

## DIAGNOSTIC TROUBLE CODE (DTC) 41/42

### RIGHT FRONT INLET AND OUTLET VALVE SOLENOID FAULT

#### Circuit Description

The solenoid valve coil circuits are supplied with power from the battery when the valve relay is energized. Switched ground is provided by the electronic brake control module (EBCM) to each coil.

#### Diagnosis

This procedure checks whether the right front inlet and outlet valves are functioning.

#### Cause(s)

- A solenoid coil is open or shorted.

#### Fail Action

ABS is disabled, and the ABS warning lamp is turned ON for the remainder of the ignition cycle. If the failure is intermittent, the EBCM will enable the system at the next ignition cycle and set a history DTC.

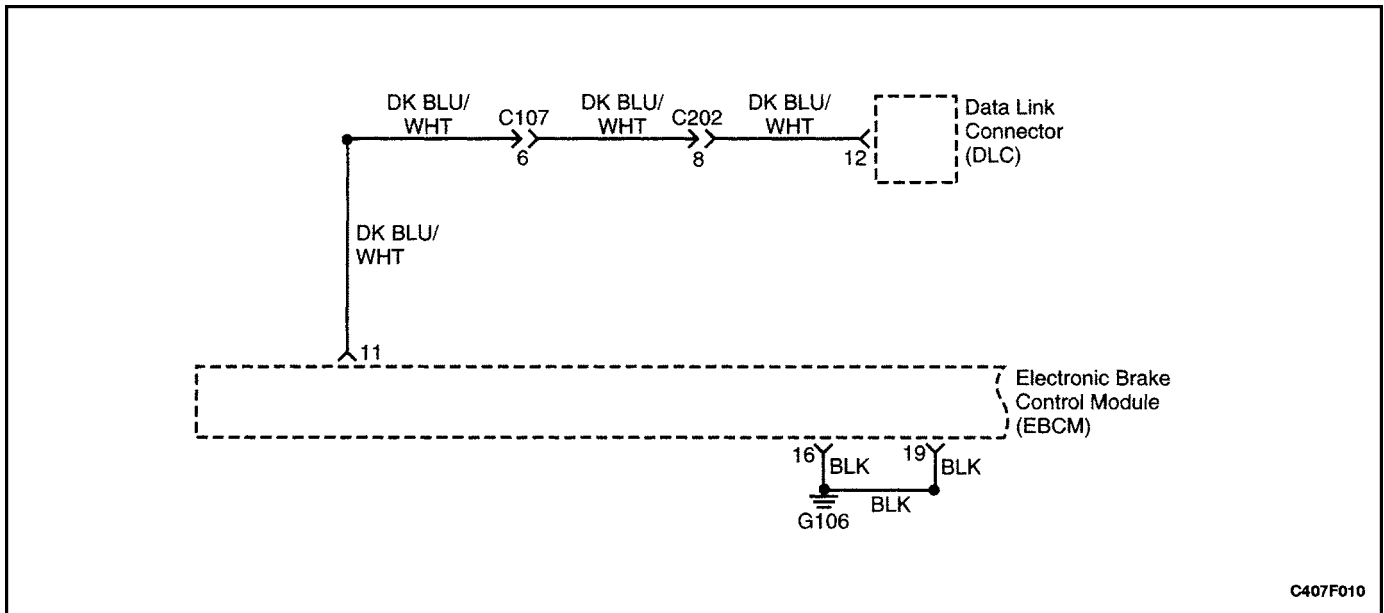
#### Test Description

The number(s) below refer to step(s) on the diagnostic table.

1. This begins the test of the inlet valve.
3. This tests the outlet valve.

**DTC 41/42 – Right Front Inlet and Outlet Valve Solenoid Fault**

<b>Step</b>	<b>Action</b>	<b>Value(s)</b>	<b>Yes</b>	<b>No</b>
1	1. Raise and suitably support the vehicle at the corner being tested. 2. Turn the ignition to ON. 3. Install the scan tool to the data link connector (DLC) diagnostic link and select "Wheel front right" to begin the solenoid tests at that wheel. This will test both the inlet and the outlet valves. 4. When the scan tool indicates "Pressure hold," press and hold the brake pedal until the end of the test. 5. Have an assistant attempt to rotate the wheel. Can the wheel be rotated?		Go to <i>Step 2</i>	Go to <i>Step 6</i>
2	1. Maintain pressure on the brake pedal. 2. When the scan tool indicates "Pressure increase," have an assistant attempt to rotate the wheel again. Can the wheel be rotated now?		Go to <i>Step 6</i>	Go to <i>Step 3</i>
3	1. Maintain pressure on the brake pedal. 2. When the scan tool indicates "Pressure release on," have an assistant attempt to rotate the wheel again. Can the wheel be rotated?		Go to <i>Step 4</i>	Go to <i>Step 6</i>
4	1. Release brake pedal pressure when the scan tool indicates "Pressure release off." 2. Clear all DTCs. 3. Road test the vehicle. Does the DTC set again?		Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	1. Check the wiring harness and the connector terminals for an intermittent problem. 2. Repair any problem found. Is the repair complete?		System OK	
6	Replace the ABS unit. Is the repair complete?		System OK	



## DIAGNOSTIC TROUBLE CODE (DTC) 43/44

### RIGHT FRONT PRIME LINE AND TRACTION CONTROL SYSTEM (TCS) PILOT VALVE FAULT

#### Circuit Description

The solenoid valve coil circuits are supplied with power from the battery when the valve relay is energized. Switched ground is provided by the electronic brake control module (EBCM) to each coil.

#### Diagnosis

This procedure checks whether the right front TCS valves are functioning.

#### Cause(s)

- A solenoid coil is open or shorted.

#### Fail Action

Antilock brake system (ABS) is disabled, and the ABS warning lamp is turned ON for the remainder of the ignition cycle. If the failure is intermittent, the EBCM will enable the system at the next ignition cycle and set a history DTC.

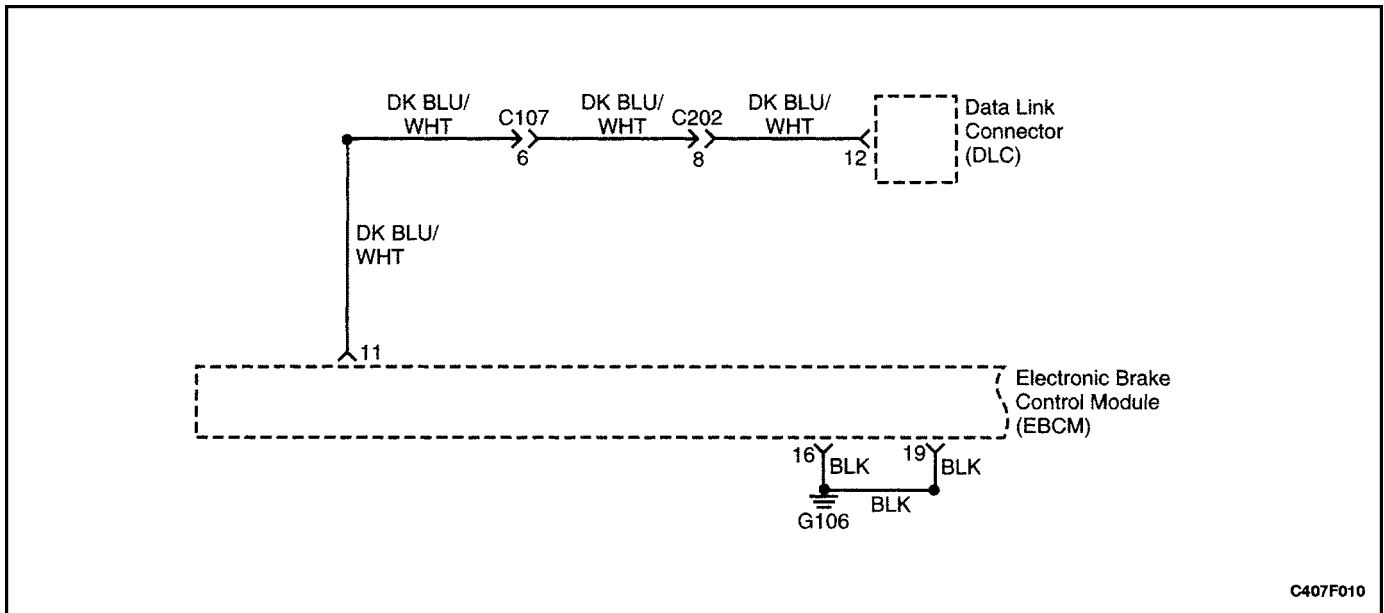
### DTC 43/44 – Right Front Prime Line and TCS Pilot Valve Fault

Step	Action	Value(s)	Yes	No
1	1. Raise and suitably support the vehicle at the corner being tested. 2. Turn the ignition to ON. <b>Important :</b> Do not step on the brake pedal at any time during this test. 1. Install the scan tool to the data link connector (DLC). 2. Select the ABD function and "Wheel front right" to begin the solenoid tests at that wheel. This will test both the prime and pilot valves. 3. When the scan tool indicates a pressure increase, attempt to rotate the wheel. Can the wheel be rotated?		Go to Step 6	Go to Step 2
2	When the scan tool indicates that the prime valve was turned OFF, attempt to rotate the wheel again. Can the wheel be rotated now?		Go to Step 6	Go to Step 3

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Step	Action	Value(s)	Yes	No
3	When the scan tool indicates that the pilot valve and the pump motor were turned OFF, attempt to rotate the wheel again. Can the wheel be rotated?		Go to <i>Step 4</i>	Go to <i>Step 6</i>
4	1. Clear all the DTCs. 2. Road test the vehicle. Does the DTC set again?		Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	1. Check the wiring harness and connector terminals for an intermittent problem. 2. Repair any problem found. Is the repair complete?		System OK	
6	Replace the ABS unit. Is the repair complete?		System OK	



## DIAGNOSTIC TROUBLE CODE (DTC) 45/46

### LEFT FRONT INLET AND OUTLET VALVE SOLENOID FAULT

#### Circuit Description

The solenoid valve coil circuits are supplied with power from the battery when the valve relay is energized. Switched ground is provided by the electronic brake control module (EBCM) to each coil.

#### Diagnosis

This procedure checks whether the left front inlet and outlet valves are functioning.

#### Cause(s)

- A valve has failed.

- A solenoid coil is open or shorted.

#### Fail Action

ABS is disabled, and the ABS warning lamp is turned ON for the remainder of the ignition cycle. If the failure is intermittent, the EBCM will enable the system at the next ignition cycle and set a history DTC.

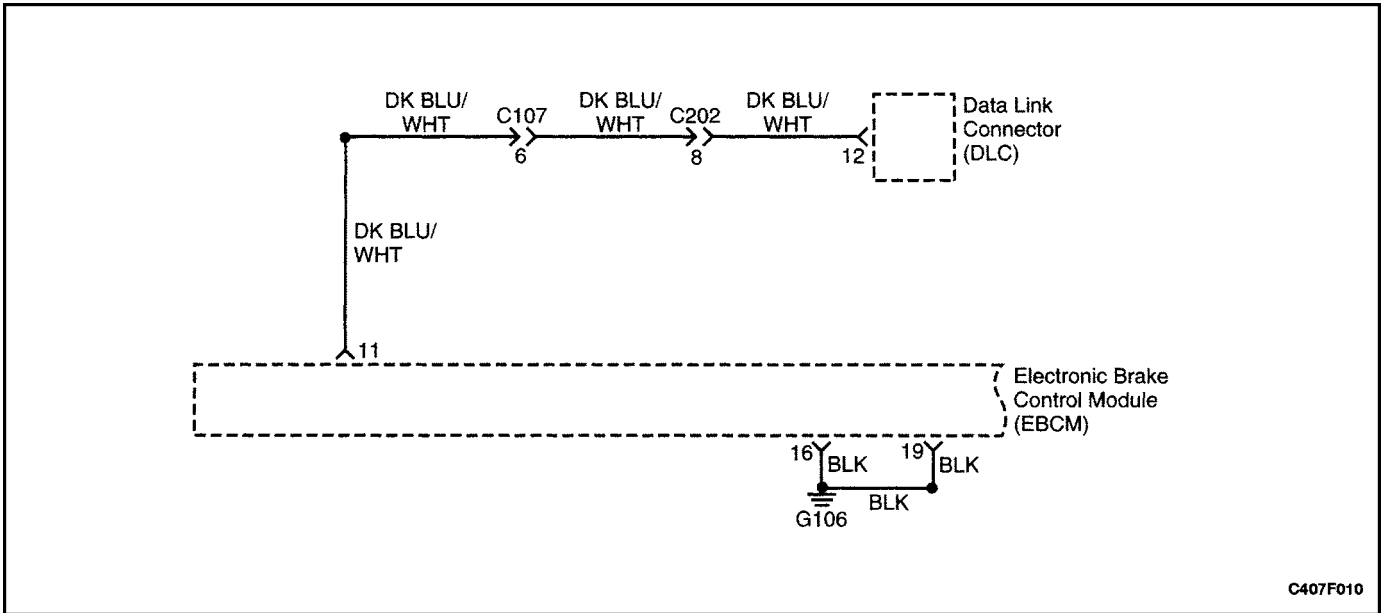
#### Test Description

The number(s) below refer to step(s) on the diagnostic table.

- This step begins the test of the inlet valve.
- This step tests the outlet valve.

**DTC 45/46 – Left Front Inlet and Outlet Valve Solenoid Fault**

<b>Step</b>	<b>Action</b>	<b>Value(s)</b>	<b>Yes</b>	<b>No</b>
1	1. Raise and suitably support the vehicle at the corner being tested. 2. Turn the ignition to ON. 3. Install the scan tool to the data link connector (DLC) and select "Wheel front left" to begin the solenoid tests at that wheel. This will test both the inlet and the outlet valves. 4. When the scan tool indicates "Pressure hold," press and hold the brake pedal until the end of the test. 5. Have an assistant attempt to rotate the wheel. Can the wheel be rotated?		Go to <i>Step 2</i>	Go to <i>Step 6</i>
2	1. Maintain pressure on the brake pedal. 2. When the scan tool indicates "Pressure increase," have an assistant attempt to rotate the wheel again. Can the wheel be rotated now?		Go to <i>Step 6</i>	Go to <i>Step 3</i>
3	1. Maintain pressure on the brake pedal. 2. When the scan tool indicates "Pressure release on," have an assistant attempt to rotate the wheel again. Can the wheel be rotated?		Go to <i>Step 4</i>	Go to <i>Step 6</i>
4	1. Release brake pedal pressure when the scan tool indicates "Pressure release off." 2. Clear all DTCs. 3. Road test the vehicle. Does the DTC set again?		Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	1. Check the wiring harness and connector terminals for an intermittent problem. 2. Repair any problem found. Is the repair complete?		System OK	
6	Replace the ABS unit. Is the repair complete?		System OK	



## DIAGNOSTIC TROUBLE CODE (DTC) 47/48

### LEFT FRONT PRIME LINE AND TRACTION CONTROL SYSTEM (TCS) PILOT VALVE FAULT

#### Circuit Description

The solenoid valve coil circuits are supplied with power from the battery when the valve relay is energized. Switched ground is provided by the electronic brake control module (EBCM) to each coil.

#### Diagnosis

This procedure checks whether the left front TCS valves are functioning.

#### Cause(s)

- A solenoid coil is open or shorted.

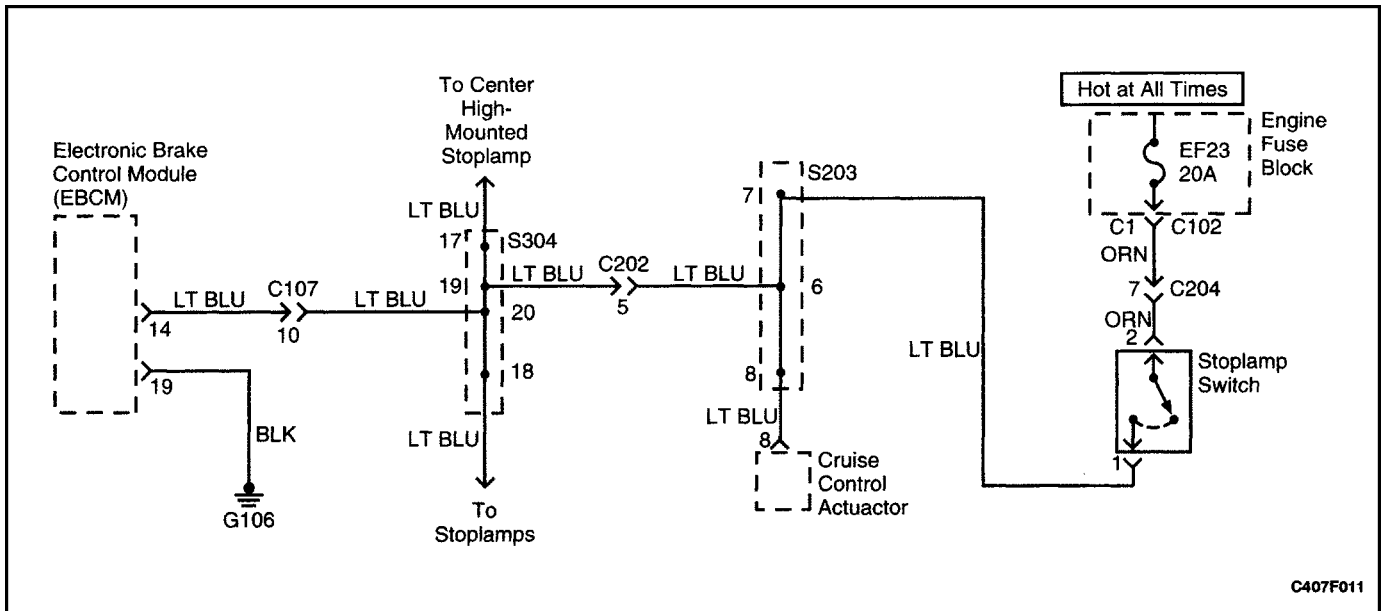
#### Fail Action

Antilock brake system (ABS) is disabled, and the ABS warning lamp is turned ON for the remainder of the ignition cycle. If the failure is intermittent, the EBCM will enable the system at the next ignition cycle and set a history DTC.

**DTC 47/48 – Left Front Prime Line and TCS Pilot Valve Fault**

Step	Action	Value(s)	Yes	No
1	1. Raise and suitably support the vehicle at the corner being tested. 2. Turn the ignition to ON. <b>Important :</b> Do not step on the brake pedal at any time during this test. 1. Install the scan tool to the data link connector (DLC). 2. Select the TCS function and wheel front left to begin the solenoid tests at that wheel. This will test both the prime and pilot valves. 3. When the scan tool indicates a pressure increase, attempt to rotate the wheel. Can the wheel be rotated?		Go to <i>Step 6</i>	Go to <i>Step 2</i>
2	When the scan tool indicates that the prime valve was turned OFF, attempt to rotate the wheel again. Can the wheel be rotated now?		Go to <i>Step 6</i>	Go to <i>Step 3</i>
3	When the scan tool indicates that the pilot valve and the pump motor were switched OFF, attempt to rotate the wheel again. Can the wheel be rotated?		Go to <i>Step 4</i>	Go to <i>Step 6</i>
4	1. Clear all the DTCs. 2. Road test the vehicle. Does the DTC set again?		Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	1. Check the wiring harness and connector terminals for an intermittent problem. 2. Repair any problem found. Is the repair complete?		System OK	
6	Replace the ABS unit. Is the repair complete?		System OK	





## DIAGNOSTIC TROUBLE CODE (DTC) 50

### STOPLAMP SWITCH FAULT

### Circuit Description

When the brake pedal is pressed, the contacts on the brake light switch close to illuminate the brake lights. Battery voltage is also applied to terminal 14 of the electronic brake control module (EBCM), which signals the ABS controller that the brakes are applied and ABS may be needed. Without this, signals from a wheel speed sensor that may indicate the need for ABS intervention are questionable. When the brake pedal is not pressed, the EBCM terminal 14 is grounded through the stoplamps.

## Diagnosis

This procedure will check whether there is no output or constant output from the stoplamp switch and will determine the cause as a faulty switch or a problem in the circuitry.

**Cause(s)**

- The ground connection or the positive connection at the EBCM has failed.
- There is an open, short to ground, or short to positive in the vehicle wiring.
- The stoplamp switch has failed.

### Fail Action

The system records a DTC 50. ABS operation is not disabled.

## Test Description

The number(s) below refer to step(s) on the diagnostic table.

13. This step begins the process of troubleshooting stoplamps that are always on.

## Diagnostic Aids

Inspect the wiring and the connectors carefully and thoroughly. Failure to do so could result in misdiagnosis, causing part replacement with the reappearance of the malfunction.

**DTC 50 – Stoplamp Switch (BLS) Fault**

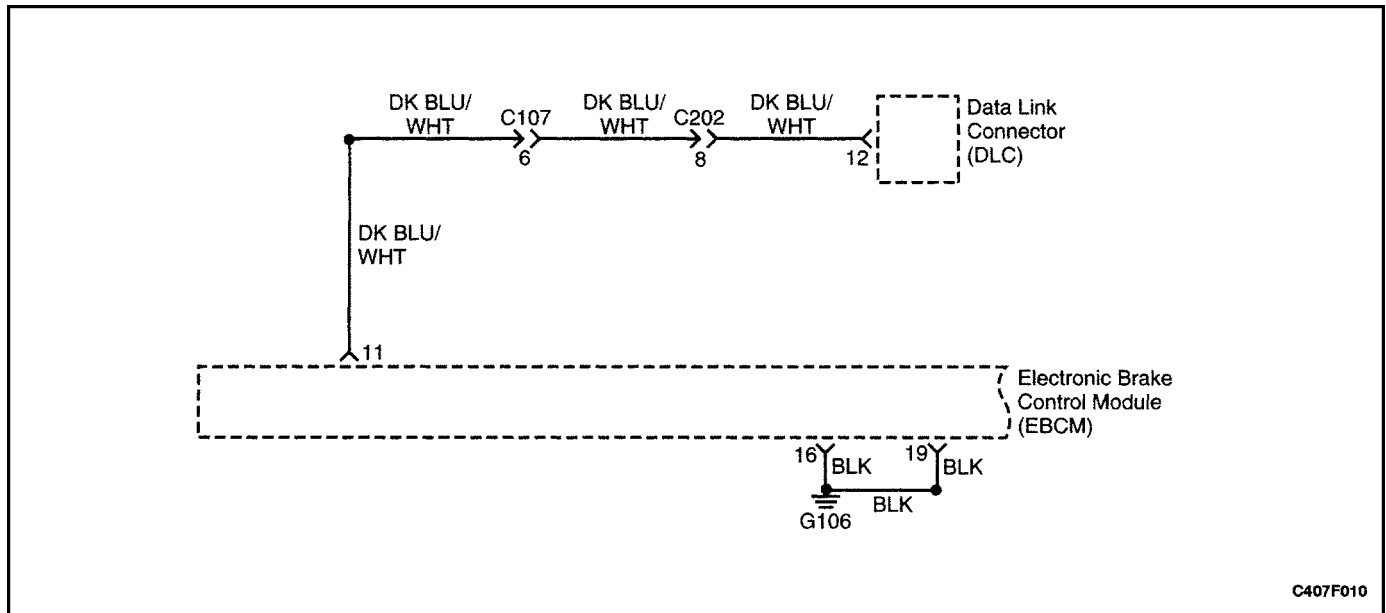
Step	Action	Value(s)	Yes	No
1	Observe the stoplamps when the brakes are applied. Do the stoplamps turn on?		Go to <i>Step 13</i>	Go to <i>Step 2</i>
2	Check fuse EF23. Is fuse EF23 blown?		Go to <i>Step 3</i>	Go to <i>Step 4</i>
3	1. Check for a short circuit and repair it, if necessary. 2. Replace fuse EF23. Is the repair complete?		System OK	
4	Check the voltage at fuse EF23. Is the voltage equal to the specified value?	11–14 v	Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	Repair the power supply circuit for fuse EF23. Is the repair complete?		System OK	
6	Check the voltage at terminal 2 of the stoplamp switch. Is the voltage equal to the specified value?	11–14 v	Go to <i>Step 8</i>	Go to <i>Step 7</i>
7	Repair the open circuit between fuse EF23 and the stoplamp switch. Is the repair complete?		System OK	
8	With the brakes applied, check the voltage at terminal 1 of the stoplamp switch. Is the voltage equal to the specified value?	11–14 v	Go to <i>Step 10</i>	Go to <i>Step 9</i>
9	Replace the stoplamp switch. Is the repair complete?		System OK	
10	1. Disconnect the electronic brake control module (EBCM) connector. 2. With the brakes applied, check the voltage terminal 14 of the EBCM. Is the voltage equal to the specified value?	11–14 v	Go to <i>Step 12</i>	Go to <i>Step 11</i>
11	Repair the open circuit between the stoplamp switch and terminal 14 of the EBCM connector. Is the repair complete?		System OK	
12	Replace the EBCM. Is the repair complete?		System OK	
13	1. Disconnect the EBCM connector. 2. Visually inspect the EBCM and its connector for damaged pins or terminals. Are there any damaged pins or terminals?		Go to <i>Step 14</i>	Go to <i>Step 15</i>
14	Repair the damaged pins or terminals. Is the repair complete?		System OK	
15	1. With the EBCM connector disconnected, turn the ignition ON. 2. When the brakes are not applied, check the voltage at terminal 1 (LT BLU wire) of the stoplamp switch. Is the voltage equal to the specified value?	0 v	Go to <i>Step 17</i>	Go to <i>Step 16</i>
16	Repair the short to voltage in the wiring harness. Is the repair complete?		System OK	

Step	Action	Value(s)	Yes	No
17	With the EBCM disconnected, use an ohmmeter to measure the resistance between ground and terminal 19 of the EBCM connector. Is the resistance equal to the specified value?	$\approx 0 \Omega$	Go to <i>Step 12</i>	Go to <i>Step 18</i>
18	Repair the open circuit between ground and terminal 19 of the EBCM. Is the repair complete?		System OK	

1. This begins the test of the inlet valve.
3. This tests the outlet valve.

**DTC 51/52 – Right Rear Inlet and Outlet Valve Solenoid Fault**

Step	Action	Value(s)	Yes	No
1	1. Raise and suitably support the vehicle. 2. Turn the ignition to ON. 3. Install the scan tool to the data link connector (DLC) and select "Wheel rear right" to begin the solenoid tests at that wheel. This will test both the inlet and the outlet valves. 4. When the scan tool indicates "Pressure hold," press and hold the brake pedal until the end of the test. 5. Have an assistant attempt to rotate the wheel. Can the wheel be rotated?		Go to <i>Step 2</i>	Go to <i>Step 6</i>
2	1. Maintain pressure on the brake pedal. 2. When the scan tool indicates "Pressure increase," have an assistant attempt to rotate the wheel again. Can the wheel be rotated now?		Go to <i>Step 6</i>	Go to <i>Step 3</i>
3	1. Maintain pressure on the brake pedal. 2. When the scan tool indicates "Pressure release on," have an assistant attempt to rotate the wheel again. Can the wheel be rotated?		Go to <i>Step 4</i>	Go to <i>Step 6</i>
4	1. Release brake pedal pressure when the scan tool indicates "Pressure release off." 2. Clear all DTCs. 3. Road test the vehicle. Does the DTC set again?		Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	1. Check the wiring harness and the connector terminals for an intermittent problem. 2. Repair any problem found. Is the repair complete?		System OK	
6	Replace the ABS unit. Is the repair complete?		System OK	



## DIAGNOSTIC TROUBLE CODE (DTC) 55/56

### LEFT REAR INLET AND OUTLET VALVE SOLENOID FAULT

#### Circuit Description

The solenoid valve coil circuits are supplied with power from the battery when the valve relay is energized. Switched ground is provided by the electronic brake control module (EBCM) to each coil.

#### Diagnosis

This procedure checks whether the left rear inlet and outlet valves are functioning.

#### Cause(s)

- A valve has failed.

- A solenoid coil is open or shorted.

#### Fail Action

ABS is disabled, and the ABS warning lamp is turned ON for the remainder of the ignition cycle. If the failure is intermittent, the EBCM will enable the system at the next ignition cycle and set a history DTC.

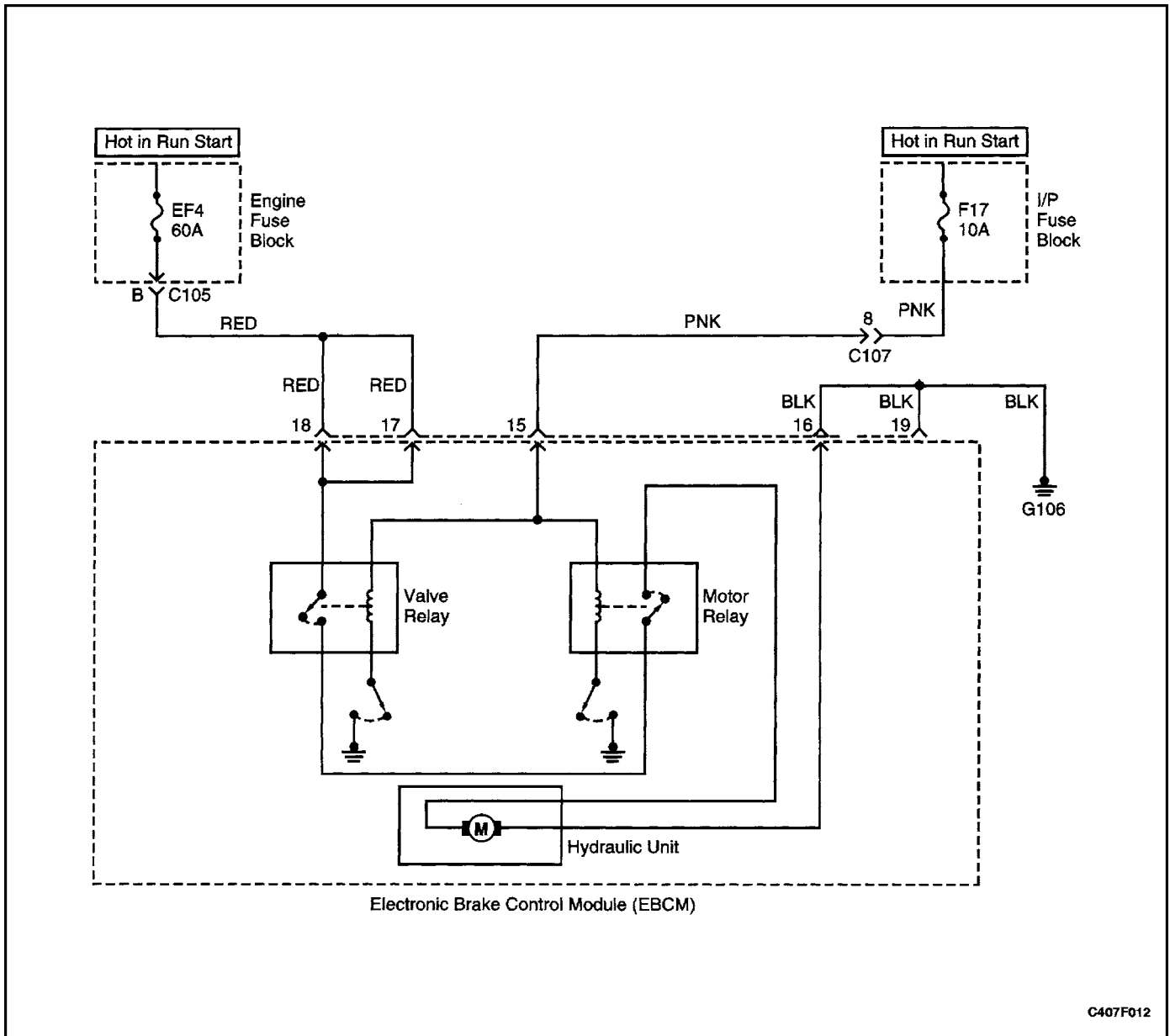
#### Test Description

The number(s) below refer to step(s) on the diagnostic table.

- This begins the test of the inlet valve.
- This tests the outlet valve.

**DTC 55/56 – Left Rear Inlet and Outlet Valve Solenoid Fault**

Step	Action	Value(s)	Yes	No
1	<ol style="list-style-type: none"> <li>1. Raise and suitably support the vehicle.</li> <li>2. Turn the ignition to ON.</li> <li>3. Install the scan tool to the data link connector (DLC) and select "Wheel rear left" to begin the solenoid tests at that wheel. This will test both the inlet and the outlet valves.</li> <li>4. When the scan tool indicates "Pressure hold," press and hold the brake pedal until the end of the test.</li> <li>5. Have an assistant attempt to rotate the wheel.</li> </ol> <p>Can the wheel be rotated?</p>		Go to <i>Step 2</i>	Go to <i>Step 6</i>
2	<ol style="list-style-type: none"> <li>1. Maintain pressure on the brake pedal.</li> <li>2. When the scan tool indicates "Pressure increase," have an assistant attempt to rotate the wheel again.</li> </ol> <p>Can the wheel be rotated now?</p>		Go to <i>Step 6</i>	Go to <i>Step 3</i>
3	<ol style="list-style-type: none"> <li>1. Maintain pressure on the brake pedal.</li> <li>2. When the scan tool indicates "Pressure release on," have an assistant attempt to rotate the wheel again.</li> </ol> <p>Can the wheel be rotated?</p>		Go to <i>Step 4</i>	Go to <i>Step 6</i>
4	<ol style="list-style-type: none"> <li>1. Release brake pedal pressure when the scan tool indicates "Pressure release off."</li> <li>2. Clear all DTCs.</li> <li>3. Road test the vehicle.</li> </ol> <p>Does the DTC set again?</p>		Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	<ol style="list-style-type: none"> <li>1. Check the wiring harness and the connector terminals for an intermittent problem.</li> <li>2. Repair any problem found.</li> </ol> <p>Is the repair complete?</p>		System OK	
6	<p>Replace the ABS unit.</p> <p>Is the repair complete?</p>		System OK	



C407F012

## DIAGNOSTIC TROUBLE CODE (DTC) 61

### PUMP MOTOR OR PUMP MOTOR RELAY FAULT

#### Circuit Description

When the electronic brake control module (EBCM) grounds the pump motor relay, it closes and provides battery voltage to the pump motor if the valve relay is closed. The EBCM senses the voltage applied to the pump motor to verify motor operation.

#### Diagnosis

This DTC sets when the EBCM detects B+ without motor relay activation or if the EBCM does not detect B+ after motor relay activation.

#### Cause(s)

- There is a faulty terminal in the pump motor connector.

- There is a faulty terminal in EBCM connector.
- There is a problem in the ABS wiring harness.
- There is high resistance in the chassis ground.
- The EBCM is defective.
- There is a problem in the wiring from the pump motor connector to the motor.

#### Fail Action

ABS is disabled, and the ABS warning lamp is ON.



**Test Description**

The number(s) below refer to step(s) on the diagnostic table.

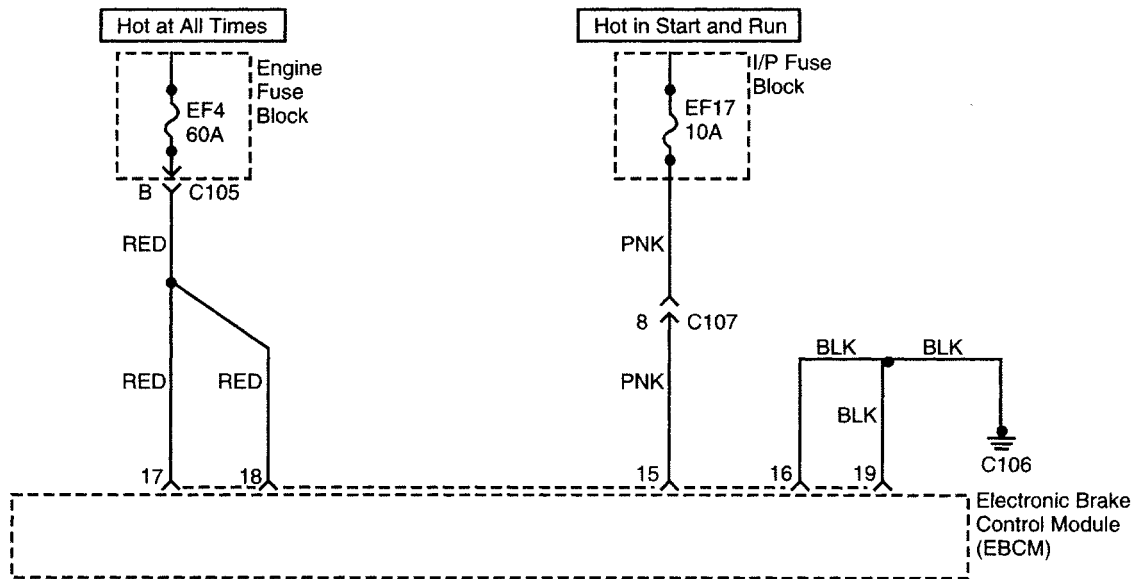
1. This step checks for connector damage.
3. This step checks for a poor ground connection.
7. This step checks for a possible problem with the motor connector at the ABS unit.

**Diagnostic Aids**

It is very important to perform a thorough inspection of the wiring and the connectors. Failure to do so may result in misdiagnosis, causing part replacement with the reappearance of the malfunction.

**DTC 61 – Pump Motor or Pump Motor Relay Fault**

Step	Action	Value(s)	Yes	No
1	1. Disconnect the connector from the EBCM. 2. Examine terminal 16 on the harness connector and on the EBCM connector.		Go to <i>Step 2</i>	Go to <i>Step 3</i>
2	Repair or replace the terminal, the connector, the wiring harness, or the EBCM, as required. Is the repair complete?		System OK	
3	Measure the resistance from terminal 16 of the EBCM connector to a good chassis ground. Is the resistance equal to the specified value?	$\approx 0 \Omega$	Go to <i>Step 7</i>	Go to <i>Step 4</i>
4	Measure the resistance at the chassis ground connection G106. Is the resistance equal to the specified value?	$\approx 0 \Omega$	Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	Repair the connection at chassis ground G106. Is the repair complete?		System OK	
6	Repair the open or the high resistance in the harness between terminal 16 of the EBCM connector and the ground lug, or replace the ABS wiring harness. Is the repair complete?		System OK	
7	1. Remove the ABS 5.3 from the vehicle. 2. Disconnect the hydraulic unit electrical connector and examine the terminals. Is there any sign of damage or corrosion that would prevent a good ground contact?		Go to <i>Step 8</i>	Go to <i>Step 9</i>
8	Repair or replace the defective terminal, connector, or ABS unit, as required. Is the repair complete?		System OK	
9	Replace the ABS unit. Is the repair complete?		System OK	



C407F006

## DIAGNOSTIC TROUBLE CODE (DTC) 63

### VALVE RELAY CIRCUIT FAULT

#### Circuit Description

When the ABS is active, the valve relay provides voltage to actuate the solenoid valves. The valves do not use this voltage unless the ABS control module provides the ground for each solenoid coil.

DTC 63 will set if the valve relay voltage is low or if the relay supply line is at 12 volts when the ABS control module is not requesting it. This DTC will also set if the ABS control module detects three or more solenoid valve circuits are open or shorted during the self-test.

#### Diagnosis

This procedure checks whether there is a poor ground connection for the electronic brake control module (EBCM).

#### Cause(s)

- A connector terminal is corroded.
- The wiring harness is damaged.
- The ground terminal is not conducting properly.
- The EBCM is defective.

#### Fail Action

ABS/TCS is disabled, and the ABS warning lamp is turned ON for the remainder of the ignition cycle. If the failure is intermittent, the control module will enable the system at the next ignition cycle and set a history DTC 63.

#### Diagnostic Aids

It is very important to perform a thorough inspection of the wiring and the connectors. Failure to do so may result in misdiagnosis, causing part replacement with the reappearance of the malfunction.

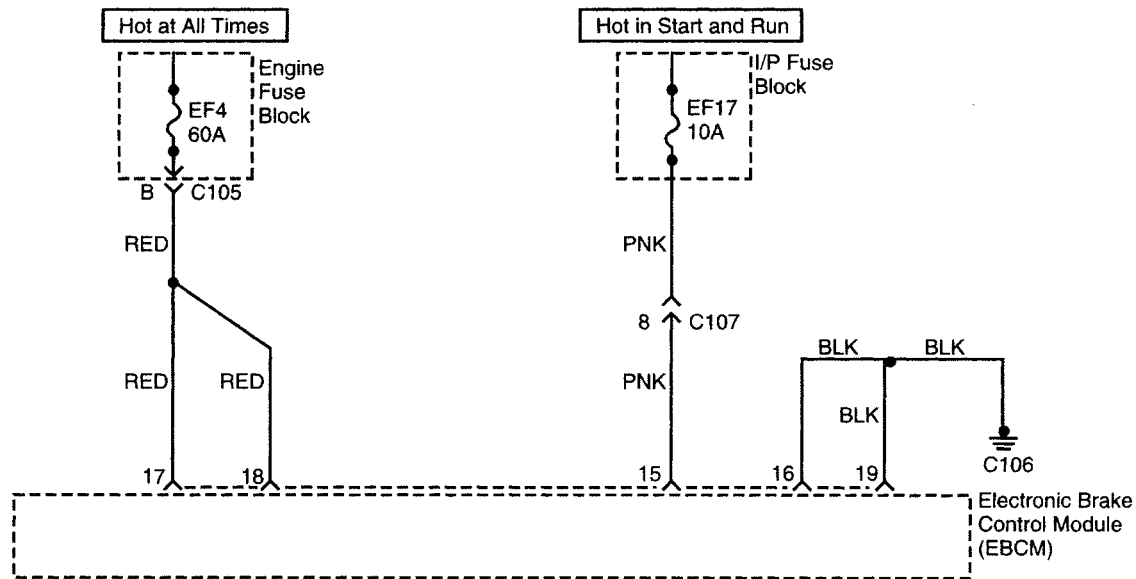
**DTC 63 – Valve Relay Circuit Fault**

Step	Action	Value(s)	Yes	No
1	1. Use a scan tool to clear all DTCs. 2. Road test the vehicle. Does DTC 63 set again?		Go to <i>Step 3</i>	Go to <i>Step 2</i>
2	1. Check all system wiring harness connectors and terminals, especially the EBCM, for any problem that could cause an intermittent condition. 2. Repair any intermittent problem found. Is the repair complete?		System OK	
3	1. Disconnect the electrical connector from the EBCM. 2. Examine terminal 19 on the electrical connector and the EBCM. Is there damage or corrosion at terminal 19?		Go to <i>Step 5</i>	Go to <i>Step 4</i>
4	Repair the terminal or the connector, or replace the ABS harness or ABS unit, as required. Is the repair complete?		System OK	
5	Measure the resistance from terminal 19 of the EBCM connector to a good chassis ground. Is the resistance equal to the specified value?	$\approx 0 \Omega$	Go to <i>Step 6</i>	Go to <i>Step 7</i>
6	Replace the ABS unit. Is the repair complete?		System OK	
7	Measure the resistance from terminal 19 of the EBCM connector to the ground lug at G106. Is the resistance equal to the specified value?	$\approx 0 \Omega$	Go to <i>Step 8</i>	Go to <i>Step 9</i>
8	Repair the chassis connection at the ground lug. Is the repair complete?		System OK	
9	Repair the open or the high resistance in the ABS harness, or replace the harness, as required. Is the repair complete?		System OK	

### Fail Action

## Diagnosis

There is no diagnostic procedure for this problem. If DTC-65 is set, replace the ABS unit.



C407F006

## DIAGNOSTIC TROUBLE CODE (DTC) 71

### ABS CONTROL MODULE INTERNAL FAULT

#### Circuit Description

The ABS control module performs various diagnostic checks on itself. If it finds a problem, it sets DTC 71.

#### Diagnosis

This procedure checks whether there is a poor ground connection for the electronic brake control module (EBCM).

#### Cause(s)

- A connector terminal is corroded.
- The EBCM is malfunctioning.

#### Fail Action

ABS is disabled, and the ABS warning lamp is turned ON. If the failure is intermittent, the control module will enable the system at the next ignition cycle and will store a history DTC 71.

#### Test Description

The number(s) below refer to step(s) on the diagnostic table.

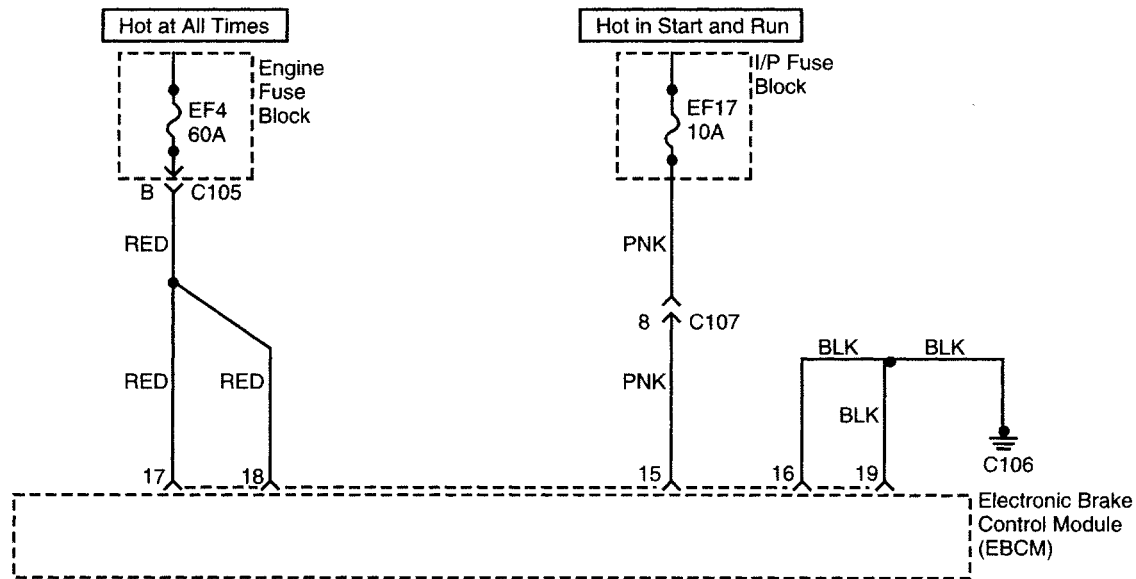
3. This step begins the testing for a poor voltage or ground connection.

#### Diagnostic Aids

It is very important to perform a thorough inspection of the wiring and the connectors. Failure to inspect the wiring and the connectors carefully and completely may result in misdiagnosis, causing part replacement with the reappearance of the malfunction.

**DTC 71 – ABS Control Module Internal Fault**

<b>Step</b>	<b>Action</b>	<b>Value(s)</b>	<b>Yes</b>	<b>No</b>
1	Use the scan tool to determine if any other DTCs are set. Are other DTCs set?		Go to the tables for the other DTCs	Go to <i>Step 2</i>
2	Clear all DTCs and road test the vehicle. Does DTC 71 set again?		Go to <i>Step 4</i>	Go to <i>Step 3</i>
3	1. Check all wiring harness connectors and terminals, especially those at the EBCM, for any condition that could cause an intermittent. 2. Repair any problems found. Is the repair complete?		System OK	
4	1. Turn the ignition to OFF. 2. Disconnect the EBCM connector. 3. Turn the ignition to ON. 4. Measure the voltage between ground and terminals 15, 17, and 18 of the EBCM harness connector. Is the voltage equal to the specified value?	11–14 v	Go to <i>Step 6</i>	Go to <i>Step 5</i>
5	1. Check the voltage supply and the ground connections to the EBCM. 2. Repair any open or high resistance found. Is the repair complete?		System OK	
6	Check the EBCM connector for any damaged terminals. Are there any problems?		Go to <i>Step 7</i>	Go to <i>Step 8</i>
7	Repair any connector problem found. Is the repair complete?		System OK	
8	Clear all DTCs and road test the vehicle. Does DTC 71 set again?		Go to <i>Step 9</i>	System OK
9	Replace the ABS unit. Is the repair complete?		System OK	



C407F006

## DIAGNOSTIC TROUBLE CODE (DTC) 85

### LOW VOLTAGE FAULT

#### Circuit Description

Proper operation of the electronic brake control module (EBCM) requires a certain minimum voltage. The EBCM monitors the ignition feed circuit to determine if the voltage falls below a minimum level.

#### Diagnosis

This test checks for battery output, proper grounding, blown fuses, faulty ignition switch, and problems in the circuitry.

#### Cause(s)

- The battery is defective.
- There is a defective ground connection.
- A connector is damaged.
- A wire is broken or shorted.
- A fuse is blown.
- The ignition switch is malfunctioning.

#### Fail Action

ABS action is disabled during the period of low voltage, and the ABS warning lamp is ON for the remainder of the ignition cycle. If the failure is intermittent, the EBCM will enable the system at the next ignition cycle and set a history DTC 85.

#### Test Description

The number(s) below refer to step(s) on the diagnostic table.

1. This step determines whether there is voltage at the battery and at the high current source.
7. This step checks for voltage at the ignition 1 source.
11. This step begins the check for voltage at the EBCM end of the ABS harness.

#### Diagnostic Aids

It is very important to perform a thorough inspection of the wiring and the connectors. Failure to do so may result in misdiagnosis, causing part replacement with the reappearance of the malfunction.

**DTC 85 – Low Voltage Fault**

<b>Step</b>	<b>Action</b>	<b>Value(s)</b>	<b>Yes</b>	<b>No</b>
1	Check the voltage at the battery. Is the voltage within the specified value?	11–14 v	Go to <i>Step 3</i>	Go to <i>Step 2</i>
2	Charge or replace the battery, as required. Is the repair complete?		System OK	
3	Check fuse EF4 in the engine fuse block. Is the fuse blown?		Go to <i>Step 4</i>	Go to <i>Step 7</i>
4	1. Replace fuse EF4. 2. Turn the ignition to ON. Does the fuse blow again?		Go to <i>Step 5</i>	Go to <i>Step 6</i>
5	1. Turn the ignition to OFF. 2. Trace the RED wires in the ABS wiring harness from terminal B of C105 at the engine fuse block to terminals 17 and 18 of the EBCM connector. 3. Repair any short circuit found along this path. Is the repair complete?		System OK	
6	1. Turn the ignition to OFF. 2. Install the scan tool. 3. Clear all DTCs. 4. Road test the vehicle. Does DTC 85 reset?		System OK	
7	Check fuse F17 in the I/P fuse block. Is fuse F17 blown?		Go to <i>Step 8</i>	Go to <i>Step 11</i>
8	1. Replace fuse F17. 2. Turn the ignition to ON. Does fuse F17 blow again?		Go to <i>Step 9</i>	Go to <i>Step 10</i>
9	1. Turn the ignition to OFF. 2. Trace the PNK wire from fuse F17 to terminal 15 of the EBCM connector. 3. Repair any short circuit found along this path. Is the repair complete?		System OK	
10	1. Turn the ignition to OFF. 2. Install the scan tool. 3. Clear all DTCs. 4. Road test the vehicle. Does DTC 85 reset?		System OK	
11	1. Disconnect the EBCM connector from the EBCM. 2. Turn the ignition to ON. 3. Check the voltage between ground and terminal 17, and between ground and terminal 18. Is the voltage within the specified value?	11–14 v	Go to <i>Step 13</i>	Go to <i>Step 12</i>
12	1. Turn the ignition to OFF. 2. Trace the RED wires between terminals 17 and 18 of the EBCM connector to terminal B of connector C105 at the engine fuse block. 3. Repair the open in this circuit. Is the repair complete?		System OK	



Step	Action	Value(s)	Yes	No
13	1. Turn the ignition ON. 2. Check the voltage at fuse F17. Is the voltage within the specified value?	11–14 v	Go to <i>Step 15</i>	Go to <i>Step 14</i>
14	Repair the power supply circuit for fuse F17. Is the repair complete?		System OK	
15	1. Turn the ignition to OFF. 2. Check the resistance between ground and terminals 16 and 19 of the ABS harness EBCM connector. Is the resistance equal to the specified value?	0 $\Omega$	Go to <i>Step 16</i>	Go to <i>Step 18</i>
16	Examine terminals 15, 16, 17, 18, and 19 of the EBCM connector. Is there a defective terminal?		Go to <i>Step 17</i>	Go to <i>Step 19</i>
17	Repair the defective terminal or replace the connector or wiring harness, as required. Is the repair complete?		System OK	–
18	Repair the defective ground connection. Is the repair complete?		System OK	
19	1. Install the scan tool. 2. Clear all DTCs. 3. Road test the vehicle. Does DTC 85 set again?		Go to <i>Step 20</i>	Go to <i>Step 21</i>
20	Replace the ABS unit. Is the repair complete?		System OK	
21	1. Examine the wiring harness and connectors for causes of intermittent problems. 2. Repair any intermittent problem found. Is the repair complete?		System OK	