

Pinpoint Test - DTC: F

B0050:11, B0050:12, B0050:13, B0050:1D

Refer to Wiring Diagrams Cell 46 for schematic and connector information.

Normal Operation and Fault Conditions

The RCM continuously monitors the driver safety belt buckle switch circuits for the following faults:

- Open circuit
- Short to voltage
- Short to ground
- Current out of range
- Faulted driver safety belt buckle switch

If a fault is detected, the RCM stores DTC B0050:11, B0050:12, B0050:13 or B0050:1D in memory and sends a message to the IPC to illuminate the airbag warning indicator.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B0050:11	Driver Seatbelt Sensor: Circuit Short to Ground	A fault is indicated when the RCM senses a short to ground on the driver safety belt buckle switch circuit for more than 6 seconds.
B0050:12	Driver Seatbelt Sensor: Circuit Short to Battery	A fault is indicated when the RCM senses a short to voltage on the driver safety belt buckle switch circuit for more than 6 seconds.

B0050:13	Driver Seatbelt Sensor: Circuit Open	A fault is indicated when the RCM senses an open on either driver safety belt buckle switch circuit for more than 6 seconds.
B0050:1D	Driver Seatbelt Sensor: Circuit Current Out of Range	A fault is indicated when the RCM measures current outside of an acceptable range on the driver safety belt buckle switch circuit for more than 6 seconds.

Possible Sources

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

Visual Inspection and Diagnostic Pre-checks

- Inspect for a damaged driver safety belt buckle.
- Inspect for damaged wiring harness(es).
- Inspect for loose or damaged connectors.

PINPOINT TEST A : B0050:11, B0050:12, B0050:13 AND B0050:1D



WARNING: Incorrect repair techniques or actions can cause an accidental Supplemental Restraint System (SRS) deployment. Never compromise or depart from these instructions. Failure to precisely follow all instructions could result in serious personal injury from an accidental deployment.

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

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

NOTE: Only disconnect or reconnect SRS components when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Always make sure the correct SRS component is being installed. Parts released for other vehicles may not be compatible even if they appear physically similar. Check the part number listed in the Ford parts catalog to make sure the correct component is being installed. If an incorrect SRS component is installed, Diagnostic Trouble Codes (DTCs) may set.

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

A1 RETRIEVE RCM (RESTRAINTS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

-  **WARNING:** Before beginning any service procedure in this section, refer to Safety Warnings in section 100-00 General Information. Failure to follow this instruction may result in serious personal injury.

REFER to: [Pyrotechnic Device Health and Safety Precautions](#) (100-00 General Information, Description and Operation).

- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Was DTC B0050:11, B0050:12, B0050:13 and B0050:1D retrieved on-demand during self-test?

Yes	If DTC U3003:16 or U3003:17 is also retrieved on-demand, REFER to: Pinpoint Test - DTC: AN, Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). If DTC U3003:16 or U3003:17 is not retrieved on-demand during self-test, DIAGNOSE the driver safety belt buckle switch Diagnostic Trouble Codes (DTCs). This fault cannot be cleared until it is corrected and the DTC is no longer retrieved on-demand during self-test. For DTC B0050:11 or B0050:1D, GO to A2 For DTC B0050:12, GO to A4 For DTC B0050:13, GO to A5
No	If DTC U3003:16 or U3003:17 is also retrieved on-demand, REFER to: Pinpoint Test - DTC: AN, Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). If DTC U3003:16 or U3003:17 is not retrieved on-demand during self-test, DIAGNOSE the driver safety belt buckle switch Continuous Memory Diagnostic Trouble Codes (CMDTCs). This is an intermittent fault when present as a CMDTC only. GO to A10

A2 CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH DTC (DIAGNOSTIC TROUBLE CODE) FOR A FAULT STATUS CHANGE (SHORT TO GROUND OR CURRENT OUT OF RANGE INDICATED)

NOTE: This pinpoint test step attempts to change the fault reported by the RCM by inducing a different fault condition. If the reported fault changes, this indicates the RCM is functioning correctly and is not the source of the fault.

- Ignition OFF.
- Disconnect Driver Safety Belt Buckle C3201.
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.
- **DIAGNOSTIC TIP:** When viewing Diagnostic Trouble Codes (DTCs) with the driver safety belt buckle switch disconnected, an open circuit fault is normally retrieved.

Did the on-demand DTC change from B0050:11 or B0050:1D to B0050:13?

Yes	GO to A8
No	For DTC B0050:11, GO to A3 For DTC B0050:1D, GO to A9

A3 CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Disconnect RCM C310A and C310B.

Is the resistance greater than 10,000 ohms?

Yes	GO to A9
No	REPAIR the circuit. Refer to Wiring Diagrams Cell 5 for schematic and connector information. GO to A11

A4 CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Disconnect RCM C310A and C310B.
- Disconnect Driver Side Airbag (Inline) C3051.
- Disconnect Driver Safety Belt Buckle C3201.
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit. Refer to Wiring Diagrams Cell 5 for schematic and connector information. GO to A11
No	GO to A9

A5 CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH DTC (DIAGNOSTIC TROUBLE CODE) FOR A FAULT STATUS CHANGE (OPEN INDICATED)

NOTE: This pinpoint test step attempts to change the fault reported by the RCM by inducing a different fault condition. If the reported fault changes, this indicates the RCM is functioning correctly and is not the source of the fault.

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Disconnect Driver Side Airbag (Inline) C3051.
- Disconnect Driver Safety Belt Buckle C3201.
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.
- **DIAGNOSTIC TIP:** When viewing Diagnostic Trouble Codes (DTCs) with the driver safety belt buckle switch circuits shorted together, a short to ground fault is normally retrieved.

Did the on-demand DTC change from B0050:13 to B0050:11?

Yes	REMOVE the fused jumper wire and GO to A8
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No	REMOVE the fused jumper wire and GO to A6
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A6 CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT FOR AN OPEN

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Disconnect RCM C310A and C310B.

Is the resistance less than 0.5 ohm?

Yes	GO to A7
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No	REPAIR the circuit. Refer to Wiring Diagrams Cell 5 for schematic and connector information. GO to A11
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A7 CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH GROUND CIRCUIT FOR AN OPEN

Is the resistance less than 3 ohms?

Yes	GO to A9
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No	REPAIR the circuit. Refer to Wiring Diagrams Cell 5 for schematic and connector information. GO to A11
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A8 CONFIRM THE DRIVER SAFETY BELT BUCKLE SWITCH FAULT

NOTE: Make sure all SRS components and the RCM electrical connectors are connected before carrying out the self-test. If not, Diagnostic Trouble Codes (DTCs) will be recorded.

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Connect Driver Side Airbag (Inline) C3051 (if previously disconnected).
- Connect Driver Safety Belt Buckle C3201.
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Was the original DTC retrieved on-demand during self-test?

Yes	INSTALL a new driver safety belt buckle (includes buckle switch). REFER to: Front Seatbelt Buckle (501-20A Seatbelt Systems, Removal and Installation). GO to A11
No	In the process of diagnosing the fault, the fault condition has become intermittent. Do not install any new SRS components at this time. Install SRS components only when directed to do so in the pinpoint test. GO to A10

A9 CONFIRM THE RCM (RESTRAINTS CONTROL MODULE) FAULT

NOTE: Make sure all SRS components and the RCM electrical connectors are connected before carrying out the self-test. If not, Diagnostic Trouble Codes (DTCs) will be recorded.

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Connect RCM C310A and C310B (if previously disconnected).
- Connect Driver Side Airbag (Inline) C3051 (if previously disconnected).
- Connect Driver Safety Belt Buckle C3201.
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Was the original DTC retrieved on-demand during self-test?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). GO to A11
No	In the process of diagnosing the fault, the fault condition has become intermittent. Do not install any new SRS components at this time. Install SRS components only when directed to do so in the pinpoint test. GO to A10

A10 CHECK FOR AN INTERMITTENT FAULT

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Connect all previously disconnected component(s) / connector(s).
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Was DTC B0050:11, B0050:12, B0050:13 and B0050:1D retrieved on-demand during self-test?

Yes	This fault cannot be cleared until it is corrected and the DTC is no longer retrieved on-demand during self-test. For DTC B0050:11 or B0050:1D, GO to A2 For DTC B0050:12, GO to A4 For DTC B0050:13, GO to A5
No	The fault is not present and cannot be recreated at this time. Do not install any new SRS components at this time. Install SRS components only when directed to do so in the pinpoint test. GO to A11

A11 CHECK FOR ADDITIONAL SRS (SUPPLEMENTAL RESTRAINT SYSTEM) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition OFF.
- Reconnect all SRS components (if previously disconnected).
- If previously directed to depower the SRS, repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- **NOTE:** *When selecting Restraints from the Self Test menu, DTCs are retrieved from the RCM, OCSM and BECMB.*

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

Are any RCM, OCSM and/or BECMB Diagnostic Trouble Codes (DTCs) retrieved on-demand during self-test?

Yes	Do not clear any Diagnostic Trouble Codes (DTCs) until all Diagnostic Trouble Codes (DTCs) have been resolved. DIAGNOSE and REPAIR the Diagnostic Trouble Codes (DTCs). REFER to: Airbag Supplemental Restraint System (SRS) (501-20B Supplemental Restraint System, Diagnosis and Testing). REFER to: Airbag Supplemental Restraint System (SRS) - Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing).
No	The repair is complete. RETURN the vehicle to the customer.