



DIAGNOSTIC TROUBLE CODE (DTC) 21

DRIVER DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

When the ignition switch is turned ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, Ignition 1 and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with the resistance measurement test. Driver low terminal 3 is grounded through a current sink. The driver current source is connected to the driver high terminal 2 to allow a known amount of current to flow. By monitoring the voltage difference between driver high and driver low, the SDM calculates the combined resistance of the driver inflator module, the clock spring, the harness wiring, and the connector terminal contacts.

DTC 21

DTC 21 will set when the resistance of the driver deployment loop is above a specified value. The test is run once each ignition cycle during the resistance measurement test when the following conditions exist:

- No higher priority faults are detected when the ignition is turned ON.
- Ignition 1 voltage is above a specified value.

When the DTC 21 is set, the SDM will turn on the AIRBAG.

DTC 21 will clear when the ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection from the driver airbag to the clock spring, the clock spring to the steering column connector, or SDM terminals 2 or 3. The test for this DTC is run only while the AIRBAG indicator is performing the turn-on test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until the next ignition cycle.

Test Description

The numbers below refer to steps on the diagnostic table.

2. Refer to the first caution below.
11. Refer to the third caution below.

DTC 21 – Driver Deployment Loop Resistance High

CAUTION : The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.

CAUTION : Never measure the resistance of an inflator module with an ohmmeter. The ohmmeter battery could unexpectedly deploy the airbag which would create the possibility of severe injury and would require the replacement of otherwise useable components.

CAUTION : During service procedures, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental inflatable restraints (SIR) system when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.

Important : Be careful not to spread or deform the terminals of the clock spring connector.

Step	Action	Value(s)	Yes	No
1	Perform the supplemental inflatable restraints (SIR) Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	1. Disable the SIR system. Refer to "Disabling the SIR System" in this section. 2. Inspect the yellow clock spring connector at the lower steering column. Is a faulty connector or terminal, or a loose wire detected?		Go to Step 3	Go to Step 4
3	1. Replace the faulty connector, terminal, or wire. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
4	1. Disconnect the sensing and diagnostic module (SDM) connector. 2. Check terminals 2 and 3 for loose terminals or wires. Is a problem found?		Go to Step 5	Go to Step 6
5	Replace the loose terminals or wires at the SDM connector. Is the repair complete?		Go to "SIR Diagnostic System Check"	
6	1. Reconnect the SDM. 2. Disconnect the yellow clock spring connector. 3. Use adapter kit J-35616-A for this test. Connect jumper between the two terminals on the SDM side of the clock spring connector. This may set Diagnostic Trouble Code (DTC) 22. Refer to "Diagnostic Illustration 8" in this section. 4. Reinstall the airbag fuse which was removed when disabling the SIR system. 5. Turn the ignition ON. 6. Check for DTCs with the scan tool. Is DTC 21 still present?		Go to Step 7	Go to Step 8
7	1. Disable the SIR system. 2. Repair the open circuit between the SDM terminals 2 or 3 and the clock spring connector at the lower steering column. Is the repair complete?		Go to "SIR Diagnostic System Check"	

Step	Action	Value(s)	Yes	No
8	<ol style="list-style-type: none"> 1. Disable the SIR system. 2. Disconnect the driver airbag. 3. Connect the load tool J-38715 in place of the driver airbag. 4. Reinstall the airbag fuse that was removed when disabling the SIR system. 5. With the ignition OFF, connect the scan tool. 6. Turn the ignition ON. 7. Check the DTCs with the scan tool. Is DTC 21 still a current DTC code?		Go to <i>Step 9</i>	Go to <i>Step 10</i>
9	<ol style="list-style-type: none"> 1. Turn the ignition to LOCK. 2. Disable the SIR system. 3. Replace the clock spring. 4. Connect all the SIR system components. 5. Check the DTCs with the scan tool. Is DTC 21 still a current DTC code?		Go to <i>Step 11</i>	Go to "SIR Diagnostic System Check"
10	<ol style="list-style-type: none"> 1. Turn the ignition to LOCK. 2. Disable the SIR system. 3. Replace the driver airbag. 4. Reconnect all of the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
11	<ol style="list-style-type: none"> 1. Turn the ignition to LOCK. 2. Disable the SIR system. 3. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 4. Connect all the SIR system components. 5. Make sure all the components are mounted properly. Is the repair complete?		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 22

DRIVER DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

When the ignition switch is turned ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, Ignition 1 and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with the resistance measurement test. Driver low terminal 3 is grounded through a current sink. The driver current source is connected to the driver high terminal 2 to allow a known amount of current to flow. By monitoring the voltage difference between driver high and driver low, the SDM calculates the combined resistance of the driver inflator module, the clock spring, the harness wiring, and the connector terminal contacts.

DTC 22

DTC 22 will set when the resistance of the driver deployment loop is below a specified value. The test is run once each ignition cycle during the resistance measurement test when the following conditions exist:

- No higher priority faults are detected when the ignition is turned ON.
- Ignition 1 voltage is below a specified value.

When DTC 22 is set, the SDM will turn on the AIRBAG indicator.

DTC 22 will clear when the ignition switch is turned OFF or the scan tool CLEAR CODES command is received.

Diagnostic Aids

An intermittent condition is likely to be caused by a short between driver high and driver low or between driver high and passenger low. This condition could also be caused by a faulty clock spring or a faulty shorting bar in the clock spring steering column connector. The test for this DTC is run only while the AIRBAG indicator is performing the turn-on test. When a scan tool CLEAR CODES command is issued and the malfunction is still present, the DTC will not reappear until the next ignition cycle.

Test Description

The numbers below refer to steps on the diagnostic table.

3. Refer to the first caution below.
15. Refer to the third caution below.

DTC 22 – Driver Deployment Loop Resistance Low

CAUTION : *The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.*

CAUTION : *Never measure the resistance of an inflator module with an ohmmeter. The ohmmeter battery could unexpectedly deploy the airbag which would create the possibility of severe injury and would require the replacement of otherwise useable components.*

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CAUTION : *During service procedures, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental inflatable restraint (SIR) system when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.*

Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	Check for additional current DTCs. Is DTC 16 also current?		Go to Step 3	Go to Step 4
3	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Repair the short from driver high to passenger high. Is the repair complete?		Go to "SIR Diagnostic System Check"	
4	1. Disconnect the clock spring yellow two-way connector located on the steering column. 2. Inspect the connector for damage. Is a faulty component, connector, terminal, or wire detected?		Go to Step 5	Go to Step 6
5	1. Replace the faulty connector, component, terminal, or wire. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
6	Visually check the SDM connector terminals 2 and 3 for shorted terminals or wires. Is a problem found?		Go to Step 7	Go to Step 8
7	1. Replace the shorted terminals or wires. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
8	With the SDM disconnected, use an ohmmeter to check the SDM harness connector for a short between terminal 2 (driver high) and terminal 4 (passenger low). Use connector test adapter kit J-35616-A. Refer to "Diagnostic Illustration 9" in this section. Is there a short between driver high and passenger low?	0Ω	Go to Step 9	Go to Step 10
9	1. Repair the short circuit. 2. Connect all the SIR system components. Is the repair complete?	0Ω	Go to "SIR Diagnostic System Check"	

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Step	Action	Value(s)	Yes	No
10	<ol style="list-style-type: none"> 1. Remove the driver airbag. 2. At the SDM connector, use an ohmmeter to check for a short between the driver high (terminal 2) and driver low (terminal 3). Refer to "Diagnostic Illustration 10" in this section. <p>Is there a short circuit between the driver high and driver low circuits?</p>	0Ω	Go to <i>Step 13</i>	Go to <i>Step 11</i>
11	<ol style="list-style-type: none"> 1. While the ignition is OFF, connect the scan tool. 2. Turn the ignition ON. 3. Clear the current DTC codes with the scan tool. 4. Turn the ignition OFF. 5. Remove the key. 6. Disconnect the driver airbag. 7. Connect the load tool J-38715 in place of the driver airbag. 8. Turn the ignition ON. 9. Check the DTCs with the scan tool. <p>Is DTC 22 still a current DTC code?</p>		Go to <i>Step 16</i>	Go to <i>Step 12</i>
12	<ol style="list-style-type: none"> 1. Replace the driver airbag. 2. Connect all the SIR system components. 3. Command CLEAR CODES with the scan tool. <p>Is the repair complete?</p>		Go to "SIR Diagnostic System Check"	
13	<ol style="list-style-type: none"> 1. Disconnect the yellow clock spring connector on the steering column. 2. At the SDM connector, use an ohmmeter to check for a short between the driver high (terminal 2) and driver low (terminal 3). Refer to "Diagnostic Illustration 10" in this section. <p>Is there a short circuit between the driver high and driver low circuits?</p>	0Ω	Go to <i>Step 15</i>	Go to <i>Step 14</i>
14	<ol style="list-style-type: none"> 1. Turn the steering wheel to the straight-ahead position. 2. Replace the clock spring. 3. Connect all the SIR system components. <p>Is the repair complete?</p>		Go to "SIR Diagnostic System Check"	
15	<p>Repair the shorted driver high and driver low wires between the SDM and the clock spring.</p> <p>Is the repair complete?</p>		Go to "SIR Diagnostic System Check"	
16	<ol style="list-style-type: none"> 1. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 2. Connect all the SIR system components. 3. Make sure all the components are properly mounted. <p>Is the repair complete?</p>		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 24

DRIVER DEPLOYMENT LOOP SHORT TO GROUND

Circuit Description

When the ignition switch is turned ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, Ignition 1 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 3) and passenger low (terminal 4) to detect shorts to ground in the deployment loops.

DTC 24

DTC 24 will set if the voltage at driver low falls below a specified value, and Ignition 1 is within the normal operating voltage range.

This test is run during turn-on tests and every 100 milliseconds during continuous monitoring.

When DTC 24 is set, the SDM will turn on the AIRBAG indicator. DTC 71 will also set.

DTC 24 will clear when the malfunction is no longer occurring and the SDM has been replaced. DTC 24 cannot be cleared with the scan tool.

Diagnostic Aids

Carefully inspect the wires in the driver loop for cutting or chafing.

Test Description

The numbers below refer to steps on the diagnostic table.

2. Refer to the first caution below.
11. Refer to the third caution below.

DTC 24 – Driver Deployment Loop Short to Ground

CAUTION : *The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.*

CAUTION : *Never measure the resistance of an inflator module with an ohmmeter. The ohmmeter battery could unexpectedly deploy the airbag which would create the possibility of severe injury and would require the replacement of otherwise useable components.*

CAUTION : *During service procedures, be very care-*

ful when handling the SDM. Never strike or jar the SDM. Never power the supplemental inflatable restraints (SIR) system when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR System. 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.

Important : A careful inspection of the circuits and components indicated on the DTC 24 chart is essential to ensure that the replacement SDM will not be damaged. When DTC 24 has been set, it is necessary to replace the SDM.

Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Visually inspect the driver's the 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. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
4	1. Disconnect the yellow clock spring connector on the steering column. 2. At the SDM connector, use an ohmmeter to check for a short between the driver high (terminal 2) and terminal 6 (ground). Refer to "Diagnostic Illustration 11" in this section. Is the resistance equal to the specified value?		Go to Step 6	Go to Step 5
5	1. Repair the short to ground in the driver high circuit between the clock spring connector and the SDM. 2. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
6	Measure the resistance at the SDM connector between terminal 3 and terminal 6 (ground). Refer to "Diagnostic Illustration 12" in this section. Is the resistance equal to the specified value?		Go to Step 8	Go to Step 7

Step	Action	Value(s)	Yes	No
7	1. Repair the short to ground in the driver low circuit between the SDM and the clock spring connector. 2. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
8	1. Temporarily remove the driver airbag. 2. Reconnect the yellow clock spring connector on the steering column. 3. At the SDM connector, use an ohmmeter to check for a short between the driver high (terminal 2) and terminal 6 (ground). Refer to "Diagnostic Illustration 11" in this section. Is the resistance equal to the specified value?		Go to <i>Step 10</i>	Go to <i>Step 9</i>
9	1. Turn the ignition to LOCK. 2. Remove the key. 3. Turn the steering wheel to the straight-ahead position. 4. Disconnect the yellow clock spring connector on the steering column. 5. Replace the clock spring. 6. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 7. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
10	Measure the resistance at the SDM connector between terminal 3 and terminal 6 (ground). Refer to "Diagnostic Illustration 12" in this section. Is the resistance equal to the specified value?		Go to <i>Step 11</i>	Go to <i>Step 9</i>
11	1. Disconnect the yellow clock spring connector on the steering column. 2. Replace the driver airbag. 3. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 4. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 25

DRIVER DEPLOYMENT LOOP SHORT TO VOLTAGE

Circuit Description

When the ignition switch is turned ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, Ignition 1 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 3) and passenger low (terminal 4) to detect shorts to voltage in the deployment loops.

DTC 25

DTC 25 will set if the driver low is above 5 volts for 500 milliseconds while the passenger low is below 5 volts, and Ignition 1 is within the normal operating voltage range. This test is run during turn-on tests and every 100 milliseconds during continuous monitoring.

When DTC 25 is set, the SDM will turn on the AIRBAG indicator.

DTC 25 will clear when the voltage measured at driver low is below 4 volts for 500 milliseconds or the ignition is turned OFF.

Diagnostic Aids

Carefully inspect the wires in the driver loop for cutting or chafing.

Test Description

The numbers below refer to steps on the diagnostic table.

2. Refer to the first caution below.
11. Refer to the third caution below.

DTC 25 – Driver Deployment Loop Short to Voltage

CAUTION : *The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.*

CAUTION : *Never measure the resistance of an inflator module with an ohmmeter. The ohmmeter battery could unexpectedly deploy the airbag which would create the possibility of severe injury and would require the replacement of otherwise useable components.*

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CAUTION : *During service procedures, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental inflatable restraints (SIR) system when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.*

Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Visually 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 SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
4	1. Disconnect the yellow clock spring connector on the steering column. 2. At the SDM connector, use an multimeter to check voltage between the driver high (terminal 2) and terminal 6 (ground). Refer to "Diagnostic Illustration 13" in this section. Is the voltage greater than the specified value?	5 v	Go to Step 5	Go to Step 6
5	1. Repair the short to voltage in the driver high circuit between the clock spring connector and the SDM. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
6	Measure the voltage at the SDM connector between terminal 3 and terminal 6 (ground). Refer to "Diagnostic Illustration 14" in this section. Is the voltage greater than the specified value?	5 v	Go to Step 7	Go to Step 8
7	1. Repair the short to voltage in the driver low circuit between the SDM and the clock spring connector. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	

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Step	Action	Value(s)	Yes	No
8	<ol style="list-style-type: none"> 1. Temporarily remove the driver airbag. 2. Reconnect the yellow clock spring connector on the steering column. 3. At the SDM connector, use a multimeter to check voltage between the driver high (terminal 2) and terminal 6 (ground). Refer to "Diagnostic Illustration 13" in this section. <p>Is the voltage greater than the specified value?</p>		Go to <i>Step 9</i>	Go to <i>Step 10</i>
9	<ol style="list-style-type: none"> 1. Turn the ignition to LOCK. 2. Remove the key. 3. Turn the steering wheel to the straight-ahead position. 4. Disconnect the yellow clock spring connector on the steering column. 5. Replace the clock spring. 6. Connect all the SIR system components. <p>Is the repair complete?</p>		Go to "SIR Diagnostic System Check"	
10	<p>Measure the voltage at the SDM connector between terminal 3 and terminal 6 (ground). Refer to "Diagnostic Illustration 14" in this section.</p> <p>Is the voltage greater than the specified value?</p>		Go to <i>Step 9</i>	Go to <i>Step 11</i>
11	<ol style="list-style-type: none"> 1. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 2. Connect all the SIR system components. <p>Is the repair complete?</p>		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 26

DRIVER DEPLOYMENT LOOP OPEN

Circuit Description

When the ignition switch is turned ON, the sensing and diagnostic module (SDM) will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, Ignition 1 and deployment loop voltages are measured to ensure that they are within their respective normal voltage ranges. The SDM then proceeds with the resistance measurement test. Driver low terminal 4 is grounded through a current sink. The driver current source is connected to the driver high terminal to allow a known amount of current to flow. By monitoring the voltage difference between driver high and driver low, the SDM calculates the combined resistance of the driver inflator module, the harness wiring, and the connector terminal contacts.

DTC 26

DTC 26 will set when the resistance of the driver deployment loop is above a specified value for 500 milliseconds. The resistance is monitored during the deployment loop continuity test and continuous monitoring.

When DTC 26 is set, the SDM will turn on the AIRBAG indicator.

DTC 26 will clear when the voltage measured at driver low is below a specified value for 500 milliseconds or the ignition is turned OFF.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection, either at the driver airbag or clock spring connectors or SDM terminals 2 and 3. An open wire in the driver deployment loop will also set DTC 26. To test for a faulty SIR clock spring, clear the DTCs, then turn the steering wheel back and forth with the ignition switch ON. If the AIRBAG indicator comes on and DTC 26 has set again, it is likely that the clock spring is faulty.

Test Description

The numbers below refer to steps on the diagnostic table.

4. This test establishes that the problem is either in the clock spring or the driver airbag.
7. Refer to the important below.
10. Refer to the first caution below.
14. Refer to the third caution below.

DTC 26 – Driver Deployment Loop Open

CAUTION : The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.

CAUTION : Never measure the resistance of an inflator module with an ohmmeter. The ohmmeter battery could unexpectedly deploy the airbag which would create the possibility of severe injury and would require the replacement of otherwise useable components.

CAUTION : During service procedures, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental inflatable restraints (SIR) when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.

Important : Avoid deforming the terminals of the clock spring-to-airbag connector.

Step	Action	Value(s)	Yes	No
1	Perform the Supplemental Inflatable Restraints (SIR) Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	1. Turn the ignition to LOCK. 2. Remove the key. 3. Check the clock spring yellow two-pin connector which is located near the lower steering column. Is the connector loose or disconnected?		Go to Step 4	Go to Step 3
3	Connect the loose or disconnected wiring connector. Is the repair complete?		Go to "SIR Diagnostic System Check"	
4	1. Disable the SIR system. Refer to "Disabling the SIR System" in this section. 2. Disconnect the driver airbag. 3. Connect the load tool J-38715 in place of the driver airbag. 4. Reinstall the airbag fuse. 5. Turn the ignition ON. 6. Check the diagnostic trouble codes (DTCs) with the scan tool. Is DTC 26 still a current DTC code?		Go to Step 6	Go to Step 5
5	1. Disable the SIR system. Refer to "Disabling the SIR System" in this section. 2. Replace the driver airbag. 3. Reconnect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
6	1. Disable the SIR system. Refer to "Disabling the SIR System" in this section. 2. Examine the connections at the SDM terminals 2 and 3. Are there any damaged pins, loose wires, or backed-out terminals on the connector?		Go to Step 7	Go to Step 8
7	1. Repair any loose wires, damaged pins, or backed-out terminals. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	

Step	Action	Value(s)	Yes	No
8	Use an ohmmeter to check both driver deployment wires for an open circuit between the SDM connector (terminals 2 and 3) and the clock spring connector. Refer to "Diagnostic Illustration 15" in this section. Is either wire open?		Go to <i>Step 9</i>	Go to <i>Step 10</i>
9	1. Replace any open wires between the SDM and the clock spring. 2. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
10	1. Turn the ignition to LOCK. 2. Remove the key. 3. Disconnect the yellow clock spring connector which is located near the lower steering column. 4. Connect the SDM connector. 5. Connect a jumper between the terminals on the SDM side of the clock spring connector. This will set DTC 22. Connector test adapter kit J-35616-A is helpful for this test. Refer to "Diagnostic Illustration 8" in this section. 6. Connect the scan tool. 7. Reinstall the airbag fuse. 8. Turn the ignition ON. Is DTC 26 still current?		Go to <i>Step 11</i>	Go to <i>Step 12</i>
11	1. Disable the SIR system. Refer to "Disabling the SIR System" in this section. 2. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. Is the repair complete?		Go to "SIR Diagnostic System Check"	
12	1. Disable the SIR system. Refer to "Disabling the SIR System" in this section. 2. Replace the clock spring. 3. Connect all the SIR system components. 4. Enter the CLEAR CODES command with the scan tool. Is the repair complete?		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 51

DEPLOYMENT COMMANDED

Circuit Description

The sensing and diagnostic module (SDM) contains a sensing device which converts vehicle velocity changes to an electrical signal. The electrical signal generated is processed by the SDM and then compared to a value stored in memory. When the generated signal exceeds the stored value, additional signal processing is performed and the generated signals are compared to signals stored in memory. When two of the generated signals exceed the stored values, the SDM will cause sufficient current to flow through the inflator modules to deploy the airbags and cause DTC 51 to be set.

DTC 51

DTC 51 will set when the SDM detects a frontal crash with-

in 30 degrees of the centerline of the vehicle, of sufficient force to warrant deployment of the airbags.

When DTC 51 is set, the SDM turns on the AIRBAG indicator and records crash data.

DTC 51 will clear when the SDM is replaced. This code cannot be cleared with a scan tool.

Test Description

The numbers below refer to steps on the diagnostic table.

2. If there is no evidence of an impact, DTC 51 may have been set falsely.
5. Refer to the cautions below.

DTC 51 – Deployment Commanded

CAUTION : *The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.*

CAUTION : *During service procedures, be very careful when handling the SDM. Never strike or jar the*

SDM. Never power the supplemental inflatable restraints (SIR) when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.

Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	1. Turn the ignition to LOCK. 2. Remove the key. 3. Check for deployed airbags. Have the airbags deployed?		Go to Step 3	Go to Step 4
3	1. Remove the airbag fuse. 2. Turn the steering wheel to the straight-ahead position. 3. Perform the inspections and replace the components as directed in "Repairs and Inspections Required After An Accident" in this section. 4. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 5. Connect all the SIR system components. 6. Make sure that all components are properly mounted. 7. Reinstall the airbag fuse. 8. Use a scan tool to clear the SIR DTCs. Are the repairs complete?		Go to "SIR Diagnostic System Check"	
4	Inspect the front of the vehicle and undercarriage for signs of impact. Are there any signs of impact?		Go to Step 3	Go to Step 5
5	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. 4. Make sure all the components are properly mounted. Are the repairs complete?		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 53 DEPLOYMENT COMMANDED WITH LOOP FAULTS PRESENT

Circuit Description

The sensing and diagnostic module (SDM) contains sensing device which converts vehicle velocity changes to an electrical signal. The electrical signal generated is processed by the SDM and then compared to a value stored in memory. When the generated signal exceeds the stored value, additional signal processing is performed and the generated signals are compared to signals stored in memory. When two of the generated signals exceed the stored values, the SDM will cause sufficient current to flow through the inflator modules to deploy the airbags. DTC 53 is set instead of DTC 51 when a deployment occurs while an inflator circuit fault is present that could possibly result in a no deployment situation in one or both inflator modules.

DTC 53 will set under the following conditions:

- The SDM detects a frontal crash to within 30 degrees from the centerline of the vehicle, of sufficient force to warrant deployment of the air bags.
- An inflator circuit fault is present.

When DTC 53 is set, the SDM turns ON the AIRBAG indicator and records crash data.

DTC 53 will clear when the SDM is replaced. This code cannot be cleared with a scan tool.

Test Description

The numbers below refer to steps on the diagnostic table.

2. If there is no evidence of an impact, DTC 53 may have been set falsely.
5. Refer to the cautions below.

DTC 53 Deployment Commanded With Loop Faults Present

CAUTION : *The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.*

CAUTION : *During service procedures, be very careful when handling the SDM. Never strike or jar the*

SDM. Never power the supplemental inflatable restraints (SIR) when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.

Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	1. Turn the ignition to LOCK. 2. Remove the key. 3. Check for deployed airbags. Have the airbags deployed?		Go to Step 3	Go to Step 4
3	1. Remove the airbag fuse. 2. Turn the steering wheel to the straight-ahead position. 3. Perform the inspections and replace the components as directed in "Repairs and Inspections Required After An Accident" in this section. 4. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 5. Connect all the SIR system components. 6. Make sure all the components are properly mounted. 7. Reinstall the airbag fuse. 8. Use a scan tool to clear the SIR DTCs. Are the repairs complete?		Go to "SIR Diagnostic System Check"	
4	Inspect the front of the vehicle and undercarriage for signs of impact. Are there any signs of impact?		Go to Step 3	Go to Step 5
5	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. 4. Make sure all the components are properly mounted. Are the repairs complete?		Go to "SIR Diagnostic System Check"	



DIAGNOSTIC TROUBLE CODE (DTC) 61

AIRBAG WARNING LAMP CIRCUIT OPEN

Circuit Description

When the ignition switch is first turned ON, Ignition 1 voltage is applied to the indicator lamp and also to the sensing and diagnostic module (SDM) input terminal 10. The SDM responds by flashing the instrument cluster AIRBAG indicator seven times. If the SDM cannot detect voltage on the indicator circuit, a DTC 61 will be set. The SDM also attempts to turn on the AIRBAG indicator, but the indicator will not turn on if inputs have been correctly processed.

DTC 61

DTC 61 will set when, either during the turn-on test or dur-

ing continuous monitoring, the SDM fails to detect voltage at terminal 7, the input terminal for the AIRBAG indicator.

When DTC 61 is set, the SDM attempts to turn on the AIRBAG indicator.

DTC 61 will clear when the ignition switch is turned OFF or the problem is repaired.

Test Description

The numbers below refer to steps on the diagnostic table.

12. Refer to the first caution below.
14. Refer to the cautions below.

DTC 61 – AIRBAG Warning Lamp Circuit Open

CAUTION : The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.

CAUTION : During service procedures, be very careful when handling the SDM. Never strike or jar the

SDM. Never power the supplemental inflatable restraints (SIR) when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.

Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	Check the instrument panel fuse F18. Is fuse F18 blown?		Go to Step 3	Go to Step 4
3	1. Check for a short circuit and repair it, if necessary. 2. Replace the fuse. Is the repair complete?		Go to "SIR Diagnostic System Check"	
4	1. Turn the ignition ON. 2. Check the power supply to fuse F18. Is the voltage equal to the specified value?	11–14 v	Go to Step 6	Go to Step 5
5	Repair the power supply to fuse F18. Is the repair complete?		Go to "SIR Diagnostic System Check"	
6	1. Remove the 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 "SIR Diagnostic System Check"	
8	1. Turn the ignition ON. 2. Check the voltage at instrument cluster connector B12. Is the voltage at B12 equal to the specified value?	11–14 v	Go to Step 10	Go to Step 9
9	Repair the open circuit between the instrument panel fuse F18 and instrument cluster connector B12. Is the repair complete?		Go to "SIR Diagnostic System Check"	
10	Test the instrument cluster printed circuit for continuity between connectors B12 and A1. Is there continuity between B12 and A1 on the printed circuit?		Go to Step 12	Go to Step 11
11	Replace the instrument cluster. Is the repair complete?		Go to "SIR Diagnostic System Check"	

8B – 48 SUPPLEMENTAL INFLATABLE RESTRAINTS (SIR)

Step	Action	Value(s)	Yes	No
12	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Disconnect the SDM electrical connector. 3. Turn the ignition ON. 4. Check the voltage at terminal 7 of the SDM connector. Is the voltage equal to the specified value?	11–14 v	Go to <i>Step 14</i>	Go to <i>Step 13</i>
13	Repair the open circuit between the instrument cluster and the SDM connector terminal 7. Is the repair complete?		Go to "SIR Diagnostic System Check"	
14	1. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 2. Connect all the SIR system components. 3. Make sure all the components are properly mounted. Is the repair complete?		Go to "SIR Diagnostic System Check"	

DIAGNOSTIC TROUBLE CODE (DTC) 71

INTERNAL SENSING AND DIAGNOSTIC MODULE (SDM) FAILURE

Circuit Description

DTC 71 is an indication of a potential internal SDM malfunction of the sensing and diagnostic module (SDM). It will set if any of the following conditions is detected:

- Reserve voltage discharge time has failed for three consecutive ignition cycles.
- The calculated checksum for internal memory does not match the stored value.
- The temporary memory storage area is malfunctioning.
- The permanent memory storage area is malfunctioning.
- The voltage measured at driver low and passenger low are too high.
- The voltage measured at driver low and passenger low are too low.
- The accelerometer inside the SDM is malfunctioning.
- The driver current source and/or passenger current source is malfunctioning.
- The SDM is unable to read from or write to the electronically erasable programmable read-only memory (EEPROM).

- The arming sensor inside the SDM is not closed during a deployment event.

DTC 71 will set when any of the indicated malfunctions is detected by the SDM. The malfunctions are detected at the following times:

- Turn-on.
- Continuous monitoring.
- Resistance measurement test.

When DTC 71 is set, the SDM turns on the AIRBAG indicator.

DTC 71

DTC 71 will clear when a scan tool CLEAR CODES command is received by the SDM. Some of the malfunctions will allow the AIRBAG indicator to turn off only briefly and then turn on again.

Test Description

The number below refers to Step 3 on the diagnostic table.

3. Refer to the cautions below.

DTC 71 – Internal Sensing and Diagnostic Module (SDM) Failure

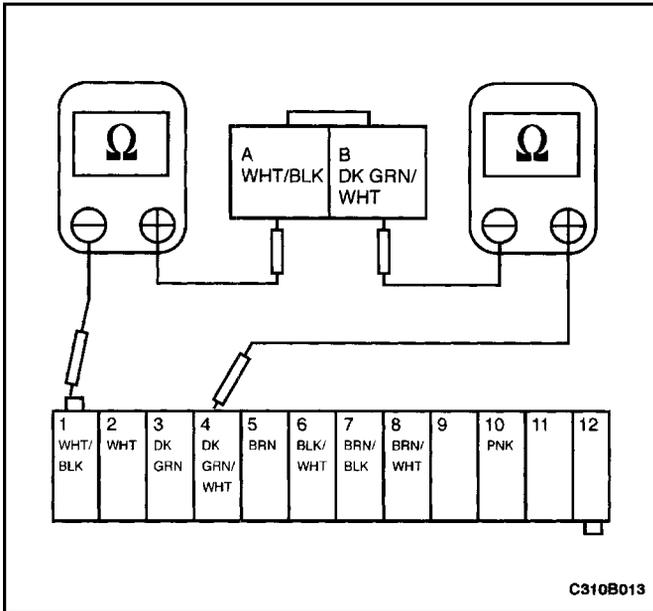
CAUTION : *The sensing and diagnostic module (SDM) can maintain sufficient voltage to deploy the airbags for 10 minutes after the ignition is OFF and the fuse has been removed. If the airbags are not disconnected, do not begin service until 10 minutes have passed after disconnecting power to the SDM. Otherwise, injury could result.*

CAUTION : *During service procedures, be very careful when handling the SDM. Never strike or jar the SDM. Never power the supplemental inflatable restraints (SIR) when the SDM is not rigidly attached to the vehicle. All SDM mounting bolts must be carefully*

tightened, and the SDM arrow must be pointing toward the front of the vehicle to ensure proper operation of the SIR system. 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.

Important : DTCs 18, 24, and 71 cannot be reset if there has been a short to ground in the deployment loops. When DTCs 18 or 24 have been set, it is necessary to replace the SDM. To avoid damaging the replacement SDM, ensure that the short to ground is repaired prior to installing a replacement SDM.

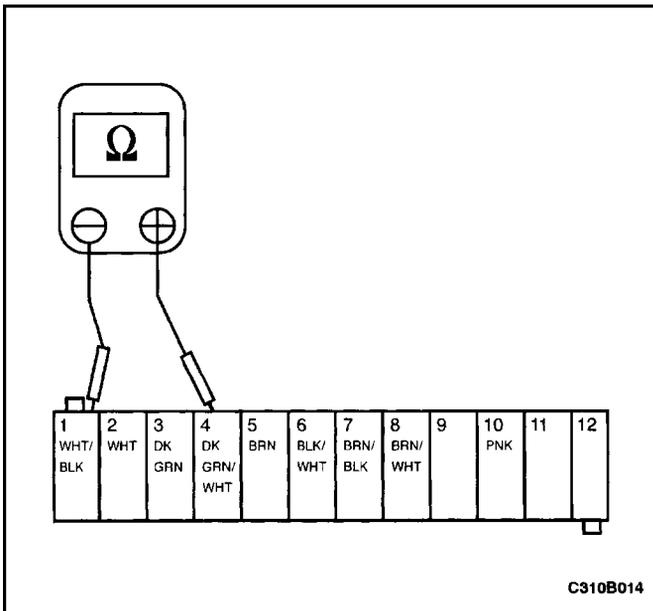
Step	Action	Value(s)	Yes	No
1	Perform the SIR Diagnostic System Check. Is the SIR Diagnostic System Check complete?		Go to Step 2	
2	Check for current or historic DTCs. Is either DTC 18 or 24 also set as a current or a historic DTC?		Go the diagnostic table for DTC 18 or 24	Go to Step 3
3	1. Disable the SIR System. Refer to "Disabling the SIR System" in this section. 2. Replace the SDM. The arrow must be pointing toward the front of the vehicle. 3. Connect all the SIR system components. 4. Make sure that all the components are properly mounted. Is the repair complete?		Go to "SIR Diagnostic System Check"	



CAUTION : Do not use these illustrations to troubleshoot without consulting the diagnostic trouble code (DTC) charts. The DTC charts give additional safety precautions and detailed instructions for each test. Failure to follow the proper precautions can result in injury from unintended airbag deployment.

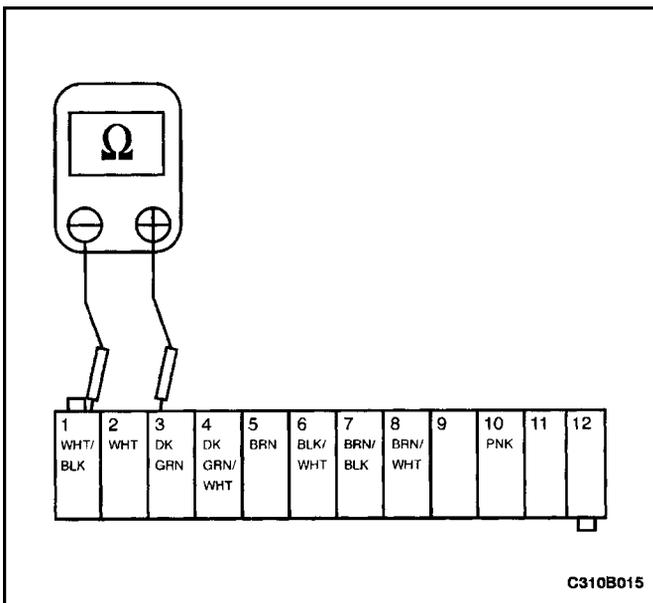
DIAGNOSTIC ILLUSTRATION 1

Checking the continuity between the passenger airbag and the sensing and diagnostic module (SDM).



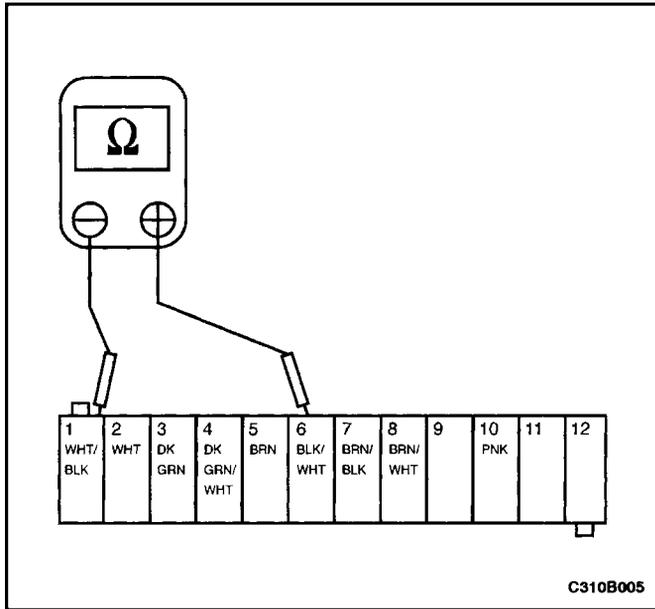
DIAGNOSTIC ILLUSTRATION 2

Checking for a short circuit between the passenger high and low circuits.



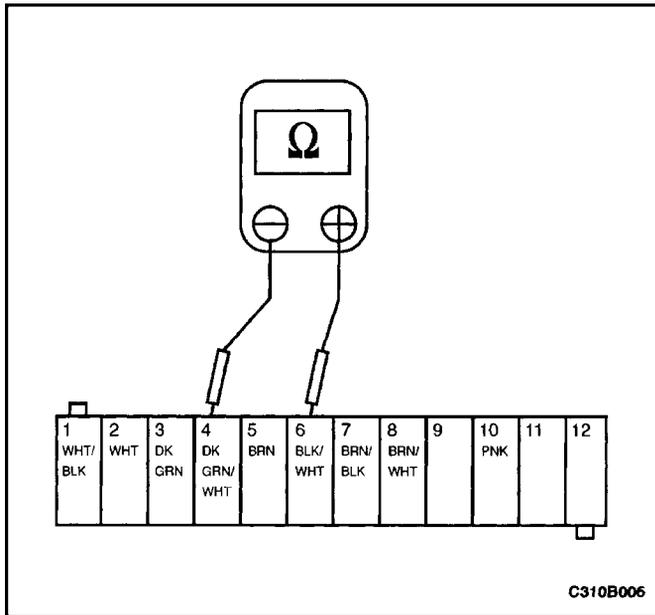
DIAGNOSTIC ILLUSTRATION 3

Checking for a short circuit between the passenger high and driver low circuits.



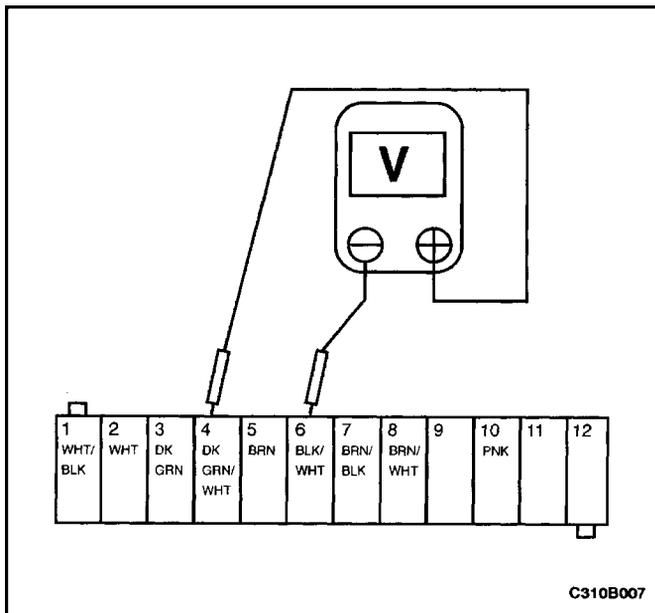
DIAGNOSTIC ILLUSTRATION 4

Checking for a short circuit between the passenger high circuit and ground.



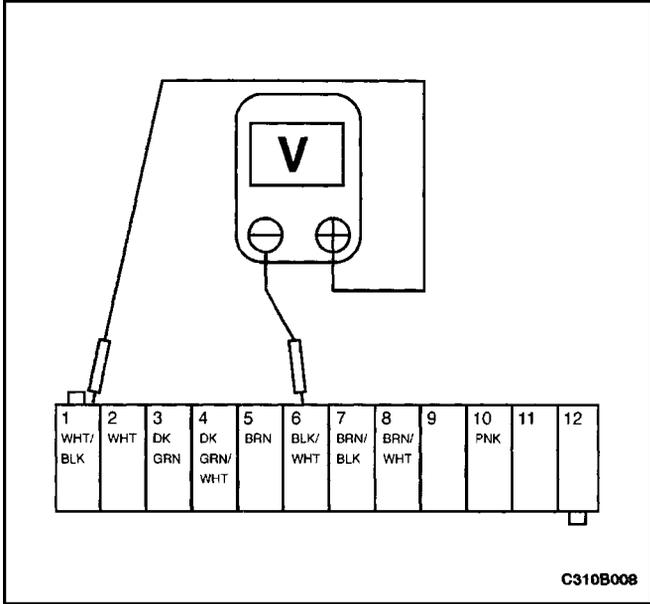
DIAGNOSTIC ILLUSTRATION 5

Checking for a short circuit between the passenger low circuit and ground.



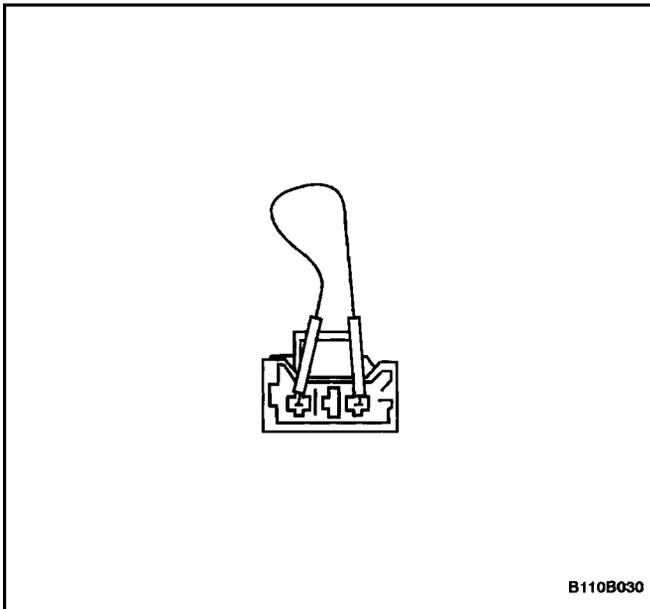
DIAGNOSTIC ILLUSTRATION 6

Checking for a short circuit between the passenger high circuit and voltage.



DIAGNOSTIC ILLUSTRATION 7

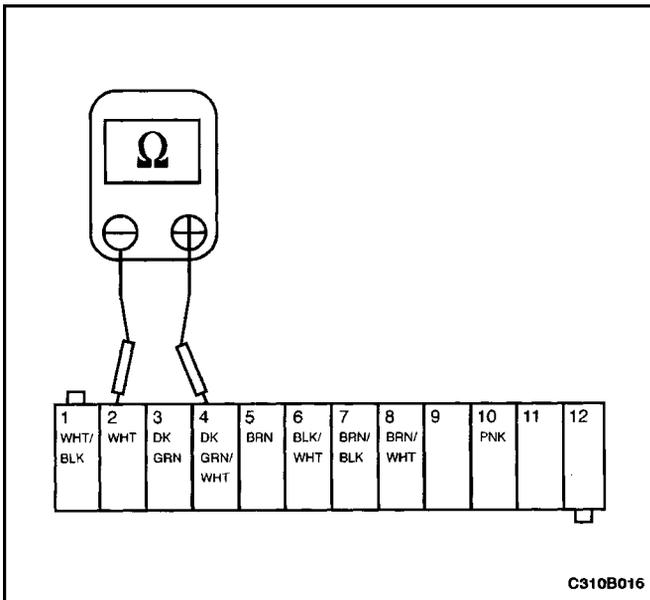
Checking for a short circuit between the passenger low circuit and voltage.



DIAGNOSTIC ILLUSTRATION 8

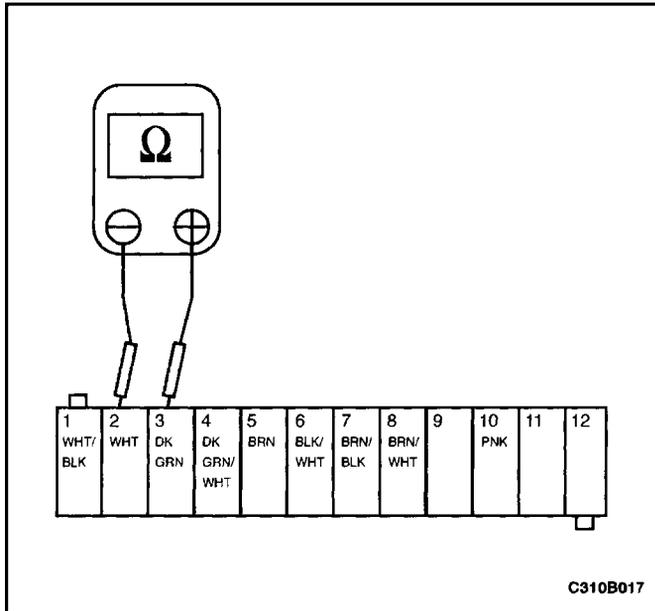
Placing a jumper on the SDM side of the yellow clock spring connector.

Connector test adapter kit J-35616-A contains jumper wires and terminal adapters.



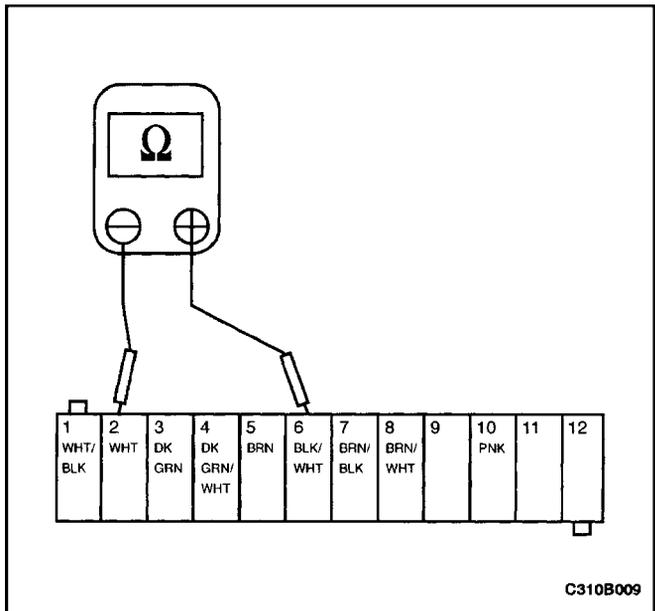
DIAGNOSTIC ILLUSTRATION 9

Checking for a short circuit between the driver high and passenger low circuits.



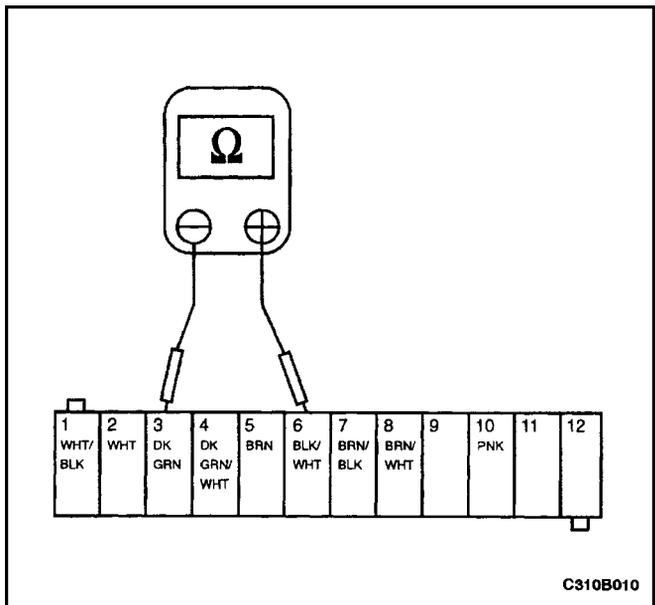
DIAGNOSTIC ILLUSTRATION 10

Checking for a short circuit between the driver high and driver low circuits.



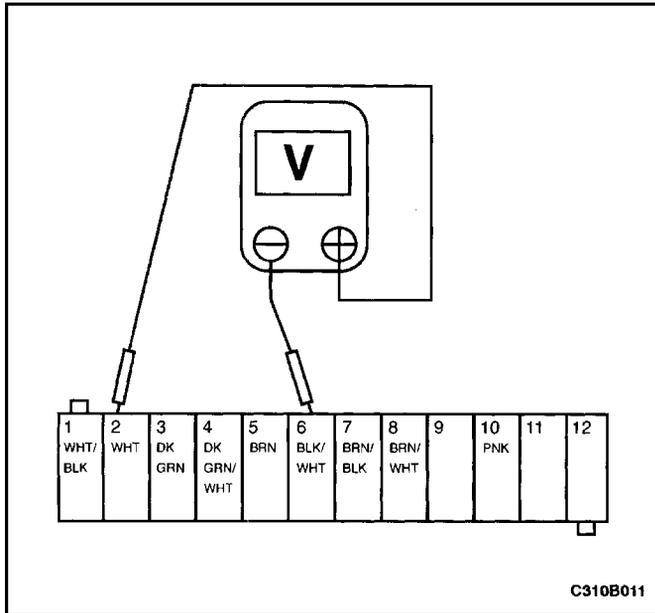
DIAGNOSTIC ILLUSTRATION 11

Checking for a short circuit between the driver high circuit and ground.



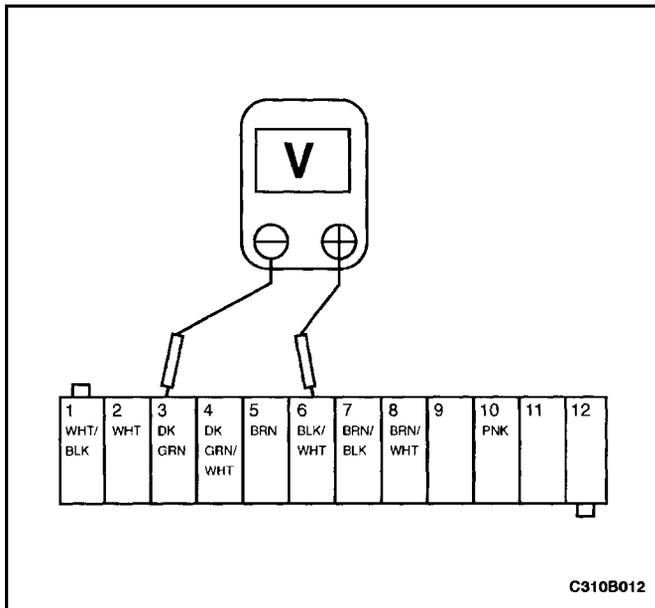
DIAGNOSTIC ILLUSTRATION 12

Checking for a short circuit between the driver low circuit and ground.



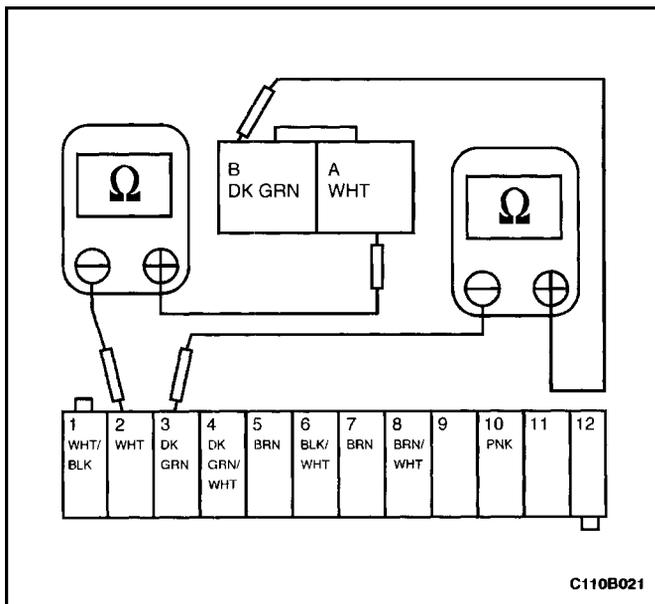
DIAGNOSTIC ILLUSTRATION 13

Checking for a short circuit between the driver high circuit and voltage.



DIAGNOSTIC ILLUSTRATION 14

Checking for a short circuit between the driver low circuit and voltage.



DIAGNOSTIC ILLUSTRATION 15

Checking for an open circuit between the sensing and diagnostic module (SDM) and the clock spring.