C0253 or C0254 The EBCM calibrates the steering sensor output so that the output reads zero

Circuit Description

The EBCM calibrates the steering sensor output so that the output reads zero when the steering wheel is centered. Using the yaw rate input, lateral accelerometer input, and the wheel speed sensor inputs, the initial steering center position is calculated after driving greater than 10 km/h (6 mph) for more than 10 seconds in a straight line on a level surface.

Conditions for Running the DTC

C0253

- The ignition is ON.
- Ignition voltage is greater than 8 volts.

C0254

- The ignition is ON.
- Ignition voltage is greater than 8 volts.
- The steer angle has been centered.

Conditions for Setting the DTC

C0253

The vehicle speed is greater than 40 km/h (25 mph) for 10 minutes without completing steer angle centering.

C0254

The steering sensor bias moves greater than 40 degrees after steer centering was accomplished.

Action Taken When the DTC Sets

- The EBCM disables the VSES for the duration of the ignition cycle.
- The DIC displays the Service Stability System 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

- Check 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 helpfind an intermittent DTC.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2. Perform the Steering Position Sensor Test in order to verify that the steering wheel position sensor (SWPS) is operating properly.
3. Verify that the lateral accelerometer input parameter is within the valid range.
4. Verify that the yaw rate input parameter is within the valid range.

Step	Action	Values	Yes	No
Schematic Reference: ABS Schematics				
1	Did you perform the ABS Diagnostic System Check?	—	Go to Step 2	Go to Diagnostic System Check -ABS
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With the scan tool, perform the Steering Position Sensor Test. Did the SWPS pass the test?	—	Go to Step 3	Go to Step 7

Step	Action	Value(s)	Yes	No
3	With a scan tool, observe the Lateral Accelerometer Input parameter in the VSES data list. Does the scan tool display within the specified range?	2.3–2.7 V	Go to Step 4	Go to Step 8
4	With a scan tool, observe the Yaw Rate Sensor Input parameter in the VSES data list. Does the scan tool display within the specified range?	2.3–2.7 V	Go to Step 5	Go to Step 8
5	1. Use the scan tool in order to clear the DTCs. 2. Perform the Diagnostic Test Drive. Refer to Diagnostic Test Drive. Does the DTC reset?	—	Go to Step 6	Go to Diagnostic Aids
6	Replace the EBCM. Refer to Electronic Brake Control Module (EBCM) Replacement. Did you complete the repair?	—	Go to Step 9	—
7	Replace the steering wheel position sensor (SWPS). Refer to Steering Wheel Position Sensor or Steering Shaft Lower Bearing Replacement in Steering Wheel and Column. Did you complete the replacement?	—	Go to Step 9	—
8	Replace the yaw rate/lateral accelerometer sensor. Refer to Yaw Rate Sensor/Lateral Accelerometer Replacement. Did you complete the replacement?	—	Go to Step 9	—
9	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	—	Go to Step 2	System OK