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2014 FORD Fusion Hybrid OEM Service and Repair Workshop Manual

Go to manual page

- Network communication concern
- Over or under voltage concerns
- BCM (body control module)
- GWM (gateway module A)
- ABS (anti-lock brake system) module

Pinpoint Test Steps available in the on-line Workshop Manual.

PINPOINT TEST E : THE HILL START ASSIST FEATURE IS INOPERATIVE, CANNOT BE DISABLED OR ENABLED

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

Possible Sources

- Network communication concern
- IPC (instrument panel cluster) concern
- PCM (powertrain control module) concern
- RCM (restraints control module) concern
- ABS (anti-lock brake system) module concern

E1 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the IPC (instrument panel cluster) self-test.

Are there any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Instrumentation, Message Center and Warning Chimes(413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
No	GO to E2

E2 CHECK THE PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the PCM (powertrain control module) self-test.

Are there any Diagnostic Trouble Codes (DTCs) present?

Yes	For 2.7L engines, REFER to: Electronic Engine Controls (303-14A Electronic Engine Controls - 2.7L EcoBoost (238kW/324PS), Diagnosis and Testing). For 3.0L engines, REFER to: Electronic Engine Controls

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 F : ABS (ANTI-LOCK BRAKE SYSTEM) MODULE BATTERY VOLTAGE CONCERNS

NOTE

The ABS (anti-lock brake system) module may set an overcharge or overvoltage DTC (diagnostic trouble code) if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if the battery has been left unattended with the accessories on.

Normal Operation and Fault Conditions

The ABS (anti-lock brake system) module, hydraulic pump and solenoid valves require an operating voltage between 10 and 17 volts. The ABS (anti-lock brake system) module receives this voltage from the BJB (battery junction box) . The ABS (anti-lock brake system) module has 2 ground circuits spliced together and terminating at a signal location. An overcharging condition in the charging system results in the ABS (anti-lock brake system) module setting a DTC (diagnostic trouble code) .

REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description(206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) U3003:17	Battery Voltage: Circuit Voltage Above Threshold	Sets when the ABS (anti-lock brake system) module detects the voltage supply is above 16 volts. This DTC (diagnostic trouble code) may also set in the ABS (anti-lock brake system) module due to battery charging or vehicle jump starting event.

Possible Sources

- Charging system concern
- ABS (anti-lock brake system) module

Pinpoint Test Steps available in the on-line Workshop Manual.

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) C1020:00	Brake System Fill Not Complete: No Sub Type Information	This DTC (diagnostic trouble code) is pre-set in a new ABS (anti-lock brake system) module and can only be cleared when the brake system has been successfully bled.

Possible Sources

- Brake system has not been bled

H1 CHECK THE ABS (ANTI-LOCK BRAKE SYSTEM) DIAGNOSTIC TROUBLE CODES (DTCS)

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

Is DTC (diagnostic trouble code) C1020:00 present?

Yes	REFER to: Brake System Pressure Bleeding(206-00 Brake System - General Information, General Procedures).
No	The system is operating correctly at this time.

PINPOINT TEST I : SASM DTC C1B00:54

Normal Operation and Fault Conditions

The SASM (steering angle sensor module) is self-monitoring and capable of setting Diagnostic Trouble Codes (DTCs) to alert of potential internal errors. When the Steering Wheel Angle Trim routine is carried out, the SASM (steering angle sensor module) stores this information and refers back to the information during module wake up (ignition ON).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SASM (steering angle sensor module) C1B00:54	Steering Angle Sensor: Missing Calibration	This DTC (diagnostic trouble code) sets if steering angle sensor trim routine has not been successfully carried out.

- ABS (anti-lock brake system) module

Pinpoint Test Steps available in the on-line Workshop Manual.

PINPOINT TEST K : U3001:68

Normal Operation and Fault Conditions

This DTC (diagnostic trouble code) is for informational purposes only and sets in conjunction with other ABS (anti-lock brake system) module Diagnostic Trouble Codes (DTCs). Retrieve and diagnose all other ABS (anti-lock brake system) module Diagnostic Trouble Codes (DTCs).

REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description(206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) U3001:68	Control Module Improper Shutdown Performance: Event Information	This DTC (diagnostic trouble code) sets when the ABS (anti-lock brake system) module has not shut down properly. This is usually due to a loss of power before the module has shut down, such as a low battery or open circuit.

Possible Sources

- Low battery voltage
- Open circuit or fuse

Diagnostic steps are not provided for this symptom or DTC. REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

PINPOINT TEST L : C0049:01, C0049:7B

Normal Operation and Fault Conditions

The brake fluid level switch is hardwired to the ABS (anti-lock brake system) module, the module monitors the switch and brake fluid level. If a circuit fault or fluid loss is detected, a DTC (diagnostic trouble code) is set.

REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description(206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

sensor is connected to the ABS (anti-lock brake system) module through 2 wires and a connector at each wheel speed sensor. The 2 circuits provide both sensor power and sensor signal return. REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description (206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) C0031:01	Left Front Wheel Speed Sensor: General Electrical Failure	Sets when the ABS (anti-lock brake system) module does not receive a signal from the wheel speed sensor.
ABS (anti-lock brake system) C0034:01	Right Front Wheel Speed Sensor: General Electrical Failure	Sets when the ABS (anti-lock brake system) module does not receive a signal from the wheel speed sensor.
ABS (anti-lock brake system) C1A95:01	Wheel Speed Sensor: General Electrical Failure	Sets when the ABS (anti-lock brake system) module detects the following conditions on 1 or more wheel speed sensor circuits; open circuit, short to voltage, short to ground. Faults with multiple wheel speed sensors also causes this DTC (diagnostic trouble code) to set.

Possible Sources

- Wiring, terminals or connectors
- Wheel speed sensor
- ABS (anti-lock brake system) module

Visual Inspection and Pre-checks

- Make sure the wheel speed sensor harness is routed correctly and is undamaged.
- Make sure the wheel speed sensor electrical connector is free from any corrosion or other contaminants.

Pinpoint Test Steps available in the on-line Workshop Manual.

PINPOINT TEST N : REAR WHEEL SPEED SENSOR ELECTRICAL FAULTS

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

PINPOINT TEST O : THE TRACTION CONTROL SYSTEM IS INOPERATIVE, CANNOT BE DISABLED OR ENABLED USING THE TRACTION CONTROL SWITCH

Refer to Wiring Diagrams Cell 60for schematic and connector information.

Normal Operation and Fault Conditions The traction control switch is used to switch the traction control system on or off. When the traction control switch is pressed, the IPC (instrument panel cluster) receives a ground signal from the switch and illuminates the stability-traction control OFF indicator. The IPC (instrument panel cluster) sends a traction control switch message to the GWM (gateway module A) over the HS-CAN3 (high-speed controller area network 3) and the GWM (gateway module A) relays this message to the ABS (anti-lock brake system) module over the HS-CAN2 (high-speed controller area network 2) . The ABS (anti-lock brake system) module takes the necessary action depending on the switch inputs and traction control message. REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description (206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

Possible Sources

- A MyKey restricted key is in use
- Network communication concern
- Traction control switch
- IPC (instrument panel cluster)

Pinpoint Test Steps available in the on-line Workshop Manual.

PINPOINT TEST P : B10DA:51

Normal Operation and Fault Conditions

The ABS (anti-lock brake system) module and BCM (body control module) share a secret code (target identifier) when the ignition is set to ON. This code is generated during the PATS (passive anti-theft system) programming procedure. If either a new BCM (body control module) or a new ABS (anti-lock brake system) module has been installed, the PATS (passive anti-theft system) programming procedure must be carried out. REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01B Passive Anti-Theft System (PATS) - Vehicles With: Keyed Ignition, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) B10DA:51	PATS Target Identifier: Not Programmed	Sets when the target identifier sent from the BCM (body control module) does not match the target identifier programmed in the ABS (anti-lock brake system) module.

Diagnostic steps are not provided for this symptom or DTC. REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

PINPOINT TEST R : ABS MODULE COMMUNICATION CONCERN WITH ADVANCED DRIVER ASSISTANCE SYSTEM (ADAS)

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

Normal Operation and Fault Conditions With the ignition ON, the Advanced Driver Assistance System (ADAS) sends messages to the ABS (anti-lock brake system) module over the FD-CAN (Flexible Data Rate Controller Area Network) . If the ABS (anti-lock brake system) module does not receive these messages within a certain time frame, the ABS (anti-lock brake system) module sets a DTC (diagnostic trouble code) . For information on the messages sent to the ABS (anti-lock brake system) module by the Advanced Driver Assistance System (ADAS), REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description (206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) U2017:68	Control Module Software #2: Event Information	This DTC (diagnostic trouble code) sets when the collision deceleration message from the CCM (cruise control module) is sent too often or the duration of the message is too long. This is mostly likely caused by a network communication concern or an internal failure of the CCM (cruise control module) .
ABS (anti-lock brake system) U2107:00	Collision Mitigation By Braking: No Sub Type Information	This DTC (diagnostic trouble code) sets when the collision deceleration message from the CCM (cruise control module) is sent too often or the duration of the message is too long. This is mostly likely caused by a network communication concern or an internal failure of the CCM (cruise control module) .
ABS (anti-lock brake system) U2107:68	Collision Mitigation By Braking: Event Information	Sets when the ABS (anti-lock brake system) module detects the vehicle deceleration is implausibly high when compared to the vehicle deceleration requested by the CCM (cruise control module) . This is most likely caused by an abrupt stop of the vehicle due to a collision, an extreme driving situation, a mechanical or electrical failure of the

		contains invalid data, this DTC (diagnostic trouble code) sets.

Possible Sources

- Temporary or mini-spare tire in use
- Under inflated tires
- Mismatched sized wheels and tires
- Network communication concern
- Incorrect BCM (body control module) configuration

Pinpoint Test Steps available in the on-line Workshop Manual.

PINPOINT TEST T : SASM COMMUNICATION CONCERN WITH BCM

Refer to Wiring Diagrams Cell 14for schematic and connector information.

Normal Operation and Fault Conditions With the ignition ON, the BCM (body control module) sends messages to the SASM (steering angle sensor module) over the HS-CAN (high-speed controller area network) . If the SASM (steering angle sensor module) does not receive these messages within the specified time frame, the module sets a DTC (diagnostic trouble code) . This can be due to a BCM (body control module) failure, a circuit failure on the HS-CAN (high-speed controller area network) or an excessive load on the network. For information on the cruise control messages sent to the SASM (steering angle sensor module) by the BCM (body control module) , REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description
(206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SASM (steering angle sensor module) U0140:00	Lost Communication With Body Control Module: No Sub Type Information	Sets when the SASM (steering angle sensor module) does not receive any messages from the BCM (body control module) .
SASM (steering angle sensor module) U0422:00	Invalid Data Received From Body Control Module: No Sub Type Information	Sets if the SASM (steering angle sensor module) receives invalid data in the BCM (body control module) personality message.

Possible Sources

- Wiring, terminals or connectors

Data Rate Controller Area Network) . A failure of the FD-CAN (Flexible Data Rate Controller Area Network) or the PSCM (power steering control module) causes the ABS (anti-lock brake system) module to set one or more Diagnostic Trouble Codes (DTCs).

REFER to: Anti-Lock Brake System (ABS) and Stability Control - System Operation and Component Description(206-09 Anti-Lock Brake System (ABS) and Stability Control, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
ABS (anti-lock brake system) C0051:64	Steering Wheel Position Sensor: Signal Plausibility Failure	This DTC (diagnostic trouble code) sets when the ABS (anti-lock brake system) module determines the steering angle message is implausible when compared to the PSCM (power steering control module) steering message (based on the yaw rate sensor information). This DTC (diagnostic trouble code) also sets if the long term offset compensation monitoring is completed after more than 30 km (18 miles) of straight driving resulting in a long term filtered steering angle offset greater than 15 degrees.
ABS (anti-lock brake system) C0051:67	Steering Wheel Position Sensor: Signal Incorrect After Event	Sets when the PSCM (power steering control module) indicates the steering center position cannot be found or has been lost.
ABS (anti-lock brake system) C0051:85	Steering Wheel Position Sensor: Signal Above Allowable Range	Sets when the total steering wheel angle is above 1,440 degrees.
ABS (anti-lock brake system) C0051:96	Steering Wheel Position Sensor: Component Internal Failure	Sets when the steering angle sensor information from the PSCM (power steering control module) is "invalid", "unknown" or "faulty" instead of the actual sensor information.

Possible Sources

- Incorrectly mounted RCM (restraints control module)
- Network communication concern
- Incomplete or incorrect stability control sensor calibration
- Mismatched wheels and tires