

DTC C0527

Circuit Description

The rear steering gear motor is a 3 phase DC motor. It has 3 hall effect switches inside the motor assembly. The rear wheel steering control module monitors the hall switches for proper switch position, and will shut down the system if a invalid switch combination is detected. A DTC C0527 will set at that time.

Conditions for Running the DTC

The ignition must be ON with the engine ON.

Conditions for Setting the DTC

- When hall 1, hall 2, and hall 3 circuits have 12 volts as their output, simultaneously, the rear steering motor is not in a recognized, valid position by the rear wheel steering module.
- When hall 1, hall 2, and hall 3 circuits have 0 volts as their output, simultaneously, the rear steering motor is not in a recognized, valid position by the rear wheel steering module.
- The hall sensor supply circuit is open.
- The hall sensor ground circuit is open.

Action Taken When the DTC Sets

- The Service 4 Wheel Steer indicator in IPC will be displayed.
- The code is displayed on the scan tool as DTC C0527.
- The output comm and to the motor is zeroed and the motor drive circuits are disabled using commands from the rear wheel steering control module to open the motor shorting relay.
- The rear wheels will be returned to the centered position.

Conditions for Clearing the DTC

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

Diagnostic Aids

If the wiring harness to the steering gear motor is damaged in any way, it **MUST** be replaced. You can only service the connectors and terminals.

Use a scan tool to monitor the outputs of the hall-affect sensor 12 volt reference circuit. If the voltage of this circuit does not measure between 11.75-12.00 volts, inspect the harness connector of the rear wheel steering control module. Inspect the harness connector for intermittent or poor connections. Refer to **TESTING FOR INTERMITTENT and POOR CONNECTIONS** and Connector Repairs .

Test Description

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

- 2) - This step helps the technician determine if the fault is current.
- 3) - This step determines if the DTC is the result of an intermittent connection at the control module.

DTC C0527 Diagnosis

Step	Action	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 ON. 3. With a scan tool, monitor the DTC Information for DTC C0527 in the rear wheel steering control module. Does the scan tool indicate that DTC C0527 is current?	Go to Step 3	Go to Diagnostic Aids
3	Inspect for poor connections at the harness connector of the rear wheel steering control module. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> in <i>Wiring Systems</i> . Did you find and correct the condition?	Go to Step 7	Go to Step 4
4	Important: If the wiring harness to the steering gear motor is damaged in any way, it MUST be replaced. You can only service the connectors and terminals. Inspect for poor connections at the harness connector of the rear wheel steering control module and the steering gear motor connector. Refer to <i>Testing for Intermittent and Poor Connections</i> and <i>Connector Repairs</i> in <i>Wiring Systems</i> . Did you find and correct the condition?	Go to Step 7	Go to Step 5
5	<ol style="list-style-type: none"> 1. Replace the steering gear motor assembly. Refer to <i>Steering Gear Motor Assembly Replacement</i> in <i>Rear Wheel Steering</i>. 2. Use the scan tool in order to clear the DTCs. 3. Operate the vehicle within normal operating conditions. Does the DTC reset?	Go to Step 6	Go to Step 7
6	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> in <i>Wheel Alignment</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 7	—
7	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within normal operating conditions. Does the DTC reset?	Go to Step 2	System OK