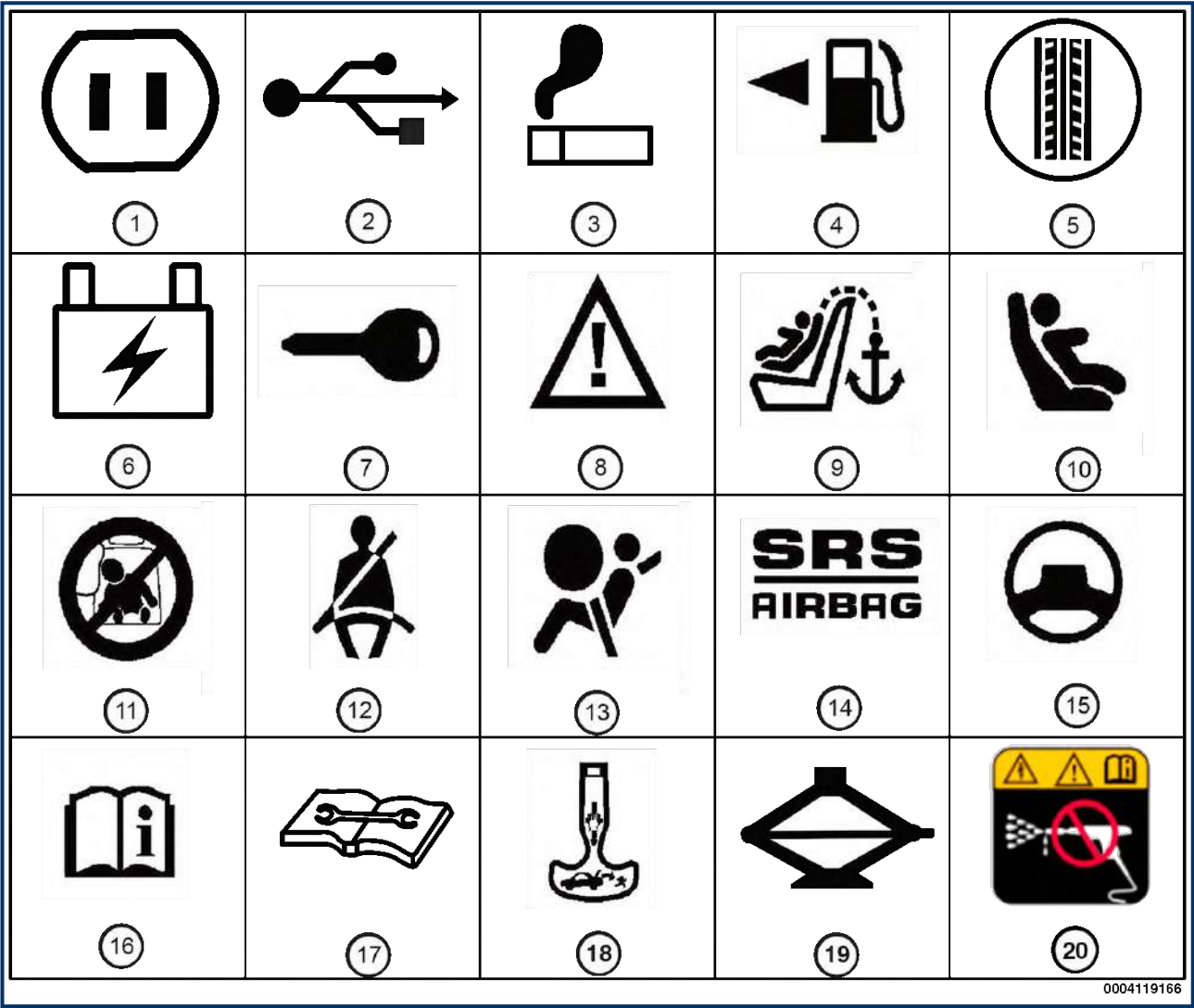


DESCRIPTION

FCA US LLC uses international symbols to identify various systems on the vehicle.

The graphic symbols illustrated are used to identify various instrument controls, vehicle controls and service information references. The symbols correspond to the controls and displays that are located on the instrument panel and throughout the vehicle.



INFORMATION SYMBOLS

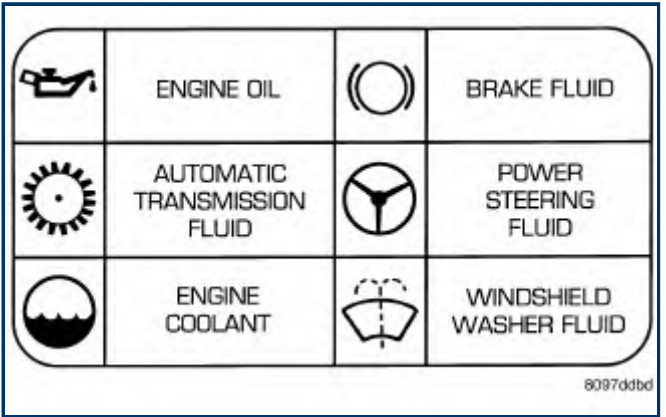
INTERNATIONAL INFORMATION SYMBOL IDENTIFICATION

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
1	115-Volt Power Inverter	11	Side Airbag
2	USB Connector	12	Seat Belt
3	Lighter	13	Airbag
4	Fuel Fill Side	14	Supplemental Restraint System
5	Spare Tire Winch	15	Power Steering Fluid
6	Fuse	16	See Owner's Manual
7	Key Activate (Power Outlet)	17	See Appropriate Service Manual Section
8	Warning	18	Emergency Release Handle
9	Child Seat Tether Anchor	19	Jack/Jack Tools Location
10	Lower Anchors and Tether for Children (LATCH)	20	No Power Washing

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
10	Windshield Washer	39	115-Volt Power Inverter	68	Four Wheel Drive Low
11	Windshield Washer Fluid Level	40	Key Activate (Power Outlet)	69	Four Wheel Drive Lock
12	Windshield Electrically Heated	41	Exterior Bulb Failure	70	Four Wheel Drive Auto
13	Windshield Defrost	42	Master Lighting Switch	71	Front Axle Lock
14	Windshield Wiper And Washer	43	Dome Light	72	Rear Axle Lock
15	Ventilating Fan	44	Park Lights	73	Electronic Vehicle Information Center (EVIC) Menu
16	Air Conditioning	45	Instrument Panel Illumination	74	Navigation Button
17	Upper Air Outlet	46	Electronic Stability Program Off	75	Step
18	Upper And Lower Air Outlet	47	Diesel Exhaust Brake	76	Reset
19	Lower Air Outlet	48	Overdrive Off	77	Axle Lock Button
20	Defrost And Lower Air Outlet	49	Hood Release	78	Traction Control Off
21	Heated Seat Low	50	Trunk/Deck Release	79	Electronic Stability Control Off
22	Heated Seat High	51	Door Ajar	80	Trailer Brakes
23	Ventilated Seat	52	Liftgate Release	81	Engine Stop/Start (ESS) ON/OFF
24	Recirculation	53	Sliding Door	82	Lane Departure Warning Switch
25	Heated Steering Wheel	54	Sliding Door	83	Forward Collision Warning (FCW)
26	Passenger Air Bag Off	55	Convertible Top Down	84	Park Assist Switch
27	Electronic Speed Control	56	Convertible Top Up	85	Parallel and Perpendicular Park Assist Switch
28	Cruise Indicator	57	Door Lock	86	Selec Speed Control Indicator Light
29	Hill Descent Control	58	Window Lift		

ENGINE COMPARTMENT

The graphic symbols illustrated are used to identify engine compartment lubricant and fluid inspection and fill locations. The symbols correspond to the caps located within the engine compartment.



SEAT BACK

REMOVAL

1. Remove the seat back cover ([Refer to 23 - Body/Seats/COVER, Seat Back/Removal and Installation](#)).
2. Using a heat gun, carefully warm the heater pad to loosen the adhesive and slowly peel the heater pad from the cushion.

NOTE: If the cushion is damaged during removal of the heater pad, it must be replaced with a **NEW cushion**.

3. For installation reference, make note of the position of the heated seat element and the routing of the wire lead and connector on the cushion being serviced.



1 - Seat Back Cover

2 - Hearer Pad

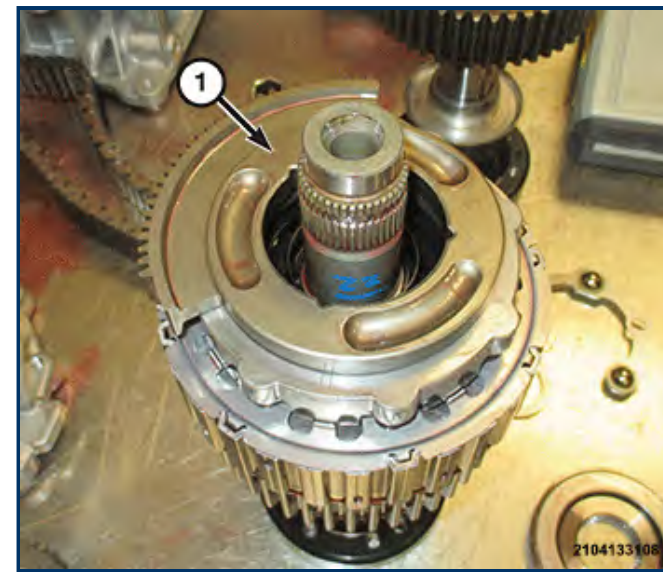
INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

CAUTION: During heated seat element replacement, be careful not to fold or crease the new heating element. Folds or creases will cause premature heated seat element failure.

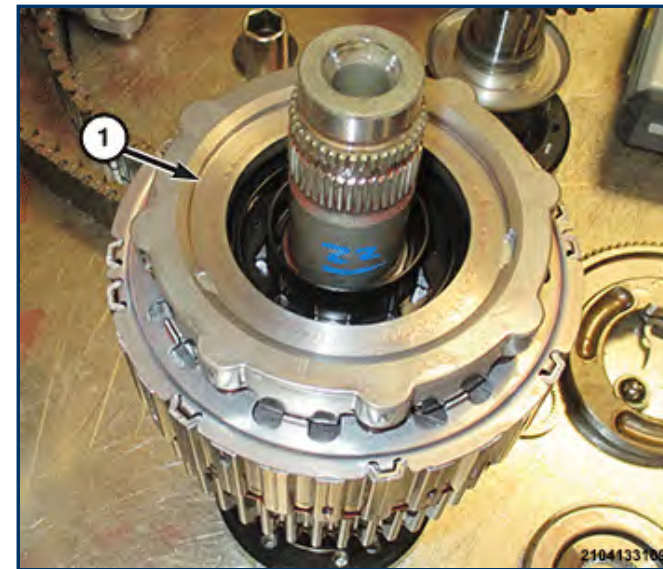
- Peel off the adhesive backing from the new heater pad.
- Position the new heater pad to the cushion in the same location as on the original cushion. Be certain the wire harness is correctly routed.
- Firmly press the new heated seat element to the cushion. Be certain the adhesive is fully adhered to the cushion.
- Verify proper heated seat system operation.

28. Remove the lower apply cam from the output shaft.



1 - Lower Apply Cam

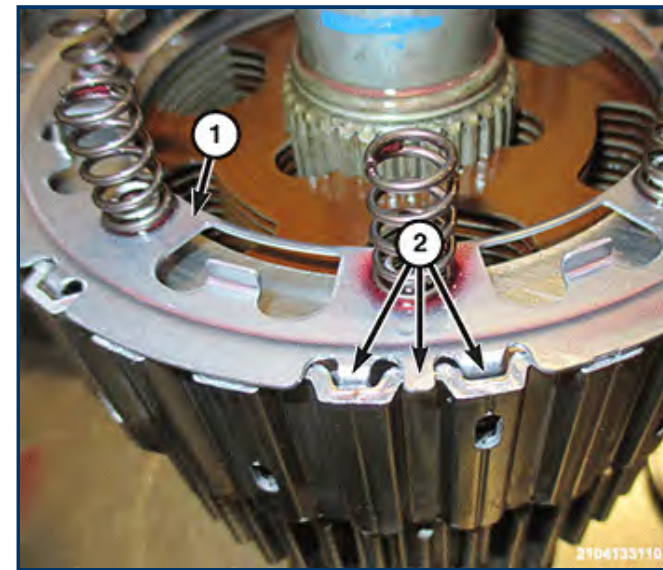
29. Remove the apply plate from the output shaft.



1 - Apply Plate

30. Remove the spring plate from the output shaft.

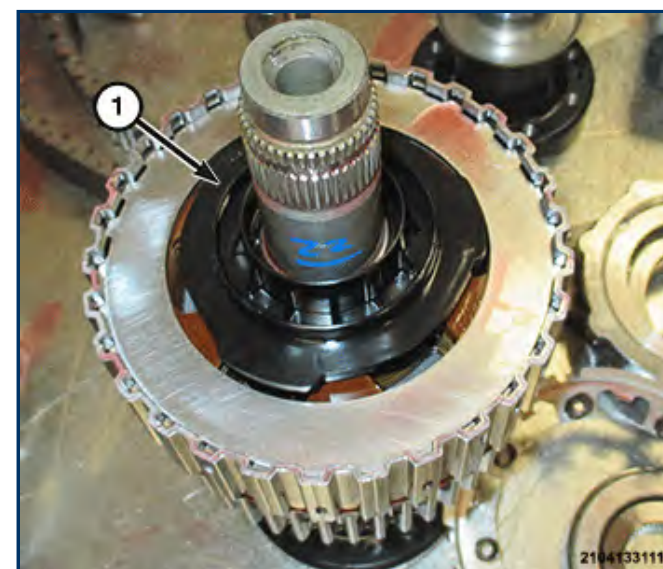
NOTE: Note the orientation of the tabs when removing the spring plate.



1 - Spring Plate

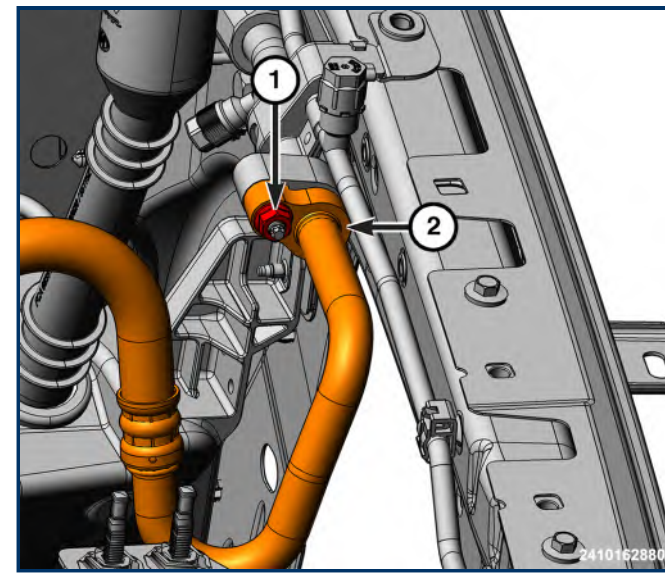
2 - Tab Orientation

31. Remove the oil deflector from the output shaft.



1 - Oil Deflector

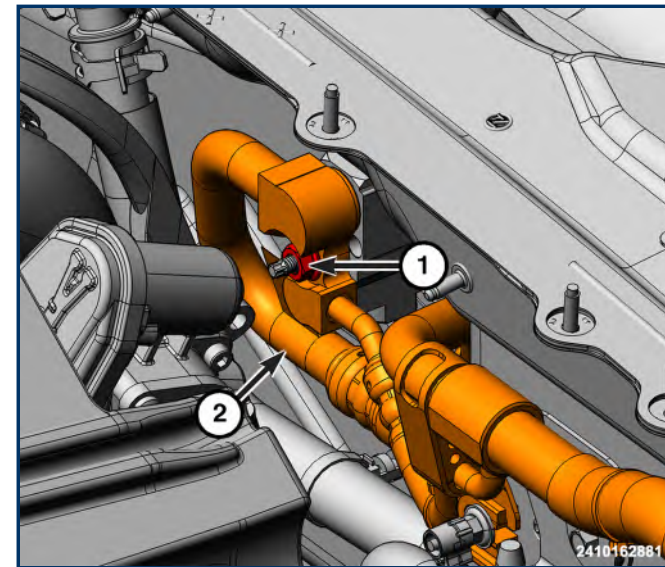
32. Remove the clutch drum assembly from the output shaft.



1 - Nut

2 - Line Jumper

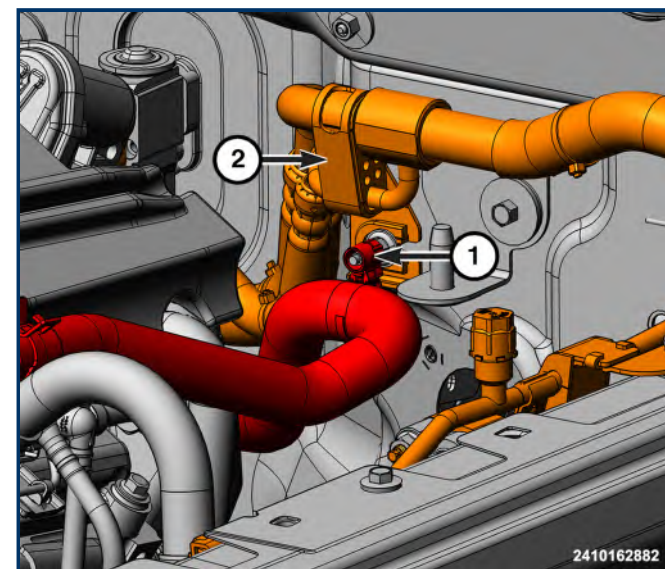
10. Remove the nuts and disconnect the A/C suction and liquid line assembly from the expansion valve.



1 - Nut

2 - Line Assembly

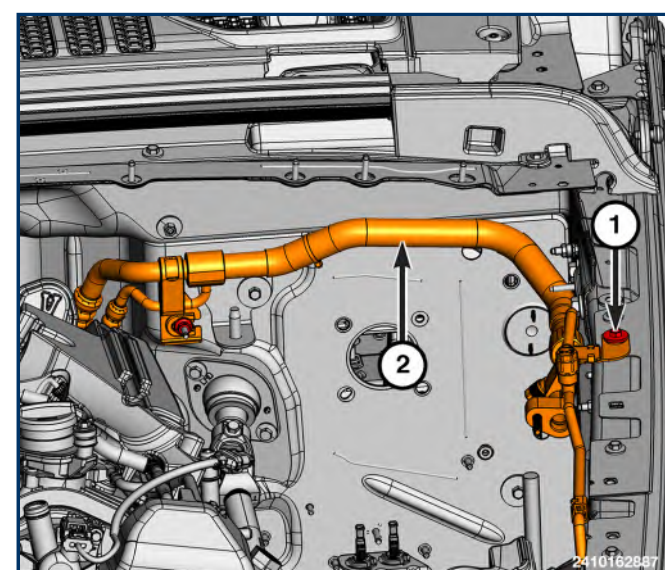
11. Remove the wire harness retainer from the stud securing the A/C suction and liquid line assembly to the vehicle.



1 - Wire Harness Retainer

2 - Line Assembly

12. Remove the fasteners securing the A/C suction and liquid line assembly to the vehicle.



1 - Fastener

2 - Line Assembly

13. Remove the retainer and the A/C suction and liquid line assembly from the vehicle.

14. Remove the A/C pressure transducer ([Refer to 24 - Heating and Air Conditioning/Controls/TRANSDUCER, A/C Pressure/Removal and Installation](#)).

B2208-00-OCCUPANT RESTRAINT CONTROLLER INTERNAL 2

For a complete RESTRAINT SYSTEMS wiring diagram, ([refer to the Wiring Information](#)).

Theory of Operation

A Supplemental Restraint System (SRS) is standard factory-installed safety equipment on this vehicle. Available supplemental occupant restraints for this vehicle include both **Active** and **Passive** types. Active restraints are those which require the vehicle occupants to take some action to employ, such as fastening and adjusting a seat belt; while passive restraints require no action by the vehicle occupants to be employed.

The Occupant Restraint Controller (ORC) and the Instrument Panel Cluster (IPC) each contain a microcontroller and programming that allow them to communicate with each other using the Controller Area Network (CAN) data bus. This method of communication is used by the ORC for control of the airbag indicator in the IPC.

ACTIVE RESTRAINTS

The primary passenger restraints in this vehicle are the standard equipment factory-installed seat belts and child restraint anchors. Seat belts and child restraint anchors are referred to as an active restraint because the vehicle occupants are required to physically fasten and properly adjust these restraints in order to benefit from them.

PASSIVE RESTRAINTS

The passive restraints are referred to as a SRS components because they were designed and are intended to enhance the protection for the occupants of the vehicle **only** when used in conjunction with the seat belts. They are referred to as passive restraints because the vehicle occupants are not required to do anything to make them operate; however, the vehicle occupants must be wearing their seat belts in order to obtain the maximum safety benefit from the factory-installed SRS components.

The SRS electrical circuits are continuously monitored and controlled by a microcontroller and software contained within the ORC. An airbag indicator in the IPC illuminates from four to six seconds as a bulb test each time the status of the ignition transitions to ON or START. Following the bulb test, the airbag indicator is turned ON or OFF by the ORC to indicate the status of the SRS. If the airbag indicator comes ON at any time other than during the bulb test, it indicates that there is a problem in the SRS electrical circuits. Such a problem may cause airbags not to deploy when required, or to deploy when not required.

For additional information regarding the description and operation of the Restraints System ([Refer to 10 - Restratints-Description-and-Operation](#)).

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following conditions are met:

- With the ignition on.

Set Conditions:

- This DTC sets when a fault is detected internal to ORC hardware and/or software. Once set, this DTC is latched for the entire power cycle. If the same failure is detected in two consecutive power cycles, this DTC is latched active indefinitely.

Default Actions:

- This DTC may inhibit deployment or modify deployment strategy.

Possible Causes
OCCUPANT RESTRAINT CONTROLLER (ORC)

Always perform the PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE before proceeding. ([Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint \(ORC\) - Standard Procedure](#)).

Diagnostic Test

READ AND RECORD DTCS AND ENVIRONMENTAL DATA

- Turn the ignition on.
- With the scan tool, read ORC DTCs and record on the repair order.
- With the scan tool, run a Vehicle Scan Report or record the Environmental Data.

WARNING: Turn the ignition off disconnect the 12-volt battery and wait two minutes before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

WARNING: If the Occupant Restraint Controller (ORC) is dropped at any time, it must be replaced. Failure to take the proper precautions could result in accidental airbag deployment. Failure to follow these instructions may result in possible serious or fatal injury.

Repair

- Replace the Occupant Restraint Controller (ORC) in accordance with Service Information. ([Refer to 08 - Electrical/8E - Electronic Control Modules/MODULE, Occupant Restraint/Removal and Installation](#)).
- Perform the RESTRAINTS SYSTEM VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/CONTROLLER, Occupant Restraint \(ORC\) - Standard Procedure](#)).

No

- Go To [3](#)

3. MECHANICAL BRAKE SYSTEM INSPECTION

- Turn the ignition off.
- Check the brake fluid for contaminants.
- Visually inspect the master cylinder, fittings and all the brake lines for leaks or damage.
- Visually inspect all the brake lines for bent, damaged, or pinched restrictions.
- Visually inspect all the brake caliper mountings, calipers, pads, and rotors for damage.

Where any problems found?

Yes

- Repair as necessary.
- Perform the ABS VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Antilock Brake \(ABS\) - Standard Procedure](#)).

No

- Go To [4](#)

4. CHECK RELATED HARNESS CONNECTIONS

- Turn the ignition off.
- Disconnect the ABS harness connector.
- Disconnect all related in-line harness connections (if equipped).
- Disconnect the related component harness connectors.
- Inspect harness connectors, component connectors, and all male and female terminals for the following conditions:
 - Proper connector installation.
 - Damaged connector locks.
 - Corrosion.
 - Other signs of water intrusion.
 - Weather seal damage (if equipped).
 - Bent terminals.
 - Overheating due to a poor connection (terminal may be discolored due to excessive current draw).
 - Terminals that have been pushed back into the connector cavity.
 - Perform a terminal drag test on each connector terminal to verify proper terminal tension.

Repair any conditions that are found.

- Connect the ABS harness connector. Be certain that the harness connector is fully seated and the connector lock is fully engaged.
- Connect all in-line harness connectors (if equipped). Be certain that all connectors are fully seated and the connector locks are fully engaged.
- Connect the related component harness connectors. Be certain that all connectors are fully seated and the connector locks are fully engaged.
- With the scan tool, erase DTCs.

WARNING: To avoid possible serious or fatal injury, check brake capability is available before road testing.

- Using the recorded Event and Environmental Data, along with the When Monitored and Set Conditions above, operate the vehicle in the conditions that set the DTC.
- With the scan tool, read ABS DTCs.

Did the DTC return?

Yes

- Replace the Anti-lock Brake System (ABS) Module in accordance with the Service Information. ([Refer to 08 - Electrical/8E - Electronic Control Modules/MODULE, Anti-Lock Brake System/Removal and Installation](#)).
- Perform the ABS VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Antilock Brake \(ABS\) - Standard Procedure](#)).

No

- The wiring or poor connection problem has been repaired.
- Perform the ABS VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Antilock Brake \(ABS\) - Standard Procedure](#)).

- 2. Disconnect the IPC harness connector.
- 3. Turn the ignition on.
- 4. With the scan tool, read BCM DTCs.

Is the DTC Active?

Yes

- Go To [3](#)

No

- Replace the Instrument Panel Cluster (IPC) in accordance with the Service Information. ([Refer to 08 - Electrical/8E - Electronic Control Modules/Cluster, Instrument Panel/Removal and Installation](#)).
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).

3. DISCONNECT THE BCM HARNESS CONNECTOR AND CHECK THE (G84) VTA WARNING INDICATOR CIRCUIT FOR A SHORT TO GROUND

** Test Information**

NOTE: When probing a circuit at any harness connector, always use an appropriate probing tool to prevent any possible damage to the harness connector terminals.

NOTE: There should be no continuity between ground and the circuit being tested.

Is there continuity between ground and the circuit being tested?

Yes

- Repair the circuit for a short to ground. Use the wiring diagram as a guide to trace the circuit and look for any in-line connectors to help isolate the location of the short.
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).

No

- Go To [4](#)

4. DISCONNECT RELATED BCM HARNESS CONNECTIONS AND INSPECT FOR PROBLEMS

1. Disconnect all BCM harness connectors.
2. Disconnect all related in-line harness connections (if equipped).
3. Disconnect the related component harness connectors.
4. Inspect harness connectors, component connectors, and all male and female terminals for the following conditions:
 - Proper connector installation.
 - Damaged connector locks.
 - Corrosion.
 - Other signs of water intrusion.
 - Weather seal damage (if equipped).
 - Bent terminals.
 - Overheating due to a poor connection (terminal may be discolored due to excessive current draw).
 - Terminals that have been pushed back into the connector cavity.
 - Perform a terminal drag test on each connector terminal to verify proper terminal tension.

Repair any conditions that are found.

5. Connect all BCM harness connectors. Be certain that all harness connectors are fully seated and the connector locks are fully engaged.
6. Connect all in-line harness connectors (if equipped). Be certain that all connectors are fully seated and the connector locks are fully engaged.
7. Connect all related component harness connectors. Be certain that all connectors are fully seated and the connector locks are fully engaged.
8. With the scan tool, erase DTCs.
9. Using the recorded Environmental Data, along with the When Monitored and Set Conditions above, operate the vehicle in the conditions that set the DTC.
10. With the scan tool, read BCM DTCs.

Did the DTC return?

Yes

- Replace the Body Control Module (BCM) in accordance with the Service Information. ([Refer to 08 - Electrical/8E - Electronic Control Modules/MODULE, Body Control/Removal and Installation](#)).
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).

No

- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).
- Test complete.

B1E99-12-FRONT LEFT HEATER CONTROL 1-CIRCUIT SHORT TO BATTERY

For a complete HEATED SEAT SYSTEM wiring diagram, [\(refer to the Wiring Information\)](#).

Theory of Operation

The Comfort Seat and Wheel Module (CSWM) provides a variable Pulse Width Modulation (PWM) signal to the Heated Seat element in each seat cushion and seat back. The CSWM provides temperature sense and return circuits to a thermistor in order to monitor and regulate Heated Seat element function.

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following conditions are met:

- Engine running.
- Controller voltage between 9.0 and 16.0 volts.
- Heated seat is turned off.

Set Conditions:

- Module detects that the Left Front Seat Cushion Heater Supply circuit voltage is above 5.0 volts for more than 2 seconds .

Default Actions:

- When the Left Front Heated Seat is turned on, the indicator turns on for 2 seconds and turns off.
- The Left Front Seat Cushion Heater output driver will be turned off.

Possible Causes
LEFT FRONT SEAT CUSHION HEATER SUPPLY CIRCUIT SHORTED TO VOLTAGE
LEFT FRONT SEAT CUSHION HEATER SUPPLY CIRCUIT SHORTED TO ANOTHER CIRCUIT
COMFORT SEAT WHEEL MODULE (CSWM)

Always perform the PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE before proceeding. [\(Refer to 28 - DTC-Based Diagnostics/Standard Procedure\)](#).

Diagnostic Test

1. READ AND RECORD DTCS AND ENVIRONMENTAL DATA - ERASE DTCS AND CHECK FOR DTC TO RETURN

NOTE: Seat and steering wheel heaters must remain OFF during this test.

+ Test Information

Is the same DTC active?

Yes

- Go To [2](#)

No

- Perform the appropriate INTERMITTENT CONDITION diagnostic procedure. [\(Refer to 28 - DTC-Based Diagnostics/Standard Procedure\)](#).

2. CHECK THE (F503) LEFT FRONT SEAT CUSHION HEATER SUPPLY CIRCUIT FOR A SHORT TO VOLTAGE

+ Test Information

Is the voltage 5.0 volts or above?

Yes

- Repair the (F503) Left Front Seat Cushion Heater Supply circuit for a short to voltage.
- Perform the BODY VERIFICATION TEST. [\(Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure\)](#).

No

- Go To [3](#)

C2129-17-BATTERY VOLTAGE-CIRCUIT VOLTAGE ABOVE THRESHOLD

Theory of Operation

The Electric Hydraulic Power Steering (EHPS) Module monitors the battery voltage level at the EHPS supply voltage terminal for the following failure conditions:

- System Voltage High

If the EHPS supply voltage is above the System Voltage High threshold, the EHPS will not supply power to the steering gear motor. A Diagnostic Trouble Code (DTC) is set when one of the diagnostic voltage thresholds is reached for a calibrated amount of time.

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following conditions are met:

- Ignition on.

Set Conditions:

- Electro-Hydraulic Power Steering (EHPS) Module detects the battery voltage has increased above 16.5 volts for more than 1 second.

Default Actions:

- EHPS is disabled.

Possible Causes
CHARGING SYSTEM DTCS PRESENT
ELECTRO-HYDRAULIC POWER STEERING (EHPS) MODULE

Always perform the PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE before proceeding. ([Refer to 28 - DTC-Based Diagnostics/Standard Procedure](#)).

Diagnostic Test

1. CHECK FOR AN ACTIVE DTC

NOTE: This DTC must be active for the results of this test to be valid.

- Turn the ignition on.
- With the scan tool, read DTCs and record on vehicle work order.
- With the scan tool, erase DTCs.
- Start the engine.
- With the scan tool, read EPS DTCs.

Is the DTC active?

Yes

- Go To [2](#)

No

- Test complete, the condition or conditions that originally set this DTC are not present at this time.
- Perform the EHPS VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Electro-Hydraulic Power Steering \(EHPS\) /Standard Procedure](#)).

2. CHECK FOR POWERTRAIN CONTROL MODULE (PCM) OR CHARGING SYSTEM RELATED DTCS

- Turn the ignition on.
- With the scan tool, read DTCs in the PCM.

Are there any PCM or Charging System related DTCs present?

Yes

- Perform the appropriate Charging System DTC diagnostic procedures before continuing with this test. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Diagnosis and Testing](#)).

No

2. READ AND RECORD DTCS AND ENVIRONMENTAL DATA - ERASE DTCS AND CHECK FOR THE DTC TO RETURN

Test Information

Did the DTC return?

Yes

- Go To [3](#)

No

- Perform the TESTING FOR AN INTERMITTENT CONDITION procedure. ([Refer to 28 - DTC-Based Diagnostics/Standard Procedure](#)).

3. CHECK THE PARK ASSIST SENSOR FOR DAMAGE AND THE HARNESS CONNECTOR AND TERMINALS

1. Turn the ignition off.
2. Check the Park Assist Sensor for damage.
3. Check the Park Assist Sensor harness connector for proper connection at the sensor.
4. Verify that the connector is completely plugged in and locked prior to disconnecting.
5. Disconnect the Park Assist Sensor harness connector and check for pushed out or spread terminals, discoloration from excessive heat, or corrosion and water intrusion.

Were any issues found for damage or with the connector or terminals?

Yes

- Repair or replace the found issues in accordance with the Service Information.
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).

No

- Go To [4](#)

4. REPLACE THE PARK ASSIST SENSOR AND RETEST FOR DTCS

Test Information

Did the DTC return?

Yes

- Go To [5](#)

No

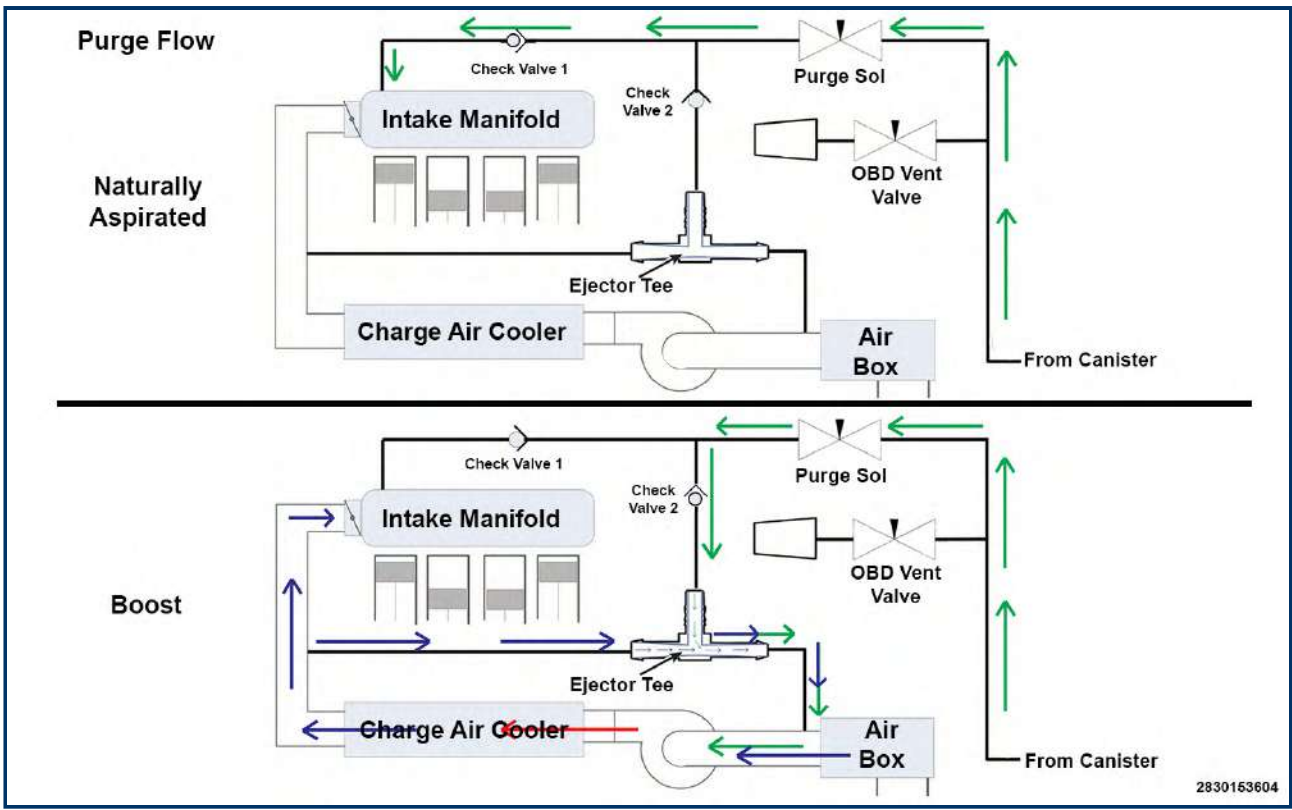
- Replacing the faulty Park Assist Sensor repaired the fault.
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).

5. CHECK RELATED PAM AND COMPONENT CONNECTIONS

1. Disconnect all PAM harness connectors.
2. Disconnect all related in-line harness connections (if equipped).
3. Disconnect the related component harness connectors.
4. Inspect harness connectors, component connectors, and all male and female terminals for the following conditions:
 - Proper connector installation.
 - Damaged connector locks.
 - Corrosion.
 - Other signs of water intrusion.
 - Weather seal damage (if equipped).
 - Bent terminals.
 - Overheating due to a poor connection (terminal may be discolored due to excessive current draw).
 - Terminals that have been pushed back into the connector cavity.
 - Perform a terminal drag test on each connector terminal to verify proper terminal tension.

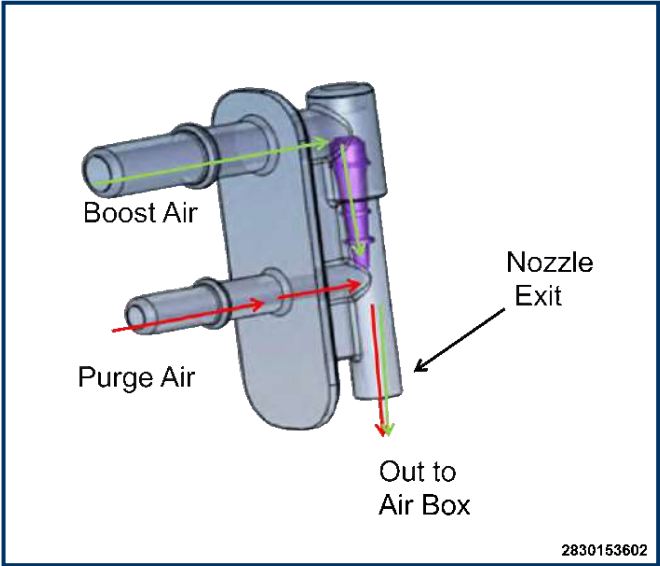
Repair any conditions that are found.

5. Reconnect all PAM harness connectors. Be certain that all harness connectors are fully seated and the connector locks are fully engaged.
6. Reconnect all in-line harness connectors (if equipped). Be certain that all connectors are fully seated and the connector locks are fully engaged.
7. Reconnect all related component harness connectors. Be certain that all connectors are fully seated and the connector locks are fully engaged.



Functional Operation: The Ejector Tee is used to create vacuum to draw fuel vapors from the charcoal canister when the engine is in boost. The fuel vapors are drawn into the intake manifold through the fresh air side of the system. To create vacuum the nozzle utilizes the venturi effect. The boost air enters the nozzle through the boost air fitting and passes through the nozzle across the end of the purge tube fitting creating a pressure drop. This creates vacuum in the purge tube leading to the Purge Solenoid. The Ejector Tee is mounted on the air cleaner box or integrated into the emissions control vacuum harness on early build vehicles.

Diagnostic Overview: The Ejector Tee functionality is diagnosed as part of the Purge Flow Monitor diagnostic. If the nozzle is damaged or blocked it will not allow vacuum to be created and will fail the boost side Purge Flow diagnostic and set DTC P1CEA.



When Monitored and Set Conditions

When Monitored: This diagnostic runs once per trip when the following conditions are met:

- Barometric Pressure Above 75 Kpa
 - Ambient Temperature Between 4.4°C (40°F) and 35°C (95°F).
 - With the engine running.
 - Engine speed between approximately 1100 and 3300 RPM.
 - Fuel Tank Isolation Valve (FTIV) Closed.
 - No Active FTIV Related DTCs.
 - No Change-Over Valve (COV) circuit DTCs.
- **Engine has sufficient vacuum.** This fault sets when the engine is operating naturally aspirated creating intake vacuum and a purge flow fault is detected.

Set Conditions:

- The ELCM Pressure Sensor reading does not decrease more than a calibrated threshold (approximately -500 Pa) after the Purge Solenoid is commanded on during naturally aspirated engine operation.

Default Actions:

- The MIL will illuminate.

Possible Causes
FUEL TANK PRESSURE (FTP) SENSOR 5-VOLT SUPPLY OPEN/HIGH RESISTANCE
PURGE SOLENOID VACUUM LINE (C) LEAKING OR BROKEN
PURGE SOLENOID VACUUM LINE(C) OR PORT RESTRICTED/OBSTRUCTED
PINCHED/OBSTRUCTED LINE (A) BETWEEN THE PURGE SOLENOID AND CANISTER
PINCHED/OBSTRUCTED LINE BETWEEN THE CANISTER AND FUEL TANK
FUEL IN THE CHARCOAL CANISTER OR TUBES DUE TO FUEL DELIVERY FLANGE TUBE DISCONNECTED INSIDE FUEL TANK
FAULTY PURGE SOLENOID
FUEL TANK PRESSURE (FTP) SENSOR

P1E1D-CONTROL MODULE IMPROPER WAKE-UP PERFORMANCE

When Monitored and Set Conditions

When Monitored:

- This diagnostic runs once when either one of the following conditions are met:
 - Powertrain Control Module (PCM) receives a wake up signal from the Body Control Module (BCM) to run the Evaporative System Leak Detection.
 - At ignition on.

Set Conditions:

- PCM receives a wake up signal from the BCM to run the Evaporative System Leak Detection and the PCM internal timer is either less than 3.5 hours or more than 8.5 hours.
- PCM wakes up with the ignition on after a minimum of 8.5 hours of key off time and no wake up signal was received from the BCM to run the Evaporative System Leak Detection on the previous key off cycle.

Note:

- This DTC will set if the BCM resets during the 8.5 hours of key off time (due to low system voltage or an interruption of power to the BCM). Any DTCs related to low battery, system voltage, no start/crank, or loss of communication should be diagnosed and resolved prior to continuing with this diagnostic.

Possible Causes
POWERTRAIN CONTROL MODULE INTERNAL TIMER
BODY CONTROL MODULE INTERNAL TIMER

Always perform the **PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE** before proceeding.[\(Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Standard Procedure\).](#)

Diagnostic Test

1. READ AND RECORD DTCS AND ENVIRONMENTAL DATA - ERASE DTCS AND CHECK FOR DTC TO RETURN

1. With the scan tool, read DTCs in all Electronic Control Units (ECU)s and record on the repair order.
2. For future reference, with the scan tool, run and save a vehicle Scan Report and all recorded data.
3. With the scan tool, erase all DTCs.
4. Run the engine for at least 60 seconds, park the vehicle, and allow it to sit with the ignition off for at least 8.5 hours.
5. With the ambient air temperature between 40 degrees and 100 degrees (Fahrenheit), turn the ignition on.
6. With the scan tool, read Powertrain Control Module (PCM) DTCs.

Did the DTC return?

Yes

- Go To [2](#)

No

- Perform the appropriate INTERMITTENT CONDITION diagnostic procedure. [\(Refer to 28 - DTC-Based Diagnostics/Standard Procedure\).](#)

2. CHECK FOR OTHER DTCS

1. Refer to the recorded DTCs.

Are there any voltage, cranking, starting or loss of communication DTCs present?

Yes

- Perform the applicable diagnostic procedure(s). [\(Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) /Diagnosis and Testing\).](#)

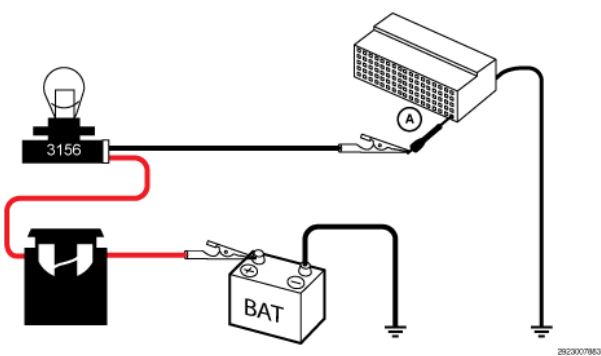
No

- Go To [3](#)

3. REPLACE PCM AND RETEST FOR DTCS

NOTE: When probing a circuit at an Electronic Control Unit (ECU) harness connector, always use an appropriate back probing tool to prevent any possible damage to the ECU terminals.

NOTE: Compare the brightness of the bulb in the load test tool to that of a direct connection to Battery.



Is the load test bulb illuminated and bright?

Yes

- Go To [16](#)

No

- Repair the ground circuit for an open or high resistance.
- Perform the RADIO FREQUENCY HUB (RF-HUB) VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Radio Frequency Hub Module \(RFHM\) - Standard Procedure](#)).

14. ISOLATE AND CHECK THE (P400) FRONT RIGHT PASSIVE ENTRY HANDLE SWITCH SENSE CIRCUIT FOR AN OPEN/HIGH RESISTANCE

Test Information

NOTE: When probing a circuit at an Electronic Control Unit (ECU) harness connector, always use an appropriate back probing tool to prevent any possible damage to the ECU terminals.

Is the resistance below 3.0 Ohms?

Yes

- Go To [15](#)

No

- Repair the circuit for an open or high resistance.
- Perform the RADIO FREQUENCY HUB (RF-HUB) VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Radio Frequency Hub Module \(RFHM\) - Standard Procedure](#)).

15. CHECK THE (P400) FRONT RIGHT PASSIVE ENTRY HANDLE SWITCH SENSE CIRCUIT FOR A SHORT TO VOLTAGE

- Measure the voltage between ground and the (P400) Front Right Passive Handle Switch Sense circuit at the RF Hub Module C2 harness connector.

Is there any voltage present?

Yes

- Repair the (P400) Front Right Passive Handle Switch Sense circuit for a short to voltage.
- With the scan tool, select "Diagnostic Procedures", "Reset ECU" and "RFH" and perform the routine.
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) - Standard Procedure](#)).

No

- Go To [16](#)

16. CHECK RELATED HARNESS CONNECTIONS

- Disconnect all RF HUB Module harness connectors.
- Disconnect all related in-line harness connections (if equipped).
- Disconnect the related component harness connectors.
- Inspect harness connectors, component connectors, and all male and female terminals for the following conditions:
 - Proper connector installation.
 - Damaged connector locks.
 - Corrosion.
 - Other signs of water intrusion.
 - Weather seal damage (if equipped).
 - Bent terminals.
 - Overheating due to a poor connection (terminal may be discolored due to excessive current draw).
 - Terminals that have been pushed back into the connector cavity.
 - Perform a terminal drag test on each connector terminal to verify proper terminal tension.

- Replace the Cellular Antenna in accordance with the Service Information.
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) /Standard Procedure](#)).

No

- Use the Radio Diagnostic Tool [Adapter, Long RF RG-58 Fakra 9977-6-13](#) to locate the open circuit, repair or replace the Cellular Antenna cable as necessary.
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) /Standard Procedure](#)).

6. CHECK RELATED HARNESS CONNECTIONS

1. Disconnect all Radio harness connectors.
2. Disconnect all related in-line harness connections (if equipped).
3. Disconnect the related component harness connectors.
4. Inspect harness connectors, component connectors, and all male and female terminals for the following conditions:
 - Proper connector installation.
 - Damaged connector locks.
 - Corrosion.
 - Other signs of water intrusion.
 - Weather seal damage (if equipped).
 - Bent terminals.
 - Overheating due to a poor connection (terminal may be discolored due to excessive current draw).
 - Presence of foreign conductive materials on connector pins and terminals.
 - Terminals that have been pushed back into the connector cavity.
 - Perform a terminal drag test on each connector terminal to verify proper terminal tension.

Repair any conditions that are found.

5. Reconnect all Radio harness connectors. Be certain that all harness connectors are fully seated and the connector locks are fully engaged.
6. Reconnect all in-line harness connectors (if equipped). Be certain that all connectors are fully seated and the connector locks are fully engaged.
7. Reconnect all related component harness connectors. Be certain that all connectors are fully seated and the connector locks are fully engaged.
8. Turn the ignition on.
9. With the scan tool, perform an ECU reset to the Radio, and then erase DTCs.
10. Turn the ignition off for a minimum of 10.0 seconds.
11. Turn the ignition on.
12. Using the recorded Environmental Data, along with the When Monitored and Set Conditions above, operate the vehicle in the conditions that set the DTC.
13. With the scan tool, read Radio DTCs.

Did the DTC return?

Yes

- Replace the Radio in accordance with the Service information. ([Refer to 08 - Electrical/8E - Electronic Control Modules/RADIO/Removal and Installation](#)).
- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) /Standard Procedure](#)).

No

- Perform the BODY VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) /Standard Procedure](#)).
- Test complete.