

## **DTC C0710 2005-2008 Cars**

### **DTC Descriptors**

**DTC C0710 00: Steering Position Signal**

**DTC C0710 1A: Steering Position Signal Bias Level Out of Range**

**DTC C0710 1F: Steering Position Signal Intermittent**

**DTC C0710 52: Steering Position Signal Compare Failure**

### **Circuit/System Description**

The steering angle sensor supplies 2 analog inputs, position signal A and position signal B, to the electronic brake control module (EBCM). The 2 input signals are approximately 90 degrees out of phase. By interpreting the relationship between the 2 inputs, the EBCM can determine the position of the steering wheel and the direction of the steering wheel rotation.

### **Conditions for Running the DTC**

#### **C0710 00**

- The ignition is ON.
- Ignition voltage is greater than 8 volts.
- The steering wheel position sensor has been powered ON for 0.2 second.

#### **C0710 1A**

- The ignition is ON.
- Ignition voltage is greater than 8 volts.
- The steering wheel position sensor is centered.

#### **C0710 1F**

- The ignition is ON.
- Ignition voltage is greater than 8 volts.
- The steering wheel position sensor has been powered ON for 0.2 second.
- The steering rate of position signal A is less than 80 degrees per second.

#### **C0710 52**

- The ignition is ON.
- Ignition voltage is greater than 8 volts.
- The steering wheel position sensor has been powered ON for 0.2 second.
- The steering wheel position sensor is centered.

### **Conditions for Setting the DTC**

#### **C0710 00**

Both position signal A and position signal B are greater than 4.9 volts or less than 0.2 volt for 1.6 seconds.

#### **C0710 1A**

The steering bias is greater than 40 degrees.

#### **C0710 1F**

The difference in the phase angle between position signal A and position signal B is greater than 106 degrees or less than 84 degrees continuously for 0.25 second.

#### **C0710 52**

The changes in position signal A or position signal B is greater than 36 degrees between consecutive scans of the signal.

### **Action Taken When the DTC Sets**

- The EBCM disables the vehicle stability enhancement system (VSES) for the duration of the ignition cycle.
- The driver information center (DIC) displays the SERVICE ACTIVE HANDLING message.
- The ABS remains functional.

### **Conditions for Clearing the DTC**

- The condition for the DTC is no longer present and the DTC is cleared with a scan tool.
- The electronic brake control module (EBCM) automatically clears the history DTC when a current DTC is not detected in 100 consecutive drive cycles.

## Diagnostic Aids

- Inspect the vehicle for proper alignment. The car should not pull in either direction while driving straight on a level surface.
- The Snapshot function on the scan tool can help find an intermittent DTC.
- Possible causes for this DTC are the following conditions:
  - One of the steering wheel position sensor inputs are open, shorted to ground, or shorted to battery.
  - Internal steering angle sensor malfunction.
  - Noise on the steering wheel position signal circuits.
  - Yaw and lateral acceleration sensor malfunction causing drifting signal outputs.
  - Internal EBCM malfunction.

## Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the steering position sensor.
2. Test for less than 5 ohms of resistance between the low reference circuit terminal 2 and ground.  
⇒If greater than the specified range, test the low reference circuit for an open/high resistance. If the circuit tests normal, replace the EBCM.
3. Ignition ON, test for 4.8-5.2 volts between the 5-volt reference circuit terminal 1 and ground.  
⇒If less than the specified range, test the 5-volt reference circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the EBCM.  
⇒If greater than the specified range, test the 5-volt reference circuit for a short to voltage. If the circuit tests normal, replace the EBCM.
4. Verify the scan tool SWPS signal A parameter is less than 0.2 volt.  
⇒If greater than the specified range, test the signal A circuit terminal 5 for a short to voltage. If the circuit tests normal, replace the EBCM.
5. Verify the scan tool SWPS signal B parameter is less than 0.2 volt.
6. If greater than the specified range, test the signal B circuit terminal 6 for a short to voltage. If the circuit tests normal, replace the EBCM.
7. Install a 3A fused jumper wire between the signal A circuit terminal 5 and the 5-volt reference circuit terminal 1. Verify the scan tool SWPS signal A parameter is greater than 4.8 volts.  
⇒If less than the specified range, test the signal A circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the EBCM.
8. Install a 3A fused jumper wire between the signal B circuit terminal 6 and the 5-volt reference circuit terminal 1. Verify the scan tool SWPS signal B parameter is greater than 4.8 volts.  
⇒If less than the specified range, test the signal B circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the EBCM.
9. If all circuits test normal, test or replace the steering position sensor.

## DTC C0710 2009 – 2013 Cars

### DTC Descriptors

DTC C0710 00: **Steering Position Signal**

DTC C0710 5A: **Steering Position Signal Plausibility Failure**

### Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition Voltage	C0710 00, U2142 00	C0710 00, U2142 00	--	C0710 5A, C0186 5A, C0196 5A
Low Reference	C0710 00, U2142 00	C0710 00, U2142 00	C0710 00, U2142 00	C0710 5A, C0186 5A, C0196 5A
CAN Bus High Serial Data	C0710 00, U2100 00, U2142 00, C0196 00	C0710 00, U2142 00	C0710 00, U2142 00	C0710 5A, C0186 5A, C0196 5A
CAN Bus Low Serial Data	C0710 00, U2142 00	C0710 00, U2142 00	C0710 00, U2100 00, U2142 00	C0710 5A, C0186 5A, C0196 5A

### Circuit/System Description

The electronic brake control module (EBCM) receives CAN message inputs from the steering wheel position sensor identifying the position and direction of the steering wheel rotation.

### Conditions for Running the DTC

The engine is running.

### Conditions for Setting the DTC

#### **C0710 00**

- Open or short to ground on the ignition voltage circuit
- Open, short to ground, or short to voltage on the low reference circuit

#### **C0710 5A**

- The calculated steering angle does not correlate between the steering angle sensor and the yaw rate sensor.
- The steering wheel is off-center.

### Action Taken When the DTC Sets

- The EBCM disables the VSES for the duration of the ignition cycle.
- A DIC message and/or a warning indicator may be displayed.

### Conditions for Clearing the DTC

- The condition for the DTC is no longer present.
- The EBCM clears the history DTC when a current DTC is not detected in 100 consecutive drive cycles.
- Run vehicle faster than 9.3mph xxx to clear DTC

### Diagnostic Aids

The car should not pull in either direction causing the steering wheel to be off-center while driving straight on a level surface.

### Circuit/System Verification

1. With the scan tool perform the Steering Angle Sensor Centering.
2. Operate the vehicle within the Conditions for Running the DTC. Verify the DTC does not reset.

### Circuit/System Testing

1. Verify that DTC U2100, or U2142 are not set.  
⇒If the DTC U2100, or U2142 are set, refer to [Diagnostic Trouble Code \(DTC\) List - Vehicle](#)
2. Verify the Yaw rate sensor and steering angle sensor mounting position is correct.
3. Ignition OFF, disconnect the harness connector at the steering angle sensor.
4. Ignition OFF for 60 seconds, test for less than 5 ohms between the low reference circuit terminal 6 and ground.  
⇒If greater than the specified range, test the low reference circuit for an open/high resistance.
5. Ignition ON, test for ignition voltage between the ignition voltage circuit terminal 5 and ground.

⇒If not within the specified range, test the ignition voltage circuit for a short to ground or open/high resistance.

6. Ignition OFF, disconnect the harness connector at the EBCM.

7. Ignition ON, test for less than 1 volt between the following terminal listed below and ground.

- CAN Bus High serial data circuit terminal 37
- CAN Bus Low serial data circuit terminal 24

⇒If greater than the specified value, test the appropriate serial data circuit for a short to voltage.

8. Ignition OFF, test for infinite resistance between the following terminal listed below and ground.

- CAN Bus High serial data circuit terminal 37
- CAN Bus Low serial data circuit terminal 24

⇒If not the specified value, test the appropriate serial data circuit for a short to ground.

9. Test for less than 2 ohms between the appropriate serial data circuit terminals listed below.

- CAN Bus High serial data circuit terminal 37 at the EBCM harness connector and terminal 3 at the steering angle sensor harness connector.
- CAN Bus Low serial data circuit terminal 24 at the EBCM harness connector and terminal 1 at the steering angle sensor harness connector.

⇒If greater than the specified range, test the appropriate serial data circuit for an open/high resistance.

10. Test for infinite resistance between the CAN Bus High serial data circuit terminal 37 and the CAN Bus Low serial data circuit terminal 24.

⇒If not the specified value, repair the serial data circuits for a short together.

11. If all circuits test normal, test or replace the steering angle sensor. If DTC resets, replace the EBCM