

# Jeep®

## WRANGLER

# 2005



# BODY

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## 1.0 INTRODUCTION

The procedures contained in this manual include all the specifications, instructions, and graphics needed to diagnose body system problems. The diagnostics in this manual are based on the failure condition or symptom being present at time of diagnosis.

Please follow the recommendations below when choosing your diagnostic path.

1. First make sure the DRBIII® is communicating with the appropriate modules: i.e., if the DRBIII® displays a "No Response" condition, you must diagnose that first.
2. Read DTC's (diagnostic trouble codes) with the DRBIII®.
3. If no DTC's are present, identify the customer complaint.
4. Once the DTC or customer complaint is identified, locate the matching test in the Table of Contents and begin to diagnose the symptom.

All component location views are in Section 8.0. All connector pinouts are in Section 9.0. All schematics are in Section 10.0.

An asterisk (\*) placed before the symptom description indicates a customer complaint.

When repairs are required, refer to the appropriate service manual for the proper removal and repair procedure.

Diagnostic procedures change every year. New diagnostic systems may be added: carryover systems may be enhanced. **READ THIS MANUAL BEFORE TRYING TO DIAGNOSE A VEHICLE DIAGNOSTIC TROUBLE CODE.** It is recommended that you review the entire manual to become familiar with all the new and changed diagnostic procedures.

This book reflects many suggested changes from readers of past issues. After using this book, if you have any comments or suggestion, please fill out the form in the back of the book, and mail it back to us.

### 1.1 SYSTEM COVERAGE

This diagnostic procedures manual covers all 2005 Jeep® Wrangler (TJ) vehicles.

### 1.2 SIX-STEP TROUBLESHOOTING PROCEDURE

Diagnosis of the body system is performed in six basic steps:

1. verification of complaint
2. verification of any related symptoms
3. symptom analysis
4. problem isolation

5. repair of isolated problem
6. verification of proper operation

## 2.0 IDENTIFICATION OF SYSTEM

The vehicle systems that are part of the "body" system are:

- airbag system
- audio
- chime
- electrically heated systems
- instrument cluster
- vehicle communications

## 3.0 SYSTEM DESCRIPTION AND FUNCTIONAL OPERATION

The body system on the 2005 Jeep® Wrangler (TJ) consists of a combination of modules that communicate over the PCI bus (Programmable Communication Interface multiplex system). Through the PCI bus, information about the operation of vehicle components and circuits is relayed quickly to the appropriate module(s). All modules receive all the information transmitted on the bus even though a module may not require all information to perform its function. It will only respond to messages "addressed" to it through a binary coding process. This method of data transmission significantly reduces the complexity of the wiring in the vehicle and the size of wiring harnesses. All of the information about the functioning of all the systems is organized, controlled, and communicated by the PCI bus, which is described in the Vehicle Communication Section of the general information.

### 3.1 AIRBAG SYSTEM

The Airbag system is designed to provide increased driver and passenger protection if the vehicle is involved in a front-end collision. The airbag system is designed to be used in conjunction with the seat belt system.

Whenever the ignition switch is turned to the Run or Start position, the ACM performs a warning indicator bulb-check via a PCI bus request to the instrument cluster to illuminate the Airbag Warning Indicator. The indicator remains illuminated for 6 to 8 seconds, and then turns off. If the indicator remains off, the ACM has checked the system and found it to be free of discernable malfunctions.

The ACM monitors critical input and output circuits within the airbag system, ensuring the circuits are operating properly. Some circuits are

## GENERAL INFORMATION

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tested continuously; other circuits are tested only under certain circumstances. The ACM provides diagnostic information about the airbag system to the technician through the DRBIII® via the PCI bus.

The deceleration of g-forces resulting from the impact of a front-end collision causes the electronic sensor inside of the ACM to be triggered. This causes the inflators to be actuated, thus deploying the airbag(s). The total time between determining to deploy and deflation of the air bag is 1/10th of one second (100ms).

The 2005 Jeep Wrangler (TJ) may be equipped with a Passenger Airbag (PAB) On - Off Switch. This switch has an ACM-controlled light that will illuminate when the switch is in the Off position.

Use the test procedures in this manual to diagnose the cause of any customer complaint regarding the Airbag Warning Indicator (located in the instrument cluster), such as:

- Airbag warning indicator does not illuminate at any time
- Airbag warning indicator is illuminated at all times

### 3.1.1 PASSENGER AIRBAG ON-OFF SWITCH

Vehicles without rear seats will be equipped with a Passenger Airbag (PAB) On - Off Switch. The PAB On - Off Switch allows the vehicle operator to turn the passenger airbag function On or Off.

The Off indicator in the PAB On - Off Switch will be illuminated for 2 seconds whenever the ignition is transitioned to the Run position as a bulb check. The Off indicator will remain illuminated when the PAB On - Off Switch is turned to the Off position.

The PAB On - Off Switch assembly is mounted in the center of the instrument panel below the radio, this allows the Off indicator to be visible to both front seat occupants.

**WARNING: TO AVOID PERSONAL INJURY OR DEATH, ALWAYS CHECK THE PASSENGER AIRBAG ON - OFF SWITCH POSITION BEFORE DRIVING THE VEHICLE. A SWITCH IN THE WRONG POSITION INCREASES THE RISK OF SERIOUS INJURY OR DEATH IN A COLLISION.**

To operate the Passenger Airbag On - Off Switch, insert the ignition key into the PAB On - Off Switch keyway, push the key in to release the internal plunger, and rotate switch to the desired position. The spring-loaded locking plunger prevents the user from leaving the key in the switch. The key will be automatically ejected from the switch when inward force is not applied. The ignition key is the only key or object that should ever be inserted into the PAB On - Off Switch.

**NOTE: Do not turn the Passenger Airbag On - Off Switch while the ignition is in the Run position.**

The ACM continuously monitors the resistance of the Passenger Airbag On - Off Switch circuits to identify the switch position and to provide switch circuit diagnostics.

- ON Position: Passenger Airbag On - Off Switch resistance = 175 to 190 ohms
- OFF Position: Passenger Airbag On - Off Switch resistance = 820 to 870 ohms

If the ACM detects that the PAB On - Off Switch circuits are open, shorted to ground, or shorted to battery voltage, it will set Active and Stored DTC's. When a DTC is detected by the ACM, it will transmit a PCI bus message to the Instrument Cluster to illuminate the Airbag warning indicator. Whenever the Airbag warning indicator is illuminated, the ACM should be the first module to be interrogated.

If after replacing the ACM, any of the following codes are active, the ACM must be re-configured to match the vehicle equipment:

- MODULE NOT CONFIGURED FOR PAB OFF SWITCH
- PASSENGER AIRBAG ON - OFF SWITCH CIRCUIT OPEN
- PASSENGER AIRBAG ON - OFF SWITCH INDICATOR CIRCUIT OPEN

To properly configure the ACM, using the DRBIII®, select Miscellaneous from the Airbag system menu and follow instructions.

**WARNING: IGNORING THE AIRBAG WARNING INDICATOR IN THE INSTRUMENT CLUSTER COULD MEAN THE PASSENGER AIRBAG ON - OFF SWITCH IS NOT FUNCTIONAL AND THE PASSENGER AIRBAG MAY DEPLOY IF AN IMPACT OCCURS. IF THE AIRBAG WARNING INDICATOR ILLUMINATES, WHILE DRIVING, THE AIRBAG ON - OFF SWITCH WILL REMAIN FUNCTIONAL FOR THAT KEY CYCLE. IF THE AIRBAG WARNING INDICATOR ILLUMINATES AGAIN AT THE NEXT IGNITION ON AND STAYS ILLUMINATED FOR MORE THAN 6 - 8 SECONDS, THE ACM WILL DEFAULT TO PASSENGER AIRBAG ON. IF THE AIRBAG WARNING INDICATOR BULB TEST OR IF THE OFF INDICATOR DOES NOT ILLUMINATE WITH THE SWITCH IN THE OFF POSITION THE PASSENGER AIRBAG MAY DEPLOY IF AN IMPACT OCCURS. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.**

### 3.1.2 SPECIAL TOOLS

Some airbag diagnostic tests use special tools, the 8310 and 8443 airbag load tools for testing squib circuits. The load tools contain fixed resistive loads, jumpers, and adapters. The fixed loads are connected to cables and are mounted in a storage case.

The cables can be directly connected to some airbag system connectors. Jumpers are used to convert the load tool cable connectors to other airbag system connectors. The adapters are connected to the module harness connector to open shorting clips and to protect the connector terminal during testing.

When using the load tool, follow all of the safety procedures in the service information for disconnecting airbag system components. Inspect the wiring, connector, and terminals for damage or misalignment.

Substitute the airbag load tool in place of a Driver or Passenger airbag, curtain airbag, clockspring, or seat belt tensioner, (use a jumper if needed). Then follow all of the safety procedures in the service information for connecting airbag system components.

Read the module active DTC's. If the module reports NO ACTIVE DTC'S, the defective component has been removed from the system and should be replaced. If the DTC is still active, continue this process until all of the components in the circuit have been tested.

Then disconnect the module connector and connect the matching adapter to the module connector. With all airbags disconnected and adapter installed, the squib circuits can be tested for open and shorted conditions.

### 3.1.3 DIAGNOSTIC TROUBLE CODES

Airbag diagnostic trouble codes (DTC) consist of active and stored codes. If more than one DTC exists, diagnostic priority should be given to the active code(s). Each DTC is diagnosed by following a specific testing procedure. The diagnostic test procedures contain step-by-step instructions for determining the cause of the DTC. It is not necessary to perform all of the tests in this manual to diagnose an individual DTC.

Always begin by reading the DTC's using the DRBIII®. If more than one code exists, diagnostic priority should be given to active code(s).

Active DTC's for the airbag system are not permanent and will change the moment the cause of the code is corrected. In certain test procedures within this manual, DTC's are used as a diagnostic tool.

### 3.1.3.1 ACTIVE CODES

An active trouble code indicates an on-going malfunction. This indicates that the defect is currently active every time the ACM checks the particular circuit or function. It is impossible to erase an active code; active codes automatically erase themselves when the cause for the code has been corrected.

With the exception of the warning indicator trouble codes or malfunctions, when a malfunction has been detected by the ACM, the Airbag warning indicator is illuminated for a minimum of 12 seconds, or as long as the malfunction is present.

### 3.1.3.2 STORED CODES

Airbag codes are automatically stored in the ACM memory as soon as the malfunction is detected, with the exception of the Loss Of Ignition Run-Only code, which is an active code only. A stored code indicates that there was an active code present at some time. However, the code currently may not be present as an active code, although another active code may be.

When a trouble code occurs, the Airbag warning indicator illuminates for 12 seconds minimum, (even if the condition existed for less than 12 seconds). Stored codes display the time in minutes that the code was active, and the number of times that the ignition has been cycled since the active code was last detected.

The minimum time shown for any code will be one minute, even if the code was actually present for less than one minute. Thus, the time shown for a code that was present for two minutes 13 seconds, for example, would be three minutes.

If a malfunction is not active while performing a diagnostic test, the active code diagnostic test will not locate the source or the condition. In this case, the stored code can indicate an area to inspect. The following procedure may uncover a malfunction that is difficult to locate:

#### **WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING INSPECTION:**

If no obvious problems are found:

- Erase the stored codes
- Place the ignition in the Run position
- Wiggle the wire harness and connectors
- Rotate the steering wheel from stop to stop
- Recheck for active codes periodically as you work through the system.

# GENERAL INFORMATION

## 3.2 AUDIO SYSTEM

Some radio systems available on the 2005 TJ communicate on the PCI Bus. They use the bus for three reasons. The first is to communicate trouble codes, second is to receive dimming information, and the third is to receive cabin equalization information. The audio system is available in a 4 speaker base system and a 7 speaker system with an external subwoofer.

When troubleshooting output shorts or "output" error messages, the following applies:

On radios without an external amplifier, the term output refers to the path between the radio and the speaker. This type of circuit can be monitored all the way through the speaker connections by the radio assembly. When the radio displays a shorted output DTC with this type of system, the speaker, radio, or wiring could be at fault.

On radios with an external amplifier, the term "output" refers to the circuit between the radio connector and the amplifier. The radio is capable of monitoring only this portion and can tell nothing about the circuit between the amplifier and the speakers. Consequently, a shorted output DTC on this type of system would only refer to this circuit. A faulty speaker could not cause this DTC.

## 3.3 ELECTROCHROMIC COMPASS/TEMPERATURE MIRROR WITH LIGHTS

### DESCRIPTION

The optional self-dimming Electrochromic Compass/Temperature Mirror has a vacuum fluorescent (VF) display that is integrated into the rear view mirror. The Compass/Temp Mirror includes the compass/temperature display and two map/reading lamps. This display provides the outside temperature and one of eight compass headings to indicate the direction the vehicle is facing. The Compass/Temp Mirror displays the compass heading and the outside temperature at the same time. The Ambient Temperature Sensor monitors the outside temperature and is hardwired to the Compass/Temp Mirror.

### BUTTON OPERATION

The Compass/Temp Mirror incorporates 3 (mode/lamp) buttons to access and control various functions.

#### Left Button

- Press and Release
  - > Toggles Left Map Light On/Off

- Press w/ Right Switch for more than 5 seconds and Release
  - > Toggles Electrochromic Status On/Off -automatic On with each ignition cycle
  - > On mode is indicated by green status LED next to right button

#### Center Button

- Press for more than 3 seconds and Release
  - > Cycle through display status
    - Compass / Temperature (Fahrenheit) - °F mode stored to memory
    - Compass / Temperature (Celsius) - °C mode stored to memory
    - Display Off - off mode stored to memory
- Press and Hold for 3-6 seconds
  - > Activate zone variance mode (adjust compass for true north)
    - "Z" and the currently programmed zone (1-15) will flash in display window
    - Each press of the center button will increment to the next zone
    - When proper zone is selected, wait 5 seconds and mirror display returns to comp/temp (see variance zone map for proper zone number setting)
- Press and Hold for more than 6 seconds
  - > Activate compass calibration
    - "CAL" shows in display window until compass is calibrated (verify correct variance zone prior to initial or re-calibration)
    - Drive vehicle in a slow circle for 1.5 revolutions to recalibrate compass

#### Right Button

- Press and Release
  - > Toggles Right Map Light On/Off

### ELECTROCHROMIC (EC) OPERATION (auto dimming feature)

The automatic dimming feature detects forward and rear light conditions and adjusts the reflectance level of the mirror to eliminate unwanted glare by the use of 2 photoelectric sensors. The feature can be disabled by depressing the Left and Right buttons together for more than 5 seconds. The disable command will only remain in effect until the ignition is turned off. The EC function will automatically return to ON with each ignition cycle.

When the forward sensor detects daytime conditions, the rear sensor is inactive and the mirror remains in a high reflectance state.

When nighttime conditions are sensed by the forward sensor, the rear facing sensor is active and detects glare from rearward approaching vehicles or other glare producing light sources. The mirror

will automatically adjust to a low reflectance state to remove the unwanted glare from the inside rear view mirror. The mirror will automatically return to a high reflectance state whenever the vehicle is placed in REVERSE to ensure a clear view when backing up.

**NOTE: Do not allow the forward or rear sensors to be obstructed since this may impair proper performance.**

## ELECTROCHROMIC (EC) DIAGNOSTICS

Ensure that both the forward and rear sensors are not obstructed by hang items, tape, stickers, window decals, etc.

1. With the ignition in the ON position:  
Use a flashlight or other light source, to illuminate the forward facing sensor. The mirror should remain/adjust to a high reflectance state. This simulates daytime conditions.  
Cover the forward facing sensor with a finger or dark material. Using a flashlight or other light source, illuminate the rear-facing sensor. The mirror should dim to a low reflectance state. This simulates nighttime glare conditions.  
Cover the forward and rear facing sensors with fingers or dark material. The mirror should remain/adjust to a high reflectance state. This simulates nighttime non-glare conditions.
2. With the ignition in the ON position, the BRAKE applied and the vehicle in REVERSE:  
Cover the forward facing sensor with a finger or dark material. Using a flashlight or other light source, illuminate the rear-facing sensor. The mirror should remain in a high reflectance state. This simulates nighttime driving conditions, providing a clear view while backing up.  
If the EC Comp/Temp Mirror does not respond as indicated, replace the EC Comp/Temp Mirror in accordance with the Service Information.

## COMPASS OPERATION

The compass is capable of distinguishing 8 primary directions: N, NE, E, SE, S, SW, W, NW. This electronic compass is designed to display readings relative to True North. All compasses measure readings relative to Magnetic North. The difference between Magnetic North and True North varies from place to place across the surface of the earth. Therefore, the compass must be told approximately where it is on the earth's surface so that the Magnetic North reading can be properly converted into a True North Display. This is done by separating different parts of the earth into numbered "Zone Variances" (see zone variance map). The Zone Variance in which the compass is to function must be entered into the compass.

## FIRST TIME / MANUAL CALIBRATION

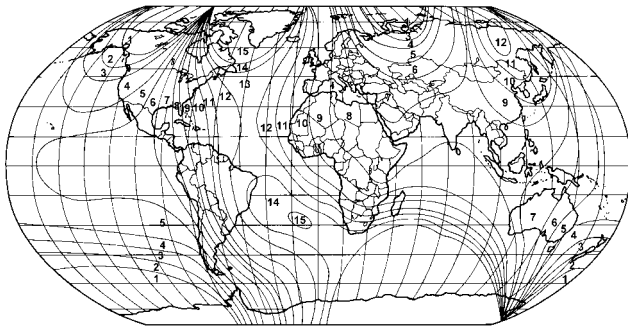
Set or confirm the Zone Variance, refer to COM-PASS ZONE VARIANCE. During first time or manual calibration, the compass may already be calibrated (CAL is not displayed). It is recommended that the CAL mode be invoked under all situations. With the ignition in the ON position, pressing and holding the CENTER button for more than 6 seconds will toggle the display to CAL. Releasing the button after the 6 second duration will enter the compass into the calibration mode. CAL will remain illuminated until the calibration is complete. Move the vehicle to an area away from large metallic objects or overhead power lines. While CAL is illuminated in the display the vehicle must be driven in at least 1 complete 360° circle at less than 5 MPH (8 KPH). Up to 3 complete 360° circles may be required. The compass will calibrate; CAL will turn off, and the compass will resume normal operation.

## COMPASS ZONE VARIANCE (adjust compass for true north)

The compass has a default zone of 8. Refer to the Zone Variance Map to determine the correct zone number. The correct compass Zone selection is critical to proper compass operation. With the ignition in the ON position, pressing the CENTER button for 3-6 seconds and then releasing while "Z" is illuminated enters the compass into the Zone display mode. In the Zone display mode, "Z" will be illuminated instead of the temperature. The current Zone number, 1 through 15 will be displayed. While "Z" is illuminated; momentarily pressing the CENTER button advances the zone to the next higher zone. When the desired zone number is displayed, do not press the button again. After 5 seconds, the Zone Variance number will be stored in the module memory.

On long trips, a vehicle may leave its original zone and enter one or more new zones. Generally, if no more than 3 or 4 zones are temporarily traversed, there is now reason to reset the Zone Variance. Only a permanent relocation of the vehicle to a new zone is reason enough to reset the Zone Variance. Each zone is magnetically about 4.2° wide. Until a total nearing 22.5° is accumulated by traversing zones, the typical driver will not notice any difference on the display. Beyond 22.5°, a reading may be off by one or more primary directions.

# GENERAL INFORMATION



## CONTINUOUS CALIBRATION

During normal operation, the EC Comp/Temp Mirror will continuously update the compass calibration to adjust for gradual changes in the vehicle's magnetic remnant field. If the vehicle is subjected to high magnetic influences, the compass may appear to indicate false headings, locked or appear unable to be calibrated. If this occurs, refer to MANUAL CALIBRATION.

## COMPASS DIAGNOSTICS

If at any time the compass continually displays the incorrect direction, the reading is erratic or locked, verify the correct zone variance per COMPASS ZONE VARIANCE and manually recalibrate per MANUAL CALIBRATION. The electronic compass, although highly protected from changes in magnetic field, can be susceptible to large changes in magnetic field. Examples include, but not limited to: high tension power lines, large steel buildings, automatic car washes, large quantities of scrap metal, etc. While occurrence of this phenomenon is infrequent, it is possible.

## OUTSIDE TEMPERATURE OPERATION

The EC Comp/Temp Mirror utilizes internal module memory temperature data to accurately display the outside temperature and to avoid "hot soak" condition readings. The displayed outside temperature information is stored within the memory of the EC Comp/Temp Mirror. The temperature memory only sets after the EC Comp/Temp Mirror has been on for 5 continuous minutes. When the EC Comp/Temp Mirror is first powered up, it retrieves the temperature data from the module memory. With the memory set when the EC Comp/Temp Mirror is powered up, the last temperature stored will be displayed and the module enters the Slow Update mode, (Slow Update = 1° increase or decrease per minute.) With the memory not set when powered up, the EC Comp/Temp Mirror will enter Fast Update mode for 5 minutes and then enter Slow Update mode, (Fast Update = Sample and display the outside air temperature every 2 seconds.)

### • TEMPERATURE UPDATE - WARM

On power up, when the outside temperature sensed by the ambient temperature sensor is warmer than the temperature stored in the module memory, the EC Comp/Temp Mirror will update the displayed temperature in relation to the current Update rate.

### • TEMPERATURE UPDATE - COLD

On power up, when the outside air temperature sensed by the ambient temperature sensor is colder than the stored memory temperature, the EC Comp/Temp Mirror will update the displayed temperature to the outside temperature at a rate of -1° every 2 seconds.

### • POTENTIAL "ICE" CONDITIONS

If the measured outside temperature is 3°C (37°F) or less, the temperature display will intermittently read the word "ICE" to indicate possible hazardous driving conditions. The alternating "ICE" display will end approximately 2 minutes after initial detection of approximately 3°C (37°F).

### • EXTREME TEMPERATURE / OPEN OR SHORT CONDITION

If the measured outside temperature is more than 60°C (140°F) or the ambient temperature sensor sense circuit is shorted to ground, the temp display will be "SC" to indicate a short circuit condition.

If the measured outside temperature is less than -45°C (-49°F) or the ambient temperature sensor sense circuit is open, the temp display will be "OC" to indicate an open circuit condition.

## AMBIENT TEMPERATURE SENSOR

### DESCRIPTION

The ambient temperature sensor is a variable resistor that operates on a 5-volt reference signal circuit hardwired to the Compass/Temp Mirror. The outside air temperature is monitored and displayed by the Compass/Temp Mirror.

The ambient temperature sensor cannot be adjusted or repaired and, if faulty or damaged, it must be replaced.

### OPERATION

The resistance in the ambient temperature sensor changes as the outside temperature rises or falls. The Compass/Temp Mirror senses the change in reference voltage through the ambient temperature sensor resistor. Based on the resistance of the ambient temperature sensor, the Compass/Temp Mirror module is programmed to correspond to a specific temperature. The Compass/Temp Mirror then displays the corresponding outside temperature received from the sensor.

## AMBIENT TEMPERATURE SENSOR DIAGNOSTICS

The outside temperature function is supported by the ambient temperature sensor, a signal and ground circuit hardwired to the compass/temp module, and the Compass/Temp Mirror display.

If the Compass/Temp Mirror display indicates "SC", the ambient temperature sensor circuit is shorted to ground.

If the Compass/Temp Mirror display indicates "OC", the ambient temperature sensor circuit is open.

The ambient temperature sensor can be diagnosed using the following Sensor Test. First, confirm that °C is not being mistaken for °F or vice-versa. If the ambient temperature sensor and the circuits are confirmed to be OK, but the temperature display is inoperative or incorrect, replace the Compass/Temp Mirror.

### AMBIENT TEMPERATURE SENSOR TEST

1. Turn the ignition OFF.
2. Disconnect and isolate the battery negative cable.
3. Disconnect the ambient temperature sensor harness connector.
4. Measure the resistance of the ambient temperature sensor using the following values:
  - > 0° C (32° F) Sensor Resistance = 29.33 - 35.99 Kilohms
  - > 10° C (50° F) Sensor Resistance = 17.99 - 21.81 Kilohms
  - > 20° C (68° F) Sensor Resistance = 11.37 - 13.61 Kilohms
  - > 25° C (77° F) Sensor Resistance = 9.12 - 10.86 Kilohms
  - > 30° C (86° F) Sensor Resistance = 7.37 - 8.75 Kilohms
  - > 40° C (104° F) Sensor Resistance = 4.90 - 5.75 Kilohms

The sensor resistance should read between these min/max values. If the resistance value is OK, refer to the Wiring Diagrams to test the Signal and Ground circuits. If the resistance values are not OK, replace the Sensor.

### MAP/READING LAMP OPERATION

The Map/Reading lamp feature uses LED (light emitting diode) technology as its light source. The driver and passenger map lamps each consist of 6 LED's, 2 blue-green and 4 amber. By mixing these colors through the use of a diffusing cover the output light is white in appearance. Direct viewing of the LED's will appear as blue-green and amber. The lights are activated by the door switch when

entering or exiting the vehicle or manually by using the appropriate button on the mirror as described above. LED's last 10-15+ years and are not designed to be replaced in this application.

## 3.4 ELECTRICALLY HEATED SYSTEMS

### 3.4.1 REAR WINDOW DEFOGGER

The timing circuit for the Rear Window Defogger is contained internally within the cluster. When the ignition is on, the first actuation of the Rear Window Defogger switch initiates a 10 (ten) minute time cycle. After 10 (ten) minutes of the same ignition cycle has elapsed, the cluster will turn the defogger off by opening the ground to the Rear Window Defogger Relay. If the defogger switch is actuated a second time during the same ignition cycle, the cluster will turn the defogger off after 5 (five) minutes. While the defogger is on, depressing the switch a second time will turn the defogger off. If the ignition is turned off while the defogger is operating, the defogger will remain off when the ignition is cycled.

## 3.5 ELECTRO/MECHANICAL INSTRUMENT CLUSTER (EMIC)

### 3.5.1 SMART CLUSTER FEATURES

The Electro/Mechanical Instrument Cluster (EMIC) houses the Fuel, Voltmeter, Engine Coolant Temp, and Oil Pressure gauges, the Speedometer and the Tachometer. The cluster positions the analog gauges using PCI Bus messages received from the PCM. The cluster also contains warning indicators as well as indicators for the Right and Left turn signals and the High Beam headlamps. Some of the indicators are hardwired to the cluster and some indicators are controlled by messages received on the PCI Bus. The vehicle Chime function, Courtesy Lamp Output, the Battery Saver function, and the Rear Window Defogger timer are contained internally within the cluster. The cluster contains a vacuum fluorescent (VF) display for the Odometer/Trip function. The cluster VF will also display P-codes and vehicle status messages. The cluster has the ability to store DTCs, communicate on the PCI Bus, display engine information, and display certain inputs using the DRBIII®. The cluster is also able to perform a manual self-test. For complete description and operation of the Instrument Cluster, refer to the TJ Service Manual Instrument Cluster section. For diagnostic procedures, refer to the TJ Body Diagnostic Procedures Manual.

# GENERAL INFORMATION

## 3.5.2 INSTRUMENT CLUSTER SELF TEST

The Instrument Cluster is capable of performing a diagnostic self test. The self test is actuated by depressing and holding the trip reset button while turning the ignition from the off to the on position. The self test can also be initiated using the DRBIII®. The self test will terminate if the tachometer is greater than 300 RPM, the ignition is turned off, or the test is complete. For diagnostic procedures, refer to the TJ Body Diagnostic Procedures Manual.

## 3.6 VEHICLE COMMUNICATION

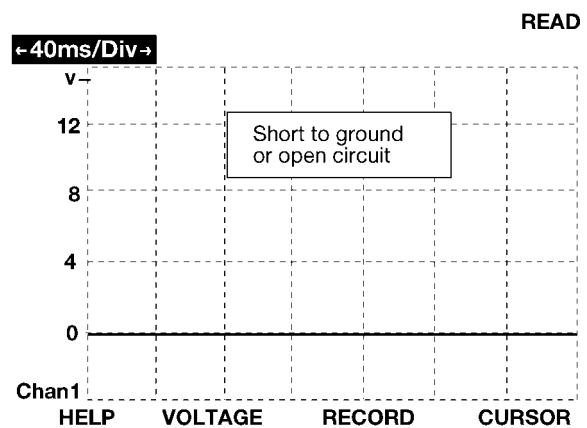
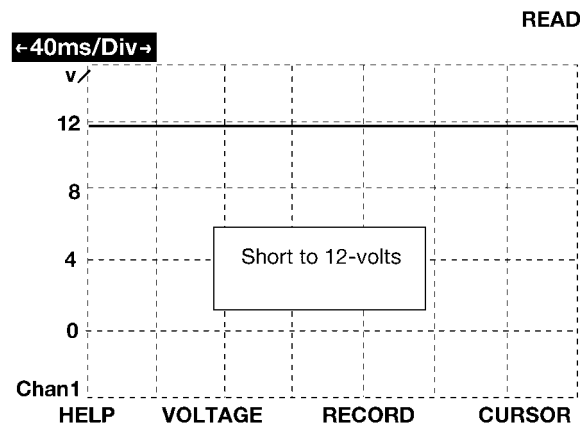
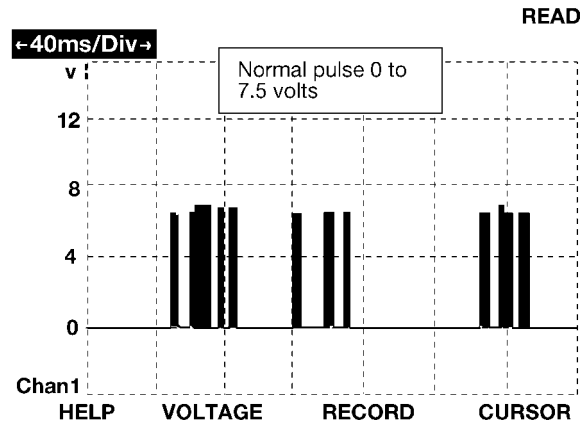
The Programmable Communication Interface or PCI Bus is a single wire multiplexed network capable of supporting binary encoded messages shared between multiple modules. The PCI bus circuit is identified as D25 and is violet with a yellow tracer. The modules are wired in parallel. Connections are made in the harness using splices. The following modules are used on 2005 Jeep® Wrangler (TJ).

- Airbag Control Module
- Mechanical Instrument Cluster
- Radio
- Powertrain Control Module (NGC)
- Sentry Key Immobilizer Module
- Controller Antilock Brake (Not on the PCI Bus. Communication with the scan tool is established thru the SCI Transmit circuit).

Each module provides its own bias and termination in order to transmit and receive messages. The bus voltage is at zero volts when no modules are transmitting and is pulled up to about seven and a half volts when modules are transmitting.

The bus messages are transmitted at a rate averaging 10800 bits per second. Since there is only voltage present when the modules transmit and the message length is only about 500 milliseconds, it is ineffective to try and measure the bus activity with a conventional voltmeter. The preferred method is to use the DRBIII® lab scope. The 12v square wave selection on the 20-volt scale provides a good view of the bus activity. Voltage on the bus should pulse between zero and about seven and a half volts. Refer to the following figure for some typical displays.

The PCI Bus Failure modes are broken down into two categories. Complete PCI Bus Communication Failure and individual module no response. Causes of a complete PCI Bus Communication Failure include a short to ground or battery on the PCI circuit. Individual module no response can be caused by an open circuit at the module, or an open battery or ground circuit to the affected module.



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Symptoms of a complete PCI Bus Communication Failure would include but are not limited to:

- All gauges on the MIC stay at zero
- All telltales on MIC illuminate
- MIC backlighting at full intensity
- No response received from any module on the PCI bus (except PCM)
- No start (if equipped with Sentry Key Immobilizer)

Symptoms of individual module failure could include any one or more of the above. The difference would be that at least one or more modules would respond to the DRBIII®.

Diagnosis starts with symptom identification. If a complete PCI Bus Communication Failure is suspected, begin by identifying which modules the vehicle is equipped with and then attempt to get a response from the module with the DRBIII®. If any modules are responding, the failure is not related to the total bus, but can be caused by one or more modules, PCI circuit or power supply and ground circuits. The DRBIII® may display "BUS +/- SIGNAL OPEN" or "NO RESPONSE" to indicate a communication problem. These same messages will be displayed if the vehicle is not equipped with that particular module. The CCD error message is a default message used by the DRBIII® and in no way indicates whether or not the PCI Bus is operational. The message is only an indication that a module is either not responding or the vehicle is not equipped.

**NOTE: Communication over the BUS is essential to the proper operation of the vehicles on-board diagnostic systems and the DRBIII®. Problems with the operation of the BUS or DRBIII® must be corrected before proceeding with diagnostic testing. If there is a problem, refer to the communications category of this manual.**

**NOTE: For 2005 model year, this vehicle will integrate the Transmission Control Module and Powertrain Control Module into a single control module. This new module is the Next Generation Controller for DaimlerChrysler and will be referred to as the Powertrain Control Module (PCM). The Transmission Control Module is part of the Powertrain Control Module.**

Diagnostic procedures and DTC numbers are some of the changes you will see which reflect the new combined module technology. The PCM will have four color coded connectors C1 through C4, (C1-BLK, C2-ORANGE, C3-WHITE, C4-GREEN), each PCM connector will have 38 pins each. Two new tools are used for probing and repairing the New PCM connectors. A New tool to release the pins from the PCM connectors Miller #3638 is introduced, you must use the Miller tool #3638 to release the connector pins or harness and connector damage will occur. Also a New tool for probing connectors Miller #8815 is introduced, you

**must use the Miller tool #8815 to probe the PCM pins or harness and connector damage will occur. There is also a new Verification test and module replacement procedure for the PCM.**

### 3.7 USING THE DRBIII®

Refer to the DRBIII® user's guide for instructions and assistance with reading trouble codes, erasing trouble codes, and other DRBIII® functions.

#### 3.7.1 DRBIII® ERROR MESSAGES AND BLANK SCREEN

Under normal operation, the DRBIII® will display one of only two error messages:

- User-Requested WARM Boot
- User-Requested COLD Boot

This is a sample of such an error message display:

```

ver: 2.14
date: 26 Jul93
file: key_itf.cc
date: Jul 26 1993
line: 548
err: 0x1
User-Requested COLD Boot

Press MORE to switch between this display
and the application screen.
Press F4 when done noting information.
    
```

If the DRBIII® should display any other error message, record the entire display and call the STAR Center for information and assistance.

#### 3.7.2 DRBIII® DOES NOT POWER UP

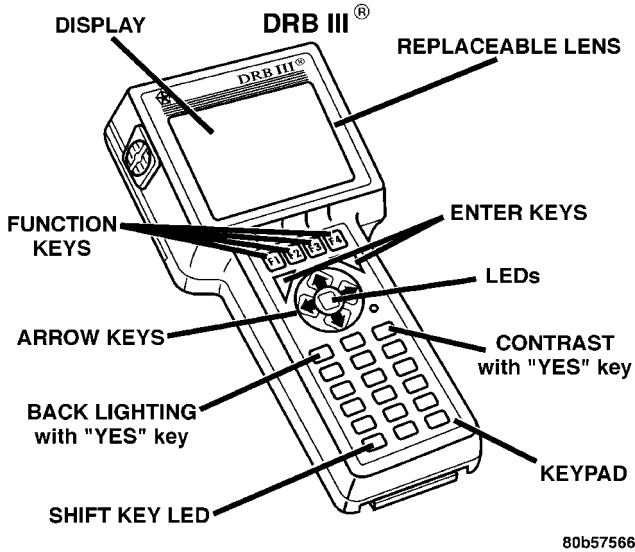
If the LED's do not light or no sound is emitted at start up, check for loose cable connections or a bad cable. Check the vehicle battery voltage (data link connector cavity 16). A minimum of 11 volts is required to adequately power the DRBIII®.

If all connections are proper between the DRBIII® and the vehicle or other devices, and the vehicle battery is fully charged, an inoperative DRBIII® may be the result of faulty cable or vehicle wiring.

# GENERAL INFORMATION

## 3.7.3 DISPLAY IS NOT VISIBLE

Low temperatures will affect the visibility of the display. Adjust the contrast to compensate for this condition.



## 4.0 DISCLAIMERS, SAFETY, WARNING

### 4.1 DISCLAIMERS

All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

### 4.2 SAFETY

#### 4.2.1 TECHNICIAN SAFETY INFORMATION

**WARNING: WHEN OPERATING, ENGINES PRODUCE AN ODORLESS GAS CALLED CARBON MONOXIDE. INHALING CARBON MONOXIDE GAS CAN RESULT IN SLOWER REACTION TIMES AND CAN LEAD TO PERSONAL INJURY OR DEATH. WHEN THE ENGINE IS OPERATING, KEEP SERVICE AREAS WELL VENTILATED OR ATTACH THE VEHICLE EXHAUST SYSTEM TO THE SHOP EXHAUST REMOVAL SYSTEM.**

Set the parking brake and block the wheels before testing or repairing the vehicle. It is especially important to block the wheels on front-wheel drive vehicles: the parking brake does not hold the drive wheels.

When servicing a vehicle, always wear eye protection, and remove any metal jewelry such as

watchbands or bracelets that might make an inadvertent electrical contact.

When diagnosing a body system problem, it is important to follow approved procedures where applicable. These procedures can be found in the service manual. Following these procedures is very important to the safety of individuals performing diagnostic tests.

#### 4.2.2 VEHICLE PREPARATION FOR TESTING

Make sure the vehicle being tested has a fully charged battery. If it does not, false diagnostic error messages may occur.

#### 4.2.3 SERVICING SUB-ASSEMBLIES

Some components of the body system are intended to be serviced in assembly only. Attempting to remove or repair certain system sub-components may result in personal injury and/or improper system operation. Only those components with approved repair and installation procedures in the service manual should be serviced.

#### 4.2.4 DRBIII® SAFETY INFORMATION

**WARNING: EXCEEDING THE LIMITS OF THE DRBIII® MULTIMETER IS DANGEROUS. READ ALL DRBIII® INSTRUCTIONS BEFORE USING THE MULTIMETER. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN PERSONAL INJURY OR DEATH.**

- Follow the vehicle manufacturer's service specifications at all times.
- Do not use the DRBIII® if it has been damaged.
- Do not use the test leads if the insulation is damaged or if metal is exposed.
- To avoid electrical shock, do not touch the test leads, tips or the circuit being tested.
- Choose the proper range and function for the measurement. Do not try voltage or current measurements that may exceed the rated capacity.
- Do not exceed the limits shown in the table below:

FUNCTION	INPUT LIMIT
Volts	0-500 volts peak AC 0-500 volts DC
Ohms (resistance)*	0-1.12 megohms
Frequency measured Frequency generated	1-10 khz
Temperature	-58-1100°F -50-600C

FUNCTION	INPUT LIMIT
*Ohms cannot be measured if voltage is present. Ohms can be measured only in a non-powered circuit.	

- Voltage between any terminal and ground must not exceed 500v DC or 500v peak AC.
- Use caution when measured voltage above 25v DC or 25v AC.
- The circuit being tested must be protected by a 10A fuse or circuit breaker.
- Use the low current shunt to measure circuits up to 10A. Use the high current clamp to measure circuits exceeding 10A.
- When testing for the presence of voltage or current, make sure the meter is functioning correctly. Take a reading of a known voltage or current before accepting a zero reading.
- When measuring current, connect the meter in series with the load.
- Disconnect the live test lead before disconnecting the common test lead.
- When using the meter function, keep the DRBIII® away from spark plug or coil wires to avoid measuring error from outside interference.

### 4.3 WARNINGS

#### 4.3.1 VEHICLE DAMAGE WARNINGS

Before disconnecting any control module, make sure the ignition is "off". Failure to do so could damage the module.

When testing voltage or continuity at any control module, use the terminal side (not the wire end) of the connector. Do not probe a wire through the insulation: this will damage it and eventually cause it to fail because of corrosion.

Be careful when performing electrical tests so as to prevent accidental shorting of terminals. Such mistakes can damage fuses or components. Also, a second code could be set, making diagnosis of the original problem more difficult.

When replacing a blown fuse, it is important to use only a fuse having the correct amperage rating. The use of a fuse with a rating other than indicated may result in a dangerous electrical system overload. If a properly rated fuse continues to blow, it indicates a problem in the circuit that must be corrected.

Service and general information labels about the airbag system can be found on the driver's sun visor, the glove box door, and in the engine compartment.

To ensure that the airbag will be ready to deploy in a collision, have the system serviced by an authorized dealer.

### 4.3.2 ROAD TESTING A COMPLAINT VEHICLE

Some complaints will require a test drive as part of the repair verification procedure. The purpose of the test drive is to try to duplicate the diagnostic code or symptom condition.

**WARNING: REASSEMBLE ALL COMPONENTS BEFORE ROAD TESTING A VEHICLE. DO NOT TRY TO READ THE DRBIII® SCREEN OR OTHER TEST EQUIPMENT DURING A TEST DRIVE. DO NOT HANG THE DRBIII® OR OTHER TEST EQUIPMENT FROM THE REARVIEW MIRROR DURING A TEST DRIVE. HAVE AN ASSISTANT AVAILABLE TO OPERATE THE DRBIII® OR OTHER TEST EQUIPMENT. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN PERSONAL INJURY OR DEATH.**

### 5.0 REQUIRED TOOLS AND EQUIPMENT

- 8310 Airbag System Load Tool
- 8443 Supplemental Restraints System Load Tool
- DRBIII® (diagnostic read-out box)
- jumper wires
- ohmmeter
- test light
- voltmeter

### 6.0 GLOSSARY OF TERMS

<b>4WD</b>	4-Wheel Drive
<b>ABS</b>	Antilock Braking System
<b>ACM</b>	Airbag Control Module
<b>AECM</b>	Airbag Electronic Control Module
<b>AIRBAG</b>	Also called "squib" initiator. Located inside the driver side airbag assembly.
<b>ASDM</b>	Airbag System Diagnostic System
<b>CAB</b>	Controller Antilock Brake
<b>CTMM</b>	Compass Temperature Mirror Module
<b>DAB</b>	Driver AirBag
<b>DLC</b>	Data Link Connector
<b>DTC</b>	Diagnostic Trouble Code

## GENERAL INFORMATION

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<b>EMIC</b>	Electro/Mechanical Instrument Cluster	<b>PCM</b>	Powertrain Control Module
<b>LED</b>	Light Emitting Diode	<b>PDC</b>	Power Distribution Center
<b>LFW</b>	Low Fuel Warning	<b>S.T.A.R.</b>	Service Technical Assistance Resource
<b>MIC</b>	Mechanical Instrument Cluster	<b>SKIM</b>	Sentry Key Immobilizer Module
<b>MIL</b>	Malfunction Indicator Lamp	<b>SKIS</b>	Sentry Key Immobilizer System
<b>NGC</b>	Next Generation Controller	<b>SRS</b>	Supplemental Restraints System
<b>PAB</b>	Passenger AirBag	<b>TCM</b>	Transmission Control Module
<b>PCI</b>	Programmable Communication Interface	<b>VFD</b>	Vacuum Fluorescent Display

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7.0

DIAGNOSTIC INFORMATION AND  
PROCEDURES

**Symptom List:**

**ACCELEROMETER 1**  
**INTERNAL 1**  
**OUTPUT DRIVER 1**  
**SAFING SENSOR**  
**STORED ENERGY FIRING 1**  
**STORED ENERGY LOGIC**

---

**Test Note: All symptoms listed above are diagnosed using the same tests.  
The title for the tests will be ACCELEROMETER 1.**

---

**When Monitored and Set Condition:**

**ACCELEROMETER 1**

When Monitored: With the ignition on, the module on board diagnostics continuously performs internal circuit tests.

Set Condition: This DTC will set if the module identifies an out of range internal circuit.

**INTERNAL 1**

When Monitored: With the ignition on, the module on board diagnostics continuously performs internal circuit tests.

Set Condition: This DTC will set if the module identifies an out of range internal circuit.

**OUTPUT DRIVER 1**

When Monitored: With the ignition on, the module on board diagnostics continuously performs internal circuit tests.

Set Condition: This DTC will set if the module identifies an out of range internal circuit.

**SAFING SENSOR**

When Monitored: With the ignition on, the module on board diagnostics continuously performs internal circuit tests.

Set Condition: This DTC will set if the module identifies an out of range internal sensor.

**STORED ENERGY FIRING 1**

When Monitored: With the ignition on, the module on board diagnostics continuously performs internal circuit tests.

Set Condition: This DTC will set if the module identifies an out of range internal circuit.

**ACCELEROMETER 1 — Continued**

**STORED ENERGY LOGIC**

When Monitored: With the ignition on, the module on board diagnostics continuously performs internal circuit tests.

Set Condition: This DTC will set if the module identifies an out of range internal circuit.

**POSSIBLE CAUSES**

AIRBAG CONTROL MODULE - ACM

TEST	ACTION	APPLICABILITY
1	<p>Turn the ignition on.  <b>NOTE: Ensure the battery is fully charged.</b>  <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b>                      Select the appropriate module and DTC type combination:</p> <p style="padding-left: 40px;">ACM - ACTIVE DTC                      Replace the Airbag Control Module in accordance with Service Instructions.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">ACM - STORED DTC                      Replace the Airbag Control Module in accordance with Service Instructions.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p><b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b></p>	All

**Symptom List:**

- AIRBAG WARNING INDICATOR OPEN**
- AIRBAG WARNING INDICATOR SHORT**

**Test Note: All symptoms listed above are diagnosed using the same tests. The title for the tests will be AIRBAG WARNING INDICATOR OPEN.**

**When Monitored and Set Condition:**

**AIRBAG WARNING INDICATOR OPEN**

**When Monitored:** With ignition on the ACM monitors the PCI Bus for a message from the MIC containing the airbag warning indicator status. The ACM request the warning lamp status from the MIC once every second.

**Set Condition:** This DTC will set immediately if the indicator status is OPEN.

**AIRBAG WARNING INDICATOR SHORT**

**When Monitored:** With ignition on the ACM monitors the PCI Bus for a message from the MIC containing the airbag warning indicator status. The ACM request the warning lamp status from the MIC once every second.

**Set Condition:** This DTC will set immediately if the indicator status is SHORT.

POSSIBLE CAUSES
MIC, COMMUNICATION FAILURE
WARNING INDICATOR
ACM, WARNING INDICATOR
STORED CODE OR INTERMITTENT CONDITION
ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Ensure the battery is fully charged. <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

**AIRBAG WARNING INDICATOR OPEN — Continued**

TEST	ACTION	APPLICABILITY
2	<p>With the DRBIII®, ensure PCI Bus communications with the Instrument Cluster. Is the Instrument Cluster communicating on the PCI Bus?</p> <p>Yes → Go To 3</p> <p>No → Refer to category COMMUNICATION CATEGORY and select the related symptom NO RESPONSE or INSTRUMENT CLUSTER BUS +/- SIGNAL OPEN. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p>With the DRBIII® select PASSIVE RESTRAINTS, AIRBAG and MONITOR DISPLAY. Using the DRBIII®, read the WARNING LAMP MONITOR screen. Select the LAMP STATUS displayed on the DRB monitors screen. Observe the Lamp Driver State and Actual Lamp State. Is the LAMP DRIVER and ACTUAL LAMP STATE: OK?</p> <p>YES Go To 4</p> <p>NO Replace Instrument Cluster. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**AIRBAG WARNING INDICATOR OPEN — Continued**

TEST	ACTION	APPLICABILITY
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

## Symptom: CLUSTER MESSAGE MISMATCH

### When Monitored and Set Condition:

#### CLUSTER MESSAGE MISMATCH

**When Monitored:** After the MIC bulb test is completed, the ACM compares the Lamp Request by ACM, On or Off, and the Lamp on by MIC, On or Off, PCI Bus messages. Each message is transmitted one time per second or when a change in the lamp state occur.

**Set Condition:** If the Lamp Request by ACM, On or Off, and the Lamp on by MIC, On or Off, messages do not match, the code will set.

#### POSSIBLE CAUSES

MIC DIAGNOSTIC CODES  
CLUSTER MESSAGE MISMATCH  
STORED CODE OR INTERMITTENT CONDITION  
ACM, CLUSTER MESSAGE MISMATCH  
ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Ensure the battery is fully charged. <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Turn the ignition on. With the DRBIII®, read the MIC DTCs. Does the DRBIII® display any active Diagnostic Codes?  Yes → Refer to symptom list for problems related to Instrument Cluster. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Go To 3	All

**CLUSTER MESSAGE MISMATCH — Continued**

TEST	ACTION	APPLICABILITY
3	<p>With the DRBIII® select PASSIVE RESTRAINTS, AIRBAG, MONITOR DISPLAY and WARNING LAMP STATUS.                      Cycle the ignition key and observe the LAMP ON BY MIC and LAMP REQ BY ACM monitors after the 6 to 8 second indicator test.                      Does the LAMP ON BY MIC and LAMP REQ BY ACM monitors match?</p> <p>YES                      Go To 4</p> <p>NO                      Replace Mechanical Instrument Cluster.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>  <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair                      Replace the Airbag Control Module in accordance with Service Instructions.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p>Yes → Select appropriate symptom from Symptom List.</p> <p>No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**  
**DRIVER SQUIB 1 CIRCUIT OPEN**

**When Monitored and Set Condition:**

**DRIVER SQUIB 1 CIRCUIT OPEN**

When Monitored: With the ignition on, the ACM monitors the resistance of the Driver Squib 1 circuits.

Set Condition: The ACM detects an open circuit or high resistance in the Driver Squib 1 circuits.

**POSSIBLE CAUSES**

DRIVER AIRBAG SQUIB 1 CIRCUIT OPEN  
 CLOCKSPRING SQUIB 1 CIRCUIT OPEN  
 DRIVER SQUIB 1 LINE 1 OR LINE 2 CIRCUITS OPEN  
 ACM, DRIVER SQUIB 1 CIRCUIT OPEN  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 6  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

**DRIVER SQUIB 1 CIRCUIT OPEN — Continued**

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Driver Airbag Squib connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the appropriate Load Tool to the Driver Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 CIRCUIT OPEN?</p> <p>Yes → Go To 3</p> <p>No → Replace the Driver Airbag in accordance with the Service Information.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Driver Airbag connector(s).</p> <p>Disconnect the Clockspring connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool to the Clockspring connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 CIRCUIT OPEN?</p> <p>Yes → Go To 4</p> <p>No → Replace the Clockspring in accordance with the Service Information.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Clockspring connector(s).</p> <p>Disconnect the Airbag Control Module connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector(s).</p> <p>Measure the resistance of the Driver Squib 1 Line 1 and Line 2 circuits between the ACM Adaptor and the Clockspring connector(s).</p> <p>Is the resistance below 1.0 ohm on both circuits?</p> <p>Yes → Go To 5</p> <p>No → Repair open or high resistance in the Driver Squib 1 Line 1 or Line 2 circuits.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**DRIVER SQUIB 1 CIRCUIT OPEN — Continued**

TEST	ACTION	APPLICABILITY
5	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <ul style="list-style-type: none"> <li>Replace the Airbag Control Module in accordance with Service Information.</li> <li>Perform __AIRBAG VERIFICATION TEST - VER 1.</li> </ul>	All
6	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules. If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.</p> <p>The following additional checks may assist you in identifying a possible intermittent problem.</p> <p>Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.</p> <p>IF only stored codes return continue the test until the problem area has been isolated In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.</p> <p>Are any ACTIVE DTCs present?</p> <ul style="list-style-type: none"> <li>Yes → Select appropriate symptom from Symptom List.</li> <li>No → No problem found at this time. Erase all codes before returning vehicle to customer.</li> </ul>	All

**Symptom:**  
**DRIVER SQUIB 1 CIRCUIT SHORT**

**When Monitored and Set Condition:**

**DRIVER SQUIB 1 CIRCUIT SHORT**

When Monitored: With the ignition on, the ACM monitors the resistance of the Driver Squib 1 circuits.

Set Condition: The ACM has detected low resistance on the Driver Squib 1 circuits.

<b>POSSIBLE CAUSES</b>
DRIVER AIRBAG SQUIB 1 CIRCUIT SHORT CLOCKSPRING, DRIVER SQUIB 1 CIRCUITS SHORT DRIVER AIRBAG SQUIB 1 LINE 1 SHORT TO LINE 2 ACM, DRIVER SQUIB LINE 1 SHORT TO LINE 2 STORED CODE OR INTERMITTENT CONDITION ACTIVE CODE PRESENT

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 6  <b>NOTE: When reconnecting airbag system components the Ignition must be turned off and the Battery must be disconnected.</b>	All

**DRIVER SQUIB 1 CIRCUIT SHORT — Continued**

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Driver Airbag connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the appropriate Load Tool to the Driver Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 CIRCUIT SHORT?</p> <p>Yes → Go To 3</p> <p>No → Replace the Driver Airbag in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Driver Airbag connector(s).</p> <p>Disconnect the Clockspring connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool to the Clockspring connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 CIRCUIT SHORT?</p> <p>Yes → Go To 4</p> <p>No → Replace the Clockspring in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Clockspring connector(s).</p> <p>Disconnect the Airbag Control Module connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector(s).</p> <p>Measure the resistance between the Driver Squib 1 Line 1 and Line 2 at the Clockspring connector.</p> <p>Is the resistance below 10K ohms?</p> <p>Yes → Repair the Driver Squib 1 Line 1 circuit shorted to Driver Squib 1 Line 2 circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 5</p>	All

**DRIVER SQUIB 1 CIRCUIT SHORT — Continued**

TEST	ACTION	APPLICABILITY
5	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <ul style="list-style-type: none"> <li>Replace the Airbag Control Module in accordance with Service Information.</li> <li>Perform __AIRBAG VERIFICATION TEST - VER 1.</li> </ul>	All
6	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules. If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.</p> <p>The following additional checks may assist you in identifying a possible intermittent problem.</p> <p>Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.</p> <p>IF only stored codes return continue the test until the problem area has been isolated In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.</p> <p>Are any ACTIVE DTCs present?</p> <ul style="list-style-type: none"> <li>Yes → Select appropriate symptom from Symptom List.</li> <li>No → No problem found at this time. Erase all codes before returning vehicle to customer.</li> </ul>	All

**Symptom:**

**DRIVER SQUIB 1 SHORT TO BATTERY**

**When Monitored and Set Condition:**

**DRIVER SQUIB 1 SHORT TO BATTERY**

When Monitored: With the ignition on, the ACM monitors the voltage of the Driver Squib 1 circuits.

Set Condition: The ACM has detected high voltage on the Driver Squib 1 circuits.

**POSSIBLE CAUSES**

DRIVER AIRBAG SQUIB 1 SHORT TO BATTERY  
 CLOCKSPRING, DRIVER SQUIB 1 SHORT TO BATTERY  
 DRIVER SQUIB 1 LINE 1 OR LINE 2 SHORT TO BATTERY  
 ACM, DRIVER SQUIB 1 SHORT TO BATTERY  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED ACM DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

**DRIVER SQUIB 1 SHORT TO BATTERY — Continued**

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Driver Airbag Squib connector(s).</p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool to the Driver Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 SHORT TO BATTERY?</p> <p>Yes → Go To 3</p> <p>No → Replace the Driver Airbag in accordance with the Service Information.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Driver Airbag connector(s).</p> <p>Disconnect the Clockspring connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool to the Clockspring connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 SHORT TO BATTERY ?</p> <p>Yes → Go To 4</p> <p>No → Replace the Clockspring in accordance with the Service Information.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**DRIVER SQUIB 1 SHORT TO BATTERY — Continued**

TEST	ACTION	APPLICABILITY
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Disconnect the Load Tool from the Clockspring connector(s). Disconnect the Airbag Control Module connector(s). <b>NOTE: Check connectors - Clean and repair as necessary.</b> Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>Measure the voltage on the Driver Squib 1 Line 1 and Line 2 circuits between the Clockspring connector and ground. Is there any voltage present?</p> <p>Yes → Repair the Driver Squib 1 Line 1 or Line 2 circuits shorted to battery. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Replace the Airbag Control Module in accordance with Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules. If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions. If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals. The following additional checks may assist you in identifying a possible intermittent problem. Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps. <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop. IF only stored codes return continue the test until the problem area has been isolated In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question. Are any ACTIVE DTCs present?</p> <p>Yes → Select appropriate symptom from Symptom List.</p> <p>No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**

**DRIVER SQUIB 1 SHORT TO GROUND**

**When Monitored and Set Condition:**

**DRIVER SQUIB 1 SHORT TO GROUND**

When Monitored: With the ignition on, the ACM monitors the resistance of the Driver Squib 1 circuits.

Set Condition: When the ACM detects a short to ground in either Driver Squib 1 circuits.

**POSSIBLE CAUSES**

DRIVER AIRBAG SQUIB 1 SHORT TO GROUND  
 CLOCKSPRING, DRIVER SQUIB 1 SHORT TO GROUND  
 DRIVER SQUIB 1 LINE 1 OR LINE 2 SHORTED TO GROUND  
 ACM, DRIVER SQUIB 1 SHORT TO GROUND  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 6  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

**DRIVER SQUIB 1 SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Driver Airbag Squib connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the appropriate Load Tool to the Driver Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 SHORT TO GROUND?</p> <p>Yes → Go To 3</p> <p>No → Replace the Driver Airbag in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Driver Airbag connector(s).</p> <p>Disconnect the Clockspring connector.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool to the Clockspring connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show DRIVER SQUIB 1 SHORT TO GROUND?</p> <p>Yes → Go To 4</p> <p>No → Replace the Clockspring in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Clockspring connector.</p> <p>Disconnect the Airbag Control Module connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector.</p> <p>Measure the resistance of the Driver Squib 1 Line 1 and Line 2 circuits between Clockspring connector and ground.</p> <p>Is the resistance below 10K ohms on either circuit?</p> <p>Yes → Repair Driver Squib 1 Line 1 or Line 2 circuits shorted to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 5</p>	All

**DRIVER SQUIB 1 SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
5	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT, PERSONAL INJURY OR DEATH, .</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <ul style="list-style-type: none"> <li>Replace the Airbag Control Module in accordance with Service Information.</li> <li>Perform __AIRBAG VERIFICATION TEST - VER 1.</li> </ul>	All
6	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules. If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.</p> <p>The following additional checks may assist you in identifying a possible intermittent problem.</p> <p>Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.</p> <p>IF only stored codes return continue the test until the problem area has been isolated In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.</p> <p>Are any ACTIVE DTCs present?</p> <ul style="list-style-type: none"> <li>Yes → Select appropriate symptom from Symptom List.</li> <li>No → No problem found at this time. Erase all codes before returning vehicle to customer.</li> </ul>	All

**Symptom:**  
**LOSS OF IGNITION RUN - START**

**When Monitored and Set Condition:**

**LOSS OF IGNITION RUN - START**

When Monitored: With the ignition in the Run-Start position the ACM monitors the Fused Ignition Switch Output Run-Start circuit for proper system voltage.

Set Condition: If the voltage on the Fused Ignition Switch Output Run-Start circuit drops below approximately 4.5 volts, the code will set.

<b>POSSIBLE CAUSES</b>
FUSED IGNITION SW OUTPUT RUN-START SHORT TO GROUND
IGNITION SWITCH RUN - START CIRCUIT OPEN
FUSED IGNITION SWITCH OUTPUT RUN-START CIRCUIT OPEN
ACM, FUSED IGNITION OUTPUT RUN-START CIRCUIT OPEN
ACM, RUN - START SHORTED TO GROUND
ON - OFF SWITCH, RUN - START CIRCUIT SHORTED TO GROUND
FUSED IGNITION SWITCH OUTPUT RUN - START CIRCUIT SHORT TO GROUND
STORED CODE OR INTERMITTENT CONDITION
ACTIVE CODE PRESENT

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	Ensure the battery is fully charged. Turn the ignition on. <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> DETERMINE ACTIVE OR STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 10  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Turn Ignition off. Remove and inspect the Airbag Run-Start Fuse. <b>NOTE: Check connectors - Clean and repair as necessary.</b> Is the Fuse open?  Yes → Go To 3 No → Go To 7	All

**LOSS OF IGNITION RUN - START — Continued**

TEST	ACTION	APPLICABILITY
3	Measure the resistance of the Fused Ignition Switch Output Run-Start circuit between the Airbag Run - Start Fuse and ground. Is the resistance below 10.0 ohms?  Yes → Go To 4  No → Replace Airbag Run - Start Fuse. Perform __AIRBAG VERIFICATION TEST - VER 1.	All
4	Is this vehicle equipped with a Passenger Airbag On - Off Indicator?  Yes → Go To 5  No → Go To 6	All
5	Disconnect the Passenger Airbag On - Off Indicator connector <b>NOTE: Check connectors - Clean and repair as necessary.</b> Measure the resistance of the Fused Ignition Switch Output Run-Start Circuit between the On - Off Indicator connector and ground. Is the resistance below 10K ohms?  Yes → Go To 6  No → Replace the Passenger Airbag On - Off Switch and Airbag Run - Start Fuse. Perform __AIRBAG VERIFICATION TEST - VER 1.	All
6	<b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b> Disconnect the Airbag Control Module connector <b>NOTE: Check connectors - Clean and repair as necessary.</b> Connect the appropriate Load Tool ACM Adaptor to the ACM connector(s). Measure the resistance of the Fused Ignition Switch Output Run-Start circuit between the ACM Adapter and ground. Is the resistance below 10K ohms?  Yes → Repair the Fused Ignition Switch Output Run - Start circuit short to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Replace the Airbag Control Module in accordance with Service Instructions and replace the fuse. Perform __AIRBAG VERIFICATION TEST - VER 1.	All
7	Turn the ignition on. Measure the voltage of the Ignition Switch Output circuit at the Airbag Run - Start fuse. Is the voltage above approximately 6.0 volts?  Yes → Go To 8  No → Repair the open Ignition Switch Output Run - Start circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.  <b>NOTE: Reinstall the fuse after performing this test.</b>	All

## LOSS OF IGNITION RUN - START — Continued

TEST	ACTION	APPLICABILITY
8	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Disconnect the Airbag Control Module connector.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Reinstall the previously removed Airbag Run-Start Fuse.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>Measure the voltage of the Fused Ignition Switch Output Run-Start Circuit between the Airbag Control Module connector ground.</p> <p>Is the voltage above approximately 4.5 volts?</p> <p>Yes → Go To 9</p> <p>No → Repair open Fused Ignition Switch Output Run-Start circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
9	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Airbag Control Module in accordance with Service Instructions.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**LOSS OF IGNITION RUN - START — Continued**

TEST	ACTION	APPLICABILITY
10	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**  
**LOSS OF IGNITION RUN ONLY**

**When Monitored and Set Condition:**

**LOSS OF IGNITION RUN ONLY**

When Monitored: With the ignition in the run position the module monitors the Run Only circuit for proper system voltage.

Set Condition: If the voltage on the Run Only circuit drops below 4.5 volts, the code will set.

**POSSIBLE CAUSES**

- IGNITION SWITCH OUTPUT RUN CIRCUIT OPEN
- FUSED IGNITION SWITCH OUTPUT RUN CIRCUIT OPEN
- ACM, FUSED IGNITION OUTPUT RUN CIRCUIT OPEN
- CHECKING FOR A SHORTED RUN CIRCUIT
- FUSED IGNITION SWITCH OUTPUT RUN CIRCUIT SHORT TO GROUND
- ACM, FUSED IGNITION RUN CIRCUIT SHORT TO GROUND

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Ensure the battery is fully charged. <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE :  ACM - ACTIVE DTC Go To 2  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Turn the ignition off. Remove and inspect the Airbag Run circuit fuse. Is the Fuse open?  Yes → Go To 3  No → Go To 6	All
3	Remove the Airbag Run fuse. <b>NOTE: Check connectors - Clean and repair as necessary.</b> Measure the resistance of the Fused Ignition Switch Output Run circuit between the Run Fuse and ground. Is the resistance below 10.0 ohms ?  Yes → Go To 4  No → Replace the defective fuse. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

**LOSS OF IGNITION RUN ONLY — Continued**

TEST	ACTION	APPLICABILITY
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Airbag Control Module connector.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Measure the resistance of the Fused Ignition Switch Output Run circuit between the ACM connector and ground.</p> <p>Is the resistance below 10K ohms ?</p> <p>Yes → Repair the Fused Ignition Switch Output Run circuit for a short to ground and replace Airbag Run Fuse. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 5</p>	All
5	<p><b>WARNING: TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Airbag Control Module in accordance with Service Instructions and replace the Run Only Fuse. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
6	<p>Turn the ignition on.</p> <p>Measure the voltage of the Ignition Switch Output Run circuit between the Airbag Run circuit fuse and ground.</p> <p>Is the voltage above approximately 4.5 volts?</p> <p>Yes → Go To 7</p> <p>No → Repair the open Ignition Switch Output Run circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
7	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Airbag Control Module connector.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Reinstall the airbag Run fuse.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>Measure the voltage of the Fused Ignition Switch Output Run circuit at the Airbag Control Module connector.</p> <p>Is the voltage above approximately 4.5 volts?</p> <p>Yes → Go To 8</p> <p>No → Repair the an open or high resistance in the Fused Ignition Switch Output Run circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**LOSS OF IGNITION RUN ONLY — Continued**

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
8	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Airbag Control Module in accordance with Service Instructions.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**MODULE NOT CONFIGURED FOR PAB OFF SWITCH**

**When Monitored and Set Condition:**

**MODULE NOT CONFIGURED FOR PAB OFF SWITCH**

**When Monitored:** When the ACM is not configured for an ON - OFF switch, the ACM monitors the Passenger Airbag On - Off Switch inputs to determine if a switch is present.

**Set Condition:** The code will set, if the ACM detects a Passenger Airbag ON - OFF Switch connected to the Airbag Control Module.

POSSIBLE CAUSES
INTERMITTENT CODES PRESENT ACM NOT CONFIGURED FOR PAB OFF SWITCH ACM, MODULE NOT CONFIGURED FOR PAB OFF SWITCH PASSENGER AIRBAG INDICATOR DRIVER CIRCUIT SHORT PAB MUX SWITCH CIRCUIT SHORT TO GROUND PAB MUX SWITCH CIRCUIT SHORT TOGETHER ACM, PAB ON - OFF SWITCH CIRCUIT SHORTED

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Ensure the battery is fully charged. <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC No problem found at this time. Perform __AIRBAG VERIFICATION TEST - VER 1.  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Inspect vehicle for a Passenger Airbag On - Off Switch located in the center of the instrument panel. Is this vehicle equipped with a Passenger Airbag On - OFF Switch?  Yes → Go To 3 No → Go To 4	All

**MODULE NOT CONFIGURED FOR PAB OFF SWITCH — Continued**

TEST	ACTION	APPLICABILITY
3	Select Restraints, Airbag and then Miscellaneous from the DRB menu. Follow instructions to verify the ACM switch configuration. Does the DRB show Configured for PAB OFF Switch?  Yes → Go To 9  No → Follow instructions on the DRB to reconfigured the Airbag Control Module to support the Passenger Airbag Switch On - Off Switch. Perform __AIRBAG VERIFICATION TEST - VER 1.	All
4	Inspect vehicle for a Passenger Airbag On - Off Switch wiring at the ACM connector. NOTE: Some vehicles may have the wiring for the Passenger Airbag Off Switch and no switch. Is this vehicle equipped with a Passenger Airbag On - OFF Switch wiring?  Yes → Go To 5  No → Go To 9	All
5	<b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> Disconnect the Airbag Control Module connector(s). <b>NOTE: Check connectors - Clean and repair as necessary.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b> Connect the appropriate Load Tool ACM Adaptor to the Airbag Control Module connector. Measure the resistance of the PAB Indicator Driver circuit between the ACM Adaptor and ground. Is the resistance below 10K ohms?  Yes → Repair the Passenger Airbag Indicator Driver circuit short to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Go To 6	All
6	Measure the resistance of the PAB MUX Switch Sense circuit between the ACM Adaptor and ground. Is the resistance below 10K ohms?  Yes → Repair the Passenger Airbag MUX Switch Sense circuit short to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Go To 7	All
7	Measure the resistance between the PAB MUX Switch Sense circuit and the PAB MUX Switch Return circuit at the ACM Adaptor. Is the resistance below 10K ohms?  Yes → Repair the Passenger Airbag MUX Switch circuits shorted together. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Go To 8	All

**MODULE NOT CONFIGURED FOR PAB OFF SWITCH — Continued**

TEST	ACTION	APPLICABILITY
8	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Airbag Control Module in accordance with Service Instructions.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
9	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Airbag Control Module in accordance with Service Instructions.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**Symptom:**  
**NO CLUSTER MESSAGE**

**When Monitored and Set Condition:**

**NO CLUSTER MESSAGE**

When Monitored: With ignition on, the ACM monitors the PCI Bus for a message from the MIC containing the airbag warning indicator status. The MIC transmits the message one time at ignition on, lamp state change, or in response to the ACM message.

Set Condition: If the MIC message is not received for 10 consecutive seconds, the code will set.

**POSSIBLE CAUSES**

MIC, COMMUNICATION FAILURE  
ACM, NO CLUSTER MESSAGES  
STORED CODE OR INTERMITTENT CONDITION  
ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 4  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Turn the ignition on. With the DRBIII®, ensure PCI Bus communications with the Instrument Cluster. Is the Instrument Cluster communicating on the PCI Bus?  Yes → Go To 3  No → Refer to category COMMUNICATION CATEGORY and select the related symptom NO RESPONSE or INSTRUMENT CLUSTER BUS +/- SIGNAL OPEN. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

**NO CLUSTER MESSAGE — Continued**

TEST	ACTION	APPLICABILITY
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, TO AVOID PERSONAL INJURY OR DEATH, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair</p> <p style="padding-left: 80px;">Replace the Airbag Control Module in accordance with Service Instructions.</p> <p style="padding-left: 80px;">Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p><b>NOTE: When reconnecting airbag system components the Ignition must be turned off and the Battery must be disconnected.</b></p>	All
4	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.</p> <p>If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.</p> <p>The following additional checks may assist you in identifying a possible intermittent problem.</p> <p>Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component.</p> <p>If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.</p> <p>IF only stored codes return continue the test until the problem area has been isolated</p> <p>In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.</p> <p>Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**  
**NO PCI TRANSMISSION**

**When Monitored and Set Condition:**

**NO PCI TRANSMISSION**

When Monitored: With the ignition on and the module transmitting information on the BUS.

Set Condition: The code will set immediately if the onboard diagnostic cannot detect the module transmitting information on the BUS. NOTE: Any Bus Failure will may cause a stored code to set.

**POSSIBLE CAUSES**

AIRBAG CONTROL MODULE - ACM  
STORED CODE OR INTERMITTENT CONDITION  
ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	<p>Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> From the list below, select the appropriate module and DTC type for the this diagnostic trouble code. DETERMINE ACTIVE OR STORED DTC</p> <p style="padding-left: 40px;">ACM - ACTIVE Go To 2</p> <p style="padding-left: 40px;">ACM - STORED Go To 3</p> <p><b>NOTE: When reconnecting airbag system components the Ignition must be turned off and the Battery must be disconnected.</b></p>	All
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b> If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**NO PCI TRANSMISSION — Continued**

TEST	ACTION	APPLICABILITY
3	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:****PASSENGER AIRBAG ON - OFF SWITCH OPEN****When Monitored and Set Condition:****PASSENGER AIRBAG ON - OFF SWITCH OPEN**

When Monitored: With the ignition on, the PAB MUX Switch Sense circuit supplies a 3 to 10 ms pulse every 100 ms across the On or Off switch resistor to the MUX Switch Return circuit.

Set Condition: The code will set if the ACM senses an open or high resistance on the PAB MUX Switch Sense circuit or PAB MUX Switch Return circuit.

**POSSIBLE CAUSES**

CHECKING EQUIPMENT  
 PAB ON - OFF SWITCH OPEN  
 SWITCH DISCONNECTED  
 PASSENGER AIRBAG MUX SWITCH CIRCUIT OPEN  
 ACM, PASSENGER ON - OFF SWITCH CIRCUIT OPEN  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure that the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 7  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Is this vehicle equipped with a Passenger Airbag On - Off Switch?  Yes → Go To 3  No → With the DRBIII® in MISCELLANEOUS, read the Configure for Airbag ON - OFF Switch current status. Enter the number 1 and press enter to re configure the ACM for NO AIRBAG ON/OFF SWITCH. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

## PASSENGER AIRBAG ON - OFF SWITCH OPEN — Continued

TEST	ACTION	APPLICABILITY
3	<p>Gain access to the Passenger Airbag On - Off Switch connector. Is the Passenger Airbag On - Off Switch connected to the dash harness?</p> <p>Yes → Go To 4</p> <p>No → Connect the Passenger Airbag On - Off switch to the dash harness connector. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag On - Off Switch. <b>NOTE: Check connectors - Clean and repair as necessary.</b> Measure the PAB On - Off Switch resistance between terminals 1 and 2 in both switch positions. The switch resistance specifications are: ON position = 175.0 to 190.0 ohms and OFF position = 820.0 to 870.0 ohms. Is the resistance within range for both switch positions?</p> <p>Yes → Go To 5</p> <p>No → Replace the Passenger Airbag ON - OFF Switch in accordance with the service information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
5	<p>Disconnect the Airbag Control Module connector(s). <b>NOTE: Check connectors - Clean and repair as necessary.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED.</b></p> <p>Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector. Measure the resistance of the PAB MUX Switch Sense between the ACM Adaptor and the PAB On - Off Switch connector. Measure the resistance of the PAB MUX Switch Return circuit between the ACM Adaptor and the PAB On - Off Switch connector. Is the resistance below 5.0 ohms on both circuits?</p> <p>Yes → Go To 6</p> <p>No → Repair the open Passenger Airbag MUX Switch circuit(s). Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
6	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p><b>WARNING: MAKE SURE THE BATTERY IS DISCONNECTED, THEN WAIT TWO MINUTES BEFORE PROCEEDING.</b> Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER AIRBAG ON - OFF SWITCH OPEN — Continued**

TEST	ACTION	APPLICABILITY
7	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.</p> <p>If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.</p> <p>The following additional checks may assist you in identifying a possible intermittent problem.</p> <p>Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component.</p> <p>If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.</p> <p>IF only stored codes return continue the test until the problem area has been isolated</p> <p>In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.</p> <p>Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO BATTERY**

**When Monitored and Set Condition:**

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO BATTERY**

**When Monitored:** With the ignition on, the MUX Switch Sense circuit supplies a 3 to 10 ms pulse every 100 ms across the switch resistor to the MUX Switch Return circuit. Once the code is active, the ACM will disable the indicator for the duration of the ignition cycle.

**Set Condition:** The code will set if the ACM senses constant voltage over approximately 4.0 volts on the PAB MUX Switch circuits.

POSSIBLE CAUSES	
CHECKING EQUIPMENT	
PAB ON - OFF SWITCH CIRCUIT SHORT	
PAB ON - OFF SWITCH SHORT	
PAB MUX SWITCH CIRCUIT SHORT TO BATTERY	
ACM, PAB ON - OFF SWITCH CIRCUIT SHORT	
STORED CODE OR INTERMITTENT CONDITION	
ACTIVE CODE PRESENT	

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure that the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 7  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Is this vehicle equipped with a Passenger Airbag On - Off Switch?  Yes → Go To 3  No → With the DRBIII® in MISCELLANEOUS, read the Configure for Airbag ON - OFF Switch current status. Enter the number 1 and press enter to re configure the ACM for NO AIRBAG ON/OFF SWITCH. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

## PASSENGER AIRBAG ON - OFF SWITCH SHORT TO BATTERY — Continued

TEST	ACTION	APPLICABILITY
3	<p><b>WARNING: TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> Disconnect the Passenger Airbag On - Off Switch. <b>NOTE: Check connectors - Clean and repair as necessary.</b> Measure the PAB On - Off Switch resistance between terminals 1 &amp; 4 and 2 &amp; 4. Is the resistance below 10K ohms on either test?</p> <p>Yes → Replace the Passenger Airbag ON - OFF Switch in accordance with the service information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p>Measure the PAB On - Off Switch resistance between terminals 1 and 2 in both switch positions. The switch resistance specifications are: ON position = 175.0 to 190.0 ohms and OFF position = 820.0 to 870.0 ohms. Is the resistance within range for both switch positions?</p> <p>Yes → Go To 5</p> <p>No → Replace the Passenger Airbag ON - OFF Switch in accordance with the service information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
5	<p><b>WARNING: TURN IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> Disconnect the Airbag Control Module connector(s). <b>NOTE: Check connectors - Clean and repair as necessary.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED.</b> <b>WARNING: TURN IGNITION ON, THEN RECONNECT THE BATTERY.</b> Measure the voltage on the PAB MUX Switch Sense and PAB MUX Switch Return circuits at the PAB On - Off Switch connector. Is there any voltage on either circuit?</p> <p>Yes → Repair the Passenger Airbag MUX Switch circuits shorted to battery. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 6</p>	All
6	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b> If there are no possible causes remaining, view repair.</p> <p>Repair Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO BATTERY —**  
**Continued**

TEST	ACTION	APPLICABILITY
7	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO GROUND**

**When Monitored and Set Condition:**

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO GROUND**

When Monitored: With the ignition on, the PAB MUX Switch Sense circuit supplies a 3 to 10 ms pulse every 100 ms across the On or Off Switch resistor to the MUX Switch Return circuit.

Set Condition: The code will set if the ACM senses low resistance on the PAB MUX Switch sense circuit.

**POSSIBLE CAUSES**

CHECKING EQUIPMENT  
 PAB ON - OFF SWITCH CIRCUIT SHORT  
 PAB ON - OFF SWITCH SHORT  
 PAB MUX SWITCH CIRCUIT SHORT TO GROUND  
 ACM, PAB ON - OFF SWITCH CONNECTOR.  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure that the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 7  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Is this vehicle equipped with a Passenger Airbag On - Off Switch?  Yes → Go To 3  No → With the DRBIII® in MISCELLANEOUS, read the Configure for Airbag ON - OFF Switch current status. Enter the number 1 and press enter to re configure the ACM for NO AIRBAG ON/OFF SWITCH. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag On - Off Switch.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Measure the PAB On - Off Switch resistance between terminals 1 &amp; 3 and 2 &amp; 3. Is the resistance below 10K ohms on either test?</p> <p>Yes → Replace the Passenger Airbag ON - OFF Switch in accordance with the service information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p>Measure the PAB On - Off Switch resistance between terminals 1 and 2 in both switch positions.</p> <p>The switch resistance specifications are: ON position = 175.0 to 190.0 ohms and OFF position = 820.0 870.0 ohms.</p> <p>Is the resistance within range for both switch positions?</p> <p>Yes → Go To 5</p> <p>No → Replace the Passenger Airbag ON - OFF Switch in accordance with the service information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
5	<p>Disconnect the Airbag Control Module connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector. Measure the resistance of the PAB MUX Switch Sense circuit between the PAB On - Off Switch connector and ground.</p> <p>Is the resistance below 10K ohms?</p> <p>Yes → Repair the Passenger Airbag MUX Switch Sense circuit short to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 6</p>	All
6	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER AIRBAG ON - OFF SWITCH SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
7	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.</p> <p>If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.</p> <p>The following additional checks may assist you in identifying a possible intermittent problem.</p> <p>Reconnect any disconnected components and harness connector.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII® monitor active codes as you work through the following steps.</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b></p> <p>Wiggle the wiring harness and connectors of the related airbag circuit or component.</p> <p>If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.</p> <p>IF only stored codes return continue the test until the problem area has been isolated</p> <p>In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.</p> <p>Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**

**PASSENGER OFF INDICATOR CIRCUIT SHORT TO BATTERY**

**When Monitored and Set Condition:**

**PASSENGER OFF INDICATOR CIRCUIT SHORT TO BATTERY**

**When Monitored:** With the ignition on, the ACM monitors the PAB Indicator Driver circuit for voltage from the PAB On - Off Switch indicator circuit.

**Set Condition:** The code will set if the ACM senses battery voltage on the PAB Indicator Driver circuit.

**POSSIBLE CAUSES**

CHECKING EQUIPMENT

PAB ON - OFF SWITCH INDICATOR SHORT

PASSENGER AIRBAG INDICATOR SHORT TO FUSED RUN - START CIRCUIT

PASSENGER AIRBAG INDICATOR DRIVER CIRCUIT SHORTED TO BATTERY

ACM, PAB INDICATOR DRIVER CIRCUIT SHORT TO BATTERY

STORED CODE OR INTERMITTENT CONDITION

ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure that the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 7  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	Is this vehicle equipped with a Passenger Airbag On - Off Switch?  Yes → Go To 3  No → With the DRBIII® in MISCELLANEOUS, read the Configure for Airbag ON - OFF Switch current status. Enter the number 1 and press enter to re configure the ACM for NO AIRBAG ON/OFF SWITCH. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

## PASSENGER OFF INDICATOR CIRCUIT SHORT TO BATTERY — Continued

TEST	ACTION	APPLICABILITY
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag On - Off Switch.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Measure the resistance between PAB On - Off Switch terminals 3 and 4. Is the resistance below 14.0 ohms?</p> <p>Yes → Go To 4</p> <p>No → Replace the Passenger Airbag On - Off Switch in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Airbag Control Module connector.</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>Measure the voltage on the Passenger Airbag Indicator Driver circuit between the PAB On - Off Switch connector and ground. Is there any voltage present?</p> <p>Yes → Go To 5</p> <p>No → Go To 6</p>	All
5	<p>Remove the Fused Ignition Switch Output Run - Start circuit fuse.</p> <p>Measure the voltage on the Passenger Airbag Indicator Driver circuit at the PAB On - Off Switch connector. Is there any voltage present?</p> <p>Yes → Repair the Passenger Airbag Indicator Driver circuit shorted to battery. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Repair the Fused ignition Switch Output Run - Start circuit shorted to the PAB Indicator Driver circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
6	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED.</b> Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER OFF INDICATOR CIRCUIT SHORT TO BATTERY —**  
**Continued**

TEST	ACTION	APPLICABILITY
7	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:****PASSENGER OFF INDICATOR CIRCUIT SHORT TO GROUND****When Monitored and Set Condition:****PASSENGER OFF INDICATOR CIRCUIT SHORT TO GROUND**

**When Monitored:** With the ignition on, the ACM monitors the PAB Indicator Driver circuit for voltage from the PAB On - Off Switch indicator circuit.

**Set Condition:** The code will set if the ACM cannot detect voltage on the PAB Indicator Driver circuit.

**POSSIBLE CAUSES**

ACTIVE ACM RUN - START CODES  
 CHECKING EQUIPMENT  
 FUSED IGNITION SWITCH OUTPUT RUN - START  
 SWITCH DISCONNECTED  
 PAB ON - OFF INDICATOR OPEN  
 PASSENGER AIRBAG INDICATOR DRIVER CIRCUIT OPEN  
 PASSENGER AIRBAG INDICATOR DRIVER CIRCUIT SHORT  
 ACM, PASSENGER ON - OFF INDICATOR CIRCUIT OPEN  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	Turn the ignition on. <b>NOTE: Ensure that the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 10  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All
2	With the DRBIII®, read active Airbag Control Module DTC's. Does the DRBIII® display LOSS OF IGNITION RUN - START ?  Yes → Refer to symptom list for problems related to Loss of Ignition Run - Start active diagnostic trouble code test. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Go To 3	All

**PASSENGER OFF INDICATOR CIRCUIT SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
3	<p>Is this vehicle equipped with a Passenger Airbag On - Off Switch?</p> <p>Yes → Go To 4</p> <p>No → With the DRBIII® in MISCELLANEOUS, read the Configure for Airbag ON - OFF Switch current status. Enter the number 1 and press enter to re configure the ACM for NO AIRBAG ON/OFF SWITCH. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p>Gain access to the Passenger Airbag On - Off Switch connector. Is the Passenger Airbag On - Off Switch connected to the dash harness?</p> <p>Yes → Go To 5</p> <p>No → Connect the Passenger Airbag On - Off switch to the dash harness connector. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
5	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger On - Off Switch connector. <b>NOTE: Check connectors - Clean and repair as necessary.</b> <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>Measure the voltage on the Fused Ignition Switch Output Run - Start circuit between the PAB On - Off Switch connector and ground. Is the voltage above 10.0 volts?</p> <p>Yes → Go To 6</p> <p>No → Repair the open Fused ignition Switch Output Run - Start circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
6	<p><b>WARNING: TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag On - Off Switch. <b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Measure the resistance between PAB On - Off Switch terminals 3 and 4. Is the resistance approximately 14 ohms?</p> <p>Yes → Go To 7</p> <p>No → Replace the Passenger Airbag ON - OFF Switch in accordance with the service information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER OFF INDICATOR CIRCUIT SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
7	Disconnect the Airbag Control Module connector <b>NOTE: Check connectors - Clean and repair as necessary.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b> Connect the appropriate Load Tool ACM Adaptor to the Airbag Control Module connector(s). Measure the resistance of the PAB Indicator Driver circuit between the ACM and the PAB On - Off Switch connector. Is the resistance below 5.0 ohms?  Yes → Go To 8  No → Repair the open Passenger Airbag Indicator Driver circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.	All
8	Measure the resistance of the PAB Indicator Driver circuit between the PAB On - Off Switch connector and ground. Is the resistance below 10K ohms?  Yes → Repair the Passenger Airbag Indicator Driver circuit short to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.  No → Go To 9	All
9	<b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b> If there are no possible causes remaining, view repair.  Repair Replace the Airbag Control Module in accordance with Service Instructions. Perform __AIRBAG VERIFICATION TEST - VER 1.	All

**PASSENGER OFF INDICATOR CIRCUIT SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
10	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**  
**PASSENGER SQUIB 1 CIRCUIT OPEN**

**When Monitored and Set Condition:**

**PASSENGER SQUIB 1 CIRCUIT OPEN**

When Monitored: With the ignition on, the ACM monitors the resistance of the Passenger Squib 1 circuits.

Set Condition: When the ACM detects an open circuit or high resistance on the Passenger Squib 1 circuits.

**POSSIBLE CAUSES**

PAB SQUIB 1 CIRCUIT OPEN  
 PAB SQUIB 1 LINE 1 OR LINE 2 CIRCUIT OPEN  
 ACM, PAB SQUIB 1 CIRCUIT OPEN  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

**PASSENGER SQUIB 1 CIRCUIT OPEN — Continued**

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the Load Tool to the Passenger Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show PASSENGER SQUIB 1 CIRCUIT OPEN?</p> <p>Yes → Go To 3</p> <p>No → Replace the Passenger Airbag in accordance with the Service Information.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Passenger Airbag connector(s).</p> <p>Disconnect the Airbag Control module connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the Load Tool ACM Adaptor to the Airbag Control Module connector(s).</p> <p>Measure the resistance of the Passenger Squib 1 Line 1 and Line 2 circuit between the ACM Adaptor and the Passenger Airbag connector.</p> <p>Is the resistance below 1.0 ohms on both circuits?</p> <p>Yes → Go To 4</p> <p>No → Repair open or high resistance in Passenger Squib 1 Line 1 or Line 2 circuits.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <p>Replace the Airbag Control Module in accordance with Service Instructions.</p> <p>Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER SQUIB 1 CIRCUIT OPEN — Continued**

TEST	ACTION	APPLICABILITY
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.            If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.            If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>            Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.            The following additional checks may assist you in identifying a possible intermittent problem.            Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>            With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>            Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.            IF only stored codes return continue the test until the problem area has been isolated            In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.            Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**

**PASSENGER SQUIB 1 CIRCUIT SHORT**

**When Monitored and Set Condition:**

**PASSENGER SQUIB 1 CIRCUIT SHORT**

When Monitored: With the ignition on, the ACM monitors the resistance between the Passenger Squib 1 circuits.

Set Condition: When the ACM detects low resistance in the Passenger Squib 1 circuits.

**POSSIBLE CAUSES**

PAB SQUIB 1 CIRCUIT SHORT  
 PAB SQUIB 1 LINE 1 SHORT TO LINE 2  
 ACM, PAB SQUIB 1 CIRCUIT SHORT  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

## PASSENGER SQUIB 1 CIRCUIT SHORT — Continued

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the appropriate Load Tool to the Passenger Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show PASSENGER SQUIB 1 CIRCUIT SHORT?</p> <p>Yes → Go To 3</p> <p>No → Replace the Passenger Airbag in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Passenger Airbag connector(s).</p> <p>Disconnect the Airbag Control Module connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p>Connect the appropriate Load Tool Adapter to the Airbag Control Module connector(s).</p> <p>Measure the resistance between Passenger Squib 1 Line 1 and Line 2 circuits at the Passenger Airbag connector.</p> <p>Is the resistance below 10K ohms?</p> <p>Yes → Repair Passenger Squib 1 Line 1 circuit short to Passenger Squib 1 Line 2 circuit. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <p>Replace the Airbag Control Module in accordance with Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER SQUIB 1 CIRCUIT SHORT — Continued**

TEST	ACTION	APPLICABILITY
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**  
**PASSENGER SQUIB 1 SHORT TO BATTERY**

**When Monitored and Set Condition:**

**PASSENGER SQUIB 1 SHORT TO BATTERY**

When Monitored: With the ignition on, the ACM monitors the voltage on the Passenger Squib 1 circuits.

Set Condition: When the ACM detects voltage on the Passenger Squib 1 circuits.

**POSSIBLE CAUSES**

- PAB SQUIB 1 CIRCUITS SHORT TO BATTERY
- PAB SQUIB 1 LINE 1 OR LINE 2 SHORT TO BATTERY
- ACM, PAB SQUIB 1 CIRCUIT SHORT TO BATTERY
- STORED CODE OR INTERMITTENT CONDITION
- ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

**PASSENGER SQUIB 1 SHORT TO BATTERY — Continued**

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Disconnect the Passenger Airbag connector(s).  <b>NOTE: Check connectors - Clean and repair as necessary.</b>  <b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b>                      Connect the appropriate Load Tool to the Passenger Airbag connector(s).  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII®, read the active Airbag Control Module DTC's.                      Does the DRBIII® show PASSENGER SQUIB 1 CIRCUIT SHORT TO BATTERY?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Replace Passenger Airbag in accordance with the Service Information.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Disconnect the Load Tool from the Passenger Airbag connector(s).                      Disconnect the Airbag Control Module connector(s).  <b>NOTE: Check connectors - Clean and repair as necessary.</b>                      Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector(s).  <b>WARNING: AVOID PERSONAL INJURY OR DEATH, TURN IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      Measure the voltage on the Passenger Squib 1 Line 1 and Line 2 circuits between the Passenger Airbag connector and ground.                      Is there any voltage present?</p> <p style="padding-left: 40px;">Yes → Repair Passenger Squib 1 Line 1 or Line 2 circuit short to battery.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Go To 4</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>  <b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b>                      If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair:                      Replace the Airbag Control Module in accordance with Service Instructions.                      Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER SQUIB 1 SHORT TO BATTERY — Continued**

TEST	ACTION	APPLICABILITY
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.            If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.            If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>            Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.            The following additional checks may assist you in identifying a possible intermittent problem.            Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>            With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>            Wiggle the wiring harness and connectors of the related airbag circuit or component.            If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.            IF only stored codes return continue the test until the problem area has been isolated            In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.            Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:**

**PASSENGER SQUIB 1 SHORT TO GROUND**

**When Monitored and Set Condition:**

**PASSENGER SQUIB 1 SHORT TO GROUND**

When Monitored: With the ignition on, the ACM monitors the resistance of the Passenger Squib 1 circuits.

Set Condition: When the ACM detects a short to ground in either Passenger Squib 1 circuits.

**POSSIBLE CAUSES**

PAB SQUIB 1 CIRCUITS SHORT TO GROUND  
 PAB SQUIB 1 LINE 1 OR LINE 2 SHORT TO GROUND  
 ACM, PAB SQUIB 1 SHORT TO GROUND  
 STORED CODE OR INTERMITTENT CONDITION  
 ACTIVE CODE PRESENT

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the battery is fully charged.</b> <b>NOTE: For the purpose of this test, the AECM and ORC modules will be referred to as an ACM.</b> SELECT ACTIVE or STORED DTC:  ACM - ACTIVE DTC Go To 2  ACM - STORED DTC Go To 5  <b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b>	All

## PASSENGER SQUIB 1 SHORT TO GROUND — Continued

TEST	ACTION	APPLICABILITY
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Passenger Airbag connector(s).</p> <p><b>NOTE: Check connectors - Clean and repair as necessary.</b></p> <p><b>WARNING: DO NOT PLACE AN INTACT UNDEPLOYED AIRBAG FACE DOWN ON A HARD SURFACE, THE AIRBAG WILL PROPEL INTO THE AIR IF ACCIDENTALLY DEPLOYED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>Connect the appropriate Load Tool to the Passenger Airbag connector(s).</p> <p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>With the DRBIII®, read the active Airbag Control Module DTC's.</p> <p>Does the DRBIII® show PASSENGER SQUIB 1 SHORT TO GROUND?</p> <p>Yes → Go To 3</p> <p>No → Replace the Passenger Airbag in accordance with the Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All
3	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p>Disconnect the Load Tool from the Passenger Airbag connector(s).</p> <p>Disconnect the Airbag Control Module connector(s).</p> <p><b>NOTE: Check connectors - Clean repair as necessary.</b></p> <p>Connect the appropriate Load Tool Adaptor to the Airbag Control Module connector.</p> <p>Measure the resistance of the Passenger Squib 1 Line 1 or Line 2 circuit between the Passenger Airbag Module Connector and ground.</p> <p>Is the resistance below 10K ohms on either circuit?</p> <p>Yes → Repair Passenger Squib 1 Line 1 and Line 2 circuits for a short to ground. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <p>Replace the Airbag Control Module in accordance with Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**PASSENGER SQUIB 1 SHORT TO GROUND — Continued**

TEST	ACTION	APPLICABILITY
5	<p>With the DRBIII®, record and erase all DTC's from all Airbag modules.                      If equipped with Passenger Airbag On - Off switch, read the DTC's in all switch positions.                      If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b>                      Using the wiring diagram/schematic as a guide, inspect the wiring and connectors. Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.                      The following additional checks may assist you in identifying a possible intermittent problem.                      Reconnect any disconnected components and harness connector.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b>                      With the DRBIII® monitor active codes as you work through the following steps.  <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, MAINTAIN A SAFE DISTANCE FROM ALL AIRBAGS WHILE PERFORMING THE FOLLOWING STEPS.</b>                      Wiggle the wiring harness and connectors of the related airbag circuit or component. If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.                      IF only stored codes return continue the test until the problem area has been isolated                      In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.                      Are any ACTIVE DTCs present?</p> <p style="padding-left: 40px;">Yes → Select appropriate symptom from Symptom List.</p> <p style="padding-left: 40px;">No → No problem found at this time. Erase all codes before returning vehicle to customer.</p>	All

**Symptom:****\*AIRBAG INDICATOR ON WITHOUT ACTIVE TROUBLE CODES****POSSIBLE CAUSES**

AIRBAG WARNING INDICATOR ON WITHOUT TROUBLE CODES

ACM, \*AIRBAG INDICATOR ON WITHOUT TROUBLE CODES

TEST	ACTION	APPLICABILITY
1	<p>Turn the ignition on. Make sure that all Airbag and Instrument Cluster DTCs have been repaired before performing this procedure. With the DRBIII® select MONITOR DISPLAY, WARNING LAMP STATUS and read the PASSIVE RESTRAINTS, AIRBAG, MONITOR DISPLAY, WARNING LAMP STATES. With no active DTCs, Does the LAMP REQ by ACM monitor show ON?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Repair or replace the Instrument Cluster as necessary. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p><b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b></p>	All
2	<p><b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b></p> <p><b>WARNING: IF THE AIRBAG CONTROL MODULE IS DROPPED AT ANY TIME, IT MUST BE REPLACED. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND PERSONAL INJURY OR DEATH.</b></p> <p>If there are no possible causes remaining, view repair.</p> <p>Repair:</p> <p style="padding-left: 40px;">Replace the Airbag Control Module in accordance with Service Information. Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**ALL OUTPUTS SHORT - BASE AUDIO SYSTEM**

**When Monitored and Set Condition:**

**ALL OUTPUTS SHORT - BASE AUDIO SYSTEM**

When Monitored: Ignition in RUN and IOD fuse installed.

Set Condition: The radio has sensed a short on the output for more than 10 seconds.

**POSSIBLE CAUSES**

DETERMINE FAULT  
 FRONT SHORTED SPEAKER  
 REAR SHORTED SPEAKER  
 (+) CIRCUIT SHORTED TO GROUND  
 (-) CIRCUIT SHORTED TO GROUND  
 SPEAKER (+) & (-) CIRCUITS SHORTED TOGETHER  
 SPEAKER SECTION OF RADIO

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Turn the Radio on. With the DRBIII®, erase the audio DTC's. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read the audio DTC's. Does the DRBIII® display ALL OUTPUTS SHORT?  Yes → Go To 2  No → Refer to the wiring diagrams located in the service information to help isolate a possible intermittent short. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each front speaker connector.</b> Disconnect each front speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display ALL OUTPUTS SHORT with all the front speakers disconnected?  Yes → Go To 3  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All

**ALL OUTPUTS SHORT - BASE AUDIO SYSTEM — Continued**

TEST	ACTION	APPLICABILITY
3	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each rear speaker connector.</b> Disconnect each rear speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display ALL OUTPUTS SHORT with all the rear speakers disconnected?  Yes → Go To 4  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All
4	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (+) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (+) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 5	All
5	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (-) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 6	All
6	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between each speaker (+) circuit and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms for any of the measurements?  Yes → Repair the speaker circuits shorted together. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 7	All
7	If there are no possible causes remaining, view repair.  Repair Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**ALL OUTPUTS SHORT - PREMIUM AUDIO SYSTEM**

**When Monitored and Set Condition:**

**ALL OUTPUTS SHORT - PREMIUM AUDIO SYSTEM**

When Monitored: Ignition in RUN and IOD fuse installed.

Set Condition: The radio has sensed a short on the output for more than 10 seconds.

<b>POSSIBLE CAUSES</b>
<p>DETERMINE FAULT</p> <p>FRONT SHORTED SPEAKER</p> <p>SUBWOOFER</p> <p>REAR SHORTED SPEAKER</p> <p>(+) CIRCUIT SHORTED TO GROUND</p> <p>(-) CIRCUIT SHORTED TO GROUND</p> <p>SPEAKER (+) &amp; (-) CIRCUITS SHORTED TOGETHER</p> <p>SPEAKER SECTION OF RADIO</p>

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	<p>Turn the ignition on.</p> <p>Turn the Radio on.</p> <p>With the DRBIII®, erase the audio DTC's.</p> <p>Cycle the ignition switch from off to on and wait 10 seconds.</p> <p>With the DRBIII®, read the audio DTC's.</p> <p>Does the DRBIII® display ALL OUTPUTS SHORT?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Refer to the wiring diagrams located in the service information to help isolate a possible intermittent short.</p> <p style="padding-left: 40px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Turn the ignition off.</p> <p>Disconnect the Subwoofer harness connector.</p> <p>Turn the ignition on.</p> <p>Turn the radio on.</p> <p>With the DRBIII®, erase the audio DTCs.</p> <p>Cycle the ignition switch from off to on and wait 10 seconds.</p> <p>With the DRBIII®, read DTC's.</p> <p>Does the DRBIII® display ALL OUTPUTS SHORT with the Subwoofer disconnected?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Replace the Subwoofer in accordance with the service information.</p> <p style="padding-left: 40px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All

**ALL OUTPUTS SHORT - PREMIUM AUDIO SYSTEM — Continued**

TEST	ACTION	APPLICABILITY
3	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each front speaker connector.</b> Disconnect each front speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display ALL OUTPUTS SHORT with all the front speakers disconnected?  Yes → Go To 4  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All
4	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each rear speaker connector.</b> Disconnect each rear speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display ALL OUTPUTS SHORT with all the rear speakers disconnected?  Yes → Go To 5  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All
5	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (+) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (+) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 6	All
6	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (-) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 7	All

**ALL OUTPUTS SHORT - PREMIUM AUDIO SYSTEM — Continued**

TEST	ACTION	APPLICABILITY
7	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between each speaker (+) circuit and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms for any of the measurements?  Yes → Repair the speaker circuits shorted together. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 8	All
8	If there are no possible causes remaining, view repair.  Repair Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom List:**

**CASSETTE PLAYER INOP**  
**CD MECHANICAL FAILURE**  
**NO PCI TRANSMISSION**  
**\*AM/FM SWITCH INOPERATIVE**  
**\*ANY STATION PRESET SWITCH INOPERATIVE**  
**\*BALANCE INOPERATIVE**  
**\*CD EJECT SWITCH INOPERATIVE**  
**\*EQUALIZER INOPERATIVE**  
**\*FADER INOPERATIVE**  
**\*FF/RW SWITCH INOPERATIVE**  
**\*HOUR/MINUTE SWITCHES INOPERATIVE**  
**\*PAUSE/PLAY SWITCH INOPERATIVE**  
**\*PWR SWITCH INOPERATIVE**  
**\*SCAN SWITCH INOPERATIVE**  
**\*SEEK SWITCH INOPERATIVE**  
**\*SET SWITCH INOPERATIVE**  
**\*TAPE EJECT SWITCH INOPERATIVE**  
**\*TIME SWITCH INOPERATIVE**  
**\*TUNE SWITCH INOPERATIVE**

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**Test Note: All symptoms listed above are diagnosed using the same tests.  
The title for the tests will be CASSETTE PLAYER INOP.**

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**When Monitored and Set Condition:****CASSETTE PLAYER INOP**

When Monitored: Continuously with the ignition and radio turned on.

Set Condition: The code will set if the radio detects a internal cassette failure.

**CD MECHANICAL FAILURE**

When Monitored: Continuously with the ignition and CD player turned on.

Set Condition: The code will set if the radio detects a CD mechanical failure.

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**POSSIBLE CAUSES**

INTERNAL FAILURE

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**CASSETTE PLAYER INOP — Continued**

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: If a DTC is set, erase the DTC and attempt to reset the DTC. If DTC resets, follow this test.</b>                      This is an internal radio failure.                      View repair</p> <p style="padding-left: 40px;">Repair</p> <p style="padding-left: 80px;">Replace the Radio.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**  
**CD PLAY FAILURE**

**When Monitored and Set Condition:**

**CD PLAY FAILURE**

When Monitored: Continuously with the ignition and the radio CD player turned on.

Set Condition: The code will set if a CD that is not formatted as a music CD or is scratched, dirty so the radio can not play the CD.

**POSSIBLE CAUSES**

CD PLAY FAILURE

TEST	ACTION	APPLICABILITY
1	Replace the problem CD with a good, clean, unscratched, music CD. Turn the radio CD player on. With the DRBIII®, read DTC's. Does the DRBIII® display CD PLAY FAILURE?  Yes → Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**CD READ FAILURE**

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**When Monitored and Set Condition:**

**CD READ FAILURE**

When Monitored: Continuously with the ignition and the radio CD player turned on.

Set Condition: The code will set if a CD that is not formatted as a music CD is installed in the radio CD player.

**POSSIBLE CAUSES**

CD READ FAILURE

TEST	ACTION	APPLICABILITY
1	Replace the problem CD with a good, clean, unscratched, music CD. Turn the radio CD player on. With the DRBIII®, read DTC's. Does the DRBIII® display CD READ FAILURE?  Yes → Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**CD TEMPERATURE HIGH**

**When Monitored and Set Condition:**

**CD TEMPERATURE HIGH**

When Monitored: Continuously with the ignition and the radio CD player turned on.

Set Condition: The code will set if the temperature inside the radio CD player is above +85° C (+185° F).

**POSSIBLE CAUSES**

HIGH TEMPERATURE FAILURE

TEST	ACTION	APPLICABILITY
1	With the DRBIII®, erase the audio DTC's. Start the engine and allow the engine to reach normal operating temperature. If the vehicle has been in the hot sunlight or extreme cold move the vehicle indoors and open the doors to allow the inside temperature to stabilize. The radio CD player will operate between -30° C and 85° C (-22° F and +185° F). With the DRBIII®, read DTC's. Does the DRBIII® display CD TEMPERATURE HIGH?  Yes → Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**LOW VOLTAGE LEVEL**

**When Monitored and Set Condition:**

**LOW VOLTAGE LEVEL**

When Monitored:

Set Condition: The radio detects lower than normal voltage.

**POSSIBLE CAUSES**

CHECK CHARGING SYSTEM  
 CHECK VOLTAGE LEVEL AT RADIO  
 RADIO

TEST	ACTION	APPLICABILITY
1	Check the charging system in accordance with the service information. Is the charging system operating properly?  Yes → Go To 2  No → Refer to the appropriate service information and repair as necessary. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Disconnect the Radio harness connector. Start the engine. Measure the voltage of each Fused B+ circuit and the Fused Ignition Switch Output circuit. Is the voltage above or approximately 14 volts for each measurement?  Yes → Go To 3  No → Repair the circuit for high resistance. Perform BODY VERIFICATION TEST - VER 1.	All
3	<b>Note: Reconnect all previously disconnected components.</b> Turn the ignition and Radio on. With the DRBIII®, erase the audio DTC's. Start the engine. With the DRBIII®, read the audio DTC's. Did this DTC reset?  Yes → Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**NO ANTENNA CONNECTION**

**When Monitored and Set Condition:**

**NO ANTENNA CONNECTION**

When Monitored: With the ignition on and the radio in seek up/down mode.

Set Condition: With the radio in seek or scan mode for two minutes and the radio does not detect an antenna connection or does not receive a radio station signal.

**POSSIBLE CAUSES**

BAD ANTENNA CONNECTION  
 TEST ANTENNA  
 RADIO

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Disconnect the Radio Antenna connector. Inspect the Radio Antenna connection. Was the Antenna connection clean and tight?  Yes → Go To 2  No → Repair Antenna connection as needed. Perform BODY VERIFICATION TEST - VER 1.	All
2	Refer to the Audio System in the service information and test the Antenna in accordance with the service procedure. Is the Antenna ok?  Yes → Go To 3  No → Repair or replace the Antenna assembly as necessary. Perform BODY VERIFICATION TEST - VER 1.	All
3	<b>NOTE: Reconnect all previously disconnected components.</b> Turn the ignition and Radio on. <b>NOTE: Move vehicle outside approximately 30ft from any structure.</b> With the DRBIII®, erase the audio DTC's, put the radio in seek up and seek down mode for approximately 2 minutes before proceeding. With the DRBIII®, read the audio DTC's. Did this DTC reset?  Yes → Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**

**POWER AMP SHUTDOWN - BASE AUDIO SYSTEM**

**When Monitored and Set Condition:**

**POWER AMP SHUTDOWN - BASE AUDIO SYSTEM**

When Monitored: Ignition in RUN and IOD fuse installed.

Set Condition: The radio has sensed a short on the output for more than 10 seconds.

**POSSIBLE CAUSES**

DETERMINE FAULT  
 FRONT SHORTED SPEAKER  
 REAR SHORTED SPEAKER  
 (+) CIRCUIT SHORTED TO GROUND  
 (-) CIRCUIT SHORTED TO GROUND  
 SPEAKER (+) & (-) CIRCUITS SHORTED TOGETHER  
 SPEAKER SECTION OF RADIO

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Turn the Radio on. With the DRBIII®, erase the audio DTC's. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read the audio DTC's. Does the DRBIII® display POWER AMP SHUTDOWN?  Yes → Go To 2  No → Refer to the wiring diagrams located in the service information to help isolate a possible intermittent short. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each front speaker connector.</b> Disconnect each front speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display POWER AMP SHUTDOWN with all the front speakers disconnected?  Yes → Go To 3  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All

**POWER AMP SHUTDOWN - BASE AUDIO SYSTEM — Continued**

TEST	ACTION	APPLICABILITY
3	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each rear speaker connector.</b> Disconnect each rear speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display POWER AMP SHUTDOWN with all the rear speakers disconnected?  Yes → Go To 4  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All
4	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (+) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (+) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 5	All
5	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (-) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 6	All
6	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between each speaker (+) circuit and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms for any of the measurements?  Yes → Repair the speaker circuits shorted together. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 7	All
7	If there are no possible causes remaining, view repair.  Repair Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**POWER AMP SHUTDOWN - PREMIUM AUDIO SYSTEM**

**When Monitored and Set Condition:**

**POWER AMP SHUTDOWN - PREMIUM AUDIO SYSTEM**

When Monitored: Ignition in RUN and IOD fuse installed.

Set Condition: The radio has sensed a short on the output for more than 10 seconds.

<b>POSSIBLE CAUSES</b>
<p>DETERMINE FAULT</p> <p>FRONT SHORTED SPEAKER</p> <p>SUBWOOFER</p> <p>REAR SHORTED SPEAKER</p> <p>(+) CIRCUIT SHORTED TO GROUND</p> <p>(-) CIRCUIT SHORTED TO GROUND</p> <p>SPEAKER (+) &amp; (-) CIRCUITS SHORTED TOGETHER</p> <p>SPEAKER SECTION OF RADIO</p>

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	<p>Turn the ignition on.</p> <p>Turn the Radio on.</p> <p>With the DRBIII®, erase the audio DTC's.</p> <p>Cycle the ignition switch from off to on and wait 10 seconds.</p> <p>With the DRBIII®, read the audio DTC's.</p> <p>Does the DRBIII® display POWER AMP SHUTDOWN?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Refer to the wiring diagrams located in the service information to help isolate a possible intermittent short.</p> <p style="padding-left: 40px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Turn the ignition off.</p> <p>Disconnect the Subwoofer harness connector.</p> <p>Turn the ignition on.</p> <p>Turn the radio on.</p> <p>With the DRBIII®, erase the audio DTCs.</p> <p>Cycle the ignition switch from off to on and wait 10 seconds.</p> <p>With the DRBIII®, read DTC's.</p> <p>Does the DRBIII® display POWER AMP SHUTDOWN with the Subwoofer disconnected?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Replace the Subwoofer in accordance with the service information.</p> <p style="padding-left: 40px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All

**POWER AMP SHUTDOWN - PREMIUM AUDIO SYSTEM — Continued**

TEST	ACTION	APPLICABILITY
3	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each front speaker connector.</b> Disconnect each front speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display POWER AMP SHUTDOWN with all the front speakers disconnected?  Yes → Go To 4  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All
4	Turn the ignition off. <b>NOTE: Perform this procedure after disconnecting each rear speaker connector.</b> Disconnect each rear speaker harness connector one at a time. Turn the ignition on. Turn the radio on. With the DRBIII®, erase the audio DTCs. Cycle the ignition switch from off to on and wait 10 seconds. With the DRBIII®, read DTC's. Does the DRBIII® display POWER AMP SHUTDOWN with all the rear speakers disconnected?  Yes → Go To 5  No → Replace the Speaker that when disconnected the DTC did not reset. Perform BODY VERIFICATION TEST - VER 1.	All
5	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (+) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (+) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 6	All
6	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between ground and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms?  Yes → Repair the speaker (-) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 7	All

**POWER AMP SHUTDOWN - PREMIUM AUDIO SYSTEM — Continued**

TEST	ACTION	APPLICABILITY
7	Turn the ignition off. Disconnect each front and rear speaker harness connector. Disconnect the Radio harness connector. Measure the resistance between each speaker (+) circuit and each speaker (-) circuit. Is the resistance below 1000.0 (1K) ohms for any of the measurements?  Yes → Repair the speaker circuits shorted together. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 8	All
8	If there are no possible causes remaining, view repair.  Repair Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:****\*POOR SOUND QUALITY****POSSIBLE CAUSES**

CHECK AUDIO DTCS

CHECK SELECTED RADIO EQ CURVE

SET THE RADIO EQ CURVE

VERIFY SOUND PERFORMANCE

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, check for any audio related DTC's. Are any Audio related DTCs set?  Yes → Refer to the Audio category for the related symptom(s). Perform BODY VERIFICATION TEST - VER 1.  No → Go To 2	All
2	Turn the ignition on. With the DRBIII®, enter body, Instrument Cluster then miscellaneous. Check the radio EQ curve setting and follow the instructions on the DRBIII®. Is the radio EQ curve correct for the audio combination the vehicle is equipped with?  Yes → Refer to the service information for problems related to poor sound quality and perform the appropriate checks. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Turn the ignition on. With the DRBIII®, enter body, Instrument Cluster then miscellaneous. Set the radio EQ curve. Follow the instructions on the DRBIII®. Cycle the ignition switch from off to on. Check the radio EQ curve setting. Is the radio EQ curve correct for the audio combination the vehicle is equipped with?  Yes → Refer to the service information for problems related to poor sound quality and perform the appropriate checks. Perform BODY VERIFICATION TEST - VER 1.  No → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*CHIME INOPERATIVE AT ALL TIMES**

**POSSIBLE CAUSES**

INSTRUMENT CLUSTER - CHIME INOPERATIVE

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	If there are no possible causes remaining, view repair.  Repair Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:****\*CHIME INOPERATIVE WITH DRIVER SEAT BELT UNFASTENED****POSSIBLE CAUSES**

SEAT BELT SWITCH STATUS WRONG  
 SEAT BELT SWITCH SHORTED  
 SEAT BELT SWITCH SENSE WIRE SHORT TO GROUND  
 INSTRUMENT CLUSTER - SEAT BELT SWITCH SHORTED

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	<p>Ensure the drivers seat belt is unfastened.            With the DRB III select: Electro Mech Cluster Input Output.            Turn the ignition on.            Read the Driver Belt SW status.            Does the DRB III show Driver Belt SW: CLOSED?</p> <p>Yes → Go To 2</p> <p>No → Replace the Instrument Cluster.            Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Disconnect the Seat Belt Switch connector.            With the DRB III select: Electro Mech Cluster Input Outputs.            Turn the ignition on.            Read the Driver Belt Sw status.            Does the DRB III show Seat Belt SW: CLOSED?</p> <p>Yes → Go To 3</p> <p>No → Repair Seat Belt switch pigtail wiring for a short to ground or            replace the Seat Belt buckle assembly.            Perform BODY VERIFICATION TEST - VER 1.</p>	All
3	<p>Turn the ignition off.            Remove the Instrument Cluster from the instrument panel.            Disconnect the Seat Belt Switch connector.            Measure the resistance between ground and the Seat Belt Switch Sense circuit at the            Instrument Cluster C2 connector.            Is the resistance below 100.0 ohms?</p> <p>Yes → Repair the Seat Belt Switch Sense wire for a short to ground.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p>If there are no possible causes remaining, view repair.</p> <p>Repair</p> <p>Replace the Instrument Cluster.            Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*CHIME INOPERATIVE WITH EXTERIOR LAMPS ON AND DRIVER DOOR OPEN**

**POSSIBLE CAUSES**

VERIFY KEY-IN IGNITION, DRIVER'S DOOR OPEN CHIME OPERATION  
 HEADLAMP SWITCH OUTPUT OPEN  
 MIC - CHIME INOP WITH EXTERIOR LAMPS ON

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Ensure the key is in the ignition switch all the way. Open the driver door. Does the chime sound?  Yes → Go To 2  No → Refer to symptom *CHIME INOPERATIVE WITH KEY IN IGNITION, DRIVER'S DOOR OPEN in the CHIME category. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Remove the Instrument Cluster From the I/P. Turn the Exterior Lamps on. Measure the voltage of the Headlamp Switch Output circuit in the Instrument Cluster C1 connector. Is the voltage above 10.0 volts?  Yes → If there are no possible causes remaining, replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.  No → Repair the Headlamp Switch Output circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*CHIME INOPERATIVE WITH KEY IN IGNITION, DRIVER'S DOOR OPEN**

POSSIBLE CAUSES
OPEN DOOR AJAR GROUND CKT OPEN/MISSING FUSE 4 DRIVER DOOR AJAR SWITCH DOOR AJAR SWITCH OUTPUT CIRCUIT OPEN DRIVER DOOR AJAR SWITCH SENSE CIRCUIT OPEN INSTRUMENT CLUSTER - DOOR AJAR IGNITION SWITCH GROUND CIRCUIT OPEN KEY-IN IGNITION SWITCH OPEN KEY-IN IGNITION SWITCH SENSE CIRCUIT OPEN INSTRUMENT CLUSTER - KEY-IN

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. Open the driver door. With the DRB, read the "DR DOOR AJAR SW" state. Does the DRB display "DR DOOR AJAR SW: CLOSED"?  Yes → Go To 2  No → Go To 6	All
2	Turn the ignition off. Disconnect the Ignition Switch harness connector. <b>Note: Ensure the key is in the Ignition Switch Lock Cylinder.</b> Measure the resistance of the Key-in Ignition Switch with the key in. Is the resistance below 20 ohms?  Yes → Go To 3  No → Check the Ignition Lock Cylinder for damage. If OK, replace the Ignition Switch. Perform BODY VERIFICATION TEST - VER 1.	All
3	Turn the ignition off. Disconnect the Ignition Switch harness connector. Measure the resistance of the ground circuit in the ignition switch harness connector. Is the resistance below 5.0 ohms?  Yes → Go To 4  No → Repair the ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

**\*CHIME INOPERATIVE WITH KEY IN IGNITION, DRIVER'S DOOR OPEN — Continued**

TEST	ACTION	APPLICABILITY
4	Turn the ignition off. Disconnect the Ignition Switch harness connector. Remove the Instrument Cluster from the I/P. Measure the resistance of the Key-in Ignition Switch Sense circuit between the ignition switch harness connector and the Instrument Cluster C2 connector. Is the resistance below 5.0 ohms?  Yes → Go To 5  No → Repair the key-in ignition switch sense circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
5	If there are no possible causes remaining, view repair.  Repair Replace the Instrument Cluster in accordance with the Service Information.. Perform BODY VERIFICATION TEST - VER 1.	All
6	Gain access to the Fuse Block Fuse #4 and inspect. Was the fuse missing or open?  Yes → Replace Fuse. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 7	All
7	Using a 12-volt Test Light connected to 12-volts, test the Ground circuit at fuse #4 for continuity. Does the light illuminate?  Yes → Go To 8  No → Repair the Ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
8	Reinstall fuse if removed in previous test. Disconnect the Driver Door Ajar Switch connector. With the DRBIII® in Inputs/Outputs, read the DRV DR AJAR SW state. Connect a jumper wire between Sense circuit and the Output circuit. Does the DRBIII® display DRV DR AJAR SW: CLOSED?  Yes → Replace the Driver Door Ajar Switch. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 9	All
9	Disconnect the Driver Door Ajar Switch connector. Measure the resistance of the Door Ajar Output from the ajar switch to the fuse. Is the resistance below 5.0 ohms?  Yes → Go To 10  No → Repair the Door Ajar Switch Output circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

**\*CHIME INOPERATIVE WITH KEY IN IGNITION, DRIVER'S DOOR OPEN — Continued**

TEST	ACTION	APPLICABILITY
10	Remove the Instrument Cluster from the I/P. Disconnect the Driver Door Ajar Switch connector. Measure the resistance of the Driver Door Ajar Switch Sense circuit from the Driver Door Ajar switch to the Instrument Cluster C2 connector. Is the resistance below 5.0 ohms?  Yes → Go To 11  No → Repair the Driver Door Ajar Switch Sense circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
11	If there are no possible causes remaining, view repair.  Repair Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*CHIME SOUNDS WITH DRIVER SEAT BELT FASTENED**

POSSIBLE CAUSES
SEAT BELT SWITCH STATUS WRONG
SEAT BELT SWITCH OPEN
GROUND WIRE OPEN
SEAT BELT SWITCH SENSE OPEN
INSTRUMENT CLUSTER - SEAT BELT SENSE OPEN

TEST	ACTION	APPLICABILITY
1	Ensure the drivers seat belt is fastened. With the DRB III select: Electro Mech Cluster Input/Outputs. Turn the ignition on. Read the Driver Belt SW status. Does the DRB III show Driver Belt SW: CLOSED?  Yes → Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 2	All
2	Disconnect the Seat Belt Switch connector. Turn all interior lights off. Measure the resistance of the Ground circuit in the Seat Belt Switch connector to ground. Is the resistance below 5.0 ohms?  Yes → Go To 3  No → Repair the open Ground wire. Perform BODY VERIFICATION TEST - VER 1.	All
3	Disconnect the Seat Belt Switch connector. Connect a jumper wire between Seat Belt Switch Sense circuit and the Ground circuit in the Seat Belt Switch connector. With the DRB III select: Electro Mech Cluster Input/Outputs. Turn the ignition on. Read the Driver Belt SW status. Does the DRB III show Driver Belt SW: CLOSED?  Yes → Repair Seat Belt switch pigtail wiring or replace Buckle assembly. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All
4	Turn the ignition off. Remove the Instrument Cluster from the instrument panel. Disconnect the Seat Belt Switch connector. Measure the resistance of the Seat Belt Switch Sense circuit between the Instrument Cluster C2 connector and the Seat Belt Switch connector. Is the resistance below 5.0 ohms?  Yes → Go To 5  No → Repair the open Seat Belt Switch Sense wire. Perform BODY VERIFICATION TEST - VER 1.	All

**\*CHIME SOUNDS WITH DRIVER SEAT BELT FASTENED — Continued**

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
5	If there are no possible causes remaining, view repair.  Repair Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*CHIME SOUNDS WITH DRIVER'S DOOR OPEN, KEY REMOVED**

POSSIBLE CAUSES	
KEY-IN IGNITION SWITCH SHORTED	
KEY-IN IGNITION SW SENSE SHORT TO GROUND	
INSTRUMENT CLUSTER - KEY-IN IGNITION SHORTED	

TEST	ACTION	APPLICABILITY
1	Disconnect the Ignition Switch connector. Did the chime turn off?  Yes → Check the Ignition Lock Cylinder for damage. If OK replace the Ignition Switch. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 2	All
2	Turn ignition off. Disconnect the Ignition Switch connector. Remove the Instrument Cluster from the I/P. Measure the resistance of the Key-in Ignition Switch Sense circuit to ground at the Instrument Cluster C2 connector. Is the resistance below 100.0 ohms?  Yes → Repair the Key-In Ignition Switch Sense wire for a short to ground.. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	If there are no possible causes remaining, view repair.  Repair Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*NO RESPONSE FROM AIRBAG CONTROL MODULE**

POSSIBLE CAUSES
CHECKING FOR VOLTAGE AT ACM GROUND CIRCUIT OPEN OPEN PCI BUS CIRCUIT AIRBAG CONTROL MODULE

TEST	ACTION	APPLICABILITY
1	<p>Ensure that the battery is fully charged. <b>WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION OFF, DISCONNECT THE BATTERY AND WAIT TWO MINUTES BEFORE PROCEEDING.</b> Disconnect the ACM harness connector. Connect the appropriate Load Tool ACM Adapter to the ACM connector. Turn the ignition on and then reconnect the Battery. Using a 12-volt test light connected to ground, probe the Fused Ignition Switch Output (Run) Circuit and the Fused Ignition Switch Output (Run/Start) Circuit at the ACM connector. NOTE: One open circuit will not cause a NO RESPONSE condition. Is the test light illuminated on both circuits?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Repair the Fused Ignition Switch Output (Run) and Fused Ignition Switch Output (Run/Start) circuits for an open. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p><b>NOTE: When reconnecting airbag system components, the ignition must be turned off and the battery must be disconnected.</b></p>	All
2	<p><b>NOTE: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.</b> <b>WARNING: To avoid personal injury or death, turn the ignition off, disconnect the Battery and wait 2 minutes before proceeding.</b> Disconnect the Airbag Control Module harness connector. Connect the appropriate Load Tool ACM Adapter to the ACM connector. Using a 12-volt test light connected to 12-volts, probe the ground circuit. Is the test light illuminated?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Repair the ground circuit for an open. Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p><b>Note: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b></p>	All

**\*NO RESPONSE FROM AIRBAG CONTROL MODULE — Continued**

TEST	ACTION	APPLICABILITY
3	<p><b>Note: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.</b></p> <p>Turn the ignition off and wait 2 minutes before proceeding.            Disconnect the Airbag Control Module harness connector.            Connect the appropriate Load Tool ACM Adapter to the ACM connector.            Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes.            Connect the scope input cable to the channel one connector on the DRB. Attach the red and black leads and the cable to probe adapter to the scope input cable.            With the DRBIII® select Pep Module Tools.            Select lab scope.            Select Live Data.            Select 12 volt square wave.            Press F2 for Scope.            Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete.            Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the ACM connector.            Turn the ignition on.            Observe the voltage display on the DRB Lab Scope.            Does the voltage pulse from 0 to approximately 7.5 volts?</p> <p style="padding-left: 40px;">Yes → Go To 4</p> <p style="padding-left: 40px;">No → Repair the PCI Bus circuit for an open.            Perform __AIRBAG VERIFICATION TEST - VER 1.</p> <p><b>NOTE: When reconnecting Airbag system components, the ignition must be turned off and the battery must be disconnected.</b></p>	All
4	<p>If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair</p> <p style="padding-left: 80px;">Replace the Airbag Control Module (ACM) in accordance with the Service Information.            Perform __AIRBAG VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*NO RESPONSE FROM CONTROLLER ANTILOCK BRAKE**

POSSIBLE CAUSES
ATTEMPT TO COMMUNICATE WITH THE PCM CHECK FUSE #7 IN FUSE BLOCK OPEN GROUND CIRCUITS OPEN FUSED IGNITION SWITCH OUTPUT CIRCUIT SCI TRANSMIT CIRCUIT OPEN CONTROLLER ANTILOCK BRAKE

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRB attempt to communicate with the PCM. Was the DRB able to communicate with the PCM?  Yes → Go To 2  No → Refer to symptom list for problems related to No Response From PCM. Perform ABS VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Remove and inspect fuse #7 in the Fuse Block. Is the fuse open?  Yes → Refer to the wiring diagrams located in the service information to help isolate a possible short to ground. Perform ABS VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Turn the ignition off. Disconnect the CAB harness connector. Using a 12-volt test light connected to 12-volts, probe each ground circuit. Is the test light illuminated for each circuit?  Yes → Go To 4  No → Repair the ground circuit for an open. Perform ABS VERIFICATION TEST - VER 1.	All
4	Turn the ignition off. <b>NOTE: Ensure fuse #7 is installed in the Fuse Block.</b> Disconnect the CAB harness connector. Turn the ignition on. Using a 12-volt test light connected to ground, probe the Fused Ignition Switch Output circuit. Is the test light illuminated?  Yes → Go To 5  No → Repair the Fused Ignition Switch Output circuit for an open. Perform ABS VERIFICATION TEST - VER 1.	All

**\*NO RESPONSE FROM CONTROLLER ANTILOCK BRAKE — Continued**

TEST	ACTION	APPLICABILITY
5	Turn the ignition off. Disconnect the CAB harness connector. Measure the resistance of the SCI Transmit circuit between the CAB connector and the DLC. Is the resistance below 5.0 ohms?  Yes → Go To 6  No → Repair the SCI Transmit circuit for an open. Perform ABS VERIFICATION TEST - VER 1.	All
6	If there are no possible causes remaining, view repair.  Repair Replace the Controller Antilock Brake in accordance with the Service Information. Perform ABS VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*NO RESPONSE FROM INSTRUMENT CLUSTER**

POSSIBLE CAUSES
<p>OPEN GROUND CIRCUIT</p> <p>OPEN FUSED IGNITION SWITCH OUTPUT CIRCUIT</p> <p>OPEN FUSED B+ CIRCUIT</p> <p>OPEN PCI BUS CIRCUIT</p> <p>INSTRUMENT CLUSTER</p>

TEST	ACTION	APPLICABILITY
1	<p>Turn the ignition off.</p> <p>Turn all lights off.</p> <p>Disconnect the Instrument Cluster C1 harness connector.</p> <p>Using a 12-volt test light connected to 12-volts, probe the ground circuit.</p> <p>Is the test light illuminated?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Repair the ground circuit for an open.</p> <p style="padding-left: 80px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Turn the ignition off.</p> <p>Disconnect the Instrument Cluster C1 harness connector.</p> <p>Turn the ignition on.</p> <p>Using a 12-volt test light connected to ground, probe the Fused Ignition Switch Output circuit.</p> <p>Is the test light illuminated?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Check the fuse in the Fuse Block for an open. Refer to the wiring diagrams. If ok, repair the Fused Ignition Switch Output circuit for an open.</p> <p style="padding-left: 80px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All
3	<p>Turn the ignition off.</p> <p>Disconnect the Instrument Cluster C1 harness connector.</p> <p>Using a 12-volt test light connected to ground, probe the Fused B+ circuit.</p> <p>Is the test light illuminated?</p> <p style="padding-left: 40px;">Yes → Go To 4</p> <p style="padding-left: 40px;">No → Repair the Fused B+ circuit for an open.</p> <p style="padding-left: 80px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All

**\*NO RESPONSE FROM INSTRUMENT CLUSTER — Continued**

TEST	ACTION	APPLICABILITY
4	<p><b>Note: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.</b></p> <p>Disconnect the Instrument Cluster C2 harness connector.                      Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes.                      Connect the scope input cable to the channel one connector on the DRB. Attach the red and black leads and the cable to probe adapter to the scope input cable.                      With the DRBIII® select Pep Module Tools.                      Select lab scope.                      Select Live Data.                      Select 12 volt square wave.                      Press F2 for Scope.                      Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete.                      Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the Instrument Cluster connector.                      Turn the ignition on.                      Observe the voltage display on the DRB Lab Scope.                      Does the voltage pulse from 0 to approximately 7.5 volts?</p> <p style="padding-left: 40px;">Yes → Go To 5</p> <p style="padding-left: 40px;">No → Repair the PCI Bus circuit for an open.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All
5	<p>If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair</p> <p style="padding-left: 80px;">Replace the Instrument Cluster in accordance with the service information.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*NO RESPONSE FROM PCM (PCI BUS) - NGC**

POSSIBLE CAUSES
PCM PCI NO RESPONSE POWERTRAIN CONTROL MODULE PCI BUS CIRCUIT OPEN

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: As soon as one or more module communicates with the DRB, answer the question.</b> With the DRB, enter Body then Electro/Mechanical Cluster (MIC). With the DRB, enter Passive Restraints then Airbag. Were you able to establish communications with any of the modules?  Yes → Go To 2  No → Refer to symptom PCI Bus Communication Failure in the Communications category. Perform POWERTRAIN VERIFICATION TEST VER - 1.	All
2	With the DRB read the Powertrain DTC's. This is to ensure power and grounds to the PCM are operational. <b>NOTE: If the DRB will not read PCM DTC's, follow the NO RESPONSE TO PCM (PCM SCI only) symptom path.</b> Turn the ignition off. Disconnect the PCM harness connectors. <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b> Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes. Connect the scope input cable to the channel one connector on the DRB. Attach the red and black leads and the cable to probe adapter to the scope input cable. With the DRBIII® select Pep Module Tools. Select lab scope. Select Live Data. Select 12 volt square wave. Press F2 for Scope. Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete. Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the appropriate terminal of special tool #8815. Turn the ignition on. Observe the voltage display on the DRB Lab Scope. Does the voltage pulse from 0 to approximately 7.5 volts?  Yes → Replace and program the Powertrain Control Module in accordance with the Service Information. Perform POWERTRAIN VERIFICATION TEST VER - 1.  No → Repair the PCI Bus circuit for an open. Perform POWERTRAIN VERIFICATION TEST VER - 1.	All

**Symptom:**

**\*NO RESPONSE FROM PCM (PCM SCI ONLY) - NGC**

POSSIBLE CAUSES
CHECK PCM POWERS AND GROUNDS
CONTROLLER ANTILOCK BRAKE
SCI TRANSMIT CIRCUIT SHORTED TO VOLTAGE
SCI RECEIVE CIRCUIT SHORTED TO VOLTAGE
SCI CIRCUITS SHORTED TOGETHER
SCI TRANSMIT CIRCUIT SHORTED TO GROUND
SCI RECEIVE CIRCUIT SHORTED TO GROUND
SCI RECEIVE CIRCUIT OPEN
SCI TRANSMIT CIRCUIT OPEN
POWERTRAIN CONTROL MODULE

TEST	ACTION	APPLICABILITY
1	Perform the symptom Checking PCM Power and Ground Circuits in the Driveability category. <b>NOTE: With the DRBIII® in the generic scan tool mode, attempt to communicate with the PCM.</b> <b>NOTE: If the DRBIII® can communicate with the PCM in the generic scan tool mode, it may not be necessary to perform this step.</b> Did the vehicle pass this test?  Yes → Go To 2  No → Repair as necessary. Perform POWERTRAIN VERIFICATION TEST VER - 1.	All
2	Turn the ignition off. Disconnect the PCM harness connectors. Disconnect the DRB from the DLC. Measure the resistance between ground and the SCI Transmit circuit at the DLC (cav 7). Is the resistance below 5.0 ohms?  Yes → Go To 3  No → Go To 4	All

**\*NO RESPONSE FROM PCM (PCM SCI ONLY) - NGC — Continued**

TEST	ACTION	APPLICABILITY
3	<p>Turn the ignition off.                      Disconnect the CAB harness connector (if equipped).  <b>NOTE: If vehicle is not equipped with antilock brakes, answer yes to the question.</b>                      Measure the resistance between ground and the SCI Transmit circuit at the DLC (cav 7).                      Is the resistance below 5.0 ohms?</p> <p>Yes → Repair the SCI Transmit circuit for a short to ground.                      Perform POWERTRAIN VERIFICATION TEST VER - 1.</p> <p>No → Replace the Controller Antilock Brake in accordance with the service information.                      Perform POWERTRAIN VERIFICATION TEST VER - 1.</p>	All
4	<p>Turn the ignition off.                      Disconnect the DRB from the DLC.                      Disconnect the PCM harness connectors.                      Disconnect the CAB harness connector (if equipped).                      Turn the ignition on.                      Measure the voltage of the SCI Transmit circuit at the DLC (cav 7).                      Is the voltage above 1.0 volt?</p> <p>Yes → Repair the SCI Transmit circuit for a short to voltage.                      Perform POWERTRAIN VERIFICATION TEST VER - 1.</p> <p>No → Go To 5</p>	All
5	<p>Turn the ignition off.                      Disconnect the DRB from the DLC.                      Disconnect the PCM harness connectors.                      Turn the ignition on.                      Measure the voltage of the SCI Receive circuit at the DLC (cav 12).                      Is the voltage above 1.0 volt?</p> <p>Yes → Repair the SCI Receive circuit for a short to voltage.                      Perform POWERTRAIN VERIFICATION TEST VER - 1.</p> <p>No → Go To 6</p>	All
6	<p>Turn the ignition off.                      Disconnect the DRB from the DLC.                      Disconnect the PCM harness connectors.                      Measure the resistance between the SCI Transmit circuit and the SCI Receive circuit at the DLC (cavs 7 and 12).                      Is the resistance below 5.0 ohms?</p> <p>Yes → Repair the short between the SCI Transmit and the SCI Receive circuits.                      Perform POWERTRAIN VERIFICATION TEST VER - 1.</p> <p>No → Go To 7</p>	All

**\*NO RESPONSE FROM PCM (PCM SCI ONLY) - NGC — Continued**

TEST	ACTION	APPLICABILITY
7	Turn the ignition off. Disconnect the PCM harness connectors. Disconnect the DRB from the DLC. Measure the resistance between ground and the SCI Receive circuit at the DLC (cav 12). Is the resistance below 5.0 ohms?  Yes → Repair the SCI Receive circuit for a short to ground. Perform POWERTRAIN VERIFICATION TEST VER - 1.  No → Go To 8	All
8	Turn the ignition off. Disconnect the PCM harness connectors. Disconnect the DRB from the DLC. <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b> Measure the resistance of the SCI Receive circuit from the DLC (cav 12) to the appropriate terminal of special tool #8815. Is the resistance below 5.0 ohms?  Yes → Go To 9  No → Repair the SCI Receive circuit for an open. Perform POWERTRAIN VERIFICATION TEST VER - 1.	All
9	Turn the ignition off. Disconnect the PCM harness connectors. Disconnect the DRB from the DLC. <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b> Measure the resistance of the SCI Transmit circuit from the DLC (cav 7) to the appropriate terminal of special tool #8815. Is the resistance below 5.0 ohms?  Yes → Go To 10  No → Repair the SCI Transmit circuit for an open. Perform POWERTRAIN VERIFICATION TEST VER - 1.	All
10	If there are no possible causes remaining, view repair.  Repair Replace and program the Powertrain Control Module in accordance with the Service Information. Perform POWERTRAIN VERIFICATION TEST VER - 1.	All

**Symptom:**

**\*NO RESPONSE FROM RADIO**

POSSIBLE CAUSES
NO RESPONSE FROM RADIO OPEN FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN FUSED B+ CIRCUIT RADIO GROUND CIRCUIT OPEN OPEN PCI BUS CIRCUIT RADIO

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>Note: As soon as one or more module communicates with the DRB, answer the question.</b> With the DRB, attempt to communicate with the Airbag Control Module (ACM). With the DRB, attempt to communicate with the Instrument Cluster (MIC). Was the DRB able to I/D or establish communications with either of the modules?  Yes → Go To 2  No → Refer to the Communications category and perform the symptom PCI Bus Communication Failure. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Disconnect the Radio harness connector. Turn the ignition on. Using a 12-volt test light connected to ground, probe the Fused Ignition Switch Output circuit. Is the test light illuminated?  Yes → Go To 3  No → Check Fuse Block fuse for an open. If ok, repair the Fused Ignition Switch Output circuit for an open or short. Refer to the wiring diagrams located in the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All
3	Turn the ignition off. Disconnect the Radio harness connector. Using a 12-volt test light connected to ground, probe each Fused B+ circuit. Is the test light illuminated for each circuit?  Yes → Go To 4  No → Repair the Fused B+ circuit for an open or short. Refer to the wiring diagrams located in the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All

**\*NO RESPONSE FROM RADIO — Continued**

TEST	ACTION	APPLICABILITY
4	Turn the ignition off. Disconnect the Radio harness connector. Using a 12-volt test light connected to 12-volts, probe each ground circuit. Is the test light illuminated for each circuit?  Yes → Go To 5  No → Repair the ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
5	<p><b>Note: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.</b></p> Disconnect the Radio harness connector. Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes. Connect the scope input cable to the channel one connector on the DRB. Attach the red and black leads and the cable to probe adapter to the scope input cable. With the DRBIII® select Pep Module Tools. Select lab scope. Select Live Data. Select 12 volt square wave. Press F2 for Scope. Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete. Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the Radio connector. Turn the ignition on. Observe the voltage display on the DRB Lab Scope. Does the voltage pulse from 0 to approximately 7.5 volts?  Yes → Go To 6  No → Repair the PCI Bus circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
6	If there are no possible causes remaining, view repair.  Repair Replace the Radio. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*NO RESPONSE FROM SENTRY KEY IMMOBILIZER MODULE**

POSSIBLE CAUSES
ATTEMPT TO COMMUNICATE WITH THE INSTRUMENT CLUSTER GROUND CIRCUIT OPEN FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN FUSED B(+) CIRCUIT OPEN OPEN PCI BUS CIRCUIT SENTRY KEY IMMOBILIZER MODULE

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRB, enter Body then Electro/Mech Cluster. Was the DRB able to I/D or communicate with the Instrument Cluster?  Yes → Go To 2  No → Refer to the symptom list for problems related to no communication with the Instrument Cluster. Perform SKIS VERIFICATION.	All
2	Turn the ignition off. Disconnect the SKIM harness connector. Using a 12-volt test light connected to 12-volts, probe the ground circuit. Is the test light illuminated?  Yes → Go To 3  No → Repair the ground circuit for an open. Perform SKIS VERIFICATION.	All
3	Turn the ignition off. Disconnect the SKIM harness connector. Turn the ignition on. Using a 12-volt test light connected to ground, probe the Fused Ignition Switch Output circuit. Is the test light illuminated?  Yes → Go To 4  No → Repair the Fused Ignition Switch Output circuit for an open. Perform SKIS VERIFICATION.	All
4	Turn the ignition off. Disconnect the SKIM harness connector. Using a 12-volt test light connected to ground, probe the Fused B(+) circuit. Is the test light illuminated?  Yes → Go To 5  No → Check the Fuse in the Fuse Block for an open. Refer to the wiring diagrams. If OK, repair the Fused B+ circuit for an open. Perform SKIS VERIFICATION.	All

**\*NO RESPONSE FROM SENTRY KEY IMMOBILIZER MODULE —  
Continued**

TEST	ACTION	APPLICABILITY
5	<p><b>Note: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.</b></p> <p>Disconnect the SKIM harness connector.                      Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes.                      Connect the scope input cable to the channel one connector on the DRB. Attach the red and black leads and the cable to probe adapter to the scope input cable.                      With the DRBIII® select Pep Module Tools.                      Select lab scope.                      Select Live Data.                      Select 12 volt square wave.                      Press F2 for Scope.                      Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete.                      Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the SKIM connector.                      Turn the ignition on.                      Observe the voltage display on the DRB Lab Scope.                      Does the voltage pulse from 0 to approximately 7.5 volts?</p> <p style="padding-left: 40px;">Yes → Go To 6</p> <p style="padding-left: 40px;">No → Repair the PCI Bus circuit for an open.                      Perform SKIS VERIFICATION.</p>	All
6	<p>If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair</p> <p style="padding-left: 80px;">Replace and program the Sentry Key Immobilizer Module in accordance with the Service Information.                      Perform SKIS VERIFICATION.</p>	All

**Symptom:**

**\*NO RESPONSE FROM TRANSMISSION CONTROL MODULE - NGC**

POSSIBLE CAUSES
NO RESPONSE FROM TRANSMISSION CONTROL MODULE FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN FUSED B(+) CIRCUIT OPEN GROUND CIRCUIT(S) OPEN PCI BUS CIRCUIT OPEN POWERTRAIN CONTROL MODULE

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>Note: As soon as one or more module communicates with the DRB, answer the question.</b> With the DRB, attempt to communicate with the Instrument Cluster. With the DRB, attempt to communicate with the Airbag Control Module. Was the DRB able to I/D or establish communications with both of the modules?  Yes → Go To 2  No → Refer to the Communications category and perform the appropriate symptom. Perform 42RLE TRANSMISSION VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Disconnect the PCM harness connectors. <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b> Turn the ignition on. Using a 12-volt test light connected to ground, probe each Fused Ignition Switch Output circuit (cavs 11 and 12) in the appropriate terminal of special tool #8815. <b>NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.</b> Is the test light illuminated for both circuits?  Yes → Go To 3  No → Repair the Fused Ignition Switch Output circuit for an open or short. Refer to the wiring diagrams located in the Service Information. Perform 42RLE TRANSMISSION VERIFICATION TEST - VER 1.	All

**\*NO RESPONSE FROM TRANSMISSION CONTROL MODULE - NGC —**  
**Continued**

TEST	ACTION	APPLICABILITY
3	<p>Turn the ignition off.                      Disconnect the PCM harness connectors.  <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b>                      Using a 12-volt test light connected to ground, probe the Fused B(+) circuit in the appropriate terminal of special tool #8815.  <b>NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.</b>                      Is the test light illuminated?</p> <p>Yes → Go To 4</p> <p>No → Repair the Fused B(+) circuit for an open. Refer to the wiring diagrams located in the Service Information.                      Perform 42RLE TRANSMISSION VERIFICATION TEST - VER 1.</p>	All
4	<p>Turn the ignition off.                      Disconnect the PCM harness connectors.  <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b>                      Using a 12-volt test light connected to 12-volts, probe each ground circuit in the appropriate terminal of special tool #8815.  <b>NOTE: The test light must illuminate brightly. Compare the brightness to that of a direct connection to the battery.</b>                      Is the light illuminated at all ground circuits?</p> <p>Yes → Go To 5</p> <p>No → Repair the Ground circuit(s) for an open. Check the main ground connection to engine block and/or chassis. Refer to the wiring diagrams located in the Service Information.                      Perform 42RLE TRANSMISSION VERIFICATION TEST - VER 1.</p>	All

**\*NO RESPONSE FROM TRANSMISSION CONTROL MODULE - NGC —**  
**Continued**

TEST	ACTION	APPLICABILITY
5	<p><b>Note: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.</b></p> <p>Disconnect the PCM harness connectors.</p> <p><b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b></p> <p>Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes.</p> <p>Connect the scope input cable to the channel one connector on the DRB. Attach the red and black leads and the cable to probe adapter to the scope input cable.</p> <p>With the DRBIII® select Pep Module Tools.</p> <p>Select lab scope.</p> <p>Select Live Data.</p> <p>Select 12 volt square wave.</p> <p>Press F2 for Scope.</p> <p>Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete.</p> <p>Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the appropriate terminal of special tool #8815.</p> <p>Turn the ignition on.</p> <p>Observe the voltage display on the DRB Lab Scope.</p> <p>Does the voltage pulse from 0 to approximately 7.5 volts?</p> <p style="padding-left: 40px;">Yes → Go To 6</p> <p style="padding-left: 40px;">No → Repair the PCI Bus circuit for an open. Perform 42RLE TRANSMISSION VERIFICATION TEST - VER 1.</p>	All
6	<p>Using the schematics as a guide, inspect the wiring and connectors. Repair as necessary. Pay particular attention to all power and ground circuits.</p> <p>If there are no possible causes remaining, view repair.</p> <p style="padding-left: 40px;">Repair</p> <p style="padding-left: 80px;">Replace and program the Powertrain Control Module in accordance with the service information. WITH THE DRBIII® PERFORM QUICK LEARN AND REPROGRAM PINION FACTOR.</p> <p style="padding-left: 80px;">Perform 42RLE TRANSMISSION VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*PCI BUS COMMUNICATION FAILURE**

POSSIBLE CAUSES
WIRING HARNESS INTERMITTENT OPEN PCI BUS CIRCUIT AT THE DATA LINK CONNECTOR (DLC) PCI BUS CIRCUIT SHORTED TO VOLTAGE MODULE SHORT TO VOLTAGE PCI BUS CIRCUIT SHORTED TO GROUND MODULE SHORT TO GROUND

TEST	ACTION	APPLICABILITY
1	<p><b>Note: Determine which modules this vehicle is equipped with before beginning.</b></p> <p><b>Note: When attempting to communicate with any of the modules on this vehicle, the DRB will display 1 of 2 different communication errors: a NO RESPONSE message or a BUS +/- SIGNALS OPEN message.</b></p> <p>Turn the ignition on.</p> <p>Using the DRB, attempt to communicate with the following control modules:                      Airbag Control Module                      SKIM (SENTRY KEY IMMOBILIZER)                      MIC (INSTRUMENT CLUSTER)</p> <p>Was the DRBIII® able to communicate with one or more Module(s)?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Go To 3</p>	All
2	<p>Turn the ignition off.</p> <p><b>Note: Visually inspect the related wiring harness. Look for any chafed, pierced, pinched, or partially broken wires.</b></p> <p><b>Note: Visually inspect the related wire harness connectors. Look for broken, bent, pushed out, or corroded terminals.</b></p> <p><b>Note: If the DRB can not communicate with a single module, refer to the category list for the related symptom.</b></p> <p>Were any problems found?</p> <p style="padding-left: 40px;">Yes → Repair wiring harness/connectors as necessary.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Test Complete.</p>	All

**\*PCI BUS COMMUNICATION FAILURE — Continued**

TEST	ACTION	APPLICABILITY
3	<p>Turn the ignition off.                      Disconnect the PCM harness connector.  <b>CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS.</b>                      Disconnect the DRB from the Data Link Connector (DLC).                      Disconnect the negative battery cable.                      Measure the resistance of the PCI Bus circuit between the Data Link Connector (DLC) and the appropriate terminal of special tool #8815.                      Is the resistance below 5.0 ohms?</p> <p>Yes → Go To 4</p> <p>No → Repair the PCI Bus circuit for an open.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All
4	<p><b>NOTE: Reconnect the PCM harness connector and the negative battery cable.</b>                      Turn the ignition on.                      Measure the voltage of the PCI Bus circuit at the Data Link Connector (DLC).                      Is the voltage above 7.0 volts?</p> <p>Yes → Go To 5</p> <p>No → Go To 6</p>	All
5	<p>Turn the ignition off.                      Using a voltmeter, connect one end to the PCI Bus circuit at the DLC, and the other end to ground.  <b>Note: When performing the next step turn the ignition off (wait one minute) before disconnecting any module. When the module is disconnected turn the ignition on to check for a short to voltage.</b>                      Turn the ignition on.                      While monitoring the voltmeter, disconnect each module the vehicle is equipped with one at a time.                      Is the voltage steadily above 7.0 volts with all the modules disconnected?</p> <p>Yes → Repair the PCI Bus circuit for a short to voltage.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the module that when disconnected the short to voltage was eliminated.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**\*PCI BUS COMMUNICATION FAILURE — Continued**

TEST	ACTION	APPLICABILITY
6	<p>Turn the ignition off.                      Disconnect the negative battery cable.                      Using a ohmmeter, connect one end to the PCI Bus circuit at the DLC, and the other end to ground.                      While monitoring the ohmmeter, disconnect each module the vehicle is equipped with one at a time.  <b>NOTE: Total bus resistance to ground thru all of the modules is typically between 350 to 1000 ohms. The more modules on the bus, the lower the total bus resistance will be.</b>                      Is the resistance below 150.0 ohms with all the modules disconnected?</p> <p>Yes → Repair the PCI Bus circuit for a short to ground.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the module that when disconnected the short to ground was eliminated.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*COMPASS/TEMP MODULE WILL NOT CALIBRATE**

**POSSIBLE CAUSES**

CALIBRATION PROCEDURE

COMPASS/TEMPERATURE MIRROR

TEST	ACTION	APPLICABILITY
1	<p>Turn the ignition off.                      Perform the Compass/Temperature module self-check.                      Press and hold the Compass/Temperature Mirror Center switch.                      Turn the ignition on and then release the Center switch.  <b>NOTE: The Compass/Temp module will illuminate all of the VF segments and then display an "F" or "P".</b>                      Exit the self-check by pressing the Center switch or cycling the ignition.                      Did the Comp/Temp module display an "F" during the self-check?</p> <p>Yes → Replace the Compass/Temperature Mirror in accordance with the Service Information. NOTE: After replacement, set the correct compass variation and calibrate. The vehicle must be driven for more than 2 minutes to update the temperature display.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Ensure that all calibration instructions have been performed properly. If calibration is unsuccessful, replace the Comp/Temp Mirror in accordance with the Service Information. NOTE: After replacement, set the correct compass variation and calibrate.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*COMPASS/TEMPERATURE MODULE INOPERATIVE**

POSSIBLE CAUSES
FUSED B(+) CIRCUIT OPEN
FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN
GROUND CIRCUIT OPEN
COMPASS/TEMPERATURE MIRROR

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Disconnect the Compass/Temperature Mirror harness connector. Measure the voltage between the Fused B(+) circuit and ground. Is the voltage below 10.5 volts?  Yes → Repair the Fused B(+) circuit for an open. If the fuse is open make sure to check for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 2	All
2	Turn the ignition off. Disconnect the Compass/Temperature Mirror harness connector. Turn the ignition on. Measure the voltage between the Fused Ignition Switch Output circuit and ground. Is the voltage below 10.5 volts?  Yes → Repair the Fused Ignition Switch Output circuit for an open. If the fuse is open make sure to check for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Turn the ignition off. Disconnect the Compass/Temperature Mirror harness connector. Measure the resistance between ground and the Ground circuit. Is the resistance above 5.0 ohms?  Yes → Repair the Ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.  No → Replace the Compass/Temperature Mirror in accordance with the Service Information. NOTE: After replacement, the vehicle must be driven for more than 2 minutes to update the display. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*TEMPERATURE DISPLAY INACCURATE OR INOPERATIVE**

POSSIBLE CAUSES
AMBIENT TEMPERATURE SENSOR AMBIENT TEMPERATURE SENSOR SIGNAL CIRCUIT OPEN AMBIENT TEMPERATURE SENSOR SIGNAL CIRCUIT SHORT TO GROUND AMBIENT TEMPERATURE SENSOR GROUND CIRCUIT OPEN COMPASS/TEMPERATURE MIRROR

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Disconnect the Ambient Temperature Sensor harness connector. Measure the resistance of the Ambient Temperature Sensor between pin 1 and pin 2. The Ambient Temperature Sensor should measure within the following values: 10°C (50°F) Sensor Resistance = 17.99k - 21.81k Ohms 20°C (68°F) Sensor Resistance = 11.37k - 13.61k Ohms 25°C (77°F) Sensor Resistance = 9.12k - 10.88k Ohms 30°C (86°F) Sensor Resistance = 7.37k - 8.75k Ohms 40°C (104°F) Sensor Resistance = 4.90k - 5.75k Ohms 50°C (122°F) Sensor Resistance = 3.33k - 3.88k Ohms Does the Ambient Temperature Sensor resistance measure between the min/max specifications?  Yes → Go To 2  No → Replace the Ambient Temperature Sensor in accordance with the Service Information. NOTE: After any repair for an Ambient Temperature Sensor problem, the vehicle must be driven for more than 2 minutes to update the display. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Disconnect the Ambient Temperature Sensor harness connector. Disconnect the Compass/Temperature Mirror harness connector. Measure the resistance of the Signal circuit between the Ambient Temperature Sensor connector and the Compass/Temperature Mirror connector. Is the resistance above 5.0 ohms?  Yes → Repair the Ambient Temperature Sensor Signal circuit for an open. NOTE: After any repair for an Ambient Temperature Sensor problem, the vehicle must be driven for more than 2 minutes to update the display. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All

**\*TEMPERATURE DISPLAY INACCURATE OR INOPERATIVE — Continued**

TEST	ACTION	APPLICABILITY
3	<p>Turn the ignition off.                      Disconnect the Ambient Temperature Sensor harness connector.                      Disconnect the Compass/Temperature Mirror harness connector.                      Measure the resistance between ground and the Ambient Temperature Sensor Signal circuit.                      Is the resistance below 5.0 ohms?</p> <p>Yes → Repair the Ambient Temperature Sensor Signal circuit for a short to ground. NOTE: After any repair for an Ambient Temperature Sensor problem, the vehicle must be driven for more than 2 minutes to update the display.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p>Turn the ignition off.                      Disconnect the Ambient Temperature Sensor harness connector.                      Disconnect the Compass/Temperature Mirror harness connector.                      Measure the resistance of the Sensor Ground circuit between the Ambient Temperature Sensor connector and the Compass/Temperature Mirror connector.                      Is the resistance above 5.0 ohms?</p> <p>Yes → Repair the Ambient Temperature Sensor Ground circuit for an open. NOTE: After any repair for an Ambient Temperature Sensor problem, the vehicle must be driven for more than 2 minutes to update the display.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the Compass/Temperature Mirror in accordance with the Service Information. NOTE: After any repair for an Ambient Temperature Sensor problem, the vehicle must be driven for more than 2 minutes to update the display.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*REAR WINDOW DEFOGGER INOPERATIVE**

POSSIBLE CAUSES
REAR WINDOW DEFOGGER GROUND CKT
REAR WINDOW DEFOGGER GRID OPEN
REAR WINDOW DEFOGGER RELAY OUTPUT OPEN
FUSED IGNITION SWITCH OUTPUT (RUN) OPEN
FUSED B(+) CKT OPEN
RELAY COIL
RELAY CONTACTS
REAR WINDOW DEFOGGER RELAY CONTROL CIRCUIT OPEN
REAR WINDOW DEFOGGER SWITCH SENSE CKT OPEN
REAR WINDOW DEFOGGER SWITCH SENSE CKT SHORTED TO GROUND
REAR WINDOW DEFOGGER SWITCH SENSE CKT SHORTED TO VOLTAGE
REAR WINDOW DEFOGGER SWITCH
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Toggle the Rear Defogger switch and listen to the Rear Window Defogger Relay in the PDC. Does the relay click when the switch is pressed?  Yes → Go To 2  No → Go To 6	All
2	Turn the ignition off. Open the tailgate. Measure resistance between ground and the Rear Window Defogger Ground circuit. Is the resistance below 5.0 ohms?  Yes → Go To 3  No → Repair the Rear Window Defogger Ground Circuit for an open condition. Perform BODY VERIFICATION TEST - VER 1.	All
3	Turn the ignition on. Turn the Rear Window Defogger on. Using a 12-volt test light connected to ground, check the Rear Window Defogger Relay Output circuit at the defogger grid. Does the test light illuminate brightly?  Yes → Repair the open in the Rear Window Defogger Grid. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All

# ELECTRICALLY HEATED SYSTEMS

## \*REAR WINDOW DEFOGGER INOPERATIVE — Continued

TEST	ACTION	APPLICABILITY
4	<p>Remove the Rear Window Defogger Relay. Turn the ignition on. Measure voltage of the Fused B+ Circuit in the Rear Window Defogger Relay connector. Is the voltage above 10.0 volts?</p> <p>Yes → Go To 5</p> <p>No → Repair the open Fused B+ Circuit from PDC fuse #2. Perform BODY VERIFICATION TEST - VER 1.</p>	All
5	<p>Remove the Rear Window Defogger Relay. Install a known good relay in the Rear Window Defogger Relay connector. Turn the ignition on. Check the Rear Window Defogger for proper operation. Does the system operate normally?</p> <p>Yes → Replace the original Rear Window Defogger Relay. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Rear Window Defogger Relay Output Circuit for an open condition. Perform BODY VERIFICATION TEST - VER 1.</p>	All
6	<p>Remove the Rear Window Defogger Relay from the PDC. Turn the ignition switch On. Using a 12-volt test light connected to ground, check the Fused Ignition Switch Output circuit at the relay. Does the test light illuminate brightly?</p> <p>Yes → Go To 7</p> <p>No → Repair the open Fused Ignition Switch Output circuit from PDC fuse #7 Perform BODY VERIFICATION TEST - VER 1.</p>	All
7	<p>Install a known good relay in the Rear Window Defogger Relay. Turn the ignition on. Check the Rear Window Defogger for proper operation. Does the system operate normally?</p> <p>Yes → Replace the original Rear Window Defogger Relay. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 8</p>	All
8	<p>Turn the ignition off. Remove the Rear Window Defogger Relay from the PDC. Disconnect the Instrument Cluster C2 connector. Measure the resistance of the Rear Window Defogger Relay Control circuit between the Instrument Cluster C2 connector and the PDC. Is the resistance below 5.0 ohms?</p> <p>Yes → Go To 9</p> <p>No → Repair the Rear Window Defogger Relay Control Circuit for an open. Perform BODY VERIFICATION TEST - VER 1.</p>	All

**\*REAR WINDOW DEFOGGER INOPERATIVE — Continued**

TEST	ACTION	APPLICABILITY
9	Turn the ignition off. Disconnect the Instrument Cluster C2 connector. Disconnect the Rear Window Defogger Switch connector. Turn the ignition on. Measure voltage between the Rear Window Defogger Switch Sense Circuit and ground. Is any voltage present? Yes → Repair the Rear Window Switch Sense Circuit for a short to voltage condition. Perform BODY VERIFICATION TEST - VER 1. No → Go To 10	All
10	Turn the ignition off. Disconnect the Instrument Cluster C2 connector. Disconnect the Rear Window Defogger Switch connector. Measure resistance between ground and the Rear Window Defogger Switch Sense Circuit. Is the resistance below 5.0 ohms? Yes → Repair the Rear Window Defogger Switch Sense Circuit for a short to ground condition. Perform BODY VERIFICATION TEST - VER 1. No → Go To 11	All
11	Turn the ignition off. Disconnect the Instrument Cluster C2 connector. Disconnect the Rear Window Defogger Switch. Measure resistance of the Rear Window Defogger Switch Sense circuit from the Instrument Cluster C2 connector to the Defogger switch connector. Is the resistance below 5.0 ohms? Yes → Go To 12 No → Repair the Rear Window Defogger Switch Sense Circuit for an open condition. Perform BODY VERIFICATION TEST - VER 1.	All
12	Turn the ignition off. Reinstall the Rear Window Defogger Relay. Reconnect the Instrument Cluster C2 connector. Disconnect the Rear Window Defogger Switch connector. Turn the ignition on. Connect a jumper wire between the Rear Window Defogger Switch Sense circuit in the Defogger Switch connector to ground and listen for the relay to click. Does the Defogger Relay click? Yes → Replace the Rear Window Defogger Switch. Perform BODY VERIFICATION TEST - VER 1. No → Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.	All

# ELECTRICALLY HEATED SYSTEMS

## Symptom:

### **\*REAR WINDOW DEFOGGER SWITCH INDICATOR LAMP INOPERATIVE**

#### POSSIBLE CAUSES

FUSED REAR WINDOW DEFOGGER RELAY OUTPUT CKT SHORTED TO GROUND  
 FUSE BLOCK FUSE #17  
 FUSED REAR WINDOW DEFOGGER RELAY OUTPUT CKT OPEN  
 DEFOGGER SWITCH

TEST	ACTION	APPLICABILITY
1	Inspect Fuse Block fuse #17. Is Fuse Block fuse #17 open?  Yes → Go To 2 No → Go To 3	All
2	Turn the ignition off. Disconnect the Rear Defogger Switch. Measure resistance of the Fused Rear Window Defogger Relay Output circuit to ground. Is the resistance below 5.0 ohms?  Yes → Repair the Fused Rear Window Defogger Relay Output circuit for a short to ground condition. Perform BODY VERIFICATION TEST - VER 1.  No → Replace Fuse Block fuse #17. Perform BODY VERIFICATION TEST - VER 1.	All
3	Turn the ignition off. Disconnect the Rear Defogger Switch. Remove the Rear Window Defogger Relay. Ensure that Fuse Block fuse #17 is installed. Measure resistance of the Fused Rear Window Defogger Relay Output circuit from the relay output terminal to the Defogger Switch connector. Is the resistance below 5.0 ohms?  Yes → Replace the Rear Window Defogger Switch. Perform BODY VERIFICATION TEST - VER 1.  No → Repair the Fused Rear Window Defogger Relay Output circuit for an open condition. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**  
**ACM MESSAGE NOT REC'D BY MIC**

**When Monitored and Set Condition:**

**ACM MESSAGE NOT REC'D BY MIC**

When Monitored: With the ignition in the Run/Start position, Instrument Cluster in power-up state.

Set Condition: The Instrument Cluster detects loss of communication with the Air Bag Control Module (ACM).

**POSSIBLE CAUSES**

ACM MESSAGE NOT RECEIVED

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the Instrument Cluster communicates on the PCI Bus.</b> With the DRBIII®, select Body, Electro/Mech Cluster, then read DTCs. Does the DRBIII® display ACM Message Not Rec'd by MIC?  Yes → Refer to the COMMUNICATION category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**AIR BAG LAMP CIRCUIT OPEN**

**When Monitored and Set Condition:**

**AIR BAG LAMP CIRCUIT OPEN**

When Monitored: With the ignition in the Run/Start position, Instrument Cluster in power-up state.

Set Condition: The Instrument Cluster performs an indicator check when the indicator is commanded on or off by the ACM. If an open lamp failure is detected, the Cluster sends this message to the ACM.

**POSSIBLE CAUSES**

INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the Instrument Cluster and the Air Bag Control Module communicate on the PCI Bus.</b> <b>NOTE: The Airbag indicator can only be turned on or off by the ACM. The Instrument Cluster reports the indicator status to the ACM on the PCI Bus.</b> With the DRBIII®, read DTCs. Does the DRBIII® display Air Bag Lamp Circuit Open?  Yes → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**AIR BAG LAMP CIRCUIT SHORT**

**When Monitored and Set Condition:**

**AIR BAG LAMP CIRCUIT SHORT**

**When Monitored:** With the ignition in the Run/Start position, the Instrument Cluster in power-up state.

**Set Condition:** The Instrument Cluster performs an indicator check when the indicator is commanded on by the ACM. If a shorted lamp failure is detected, the Cluster sends this message to the ACM.

**POSSIBLE CAUSES**

INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the Instrument Cluster and the Air Bag Control Module communicate on the PCI Bus.</b> <b>NOTE: The Airbag indicator can only be turned on or off by the ACM. The Instrument Cluster reports the status of the indicator to the ACM on the PCI Bus.</b> With the DRBIII®, read DTCs. Does the DRBIII® display Air Bag Lamp Circuit Shorted?  Yes → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**CHECKSUM FAILURE**

**When Monitored and Set Condition:**

**CHECKSUM FAILURE**

When Monitored: Instrument Cluster detects battery connection.

Set Condition: Instrument Cluster fails EEPROM checksum test. (The Instrument Cluster performs an EEPROM checksum as a continuous self test to verify functionality.)

**POSSIBLE CAUSES**

INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, select Body, then Electro/Mech Cluster, read DTCs. Does the DRBIII® display Checksum Failure?  Yes → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**  
**PANEL DIMMER OPEN**

**When Monitored and Set Condition:**

**PANEL DIMMER OPEN**

**When Monitored:** The Instrument Cluster detects battery voltage input on the Headlamp Switch Output circuit.

**Set Condition:** The Instrument Cluster detects the Panel Lamp Dimmer Signal circuit resistance is greater than 9250 ohms for five seconds. During an open circuit condition, the VF display and general panel illumination will default to full intensity.

<b>POSSIBLE CAUSES</b>
<p>INTERMITTENT CONDITION</p> <p>PANEL LAMP DIMMER SIGNAL CIRCUIT OPEN</p> <p>MULTI-FUNCTION SWITCH</p> <p>MULTI-FUNCTION SWITCH GROUND CIRCUIT OPEN</p> <p>INSTRUMENT CLUSTER</p>

<b>TEST</b>	<b>ACTION</b>	<b>APPLICABILITY</b>
1	<p>Turn the ignition on.</p> <p>With the DRBIII®, erase DTCs.</p> <p>Cycle the ignition.</p> <p>With the DRBIII®, read DTCs.</p> <p>Does the DRBIII® display Panel Dimmer Open?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins (TSB) that may apply. Visually inspect the related wiring harness and connector terminals.</p> <p style="padding-left: 40px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Turn the ignition off.</p> <p>Disconnect the Instrument Cluster C2 harness connector.</p> <p>Disconnect the Multi-Function Switch harness connector.</p> <p>Check connectors - Clean/repair as necessary.</p> <p>Measure the resistance of the Panel Lamp Dimmer Signal circuit.</p> <p>Is the resistance below 5.0 ohms?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Repair the Panel Lamp Dimmer Signal circuit for an open.</p> <p style="padding-left: 40px;">Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

## PANEL DIMMER OPEN — Continued

TEST	ACTION	APPLICABILITY
3	<p>Turn the ignition off. Disconnect the Multi-Function Switch harness connector. Check connectors - Clean/repair as necessary. Measure the resistance of the Multi-Function Switch between terminal pin 7 and terminal pin 8. Does the resistance measure above 9250 ohms?</p> <p>Yes → Replace the Multi-Function Switch in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 4</p>	All
4	<p>Turn the ignition off. Disconnect the Multi-Function Switch harness connector. Check connectors - Clean/repair as necessary. Measure the resistance between ground and the Multi-Function Switch Ground circuit. Is the resistance below 5.0 ohms?</p> <p>Yes → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Multi-Function Switch Ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**  
**PCM MESSAGE NOT REC'D BY MIC**

**When Monitored and Set Condition:**

**PCM MESSAGE NOT REC'D BY MIC**

When Monitored: With the ignition in the Run/Start position, Instrument Cluster in power-up state.

Set Condition: The Instrument Cluster detects loss of communication with Powertrain Control Module (PCM). .

**POSSIBLE CAUSES**

PCM MESSAGE NOT REC'D BY MIC

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the Instrument Cluster communicates on the PCI Bus.</b> With the DRBIII®, select Body, Electro/Mech Cluster, then read DTCs. Does the DRBIII® display NO RESPONSE FROM PCM (PCI)?  Yes → Refer to the COMMUNICATION category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**

**SKIM MESSAGE NOT REC'D BY MIC**

**When Monitored and Set Condition:**

**SKIM MESSAGE NOT REC'D BY MIC**

When Monitored: With the ignition in the Run/Start position, Instrument Cluster in power-up state.

Set Condition: The Instrument Cluster detects loss of communication with the Sentry Key Immobilizer Module (SKIM). .

**POSSIBLE CAUSES**

SKIM MESSAGE NOT RECEIVED

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. <b>NOTE: Ensure the Instrument Cluster communicates on the PCI Bus.</b> With the DRBIII®, select Body, Electro/Mech Cluster, then read DTCs. Does the DRBIII® display SKIM Message Not Rec'd by MIC?  Yes → Refer to the COMMUNICATION category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.  No → Test Complete.	All

**Symptom:**

**\*"NO BUS" IN VF DISPLAY**

**POSSIBLE CAUSES**

PCI BUS MESSAGES NOT REC'D BY MIC  
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, select J1850 Module Scan. Does the DRBIII® display MIC in the J1850 Module Scan?  Yes → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Refer to the COMMUNICATION category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.	All

# INSTRUMENT CLUSTER

## Symptom:

**\*"NO FUSE" IN VF DISPLAY**

### POSSIBLE CAUSES

FUSED B(+) CIRCUIT SHORT TO GROUND  
 FUSED B(+) CIRCUIT OPEN  
 INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Inspect the #24 fuse in the Power Distribution Center. If the fuse is open, replace with proper rated fuse. Turn the ignition on for one minute. Turn the ignition off. Inspect the #24 fuse in the Power Distribution Center. Is the fuse open?  Yes → Repair the Fused B(+) circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 2	All
2	Turn the ignition off. Disconnect the Instrument Cluster C1 harness connector. Check connectors - Clean/repair as necessary. Measure the voltage between the Fused B(+) circuit and ground. Is the voltage above 10.5 volts?  Yes → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Repair the Fused B(+) circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*4WD INDICATOR INOPERATIVE**

POSSIBLE CAUSES
INTERMITTENT CONDITION TRANSFER CASE SWITCH - EXCEPT OFF-ROAD PACKAGE 4WD INDICATOR CIRCUIT OPEN TRANSFER CASE SWITCH GROUND CIRCUIT OPEN - EXCEPT OFF-ROAD PACKAGE TRANSFER CASE SWITCH - OFF-ROAD PACKAGE TRANSFER CASE POSITION SENSOR INPUT CIRCUIT OPEN TRANSFER CASE SWITCH GROUND CIRCUIT OPEN - OFF-ROAD PACKAGE INSTRUMENT CLUSTER - EXCEPT OFF-ROAD PACKAGE INSTRUMENT CLUSTER - OFF-ROAD PACKAGE

TEST	ACTION	APPLICABILITY
1	Is vehicle equipped with the optional Off-Road Package?  Yes → Go To 2  No → Go To 6	All
2	Perform the Instrument Cluster self-test. Turn the ignition off. Press and hold the Trip Reset button. Turn the ignition on. Observe the 4WD indicator during the self-test. <b>NOTE: The Instrument Cluster self-test can be initiated using the DRBIII®.</b> Did the 4WD indicator illuminate during the self-test?  Yes → Go To 3  No → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All
3	Turn the ignition on, Transfer Case Shift Lever in 2H. With the DRBIII® in Inputs/Outputs, read the 4WD Switch state. Place the Transfer Case Shift Lever in 4H or 4L while observing the 4WD Switch State. Did the Does the DRBIII® display 4H or 4L?  Yes → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins (TSB) that may apply. Visually inspect the related wiring harness and connector terminals. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All

# INSTRUMENT CLUSTER

## \*4WD INDICATOR INOPERATIVE — Continued

TEST	ACTION	APPLICABILITY
4	<p>Turn the ignition off.            Disconnect the Transfer Case Switch harness connector.            Connect a jumper wire between cavity 1 and cavity 2.            Turn the ignition on.            With the DRBIII®, read the 4WD Switch input.            Does the DRBIII® display "Closed?"</p> <p>Yes → Replace the Transfer Case Switch in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 5</p>	All
5	<p>Turn the ignition off.            Disconnect the Transfer Case Switch harness connector.            Disconnect the PCM C1 harness connector.            Measure the resistance of the Transfer Case Position Sensor Input circuit between the T/Case Switch connector and the PCM C1 connector.            Is the resistance above 5.0 ohms?</p> <p>Yes → Repair the Transfer Case Position Sensor Input circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Transfer Case Switch Ground circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p>	All
6	<p>Turn the ignition on.            With the DRBIII®, select Body, MIC, then Inputs/Outputs.            Move the transfer case shift lever from the 2H to the 4H or 4L position.            Does the DRBIII® display 4WD Switch "Closed" with the shift lever in the 4H or 4L position?</p> <p>Yes → Replace and configure the Instrument Cluster in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 7</p>	All
7	<p>Turn the ignition off.            Disconnect the Transfer Case Switch harness connector.            Connect a jumper wire between cavity A and cavity B.            Turn the ignition on.            With the DRBIII®, read the 4WD Switch input.            Does the DRBIII® display "Closed".</p> <p>Yes → Replace the Transfer Case Switch in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 8</p>	All

**\*4WD INDICATOR INOPERATIVE — Continued**

TEST	ACTION	APPLICABILITY
8	<p>Turn the ignition off.                      Disconnect the Transfer Case Switch harness connector.                      Connect a jumper wire between the 4WD Indicator circuit and ground.                      Turn the ignition on.                      With the DRBIII®, read the 4WD Switch state.                      Does the DRBIII® display "Closed"?</p> <p>Yes → Go To 9</p> <p>No → Repair the 4WD Indicator circuit for an open.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All
9	<p>Turn the ignition off.                      Disconnect the Transfer Case Switch harness connector.                      Measure the resistance between ground and the Transfer Case Switch Ground circuit.                      Is the resistance below 5.0 ohms?</p> <p>Yes → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins (TSB) that may apply. Visually inspect the related wiring harness and connector terminals.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Transfer Case Switch Ground circuit for an open.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

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## Symptom:

**\*ABS INDICATOR INOPERATIVE**

### POSSIBLE CAUSES

ABS DTC

INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: The Instrument Cluster ABS Indicator will not illuminate during the cluster Self Test. The indicator is controlled by PCI Bus messages received from the CAB.</b></p> <p><b>NOTE: The CAB will command the ABS Indicator on when the ignition is cycled to the Run/Start position.</b></p> <p>With the DRBIII®, read DTCs. Does the DRBIII® display any ABS DTCs?</p> <p>Yes → Refer to the Anti-Lock Brake System category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*AIR BAG INDICATOR INOPERATIVE**

**POSSIBLE CAUSES**

INSTRUMENT CLUSTER  
AIR BAG INDICATOR DTC

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: The Instrument Cluster Air Bag Indicator will not illuminate during the cluster Self Test. The indicator is controlled by PCI Bus messages received from the Air Bag Control Module (ACM).</b></p> <p><b>NOTE: The ACM will command the indicator on when the ignition is cycled to the Run/Start position.</b></p> <p>With the DRBIII®, select Body, then MIC, read DTCs. Does the DRBIII® display Air Bag Lamp Open or Air Bag Lamp Shorted?</p> <p>Yes → Refer to the Service Information and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

## Symptom:

### \*ALL GAUGES INOPERATIVE

#### POSSIBLE CAUSES

NO RESPONSE - PCI BUS  
 NO RESPONSE - PCI BUS - INSTRUMENT CLUSTER  
 NO RESPONSE - PCI BUS - POWERTRAIN CONTROL MODULE  
 FUSED IGNITION SWITCH OUTPUT CIRCUIT SHORT TO GROUND  
 FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN  
 GROUND CIRCUIT OPEN  
 INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, select System Monitors, then J1850 Module Scan. Does the DRBIII® display MIC PRESENT on the BUS?  Yes → Go To 2  No → Refer to the COMMUNICATION category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition on. With the DRBIII®, select Body, MIC, MODULE DISPLAY. Does the DRBIII® display NO RESPONSE from MIC?  Yes → Refer to symptom *NO CLUSTER BUS MESSAGE in the Communication category. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Turn the ignition on. With the DRBIII®, select Body, MIC, SYSTEM TESTS, PCM Monitor. Does the DRBIII® display PCM INACTIVE ON THE BUS?  Yes → Refer to the symptom list for problems related to *NO RESPONSE FROM THE POWERTRAIN CONTROL MODULE. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All

**\*ALL GAUGES INOPERATIVE — Continued**

TEST	ACTION	APPLICABILITY
4	Turn the ignition off. Inspect the #10 Fuse in the Fuse Block. If the fuse is open, replace with proper rated fuse. Turn the ignition on for one minute. Turn the ignition off. Inspect the #10 Fuse in the Fuse Block. Is the fuse open?  Yes → Repair the Fused Ignition Switch Output circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 5	All
5	Turn the ignition off. Disconnect the Instrument Cluster C1 harness connector. Check connectors - Clean/repair as necessary. Turn the ignition on. Measure the voltage between the Fused Ignition Switch Output circuit and ground. Is the voltage above 10.5 volts?  Yes → Go To 6  No → Repair the Fused Ignition Switch Output circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
6	Turn the ignition off. Disconnect the Instrument Cluster C1 harness connector. Check connectors - Clean/repair as necessary. Measure the resistance between ground and the Instrument Cluster Ground circuit. Is the resistance below 5.0 ohms?  Yes → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Repair the Instrument Cluster Ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

# INSTRUMENT CLUSTER

## Symptom:

### \*ANY PCI BUS INDICATOR INOPERATIVE

POSSIBLE CAUSES
NO RESPONSE - PCI BUS
NO RESPONSE - INSTRUMENT CLUSTER
NO RESPONSE - POWERTRAIN CONTROL MODULE
INOPERATIVE INDICATOR
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, select System Monitors, then J1850 Module Scan. Does the DRBIII® display MIC PRESENT on the Bus?  Yes → Go To 2  No → Refer to the COMMUNICATION category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition on. With the DRBIII®, Select Body, MIC, then MODULE DISPLAY. Does the DRBIII® display NO RESPONSE from MIC?  Yes → Refer to the symptom list for problems related to *NO RESPONSE FROM THE INSTRUMENT CLUSTER Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Turn the ignition on. With the DRBIII®, select Body, MIC, SYSTEM TESTS, PCM MONITOR. Does the DRBIII® display PCM INACTIVE on the BUS?  Yes → Refer to the symptom list for problems related to *NO RESPONSE FROM THE POWERTRAIN CONTROL MODULE Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All
4	<b>NOTE: Diagnose and repair any PCM DTCs before proceeding with this test.</b> Perform the Instrument Cluster Self Test. Observe the indicator in question during the Self Test. Did the indicator illuminate?  Yes → Refer to the appropriate Service Information category to diagnose the related system. Perform BODY VERIFICATION TEST - VER 1.  No → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*AXLE LOCK INDICATOR PROBLEMS**

POSSIBLE CAUSES
DTC PRESENT AXLE LOCKER SWITCH FUSED B(+) CIRCUIT OPEN AXLE LOCKER SWITCH GROUND CIRCUIT OPEN FRONT LOCKER REQUEST CIRCUIT OPEN REAR LOCKER REQUEST CIRCUIT OPEN AXLE LOCK SWITCH INTERMITTENT CONDITION INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: The following tests are to diagnose an inoperative Axle Lock indicator. If the Axle Lock indicator flashes, the Enable conditions have not been met to lock the axle, or an axle mechanical fault exists.</b></p> <p><b>NOTE: The Front Axle Lock and Rear Axle Lock indicators can NOT be diagnosed using the Instrument Cluster self test.</b></p> <p>With the DRBIII®, read DTCs.                      Are any ABS, PCM, VSS, or Transfer Case DTCs present?</p> <p style="padding-left: 40px;">Yes → Refer to DRIVEABILITY or TRANSMISSION/TRANSFER CASE information for the related symptom(s).                      Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Go To 2</p>	All
2	<p>Select the inoperative indicator.</p> <p style="padding-left: 40px;">Rear Axle Lock Indicator                      Go To 3</p> <p style="padding-left: 40px;">Front Axle Lock Indicator                      Go To 8</p>	All
3	<p>Perform the Axle Locker test.                      Turn the ignition on.                      Place transfer case in 4WD Lo and visually confirm by observing the 4WD indicator.                      Drive the vehicle at less than 10 MPH (16 km/h).                      Press the Axle Lock switch once.                      Did the Rear Axle Lock indicator illuminate?</p> <p style="padding-left: 40px;">Yes → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins(TSB) that may apply. Visually inspect the related wiring harness and connector terminals.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Go To 4</p>	All

# INSTRUMENT CLUSTER

## \*AXLE LOCK INDICATOR PROBLEMS — Continued

TEST	ACTION	APPLICABILITY
4	<p>Place the transfer case in 4WD Lo.            Drive the vehicle at less than 2.5 MPH (4 km/h).            With the DRBIII® in Inputs/Outputs, read the Enable 1 state, (should read LOW).            With the DRBIII® in Inputs/Outputs, read the Rear Lock Request state.            Press the Axle Lock switch once.            Did the Rear Lock Request change state?</p> <p>Yes → Replace and configure the Instrument Cluster in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 5</p>	All
5	<p>Turn the ignition off.            Disconnect the Axle Lock Switch harness connector.            Measure the voltage between the Fused B(+) circuit and ground.            Is the voltage below 10.5 volts?</p> <p>Yes → Repair the Axle Locker Switch Fused B(+) circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 6</p>	All
6	<p>Turn the ignition off.            Disconnect the Axle Lock Switch harness connector.            Measure the resistance between ground and the Axle Locker Switch Ground circuit.            Is the resistance above 5.0 ohms?</p> <p>Yes → Repair the Axle Locker Switch Ground circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 7</p>	All
7	<p>Turn the ignition off.            Disconnect the Axle Locker Switch harness connector.            Disconnect the Instrument Cluster C1 harness connector.            Measure the resistance of the Rear Locker Request circuit between the Axle Locker Switch connector and the Instrument Cluster C1 connector.            Is the resistance above 5.0 ohms?</p> <p>Yes → Repair the Rear Locker Request circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the Axle Lock Switch in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p>	All

**\*AXLE LOCK INDICATOR PROBLEMS — Continued**

TEST	ACTION	APPLICABILITY
8	<p>Place transfer case in 4WD Lo and drive vehicle at less than 2.5 MPH (4 km/h).                      Press the Axle Locker Switch once to lock the rear axle.                      With the DRBIII® in Inputs/Outputs, ensure that the Enable 1 and Enable 2 states both read LOW.                      With the DRBIII® in Inputs/Outputs, ensure that the Rear Lock Request and Rear Lock Return states both read LOCKED.                      Press the Axle Locker Switch again.                      Did the Front Axle Lock indicator illuminate?</p> <p>Yes → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins(TSB) that may apply. Visually inspect the related wiring harness and connector terminals.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 9</p>	All
9	<p>Place the vehicle in 4WD Lo, operate vehicle at 2.5 MPH (4 km/h) or less.                      With the DRBIII® in Inputs/Outputs, ensure that the Enable 1 and Enable 2 states read LOW.                      The Rear Axle Lock indicator must be illuminated.                      With the DRBIII® in Inputs/Outputs, read the Front Lock Request state.                      Press the Axle Locker Switch.                      Did the Front Axle Lock Request change state?</p> <p>Yes → Replace and configure the Instrument Cluster in accordance with the Service Information.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Go To 10</p>	All
10	<p>Turn the ignition off.                      Disconnect the Axle Locker Switch harness connector.                      Disconnect the Instrument Cluster C2 harness connector.                      Measure the resistance of the Front Locker Request circuit between the Axle Locker Switch connector and the Instrument Cluster C2 connector.                      Is the resistance above 5.0 ohms?</p> <p>Yes → Repair the Front Locker Request circuit for an open.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the Axle Lock Switch in accordance with the Service Information.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

## Symptom:

**\*BRAKE WARNING INDICATOR ALWAYS ON**

### POSSIBLE CAUSES

BRAKE WARNING INDICATOR CIRCUIT SHORT TO GROUND

BRAKE WARNING INDICATOR SWITCH

PARK BRAKE SWITCH

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: Ensure that the Base brake system functions properly and that the Brake Master Cylinder is filled with proper amount of fluid.</b></p> <p><b>NOTE: If equipped, diagnose and repair any ABS DTCs before continuing with this test.</b></p> <p>Turn the ignition off.                      Disconnect the Park Brake Switch harness connector.                      Turn the ignition on and observe the Brake Warning Indicator.                      Does the Brake Warning Indicator remain illuminated?</p> <p>Yes → Go To 2</p> <p>No → Replace the Park Brake Switch in accordance with the Service Information.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Turn the ignition off.                      Disconnect the Brake Warning Indicator Switch harness connector.                      Connect a jumper wire between cavity 1 and cavity 2.                      Turn the ignition on and observe the Brake Warning Indicator.                      Does the Brake Warning Indicator remain illuminated?</p> <p>Yes → Repair the Brake Warning Indicator circuit for a short to ground.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Replace the Brake Warning Indicator Switch in accordance with the Service Information.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*BRAKE WARNING INDICATOR INOPERATIVE**

POSSIBLE CAUSES
BRAKE WARNING INDICATOR CIRCUIT SHORT TO VOLTAGE BRAKE WARNING INDICATOR CIRCUIT OPEN BRAKE WARNING INDICATOR SWITCH PARK BRAKE SWITCH INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Perform the Instrument Cluster Self Test. Did the Brake Warning Indicator illuminate during the Self Test?  Yes → Go To 2  No → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All
2	Turn the ignition off. Disconnect the Instrument Cluster C2 harness connector. Check connectors - Clean/repair as necessary. Measure the voltage between the Brake Warning Indicator circuit and ground. Is there any voltage present?  Yes → Repair the Brake Warning Indicator circuit for a short to voltage. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	<b>NOTE: Ensure that the Instrument Cluster harness connector is connected.</b> Turn the ignition off. Disconnect the Brake Warning Indicator Switch (Pressure Switch) harness connector. Connect a jumper wire between cavity 1 and cavity 2. Disconnect the Park Brake Switch harness connector. Connect a jumper wire between the Brake Warning Indicator circuit and ground. Turn the ignition on and observe the Brake Warning Indicator. Does the Brake Warning Indicator illuminate?  Yes → Replace the Park Brake Switch in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All

# INSTRUMENT CLUSTER

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## \*BRAKE WARNING INDICATOR INOPERATIVE — Continued

TEST	ACTION	APPLICABILITY
4	<p>Turn the ignition off. Disconnect the Instrument Cluster C2 harness connector. Disconnect the Park Brake Switch harness connector. Disconnect the Brake Warning Indicator Switch harness connector. Connect a jumper wire between cavity 1 and cavity 2. Measure the resistance of the Brake Warning Indicator circuit. Is the resistance below 5.0 ohms?</p> <p>Yes → Replace the Brake Warning Indicator Switch in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Brake Warning Indicator circuit for an open. Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*FOG LAMP INDICATOR INOPERATIVE - DOMESTIC**

**POSSIBLE CAUSES**

FOG LAMP INDICATOR CIRCUIT OPEN  
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: Ensure that the Fog Lamps operate properly. If not, refer to EXTERIOR LIGHTING in the Service Information.</b></p> <p><b>NOTE: The Headlamps must be on Low Beam for indicator to operate.</b></p> <p>Turn the ignition off. Disconnect the Instrument Cluster. Check connectors - Clean/repair as necessary. Turn the Headlamps on and actuate the Fog Lamps. Using a 12-volt test light connected to ground, check the Fog Lamp Indicator circuit. Does the test light illuminate brightly?</p> <p>Yes → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Fog Lamp Indicator circuit for an open. Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

## Symptom:

### \*HIGH BEAM INDICATOR INOPERATIVE

POSSIBLE CAUSES
HIGH BEAM INDICATOR CIRCUIT OPEN
INDICATOR BULB
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: Ensure that the Headlamp High Beams operate properly. If not, refer to the Exterior Lighting Service Information.</b></p> <p>Turn the ignition off.            Disconnect the Instrument Cluster C1 harness connector.            Check connectors - Clean/repair as necessary.            Turn the Headlamps on and actuate the High Beams.  <b>NOTE: Ensure that the Fog Lamps are not actuated (Domestic vehicles only).</b>            Using a 12-volt test light connected to ground, back probe the High Beam Indicator circuit.            Does the test light illuminate brightly?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Repair the Dimmer Switch High Beam Output circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>Turn the ignition off.            Disconnect the Instrument Cluster.            Check connectors - Clean/repair as necessary.            Remove and inspect the High Beam Indicator bulb.            Is the indicator bulb filament open?</p> <p style="padding-left: 40px;">Yes → Replace the High Beam Indicator Bulb in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Replace the Instrument Cluster in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**  
**\*ONE GAUGE INOPERATIVE**

POSSIBLE CAUSES
INTERMITTENT CONDITION POWERTRAIN CONTROL MODULE DTC PRESENT INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, read DTCs. <b>NOTE: The PCM will not store any DTCs regarding Oil Pressure concerns.</b> <b>NOTE: If Oil Pressure gauge readings are in question and the gauge tests good, a mechanical oil pressure gauge must be attached to the engine.</b> Does the DRBIII® display any PCM DTCs?  Yes → Refer to the DRIVEABILITY category and perform the appropriate symptom. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 2	All
2	Turn the ignition off. Perform the Instrument Cluster Self Test. Observe the gauge in question while the Instrument Cluster performs the Self Test. The gauges should position at the following calibration points: Speedometer: 20mph (40km/h BUX), 55mph (80km/h BUX), 75mph (120km/h BUX) Tachometer: 2000, 5000 Fuel: Empty Stop, E, 1/2, F, Full Stop Temperature: Lo, Mid Lo, Mid High, High Oil Pressure: 0, 40, 60, Volt: Off, 9, 12, 14, 16, 19 Did the gauge in question operate properly?  Yes → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins (TSB) that may apply. Visually inspect the related wiring harness and connector terminals. Perform BODY VERIFICATION TEST - VER 1.  No → Replace and configure the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.	All

# INSTRUMENT CLUSTER

## Symptom:

### \*PANEL DIMMING INOPERATIVE

POSSIBLE CAUSES
INSTRUMENT CLUSTER PANEL DIMMING DTC
PARK LAMP FEED CIRCUIT OPEN
ILLUMINATION BULB
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: Ensure that the Park/Headlamps operate properly before continuing with this test.</b></p> <p><b>NOTE: Ensure that other Instrument Cluster functions operate properly before continuing with this test.</b></p> <p>Turn the ignition on.            With the DRBIII®, select Body, Electro/Mech Cluster, read DTCs.            Does the DRBIII® display PANEL DIMMER OPEN?</p> <p style="padding-left: 40px;">Yes → Refer to PANEL DIMMER OPEN DTC in the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Go To 2</p>	All
2	<p>Turn the ignition off.            Disconnect the Instrument Cluster C1 harness connector.            Check connectors - Clean/repair as necessary.            Turn the Park lamps on.            Measure the voltage between the Park Lamp Feed circuit and ground.            Is the voltage above 10.5 volts?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Repair the Park Lamp Feed circuit for an open.            Perform BODY VERIFICATION TEST - VER 1.</p>	All
3	<p>Turn the ignition off.            Disconnect the Instrument Cluster C1 harness connector.            Check connectors - Clean/repair as necessary.            Remove and inspect the inoperative illumination bulb(s).            Is the illumination bulb filament open?</p> <p style="padding-left: 40px;">Yes → Replace the Instrument Cluster Illumination Bulb(s) in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Replace the Instrument Cluster in accordance with the Service Information.            Perform BODY VERIFICATION TEST - VER 1.</p>	All

**Symptom:**

**\*REAR FOG LAMP INDICATOR INOPERATIVE - BUX ONLY**

**POSSIBLE CAUSES**

REAR FOG LAMP INDICATOR CIRCUIT OPEN  
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: Ensure that the Rear Fog Lamp operates properly. If not, refer to EXTERIOR LIGHTING in the Service Information.</b>  <b>NOTE: Headlamps must be turned on for Rear Fog Lamp and indicator to operate.</b>                      Turn the ignition off.                      Disconnect the Instrument Cluster.                      Check connectors - Clean/repair as necessary.                      Turn on the Headlamps and Rear Fog Lamp.                      Using a 12-volt test light connected to ground, check the Rear Fog Lamp Indicator circuit.                      Does the test light illuminate brightly?</p> <p>Yes → Replace the Instrument Cluster in accordance with the Service Information.                      Perform BODY VERIFICATION TEST - VER 1.</p> <p>No → Repair the Fog Lamp Indicator circuit for an open.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

## Symptom:

### \*SEAT BELT INDICATOR NOT OPERATING PROPERLY

POSSIBLE CAUSES
SEAT BELT SWITCH SENSE CIRCUIT SHORT TO GROUND
SEAT BELT SWITCH SENSE CIRCUIT OPEN
SEAT BELT SWITCH GROUND CIRCUIT OPEN
SEAT BELT SWITCH
SEAT BELT SWITCH SENSE CIRCUIT SHORT TO VOLTAGE
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p>Turn the ignition on. With the DRBIII® in Inputs/Outputs, read the Driver Belt Switch state while buckling and unbuckling the Seat Belt. Does the DRBIII® display Open while the belt is buckled and Closed while unbuckled?</p> <p style="padding-left: 40px;">Yes → Go To 2 No → Go To 3</p>	All
2	<p>Turn the ignition off. Perform the Instrument Cluster Self Test while observing the Seat Belt Indicator. Did the Seat Belt Indicator illuminate during the Self Test?</p> <p style="padding-left: 40px;">Yes → Test Complete. No → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.</p>	All
3	<p>Turn the ignition off. Disconnect the Instrument Cluster C2 harness connector. Check connectors - Clean/repair as necessary. <b>NOTE: Ensure that the Seat Belt is buckled.</b> Measure the voltage between the Seat Belt Switch Sense circuit and ground. Is there any voltage present?</p> <p style="padding-left: 40px;">Yes → Repair the Seat Belt Switch Sense circuit for a short to voltage. Perform BODY VERIFICATION TEST - VER 1. No → Go To 4</p>	All
4	<p>Turn the ignition off. Disconnect the Seat Belt Switch harness connector. Disconnect the Instrument Cluster C2 harness connector. Check connectors - Clean/repair as necessary. Measure the resistance between ground and the Seat Belt Switch Sense circuit. Is the resistance below 5.0 ohms?</p> <p style="padding-left: 40px;">Yes → Repair the Seat Belt Switch Sense circuit for a short to ground. Perform BODY VERIFICATION TEST - VER 1. No → Go To 5</p>	All

**\*SEAT BELT INDICATOR NOT OPERATING PROPERLY — Continued**

TEST	ACTION	APPLICABILITY
5	Turn the ignition off. Disconnect the Seat Belt Switch harness connector. Disconnect the Instrument Cluster C2 harness connector. Check connectors - Clean/repair as necessary. Measure the resistance of the Seat Belt Switch Sense circuit. Is the resistance above 5.0 ohms?  Yes → Repair the Seat Belt Switch Sense circuit for an open. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 6	All
6	Turn the ignition off. Disconnect the Seat Belt Switch harness connector. Check connectors - Clean/repair as necessary. Measure the resistance between ground and the Seat Belt Switch Ground circuit. Is the resistance below 5.0 ohms?  Yes → Replace the Seat Belt Switch in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Repair the Seat Belt Switch Ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

# INSTRUMENT CLUSTER

## Symptom:

### \*SPEEDOMETER INACCURATE OR INOPERATIVE

POSSIBLE CAUSES
PCM DTC PRESENT
INCORRECT CONFIGURATION
INTERMITTENT CONDITION
INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p>With the DRBIII®, read DTCs. Are any Powertrain DTCs present?</p> <p style="padding-left: 40px;">Yes → Refer to DRIVEABILITY for the related symptom(s).</p> <p style="padding-left: 40px;">No → Go To 2</p>	All
2	<p>With the DRBIII®, ensure that the Instrument Cluster is correctly configured for Tire Size, Axle Type, and Transfer Case Type. Are the Instrument Cluster configurations correct?</p> <p style="padding-left: 40px;">Yes → Go To 3</p> <p style="padding-left: 40px;">No → Using the DRBIII®, select Miscellaneous, Configure Cluster for the correct Tire Size, Axle Type, and Transfer Case Type. With the DRBIII®, erase DTCs.</p>	All
3	<p>Turn the ignition off. Perform the Instrument Cluster self test. Press and hold the Trip Reset button. Turn the ignition on. Observe the Speedometer during the self test. NOTE: The self test can also be initiated using the DRBIII®. The Speedometer should pause at the following calibration points: Cal Point 1: 20 MPH (40km/h Canada/BUX) (40 MPH Aus/Japan) Cal Point 2: 55 MPH (80 km/h Canada/BUX) (80 MPH Aus/Japan) Cal Point 3: 75 MPH (120 km/h Canada/BUX) (120 MPH Aus/Japan) Did the Speedometer pause at the correct calibration points?</p> <p style="padding-left: 40px;">Yes → The condition is not present at this time. Monitor DRBIII® parameters while wiggling the related wire harness. Refer to any Technical Service Bulletins (TSB) that may apply. Visually inspect the related wiring harness and connector terminals.</p> <p style="padding-left: 40px;">No → Replace and configure the Instrument Cluster in accordance with the Service Information.</p>	All

**Symptom:**

**\*VF DISPLAY INOPERATIVE**

**POSSIBLE CAUSES**

INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	<p><b>NOTE: Ensure that all other Instrument Cluster functions operate properly.</b>                      Turn the ignition off.                      Perform the Instrument Cluster Self Test.                      Did any or all of the VF display fail to operate?</p> <p>Repair</p> <p>Replace and configure the Instrument Cluster in accordance with the Service Information.                      Perform BODY VERIFICATION TEST - VER 1.</p>	All

# INSTRUMENT CLUSTER

## Symptom:

**\*VF ODOMETER INOPERATIVE WITH DOOR OPEN**

### POSSIBLE CAUSES

DEFECTIVE FUSE  
 DOOR AJAR SENSE CIRCUIT SHORT TO VOLTAGE  
 AJAR SWITCH  
 DOOR AJAR SWITCH SENSE CIRCUIT OPEN  
 DOOR AJAR SWITCH GROUND CIRCUIT OPEN  
 INSTRUMENT CLUSTER

TEST	ACTION	APPLICABILITY
1	Turn the ignition off. Inspect the #4 fuse in the Fuse Block. If the fuse is open, replace with proper rated fuse. <b>NOTE: Ensure that the ignition is in the off position.</b> Open the door(s). Inspect the #4 fuse in the Fuse Block. Is the fuse open?  Yes → Go To 2 No → Go To 3	All
2	Turn the ignition off. Disconnect the Instrument Cluster C2 harness connector. Check connectors - Clean/repair as necessary. Measure the voltage between the Door Ajar Switch Sense circuit and ground. <b>NOTE: This test will work for either the Driver or Passenger Door Ajar Switch Sense circuit.</b> Is there any voltage present?  Yes → Repair the Door Ajar Switch Sense circuit for a short to voltage. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Turn the ignition off. Disconnect the Door Ajar Switch harness connector. <b>NOTE: This test will work for the Driver or Passenger Door Ajar Switch.</b> Connect a jumper wire between cavity 1 and cavity 3. Does the VF Odometer illuminate?  Yes → Replace the inoperative Door Ajar Switch in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 4	All

**\*VF ODOMETER INOPERATIVE WITH DOOR OPEN — Continued**

TEST	ACTION	APPLICABILITY
4	Turn the ignition off. Disconnect the Door Ajar Switch harness connector. Connect a jumper wire between the Door Ajar Switch Sense circuit and ground. <b>NOTE: This test will work for the Driver or Passenger Door Ajar Switch Sense circuit.</b> Does the VF display illuminate?  Yes → Go To 5  No → Repair the Door Ajar Switch Sense circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All
5	Turn the ignition off. Disconnect the Door Ajar Switch harness connector. Check connectors - Clean/repair as necessary. Measure the resistance between ground and the Door Ajar Switch Ground circuit. <b>NOTE: This test will work for the Driver or Passenger Door Ajar Switch.</b> Is the resistance below 5.0 ohms?  Yes → Replace the Instrument Cluster in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.  No → Repair the Door Ajar Switch Ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1.	All

# INTERIOR LIGHTING

## Symptom:

### \*COURTESY LAMPS INOPERATIVE - ALL LAMPS

#### POSSIBLE CAUSES

FUSED B+ CIRCUIT OPEN  
 INSTRUMENT CLUSTER - COURTESY LAMP OPEN  
 COURTESY LAMP FEED CIRCUIT OPEN  
 INTERMITTENT CONDITION

TEST	ACTION	APPLICABILITY
1	Remove the dome lamp lens. Remove and ensure the bulb is good. Using a 12-volt test light connected to ground, check the Fused B+ circuit. Does the test light illuminate brightly?  Yes → Go To 2  No → Repair the Fused B+ Circuit for an open condition. Perform BODY VERIFICATION TEST - VER 1.	All
2	Disconnect the Instrument Cluster. Connect a jumper wire between the Courtesy Lamp Feed Circuit and ground. Observe the Dome Lamp. Does the test light illuminate brightly?  Yes → Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 3	All
3	Remove the dome lamp bulb. Disconnect the Instrument Cluster. Connect a jumper wire between the Courtesy Lamp Feed Circuit in the Instrument Cluster connector and ground. Measure resistance of the Courtesy Lamp Feed Circuit from the Dome Lamp to the Instrument Cluster connector. Is the resistance below 5.0 ohms?  Yes → Repair the Courtesy Lamp Feed Circuit for an open condition. Perform BODY VERIFICATION TEST - VER 1.  No → The condition that caused this 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 BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*COURTESY LAMPS ON AT ALL TIMES**

POSSIBLE CAUSES
<p>DRIVERS DOOR AJAR SWITCH</p> <p>DRIVERS DOOR AJAR SWITCH SENSE CIRCUIT SHORT TO GROUND</p> <p>INSTRUMENT CLUSTER</p> <p>PANEL LAMPS DIMMER SIGNAL CIRCUIT SHORT TO GROUND</p> <p>MULTIFUNCTION SWITCH</p> <p>DOOR AJAR SWITCH OPEN</p> <p>PASSENGER DOOR AJAR SWITCH SENSE CIRCUIT SHORT TO GROUND</p> <p>COURTESY LAMP DRIVER CIRCUIT SHORT TO GROUND</p> <p>INSTRUMENT CLUSTER</p>

TEST	ACTION	APPLICABILITY
1	<p>Close all the doors.</p> <p>Turn the Panel Lamps Dimmer Switch to the MID position.</p> <p>With the DRBIII®, read the Electro/Mech Cluster, I/O's.</p> <p>Does the DRBIII® read CLOSED?</p> <p style="padding-left: 40px;">Yes → Go To 2</p> <p style="padding-left: 40px;">No → Go To 6</p>	All
2	<p>Open the Drivers door.</p> <p>Disconnect the Driver Door Ajar Switch connector.</p> <p>With the DRBIII® select: Body, Electro/Mech Cluster, Input/Output.</p> <p>Read the: Drv Door Ajar Sw - state.</p> <p>Does the DRBIII® show: Open?</p> <p style="padding-left: 40px;">Yes → Replace the Drivers Door Ajar Switch.</p> <p style="padding-left: 80px;">Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Go To 3</p>	All
3	<p>Turn the ignition off.</p> <p>Disconnect the Driver Door Ajar Switch connector.</p> <p>Disconnect the Instrument Cluster connector.</p> <p>Measure resistance of the Driver Door Ajar Switch Sense Circuit from the door ajar switch connector to ground.</p> <p>Is the resistance below 100.0 ohms?</p> <p style="padding-left: 40px;">Yes → Repair the Drivers Door Ajar Switch Sense Circuit for a short to ground condition.</p> <p style="padding-left: 80px;">Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 40px;">No → Go To 4</p>	All

# INTERIOR LIGHTING

## \*COURTESY LAMPS ON AT ALL TIMES — Continued

TEST	ACTION	APPLICABILITY
4	Turn the Panel Lamps Dimmer to the MID position. Remove the Instrument Cluster. Measure the resistance between ground and the Panel Lamps Dimmer Signal Circuit in the C2 connector. Is the resistance below 100.0 ohms?  Yes → Go To 5  No → Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.	All
5	Disconnect the Instrument Cluster. Disconnect the Multifunction Switch connector. Measure the resistance of the Panel Lamps Dimmer Signal Circuit in the instrument cluster connector to ground. Is the resistance below 200.0 ohms?  Yes → Repair the Panel Lamps Dimmer Signal Circuit for a short to ground condition. Perform BODY VERIFICATION TEST - VER 1.  No → Replace the Multifunction Switch. Perform BODY VERIFICATION TEST - VER 1.	All
6	Close all the passenger doors. With the DRBIII® select: Body, Electro/Mech Cluster, Input /Output. Read the, Pas Door Ajar Sw - state. Remove the passenger door ajar switch and observe the DRBIII®. Did the DRBIII® change states to read: Pas Door Ajar Sw: Open?  Yes → Replace the applicable open Door Ajar Switch. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 7	All
7	Turn the ignition off. Disconnect the passenger door ajar switch. Disconnect the Instrument Cluster connector. Measure the resistance of the Passenger Door Ajar Circuit in the Passenger Door Ajar Switch connector. Is the resistance below 100.0 ohms?  Yes → Repair the Passenger Door Ajar Switch Sense Circuit for a short to ground condition. Perform BODY VERIFICATION TEST - VER 1.  No → Go To 8	All
8	Turn the Panel Lamps Dimmer to the MID position. Disconnect the Instrument Cluster Connector. Measure the resistance between ground and the Courtesy Lamp Driver Circuit. Is the resistance below 100.0 ohms?  Yes → Repair the Courtesy Lamp Driver Circuit for a short to ground condition. Perform BODY VERIFICATION TEST - VER 1.  No → Replace the Instrument Cluster. Perform BODY VERIFICATION TEST - VER 1.	All

**Symptom:**

**\*ILLUMINATED ENTRY INOPERATIVE**

POSSIBLE CAUSES
COURTESY LAMPS OPERATIONAL INTERMITTENT CONDITION ILLUMINATED ENTRY NOT ENABLED

TEST	ACTION	APPLICABILITY
1	<p>Check the Courtesy Lamps for proper operation. Do the Courtesy Lamps operate properly from the Door Ajar Switches?</p> <p style="padding-left: 20px;">Yes → Go To 2</p> <p style="padding-left: 20px;">No → Refer to Symptom list for problems related to COURTESY LAMPS INOPERATIVE. Perform BODY VERIFICATION TEST - VER 1.</p>	All
2	<p>With the DRBIII® select: ENABLE ILLUMINATED ENTRY. With the DRBIII®, read the ILLUMINATED ENTRY status. Does the DRBIII® display ENABLED?</p> <p style="padding-left: 20px;">Yes → The condition that caused this symptom is currently not present. Inspect the related wiring harness for a possible intermittent condition. Look for any chafed, pierced, pinched or partially broken wires. Perform BODY VERIFICATION TEST - VER 1.</p> <p style="padding-left: 20px;">No → With the DRB, enable the Illuminated Entry. Perform BODY VERIFICATION TEST - VER 1.</p>	All

## Verification Tests

42RLE TRANSMISSION VERIFICATION TEST - VER 1	APPLICABILITY
<ol style="list-style-type: none"> <li>1. Connect the DRBIII® to the Data Link Connector (DLC).</li> <li>2. Reconnect any disconnected components.</li> <li>3. With the DRBIII®, erase all Transmission DTC's, also erase the PCM DTC's.</li> <li>4. <b>NOTE: Erase DTC P0700 in the PCM to turn the Malfunction Indicator Lamp (MIL) off after making Transmission repairs.</b></li> <li>5. With the DRBIII®, display Transmission Temperature. Start and run the engine until the Transmission Temperature is HOT - above 43° C or 110° F.</li> <li>6. Check the Transmission Fluid and adjust if necessary. Refer to the Service information for the Fluid Fill procedure.</li> <li>7. <b>NOTE: If the Transmission Control Module or the Transmission has been repaired or replaced it is necessary to perform the DRBIII® Quick Learn Procedure and reset the "Pinion Factor"</b></li> <li>8. Road test the vehicle. With the DRBIII®, monitor the engine RPM. Make 15 to 20 1-2, 2-3, 3-4 upshifts. Perform these shifts from a standing start to 45 MPH with a constant throttle opening of 20 to 25 degrees.</li> <li>9. Below 25 MPH, make 5 to 8 wide open throttle kickdowns to 1st gear. Allow at least 5 seconds each in 2nd and 3rd gear between each kickdown.</li> <li>10. For a specific DTC, drive the vehicle to the Symptom's When Monitored/When Set conditions to verify the DTC repair.</li> <li>11. If equipped with AutoStick®, up-shift and down-shift several times using the AutoStick® feature during the road test.</li> <li>12. <b>NOTE: Use the EATX OBDII Task Manager to run Good Trip time in each gear, this will confirm the repair and to ensure that the DTC has not re-matured.</b></li> <li>13. Check for Diagnostic Trouble Codes (DTC's) during the road test. If a DTC sets during the road test , return to the Symptom list and perform the appropriate Symptom.</li> </ol> <p>Were there any Diagnostic Trouble Codes (DTCs) set during the road test?</p> <p style="padding-left: 40px;">Yes → Refer to the Symptom List for appropriate Symptom(s).</p> <p style="padding-left: 40px;">No → Repair is complete.</p>	<p>All</p>

ABS VERIFICATION TEST - VER 1	APPLICABILITY
<ol style="list-style-type: none"> <li>1. Turn the ignition off.</li> <li>2. Connect all previously disconnected components and connectors.</li> <li>3. Ensure all accessories are turned off and the battery is fully charged.</li> <li>4. Ensure that the Ignition is on, and with the DRBIII, erase all Diagnostic Trouble Codes from ALL modules. Start the engine and allow it to run for 2 minutes and fully operate the system that was malfunctioning.</li> <li>5. Turn the ignition off and wait 5 seconds. Turn the ignition on and using the DRBIII, read DTC's from ALL modules.</li> <li>6. If any Diagnostic Trouble Codes are present, return to Symptom list and troubleshoot new or recurring symptom.</li> <li>7. <b>NOTE: For Sensor Signal and Pump Motor faults, the CAB must sense all 4 wheels at 25 km/h (15 mph) before it will extinguish the ABS Indicator.</b></li> <li>8. If there are no DTC's present after turning ignition on, road test the vehicle for at least 5 minutes. Perform several antilock braking stops.</li> <li>9. <b>Caution: Ensure braking capability is available before road testing.</b></li> <li>10. Again, with the DRBIII® read DTC's. If any DTC's are present, return to Symptom list.</li> <li>11. If there are no Diagnostic Trouble Codes (DTC's) present, and the customer's concern can no longer be duplicated, the repair is complete.</li> </ol> <p>Are any DTC's present or is the original concern still present?</p> <p style="padding-left: 40px;">Yes → Repair is not complete, refer to appropriate symptom.</p> <p style="padding-left: 40px;">No → Repair is complete.</p>	<p>All</p>

**Verification Tests — Continued**

<b>BODY VERIFICATION TEST - VER 1</b>	<b>APPLICABILITY</b>
<p>1. Disconnect all jumper wires and reconnect all previously disconnected components and connectors.</p> <p><b>2. NOTE: If the SKIM or PCM was replaced, refer to the service information for proper programming procedures.</b></p> <p><b>3. NOTE: If the MIC was replaced, configure new cluster with Tire Size, Axle, T-Case Type, and EQ Setting.</b></p> <p>4. Ensure all accessories are turned off and the battery is fully charged.</p> <p>5. With the DRBIII®, record and erase all DTC's from ALL modules. Start and run the engine for 2 minutes. Operate all functions of the system that caused the original concern.</p> <p>6. Turn the ignition off and wait 5 seconds. Turn the ignition on and using the DRBIII®, read DTC's from ALL modules.</p> <p>Are any DTCs present or is the original condition still present?</p> <p style="padding-left: 40px;">Yes → Repair is not complete, refer to the appropriate symptom.</p> <p style="padding-left: 40px;">No → Repair is complete.</p>	All

<b>POWERTRAIN VERIFICATION TEST VER - 1</b>	<b>APPLICABILITY</b>
<p><b>1. NOTE: After completing the Powertrain Verification Test the Transmission Verification Test must be performed.</b></p> <p><b>2. NOTE: If the PCM has been replaced and the correct VIN and mileage have not been programmed, a DTC will set in the ABS Module, Airbag Module and the SKIM.</b></p> <p><b>3. NOTE: If the vehicle is equipped with a Sentry Key Immobilizer System, Secret Key data must be updated. Refer to the Service Information for the PCM, SKIM and the Transponder (ignition key) for programming information.</b></p> <p>4. Inspect the vehicle to ensure that all components related to the repair are properly installed and connected.</p> <p>5. Inspect the engine oil for fuel contamination. Replace the oil and filter as necessary.</p> <p>6. Attempt to start the engine.</p> <p>7. If the No Start condition is still present, refer to the symptom list and perform the diagnostic testing as necessary. Refer to any Technical Service Bulletins that may apply.</p> <p>8. Run the engine for one warm-up cycle to verify operation.</p> <p>9. With the DRBIII®, confirm that no DTCs or Secondary Indicators are present and that all components are functioning properly.</p> <p>Are any DTCs or symptoms remaining?</p> <p style="padding-left: 40px;">Yes → Check for any related Technical Service Bulletins and/or refer to the appropriate Symptom list (Diagnostic Procedure).</p> <p style="padding-left: 40px;">No → Repair is complete.</p>	All

# VERIFICATION TESTS

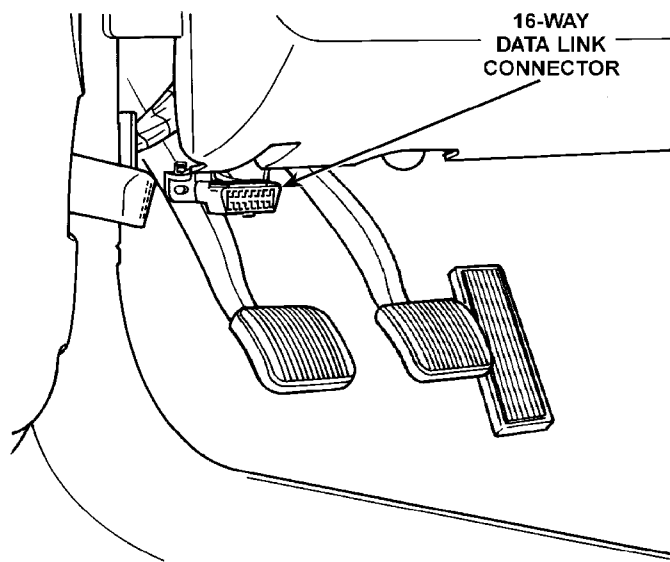
## Verification Tests — Continued

SKIS VERIFICATION	APPLICABILITY
<p>1. Reconnect all previously disconnected components and connectors.</p> <p>2. Obtain the vehicle's unique Personal Identification Number (PIN) assigned to it's original SKIM. This number can be obtained from the vehicle's invoice or Chrysler's Customer Center (1-800-992-1997).</p> <p><b>3. NOTE: When entering the PIN, care should be taken because the SKIM will only allow 3 consecutive attempts to enter the correct PIN. If 3 consecutive incorrect PINs are entered, the SKIM will Lock Out the DRB for 1 hour.</b></p> <p>4. To exit Lock Out mode, the ignition key must remain in the Run position continually for 1 hour. Turn off all accessories and connect a battery charger if necessary.</p> <p>5. With the DRB, select Theft Alarm, SKIM and Miscellaneous. Then, select the desired procedure and follow the steps that will be displayed.</p> <p>6. If the SKIM has been replaced, ensure all of the vehicle ignition keys are programmed to the new SKIM.</p> <p><b>7. NOTE: Prior to returning vehicle to the customer, perform a module scan to be sure that all DTCs are erased. Erase any DTCs that are found.</b></p> <p>8. With the DRB, erase all DTCs. Perform 5 ignition key cycles leaving the key on for at least 90 seconds per cycle.</p> <p>9. With the DRB, read the SKIM DTCs.</p> <p>Are there any SKIM DTCs?</p> <p style="padding-left: 40px;">Yes → Repair is not complete, refer to appropriate symptom.</p> <p style="padding-left: 40px;">No → Repair is complete.</p>	<p>All</p>

__AIRBAG VERIFICATION TEST - VER 1	APPLICABILITY
<p>1. Remove any special tools or jumper wires and reconnect all previously disconnected components - except the Battery.</p> <p><b>2. WARNING: TO AVOID PERSONAL INJURY OR DEATH, TURN THE IGNITION ON, THEN RECONNECT THE BATTERY.</b></p> <p>3. Connect the DRBIII® to the Data Link Connector - use the most current software available.</p> <p>4. Use the DRBIII® and erase the stored codes in all airbag system modules.</p> <p>5. Turn the ignition off, and wait 15 seconds, then turn the ignition on.</p> <p>6. Wait one minute, and read active codes and if there are none present read the stored codes.</p> <p>7. Note: If equipped with Airbag On - Off switch, read the DTC's in all switch positions.</p> <p>8. Note: Read the DTC's in all airbag system related modules.</p> <p>9. If the DRBIII® shows any active or stored codes, return to the Symptom list and follow path specified for that trouble code. If no active or stored codes are present, the repair is complete.</p> <p>Are any DTC's present or is the original condition still present?</p> <p style="padding-left: 40px;">YES Repair is not complete, refer to appropriate symptom list.</p> <p style="padding-left: 40px;">NO Repair is complete.</p>	<p>All</p>

## 8.0 COMPONENT LOCATIONS

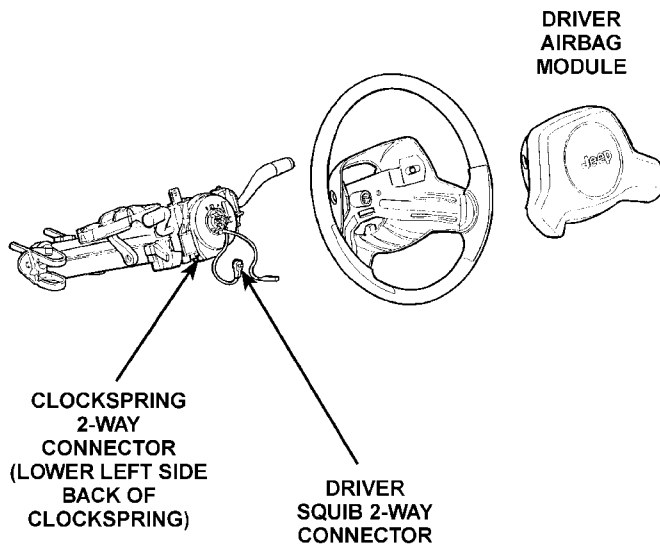
### 8.1 DATA LINK CONNECTOR



80a4835f

### 8.2 AIRBAG

#### 8.2.1 DRIVER AIRBAG MODULE & CLOCKSPRING

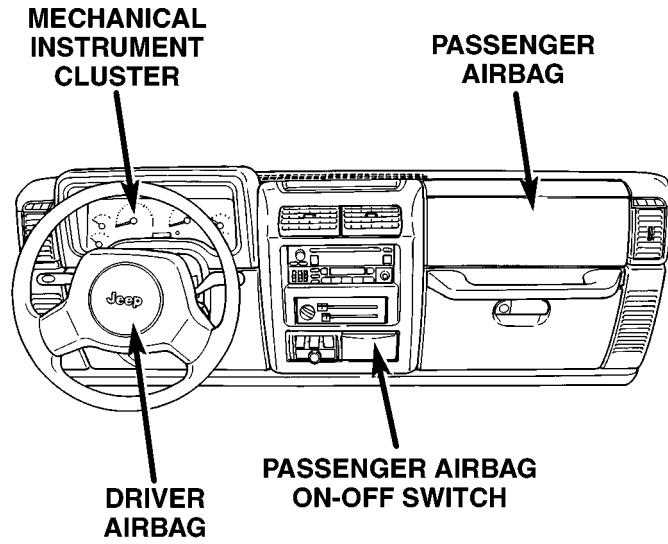


80a48360

# COMPONENT LOCATIONS

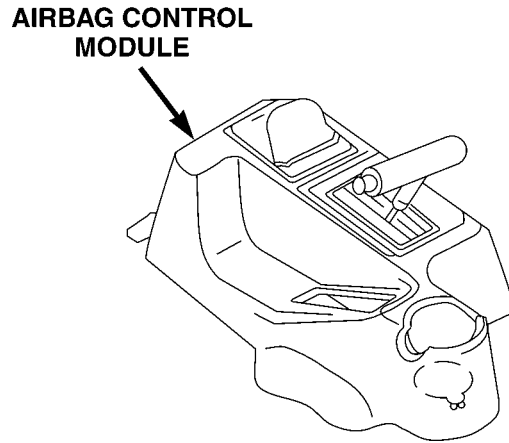
## 8.2 AIRBAG (Continued)

### 8.2.2 DRIVER/PASSENGER AIRBAG MODULES & MECHANICAL INSTRUMENT CLUSTER



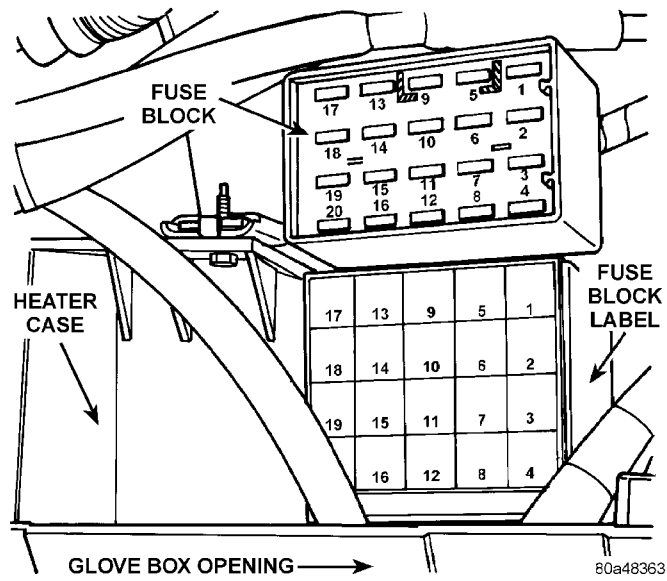
80f46ad8

### 8.2.3 AIRBAG CONTROL MODULE AND PASSENGER AIRBAG ON/OFF SWITCH



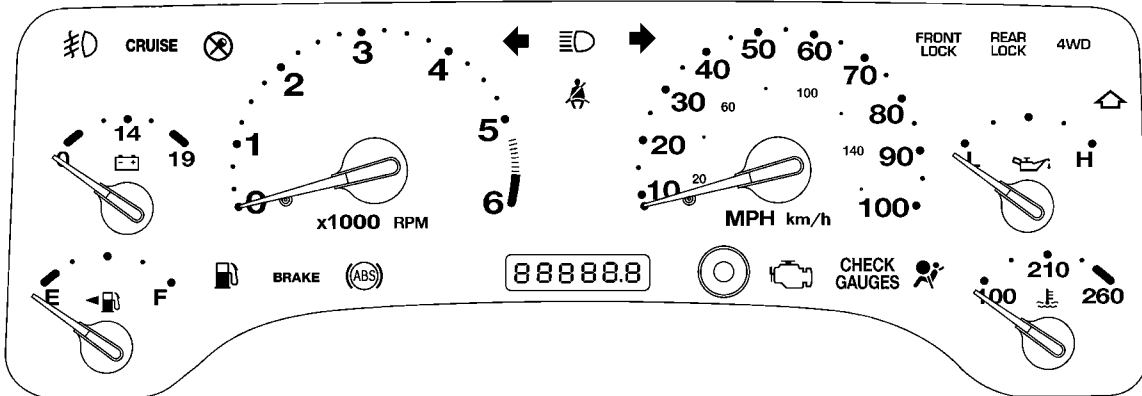
80f468c8

8.3 FUSE BLOCK



8.4 INSTRUMENT CLUSTER

8.4.1 FRONT VIEW

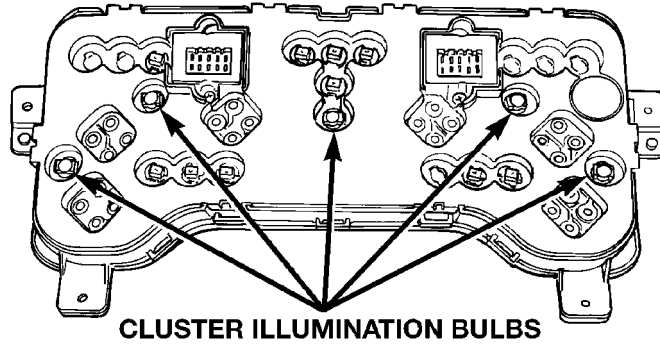


80bcae73

# COMPONENT LOCATIONS

## 8.4 INSTRUMENT CLUSTER (Continued)

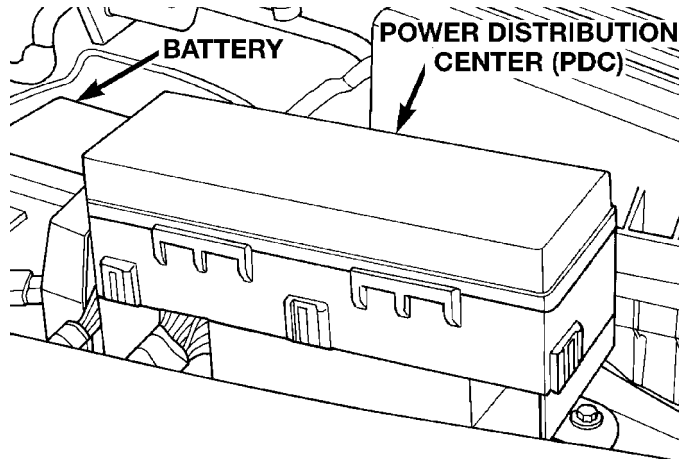
### 8.4.2 REAR VIEW



**CLUSTER ILLUMINATION BULBS**

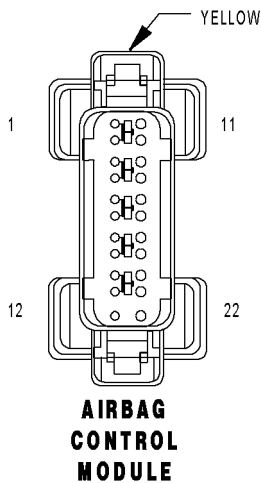
80a4d2ef

## 8.5 POWER DISTRIBUTION CENTER (PDC)



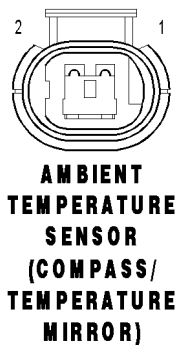
80a43755

9.0 CONNECTOR PINOUTS



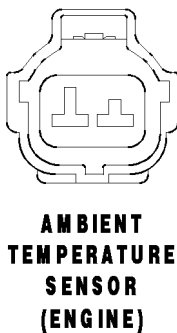
AIRBAG CONTROL MODULE - YELLOW 22 WAY

CAV	CIRCUIT	FUNCTION
1	R43 18LG/BR	DRIVER SQUIB 1 LINE 1
2	R45 18LG/OR	DRIVER SQUIB 1 LINE 2
3	-	-
4	-	-
5	R44 18LB/OR	PASSENGER SQUIB 1 LINE 2
6	R42 18LB/BR	PASSENGER SQUIB 1 LINE 1
7	-	-
8	G104 18VT/GY (PAD)	PASSENGER AIRBAG INDICATOR DRIVER
9	-	-
10	Z104 18BK/LG	GROUND
11	R106 18LG/LB (PAD)	PASSENGER AIRBAG MUX SWITCH SENSE
12	-	-
13	-	-
14	-	-
15	-	-
16	-	-
17	F201 18PK/OR	FUSED IGNITION SWITCH OUTPUT (RUN-START)
18	D25 18WT/VT	PCI BUS
19	-	-
20	F100 18PK/VT	FUSED IGNITION SWITCH OUTPUT (RUN)
21	-	-
22	R104 18LB/LG (PAD)	PASSENGER AIRBAG MUX SWITCH RETURN



AMBIENT TEMPERATURE SENSOR (COMPASS/TEMPERATURE MIRROR) - 2 WAY

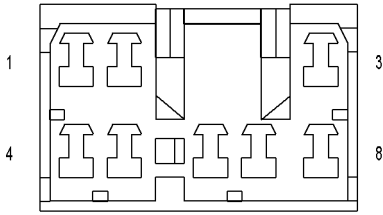
CAV	CIRCUIT	FUNCTION
1	G231 20VT/YL	AAT SIGNAL
2	G32 20VT/LB	SENSOR GROUND



AMBIENT TEMPERATURE SENSOR (ENGINE) - 2 WAY

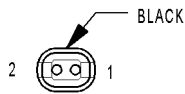
CAV	CIRCUIT	FUNCTION
1	G31 20VT/LG	AAT SIGNAL
2	K900 20DB/DG	SENSOR GROUND

# CONNECTOR PINOUTS



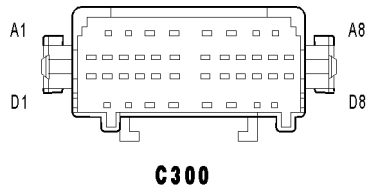
**AXLE  
LOCK  
SWITCH  
(OFF-ROAD  
PACKAGE)**

AXLE LOCK SWITCH (OFF-ROAD PACKAGE) - 8 WAY		
CAV	CIRCUIT	FUNCTION
1	Z1 18BK	GROUND
2	E2 20OR/BR	PANEL LAMPS FEED
3	M21 20YL/BR	FUSED B(+)
4	G302 20VT/OR	LOCKER ENABLE SIGNAL 1
5	G303 20VT/DG	LOCKER ENABLE SIGNAL 2
6	G305 20VT/LG	REAR LOCKER REQUEST
7	G304 20VT/DB	FRONT LOCKER REQUEST
8	-	-



**BRAKE  
WARNING  
INDICATOR  
SWITCH**

BRAKE WARNING INDICATOR SWITCH - BLACK 2 WAY		
CAV	CIRCUIT	FUNCTION
1	G9 20GY/BK	BRAKE WARNING INDICATOR DRIVER
2	B83 20DG/WT	BRAKE PRESSURE SENSOR SUPPLY

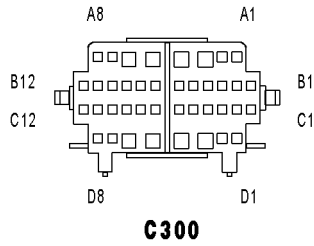


**C300 - (BODY SIDE)**

CAV	CIRCUIT
A1	L45 20LG/DG
A2	G75 20VT
A3	X55 18DG/BR
A4	X53 18DG
A5	L7 18WT/YL
A5	L7 18WT/YL
A6	L61 18GY
A6	L61 18GY
A7	L1 20WT/LG
A8	A207 18RD/LG
B1	F201 18PK/OR
B2	F505 20PK/YL
B3	X52 18GY/DB
B4	X58 18GY/OR
B5	L60 18TN
B6	-
B7	G15 20VT/TN
B8	G104 18VT/GY
B9	W20 18BR/YL
B10	G93 20VT/LB
B11	C515 20LB/OR
B12	L36 16WT/DB
C1	X112 16DG/GY
C2	X60 20GY/OR
C3	W13 18BR/LG
C4	G10 20VT/LG
C5	M22 20YL/OR
C6	F302 18GY/PK
C7	E19 20OR/BR
C8	-
C9	R104 18LB/LG
C10	X51 18DG/DB
C11	X57 18DG/OR
C12	D25 20WT/VT
D1	-
D2	G76 20VT/YL
D3	M21 20YL/BR
D3	M21 20YL/BR
D4	F504 20GY/PK
D5	X54 18GY
D6	X56 18GY/BR
D7	E2 20OR/BR
D8	R106 18LG/LB

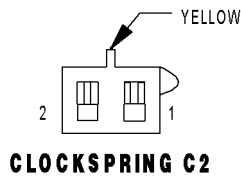
# CONNECTOR PINOUTS

CONNECTOR PINOUTS



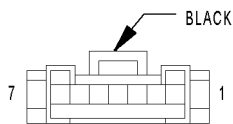
## C300 - (I/P SIDE)

CAV	CIRCUIT
A1	L45 20WT/OR
A2	G75 20VT
A3	X55 18DG/BR
A3	X55 18DG/BR
A4	X53 18DG
A4	X53 18DG
A5	L7 18WT/YL
A6	L61 18WT/LG
A7	L1 20WT/LG
A8	A207 18RD/LG
B1	F201 18PK/OR
B2	F505 20PK/YL
B3	X52 18GY/DB
B4	X58 18GY/OR
B5	L60 18WT/TN
B6	-
B7	G15 20VT/TN
B8	G104 18VT/GY
B9	W20 18BR/YL
B10	G93 20VT/LB
B11	C515 20LB/OR
B12	L36 16WT/DB
C1	X112 16DG/GY
C2	X60 20GY/OR
C3	W13 18BR/LG
C4	G10 20VT/LG
C5	M22 20YL/OR
C6	F302 18GY/PK
C7	E19 20OR/BR
C8	-
C9	R104 18LB/LG
C10	X51 18DG/DB
C11	X57 18DG/OR
C12	D25 20WT/VT
D1	-
D2	G76 20VT/YL
D3	M21 20YL/BR
D4	F504 20GY/PK
D4	F504 20GY/PK
D5	X54 18GY
D5	X54 18GY
D6	X56 18GY/BR
D6	X56 18GY/BR
D7	E2 20OR/BR
D8	R106 18LG/LB



## CLOCKSPring C2 - YELLOW 2 WAY

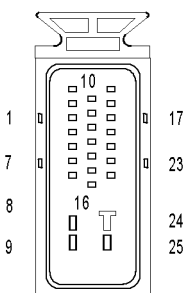
CAV	CIRCUIT	FUNCTION
1	R43 18LG/BR	DRIVER SQUIB 1 LINE 1
2	R45 18LG/OR	DRIVER SQUIB 1 LINE 2



**COMPASS/  
TEMPERATURE  
MIRROR**

**COMPASS/TEMPERATURE MIRROR - BLACK 7 WAY**

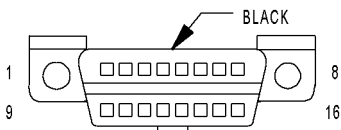
CAV	CIRCUIT	FUNCTION
1	F505 20DB/WT	FUSED IGNITION SWITCH OUTPUT (RUN-START)
2	Z2 20BK/LG	GROUND
3	L1 20VT/BK	BACK-UP LAMP FEED
4	G31 20VT/LG	AAT SIGNAL
5	G32 20BK/LB	SENSOR GROUND
6	M22 20YL	COURTESY LAMPS DRIVER
7	M21 20PK/WT	FUSED B(+)



**CONTROLLER  
ANTILOCK  
BRAKE**

**CONTROLLER ANTILOCK BRAKE - 25 WAY**

CAV	CIRCUIT	FUNCTION
1	B1 18DG/OR	RIGHT REAR WHEEL SPEED SENSOR (-)
2	B3 18DG/YL	LEFT REAR WHEEL SPEED SENSOR (-)
3	B7 18DG/VT	RIGHT FRONT WHEEL SPEED SENSOR (+)
4	B9 18DG/LG	LEFT FRONT WHEEL SPEED SENSOR (+)
5	-	-
6	G117 18VT/LG	G-SWITCH NO. 1 SENSE
7	G118 18VT/YL	G-SWITCH NO. 2 SENSE
8	Z127 12BK/DG	GROUND
9	A111 12DG/RD	FUSED B(+)
10	B4 18DG/GY	LEFT REAR WHEEL SPEED SENSOR (+)
11	B8 18DG/TN	LEFT FRONT WHEEL SPEED SENSOR (-)
12	L50 18WT/TN	BRAKE LAMP SWITCH OUTPUT
13	G119 18VT	G-SWITCH TEST SIGNAL
14	-	-
15	-	-
16	G83 18VT/WT	ABS RELAY CONTROL
17	B2 18DG/LB	RIGHT REAR WHEEL SPEED SENSOR (+)
18	B6 18DG/WT	RIGHT FRONT WHEEL SPEED SENSOR (-)
19	-	-
20	D21 18WT/BR	SCI TRANSMIT
21	-	-
22	-	-
23	F102 18PK/DB	FUSED IGNITION SWITCH OUTPUT (RUN)
24	Z107 12BK/DG	GROUND
25	A107 12TN/RD	FUSED B(+)

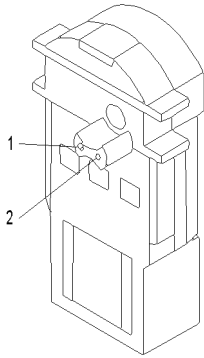


**DATA LINK  
CONNECTOR**

**DATA LINK CONNECTOR - BLACK 16 WAY**

CAV	CIRCUIT	FUNCTION
1	-	-
2	D25 20WT/VT	PCI BUS
3	-	-
4	Z111 20BK/WT	GROUND
5	Z11 20BK/LG	GROUND
6	-	-
7	D21 20WT/BR	SCI TRANSMIT (PCM/CAB)
8	-	-
9	D16 20WT/OR	SCI RECEIVE (TCM)
10	-	-
11	-	-
12	D20 20WT/LG	SCI RECEIVE (PCM)
13	-	-
14	-	-
15	D15 20WT/DG	SCI RECIEVE (TCM)
16	M21 20YL/BR	FUSED B(+)

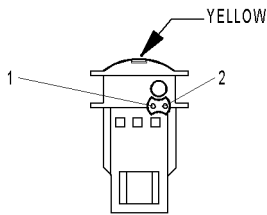
# CONNECTOR PINOUTS



**DRIVER AIRBAG**

**DRIVER AIRBAG - 2 WAY**

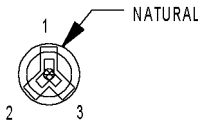
CAV	CIRCUIT	FUNCTION
1	BK/LB	DRIVER AIRBAG LINE 1
2	DG/LB	DRIVER AIRBAG LINE 2



**DRIVER AIRBAG SQUIB 1**

**DRIVER AIRBAG SQUIB 1 - YELLOW 2 WAY**

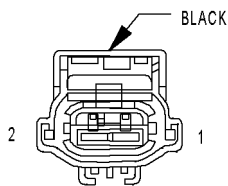
CAV	CIRCUIT	FUNCTION
1	R45 18DG/LB	DRIVER SQUIB 1 LINE 2
2	R43 18BK/LB	DRIVER SQUIB 1 LINE 1



**DRIVER DOOR AJAR SWITCH**

**DRIVER DOOR AJAR SWITCH - NATURAL 3 WAY**

CAV	CIRCUIT	FUNCTION
1	M23 20YL/DG	DOOR AJAR SWITCH OUTPUT
2	-	-
3	G75 20VT	DRIVER DOOR AJAR SWITCH SENSE

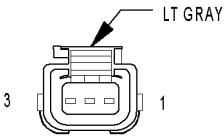


**FRONT LOCKER INDICATOR SWITCH (OFF-ROAD PACKAGE)**

**FRONT LOCKER INDICATOR SWITCH (OFF-ROAD PACKAGE) - BLACK 2 WAY**

CAV	CIRCUIT	FUNCTION
1	Z987 20BK	GROUND
2	G300 20VT/WT	FRONT LOCKER INDICATOR SWITCH SENSE

CONNECTOR PINOUTS



**FRONT  
LOCKER  
PUMP  
(OFF-ROAD  
PACKAGE)**

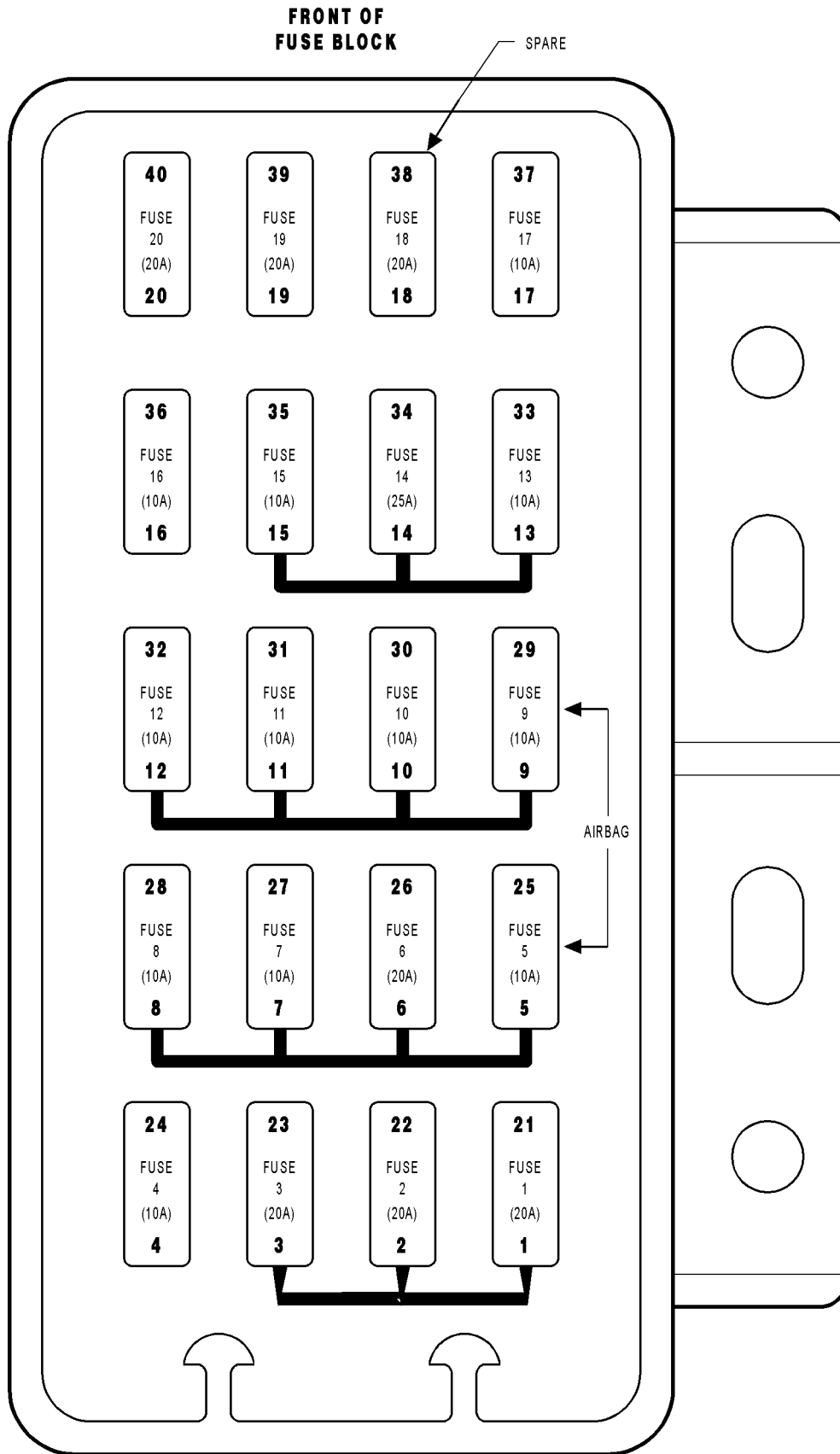
**FRONT LOCKER PUMP (OFF-ROAD PACKAGE) - LT GRAY 3 WAY**

CAV	CIRCUIT	FUNCTION
1	Z987 18BK	GROUND
2	-	-
3	A750 18TN/RD	FRONT LOCKER RELAY OUTPUT

CONNECTOR  
PINOUTS

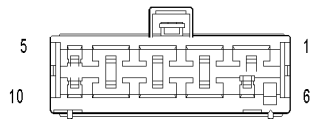
# CONNECTOR PINOUTS

CONNECTOR PINOUTS



## FUSES (FB)

FUSE NO.	AMPS	FUSED CIRCUIT	FUNCTION
1	20A	L177 18WT/OR	FUSED B(+)
1	20A	L177 20WT/OR	FUSED B(+)
2	20A	A103 18GY/RD	FUSED B(+)
3	20A	X13 16BK/RD (SUBWOOFER)	FUSED B(+)
4	10A	Z902 20BK	GROUND
5	10A	F100 18PK/VT	FUSED IGNITION SWITCH OUTPUT (RUN)
6	20A	F302 18GY/PK (HARDTOP)	FUSED IGNITION SWITCH OUTPUT (RUN)
7	10A	F102 20PK/DB	FUSED IGNITION SWITCH OUTPUT (RUN)
8	10A	F504 20GY/PK	FUSED IGNITION SWITCH OUTPUT (RUN)
9	10A	F201 18PK/OR	FUSED IGNITION SWITCH OUTPUT (RUN-START)
10	10A	F505 20PK/YL	FUSED IGNITION SWITCH OUTPUT (RUN-START)
10	10A	F505 20PK/YL	FUSED IGNITION SWITCH OUTPUT (RUN-START)
11	10A	F960 20PK/LG	FUSED IGNITION SWITCH OUTPUT (RUN-START)
12	10A	F1 20PK/WT	FUSED IGNITION SWITCH OUTPUT (RUN-START)
12	10A	F1 20PK/WT	FUSED IGNITION SWITCH OUTPUT (RUN-START)
13	10A	L5 20WT/LB	FUSED IGNITION SWITCH OUTPUT (RUN-ACC)
14	10A	X112 16DG/GY	FUSED IGNITION SWITCH OUTPUT (RUN-ACC)
15	10A	C515 20LB/OR (HARDTOP)	FUSED REAR WINDOW DEFOGGER RELAY OUTPUT
16	10A	L45 20LG/DG (EXPORT)	DIMMER SWITCH LOW BEAM OUTPUT
16	10A	L45 20LG/DG (EXPORT)	DIMMER SWITCH LOW BEAM OUTPUT
17	25A	F300 16OR/PK	FUSED IGNITION SWITCH OUTPUT (RUN-ACC)
17	25A	F300 16OR/PK	FUSED IGNITION SWITCH OUTPUT (RUN-ACC)
18	15A	A207 18RD/LG	FUSED IGNITION SWITCH OUTPUT (RUN-ACC)
19	-	-	-
20	-	-	-

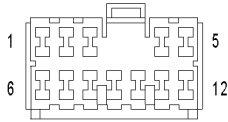


**IGNITION SWITCH**

## IGNITION SWITCH - 10 WAY

CAV	CIRCUIT	FUNCTION
1	A1 16RD	FUSED B(+)
2	F951 16PK/LG	IGNITION SWITCH OUTPUT (RUN-START)
3	F993 12PK/YL	IGNITION SWITCH OUTPUT (RUN-ACC)
4	A991 12 RD	FUSED B(+)
5	G15 20VT/TN	KEY-IN IGNITION SWITCH SENSE
6	F26 16PK/OR	IGNITION SWITCH OUTPUT (START)
7	F982 16PK/YL	IGNITION SWITCH OUTPUT (RUN-ACC)
8	F921 14PK/YL	IGNITION SWITCH OUTPUT (RUN)
9	A8 14RD	FUSED B(+)
10	Z902 16BK	GROUND

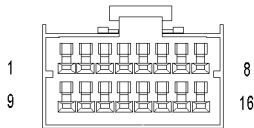
# CONNECTOR PINOUTS



**INSTRUMENT CLUSTER C1**

## INSTRUMENT CLUSTER C1 - 12 WAY

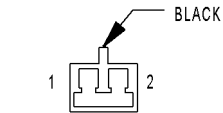
CAV	CIRCUIT	FUNCTION
1	L61 18WT/LG	LEFT TURN SIGNAL
2	L60 18WT/TN	RIGHT TURN SIGNAL
3	L300 16LG/WT	DIMMER SWITCH HIGH BEAM OUTPUT
4	L39 16WT/OR (EXCEPT EXPORT)	FOG LAMP RELAY OUTPUT
4	L36 16WT/DB (EXPORT)	REAR FOG LAMP FEED
5	L7 18WT/YL	HEADLAMP SWITCH OUTPUT
6	G305 20VT/LG (OFF-ROAD PACKAGE)	REAR LOCKER REQUEST
7	G301 20VT/LB (OFF-ROAD PACKAGE)	REAR LOCKER INDICATOR SWITCH SENSE
8	Z18 18BK/LB	GROUND
9	G303 20VT/DG (OFF-ROAD PACKAGE)	LOCKER ENABLE SIGNAL 2
10	D16 20WT/OR	SCI RECEIVE (TCM)
11	F505 20PK/YL	FUSED IGNITION SWITCH OUTPUT (RUN-START)
12	M21 20YL/BR	FUSED B(+)



**INSTRUMENT CLUSTER C2**

## INSTRUMENT CLUSTER C2 - 16 WAY

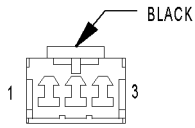
CAV	CIRCUIT	FUNCTION
1	C80 20DB (HARD TOP)	REAR WINDOW DEFOGGER SWITCH SENSE
2	G10 20VT/LG	SEAT BELT SWITCH SENSE
3	G76 20VT/YL	PASSENGER DOOR AJAR SWITCH SENSE
4	G75 20VT	DRIVER DOOR AJAR SWITCH SENSE
5	M22 20YL/OR	COURTESY LAMPS FEED
6	E2 20OR/BR	PANEL LAMPS FEED
7	C115 20DB (HARD TOP)	REAR WINDOW DEFOGGER RELAY CONTROL
8	G4 20VT/LB (ABS)	ABS WARNING INDICATOR DRIVER
9	B83 20DG/WT	BRAKE PRESSURE SENSOR SUPPLY
10	G304 20VT/DB (OFF-ROAD PACKAGE)	FRONT LOCKER REQUEST
11	G93 20VT/LB (OFF-ROAD PACKAGE)	4WD INDICATOR
12	D25 20WT/VT	PCI BUS
13	G15 20VT/TN	KEY-IN IGNITION SWITCH SENSE
14	G302 20VT/OR (OFF-ROAD PACKAGE)	LOCKER ENABLE SIGNAL 1
15	E19 20OR/BR	PANEL LAMPS DIMMER SIGNAL
16	G300 20VT/WT (OFF-ROAD PACKAGE)	FRONT LOCKER INDICATOR SWITCH SENSE



**LEFT FRONT SPEAKER**

## LEFT FRONT SPEAKER - BLACK 3 WAY

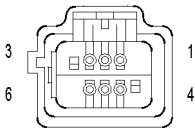
CAV	CIRCUIT	FUNCTION
1	X53 18DG	LEFT FRONT SPEAKER (+)
2	-	-
3	X55 18DG/BR	LEFT FRONT SPEAKER (-)



**LEFT  
REAR  
SPEAKER**

**LEFT REAR SPEAKER - BLACK 3 WAY**

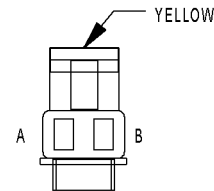
CAV	CIRCUIT	FUNCTION
1	X57 20BR/LB	LEFT REAR SPEAKER (-)
2	-	-
3	X51 18BR/YL	LEFT REAR SPEAKER (+)



**PASSENGER  
AIRBAG  
ON-OFF  
SWITCH  
(LHD)**

**PASSENGER AIRBAG ON-OFF SWITCH (LHD) - 6 WAY**

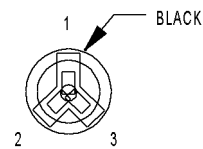
CAV	CIRCUIT	FUNCTION
1	F201 18PK/OR	FUSED IGNITION SWITCH OUTPUT (RUN-START)
2	G104 18VT/GY	PASSENGER AIRBAG INDICATOR DRIVER
3	R106 18LG/LB	PASSENGER AIRBAG MUX SWITCH SENSE
4	-	-
5	-	-
6	R104 18LB/LG	PASSENGER AIRBAG MUX SWITCH RETURN



**PASSENGER  
AIRBAG SQUIB 1**

**PASSENGER AIRBAG SQUIB 1 - YELLOW 2 WAY**

CAV	CIRCUIT	FUNCTION
A	R42 18LB/BR	PASSENGER SQUIB 1 LINE 1
B	R44 18LB/OR	PASSENGER SQUIB 1 LINE 2



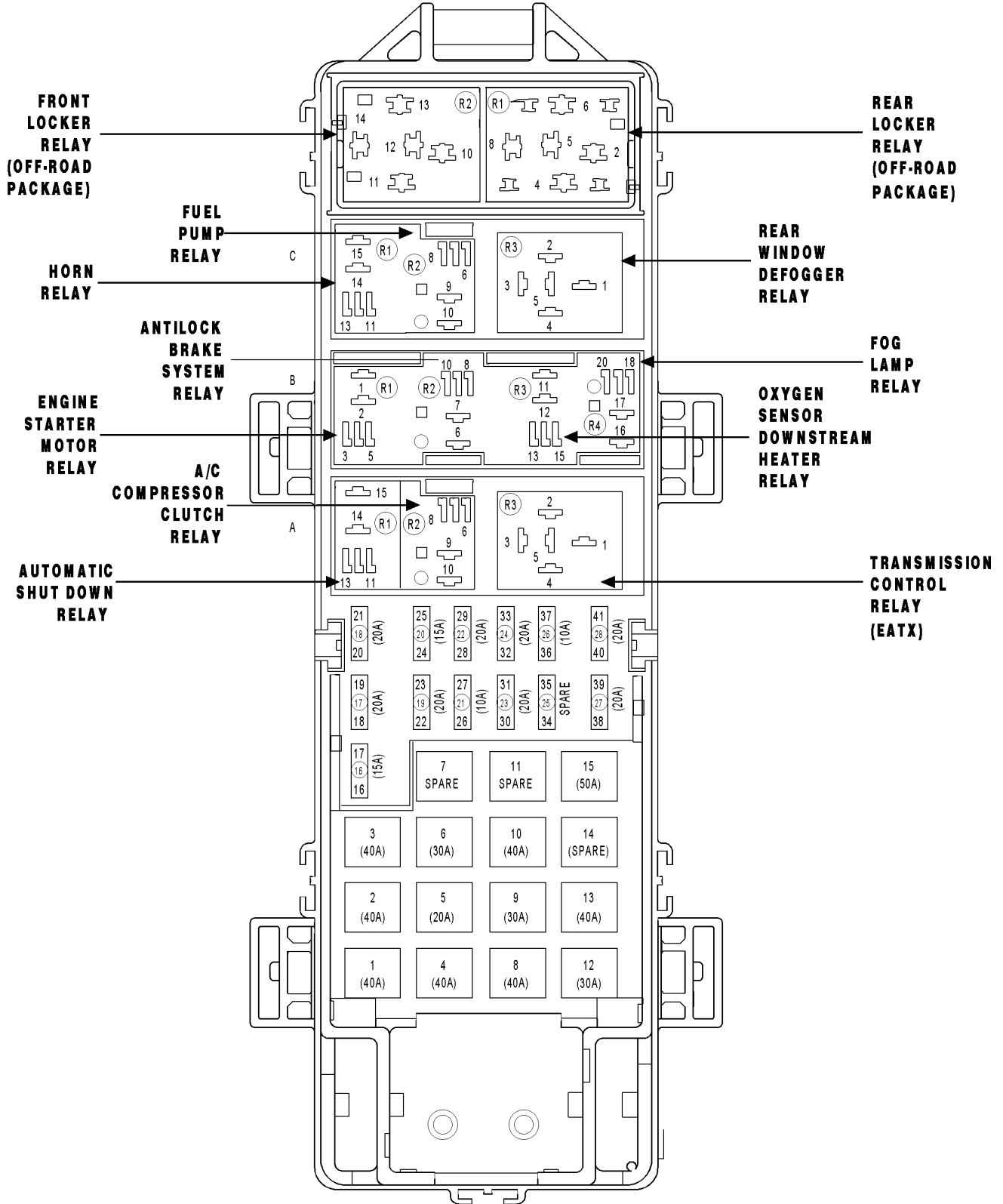
**PASSENGER  
DOOR AJAR  
SWITCH**

**PASSENGER DOOR AJAR SWITCH - BLACK 3 WAY**

CAV	CIRCUIT	FUNCTION
1	M23 20YL/DG	DOOR AJAR SWITCH OUTPUT
2	-	-
3	G76 20VT/YL	PASSENGER DOOR AJAR SWITCH SENSE

# CONNECTOR PINOUTS

## POWER DISTRIBUTION CENTER



## FUSES (PDC)

FUSE NO.	AMPS	FUSED CIRCUIT	FUNCTION
1	40A	A502 12RD/LG	FUSED B(+)
2	40A	A902 12RD	FUSED B(+)
3	40A	A906 12RD	FUSED B(+)
4	40A	A16 12GY (2.4L)	FUSED B(+)
5	20A	A30 16RD/WT (A/T)	FUSED B(+)
6	40A	A8 14RD	FUSED B(+)
7	-	-	-
8	40A	A107 12TN/RD (ABS)	FUSED B(+)
9	20A	A209 18RD/YL	FUSED B(+)
9	20A	A209 18RD (42RLE)	FUSED B(+)
9	20A	A209 18RD/YL (NA1)	FUSED B(+)
10	40A	A940 12RD	FUSED B(+)
11	-	-	-
12	30A	A111 12DG/RD (ABS)	FUSED B(+)
13	40A	A991 12RD	FUSED B(+)
14	-	-	-
15	50A	INTERNAL	FUSED B(+)
16	-	-	-
17	20A	A205 18RD/OR	FUSED B(+)
18	20A	A43 18RD/DG	FUSED B(+)
18	20A	A43 18RD/DG	FUSED B(+)
19	20A	A39 18RD/DG (OPTION 1)	FUSED B(+)
19	20A	A39 16RD/DG (OPTION 2)	FUSED B(+)
20	15A	F306 16DB/PK	FUSED B(+)
21	10A	A926 20RD	FUSED B(+)
22	25A	A1 16RD	FUSED B(+)
23	20A	A930 18RD	FUSED B(+)
24	20A	INTERNAL (OFF-ROAD PACKAGE)	FUSED B(+)
25	-	-	-
26	10A	M21 20YL/BR	FUSED B(+)
27	20A	A701 18BR/RD	FUSED B(+)
28	10A	K900 20DB/DG	SENSOR GROUND
28	10A	Y3 18LG	FUSED SENSOR GROUND
28	10A	Y3 20LG	FUSED SENSOR GROUND

## FOG LAMP RELAY (IN PDC)

CAV	CIRCUIT	FUNCTION
B16	L139 18WT/YL	FOG LAMP SWITCH SIGNAL
B17	-	-
B18	L300 14LG/WT	DIMMER SWITCH HIGH BEAM OUTPUT
B18	L340 14WT/OR (DRL)	HIGH BEAM INDICATOR DRIVER
B19	L39 18WT/OR	FOG LAMP RELAY OUTPUT
B20	Z901 18BK	GROUND

## FRONT LOCKER RELAY (OFF-ROAD PACKAGE)

CAV	CIRCUIT	FUNCTION
D10	INTERNAL	FUSED B(+)
D11	G304 20VT/DB	FRONT LOCKER REQUEST
D12	-	-
D13	INTERNAL	FUSED B(+)
D14	A750 18TN/RD	FRONT LOCKER RELAY OUTPUT

# CONNECTOR PINOUTS

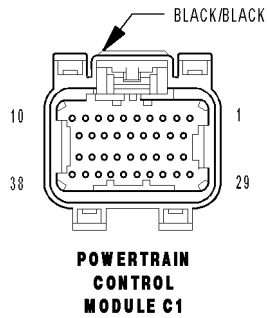
## REAR LOCKER RELAY (IN PDC/OFF-ROAD PACKAGE)

CAV	CIRCUIT	FUNCTION
D2	INTERNAL	FUSED B(+)
D4	INTERNAL	FUSED B(+)
D5	-	-
D6	G305 20VT/LG	REAR LOCKER REQUEST
D8	A850 18RD/WT	REAR LOCKER RELAY OUTPUT

## REAR WINDOW DEFOGGER RELAY (IN PDC)

CAV	CIRCUIT	FUNCTION
C1	A902 12RD	FUSED B(+)
C2	C115 20DB	REAR WINDOW DEFOGGER RELAY CONTROL
C3	C15 12BK/WT	REAR WINDOW DEFOGGER RELAY OUTPUT
C4	F102 20PK/DB	FUSED IGNITION SWITCH OUTPUT (RUN)
C5	-	-

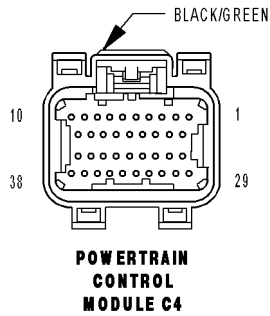
POWERTRAIN CONTROL MODULE C1 - BLACK/BLACK 38 WAY



CAV	CIRCUIT	FUNCTION
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	Z130 18BK/BR	GROUND
10	C20 20DB/YL (2.4L)	A/C REQUEST SIGNAL
10	C20 18DB/YL (4.0L)	A/C REQUEST SIGNAL
11	F1 18PK/WT	FUSED IGNITION SWITCH OUTPUT (RUN-START)
12	F1 18PK/WT (A/T)	FUSED IGNITION SWITCH OUTPUT (RUN-START)
13	K75 18DB/OR	VEHICLE SPEED SENSOR SIGNAL
14	-	-
15	-	-
16	-	-
17	-	-
18	Z131 18BK/DG	GROUND
19	-	-
20	G6 18VT/GY	OIL PRESSURE SIGNAL
21	-	-
22	G31 18VT/LG	AAT SIGNAL
23	-	-
24	-	-
25	D20 18WT/LG	SCI RECEIVE (PCM)
26	D16 18WT/OR	SCI RECEIVE (TCM)
27	F856 18YL/PK	5 VOLT SUPPLY
28	T56 18DG/LB	OVERDRIVE OFF SWITCH INDICATOR
29	A209 18RD	FUSED B(+)
30	F26 16PK/OR	IGNITION SWITCH OUTPUT (START)
31	K141 18DB/YL	O2 1/2 SIGNAL
32	K902 18BR/DG	O2 RETURN (UPSTREAM)
33	K243 18BR (4.0L)	O2 2/2 SIGNAL
34	-	-
35	-	-
36	D21 18WT/BR	SCI TRANSMIT (PCM/CAB)
37	D15 18WT/DG	SCI RECEIVE (TCM)
38	D25 18WT/VT	PCI BUS

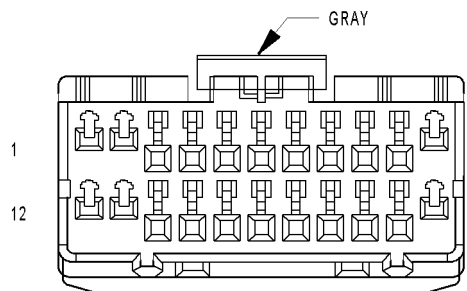
# CONNECTOR PINOUTS

POWERTRAIN CONTROL MODULE C4 - BLACK/GREEN 38 WAY



CAV	CIRCUIT	FUNCTION
1	T60 16YL/GY	OD SOLENOID CONTROL
2	T59 16YL/LB	UD SOLENOID CONTROL
3	-	-
4	-	-
5	-	-
6	T19 16YL/DB	2-4 SOLENOID CONTROL
7	-	-
8	-	-
9	-	-
10	T20 16DG/WT	L/R SOLENOID CONTROL
11	T140 18YL/GY	MS SOLENOID CONTROL
12	Z903 16BK	GROUND
13	Z903 16BK	GROUND
14	-	-
15	T1 18DG/LB	TRS T1 SENSE
16	T3 18DG/DB	TRS T3 SENSE
17	T6 18DG	TOW/HAUL OVERDRIVE OFF SWITCH SENSE
18	T515 18YL/DB	TRANSMISSION CONTROL RELAY CONTROL
19	T16 16YL/OR	TRANSMISSION CONTROL RELAY OUTPUT
20	-	-
21	-	-
22	T9 18DG/TN	OD PRESSURE SWITCH SENSE
23	-	-
24	-	-
25	-	-
26	-	-
27	T41 18YL/DB	TRS T41 SENSE (P/N)
28	T16 16YL/OR	TRANSMISSION CONTROL RELAY OUTPUT
29	T50 18YL/TN	L/R PRESSURE SWITCH SENSE
30	T47 18YL/DG	2-4 PRESSURE SWITCH SENSE
31	T38 18YL/BR	LINE PRESSURE SENSOR SIGNAL
32	T14 18DG/BR	OUTPUT SPEED SENSOR SIGNAL
33	T52 18DG/OR	INPUT SPEED SENSOR SIGNAL
34	T13 18DG/VT	SPEED SENSOR GROUND
35	T54 18DG/OR	TRANSMISSION TEMPERATURE SENSOR SIGNAL
36	-	-
37	T42 18DG/YL	TRS T42 SENSE
38	-	-

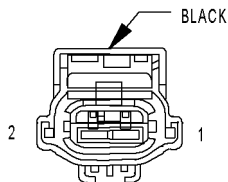
CONNECTOR PINOUTS



**RADIO**

**RADIO - GRAY 22 WAY**

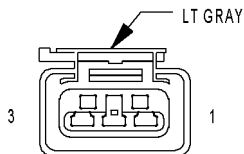
CAV	CIRCUIT	FUNCTION
1	F306 16DB/PK	FUSED B(+)
2	X112 16DG/GY	FUSED IGNITION SWITCH OUTPUT (RUN-ACC)
3	E2 200R/BR	PANEL LAMPS FEED
4	-	-
5	-	-
6	-	-
7	X54 18GY	RIGHT FRONT SPEAKER (+)
8	X56 18GY/BR	RIGHT FRONT SPEAKER (-)
9	X55 18DG/BR	LEFT FRONT SPEAKER (-)
10	X53 18DG	LEFT FRONT SPEAKER (+)
11	Z514 16BK/LG	GROUND
12	F306 16DB/PK	FUSED B(+)
13	X60 20GY/OR	RADIO 12V OUTPUT
14	D25 20WT/VT	PCI BUS
15	-	-
16	-	-
17	-	-
18	X51 18DG/DB	LEFT REAR SPEAKER (+)
19	X57 18DG/OR	LEFT REAR SPEAKER (-)
20	X58 18GY/OR	RIGHT REAR SPEAKER (-)
21	X52 18GY/DB	RIGHT REAR SPEAKER (+)
22	Z515 16BK	GROUND



**REAR LOCKER INDICATOR SWITCH (OFF-ROAD PACKAGE)**

**REAR LOCKER INDICATOR SWITCH (OFF-ROAD PACKAGE) - BLACK 2 WAY**

CAV	CIRCUIT	FUNCTION
1	Z987 20BK	GROUND
2	G301 20VT/LB	REAR LOCKER INDICATOR SWITCH SENSE

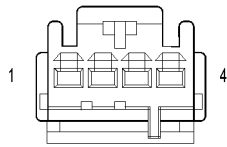


**REAR LOCKER PUMP (OFF-ROAD PACKAGE)**

**REAR LOCKER PUMP (OFF-ROAD PACKAGE) - LT GRAY 3 WAY**

CAV	CIRCUIT	FUNCTION
1	Z987 18BK	GROUND
2	-	-
3	A850 18RD/WT	REAR LOCKER RELAY OUTPUT

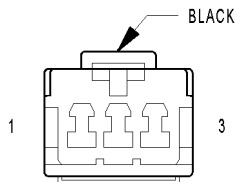
# CONNECTOR PINOUTS



**REAR WINDOW DEFOGGER SWITCH (HARD TOP)**

**REAR WINDOW DEFOGGER SWITCH (HARD TOP) - 4 WAY**

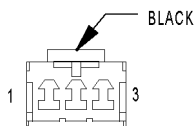
CAV	CIRCUIT	FUNCTION
1	Z1 20BK	GROUND
2	C80 20DB	REAR WINDOW DEFOGGER SWITCH SENSE
3	C515 20LB/OR	FUSED REAR WINDOW DEFOGGER RELAY OUTPUT
4	E2 20OR/BR	PANEL LAMPS FEED



**RIGHT FRONT SPEAKER**

**RIGHT FRONT SPEAKER - BLACK 3 WAY**

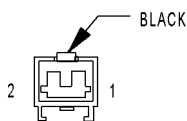
CAV	CIRCUIT	FUNCTION
1	X54 18GY	RIGHT FRONT SPEAKER (+)
2	-	-
3	X56 18GY/BR	RIGHT FRONT SPEAKER (-)



**RIGHT REAR SPEAKER**

**RIGHT REAR SPEAKER - BLACK 3 WAY**

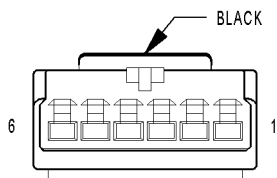
CAV	CIRCUIT	FUNCTION
1	X58 18DB/PK	RIGHT REAR SPEAKER (-)
2	-	-
3	X52 18DB/WT	RIGHT REAR SPEAKER (+)



**SEAT BELT SWITCH (EXCEPT LHD EXPORT)**

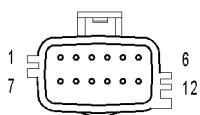
**SEAT BELT SWITCH (EXCEPT LHD EXPORT) - BLACK 2 WAY**

CAV	CIRCUIT	FUNCTION
1	G10 20VT/LG	SEAT BELT SWITCH SENSE
2	Z913 20BK	GROUND



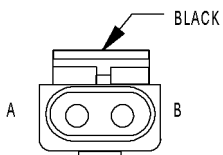
**SENTRY KEY  
IMMOBILIZER  
MODULE**

SENTRY KEY IMMOBILIZER MODULE - BLACK 6 WAY		
CAV	CIRCUIT	FUNCTION
1	-	-
2	D25 20WT/VT	PCI BUS
3	-	-
4	F1 20PK/WT	FUSED IGNITION SWITCH OUTPUT (RUN-START)
5	Z120 20BK/WT	GROUND
6	L177 20WT/OR	FUSED B(+)



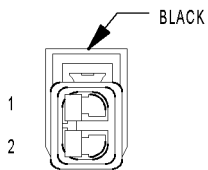
**SUBWOOFER**

SUBWOOFER - 12 WAY		
CAV	CIRCUIT	FUNCTION
1	X54 18GY	RIGHT FRONT SPEAKER (+)
2	X56 18GY/BR	RIGHT FRONT SPEAKER (-)
3	X53 18DG	LEFT FRONT SPEAKER (+)
4	X55 18DG/BR	LEFT FRONT SPEAKER (-)
5	X60 20GY/OR	RADIO 12V OUTPUT
6	X13 16BK/RD	FUSED B(+)
7	X52 18GY/DB	RIGHT REAR SPEAKER (+)
8	X58 18GY/OR	RIGHT REAR SPEAKER (-)
9	X51 18DG/DB	LEFT REAR SPEAKER (+)
10	X57 18DG/OR	LEFT REAR SPEAKER (-)
11	-	-
12	Z513 16BK	GROUND



**TRANSFER  
CASE SWITCH  
(EXCEPT  
OFF-ROAD  
PACKAGE)**

TRANSFER CASE SWITCH (EXCEPT OFF-ROAD PACKAGE) - BLACK 2 WAY		
CAV	CIRCUIT	FUNCTION
A	G93 20VT/LB	4WD INDICATOR
B	Z987 18BK	GROUND



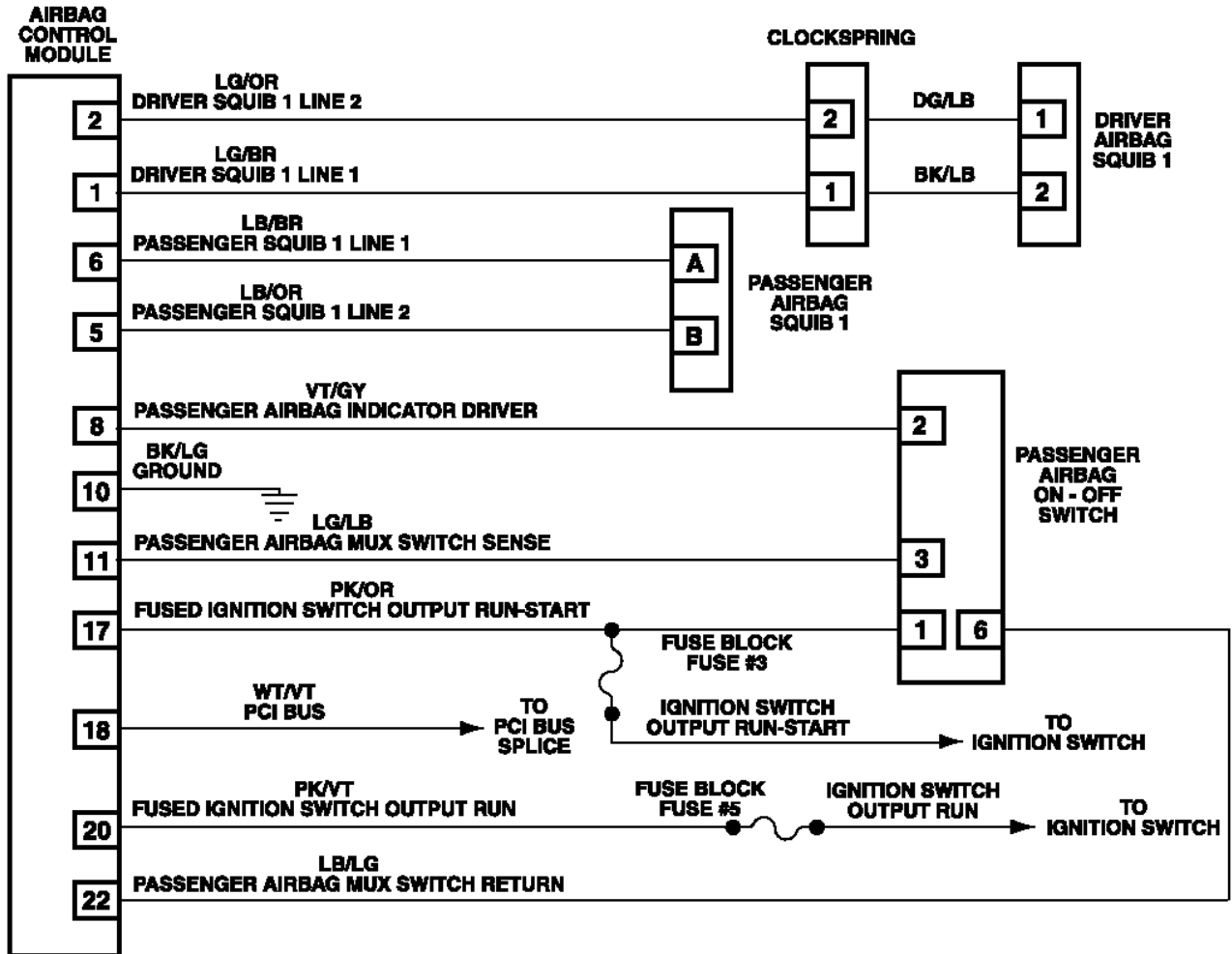
**TRANSFER  
CASE SWITCH  
(OFF-ROAD  
PACKAGE)**

TRANSFER CASE SWITCH (OFF-ROAD PACKAGE) - BLACK 2 WAY		
CAV	CIRCUIT	FUNCTION
1	K77 18BR/WT	TRANSFER CASE POSITION SENSOR INPUT
2	K900 20DB/DG	SENSOR GROUND



10.0 SCHEMATIC DIAGRAMS

10.1 AIRBAG SYSTEM

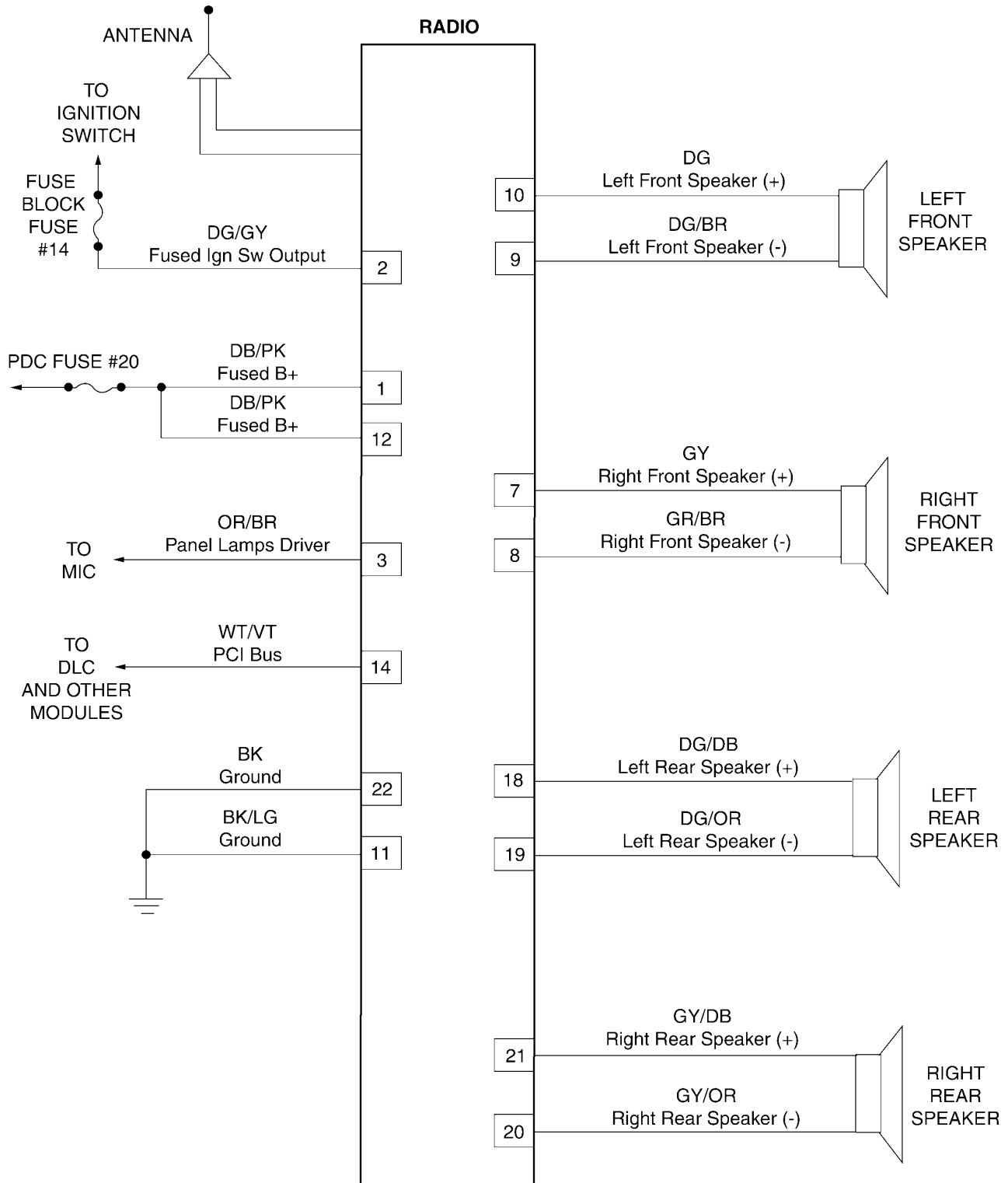


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# SCHEMATIC DIAGRAMS

## 10.2 AUDIO SYSTEM

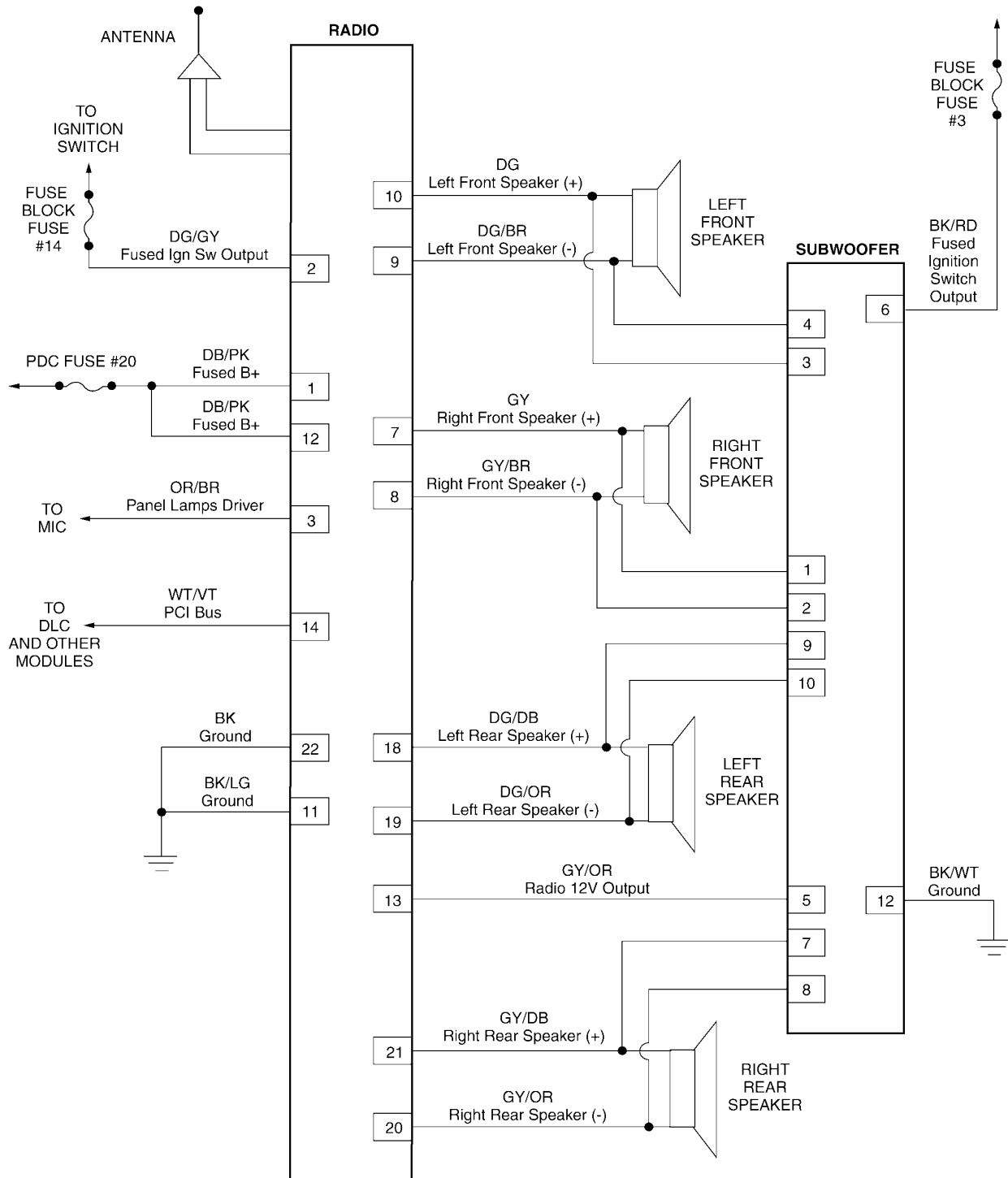
### 10.2.1 BASE AUDIO SYSTEM



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SCHEMATIC DIAGRAMS

10.2.2 PREMIUM AUDIO SYSTEM

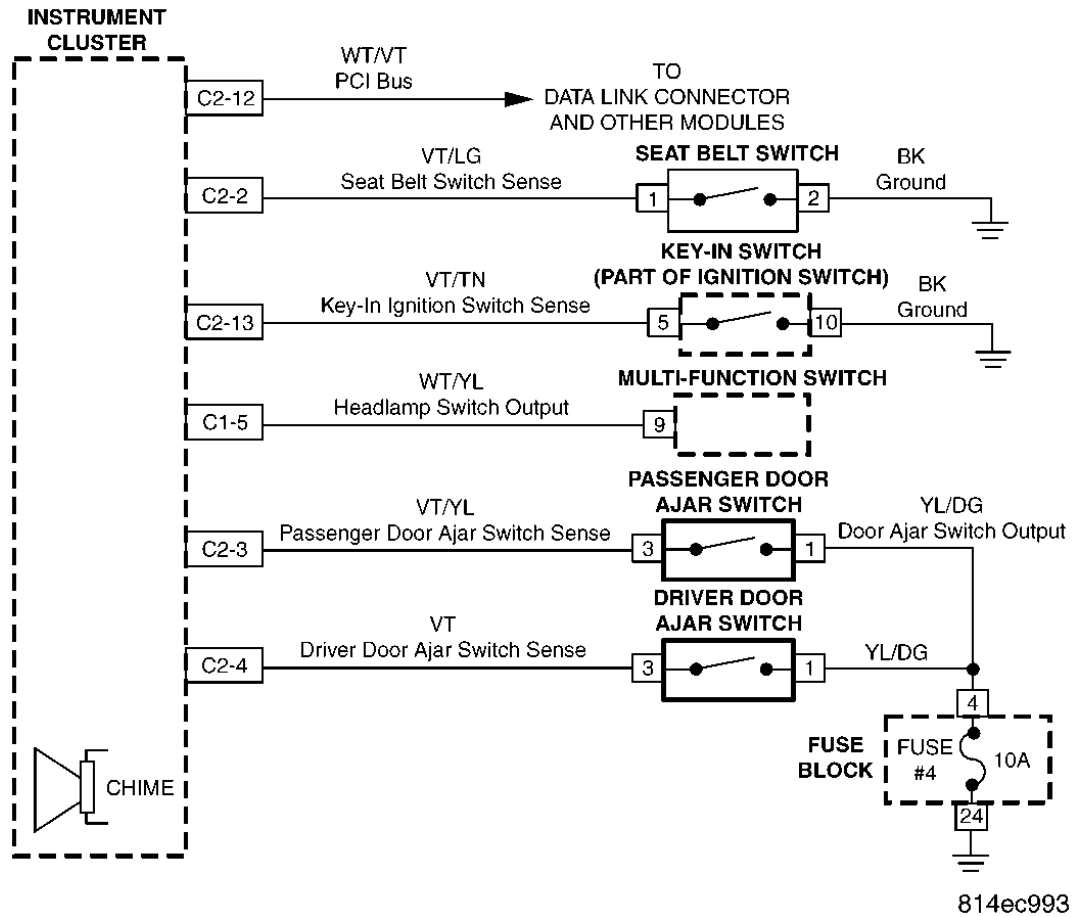


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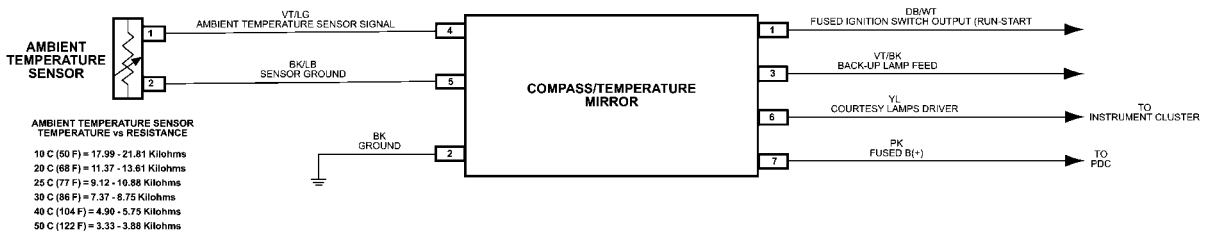
SCHEMATIC DIAGRAMS

# SCHEMATIC DIAGRAMS

## 10.3 CHIME SYSTEM

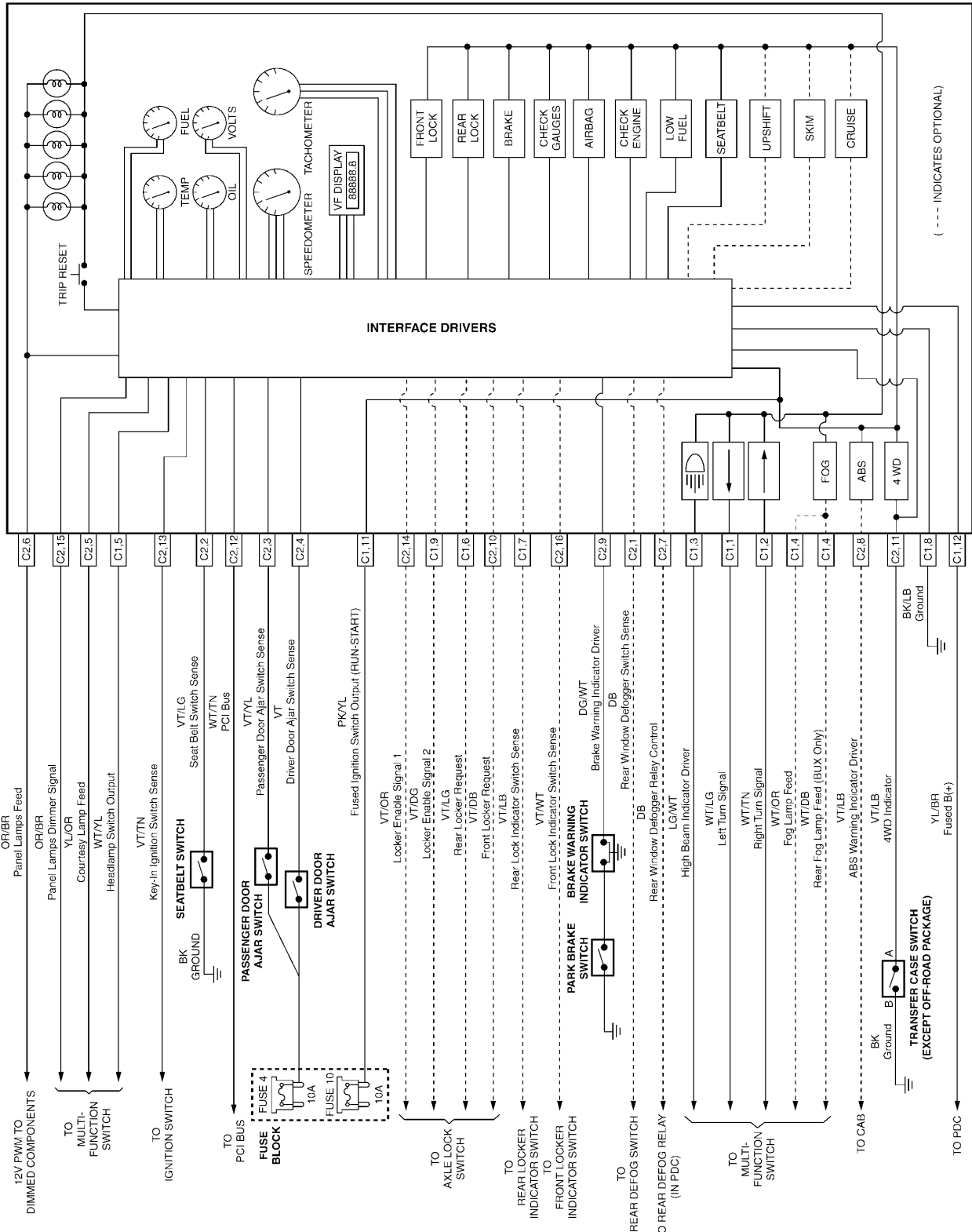


## 10.4 COMPASS/TEMPERATURE MIRROR



SCHEMATIC DIAGRAMS

10.5 INSTRUMENT CLUSTER



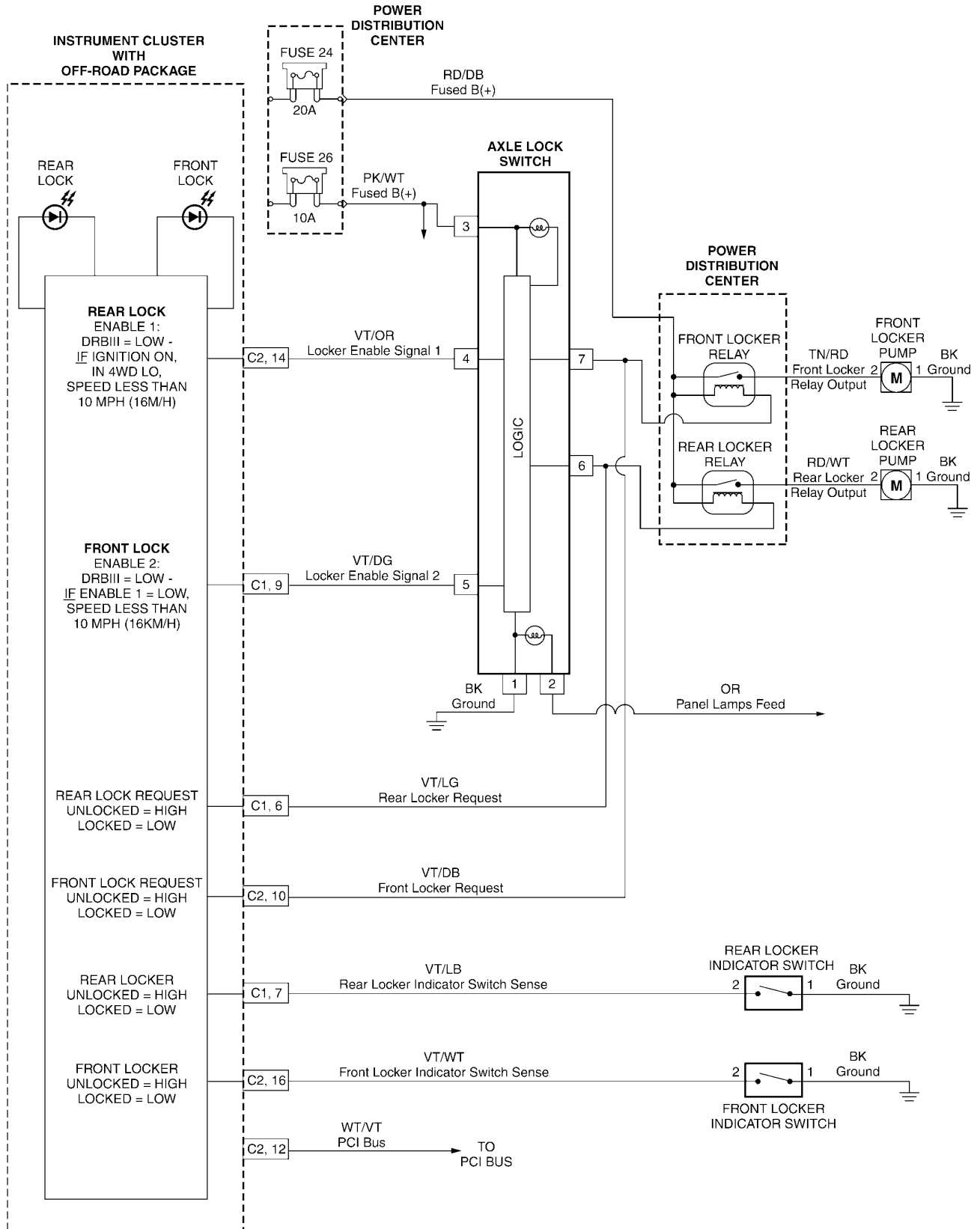
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SCHEMATIC DIAGRAMS

# SCHEMATIC DIAGRAMS

## 10.5 INSTRUMENT CLUSTER (Continued)

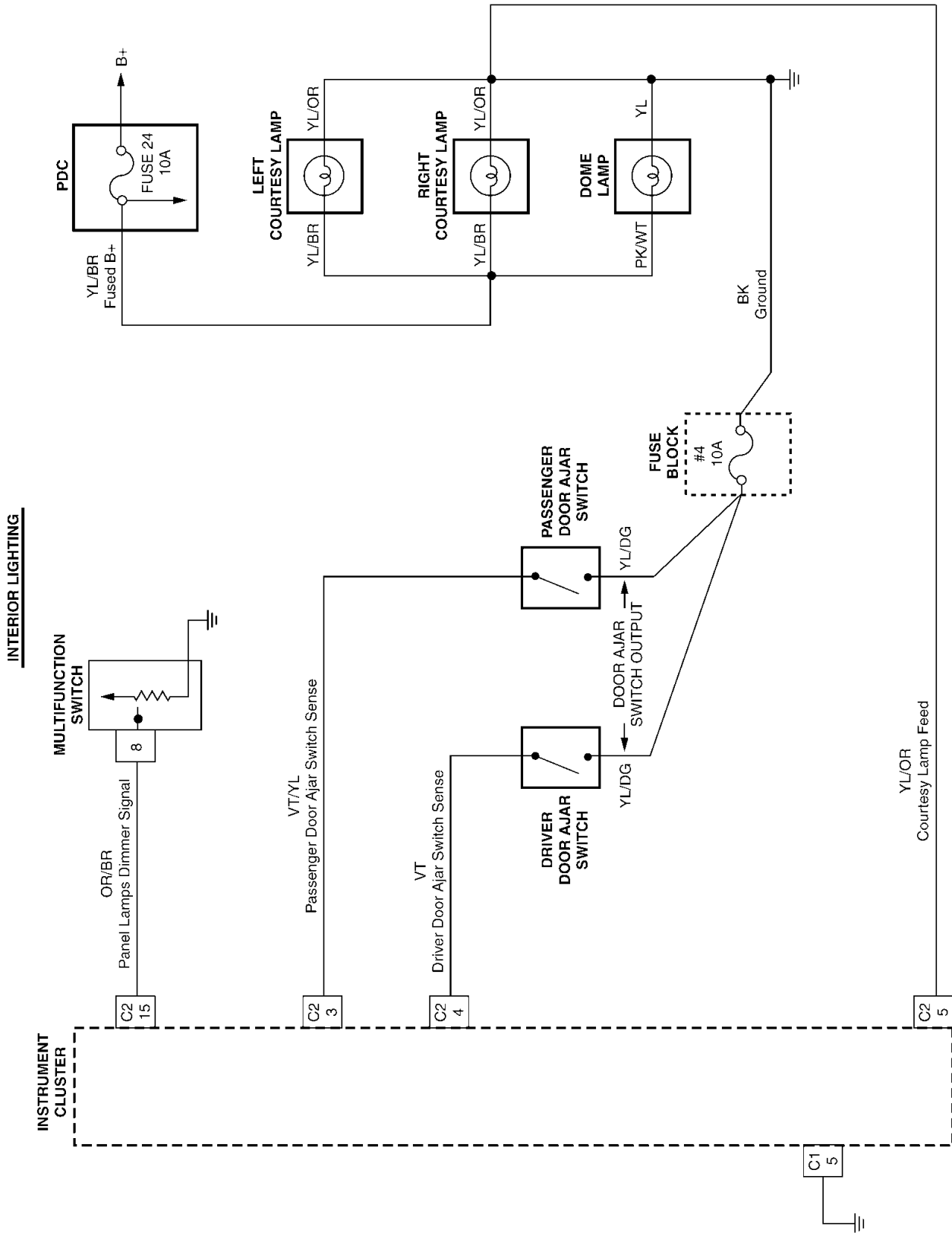
### 10.5.1 INSTRUMENT CLUSTER/AXLE LOCKER SYSTEM



SCHEMATIC DIAGRAMS

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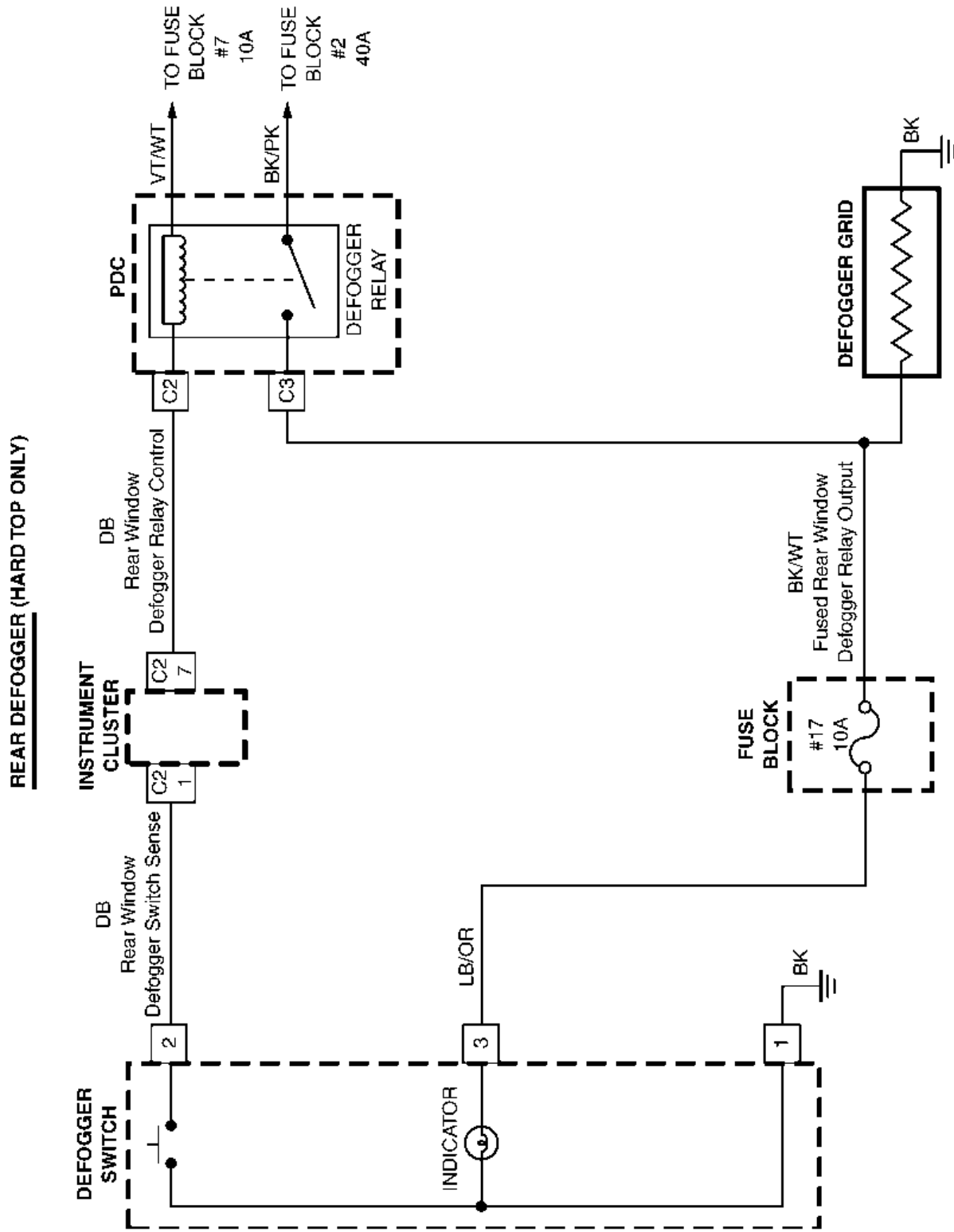
10.6 INTERIOR LIGHTING



81512294

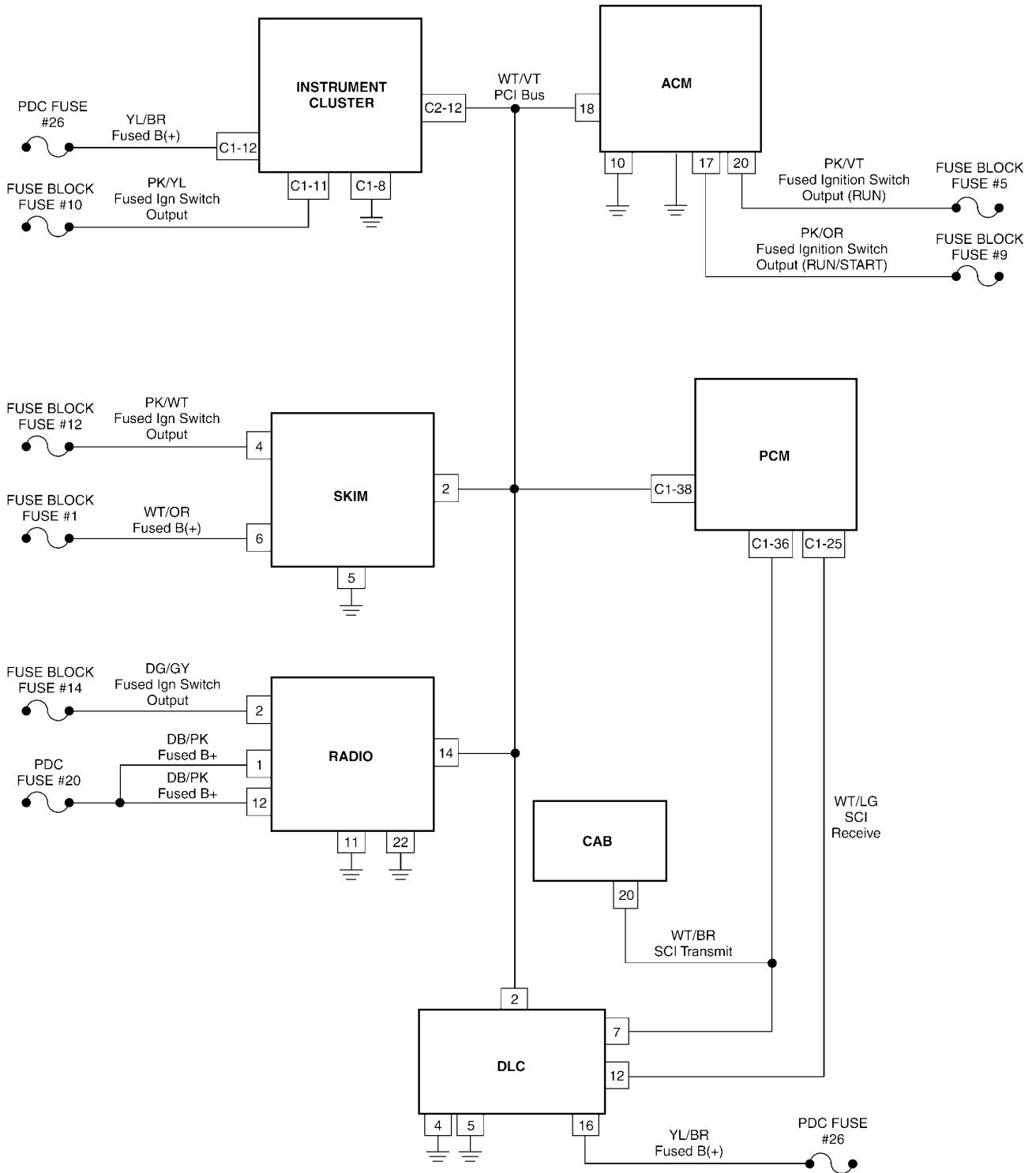
SCHEMATIC DIAGRAMS

10.7 REAR DEFOGGER



814ec988

10.8 VEHICLE COMMUNICATIONS



81501217



## DIAGNOSTIC TEST PROCEDURES — TELL US!

DaimlerChrysler Corporation is constantly working to provide the technician the best diagnostic manuals possible. Your comments and recommendations regarding the diagnostic manuals and procedures are appreciated.

To best understand your suggestion, please complete the form giving us as much detail as possible.

---

**Model** \_\_\_\_\_ **Year** \_\_\_\_\_ **Body Type** \_\_\_\_\_ **Engine** \_\_\_\_\_

**Transmission** \_\_\_\_\_ **Vehicle Mileage** \_\_\_\_\_ **MDH** \_\_\_\_\_

**Diagnostic Procedure** \_\_\_\_\_ **Book No.** \_\_\_\_\_ **Page** \_\_\_\_\_

Comments/recommendations (if necessary, draw sketch)

Name \_\_\_\_\_

Submitted by: \_\_\_\_\_

Address \_\_\_\_\_

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All comments become property of DaimlerChrysler Corporation and may be used without compensation.

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