagnostic Trouble Codes (DTCs).
- Using a diagnostic scan tool, carry out the PCM KOEO self-test.

- Retrieve and record all PCM Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) present in the BCM or PCM?

Yes	For BCM Diagnostic Trouble Codes (DTCs), REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules) . For PCM Diagnostic Trouble Codes (DTCs), REFER to: Electronic Engine Controls (303-14 Electronic Engine Controls - 2.7L EcoBoost (238kW/324PS)) . REFER to: Electronic Engine Controls (303-14 Electronic Engine Controls - 3.5L Duratec (209kW/284PS)) . REFER to: Electronic Engine Controls (303-14C Electronic Engine Controls - 3.5L EcoBoost (272kW/370PS), Diagnosis and Testing). REFER to: Electronic Engine Controls (303-14 Electronic Engine Controls - 5.0L 32V Ti-VCT) .
No	GO to E4

E4 CHECK THE ACTUATOR MOTOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect ABS module C135.
- Disconnect the suspect parking brake actuator motor electrical connector.

Are the resistances less than 3 ohms?

Yes	If DTC C2007:13 or C2008:13 are the only Diagnostic Trouble Codes (DTCs) are present, GO to E8 If other Diagnostic Trouble Codes (DTCs) are present, GO to E5
No	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. If the jumper harness is OK, REPAIR the circuit.

E5 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TO GROUND

Are the resistances greater than 10,000 ohms?

Yes	GO to E6
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No	REPAIR the circuit.
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E6 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TOGETHER

Is the resistance greater than 10,000 ohms?

Yes	GO to E7
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No	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. If the jumper harness is OK, REPAIR the circuit.
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E7 CHECK THE ACTUATOR MOTOR CIRCUITS FOR A SHORT TO VOLTAGE

NOTE: Performing this step sets Diagnostic Trouble Codes (DTCs) in the ABS module.

- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit.
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No	GO to E8
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E8 CHECK THE BRAKE CALIPER BALL SCREW DRIVE

- Ignition OFF.
- Remove the suspect actuator motor.
REFER to: [Parking Brake Actuator Motor](#) (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).
- Using a torque wrench, turn the ball screw drive on the brake caliper counterclockwise. It should not take more than 5 Nm (44 lb-in) to turn the ball screw drive.

Does the ball screw drive turn with less than 5 Nm (44 lb-in) or turning force?

Yes	GO to E9
No	INSTALL a new brake caliper. REFER to: Brake Caliper - Vehicles With: Electronic Parking Brake (EPB) (206-04 Rear Disc Brake) .

E9 CHECK THE ACTUATOR MOTOR RESISTANCE

- Ignition OFF.
- Measure:

Click to display connectors

Positive Lead	Measurement / Action	Negative Lead
Suspect Actuator Motor Electrical Connector Pin-1, Component Side	Ω	Suspect Actuator Motor Electrical Connector Pin-2, Component Side

Is the resistance less than 500 ohms?

Yes	GO to E10
No	INSTALL a new parking brake actuator motor. REFER to: Parking Brake Actuator Motor (206-05B Parking Brake and Actuation - Vehicles With: Electronic Parking Brake (EPB), Removal and Installation).

E10 VERIFY ALL WIRING CONNECTIONS

- Ignition OFF.
- Disconnect all in-line connectors between the ABS module and the suspect parking brake actuator motor.
- Using a good light source, inspect ABS module C135, parking brake actuator motor C4478 or C4479 and all related in-line connectors for the following:
 - 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 E11
No	REPAIR the connector or terminals. Refer to Wiring Diagrams Cell 5 for schematic and connector information.

E11 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

- Connect ABS module C135 and all related in-line connectors. Make sure they seat and latch correctly.
- Connect the suspect parking brake actuator motor connector. Make sure it seats and latches correctly.
- Ignition ON.
- Perform the following steps to restore parking brake switch functionality:
 - Place the switch in the APPLY position.
 - Release the switch to the NEUTRAL position.
 - Place the switch in the RELEASE position.
 - Release the switch to the NEUTRAL position.
 - Repeat the 4 steps.
- Operate the system and determine if 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) exist for this concern, INSTALL a new ABS module. REFER to: Anti-Lock Brake System (ABS) Module (206-09 Anti-Lock Brake System (ABS) and Stability Control, 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.