

DTC B3593

Circuit Description

The rear wheel steering control module monitors the rear wheel steering mode select switch 5 volt reference circuit for out of range voltage conditions. When the mode select switch button is depressed the switch is in the active state. When the mode select switch is released the switch is in the inactive state. The following conditions will help determine if there is a malfunctioning rear wheel steering mode select switch:

- The resistance of the load in the active state is 500 ohms with an additional 1,000 ohms pull-up resistor.
- The resistance of the load in the inactive state is 2,000 ohms with an additional 1,000 ohms pull-up resistor.
- The pull-up voltage is 12 volts.

Conditions for Running the DTC

Turn ON the ignition, with engine ON.

Conditions for Setting the DTC

- The mode select switch 5 volt reference circuit is open or shorted to ground.
- The mode select switch signal circuit is open or shorted to ground.

Action Taken When the DTC Sets

- The Service 4 Wheel Steer indicator on IPC will be displayed.
- The code is displayed on the scan tool as DTC B3593.
- The output to the motor is ramped down slowly at a rate of 1 degree/second back to center and held.
- The rear wheels will be returned to the centered position.

Conditions for Clearing the DTC

- The conditions for DTC are not currently present.
- The module receives a clear code comm and from the scan tool.
- The DTC clears after 100 malfunction free ignition cycles.

Diagnostic Aids

- Inspect for poor connections at the harness connector of the rear wheel steering control module and Rear Wheel Steering Select Switch. Refer to **TESTING FOR INTERMITTENT and POOR CONNECTIONS** and Connector Repairs .
- Observe the rear wheel steering mode select switch. If all of the mode indicator LEDs are illuminated the rear wheel steering control module has lost its alignment memory settings and the scan tool must be used to re-calibrate the rear wheel steering alignment data in the rear wheel steering control module.

Test Description

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

- 2) - The normal state of the switch is the state of the switch input before activation. The terminology used by the scan tool is OFF.
- 3) - Tests for the proper operation of the switch in the normally open position.
- 4) - Tests for the proper operation of the switch in the closed position.
- 8) - Tests the 5 volt reference signal circuit for an open or a short to ground.

Step	Action	Value	Yes	No
1	Did you perform the Diagnostic System Check–Rear Wheel Steering?	—	Go to Step 2	Go to <i>Diagnostic System Check - Rear Wheel Steering</i>
2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn the ignition switch to the ON position,with the engine OFF. 3. Activate the rear wheel steer mode select switch. 4. With a scan tool, observe the rear wheel steer mode select switch data parameter. Does the parameter change?	ON/OFF	Go to Diagnostic Aids	Go to Step 3
3	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Disconnect the rear wheel steer mode select switch. 3. Measure the resistance between the 5 volt reference circuit and the mode select switch signal circuit on the rear wheel steer mode select switch. Does the resistance measure within the specified parameter?	1.8 k Ω to 2.2 k Ω	Go to Step 4	Go to Step 14
4	<ol style="list-style-type: none"> 1. Depress the rear wheel steer mode select switch. 2. Measure the resistance between the 5 volt reference circuit and the mode select switch signal circuit on this switch. Does the resistance measure within the specified parameter?	450 Ω – 550 Ω	Go to Step 5	Go to Step 14
5	<ol style="list-style-type: none"> 1. Turn the ignition to the ON position,with the engine OFF. 2. Measure the voltage between the 5 volt reference circuit of the rear wheel steer mode select switch harness connector and a good ground. Is the voltage at the 5 volt reference circuit within the specified parameter?	4.750 to 5.00 V	Go to Step 7	Go to Step 6
6	Is the voltage at the 5 volt reference circuit less than the specified parameter?	4.75 to 5.00 V	Go to Step 8	Go to Step 9
7	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Measure the resistance between the mode select switch signal circuit of the rear wheel steer mode select switch connector and a good ground. Is the resistance at the mode select switch signal circuit less than the specified parameter?	1500 Ω	Go to Step 11	Go to Step 10
8	Test the 5 volt reference circuit of the rear wheel steer mode select switch for an open, or a short to ground. Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 15	Go to Step 11
9	Test the 5 volt reference circuit of the rear wheel steer mode select switch for a short to voltage. Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 15	Go to Step 11
10	Test the mode select switch signal circuit of the rear wheel steer mode select switch for an open, high resistance or short to voltage. Refer to <i>Circuit Testing and Wiring Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 15	Go to Step 11
11	Inspect for poor connections at the harness connector of the rear wheel steering control module. Refer to <i>Testing for Intermittent and Poor Connections and Connector Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 15	Go to Step 12
12	Inspect for poor connections at the harness connector of the rear wheel steer mode select switch. Refer to <i>Testing for Intermittent and Poor Connections and Connector Repairs</i> in Wiring Systems. Did you find and correct the condition?	—	Go to Step 15	Go to Step 13
13	Important: Perform the Learn Alignment procedure. Refer to <i>Measuring Wheel Alignment (With Rear Wheel Steering)</i> or <i>Measuring Wheel Alignment (Without Rear Wheel Steering)</i> Replace the rear wheel steering module. Refer to <i>Rear Wheel Steering Control Module Replacement</i> . Did you complete the replacement?	—	Go to Step 15	—
14	Replace the rear wheel steer mode select switch. Refer to <i>Rear Wheel Steering Mode Switch Replacement</i> . Did you complete the replacement?	—	Go to Step 15	—
15	<ol style="list-style-type: none"> 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