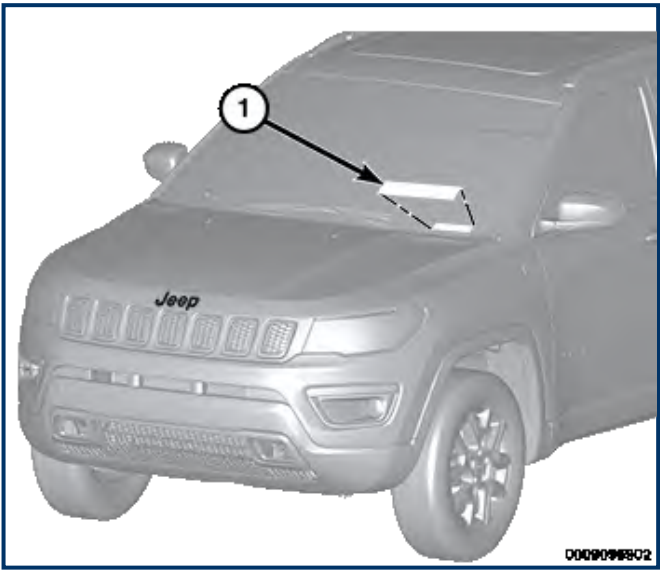


DESCRIPTION

The Vehicle Identification Number (VIN) (1) can be viewed through the windshield at the upper left corner of the instrument panel, near the left windshield pillar. The VIN consists of 17 characters in a combination of letters and numbers that provide specific information about the vehicle. Refer to the vehicle identification number decoding charts below, for decoding information.

To protect the consumer from theft and possible fraud the manufacturer is required to include a Check Digit at the ninth position of the vehicle identification number. The check digit is used by the manufacturer and government agencies to verify the authenticity of the vehicle and official documentation. The formula to use the check digit is not released to the general public.



POSITIONS 1 - 3: WORLD MANUFACTURER IDENTIFIER

1	2	3	Manufacturer	Vehicle Type
M	C	A	FCA India Automobiles Private Limited	MPV

POSITION 4:

Brake System	GVWR Range		Active Belts, Air Bags	Active Belts, Air Bags, Side Bags-Front Row	Active Belts, Air Bags, Side Bags-All Rows	Active Belts, No Air Bags	Active Belts, GVWR > 10, 000 lbs.
	Pounds	Kilograms					
Hydraulic	4001-5000	(1815-2267 kg)	A	-	N	-	—

Positions 5 - 7: Vehicle Descriptor

Define the following: brand, marketing name, drive wheels, cab/body type, drive position, and price series.

Jeep Meridian H6

FWD			AWD			BODY TYPE	DRIVE POSITION	SERIES
J	P	E	J	R	E	Sport Utility - 4 Door	Right Hand Drive	BASE
J	P	A	—	—	—			SPORT
J	P	B	J	R	B			LONGITUDE
J	P	C	J	R	C			LIMITED
—	—	—	J	R	D			TRAILHAWK

POSITION 8: ENGINE

Code	Displacement	Cylinders	Fuel	Turbo	Sales Codes
Y	2.0 Liter	4	Diesel	Yes	,EBS

WHEEL ALIGNMENT

PRE-WHEEL ALIGNMENT INSPECTION

Before starting wheel alignment, the following inspection and necessary corrections must be completed. Refer to the suspension and steering system diagnosis chart below for additional information.

1. Inspect tires for size, air pressure, and tread wear. If tire wear is found, proceed to following steps. If not, proceed to step 2.

a. Inspect the front wheel bearings for wear using the procedure outlined in the hub and bearing section.
b. Inspect the front wheels for excessive radial or lateral runout and balance using procedure outlined in tire and wheel section.
2. Inspect the ball joints, linkage pivot points, and the steering gear for looseness, roughness, binding, wear or noise using the appropriate component diagnosis procedure.
3. Road test the vehicle. The purpose of road testing the vehicle is to fully understand the voice of the customer. During the road test, the customer complaint should be duplicated under the same conditions that the customer cites (i.e. road, lane, and speeds) as an issue.

a. Vehicle pulling and steering wheel off center complaints can often be misdiagnosed. The road test should be used to determine if the vehicle is actually pulling, or if the steering wheel is off center.
b. While driving in a stable manner, a test driver can differentiate a pull and wheel off center condition by momentarily releasing the steering wheel and observing whether the vehicle tracks straight, follows the road crown or if the steering wheel is simply off center to one side.
c. Depending on the results, the appropriate corrective action should be applied.

SUSPENSION AND STEERING SYSTEM DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
FRONT END NOISE	1. Loose or worn hub and bearing. 2. Loose or worn steering or suspension components.	1. Replace the hub and bearing. 2. Tighten or replace components as necessary.
EXCESSIVE PLAY IN STEERING	1. Loose or worn hub and bearing. 2. Loose or worn steering or suspension components. 3. Loose or worn steering gear.	1. Replace the hub and bearing. 2. Tighten or replace components as necessary. 3. Replace steering gear.
FRONT WHEELS SHIMMY	1. Loose or worn wheel bearing. 2. Loose or worn steering or suspension components. 3. Tires worn or out of balance. 4. Wheel Alignment.	1. Replace the wheel bearing. 2. Tighten or replace components as necessary. 3. Replace or balance the tires. 4. Align the vehicle to specifications.
VEHICLE INSTABILITY	1. Loose or worn wheel bearing. 2. Loose or worn steering or suspension components. 3. Tire pressure. 4. Wheel Alignment.	1. Replace the wheel bearing. 2. Tighten or replace components as necessary. 3. Adjust the tire pressure. 4. Align the vehicle to specifications.
EXCESSIVE STEERING EFFORT	1. Loose or worn steering gear. 2. Column coupler binding. 3. Tire pressure. 4. Wheel Alignment.	1. Replace the steering gear. 2. Replace the coupler. 3. Adjust the tire pressure. 4. Align the vehicle to specifications.
VEHICLE PULLS TO ONE SIDE	1. Tire pressure.	1. Adjust the tire pressure.

the status of the appropriate PAS feature from enabled to disabled, or from disabled to enabled, then sends an electronic system status message back to the BCM over the CAN-IHS data bus as confirmation.

The BCM responds to the system status message by sending a message to the IP switch bank over the CAN data bus to control the park assist LED units so that they are illuminated only when appropriate while the status of the ignition is ON, and are extinguished when the status of the ignition is anything except ON. If the PAS is disabled due to a monitored fault or failure, a press of the park assist OFF push button will result in the LED flashing on and off for about five seconds, then lighting solid.

REAR CROSS PATH

The Blind Spot Monitoring (BSM) system provides a feature called Rear Cross Path (RCP) mode. The RCP mode is active only when the transmission gear selector is in the Reverse (**R**) position. The RCP mode is intended to aid the driver when backing out of parking spaces where vision of vehicles crossing laterally through the rear path of the host vehicle may be blocked. The host vehicle must proceed slowly and cautiously out of the parking space until the rear end of the vehicle is exposed. The BSM radar sensors will then have a clear view of the crossing traffic and, if an oncoming vehicle (object of interest) is detected, will generate visual and audible alerts to the operator of the host vehicle.

The BSM system monitors the rear detection zones on both sides of the vehicle for objects that are moving toward the side of the vehicle with speeds of from 1 to 3 km/h (1 to 2 mph) up to 35 km/h (22 mph), such as typically encountered in parking lot situations. In vehicles equipped with the BSM option, the RCP mode is enabled from the factory as a default.

The RCP mode normally uses the same BSM system settings. However, the RCP mode will always include the audible alert feature, even if it was disabled for the BSM mode using the radio Setup Menu. The audible alert can not be deactivated for the RCP mode. The RCP mode visual alert is illuminated only in the display located on the same side of the vehicle where the object of interest is detected.

OPERATING CONDITIONS – The park assist system is active only when the ignition switch is in the ON or START positions, the parking brake is released, and the transmission gear selector lever is in one of the following:

- REVERSE position and the vehicle speed is less than 16 km/h (10 mph)
- DRIVE position and the vehicle speed is less than 14 km/h (8 mph) on deceleration
- DRIVE position and the vehicle speed is less than 18 km/h (12 mph) on acceleration

The park assist system is enabled from the factory as a default but can be disabled or enabled using the personal settings menu of the IPC.

DISABLE FEATURE – The feature is provided for trailer towing purposes. With a trailer attached to the vehicle the audible and visible park assist alerts would be incessant whenever the gear selector lever was in the REVERSE position due to the proximity of the trailer to the rear of the vehicle. When the system is disabled, a park assist icon will appear within the display. On vehicles equipped with an optional IPC, a **PARK ASSIST OFF** textual message will appear within the IPC display of the instrument cluster whenever the gear selector lever is in the REVERSE position.

When the PAM monitors a problem in any of the park assist system circuits or components, it stores a fault code or Diagnostic Trouble Code (DTC) in its memory circuit, sends an electronic message to the IPC, and a **SERVICE PARK ASSIST SYSTEM** textual message is displayed in the IPC display.

When the Park Assist System button is pressed to ON, the IP switch bank sends an output signal to the BCM. The BCM then relays an electronic switch request message to the PAM over the CAN data bus. The PAM responds to each switch request message by toggling the status of the appropriate park assist system feature from enabled to disabled, or from disabled to enabled, then sends an electronic system status message back to the BCM over the CAN data bus as confirmation.

Blind Spot Sensors

[Component Index](#)

The blind spot sensors monitors the rear detection zones on both sides of the vehicle for objects that are moving toward the side of the vehicle with speeds of from 1 to 3 km/h (1 to 2 mph) up to 35 km/h (22 mph), such as typically encountered in parking lot situations. In vehicles equipped with the BSM option, the RCP mode is enabled from the factory as a default. They will alert the driver during park assist maneuvers.

Body Control Module (BCM)

[Component Index](#)

The BCM is the gateway for CAN-IHS to CAN – Chassis (CAN-C) bus communications.

Inputs/Outputs

- Receiving the IP switch bank input request for PAS ON/OFF requests
- Enabling and disabling the PAS light
- Outputs the chime activation request
- Requests to the IPC to display the vehicle graphics layout on the IPC screen.
- Receives the trailer tow input from the Trailer Tow Module (TTM).
- Reverse gear status input from the Powertrain Control Module (PCM) obtained over the CAN bus from the Transmission Control Module (TCM)

Instrument Panel Cluster (IPC)

[Component Index](#)

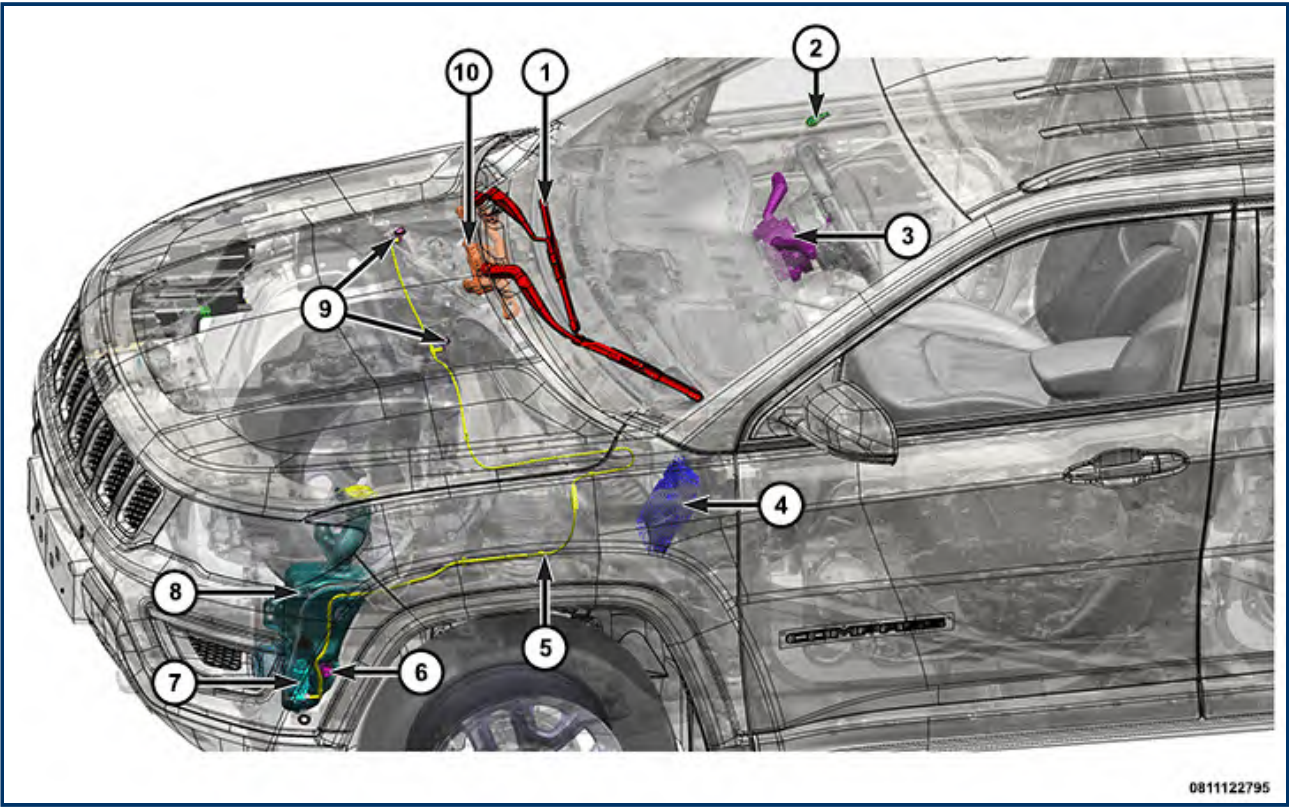
The IPC displays all of the PAS warning and audibles.

Inputs/Outputs

- Input from the radio - customer programmable features related to the PAS.
- Inputs from the BCM:
 - Display activation
 - Display graphic layouts
 - Park alerts
 - Chime activations
 - PAM system status
 - Above speed indication
- IPC shows/performs:
 - PAS Display

DESCRIPTION AND OPERATION - FRONT

DESCRIPTION



The front wiper system consists of the following components:

Component Index

1.	Front Wiper Arms And Blades
2.	Light Rain Sensor Module (LRSM)
3.	Steering Column Control Module (SCCM) - Activation controls
4.	Body Control Module (BCM)
5.	Washer Fluid Hoses And Tubes
6.	Washer Fluid Level Switch
7.	Two-Way Washer Pump - for the front and rear washer circuit
8.	Washer Fluid Reservoir
9.	Washer Fluid Nozzles - with integral check valves
10.	Wiper Motor And Linkage

Front and rear wipers and washers are standard equipment on this vehicle. Both wiper and washer systems are controlled by the right stalk of the SCCM which sends MUX signal inputs to the BCM to determine what function or functions of the system are activated or deactivated. The BCM controls the wiper and washer system by providing Low Side Driver (LSD) inputs to the relays in the BCM which activate the electric motors that drive the wiper or washer when selected by the driver. The Fused B+ output to the wiper and washer pump motors are protected by a 20 amp fuse in the BCM. The relays are not serviceable separately as they are soldered to the printed circuit board of the BCM.

The vehicle may be equipped with a rain detection sensor on the windshield. When rain/water is detected on the windshield, the system will automatically operate the wipers. The system uses an infrared sensor fitted behind the windshield in front of the interior rear view mirror. The sensor continuously sends infrared rays against the windshield to detect the presence of water on the glass; if detected, the sensor will send a signal on the Local Interface Network (LIN) data bus to the BCM, which will activate the wiper at the appropriate speed.

The rain sensor is built into an electronic LRSM which, in addition to detecting moisture on the windshield, enables the dusk function by measuring ambient light levels. According to this information and the sensitivity level set by the user, it controls both windshield cleaning and running lights.

OPERATION

Operating front wiper/washer conditions.

Ignition switch status	Function that can be activated
------------------------	--------------------------------

REMOVAL AND INSTALLATION

REMOVAL

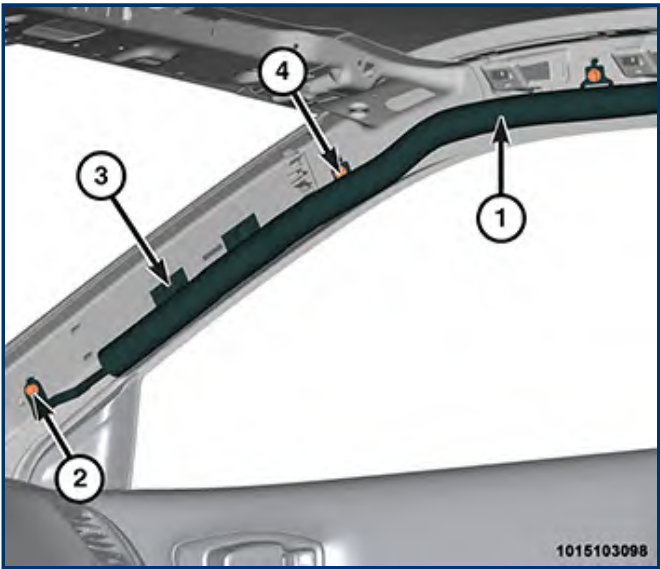
- WARNING:** To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.
- WARNING:** To avoid serious or fatal injury when removing a deployed airbag, rubber gloves, eye protection, and a long-sleeved shirt should be worn. There may be deposits on the airbag unit and other interior surfaces. In large doses, these deposits may cause irritation to the skin and eyes.
- WARNING:** To avoid serious or fatal injury, use extreme care to prevent any foreign material from entering the side curtain airbag, or becoming entrapped between the side curtain airbag cushion and the headliner. Failure to observe this warning could result in occupant injuries upon airbag deployment.

NOTE: The following procedure is for replacement of an ineffective or damaged side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints ([Refer to 10 - Restraints - Standard Procedure](#)). If the side curtain airbag has been deployed, review the recommended procedures for Service After A Supplemental Restraint Deployment before removing the airbag from the vehicle ([Refer to 10 - Restraints - Standard Procedure](#)).

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable. Wait 2 minutes for the system capacitor to discharge before continuing service.
2. Fully recline both front seat backs.

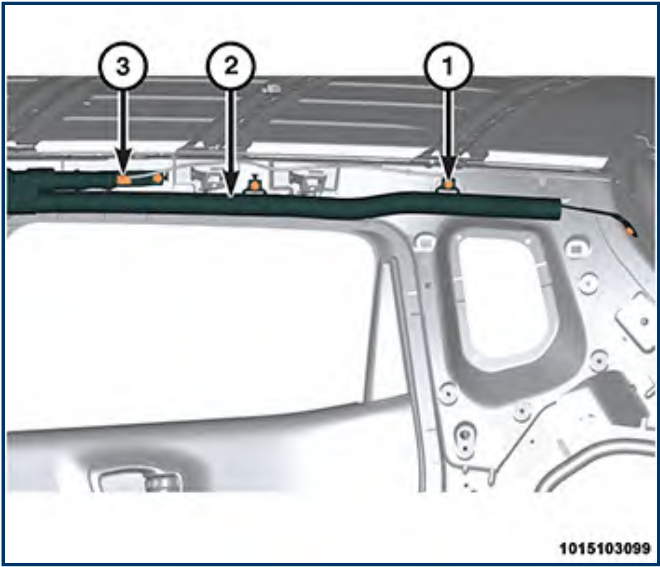
NOTE: Use the headliner removal procedure to lower the headliner from the inner roof panel. The headliner will NOT be removed from the vehicle interior.

3. Lower the headliner from the inner roof panel and allow it to rest within the vehicle interior ([Refer to 23 - Body/Interior/HEADLINER/Removal and Installation](#)).
4. Remove the three screws (4) that secure the SABIC (1) to the inner A-pillar and front inner roof rail.
5. Disengage the front tether (2) from the retaining clip on the inner A-pillar.
6. Disengage the two push pin retainers (3) securing the SABIC to the inner A-pillar.



7. Disconnect the body wire harness connector (3) for the SABIC (2) from the connector receptacle of the inflator above the front door opening.
8. Remove the four screws (1) that secure the SABIC (2) to the inner roof rail above the front, rear door openings and rear of the inner roof rail.
9. Remove the SABIC (2) from the vehicle as a unit.

NOTE: If the SABIC has been deployed, the B-pillar and C-pillar deploy brackets must also be inspected ([Refer to 10 - Restraints/AIR BAG, Side/Removal and Installation](#)) and select DEPLOY BRACKET - B-Pillar or DEPLOY BRACKET - C-Pillar for removal and installation procedures.



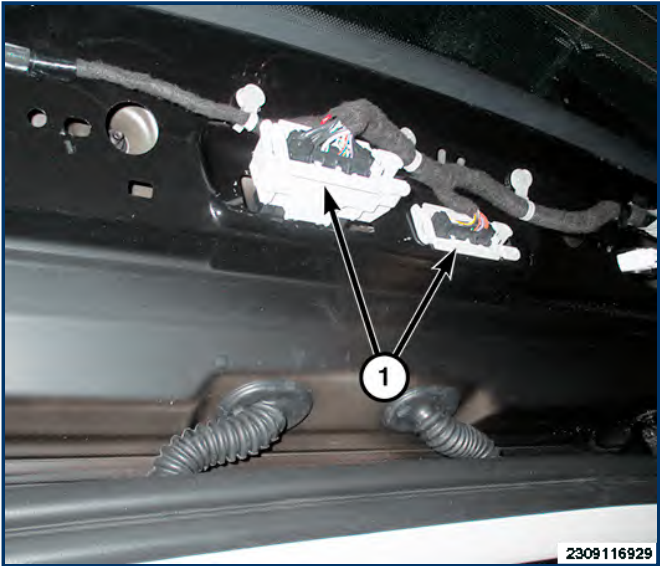
INSTALLATION

NOTE: The following procedure is for replacement of an ineffective or damaged side curtain airbag (also known as Side AirBag Inflatable Curtain/SABIC). If the airbag is ineffective or damaged, but not deployed, review the recommended procedures for Handling Non-Deployed Supplemental Restraints ([Refer to 10 - Restraints - Standard Procedure](#)). If the side curtain airbag has been deployed, review

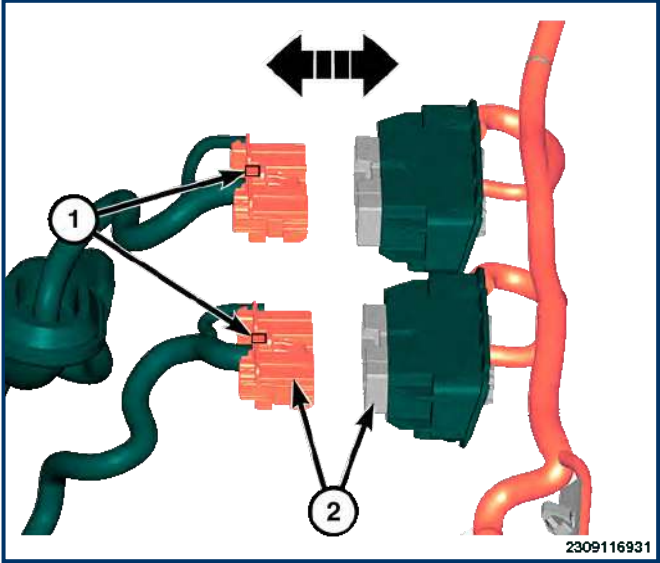
REMOVAL AND INSTALLATION

REMOVAL

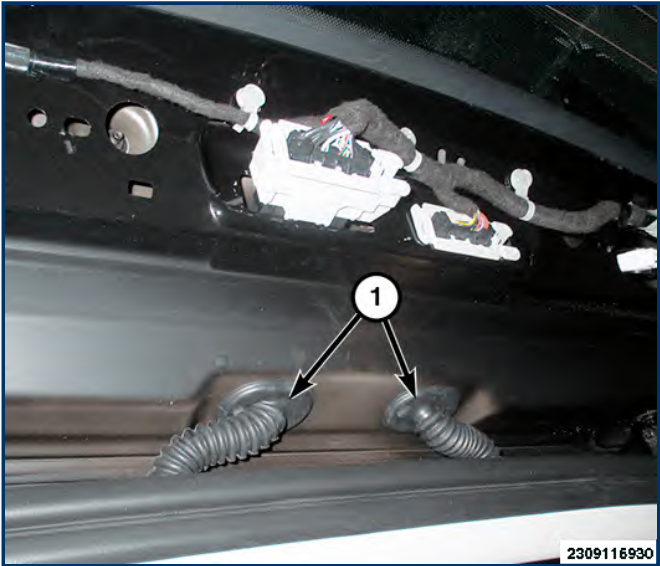
- 1. Remove the spoiler ([Refer to 23 - Body/Decklid/Hatch/Liftgate/Tailgate/SPOILER/Removal and Installation](#)).
- 2. Release the wire harness connectors (1) and extract from the liftgate.



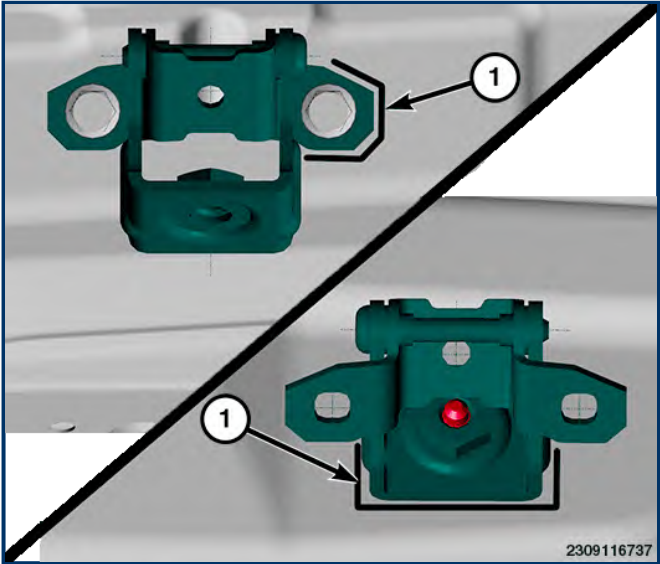
- 3. Press the tabs (1) and disconnect both of the wire harness connectors (2).



- 4. Disconnect the wire harness boots (1) and separate the wire harness from the liftgate.



- 5. Using a grease pencil or equivalent, mark the hinge location (1) to aid during installation.



- 6. Disconnect and plug the rear washer hose (1).

AIR OUTLET TEMPERATURE SENSOR - LOWER LEFT

 **Special Tools:** Click to display a list of tools used in this procedure

REMOVAL

NOTE:
LHD shown RHD similar.

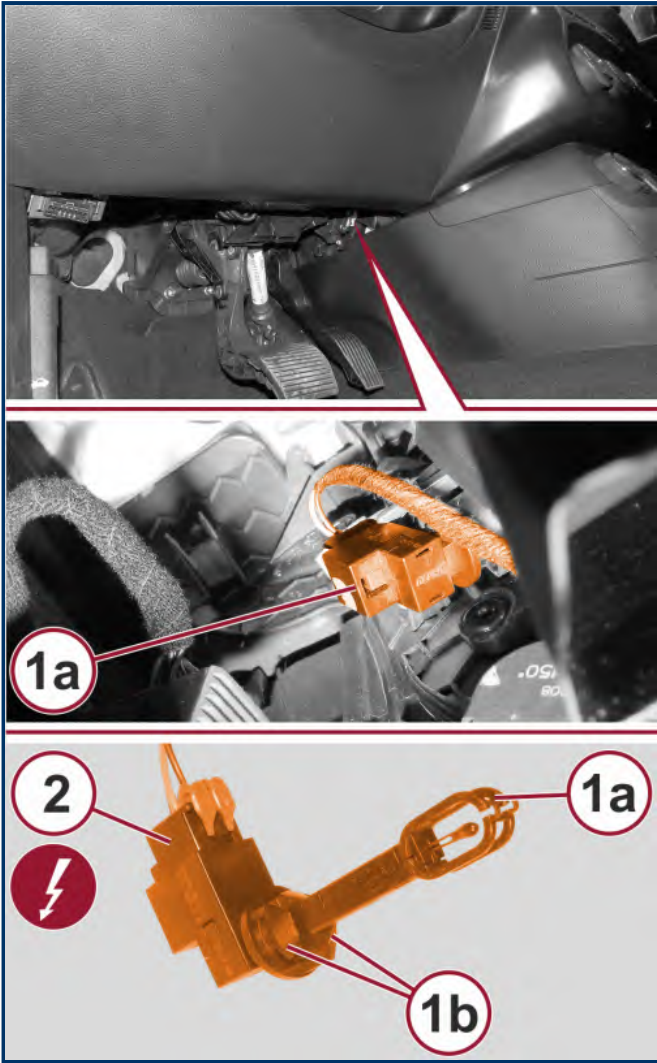
WARNING:
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the Intelligent Battery Sensor (IBS)/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

WARNING:
Disable the airbag system before attempting any steering wheel, steering column or instrument panel component diagnosis or service. Disconnect and isolate the negative battery (ground) cable and wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to follow these instructions may result in accidental airbag deployment and possible serious or fatal injury.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the steering column opening cover ([Refer to 23 - Body/Instrument Panel/COVER, Steering Column Opening/Removal and Installation](#)).

NOTE:
If RHD remove the instrument panel glovebox ([Refer to 23 - Body/Instrument Panel/GLOVE BOX, Instrument Panel/Removal and Installation](#)).

3. Disconnect the Heating, Ventilation and Air Conditioning (HVAC) wire harness connector (2) from the air duct temperature sensor (1a).
4. Using Trim Stick [C-4755](#) (3) or equivalent, disengage the air duct temperature sensor (1a) from the left side of the HVAC housing and remove the sensor.



INSTALLATION

NOTE:
LHD shown RHD similar.

1. Install the air duct temperature sensor (2) into the left side of the HVAC housing. Be certain the sensor retaining tabs (1b) are fully engaged to the housing.
2. Connect the HVAC wire harness connector (2) to the air duct temperature sensor (1a).

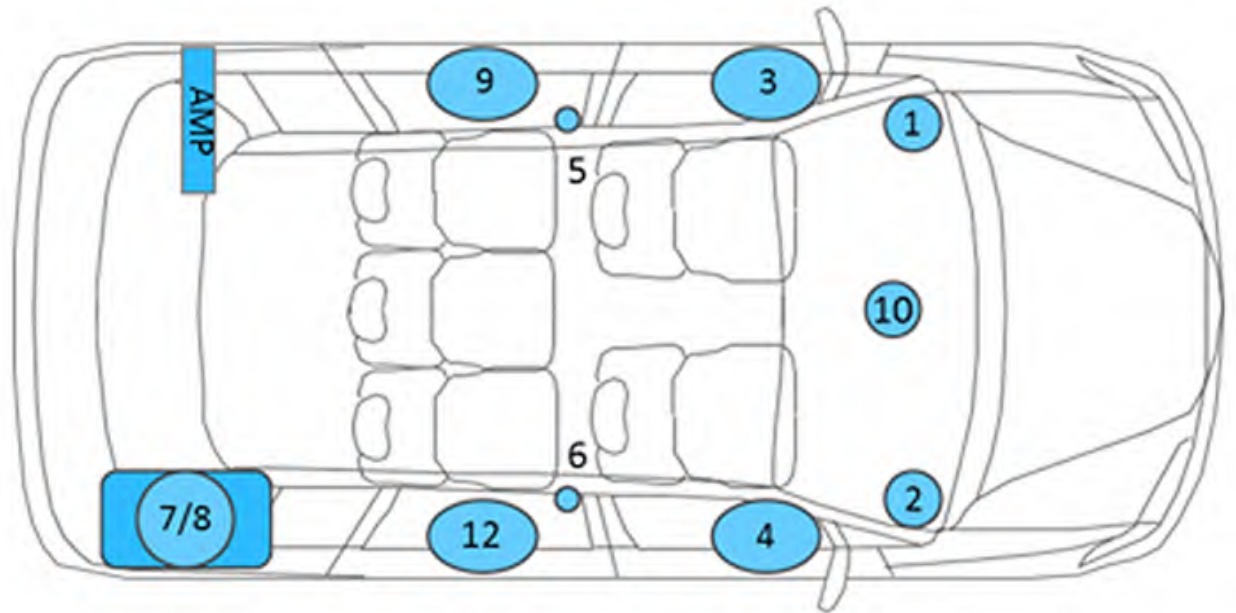
B1465-11-CHANNEL 2 AUDIO SPEAKER OUTPUT - CIRCUIT SHORT TO GROUND

For a complete AUDIO SYSTEM BASE/PREMIUM wiring diagram, ([refer to the Wiring Information](#)).

AUDIO CHANNEL MAPPING

NOTE: The use of speaker channel mapping and sales codes are being used to quickly identify those differences in location; and the total number of speakers in the audio system configuration noted below.

NOTE: Channel 11 is not used in this system configuration below.



2806115690

Theory of Operation

The speaker circuits are outputs of the Amplifier. The Amplifier controls and monitors these circuits for a concern when the ignition is cycled on.

For additional detailed description and operation of the Audio System. ([Refer to 08 - Electrical/8A - Audio/Video/Entertainment/Connectivity/Description and Operation](#)).

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following condition is met:

- With the ignition on.

Set Conditions:

- The Amplifier (AMP) detects a shorted to ground condition on the speaker output circuit.

Default Actions:

- Power IC automatically shuts down individual channel speaker output when this fault is detected.

Possible Causes
PASSENGER AMPLIFIED RIGHT I/P SPEAKER (+/-) CIRCUIT SHORTED TO GROUND
RIGHT I/P SPEAKER
AMPLIFIER

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

Diagnostic Test

U2008-64-MESSAGE STATUS_LBSS BSS_LT_CHIME_TYPESTS 1 FROM LEFT BLIND SPOT SENSOR - SIGNAL PLAUSIBILITY FAILURE

Perform the COMMUNICATION DIAGNOSTIC PROCEDURE. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Body Control \(BCM\) /Standard Procedure](#)).

NOTE: Treat this DTC as an IMPLAUSIBLE SIGNAL DTC when performing the COMMUNICATION DIAGNOSTIC PROCEDURE.

B007F-11-PASSENGER SEATBELT RETRACTOR PRETENSIONER DEPLOYMENT CONTROL-CIRCUIT SHORT TO GROUND

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

Theory of Operation

When powered, the Occupant Restraint Controller (ORC) sends a test current to the squibs to verify the integrity of the squib and wiring. These circuits are maintained in a “floating” configuration at the module (connected to neither power nor ground) as protection against inadvertent deployment.

When Monitored and Set Conditions

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

- Ignition on.

Set Conditions:

- The Occupant Restraint Controller (ORC) monitors the squib circuits for multiple circuit failures. If the controller detects a circuit value that is out of the allowable range, the ORC will set this DTC.

Default Actions:

- In the case that this DTC is set, the squib may still deploy in a crash event.

Possible Causes
PASSENGER RETRACTOR PRETENSIONER LINE 2 CIRCUIT SHORTED TO GROUND
PASSENGER RETRACTOR PRETENSIONER LINE 1 CIRCUIT SHORTED TO GROUND
PASSENGER RETRACTOR PRETENSIONER
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](#)).

Circuits To Be Tested

DRIVER SEATBELT RETRACTOR PRETENSIONER

Circuit ID	Circuit Description
R277	(+) LINE 2
R278	(-) LINE 1

PASSENGER SEATBELT RETRACTOR PRETENSIONER

Circuit ID	Circuit Description
R279	(+) LINE 2
R280	(-) LINE 1

Diagnostic Test

1. CHECK FOR AN ACTIVE DTC

- With the scan tool, read ORC DTCs and record on the repair order.
- Record the Environmental Data.
- With the scan tool, erase DTCs.

C0034-2F-RIGHT FRONT WHEEL SPEED SENSOR - SIGNAL ERRATIC

Theory of Operation

The Anti-Lock Brake System (ABS) Module receives signals from the Wheel Speed Sensors (WSS) of all four wheels. The wheel speed sensors convert the wheel speed into a signal, sent to the ABS Module. A magnetic wheel (encoder) that is internal to the wheel bearing is used to trigger the measuring mechanism for each wheel. Each wheel has a wheel speed sensor and an encoder. There is no adjustment between the wheel speed sensor and the encoder.

When Monitored and Set Conditions

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

- Ignition on.
- No under or over voltage conditions.
- Vehicle speed above 40 km/h (25 mph).

Set Conditions:

- Anti-lock Brake System (ABS) Module detects multiple changes in Wheel Speed Sensor (WSS) signals.

Default Actions:

- Anti-lock Brake System (ABS) indicator light illuminated.
- Electronic Stability Control (ESC) System indicator light illuminated.
- ABS disabled.
- ESC disabled.

Possible Causes
ANTI-LOCK BRAKE SYSTEM (ABS) MODULE WHEEL SPEED SENSOR (WSS) CIRCUIT RELATED DTCS
CHECK WHEEL SPEED SENSOR (WSS) SIGNALS
CHECK WHEEL SPEED SENSOR (WSS) FOR DAMAGE
INSPECT CIRCUITS/CONNECTOR/TERMINALS FOR DAMAGE
WHEEL BEARING/TONE WHEEL OR HUB DAMAGE
WHEEL SPEED SENSOR (WSS)
ANTI-LOCK BRAKE SYSTEM (ABS) MODULE

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

1. CHECK FOR AN ACTIVE DTC

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

1. Perform any Service Bulletins that may apply.
2. Turn the ignition on.
3. With the scan tool, read ABS DTCs and record on the repair order.
4. With the scan tool, read and record Environmental Data to help identify the conditions in which the DTC was set.
5. With the scan tool, erase DTCs.

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

6. Road test the vehicle over 40 km/h (25 mph).

NOTE: Vehicle must be driven for several minutes above 40 km/h (25 mph) for set conditions to be met.

7. With the scan tool, read ABS DTCs.

Did the DTC return?

Yes

- Go To [2](#)

No

- The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
- Perform the ABS INTERMITTENT CONDITION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Antilock Brake \(ABS\) - Standard Procedure](#)).

C220B-00-ABS ACC VALVES NOT CALIBERATED

Theory of Operation

The Anti-lock Brake System (ABS) Module monitors internal calibration of the valves.

When Monitored and Set Conditions

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

- Ignition on.
- No under voltage DTCs.

Set Conditions:

- Anti-lock Brake System (ABS) Module and Hydraulic Control Unit (HCU) do not match.
- ABS analog valves are not calibrated.

Default Actions:

- Electronic Stability Control (ESC) System indicator lamp illuminated.
- Electric Park Brake (EPB) Fail indicator lamp illuminated.
- ESC disabled.

Possible Causes
ABS VALVE CALIBRATION ROUTINE NOT PERFORMED
ANTI-LOCK BRAKE SYSTEM (ABS) MODULE
HYDRAULIC CONTROL UNIT (HCU)

Diagnostic Test

1. VERIFY THE DTC IS ACTIVE

1. Perform any Service Bulletins that may apply.
2. Turn the Ignition on.
3. With the scan tool, read and record the ABS DTCs on the repair order.
4. With the scan tool, read and record Environmental Data to help identify the conditions in which the DTC was set.
5. With the scan tool, erase ABS DTCs.
6. Park the vehicle on level ground.
7. Cycle the ignition from off to on.
8. With the scan tool, read the ABS DTCs.

Did the DTC return?

Yes

- Go To [2](#)

No

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

2. PERFORM THE ABS VALVE CALIBRATION ROUTINE

1. With the scan tool, under “Miscellaneous Functions” perform the ABS Valve Calibration routine.
2. With the scan tool, erase the DTCs.
3. Cycle the ignition from off to on.
4. With the scan tool, read the DTCs.

Does the DTC remain active?

Yes

- Perform the "ABS Valve Calibration" routine again, if still unsuccessful.
- Go To [3](#)

B21DD-84-SYSTEM VOLTAGE-SIGNAL BELOW ALLOWABLE RANGE

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following condition is met:

- Ignition on.

Set Conditions:

- The Comfort Seat Wheel Module (CSWM) receives a message over the Controller Area Network (CAN) that the system voltage was below 9.0 volts for over 61 seconds.

Possible Causes
LOW BATTERY SYSTEM VOLTAGE
CHARGING SYSTEM

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

Diagnostic Test

1. CHECK FOR ANY SERVICE BULLETINS OR MODULE SOFTWARE UPDATES

- Check for any applicable Service Bulletins or Flash updates related to the DTC.

Are there any applicable Service Bulletins or Flash updates?

Yes

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

No

- Go To [2](#)

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

- With the scan tool, read DTCs in all Electronic Control Units (ECUs) and record on the repair order.
- For future reference, run and save a vehicle Scan Report and all related recorded data.
- With the scan tool, erase all DTCs.
- Turn the ignition off for a minimum of 10.0 seconds.
- Turn the ignition on.
- Using the When Monitored and Set Conditions above and recorded data, operate the vehicle in the conditions that set the DTC.
- With the scan tool, read DTCs.

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 FOR PCM BATTERY OR CHARGING SYSTEM DTCS

- Refer to the recorded DTCs.

Are there any PCM battery OR charging system DTCs present?

Yes

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

Does the suspected Pinch Sensor have excessive resistance?

Yes

- Inspect the Pinch Sensor Harness/Connectors for damage/ bent pins or corrosion and repair as necessary.

No

- Inspect the Pinch Sensor for damage and verify the proper gap and flush panel adjustment according to the Service Information.
- If the issue is still present continue on with the Diagnostics.

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following condition is met:

- The Power Liftgate Module (PLGM) is awake.

Set Conditions:

- The PLGM has detects the Right Power Liftgate Pinch Sensor circuit voltage is above 4.6 volts.

Default Actions:

- The power cycle is aborted.

Possible Causes
RIGHT PINCH SENSOR SIGNAL CIRCUIT SHORTED TO VOLTAGE RIGHT LIFTGATE PINCH SENSOR

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. [\(Refer to 28 - DTC-Based Diagnostics/Standard Procedure\)](#).

1. CHECK FOR AN ACTIVE DTC

1. Turn the ignition on.
2. With the scan tool, create a Vehicle Scan Report and attach it to the repair order.
3. With the scan tool, read the PLGM DTCs.

Is the DTC active?

Yes

- Go To [4](#)

No

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

2. CHECK THE (Q78) RIGHT PINCH SENSOR SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE

1. Turn the ignition off.
2. Disconnect the Power Liftgate Module C2 (Component Side) connector from the Power Liftgate Module C2 harness connector.
3. Turn the ignition on.
4. Measure the voltage between ground and the (Q78) Right Pinch Sensor Signal circuit in the Power Liftgate Module C2 (Component Side) connector.

Is there any voltage present?

Yes

- Repair the (Q78) Right Pinch Sensor Signal 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 [5](#)

3. CHECK RELATED HARNESS CONNECTIONS

Yes

- Replace EGR Valve in accordance with the Service Information. ([Refer to 25 - Emissions Control/Exhaust Gas Recirculation/VALVE, Exhaust Gas Recirculation \(EGR\) Airflow Control/Removal and Installation](#)).
- Perform the POWERTRAIN VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Standard Procedure](#)).

No

- Go To [3](#)

3. CHECK THE EXHAUST SYSTEM FOR LEAKS

1. Perform the CHECKING THE EXHAUST SYSTEM FOR LEAKS diagnostic procedure. ([Refer to 29 - Non-DTC Diagnostics/Drivability - Diesel - Diagnosis and Testing](#)).

Was an Exhaust System leak found?

Yes

- Repair the Exhaust System leak.
- Perform the POWERTRAIN VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Standard Procedure](#)).

No

- Go To [4](#)

4. CHECK THE INTAKE SYSTEM FOR LEAKS

1. Perform INTAKE AIR SYSTEM PRESSURE TEST diagnostic procedure. ([Refer to 29 - Non-DTC Diagnostics/Drivability - Diesel - Diagnosis and Testing](#)).

Was an Intake System leak found?

Yes

- Repair the Intake Air System leak.
- Perform the POWERTRAIN VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Standard Procedure](#)).

No

- Go To [5](#)

5. CHECK THE CHARGE AIR COOLER FOR RESTRICTIONS

1. Visually inspect the Charge Air Cooler and Radiator fins for excessive debris restricting air flow through the Charge Air Cooler.

Are the Charge Air Cooler or Radiator restricted with debris?

Yes

- Clean the debris from the Charge Air Cooler or Radiator.
- Perform the POWERTRAIN VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Standard Procedure](#)).

No

- Go To [6](#)

6. CHECK THE AFTERTREATMENT SYSTEM PERFORMANCE

NOTE: Check for an clear any deposits in the Decomposition Tube before beginning this test.

1. Using the Scan Tool, run the Aftertreatment System Performance Test. ([Refer to 29 - Non-DTC Diagnostics/Driveability - Diesel/Diagnosis and Testing](#)).

Did the Aftertreatment System Performance Test pass?

Yes

- Go To [7](#)

No

- Perform the appropriate repair in accordance with the Service Information.
- Perform the POWERTRAIN VERIFICATION TEST. ([Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control \(PCM\) - Standard Procedure](#)).