

**2009 ENGINE**

**2.8L Diesel - Service Information - Grand Caravan, Town & Country**

**DESCRIPTION**

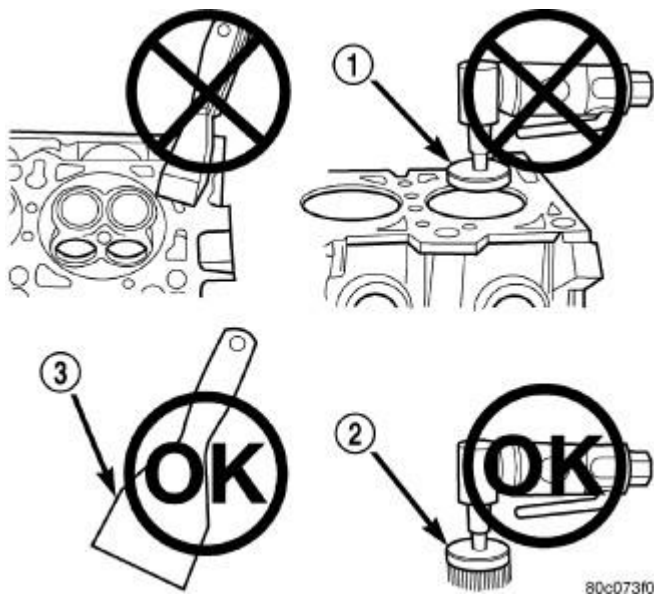
**DESCRIPTION**

The 2.8L (2776 cc) four-cylinder "common rail" direct injection engine is an in-line overhead valve design. The engine utilize a cast iron cylinder block. The engine has a one piece aluminum cylinder head with four valves per cylinder and dual overhead cam shafts. The 2.8L is turbocharged, intercooled and also equipped with a EGR cooler.

The identification stamp for the 2.8L is located on the right side of the engine block, below the turbocharger. The engine code label is located on the front timing cover and is the same as the engine I.D. and serial number. There is also a fuel system label on the front timing cover used for fuel system identification during ECM programming.

**STANDARD PROCEDURE**

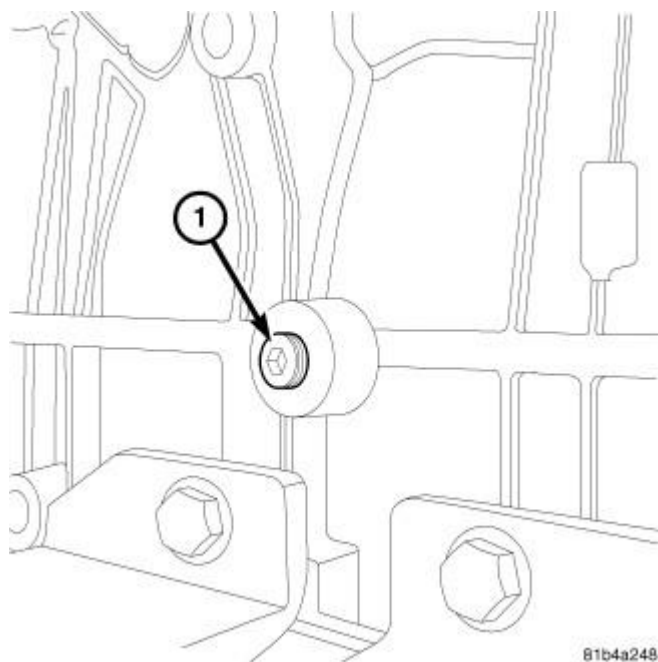
**ENGINE GASKET SURFACE PREPARATION**



**Fig. 1: Proper Tool Usage For Surface Preparation**  
 Courtesy of CHRYSLER LLC

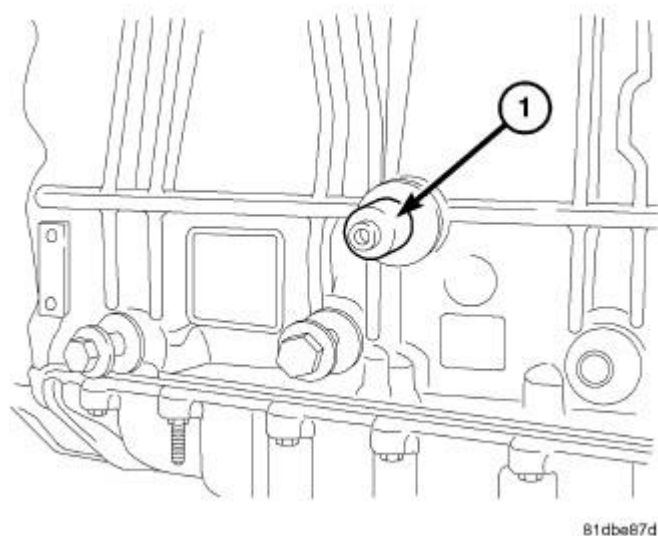
- 1 - ABRASIVE PAD
- 2 - 3M ROLOC™ BRISTLE DISC
- 3 - PLASTIC SCRAPER

cover are aligned.



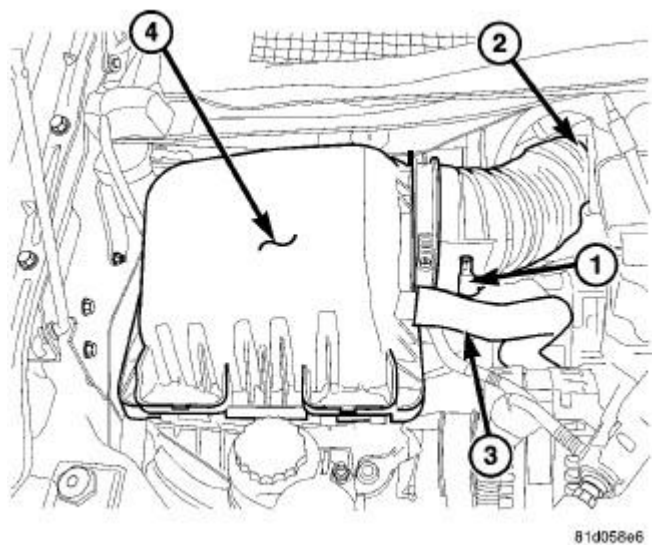
**Fig. 566: Crank Lock Plug Location**  
Courtesy of CHRYSLER LLC

4. Remove the engine block plug (1) for the crankshaft locking tool. The crankshaft locking tool is installed on the intake manifold side of the engine.



**Fig. 567: Crankshaft Locking Tool**  
Courtesy of CHRYSLER LLC

5. Install the Crankshaft locking tool VM 9992 into engine block located on the intake manifold side of the block. Make sure that the crankshaft locking tool threads into the crankshaft. If it does not thread into the

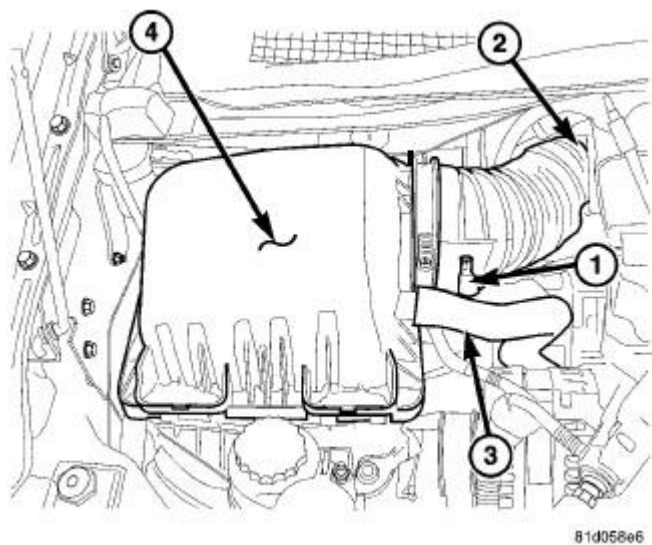


**Fig. 137: Identifying Wiring Harness Connector, Throttle Body & Makeup Air Hose**  
Courtesy of CHRYSLER LLC

1. Disconnect the intake air temperature sensor (IAT) wiring harness connector (1).
2. Disconnect the air inlet tube at the throttle body (2).
3. Disconnect the makeup air hose (3).
4. Release cover tabs from air box.
5. Lift cover and remove the element.

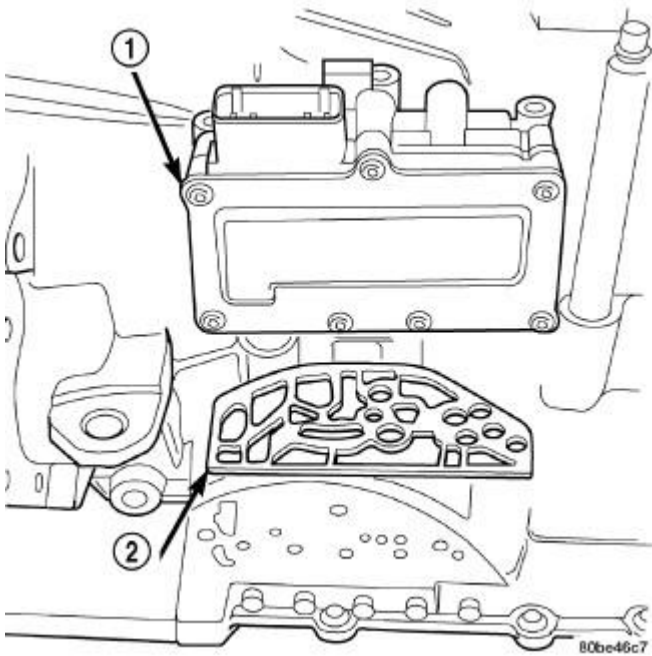
### Installation

#### INSTALLATION



## 2009 Chrysler Town & Country LX

2009 AUTOMATIC TRANSMISSION 41TE - Service Information - Grand Caravan, Town & Country



**Fig. 28: Identifying Solenoid/Pressure Switch Assembly & Gasket**  
Courtesy of CHRYSLER LLC

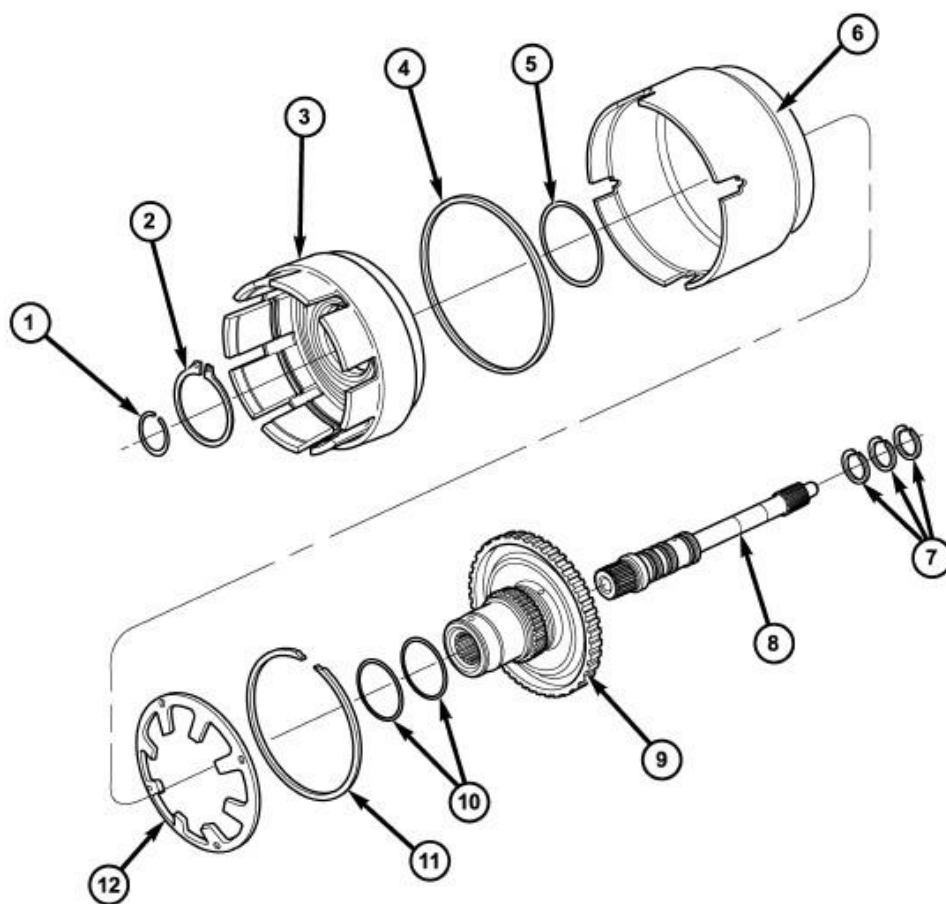
1 - SOLENOID/PRESSURE SWITCH ASSEMBLY

2 - GASKET

**NOTE:** If transaxle is being overhauled (clutch and/or seal replacement) or replaced, it is necessary to perform the PCM/TCM Quick Learn Procedure. Refer to Electrical - Electronic Control Modules/Electronic Control Modules/MODULE, Powertrain Control - Standard Procedure .

**NOTE:** This procedure does not include final drive (differential) disassembly.

1. Remove input and output speed sensors.
2. Remove the solenoid/pressure switch assembly-to-case bolts.
3. Remove solenoid/pressure switch assembly and gasket (2).



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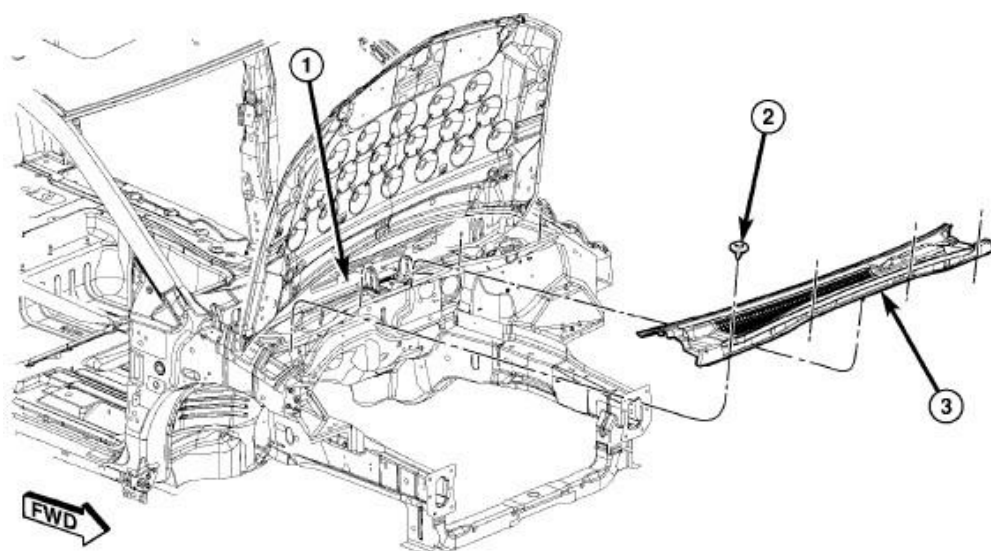
**Fig. 325: Input Clutch Hub, Retainer & OD/Reverse Piston**  
Courtesy of CHRYSLER LLC

- 1 - SNAP RING (INPUT SHAFT)
- 2 - SNAP RING
- 3 - CLUTCH RETAINER
- 4 - SEAL, OUTER
- 5 - SEAL, INNER
- 6 - OD/REVERSE PISTON
- 7 - SEAL, INPUT SHAFT
- 8 - SHAFT, INPUT
- 9 - HUB
- 10 - SEAL
- 11 - SNAP RING
- 12 - BELLEVILLE SPRING

7. Refer to the illustration as necessary when performing the following steps.

## 2009 Chrysler Town & Country LX

2009 ACCESSORIES AND EQUIPMENT Body - Grand Caravan, Town & Country



**Fig. 404: Removing/Installing Cowl Grille ("Cowl Panel Cover")**

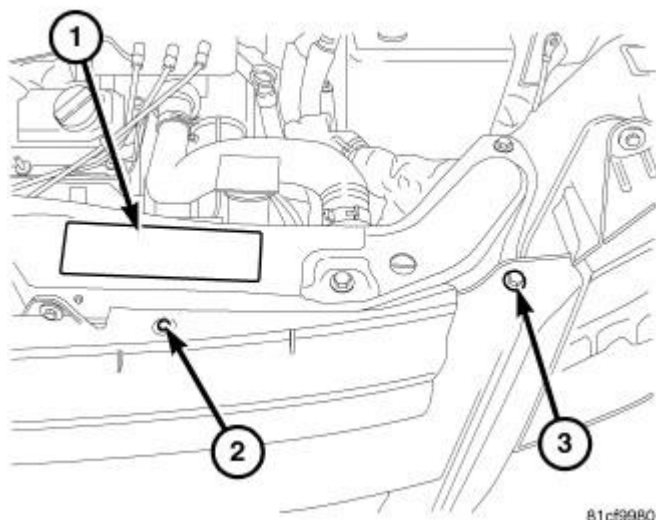
Courtesy of CHRYSLER LLC

1. Install the cowl grille (3) in place to the vehicle and route the clips under the windshield (1).
2. Install the push pins (2) and metal clips.
3. Install the wiper arms.

### CROSSMEMBER, RADIATOR

#### Removal

#### REMOVAL

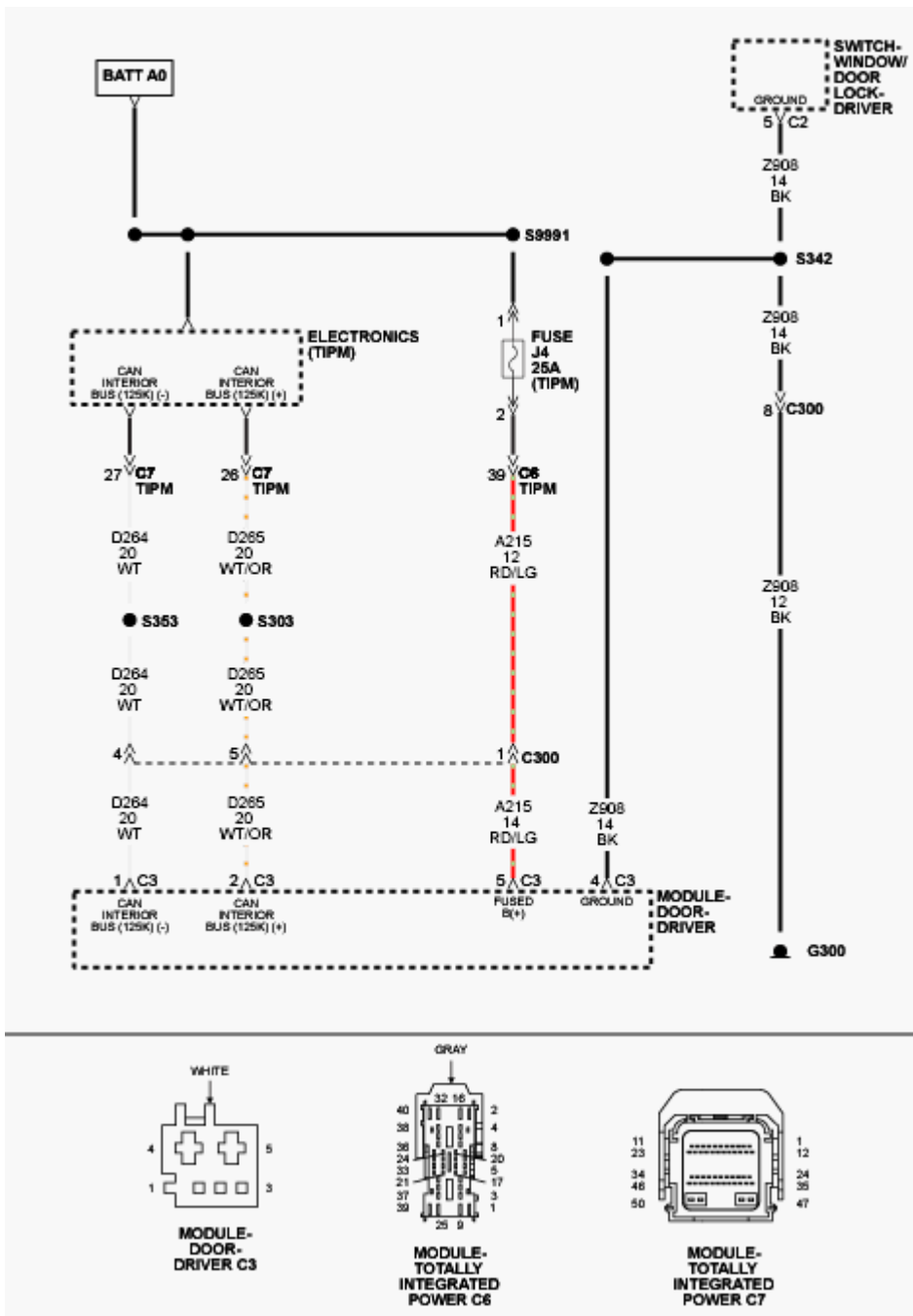


**Fig. 405: Identifying Grille Pushpin & Fastener Bolts**

Courtesy of CHRYSLER LLC

## 2009 Dodge Grand Caravan SE

2009 ACCESSORIES AND EQUIPMENT Driver Door Module (DDM) (DMFL/R) - Electrical Diagnostics - Grand Caravan, Town & Country

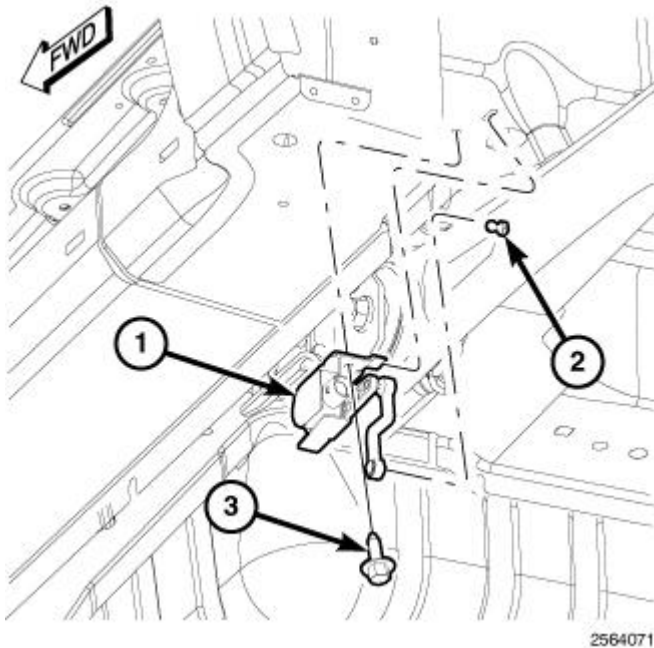


**Fig. 38: Driver Door Module - Circuit Schematic**

Courtesy of CHRYSLER LLC

For complete wiring diagrams refer to:

- **SYSTEM WIRING DIAGRAMS** for Town & Country.
- **SYSTEM WIRING DIAGRAMS** for Grand Caravan.
- **When Monitored:**



**Fig. 44: Rear Axle Sensor**  
Courtesy of CHRYSLER LLC

1. Disconnect and isolate the battery negative cable.
2. Raise and support the vehicle.
3. Locate the rear axle sensor (1) on the underside of the lower C-pillar reinforcement outboard of the left lower control arm for the rear axle.
4. Disconnect the underbody wire harness connector from the connector receptacle for the rear axle sensor.
5. Carefully unsnap the lower end of the rear axle sensor link from the ball stud (2) on the outboard side of the left lower control arm for the rear axle.
6. Remove the screw (3) that secures the rear axle sensor mounting bracket to the lower C-pillar reinforcement.
7. Disengage the two tabs on the inboard side of the rear axle sensor mounting bracket from the two slots in the lower C-pillar reinforcement.
8. Remove the rear axle sensor, mounting bracket and link from the vehicle as a unit.

## INSTALLATION

### FRONT



## 2009 Chrysler Town & Country LX

2009 HVAC Heating & Air Conditioning (MTC Three Zone) - Electrical Diagnostics - Grand Caravan, Town & Country

### Theory of Operation

The Rear A/C Heater Control works in conjunction with the A/C Heater Control to control the rear blower motor, rear temperature control and rear mode control. The Rear A/C Heater Control is constantly monitored by the A/C Heater Control for proper operation. If the monitored signal circuits are out of a calibrated range at DTC will set.

- **When Monitored:**

With the ignition on.

- **Set Condition:**

If the A/C Heater Control detects the voltage is greater than 4.86 volts for five seconds on the Rear Blend Signal circuit. If a valid voltage is detected for one second the DTC will change from active to stored and stay in the controllers memory for 100 consecutive ignition cycles.

Possible Causes
(C254) REAR BLEND SIGNAL CIRCUIT SHORTED TO VOLTAGE (C955) SIGNAL GROUND CIRCUIT SHORTED TO VOLTAGE (C955) SIGNAL GROUND CIRCUIT OPEN REAR A/C HEATER CONTROL A/C HEATER CONTROL

**Always perform the HVAC Pre-Diagnostic Troubleshooting procedure before proceeding. See HVAC PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE.**

### Diagnostic Test

#### 1. VERIFY THE DTC IS ACTIVE

1. Ignition on, engine not running.
2. With the scan tool, erase HVAC DTCs.
3. Turn the ignition off, wait 10 seconds, and turn the ignition on.

**NOTE: Make sure the Rear Control Lockout on the A/C Heater Control is not turned on.**

4. With the scan tool, read HVAC DTCs.

Does the scan tool display this DTC as active?

**Yes**

- Go to Step 2.

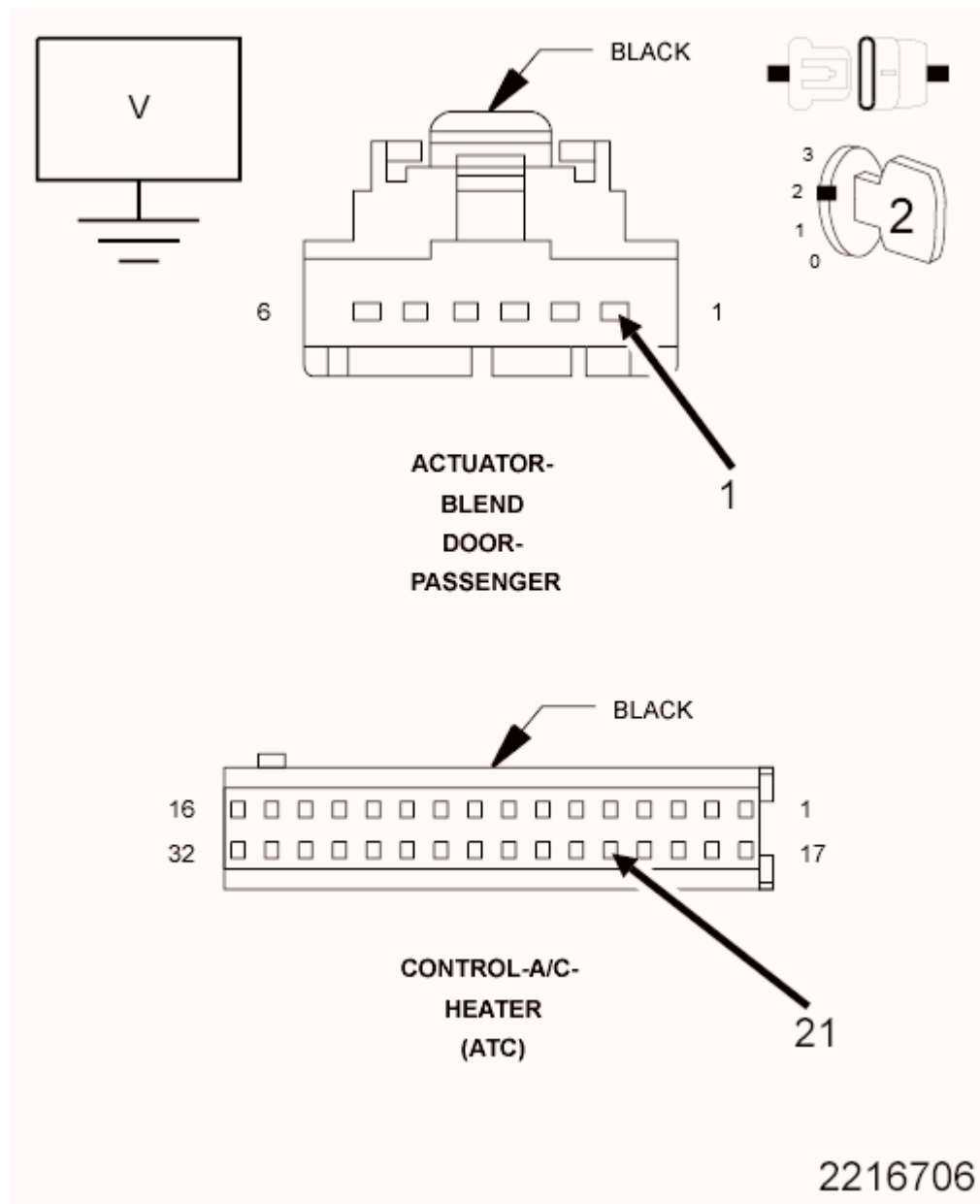
Yes

- Repair the (C33) Passenger Blend Door Driver circuit for a short to voltage.
- Perform the HVAC VERIFICATION TEST. See DTC-Based Diagnostics/HVAC - Standard Procedure.

No

- Go to 4

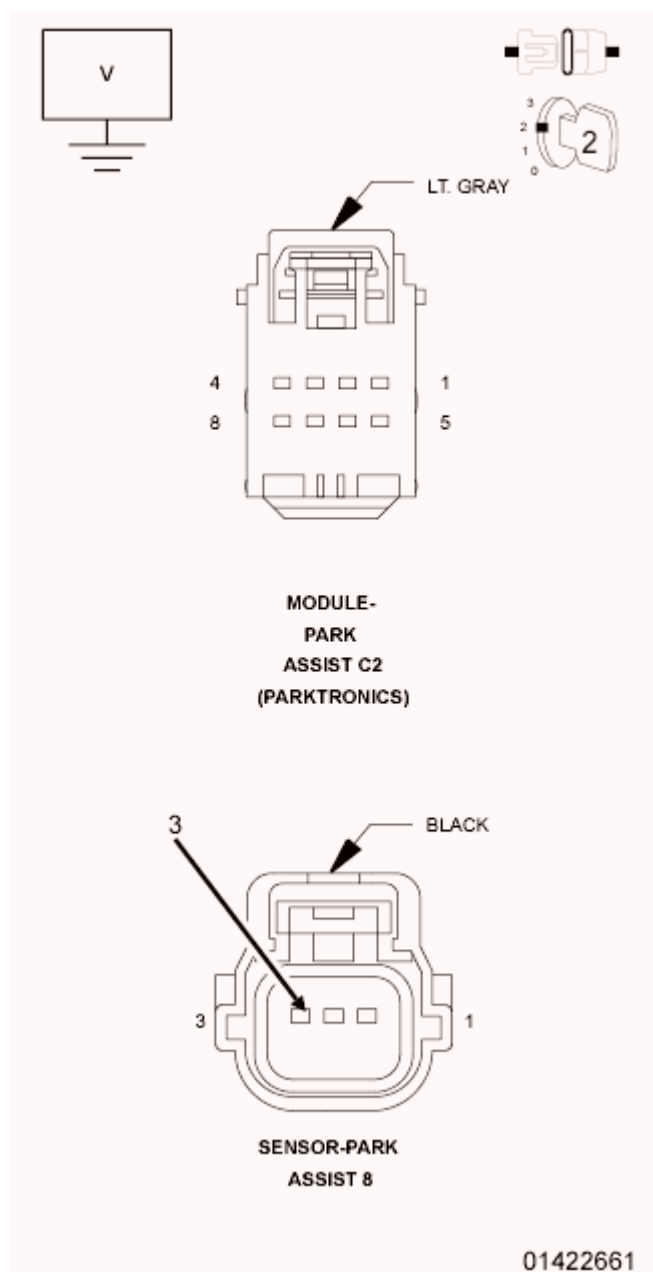
4. CHECK THE (C807) COMMON DOOR DRIVER 2 CIRCUIT FOR A SHORT TO VOLTAGE



**Fig. 74: Checking Common Door Driver 2 Circuit For Short To Voltage**

## 2009 Dodge Grand Caravan SE

2009 ACCESSORIES & EQUIPMENT Park Assist Module (PTS) - Electrical Diagnostics - Grand Caravan, Town & Country



**Fig. 9: Checking Park Assist Sensor Signal Circuit For Short To Battery**  
Courtesy of CHRYSLER LLC

1. Turn the ignition off.
2. Disconnect the Park Assist Module C2 harness connector.
3. Turn the ignition on.
4. Measure the voltage of the (D701) Park Assist Sensor No. 8 Signal circuit.

Is the voltage above 10.0 volts?

**Yes**

## 2009 Dodge Grand Caravan SE

2009 ACCESSORIES AND EQUIPMENT Audio (Radio) - Electrical Diagnostics - Grand Caravan, Town & Country

With the Radio on.

- **Set Condition:**

When the Output circuit is open for more than 3 seconds. The Radio will not set the fault if the radio confirms an amplifier is on the Bus.

### Possible Causes

SPEAKER

(X304) (X394) RIGHT REAR SPEAKER OUTPUT CIRCUIT

### Diagnostic Test

#### 1. INTERMITTENT CONDITION

1. Turn the ignition on.
2. With the scan tool, clear all Audio DTCs.
3. Turn the Radio on.
4. With the scan tool, read the DTC information.

Does the scan tool read: B140F-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

**Yes**

- Go to Step 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 BODY VERIFICATION TEST. Refer to **DTC-Based Diagnostics/MODULE, Totally Integrated Power (TIPM) - Standard Procedure** .

#### 2. (X394) (X304) SPEAKER OUTPUT CIRCUITS

1. Turn the ignition off.
2. Disconnect the Radio C1 harness connector.
3. Disconnect the Rear Right Audio Speaker connector.
4. Measure the resistance of each speaker (X304) (+) and (X394) (-) circuit between the Radio and the Speaker.

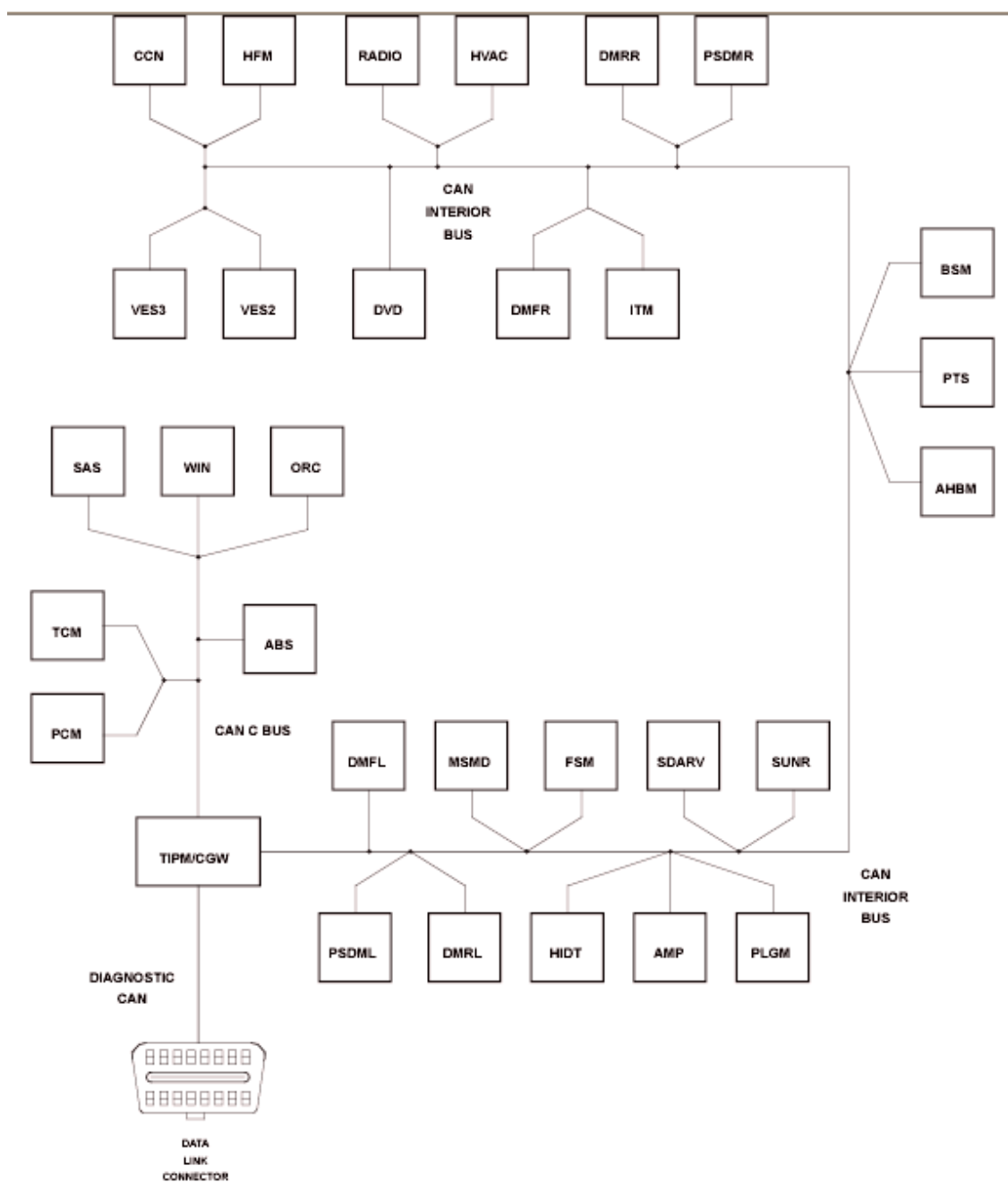
Is the resistance below 5.0 Ohms for each circuit?

**Yes**

- Go to Step 3.

## 2009 Dodge Grand Caravan SE

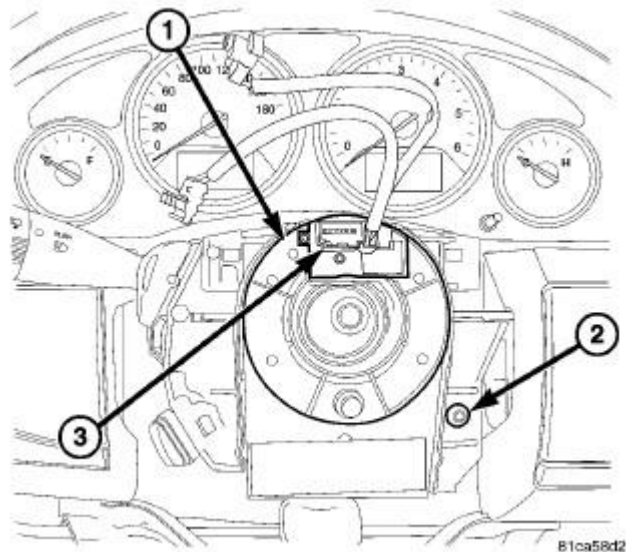
2009 ACCESSORIES AND EQUIPMENT Rear Right Door Module (DMRR) - Electrical Diagnostics - Grand Caravan, Town & Country



**Fig. 133: IPM (FCM/TIPM) Schematic**  
Courtesy of CHRYSLER LLC

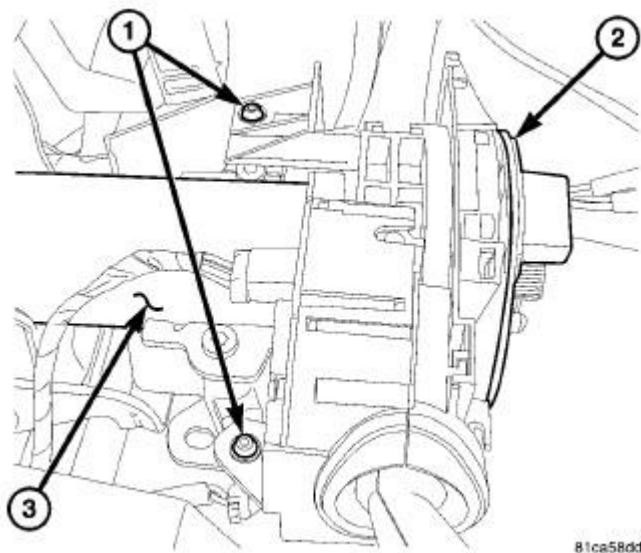
For complete wiring diagrams refer to:

- **SYSTEM WIRING DIAGRAMS** for Town & Country.
- **SYSTEM WIRING DIAGRAMS** for Grand Caravan.
- **When Monitored:**



**Fig. 31: Identifying SCCM Lower Mounting Screw**  
Courtesy of CHRYSLER LLC

1. Remove the lower mounting screw (2) attaching the Steering Column Control Module (SCCM) to the steering column.



**Fig. 32: Identifying SCCM Upper Mounting Screws**  
Courtesy of CHRYSLER LLC

2. Remove the two upper mounting screws (1) attaching the SCCM to the steering column.
3. Slide the SCCM off the steering column (2).

## 2009 Chrysler Town & Country LX

2009 ACCESSORIES AND EQUIPMENT Wireless Ignition Module (WIN) - Electrical Diagnostics - Grand Caravan, Town & Country

Do the TPM Sensor IDs match what is stored in the WIN?

**Yes**

- Replace the Wireless Ignition Node (WIN) in accordance with the Service Information.
- Perform the TPM VERIFICATION TEST. See **TIRE PRESSURE MONITOR (TPM) VERIFICATION**.

**No**

- Test complete.
- Perform the TPM VERIFICATION TEST. See **TIRE PRESSURE MONITOR (TPM) VERIFICATION**.

### 7. TIRE PRESSURE MONITORING (TPM) SENSOR INTERNAL FAULT SET

**NOTE:** Some vehicles will not receive the TPM Sensor data when the vehicle is stationary. The vehicle may need to be driven at speeds greater than 24 km/h (15 mph) for about a minute in order to receive TPM Sensor data.

1. Starting with the left front wheel, deflate the tire to 20 PSI, wait two minutes, and check the scan tool for changes to any compensated tire pressure values.
2. Look for a tire location with a non-responsive TPM Sensor ID.
3. Repeat this test on each wheel on the vehicle until the TPM Sensor in question has been identified.

Has the TPM Sensor been located?

**Yes**

- Install the Tire Pressure Monitoring (TPM) Sensor in accordance with the Service Information.
- Perform the TPM VERIFICATION TEST. See **TIRE PRESSURE MONITOR (TPM) VERIFICATION**.

**No**

- Test complete.
- Perform the TPM VERIFICATION TEST. See **TIRE PRESSURE MONITOR (TPM) VERIFICATION**.

### 8. INTERMITTENT TIRE PRESSURE MONITORING (TPM) SENSOR DTC

1. The conditions necessary to set this DTC are not present at this time.
2. Refer to any Technical Service Bulletins that may apply to this condition.
3. With the scan tool, clear DTCs in the Tire Pressure Monitoring (TPM) Module.
4. Test Drive the vehicle for a minimum of 10 minutes with vehicle speed greater than 24 km/h (15