

GENERIC · CHASSIS

C0633

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0633

Front Half Shaft Speed Sensor

C0633 indicates the anti-lock brake system (ABS) module has detected an implausible or missing signal from the front half shaft speed sensor, which measures wheel rotation at the front axle. The computer compares this signal against the other wheel speed sensors and sets the code when the expected pulses are absent, erratic, or inconsistent during driving.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- Anti-lock brake system (ABS) warning light illuminated on the dashboard
- Traction control or stability control warning light also on, since these systems share the same sensor data
- ABS disabled, which may be felt as wheel lockup during hard braking on slippery surfaces
- Speedometer fluctuation or inaccuracy if the affected sensor feeds the vehicle speed signal
- Often no symptoms besides the warning light, with normal braking performance in dry conditions

Common causes, most likely first

- 1 Damaged or corroded wiring harness or connector at the front half shaft speed sensor
- 2 Failed front half shaft speed sensor itself due to heat, debris, or internal fault
- 3 Debris, metal shavings, or rust buildup on the sensor tip or tone ring, disrupting the magnetic signal
- 4 Damaged or cracked tone ring (reluctor ring) on the half shaft, causing erratic pulses
- 5 Excessive wheel bearing play or half shaft runout altering the sensor-to-ring air gap
- 6 Faulty ABS control module or poor ground connection affecting sensor reference voltage
- 7 Aftermarket or mismatched half shaft installation that positions the tone ring incorrectly



How to diagnose and fix it

- 1 Inspect the front half shaft speed sensor connector and wiring for corrosion, chafing, or loose pins, and clean or repair as needed
- 2 Remove the sensor and check the tip and tone ring for metallic debris, rust, or physical damage, then clean and reinstall
- 3 Measure sensor resistance and compare to the manufacturer's specification, and check for an AC voltage signal while spinning the wheel by hand
- 4 Use a scan tool to view live wheel speed data for all four wheels and compare the front signals during a slow test drive
- 5 Check the tone ring on the half shaft for cracks, missing teeth, or incorrect air gap, and replace the half shaft or ring if damaged
- 6 Verify the ABS module ground and power supply, and inspect for any related stored codes that point to a module fault
- 7 Replace the front half shaft speed sensor if all wiring and mechanical checks pass, then clear codes and confirm the repair with a road test

Why this code often misleads

- A dirty or debris-covered sensor tip is one of the most common causes and is frequently overlooked because the sensor itself tests fine electrically.
- The code can set from a damaged tone ring on the half shaft even when the sensor is new, so always inspect the ring before condemning the sensor.
- Wheel bearing play or a bent half shaft can change the air gap and trigger C0633 without any fault in the sensor or wiring.
- Low battery voltage or a weak ground can cause intermittent sensor signals that mimic a failed sensor, so check the charging system first.
- C0633 is sometimes stored alongside transmission or speedometer codes because the front half shaft speed sensor may also provide the vehicle speed signal.

Can I keep driving with C0633?

You can usually drive the vehicle with the warning light on, but the anti-lock brake system and traction control are disabled, so avoid hard braking and slippery conditions until the fault is repaired. If the brake pedal feels abnormal or the warning light is accompanied by a red brake warning, stop driving and have the system inspected immediately.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Jack and jack stands or a lift
- Basic hand tools (socket set, screwdrivers)
- Feeler gauge for air gap measurement
- Brake cleaner and shop rags

Reading C0633

C	Chassis: brakes, steering and suspension.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
6	Brakes, steering and suspension.
33	The exact fault within that area.

Often seen with

C0035 Left Front Wheel Speed Sensor Circuit Range/Performance · **C0040** Left Rear Wheel Speed Sensor Circuit · **C0050** Right Rear Wheel Speed Sensor Circuit Malfunction · **C0632** Front Axle Disconnect Control Circuit · **P0500** Vehicle Speed Sensor Malfunction

See it working

Watch the animated explainer [How a MAF Sensor Works: Hot-Wire Airflow Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0633/>

