SECTION 8B
SUPPLEMENTAL RESTRAINTS SYSTEM

CAUTION: Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in LOCK unless otherwise noted.

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SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The supplemental restraint system (SRS) is a safety device used in conjunction with the seat belts. The air bag does not replace the function of the seatbelt. The driver and the passengers must always fasten their seat belts for a proper fit.

The SRS is designed to protect the driver and the front seat passenger in the event of a significant frontal impact to the vehicle. The airbags deploy if the force is applied from a direction within about 30 degrees of the vehicle’s centerline.

The SRS system consists of the following components:
- Driver side airbag module.
- Passenger airbag module.
- Driver’s and passenger front seat belt pretensioners.
- Sensing and diagnostic module (SDM).
- Clock spring.
- Wire harness and connectors.
- Airbag warning lamp on the instrument cluster.

There are four separate deployment loops in the SRS system. The term “loop” is used because current leaves the SDM and returns to the SDM during deployment or testing. First loop is the circuit from SDM to the driver airbag and back to SDM. Second loop is the circuit from the SDM to the passenger airbag and back to the SDM. The third and forth loops are for right and left pretensioners.

System Control

The sensing and diagnostic module (SDM) continuously monitors and controls the supplemental restraint system (SRS) function during ignition ON or driving. When SDM detects any problem it turns on or blink the airbag warning lamp and keeps the diagnostic trouble codes (DTCs). If there is a danger of improper deployment, the system will enter overall or partial shutdown status and the airbag will not inflate. The Diagnostic System Check reveals diagnostic trouble codes (DTCs) through the use of scan tool. It also checks for proper airbag warning lamp operation.

Battery Voltage Check

The SDM checks the battery voltage continuously and if it is outside of the normal operating range (9-16 volts), all system diagnosis stops and turns on the warning warning lamp.

Deployment Line Check

The SDM checks not only low or high resistance in the deployment loop but also short to battery or ground condition to indicate defects in deployment loop. It indicates the defects by blinking the airbag warning lamp.

Safety Function Check

The SDM checks the operation of arming sensor. If the arming sensor is shorted more than 2 seconds, the SDM will enter overall shutdown mode.

AIRBAG MODULES

Driver Airbag Module

*Caution: Tampering with driver side airbag module creates the risk of an injury from unexpected deployment. Therefore, the passenger airbag module should never be disassembled.*

The passenger airbag module is under the center pad of the steering wheel. The driver airbag module contains an igniter charge and a gas generator to inflate the folded airbag.

The airbag contains a shorting bar, which short-circuit the driver high circuit to driver low circuit when the connector is disconnected. The shorting bar prevents current from traveling through the driver airbag module during servicing. The shorting bar is disengaged when the connector is connected.
Passenger Airbag Module

Caution: Tampering with passenger airbag module creates the risk of an injury from unexpected deployment. Therefore, the passenger airbag module should never be disassembled.

The passenger airbag module is on the passenger of the instrument panel. The passenger airbag module contains an igniter charge and a gas generator to inflate the folded airbag.

The airbag contains a shorting bar, which short-circuit the passenger high circuit to passenger low circuit when the connector is disconnected. The shorting bar prevents current from traveling through the passenger airbag module during servicing. The shorting bar is disengaged when the connector is connected.

SENSING AND DIAGNOSTIC MODULE (SDM)

Caution: During the service procedures, be careful when handling the SDM. Never shake or jar the SDM. Never apply power to SRS when the SDM is not rigidly attached to the vehicle. All SDM mounting nuts and grounding nut must be fully tightened. Failures to follow these precautions could cause deployment and results in personal injury.

The SDM located on floor beneath the instrument panel. The SDM performs the following functions:

- Monitors the supplemental restraint system (SRS) electrical components and sets a diagnostic trouble code (DTC) when malfunction is detected.
- Displays SRS diagnostic trouble codes and system status information when connected to a scan tool.
- Illuminates the airbag indicator to alert the driver to any fault.
- Provides a reserve power source to deploy the airbags and pretensioners if an accident has disabled the normal power source.
- Monitors vehicle velocity changes to detect frontal impacts, which are severe enough to warrant deployment.
- Causes current to flow through the airbag modules and pretensioner to cause deployment if a frontal impact of sufficient force is detected.

The SDM contains no user-serviceable parts.

FRONT SEAT BELT PRETENSIONERS

Caution: Tampering with seat belt pretensioner creates the risk of an injury from unexpected deployment. Therefore, the seat belt pretensioner should never be disassembled.

The seat belt pretensioners are assembled with each front seat belt retractor to retract the seat belt webbing when accounted a frontal collision. The seat belt pretensioners are controlled by sensing and diagnostic Module (SDM).

The seat belt pretensioner contains an igniter charge and a gas generator to pull the seat belt webbing. The seat belt pretensioner must be replaced after an accident that causes its activation.

The seat belt pretensioner also contains a shorting bar to prevent current from traveling through the seat belt pretensioner during servicing. The shorting bar is disengaged when the connector is connected.
AIRBAG WARNING LAMP

The instrument cluster contains an airbag warning indicator bulb to verify the operation of the airbag indicator and sensing and diagnostic module (SDM). The SDM performs a start-up test when the ignition is turned ON and turns the airbag indicator on for 4.5 seconds by supplying an internal ground to the indicator lamp circuit. After 4.5 seconds, the airbag indicator will turn off if no more malfunctions have been detected.

If the SDM has detected malfunctions, which could potentially affect the operation of the supplemental restraint system (SRS) it turns on or blinks the airbag warning indicator. The airbag indicator stays on for the malfunction of internal system and blinks for external circuit problem such as short to battery or ground. The airbag indicator blinks four different modes according to the fault.

Some malfunctions could result in non-deployment when necessary or deployment under conditions which would no normally result in deployment.

When the SDM is not properly attached to its connector the airbag circuit is shorted to ground because there is a shorting bar within the SDM electronic connector. The shorting bar is disengaged when proper connection is made, but if a poor connection exists the SDM connector supplies a ground to the airbag indicator in dependently of the SDM, and the airbag indicator turns on.

CLOCK SPRING

Caution: Disassembling the clock spring can cause injury or cause the clock spring to malfunction.

Caution: Over-rotating the clock spring without the steering wheel in position could damage the clock spring and result in an inoperative driver airbag.

WIRING HARNESS CONNECTORS

If the sensing and diagnostic module (SDM) electrical connector is not attached properly, a built in shorting bar will connect the wire from airbag warning lamp with the SDM ground wire. This turns on the airbag indicator.

To prevent deployment during servicing, additional shorting bars are located in following locations:

- The clock spring electrical connector at the lower steering column.
- The passenger airbag module.
- The driver airbag module.
- The seat belt pretensioners.
- The SDM connector.

The shorting bar is only a backup safety device. Always disable the supplemental restraints system (SRS) before beginning any service procedure.
COMPONENTS LOCATOR
SRS COMPONENT AND WIRING LOCATION VIEW

1 Driver Airbag Module & Clock Spring
2 Passenger Airbag Module
3 Sensing And Diagnostic Module (SDM)
4 Data Link Connector (DLC)
5 Pretensioner (at A Pillar)
DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC TROUBLE CODES (DTC)

When the sensing and diagnostic module (SDM) detects any problem it illuminates or blinks the airbag warning indicator and keeps the diagnostic trouble codes (DTCs). The supplemental restraint system (SRS) Diagnostic System Check must always be the starting point for any SRS diagnosis. The SRS Diagnostic System Check reveals DTCs through the use of scan tool. It also checks for proper airbag warning lamp operation.

The two types of DTCs that may be recorded are as follows:
1. Current DTCs represent malfunction currently being detected. Current DTCs are stored in random access memory (RAM).
2. Historic DTCs represent malfunctions detected since the last time the historic memory was cleared. Historic DTCs are stored in the electrically erasable programmable read-only memory (EEPROM).

The DTC is differentiates internal and external faults upon the cause of the defects. Internal faults can not be cured, replace the SDM. Refer to “Diagnostic Trouble Code Table” in this section.

SCAN TOOL DIAGNOSTICS

A scan tool can read serial data from terminal 9 of the data link connector (DLC). The scan tool is used to read diagnostic trouble codes (DTCs), and to clear some DTCs after a repair is completed. By design, certain codes cannot be cleared.

To use the scan tool, turn the ignition OFF, connect the scan tool to the DLC, and turn the ignition switch to ON. Follow the instructions in the scan tool manual. The SDM sends serial data from terminal 20 of the SDM to terminal 9 of the DLC.

USE OF SPECIAL TOOLS

Use a scan tool to read and clear diagnostic trouble codes (DTCs). A connector adapter kit provides jumper wires and terminal adapters to make it easier to test small terminals. In diagnostic testing, use load tool or dummy resistance to substitute for airbag modules.

DIAGNOSTIC TROUBLE CODE TABLE

<table>
<thead>
<tr>
<th>DTC</th>
<th>Description</th>
<th>Type of the Faults</th>
<th>Error Handling</th>
<th>Airbag Warning Indicator Blink Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Driver Deployment Loop Shorted to Voltage</td>
<td></td>
<td>Partial</td>
<td>3</td>
</tr>
<tr>
<td>02</td>
<td>Passenger Deployment Loop Shorted to Voltage</td>
<td></td>
<td>Partial Shutdown</td>
<td>3</td>
</tr>
<tr>
<td>03</td>
<td>Driver Seat Belt Pretensioner Shorted to Voltage</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>04</td>
<td>Passenger Seat Belt Pretensioner Shorted to Voltage</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>05</td>
<td>Driver Deployment Loop Shorted to Ground</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>06</td>
<td>Passenger Deployment Loop Shorted to Ground</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>07</td>
<td>Driver Seat Belt Pretensioner Shorted to Ground</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>08</td>
<td>Passenger Seat Belt Pretensioner Shorted to Ground</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>09</td>
<td>Driver Energy Shutdown Switch Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Passenger Energy Shutdown Switch Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Driver Seat Belt Pretensioner Energy Shutdown Switch Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Passenger Seat Belt Pretensioner Energy Shutdown Switch Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Driver Ignition Switch Fault Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Passenger Ignition Switch Fault Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Driver Seat Belt Pretensioner Ignition Switch Fault</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Passenger Seat Belt Pretensioner Ignition Switch Fault</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Diagnostic Trouble Code Table (Cont’d)

<table>
<thead>
<tr>
<th>DTC</th>
<th>Description</th>
<th>Type of the Faults</th>
<th>Error Handling</th>
<th>Airbag Warning Indicator Blink Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Driver Deployment Loop Resistance High</td>
<td>Partial Shutdown</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Passenger Deployment Loop Resistance High</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Driver Seat Belt Pretensioner Deployment Loop Resistance High</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Passenger Seat Belt Pretensioner Deployment Loop Resistance High</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Driver Deployment Loop Resistance Low</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Passenger Deployment Loop Resistance Low</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Driver Seat Belt Pretensioner Deployment Loop Resistance Low</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Passenger Seat Belt Pretensioner Deployment Loop Resistance Low</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Driver Deployment Loop Energy Reserve Voltage</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Passenger Deployment Loop Energy Reserve Voltage</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Driver Seat Belt Pretensioner Deployment Loop Energy Reserve Voltage</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Passenger Seat Belt Pretensioner Deployment Loop Energy Reserve Voltage</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>System Energy Reserve Voltage</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Safety Energy Reserve Capacitor Voltage</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Driver Deployment Loop Energy Reserve Current off Capacity</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Passenger Deployment Loop Energy Reserve Current off Capacity</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Driver Seat Belt Pretensioner Deployment Loop Energy Reserve Current off Capacity</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Passenger Seat Belt Pretensioner Deployment Loop Energy Reserve Current off Capacity</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>5th Energy Reserve Current off Capacity</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Condenser Voltage</td>
<td>Internal</td>
<td></td>
<td>Total Shutdown</td>
</tr>
<tr>
<td>37</td>
<td>Collision Times Checksum</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Accelerometer Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Accelerometer Off-Set Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Arming Sensor Shorted</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Major Upper Side Application Specific Integrated Circuit</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Application Specific Integrated Circuit Over Heat</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Micro Control Unit Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Standard Band Gap</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Temperature Sensor</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Warning Lamp circuit open or short to ground/battery</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Diagnostic Trouble Code Table (Cont’d)

<table>
<thead>
<tr>
<th>DTC</th>
<th>Description</th>
<th>Type of the Faults</th>
<th>Error Handling</th>
<th>Airbag Warning Indicator Blink Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>Battery Voltage is out of specification</td>
<td>Internal</td>
<td>Total Shutdown</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Fault Code List</td>
<td>Internal</td>
<td>Additional Error Code</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Upper Side Application Specific Integrated Circuit Communication</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Lower Side Application Specific Integrated Circuit Communication</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>No Electronically Erasable Programmable Read Only Memory (EEPROM) Program Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Electronically Erasable Programmable Read Only Memory (EEPROM) Checksum Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Electronically Erasable Programmable Read Only Memory (EEPROM) Map Error</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>External Watchdog 1 Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Arming Sensor No Close Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Random Access Memory (RAM) Check Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>System Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>External Watchdog 2 Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Pulse Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>127</td>
<td>Collision Signal Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>Collision Number Internal</td>
<td>Internal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SRS DIAGNOSTIC SYSTEM CHECK

Notice: If the vehicle interior has been exposed to extensive water intrusion such as water leaks, driving through high water, flooding, or other caucuses, the sensing and diagnostic module (SDM) and SDM connector may be need to be replaced. With ignition OFF, inspect the area around the SDM, including the carpet. If any significant soaking or evidence of previous soaking is detected, the water must be removed, water damage repaired, and the SDM and SDM connector must be replaced. Before attempting any of these repairs, the supplemental restraint system (SRS) must be disabled. Refer to “Disabling the SRS” and “Sensing and Diagnostic Module (SDM)” in this section.

The SRS Diagnostic System Check must always be the starting point for any SRS system diagnosis. The SRS Diagnostic System Check reveals diagnostic trouble codes (DTCs) through the use of scan tool.

The diagnostic procedures used in this section are designed to find and repair SRS conditions. To get the best results, it is important to use the diagnostic charts and follow the sequence listed below.

1. Perform the SRS Diagnostic System Check, which reveals diagnostic trouble codes (DTCs) through the use of scan tool. It also checks for proper airbag indicator operation.
2. Refer to the proper diagnostic chart as directed by SRS Diagnostic System Check. Bypassing these procedures may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacement.
3. Repeat the SRS Diagnostic System Check after any repair or diagnostic procedures have been performed to ensure that the repair has been made correctly and that no other malfunction exists.

Circuit Description
When the ignition switch is first turned to ON, ignition voltage is supplied from airbag fuse to the SDM at input terminal 5. The SDM responds by turning on the airbag indicator for 4.5 seconds and then turning it off while the SDM performs tests on the SRS system.

Diagnostic Aids
The order in which DTCs are diagnosed is very important. Failure to diagnose the DTCs in the order specified may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacement.

Test Description
The numbers below refer to steps on the diagnostic table.

2. This test differentiates between an indicator that will not come on and an indicator that stays on when it should be off.
3. Refer to the first caution below
5. This test, along with step 6, differentiates internal or external faults of SDM.
9. Refer to the cautions below.
SRS Diagnostic System Check

**Caution:** the sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

**Caution:** During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Turn the ignition switch to ON.</td>
</tr>
<tr>
<td>2.</td>
<td>Observe the airbag indicator as the ignition is being turned ON.</td>
</tr>
<tr>
<td>3.</td>
<td>Does the indicator turn on for 4.5 seconds and go out?</td>
</tr>
<tr>
<td>4.</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Observe the airbag indicator after the ignition has been turned ON.</td>
</tr>
<tr>
<td>3.</td>
<td>Does the airbag indicator stay on?</td>
</tr>
<tr>
<td>4.</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Turn the ignition to LOCK and remove the key.</td>
</tr>
<tr>
<td>4.</td>
<td>Disconnect the sensing and diagnostic module (SDM) connector.</td>
</tr>
<tr>
<td>5.</td>
<td>Check the airbag indicator bulb and circuit.</td>
</tr>
<tr>
<td>6.</td>
<td>Are the bulb and bulb circuit in good condition?</td>
</tr>
<tr>
<td>7.</td>
<td>Yes</td>
</tr>
<tr>
<td>4.</td>
<td>Replace the bulb or repair the bulb circuit.</td>
</tr>
<tr>
<td>5.</td>
<td>Connect SDM connector and ensure that all components are properly mounted.</td>
</tr>
<tr>
<td>6.</td>
<td>Is the repair complete?</td>
</tr>
<tr>
<td>7.</td>
<td>Go to Step 1</td>
</tr>
<tr>
<td>5.</td>
<td>Observe the airbag indicator after 4.5 seconds.</td>
</tr>
<tr>
<td>6.</td>
<td>Does the indicator turn on again and stay?</td>
</tr>
<tr>
<td>7.</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Observe the airbag indicator after 4.5 seconds.</td>
</tr>
<tr>
<td>7.</td>
<td>Does the indicator blink?</td>
</tr>
<tr>
<td>8.</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Turn the ignition to LOCK and remove the key.</td>
</tr>
<tr>
<td>8.</td>
<td>Connect the scan tool to the data link connector (DLC).</td>
</tr>
<tr>
<td>10.</td>
<td>Turn the ignition to ON.</td>
</tr>
<tr>
<td>11.</td>
<td>Request SRS DTC display with the scan tool.</td>
</tr>
<tr>
<td>12.</td>
<td>Are any SRS DTCs displayed?</td>
</tr>
<tr>
<td>13.</td>
<td>Check the bulb circuit for improper connections.</td>
</tr>
<tr>
<td>14.</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Is the repair complete?</td>
</tr>
<tr>
<td>9.</td>
<td>1. Turn the ignition to LOCK and remove the key.</td>
</tr>
<tr>
<td>10.</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>Disconnect the SDM connector.</td>
</tr>
<tr>
<td>12.</td>
<td>Replace the SDM.</td>
</tr>
<tr>
<td>13.</td>
<td>Reconnect SDM connector and ensure that all components are properly mounted.</td>
</tr>
<tr>
<td>14.</td>
<td>Is the repair complete?</td>
</tr>
</tbody>
</table>
SENSEING AND DIAGNOSTIC MODULE (SDM) INTEGRITY CHECK

The following diagnostic chart must be used when all circuitry outside the sensing and diagnostic module (SDM) has been found to operate properly, as indicated by following the appropriate diagnostic trouble code (DTC) chart. The chart verifies the need for SDM replacement.

Circuit Description
When the SDM recognizes ignition voltage greater then 9 volts at terminal 5 of the SDM, the airbag indicator is turns on for 4.5 seconds to verify operation. At this time the SDM performs start-up tests followed by resistance measurement tests and continues monitoring tests. When malfunction is detected, the SDM sets a current DTC and illuminates or blinks the airbag indicator. When the malfunction is no longer detected and/or the ignition switch is cycled, the SDM will clear current DTCs and move them to a history file, except for the DTCs 18, 24, 51, 53 and sometimes 71. DTCs 18, 24, 51 and 53 will not clear using a scan tool because these codes require replacement of SDM. The SDM must be replaced only after the malfunction that set the DTC has been repaired.

Diagnostic Aids
The order in which DTCs are diagnosed is very important. Failure to diagnose the DTCs in the order specified may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacement.

Test Description
The numbers below refer to steps on the diagnostic table.
1. This test confirms a current malfunction. If no current malfunction is occurring, refer to “Diagnostic Aids” for the appropriate DTC. The SDM should not be replaced for a historic DTC except when directed.
2. This test checks for a malfunction introduced into the supplemental restraints system (SRS) during the diagnostic procedure. It is extremely unlikely that a malfunctioning SDM would cause a new malfunction to occur during the diagnostic process.
4. See the caution below.

Sensing and Diagnostic Module (SDM) Integrity Check

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS operation. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 1    | 1. Turn the ignition to LOCK and remove the key.  
2. Connect all SRS components, and ensure that all components are properly mounted.  
3. Ensure that the ignition switch has been off for at least 30 seconds.  
4. Observe the airbag indicator as the ignition is turned ON.  
Does the indicator lamp turn on for 4.5 seconds and then turn off? | - | Check the SRS DTCs and go to “Diagnostic system Check” | Go to Step 2 |
| 2    | 1. Turn the ignition to LOCK and remove the key.  
2. Connect the scan tool to DLC. Follow the directions given in the scan tool manual.  
3. Turn the ignition to ON.  
4. Request SRS DTC display with the scan tool.  
Is the same DTC displayed that was previously occurring when the SRS Diagnostic System Check was previously performed? | - | Go to Step 3 | Go to table for the DTC indicated |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 3    | 1. Clear SRS DTCs.  
     2. Turn the ignition OFF for at least 30 seconds.  
     3. Observe the airbag indicator as the ignition is turned ON.  
     Does the airbag indicator turn on for 4.5 seconds and turn off? | - | System OK | Go to Step 4 |
| 4    | 1. Turn the ignition to LOCK and remove the key.  
     2. Disconnect the SDM connector.  
     3. Replace the SDM.  
     4. Connect SDM connector and ensure that all components are properly mounted.  
     Is the repair complete? | - | Go to “Diagnostic System Check” | - |
AIRBAG WARNING LAMP STAYS ON WITH IGNITION SWITCH ON

Circuit Description
The airbag indicator will stay on if the sensing and diagnostic module (SDM) connector is not securely attached to the SDM. There is a shorting bar in SDM connector which completes the circuit between the indicator lamp circuit and ground. The shorting bar is disengaged when the connector is properly attached. When the ignition switch is first turned to ON, ignition voltage applied to the instrument use for the indicator lamp and also to the airbag fuse for input terminal 5. If ignition voltage is outside the range of 9 to 16 volts, the airbag indicator will come on and stay on and DTC47 will set.

Test Description
The numbers below refer to steps on the diagnostic table.
8. See the caution below.

Airbag Warning Lamp Stays on with Ignition Switch ON

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check the SDM connector to verify that it is properly connected to the SDM.</td>
<td>-</td>
<td>Go to Step 3</td>
<td>Go to Step 2</td>
</tr>
<tr>
<td></td>
<td>Is the SDM connector properly connected?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Connect the SDM connector.</td>
<td></td>
<td>System OK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1. Turn the ignition OFF.</td>
<td>9 v</td>
<td>Go to “SDM Integrity Check”</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td></td>
<td>2. Disconnect the SDM connector.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Turn the ignition ON.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Check the voltage at SDM connector terminal 5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the ignition voltage greater than the specified value?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1. Turn the ignition ON.</td>
<td>9 - 16 v</td>
<td>Go to Step 6</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td></td>
<td>2. Check the voltage supply to the airbag fuse F31.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is the voltage within the specified value?
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 5    | Repair the power supply to the airbag fuse.  
     Is the repair complete? | - | System OK | - |
| 6    | Check the airbag fuse.  
     Is the fuse in good condition? | - | Go to Step 8 | Go to Step 7 |
| 7    | Replace the airbag fuse F31.  
     Is the repair complete? | - | System OK | - |
| 8    | 1. Turn the ignition to LOCK and remove the key.  
     2. Disconnect the SDM connector.  
     3. Check for open circuit between terminal 5 of the SDM and the airbag fuse F31.  
     Is there an open circuit? | - | Go to Step 9 | Go to Step 10 |
| 9    | Repair the open circuit between the SDM and airbag fuse F31.  
     Is the repair complete? | - | System OK | - |
| 10   | Repair the short to ground circuit between the airbag indicator lamp and terminal 1 of the SDM.  
     Is the repair complete? | - | System OK | - |
DIAGNOSTIC TROUBLE CODES (DTCS) - INTERNAL FAULT

Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Internal fault DTC will set when any of the malfunctions detected by SDM itself. Refer to “Diagnostic Trouble Code Table” in this section.

Action Taken
The SDM will turn on the airbag indicator and set diagnostic trouble code.
The SDM will shutdown its function partially or totally.

Diagnostic Trouble Code (DTC) - Internal Fault

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Check for any DTCs that is not internal fault. Is there any DTCs that set except internal DTC?</td>
<td></td>
<td>Go to specific DTC chart.</td>
<td>Go to Step 2</td>
</tr>
<tr>
<td>3</td>
<td>1. Disable the supplemental restraint system (SRS) in this section. 2. Replace SDM. 3. Enable the SRS. 4. Make sure all the components are properly mounted. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
</tbody>
</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to voltage in the deployment loops.

DTC 01 Will Set When
DTC 01 will set when the driver low is above 5 volts for 250 milliseconds while the other deployment loop low is below 5 volts and ignition voltage is within the normal operating voltage range.

DTC 01 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in driver airbag deployment loop for cutting or chafing.

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
<td>Value(s)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>----------</td>
<td>-----</td>
<td>----</td>
</tr>
</tbody>
</table>
| 2   | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Virtually inspect the driver airbag circuit and connectors, especially at the SDM.  
Is there any evidence of rubbing, damage or chafing? | - | Go to Step 3 | Go to Step 4 |
| 3   | 1. Repair the damaged wires or connectors.  
2. Connect all the SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 4   | 1. Disconnect the SDM connector.  
2. Disconnect driver airbag.  
3. Turn the ignition ON.  
4. Measure the voltage between terminal 1 (or 2) of the driver airbag connector and ground.  
Is the voltage within the specified value? | $\approx 0$ v | Go to Step 8 | Go to Step 5 |
| 5   | 1. Disconnect C203.  
2. Measure the voltage between terminal 1 (or 2) of the driver airbag connector and ground.  
Is the voltage within the specified value? | $\approx 0$ v | Go to Step 7 | Go to Step 6 |
| 6   | 1. Repair short to voltage in clock spring or replace the clock spring as needed.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 7   | 1. Repair short to voltage between SDM and C203.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 8   | 1. Connect dummy resistance ($2.15 \pm 0.35 \Omega$) to driver airbag connector instead of driver airbag.  
2. Enable the SRS.  
3. Connect the scan tool to the data link connector (DLC).  
4. Clear DTC and request DTC.  
Is the DTC 01 still present? | - | Go to Step 10 | Go to Step 9 |
| 9   | Replace driver airbag.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 10  | 1. Replace SDM.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to voltage in the deployment loops.

DTC 02 Will Set When
DTC 02 will set when the driver low is above 5 volts for 250 milliseconds while the other deployment loop low is below 5 volts and ignition voltage is within the normal operating voltage range. This test is run during start-up test and every 250 milliseconds during continuous monitoring.

Action Taken
The SDM will turn on the airbag indicator (blink mode 3) and set DTC 02. The SDM will shutdown the passenger airbag deployment loop.

DTC 02 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in passenger airbag deployment loop for cutting or chafing.

DTC 02 - Passenger Deployment Loop Shorted to Voltage

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
</tbody>
</table>
## Step 2
1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.
2. Virtually inspect the passenger airbag circuit and connectors, especially at the SDM.
   Is there any evidence of rubbing, damage or chafing?

<table>
<thead>
<tr>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Go to Step 3</td>
<td>Go to Step 4</td>
</tr>
</tbody>
</table>

## Step 3
1. Repair the damaged wires or connectors.
2. Connect all the SRS components.
   Is the repair complete?

## Step 4
1. Disconnect the SDM connector.
2. Disconnect passenger airbag.
3. Turn the ignition ON.
4. Measure the voltage between terminal 1 (or 2) of the passenger airbag connector and ground.
   Is the voltage within the specified value?

<table>
<thead>
<tr>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 0 v</td>
<td>Go to Step 6</td>
<td>Go to Step 5</td>
</tr>
</tbody>
</table>

## Step 5
1. Repair short to voltage in passenger airbag deployment loop.
2. Connect all SRS components.
   Is the repair complete?

## Step 6
1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger airbag connector instead of driver airbag.
2. Enable the SRS.
3. Connect the scan tool to the data link connector (DLC).
4. Clear DTC and request DTC.
   Is the DTC 02 still present?

## Step 7
Replace passenger airbag.

## Step 8
1. Replace SDM.
2. Connect all SRS components.
   Is the repair complete?

<table>
<thead>
<tr>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
</tbody>
</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to voltage in the deployment loops.

DTC 03 Will Set When
DTC 03 will set when the driver seat belt pretensioner low is above 5 volts for 250 milliseconds while the other deployment loop low is below 5 volts and ignition voltage is within the normal operating voltage range. This test is run during start-up test and every 250 milliseconds during continuous monitoring.

Action Taken
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 03. The SDM will shutdown the driver seat belt pretensioner deployment loop.

DTC 03 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in passenger airbag deployment loop for cutting or chafing.

DTC 03 - Driver Seat Belt Pretensioner Shorted to Voltage

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
<td>Value(s)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------</td>
<td>----------</td>
<td>-----</td>
<td>----</td>
</tr>
</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Virtually inspect the driver seat belt pretensioner circuit and connectors, especially at the SDM. Is there any evidence of rubbing, damage or chafing? | -        | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair the damaged wires or connectors.  
2. Connect all the SRS components. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Disconnect the SDM connector.  
2. Disconnect driver airbag.  
3. Turn the ignition ON.  
4. Measure the voltage between terminal 1 (or 2) of the driver seat belt pretensioner connector and ground. | = 0 v    | Go to Step 5 | Go to Step 6 |
| 5    | Is the voltage within the specified value?  
1. Repair short to voltage in driver seat belt pretensioner deployment loop.  
2. Connect all SRS components. | -        | Go to “SRS Diagnostic System Check” | - |
| 6    | Is the repair complete?  
1. Connect dummy resistance (2.15 ± 0.35 Ω) to driver seat belt pretensioner connector instead of driver seat belt pretensioner.  
2. Enable the SRS.  
3. Connect the scan tool to the data link connector (DLC).  
4. Clear DTC and request DTC. Is the DTC 03 still present? | -        | Go to Step 8 | Go to Step 7 |
| 7    | Replace driver seat belt pretensioner. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
| 8    | 1. Replace SDM.  
2. Connect all SRS components. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to voltage in the deployment loops.

DTC 04 Will Set When
DTC 04 will set when the passenger seat belt pretensioner low is above 5 volts for 250 milliseconds while the other deployment loop low is below 5 volts and ignition voltage is within the normal operating voltage range. This test is run during start-up test and every 250 milliseconds during continuous monitoring.

Action Taken
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 04. The SDM will shutdown the passenger seat belt pretensioner deployment loop.

DTC 04 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in passenger airbag deployment loop for cutting or chafing.

DTC 04 - Passenger Seat Belt Pretensioner Shorted to Voltage

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

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<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
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</tr>
<tr>
<td>2</td>
<td>1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section. 2. Virtually inspect the passenger seat belt pretensioner circuit and connectors, especially at the SDM. Is there any evidence of rubbing, damage or chafing?</td>
<td>-</td>
<td>Go to Step 3</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td>3</td>
<td>1. Repair the damaged wires or connectors. 2. Connect all the SRS components. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>1. Disconnect the SDM connector. 2. Disconnect passenger seat belt pretensioner. 3. Turn the ignition ON. 4. Measure the voltage between terminal 1 (or 2) of the passenger seat belt pretensioner connector and ground. Is the voltage within the specified value?</td>
<td>= 0 v</td>
<td>Go to Step 6</td>
<td>Go to Step 5</td>
</tr>
<tr>
<td>5</td>
<td>1. Repair short to voltage in passenger seat belt pretensioner deployment loop. 2. Connect all SRS components. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger seat belt pretensioner connector instead of passenger seat belt pretensioner. 2. Enable the SRS. 3. Connect the scan tool to the data link connector (DLC). 4. Clear DTC and request DTC. Is the DTC 04 still present?</td>
<td>-</td>
<td>Go to Step 8</td>
<td>Go to Step 7</td>
</tr>
<tr>
<td>7</td>
<td>Replace passenger seat belt pretensioner. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>1. Replace SDM. 2. Connect all SRS components. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
</tbody>
</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to ground in the deployment loops.

DTC 05 Will Set When
DTC 05 will set when the voltage at driver airbag low falls below a specified value, and ignition voltage is within the normal operating voltage range.

DTC 05 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in driver airbag deployment loop for cutting or chafing.

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

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<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td></td>
<td>Go to Step 2</td>
<td></td>
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<tr>
<td></td>
<td>Is the SRS Diagnostic System Check complete?</td>
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</tbody>
</table>

DTC 05 - Driver Deployment Loop Shorted to Ground

This test is run during start-up test and every 250 milliseconds during continuous monitoring.

Action Taken
The SDM will turn on the airbag indicator (blink mode 3) and set DTC 05. The SDM will shutdown the driver airbag module deployment loop.

DTC 05 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in driver airbag deployment loop for cutting or chafing.

Perform the SRS Diagnostic System Check.
Is the SRS Diagnostic System Check complete?
1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.
2. Virtually inspect the driver airbag circuit and connectors, especially at the SDM. Is there any evidence of rubbing, damage or chafing?

**Step** | **Action** | **Value(s)** | **Yes** | **No**  
--- | --- | --- | --- | ---  
2 | 1. Repair the damaged wires or connectors.  
2. Connect all the SRS components.  
Is the repair complete? | - | Go to Step 3 | Go to Step 4  
3 | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to driver airbag connector instead of driver airbag.  
2. Enable the SRS.  
3. Connect the scan tool to the data link connector (DLC).  
4. Clear DTC and request DTC. Is the DTC 05 still present? | - | Go to Step 10 | Go to Step 9  
4 | 1. Disconnect the SDM connector.  
2. Disconnect driver airbag.  
3. Turn the ignition ON.  
4. Measure the resistance between terminal 1 (or 2) of the driver airbag connector and ground. Is the resistance within the specified value? | ∞ | Go to Step 7 | Go to Step 6  
5 | 1. Repair short to ground in clock spring or replace the clock spring as needed.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | -  
6 | 1. Repair short to ground between SDM and C203.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | -  
7 | 1. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | -  
8 | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to driver airbag connector instead of driver airbag.  
2. Enable the SRS.  
3. Connect the scan tool to the data link connector (DLC).  
4. Clear DTC and request DTC. Is the DTC 05 still present? | - | Go to Step 10 | Go to Step 9  
9 | Replace driver airbag. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | -  
10 | 1. Replace SDM.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | -
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to ground in the deployment loops.

DTC 06 Will Set When
DTC 06 will set when the voltage at passenger airbag low falls below a specified value, and ignition voltage is within the normal operating voltage range.

Action Taken
The SDM will turn on the airbag indicator (blink mode 3) and set DTC 06. The SDM will shutdown the passenger airbag deployment loop.

DTC 06 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in passenger airbag deployment loop for cutting or chafing.

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

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<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
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<td>Go to Step 2</td>
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<td>Step</td>
<td>Action</td>
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<tr>
<td>2</td>
<td>1. Disable the Supplemental Restraint System (SRS).</td>
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<td>Go to Step 3</td>
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<td></td>
<td>Refer to “Disabling the Supplemental Restraint System (SRS)” in this</td>
<td></td>
<td>Yes</td>
<td>Go to Step 4</td>
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<td>section.</td>
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<td></td>
<td>2. Virtually inspect the passenger airbag circuit and connectors,</td>
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<td></td>
<td>especially at the SDM.</td>
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<td></td>
<td>Is there any evidence of rubbing, damage or chafing?</td>
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<td>3</td>
<td>1. Repair the damaged wires or connectors.</td>
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<td></td>
<td>2. Connect all the SRS components.</td>
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<td></td>
<td>Is the repair complete?</td>
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<td>4</td>
<td>1. Disconnect the SDM connector.</td>
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<td></td>
<td>2. Disconnect passenger airbag.</td>
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<td>3. Turn the ignition ON.</td>
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<td>4. Measure the resistance between terminal 1 (or 2) of the passenger</td>
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<td></td>
<td>airbag connector and ground.</td>
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<td></td>
<td>Is the resistance within the specified value?</td>
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<tr>
<td>5</td>
<td>1. Repair short to ground in passenger airbag deployment loop.</td>
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<td></td>
<td>2. Connect all SRS components.</td>
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<td></td>
<td>Is the repair complete?</td>
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<tr>
<td>6</td>
<td>1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger airbag</td>
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<td></td>
<td>connector instead of passenger airbag.</td>
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<td></td>
<td>2. Enable the SRS.</td>
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<td></td>
<td>3. Connect the scan tool to the data link connector (DLC).</td>
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<td></td>
<td>4. Clear DTC and request DTC.</td>
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<td></td>
<td>Is the DTC 06 still present?</td>
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<tr>
<td>7</td>
<td>Replace passenger airbag.</td>
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<tr>
<td></td>
<td>Is the repair complete?</td>
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<tr>
<td>8</td>
<td>1. Replace SDM.</td>
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<tr>
<td></td>
<td>2. Connect all SRS components.</td>
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<tr>
<td></td>
<td>Is the repair complete?</td>
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</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to ground in the deployment loops.

DTC 07 Will Set When
DTC 07 will set when the voltage at driver seat belt pretensioner low falls below a specified value, and ignition voltage is within the normal operating voltage range.

This test is run during start-up test and every 250 milliseconds during continuous monitoring.

Action Taken
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 07. The SDM will shutdown the driver seat belt pretensioner deployment loop.

DTC 07 Will Clear When
The scan tool CLEAR CODES command is received.

Diagnostic Aids
Carefully inspect the wires in passenger airbag deployment loop for cutting or chafing.

DTC 07 - Driver Seat Belt Pretensioner Shorted to Ground

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

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<td>Go to Step 2</td>
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<tr>
<td>Step</td>
<td>Action</td>
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</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Virtually inspect the driver seat belt pretensioner circuit and connectors, especially at the SDM. Is there any evidence of rubbing, damage or chafing? | - | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair the damaged wires or connectors.  
2. Connect all the SRS components. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Disconnect the SDM connector.  
2. Disconnect driver airbag.  
3. Turn the ignition ON.  
4. Measure the resistance between terminal 1 (or 2) of the driver seat belt pretensioner connector and ground. Is the voltage within the specified value? | ∞ | Go to Step 6 | Go to Step 5 |
| 5    | 1. Repair short to ground in driver seat belt pretensioner deployment loop.  
2. Connect all SRS components. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 6    | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to driver seat belt pretensioner connector instead of driver seat belt pretensioner.  
2. Enable the SRS.  
3. Connect the scan tool to the data link connector (DLC).  
4. Clear DTC and request DTC. Is the DTC 07 still present? | - | Go to Step 8 | Go to Step 7 |
| 7    | Replace driver seat belt pretensioner. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 8    | 1. Replace SDM.  
2. Connect all SRS components. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM monitors the voltages at the driver low (terminal 14), passenger low (terminal 11), driver seat belt pretensioner low (terminal 7) and passenger seat belt pretensioner low (terminal 4) to detect short to ground in the deployment loops.

DTC 08 Will Set When
DTC 08 will set when the voltage at passenger seat belt pretensioner low falls below a specified value, and ignition voltage is within the normal operating voltage range.

DTC 08 - Passenger Seat Belt Pretensioner Shorted to Ground

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

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<td>Go to Step 2</td>
<td>-</td>
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<tr>
<td>Step</td>
<td>Action</td>
<td>Value(s)</td>
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<td>No</td>
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</tr>
<tr>
<td>2</td>
<td>1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section. 2. Virtually inspect the passenger seat belt pretensioner circuit and connectors, especially at the SDM. Is there any evidence of rubbing, damage or chafing?</td>
<td>-</td>
<td>Go to Step 3</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td>3</td>
<td>1. Repair the damaged wires or connectors. 2. Connect all the SRS components. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>1. Disconnect the SDM connector. 2. Disconnect passenger seat belt pretensioner. 3. Turn the ignition ON. 4. Measure the resistance between terminal 1 (or 2) of the passenger seat belt pretensioner connector and ground. Is the resistance within the specified value?</td>
<td>₧</td>
<td>Go to Step 6</td>
<td>Go to Step 5</td>
</tr>
<tr>
<td>5</td>
<td>1. Repair short to ground in passenger seat belt pretensioner deployment loop. 2. Connect all SRS components. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger seat belt pretensioner connector instead of passenger seat belt pretensioner. 2. Enable the SRS. 3. Connect the scan tool to the data link connector (DLC). 4. Clear DTC and request DTC. Is the DTC 08 still present?</td>
<td>-</td>
<td>Go to Step 8</td>
<td>Go to Step 7</td>
</tr>
<tr>
<td>7</td>
<td>Replace passenger seat belt pretensioner. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>1. Replace SDM. 2. Connect all SRS components. Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
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</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Driver low terminal 14 is grounded through a current sink. The current source is connected to driver high terminal 13 to allow a known amount of the current flow. By monitoring the voltage difference between drive high and driver low, the SDM calculates the combined resistance of the driver inflator module, the clock spring, the harness wiring, and connector terminal contacts.

DTC 17 Will Set When
DTC 17 will set when the resistance of the driver airbag deployment loop is above specified value (4.5 ± 0.5Ω).

The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 1) and set DTC 17. And driver airbag deployment loop shutdown.

DTC 17 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the driver airbag to the clock spring or SDM terminal 13 or 14. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.
**Perform the SRS Diagnostic System Check.**

Is the SRS Diagnostic System Check complete?  

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 1    | **Perform the SRS Diagnostic System Check.**  
Is the SRS Diagnostic System Check complete? | - | Go to Step 2 | - |
| 2    | 1. Disable the Supplemental Restraint System (SRS).  
Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Inspect the yellow clock spring connector at the lower steering column.  
Is a faulty connector or terminal or loose wire detected? | - | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair or Replace the faulty connector, terminal, or wire.  
2. Connect all the SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Disconnect the SDM connector.  
2. Check terminals 13 and 14 for loose terminals or wire.  
Is a problem found? | - | Go to Step 5 | Go to Step 6 |
| 5    | Replace the loose terminals or wires at SDM connector.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 6    | 1. Reconnect the SDM.  
2. Connect dummy resistance \((2.15 \pm 0.35 \, \Omega)\) to driver airbag connector instead of driver airbag.  
3. Connect other SRS components.  
4. Enable the SRS.  
5. Turn the ignition switch to ON and check for DTCs with scan tool.  
Is DTC 17 still current? | - | Go to Step 8 | Go to Step 7 |
| 7    | Replace driver airbag.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 8    | 1. Disable the SRS.  
2. Disconnect C203.  
3. Connect dummy resistance \((2.15 \pm 0.35 \, \Omega)\) to SDM side terminal of C203.  
4. Enable the SRS.  
5. Turn the ignition switch to ON and check for DTCs with scan tool.  
Is DTC 17 still current? | - | Go to Step 9 | Go to Step 12 |
| 9    | 1. Disconnect the SDM.  
2. Measure resistance between terminal 1 or 2 of C203 and ground.  
Is the resistance equal to specified value? \(\infty\) | - | Go to Step 11 | Go to Step 10 |
| 10   | 1. Repair short to ground or short to voltage circuit between SDM and C203.  
2. Connect all SRS components.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
### 8B-36 SUPPLEMENTAL RESTRAINTS SYSTEM

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>1. Replace SDM.</td>
<td></td>
<td>Go to “SRS Diagnostic System Check”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Connect all SRS components.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1. Repair short to ground or short to voltage circuit in clock spring and replace the clock spring as needed.</td>
<td></td>
<td>Go to “SRS Diagnostic System Check”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Connect all SRS components.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
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</tr>
</tbody>
</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Passenger low terminal 11 is grounded through a current sink. The current source is connected to driver high terminal 10 to allow a known amount of the current flow. By monitoring the voltage difference between passenger high and passenger low, the SDM calculates the combined resistance of the passenger inflator module, the harness wiring, and connector terminal contacts.

DTC 18 Will Set When
DTC 18 will set when the resistance of the passenger airbag deployment loop is above specified value (4.5 ± 0.5 Ω).

The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 2) and set DTC 18. And passenger airbag deployment loop shutdown.

DTC 18 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the passenger airbag to the SDM terminal 11 or 12. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

DTC 18 - Passenger Deployment Loop Resistance High

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Is the SRS Diagnostic System Check complete?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1. Disable the Supplemental Restraint System (SRS).</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.</td>
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</tr>
<tr>
<td></td>
<td>2. Disconnect the passenger airbag module yellow connector located at the rear of glove box.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>3. Inspect the passenger airbag module connector for damage or loose terminals or wires.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is a faulty connector, terminal, or wire detected?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1. Repair or replace the faulty wires, terminals or connectors.</td>
<td></td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2. Connect all the SRS components.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1. Disconnect the SDM connector.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Check the SDM connector terminal 11 and 12 for loose terminals.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is a problem found?</td>
<td></td>
<td>Go to Step 5</td>
<td>Go to Step 6</td>
</tr>
<tr>
<td>5</td>
<td>1. Repair the loose terminals or wires.</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2. Connect all SRS components.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger airbag connector instead of passenger airbag.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Enable the SRS.</td>
<td></td>
<td>Go to Step 7</td>
<td>Go to Step 8</td>
</tr>
<tr>
<td>7</td>
<td>Replace passenger airbag.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>1. Disable the SRS.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Disconnect the SDM.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Measure resistance between terminal 1 or 2 of passenger airbag module connector and ground.</td>
<td></td>
<td>Go to Step 10</td>
<td>Go to Step 9</td>
</tr>
<tr>
<td></td>
<td>Is the resistance equal to specified value?</td>
<td>∞</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Measure the voltage between terminal 1 or 2 of passenger airbag module connector and ground.</td>
<td></td>
<td>= 0 v</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the voltage within the specified value?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Repair short to ground or short to voltage circuit between SDM to passenger airbag module.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>1. Replace SDM.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Connect all SRS components.</td>
<td>-</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Driver seat belt pretensioner low terminal 7 is grounded through a current sink. The current source is connected to driver seat belt pretensioner high terminal 6 to allow a known amount of the current flow. By monitoring the voltage difference between driver seat belt pretensioner high and driver seat belt pretensioner low, the SDM calculates the combined resistance of the driver seat belt pretensioner inflator module, the harness wiring, and connector terminal contacts.

DTC 19 Will Set When
DTC 19 will set when the resistance of driver seat belt pretensioner deployment loop is above specified value (4.5 ± 0.5 Ω). The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 19. And driver seat belt pretensioner deployment loop shutdown.

DTC 19 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the driver seat belt pretensioner to the SDM terminal 6 or 7. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

DTC 19 - Driver Seat Belt Pretensioner Deployment Loop Resistance High

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.
<table>
<thead>
<tr>
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<th>Action</th>
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<th>Yes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td></td>
</tr>
</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
|      | 2. Disconnect the driver seat belt pretensioner yellow connector located inside of rear lower quarter panel.  
|      | 3. Inspect the driver seat belt pretensioner connector for damage or loose terminals or wires. Is a faulty connector, terminal, or wire detected? | -        | Go to Step 3         | Go to Step 4        |
| 3    | 1. Repair or replace the faulty wires, terminals or connectors.  
|      | 2. Connect all the SRS components.  
|      | Is the repair complete?                                               | -        |                      |                     |
| 4    | 1. Disconnect the SDM connector.  
|      | 2. Check the SDM connector terminal 6 and 7 for loose terminals. Is a problem found? | -        | Go to Step 5         | Go to Step 6        |
| 5    | 1. Repair the loose terminals or wires.  
|      | 2. Connect all SRS components. Is the repair complete?                | -        | Go to “SRS Diagnostic System Check” |                     |
| 6    | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to driver seat belt pretensioner connector instead of driver seat belt pretensioner.  
|      | 2. Enable the SRS.  
|      | Is the repair complete?                                               | -        | Go to Step 7         | Go to Step 8        |
| 7    | Replace the driver seat belt pretensioner. Is the repair complete?    | -        | Go to “SRS Diagnostic System Check” |                     |
| 8    | 1. Disable the SRS.  
|      | 2. Disconnect the SDM.  
|      | 3. Measure resistance between terminal 1 or 2 of driver seat belt pretensioner connector and ground. Is the resistance equal to specified value? | ∞        |                      |                     |
|      | 4. Measure the voltage between terminal 1 or 2 of driver seat belt pretensioner connector and ground. Is the voltage within the specified value? | 0 v      | Go to Step 10        | Go to Step 9        |
| 9    | Repair short to ground or short to voltage circuit between SDM to driver seat belt pretensioner. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” |                     |
| 10   | 1. Replace SDM.  
|      | 2. Connect all SRS components. Is the repair complete?                | -        | Go to “SRS Diagnostic System Check” |                     |
**DIAGNOSTIC TROUBLE CODE (DTC) 20**

**PASSENGER SEAT BELT PRETENSIONER DEPLOYMENT LOOP RESISTANCE HIGH**

**Circuit Description**
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Passenger seat belt pretensioner low terminal 4 is grounded through a current sink. The current source is connected to passenger seat belt pretensioner high terminal 3 to allow a known amount of the current flow. By monitoring the voltage difference between passenger seat belt pretensioner high and passenger seat belt pretensioner low, the SDM calculates the combined resistance of the passenger seat belt pretensioner inflator module, the harness wiring, and connector terminal contacts.

**DTC 20 Will Set When**
DTC 20 will set when the resistance of passenger seat belt pretensioner deployment loop is above specified value \((4.5 \pm 0.5 \, \Omega)\). The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

**Action Taken**
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 20. And passenger seat belt pretensioner deployment loop shutdown.

**DTC 20 Will Clear When**
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

**Diagnostic Aids**
All intermittent condition is likely to be the caused by a poor connection from the passenger seat belt pretensioner to the SDM terminal 3 or 4. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

**DTC 20 - Passenger Seat Belt Pretensioner Deployment Loop Resistance High**

_Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result._

_Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury._
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td>-</td>
<td>Go to Step 2</td>
<td>Go to Step 4</td>
</tr>
</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Disconnect the passenger seat belt pretensioner yellow connector located inside of rear lower quarter panel.  
3. Inspect the passenger seat belt pretensioner connector for damage or loose terminals or wires. Is a faulty connector, terminal, or wire detected? | -        | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair or replace the faulty wires, terminals or connectors.  
2. Connect all the SRS components. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Disconnect the SDM connector.  
2. Check the SDM connector terminal 3 and 4 for loose terminals. Is a problem found? | -        | Go to Step 5 | Go to Step 6 |
| 5    | 1. Repair the loose terminals or wires.  
2. Connect all SRS components. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
| 6    | 1. Connect dummy resistance ($2.15 \pm 0.35 \Omega$) to passenger seat belt pretensioner connector instead of passenger seat belt pretensioner.  
2. Enable the SRS. Is the repair complete? | $\approx 0 \, \text{v}$ | Go to Step 7 | Go to Step 8 |
| 7    | Replace the passenger seat belt pretensioner. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
| 8    | 1. Disable the SRS.  
2. Disconnect the SDM.  
3. Measure resistance between terminal 1 or 2 of passenger seat belt pretensioner connector and ground. Is the resistance equal to specified value? | $\infty$ | Go to Step 10 | Go to Step 9 |
| 9    | Repair short to ground or short to voltage circuit between SDM to passenger seat belt pretensioner. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
| 10   | 1. Replace SDM.  
2. Connect all SRS components. Is the repair complete? | -        | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Driver low terminal 14 is grounded through a current sink. The current source is connected to driver high terminal 13 to allow a known amount of the current flow. By monitoring the voltage difference between drive high and driver low, the SDM calculates the combined resistance of the driver inflator module, the clock spring, the harness wiring, and connector terminal contacts.

DTC 21 Will Set When
DTC 21 will set when the resistance of the driver airbag deployment loop is below a specified value (1.4 ± 0.5 \( \Omega \)).

The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 1) and set DTC 21. And driver airbag deployment loop shutdown.

DTC 21 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the driver airbag to the clock spring or SDM terminal 13 or 14. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td></td>
<td></td>
<td>Go to Step 2</td>
</tr>
<tr>
<td></td>
<td>Is the SRS Diagnostic System Check complete?</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>1. Disable the Supplemental Restraint System (SRS).</td>
<td></td>
<td>Go to Step 3</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td></td>
<td>Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.</td>
<td></td>
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<tr>
<td></td>
<td>2. Inspect the yellow clock spring connector at the lower steering column.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Is a faulty connector or terminal or loose wire detected?</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>1. Repair or Replace the faulty connector, terminal, or wire.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Connect all the SRS components.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>1. Disconnect the SDM connector.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Check terminals 13 and 14 for loose terminals or wire.</td>
<td></td>
<td>Go to Step 5</td>
<td>Go to Step 6</td>
</tr>
<tr>
<td></td>
<td>Is a problem found?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Replace the loose terminals or wires at SDM connector.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>1. Reconnect the SDM.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Connect dummy resistance (2.15 ± 0.35 Ω) to driver airbag connector instead of driver airbag.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3. Connect other SRS components.</td>
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<tr>
<td></td>
<td>4. Enable the SRS.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>5. Turn the ignition switch to ON and check for DTCs with scan tool.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is DTC 21 still current?</td>
<td></td>
<td>Go to Step 8</td>
<td>Go to Step 7</td>
</tr>
<tr>
<td>7</td>
<td>Replace driver airbag.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>1. Disable the SRS.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Disconnect C203.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Connect dummy resistance (2.15 ± 0.35 Ω) to SDM side terminal of C203.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>4. Enable the SRS.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>5. Turn the ignition switch to ON and check for DTCs with scan tool.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is DTC 21 still current?</td>
<td></td>
<td>Go to Step 9</td>
<td>Go to Step 14</td>
</tr>
<tr>
<td>9</td>
<td>Measure resistance between terminal 1 and 2 of connector C203.</td>
<td>0 v</td>
<td>Go to Step 11</td>
<td>Go to Step 10</td>
</tr>
<tr>
<td></td>
<td>Is the resistance within the specified value?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Repair open circuit between C203 and SDM.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the repair complete?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1. Disconnect the SDM.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Measure resistance between terminal 1 or 2 of C203 and ground.</td>
<td>∞</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the resistance equal to specified value?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Measure the voltage between terminal 1 or 2 of the driver airbag module and ground.</td>
<td>0 v</td>
<td>Go to Step 10</td>
<td>Go to Step 9</td>
</tr>
<tr>
<td></td>
<td>Is the voltage within the specified value?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 8B-46 SUPPLEMENTAL RESTRAINTS SYSTEM

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
| 12   | 1. Repair short to ground or short to voltage circuit between SDM and C203.  
     2. Connect all SRS components.  
     Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 13   | 1. Replace SDM.  
     2. Connect all SRS components.  
     Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 14   | 1. Repair short to ground or short to voltage circuit in clock spring and replace the clock spring as needed.  
     2. Connect all SRS components.  
     Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Passenger low terminal 11 is grounded through a current sink. The current source is connected to driver high terminal 10 to allow a known amount of the current flow. By monitoring the voltage difference between passenger high and passenger low, the SDM calculates the combined resistance of the passenger inflator module, the harness wiring, and connector terminal contacts.

DTC 22 Will Set When
DTC 22 will set when the resistance of the passenger airbag deployment loop is below a specified value (1.4 ± 0.5 Ω).

The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 2) and set DTC 22. And passenger airbag deployment loop shutdown.

DTC 22 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the passenger airbag to the SDM terminal 11 or 12. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

DTC 22 - Passenger Airbag Deployment Loop Resistance Low

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Disconnect the passenger airbag module yellow connector located at the rear of glove box.  
3. Inspect the passenger airbag module connector for damage or loose terminals or wires. | - | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair or replace the faulty wires, terminals or connectors.  
2. Connect all the SRS components. | - | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Disconnect the SDM connector.  
2. Check the SDM connector terminal 11 and 12 for loose terminals. | - | Go to Step 5 | Go to Step 6 |
| 5    | 1. Repair the loose terminals or wires.  
2. Connect all SRS components. | - | Go to “SRS Diagnostic System Check” | - |
| 6    | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger airbag connector instead of passenger airbag.  
2. Enable the SRS. | - | Go to Step 7 | Go to Step 8 |
| 7    | Replace passenger airbag. | - | Go to “SRS Diagnostic System Check” | - |
| 8    | Measure resistance between terminal 1 and 2 of the passenger airbag module connector. | 0 v | Go to Step 10 | Go to Step 9 |
| 9    | Repair open circuit between passenger airbag module connector and SDM. | - | Go to “SRS Diagnostic System Check” | - |
| 10   | 1. Disconnect the SDM.  
2. Measure resistance between terminal 1 or 2 of the passenger airbag module connector and ground. | ∞ | Go to Step 12 | Go to Step 11 |
| 11   | Repair short to ground or short to voltage circuit between SDM to passenger airbag module. | - | Go to “SRS Diagnostic System Check” | - |
| 12   | 1. Replace SDM.  
2. Connect all SRS components. | - | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Driver seat belt pretensioner low terminal 7 is grounded through a current sink. The current source is connected to driver seat belt pretensioner high terminal 6 to allow a known amount of the current flow. By monitoring the voltage difference between driver seat belt pretensioner high and driver seat belt pretensioner low, the SDM calculates the combined resistance of the driver seat belt pretensioner inflator module, the harness wiring, and connector terminal contacts.

DTC 23 Will Set When
DTC 23 will set when the resistance of driver seat belt pretensioner deployment loop is below a specified value \((1.4 \pm 0.5 \, \Omega)\). The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 23. And driver seat belt pretensioner deployment loop shutdown.

DTC23 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the driver seat belt pretensioner to the SDM terminal 6 or 7. The test for this DTCis run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.
## SUPPLEMENTAL RESTRAINTS SYSTEM 8B-51

Perform the SRS Diagnostic System Check. 

**Is the SRS Diagnostic System Check complete?**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Go to Step 2</td>
</tr>
</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to "Disabling the Supplemental Restraint System (SRS)" in this section.  
2. Disconnect the driver seat belt pretensioner yellow connector located inside of rear lower quarter panel.  
3. Inspect the driver seat belt pretensioner connector for damage or loose terminals or wires.  
**Is a faulty connector, terminal, or wire detected?** | - | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair or replace the faulty wires, terminals or connectors.  
2. Connect all the SRS components.  
**Is the repair complete?** | Go to "SRS Diagnostic System Check" |    |
| 4    | 1. Disconnect the SDM connector.  
2. Check the SDM connector terminal 6 and 7 for loose terminals.  
**Is a problem found?** | Go to Step 5 | Go to Step 6 |
| 5    | 1. Repair the loose terminals or wires.  
2. Connect all SRS components.  
**Is the repair complete?** | Go to "SRS Diagnostic System Check" |    |
| 6    | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to driver seat belt pretensioner connector instead of driver seat belt pretensioner.  
2. Enable the SRS.  
**Is the repair complete?** | Go to Step 7 | Go to Step 8 |
| 7    | Replace the driver seat belt pretensioner.  
**Is the repair complete?** | Go to "SRS Diagnostic System Check" |    |
| 8    | Measure resistance between terminal 1 and 2 of the driver seat belt pretensioner connector.  
**Is the resistance within the specified value?** | Go to Step 10 | Go to Step 9 |
| 9    | Repair open circuit between the driver seat belt pretensioner connector and the SDM.  
**Is the repair complete?** | Go to "SRS Diagnostic System Check" |    |
| 10   | 1. Disconnect the SDM.  
2. Measure resistance between terminal 1 or 2 of the driver seat belt pretensioner connector and ground.  
**Is the resistance equal to specified value?** | Go to Step 12 | Go to Step 1 |
|      | 3. Measure the voltage between terminal 1 or 2 of the driver seat belt pretensioner connector and ground.  
**Is the voltage within the specified value?** | Go to Step 12 | Go to Step 1 |
| 11   | Repair short to ground or short to voltage circuit between SDM to driver seat belt pretensioner.  
**Is the repair complete?** | Go to "SRS Diagnostic System Check" |    |
| 12   | 1. Replace SDM.  
2. Connect all SRS components.  
**Is the repair complete?** | Go to "SRS Diagnostic System Check" |    |
Circuit Description
When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within SDM itself. Upon passing these tests ignition and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with resistance measurement test. Passenger seat belt pretensioner low terminal 4 is grounded through a current sink. The current source is connected to passenger seat belt pretensioner high terminal 3 to allow a known amount of the current flow. By monitoring the voltage difference between passenger seat belt pretensioner high and passenger seat belt pretensioner low, the SDM calculates the combined resistance of the passenger seat belt pretensioner inflator module, the harness wiring, and connector terminal contacts.

DTC 24 Will Set When
DTC 24 will set when the resistance of passenger seat belt pretensioner deployment loop is below a specified value (1.4 ± 0.5 Ω). The test is run once each ignition cycle during the resistance measurement test when the ignition voltage is above a specified value.

Action Taken
The SDM will turn on the airbag indicator (blink mode 4) and set DTC 24. And passenger seat belt pretensioner deployment loop shutdown.

DTC24 Will Clear When
The ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids
All intermittent condition is likely to be the caused by a poor connection from the passenger seat belt pretensioner to the SDM terminal 3 or 4. The test for this DTC is run only while the airbag indicator is performing the start-up test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until next ignition cycle.

DTC 24 - Passenger Seat Belt Pretensioner Deployment Loop Resistance Low

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
</tbody>
</table>
| 2    | 1. Disable the Supplemental Restraint System (SRS). Refer to “Disabling the Supplemental Restraint System (SRS)” in this section.  
2. Disconnect the passenger seat belt pretensioner yellow connector located inside of rear lower quarter panel.  
3. Inspect the passenger seat belt pretensioner connector for damage or loose terminals or wires. Is a faulty connector, terminal, or wire detected? | - | Go to Step 3 | Go to Step 4 |
| 3    | 1. Repair or replace the faulty wires, terminals or connectors.  
2. Connect all the SRS components. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Disconnect the SDM connector.  
2. Check the SDM connector terminal 3 and 4 for loose terminals. Is a problem found? | - | Go to Step 5 | Go to Step 6 |
| 5    | 1. Repair the loose terminals or wires.  
2. Connect all SRS components. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 6    | 1. Connect dummy resistance (2.15 ± 0.35 Ω) to passenger seat belt pretensioner connector instead of passenger seat belt pretensioner.  
2. Enable the SRS. Is the repair complete? | - | Go to Step 7 | Go to Step 8 |
| 7    | Replace the passenger seat belt pretensioner. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 8    | Measure resistance between terminal 1 and 2 of the passenger seat belt pretensioner connector. Is the resistance within the specified value? | = 0 v | Go to Step 10 | Go to Step 9 |
| 9    | Repair open circuit between the passenger seat belt pretensioner connector and the SDM. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 10   | 1. Disconnect the SDM.  
2. Measure resistance between terminal 1 or 2 of passenger seat belt pretensioner connector and ground. Is the resistance equal to specified value? | ∞ | Go to Step 12 | Go to Step 11 |
| 11   | Repair short to ground or short to voltage circuit between SDM to passenger seat belt pretensioner. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 12   | 1. Replace SDM.  
2. Connect all SRS components. Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
Circuit Description
When the ignition switch is first turned ON, ignition voltage applied to the indicator lamp and also to the sensing and diagnostic module (SDM) input terminal 5. The SDM respond by illuminating the airbag indicator in instrument cluster for 4.5 seconds. If the SDM cannot detect ignition voltage at terminal 1, a DTC 46 will be set. The SDM also attempts to turn on the airbag indicator, but the indicator will not turn on if the inputs have not been correctly processed.

DTC 46 Will Set When
DTC 46 will set when during the continuous monitoring, the SDM fails to detect voltage terminal 1, the input terminal for airbag indicator.

Action Taken
The SDM also attempts to turn on the airbag indicator, but the indicator will not turn on if the inputs have not been correctly processed.

DTC 46 Will Clear When
The ignition switch is turned OFF or the problem is repaired.

DTC 46 - Airbag Warning Lamp Circuit Open or Short to Ground/Battery

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
<th>Value(s)</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check.</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Is the SRS Diagnostic System Check complete?</td>
<td></td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Check the fuse F30 in instrument panel fuse block.</td>
<td>-</td>
<td>Go to Step 3</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td></td>
<td>Is the fuse F30 blown?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
<td>Value(s)</td>
<td>Yes Action</td>
<td>No Action</td>
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</tbody>
</table>
| 3    | 1. Check for a short circuit and repair it.  
2. Replace the fuse.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 4    | 1. Turn the ignition switch to ON.  
2. Check power supply to fuse F30.  
Is the voltage equal to specified value? | 11 - 14 v | Go to Step 6 | Go to Step 5 |
| 5    | Repair the power supply to fuse F30.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 6    | 1. Remove instrument cluster.  
2. Check the airbag indicator bulb.  
Is the bulb in good condition? | - | Go to Step 8 | Go to Step 7 |
| 7    | Replace the airbag indicator bulb.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 8    | 1. Turn the ignition switch to ON.  
Is the voltage within the specified value? | 11 - 14 v | Go to Step 10 | Go to Step 9 |
| 9    | Repair open circuit between the fuse F30 and terminal A1 of instrument connector.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 10   | Test the instrument cluster printed circuit for continuity between terminal A1 and terminal B2 of the instrument cluster connector.  
Is there continuity between terminal A1 and terminal B2 on the printed circuit? | - | Go to Step 12 | Go to Step 11 |
| 11   | Replace the instrument cluster printed circuit or instrument cluster.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 12   | 1. Disable the SRS. Refer to “Disabling the supplemental restraint system (SRS)” in this section.  
2. Disconnect the SDM electric connector.  
3. Turn the ignition switch to ON.  
4. Measure the voltage at terminal 1 of the SDM connector  
Is the voltage within the specified value? | - | Go to Step 14 | Go to Step 13 |
| 13   | Repair open circuit between terminal B2 of instrument cluster and terminal 1 of the SDM connector.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
| 14   | 1. Replace the SDM.  
2. Connect all the SRS components and make sure properly mounted.  
Is the repair complete? | - | Go to “SRS Diagnostic System Check” | - |
DIAGNOSTIC TROUBLE CODE (DTC) 47
BATTERY VOLTAGE IS OUT OF SPECIFICATION

Circuit Description
When the ignition switch is first turned ON, ignition voltage applied to the indicator lamp and also to the sensing and diagnostic module (SDM) input terminal 5. The SDM respond by illuminating the airbag indicator in instrument cluster for 4.5 seconds. If the SDM cannot detect ignition voltage at terminal 5, a DTC 47 will be set.

DTC 47 Will Set When
DTC 47 will set when during the continuos monitoring, the SDM fails to detect normal operating voltage at terminal 5, the input terminal for ignition voltage supply.

DTC 47 - Battery Voltage is Out of Specification

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for 0.15 seconds after the ignition is OFF and the fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. Otherwise, injury could result.

Action Taken
The SDM will illuminates the airbag indicator, but the indicator will not turn on if the inputs have not been correctly processed.

DTC 47 Will Clear When
The ignition switch is turned OFF or the problem is repaired.

Caution: During service procedure, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental restraints system (SRS) when the SDM is not rigidly attached to the vehicle. Also SDM mounting nuts must be carefully tightened to ensure proper operation of the SRS. The SDM could be activated if it is powered when it is not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

<table>
<thead>
<tr>
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<th>Action</th>
<th>Value(s)</th>
<th>Yes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perform the SRS Diagnostic System Check. Is the SRS Diagnostic System Check complete?</td>
<td>-</td>
<td>Go to Step 2</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>1. Repair or replace the faulty wires, terminals or connectors. &lt;br&gt;2. Connect all the SRS components. &lt;br&gt;Is the repair complete?</td>
<td>-</td>
<td>Go to Step 3</td>
<td>Go to Step 4</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
<td>Value(s)</td>
<td>Yes</td>
<td>No</td>
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<tr>
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</tr>
<tr>
<td>4</td>
<td>Measure the voltage at terminal 5 of SDM connector. Is the voltage within the specified value?</td>
<td>11 - 14 v</td>
<td>Go to Step 12</td>
<td>Go to Step 5</td>
</tr>
<tr>
<td>5</td>
<td>Check fuse F31 in I/P fuse block. Is the fuse F31 blown?</td>
<td>11 - 14 v</td>
<td>Go to Step 6</td>
<td>Go to Step 7</td>
</tr>
<tr>
<td>6</td>
<td>1. Check for a short circuit and repair it. 2. Replace the fuse. Is the repair complete?</td>
<td>11 - 14 v</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Measure the voltage at fuse F31. Is the voltage within the specified value?</td>
<td>11 - 14 v</td>
<td>Go to Step 9</td>
<td>Go to Step 8</td>
</tr>
<tr>
<td>8</td>
<td>Repair power supply to fuse F31. Is the repair complete?</td>
<td>11 - 14 v</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Repair open circuit between the terminal 5 of SDM connector and fuse F31. Is the repair complete?</td>
<td>11 - 14 v</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>1. Replace SDM. 2. Connect all SRS components. Is the repair complete?</td>
<td>11 - 14 v</td>
<td>Go to “SRS Diagnostic System Check”</td>
<td>-</td>
</tr>
</tbody>
</table>
ON-VEHICLE SERVICE

SERVICE PRECAUTION

Caution: The sensing and diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioner for 0.15 seconds after the ignition is OFF and the airbag fuse has been removed. If the airbags or pretensioners are not disconnected, do not begin service until one minute has passed after disconnecting power to the SDM. If the airbag are disconnected, service can begin immediately without waiting for one-minute time period to expire. Failure to temporarily disable the SRS during service can result in unexpected deployment, personal injury, and otherwise unneeded SRS repairs.

DISABLING THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

1. Turn the steering wheel to the straight-ahead position.
2. Turn the ignition switch to LOCK and remove the key.
3. Remove the airbag fuse F31 in the I/P fuse block and wait more than one minute for SRS capacitor to discharge.

ENABLING THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Enabling the supplemental restraint system (SRS) is reverse order of “Disabling the Supplemental Restraint System (SRS)”.

Caution: Staying well away from the inflator modules, turn the ignition key switch to ON, and verify that the airbag indicator illuminates for 4.5 seconds and turns OFF. If it does not operate as described, perform the “SRS Diagnostic System Check” referring in this section.

HANDLING, INSTALLATION AND DIAGNOSIS

- Airbag modules should not be subjected to temperature above 65°C (149°F)
- An airbag module or sensing and diagnostic module (SDM) should not be used if it has been dropped from height of 0.9 meters (3 feet) or greater.
- It is very important for the SDM to be installed flat on the mounting surface, parallel to the vehicle’s longitudinal axis.
- To avoid setting diagnostic trouble codes (DTCs), do not apply power to the SRS unless all components are connected or a diagnostic chart request it.

- The SRS Diagnostic System Check must be the starting point of any SRS diagnostics. The SRS Diagnostic System Check will verify proper airbag indicator operation and will lead you to correct chart to diagnose any SRS malfunctions. Bypassing these procedures may result in extended diagnostic time and incorrect parts replacements.

REPAIRS AND INSPECTIONS REQUIRED AFTER AN ACCIDENT

Caution: any repairs to the vehicle’s structure must return it to the original production configuration. Deployment requires replacement of SDM, the inflator modules, and a dimensional inspection of the steering column.

- If any SRS components are damaged, they must be replaced. If SRS components mounting points are damaged, they must be repaired or replaced.
- Never use SRS parts from another vehicle. This does not include remanufactured parts purchased from an authorized source.
- Do not attempt to service the SDM, the clock spring, or other airbag modules, these items must be replaced if they are defective.
- Verify the part number of replacement airbag modules. Some inflator modules look identical but contain different internal components.

ACCIDENT WITH DEPLOYMENT - COMPONENTS REPLACEMENT

All SRS components must be replaced after frontal crash involving airbag deployment. After deployment, a powdery residue may be on the surface of the airbag. The powder consists primarily of cornstarch (used to lubricate the bag as it inflates) and by-products of the chemical reaction. Sodium hydroxide dust (similar to lye soap) is produced as a by-product of the deployment reaction. The sodium hydroxide then quickly reacts with atmospheric moisture and is converted to sodium carbonate and sodium bicarbonate (also known as baking soda). Therefore, it is unlikely that sodium hydroxide will be present after deployment. Replace the following SRS components.

Caution: Wear gloves and safety glasses during the disposal procedure. Refer to “Deployed Airbag Module Disposal Procedure” in this section.

- The SDM.
- Airbag modules and pretensioners
- SRS wiring
- Clock spring
ACCIDENT WITHOUT DEPLOYMENT
- COMPONENT INSPECTION
Certain inspection must be performed after any crash, whether the airbag has deployed or not:
- The steering column must be dimensionally inspected.
- Inspect the knee bolsters and mounting points for distortion, bending, cracking, or other damage.
- Inspect the instrument panel (I/P) and steering column reinforcement plate for distortion, bending, cracking, or other damage.
- Inspect the I/P braces for distortion, bending, cracking, or other damage.
- Inspect seat belt and mounting points. Refer to Section 8A, Seat Belts.

SENSING AND DIAGNOSTIC MODULE (SDM)

Caution: during service procedures, be very careful when handling the SDM. Never strike or jar the SDM. Never power up the SRS when the SDM is not rigidly attached to the vehicle. All SDM mounting nuts must carefully tightened, to ensure proper operation of the SRS. The SDM could be activated if it is powered while not rigidly attached to the vehicle, resulting in unexpected deployment and possible injury.

Important: If the vehicle interior has been exposed to extensive water intrusion such as water leaks, driving through high water, flooding, or other causes, the sensing and diagnostic module (SDM) and SDM connector may need to be replaced. With the ignition OFF, inspect the area around the SDM, including the carpet. If any significant soaking or evidence of previous soaking is detected, the water must be removed, the water damage repaired, and the SDM and SDM connector must be replaced. Before attempting any of these repairs, the supplemental restraint system (SRS) must be disabled. Refer to "Disabling the Supplemental Restraint System (SRS)" in this section.

Removal and installation Procedure
1. Disable the supplemental restraint system (SRS). Refer to "Disabling the SRS" in this section.
2. Remove the connector position assurance lock, which is tethered to the SDM connector.
3. Disconnect the SDM electrical connector.
4. Remove the SDM mounting nuts and grounding nut.

Installation Notice
5. Remove the SDM.
6. Installation should follow the removal procedure in the reverse order.
Notice: Enable the SRS. Refer to "Enabling the SRS" in this section.
DRIVER AIRBAG MODULE

Removal and installation Procedure

1. Disconnect the negative battery cable.
   
   Caution: The SDM can maintain sufficient voltage to deploy the airbags for 0.15 seconds after the ignition is OFF and the airbag fuse has been removed. If the airbags are not disconnected, service cannot begin until one minute has passed after disconnecting power to the SDM. If the airbags are disconnected, service can begin immediately without waiting for one-minute time period to expire. Failure to temporarily disable the SRS during service result in unexpected deployment, personal injury, and otherwise unneeded SRS repair.

2. Disable the supplemental restraint system (SRS). Refer to “Disabling the SRS” in this section.

3. Position the steering wheel straight ahead.

4. Remove the driver airbag module mounting bolts.

   Installation Notice

   | Tightening Torque | 8 N•m (71 lb-in) |

Caution: When handling an airbag module, always keeps the top of the unit facing upward. This leaves room for the airbag to expand if the module unexpectedly deploys. Without room for expansion, a module suddenly propelled toward a person or object can cause injury or vehicle damage.

5. Remove the connector from the horn terminal and the driver airbag module.

6. Remove the driver airbag module.

7. Installation should follow the removal procedure in the reverse order.
CLOCK SPRING

Removal and installation Procedure

_Caution:_ The SDM can maintain sufficient voltage to deploy the airbags for 0.15 seconds after the Ignition is OFF and the airbag fuse has been removed. If the airbags are not disconnected, service cannot begin until one minute has passed after disconnecting power to the SDM. If the airbags are disconnected, service can begin immediately without waiting for one-minute time period to expire. Failure to temporarily disable the SRS during service result in unexpected deployment, personal injury, and otherwise unneeded SRS repair.

1. Disconnect the negative battery cable.
2. Remove the driver airbag module. Refer to “Driver Airbag Module” in this section.
3. Remove the steering wheel. Refer to _Section 6E, Steering Wheel and Column_.
4. Remove the steering column cover. Refer to _Section 6E, Steering Wheel and Column_.
5. Carefully full the instrument panel lower cover.
6. Remove driver side knee bolster.
7. Disconnect the clock spring, horn and remote audio control connectors at the lower steering column.
8. Remove the screws and the clock spring from the steering shaft.

**Installation Notice**

| Tightening Torque | 4 N•m (35 lb-in) |

- Turning the clock spring more than three turns clockwise or counterclockwise can damage the spring.
- Align the clock spring before installation. Turn the lobe of the clock spring clockwise to lock but do not force. Then turn the lobe of clock spring count clockwise approximately three turns to the neutral position, with the front of the wheels straight ahead. Properly align the pointed marks on the components of the clock spring.

9. Installation should follow the removal procedure in the reverse order.

_Caution:_ If the clock spring is not properly aligned, the steering wheel may not be able to rotate completely during a turn. Restricted turning ability can cause the vehicle to crash. Improper alignment of the clock spring also may make the supplemental restraint system (SRS) inoperative, preventing the airbag from deploying during crash. Both of the out comes can result in injury.
PASSENGER AIRBAG MODULE

Removal and installation Procedure

Caution: The SDM can maintain sufficient voltage to deploy the airbags for 0.15 seconds after the Ignition is OFF and the airbag fuse has been removed. If the airbags are not disconnected, service cannot begin until one minute has passed after disconnecting power to the SDM. If the airbags are disconnected, service can begin immediately without waiting for one-minute time period to expire. Failure to temporarily disable the SRS during service result in unexpected deployment, personal injury, and otherwise unneeded SRS repair.

1. Disconnect the negative battery cable.
2. Remove the glove box. Refer to Section 9E, Instrumentation/Driver Information.
3. Disconnect the passenger airbag yellow electrical connector.
4. Remove two nuts from the airbag bracket.

Installation Notice

| Tightening Torque | 16 N•m (12 lb-ft) |

5. Remove the passenger airbag module from the instrument panel by pushing back side of passenger airbag.
6. Installation should follow the removal procedure in the reverse order.

FRONT SEAT BELT PRETENSIONER

For removal and installation refer to Section 8A, Seat Belts.
AIRBAG MODULE DEPLOYMENT (IN VEHICLE)

Deploy airbags before disposing of them. If a vehicle to be scraped, the airbag may be deployed inside the vehicle.

Caution: To avoid injury while deploying an airbag or a pretensioner in the vehicle, observe the following precaution:

- Before deploying the airbags, remove all loose objects from the airbag’s expansion area.
- Deploy the airbags with the vehicle doors closed and the side windows open.
- Deploy the airbags only in an evacuated area. Service personnel who must be present during the deployment should be at least 10 meters (33 feet) in front of the vehicle.
- Do not connect the voltage source until after having completed all other preparations for the deployment of the airbags.
- Allow a deployed airbag module or pretensioner to cool for at least 30 minutes before handling.
- Wear gloves and eye protection during the disposal procedure.
- If the deployment fails, disconnect the voltage source and wait 5 minutes before approaching the vehicle.

Deployment Procedure

Caution: The SDM can maintain sufficient voltage to deploy the airbags for 0.15 seconds after the Ignition is OFF and the airbag fuse has been removed. If the airbags are not disconnected, service cannot begin until one minute has passed after disconnecting power to the SDM. If the airbags are disconnected, service can begin immediately without waiting for one-minute time period to expire. Failure to temporarily disable the SRS during service result in unexpected deployment, personal injury, and otherwise unneeded SRS repair.

1. Disconnect both battery cables and place the battery at least 10 meters (33 feet) from the vehicle.
2. Remove the knee bolster from the steering column. Refer to Section 9G, Interior Trim.
3. At the lower steering column, cut the two wires leading from the supplemental restraint system (SRS) harness to the clock spring.
4. Strip 13 mm (0.5 inch) of the insulation from the end of the wires leading to the clock spring.
5. Use two additional wires, each at least 10 meters (33 feet) long, to reach from the deployment battery to the inflator module.
6. Strip 13 mm (0.5 inch) of the insulation from the ends of these two additional wires.
7. Twist the two wires together at one end.
8. Place the twisted ends of the two wires near the deployment battery. Do not connect the wires to the battery at this time.
9. Using the free ends of the 10 meters (33 feet) wires leading to the clock spring, make two splices, one at each wires from the airbag modules.
10. Wrap the wires with insulation tape.
11. Now that the free ends of the 10 meters (33 feet) wires are spliced to the airbag module wires, and the ends that are twisted together are near the deployment battery, clear the area.
12. Untwist the wires that near the deployment battery.
13. Touch one wire to the positive battery terminal and touch the other wire to the negative battery terminal. The airbag will deploy.
14. Repeat the procedure for the passenger airbag and pretensioners.
15. Using proper precautions, dispose of the deployed airbag/pretensioner. Refer to “Deployed Airbag Module Disposal Procedure” in this section.
AIRBAG MODULE DEPLOYMENT (OUTSIDE OF VEHICLE)

If the vehicle is within the warranty period, contact the Daewoo regional service manager for approval or special instructions before deploying the airbag modules.

Deploy airbag modules in following situations:

- If the vehicle is to be scrapped. Refer to “Airbag Module Deployment (Inside of Vehicle)” in this section.
- If an airbag module is damaged during transit, storage, or service.

Caution: to avoid injury while deploying an airbag module or pretensioner outside the vehicle, observe following precaution:

- Deploy the airbags only in an evacuated area. Service personnel who must be present during the deployment should be at least 10 meters (33 feet) in front of the airbag module.
- Do not connect the voltage source until after having completed all other preparations for the deployment of the airbags.
- Allow a deployed airbag module or pretensioner to cool for at least 30 minutes before handling.
- Wear gloves and eye protection during the disposal procedure.
- If the deployment fails, disconnect the voltage source and wait 5 minutes before approaching the vehicle.

1. Position the airbag module face up, on flat ground outdoors, at least 10 meters (33 feet) from the any obstacles or people.
2. Place a vehicle battery at least 10 meters (33 feet) away from the airbag module.

3. Deploy the airbag module using the deployment tool.
4. If you do not have deployment tool follow below procedure.
5. Cut the yellow wires to the airbag module/pretensioner.
6. Strip 13 mm (0.5 inch) of the insulation from the end of the wires leading to the airbag module/pretensioner.
7. Use two additional wires, each at least 10 meters (33 feet) long, to reach from the deployment battery to the airbag module/pretensioner.
8. Strip 13 mm (0.5 inch) of the insulation from the ends of these two additional wires.
9. Twist the two wires together at one end.
10. Place the twisted ends of the two wires near the deployment battery. Do not connect the wires to the battery at this time.
11. Using the free ends of the 10 meters (33 feet) wires leading to the airbag module/pretensioner, make two splices, one at each wires from the airbag module/pretensioner.
12. Wrap the splices with insulating tape.
13. Now that the free ends of the 10 meters (33 feet) wires are spliced to the airbag module/pretensioner wires, and the ends that are twisted together are near the deployment battery, clear the area.
14. Untwist the wires that near the deployment battery.
15. Touch one wire to the positive battery terminal and touch the other wire to the negative battery terminal. The airbag module/pretensioner will deploy.
DEPLOYED AIRBAG MODULE DISPOSAL PROCEDURE

Caution: After deployment, a powdery residue may be on the surface of the airbag. The powder consists primarily of cornstarch (used to lubricate the bag as it inflates) and by-products of the chemical reaction. Sodium hydroxide dust (similar to lye soap) is produced as a by-product of the deployment reaction. The sodium hydroxide then quickly reacts with atmospheric moisture and is converted to sodium carbonate and sodium bicarbonate (also known as baking soda). Therefore, it is unlikely that sodium hydroxide will be present after deployment.

Caution: Wear gloves and eye protection during the disposal procedure.

Caution: After deployment, the metal surfaces of the airbag module will be hot. In order to avoid the risk of an injury or a fire, do not place the deployed airbag module near any flammable objects, and allow the airbag module to cool for 30 minutes before handling.

Deploy an airbag or pretensioner before disposing of it. This includes those in a whole vehicle being scrapped. If the vehicle is still within the warranty period contact the Daewoo regional service manager for approval or special instructions before deploying an airbag module or a pretensioner. Deployed airbag module or pretensioner should be disposed of in the same manner as other scrap parts, with the addition of the following steps:

1. Place the deployed airbag or pretensioner in a sturdy plastic bag.
2. Seal the plastic bag securely.
3. Wash your hands and rinse them with water after handling a deployed airbag.

SRS WIRING REPAIR

Connector Repair

Caution: Before attempting any repairs, the SRS must be disabled. Refer to “Disabling the SRS” in this section for instructions on how to disable the SRS.

The terminals in the SRS are made of special metal to provide necessary contact integrity for the sensitive, low-energy circuits. These terminals are available only in connector repair assembly packs. Do not substitute any other terminals for those in the assembly packs.

Wire Repair

Caution: Before attempting any repairs, the SRS must be disabled. Refer to “Disabling the SRS” in this section for instructions on how to disable the SRS.

Do not repair any wires of supplemental restraint system (SRS). Replace any damaged wires with new one.
### SPECIFICATIONS

#### GENERAL SPECIFICATION

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<th>Application</th>
<th>Description</th>
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<td>Detection Time</td>
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<td>Operating Temperature</td>
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<td>Storage Temperature</td>
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<tr>
<td>Airbag Replacement interval</td>
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<td>Squib Resistance</td>
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#### FASTENER TIGHTENING SPECIFICATIONS

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