

GENERIC · CHASSIS

C0587

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0587

Brake Booster Motor A Position Sensor Circuit/Open

This code means the brake control module has detected an open circuit or loss of signal in the position sensor circuit for the electric brake booster motor, which is the sensor that reports the motor's stroke or position. The module sets the code when the voltage on the sensor signal or return circuit falls outside the expected range for the commanded booster position.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Brakes, steering and suspension

Symptoms you may notice

- Illumination of the red brake warning light, the yellow ABS (Anti-lock Braking System) light, or both on the instrument cluster
- Often no symptoms besides the warning light, with normal brake pedal feel and stopping performance
- A brake pedal that feels unusually firm or requires higher effort because the booster assist is limited or disabled
- Reduced or disabled electronic brake assist features such as emergency brake assist or hill-hold
- A chime or message on the driver information center warning of a brake system fault
- Intermittent warning light that comes and goes over bumps or in wet weather, pointing to a wiring or connector issue

Common causes, most likely first

- 1 Damaged, chafed, or broken wires in the brake booster motor position sensor harness, especially near the booster or where the harness flexes
- 2 Corroded, loose, or water-intruded electrical connector at the position sensor or at the brake control module
- 3 Failed brake booster motor position sensor, either an internal open winding or a worn sensing element
- 4 Open or high-resistance ground connection shared by the booster motor and position sensor circuit
- 5 Faulty brake control module or a module that has lost its calibration for the booster motor position
- 6 Aftermarket or incorrect replacement booster assembly whose sensor does not match the vehicle's calibration
- 7 Physical damage to the booster motor or sensor from impact, heat, or brake fluid contamination



How to diagnose and fix it

- 1 Read the code with a scan tool that can access the brake control module and record any freeze-frame data, then clear the code and verify whether it returns immediately or only after a drive cycle
- 2 Visually inspect the booster motor position sensor harness and connector for chafing, corrosion, pushed pins, or water intrusion, and repair any damaged wiring
- 3 Measure resistance and voltage on the sensor signal, reference, and ground circuits at the sensor connector and compare with the manufacturer's specification to isolate an open circuit
- 4 Check the shared ground points for the booster motor and sensor circuit for looseness or corrosion, and clean and tighten them as needed
- 5 If wiring and grounds pass, substitute a known-good position sensor or perform a resistance sweep of the sensor through its travel to confirm an internal open
- 6 After any sensor or booster replacement, perform the required brake control module calibration or relearn procedure with a capable scan tool
- 7 Clear codes and complete a road test with several braking cycles to confirm the repair and ensure no related codes return

What the booster position sensor really does

- The brake booster motor position sensor is often a non-serviceable part of the booster assembly on many vehicles, so a confirmed sensor failure can mean replacing the entire booster rather than a small sensor.
- A code for this circuit does not always mean the sensor has failed; a poor ground or a chafed wire in the harness is a common cause that a parts-swapping approach will miss.
- Because the booster motor and position sensor share connectors and grounds, a fault in the motor circuit can set a position sensor code as a secondary effect, so always check for related booster motor codes before condemning the sensor.
- After replacement, many vehicles require a scan-tool calibration of the booster motor position; skipping this step can leave the code stored or cause poor brake assist even with good parts.
- Intermittent sets that appear only in wet weather or over rough roads usually point to connector water intrusion or a harness flex point rather than an internal sensor failure.

Can I keep driving with C0587?

The vehicle remains driveable in most cases because the base hydraulic brakes still work, but you should expect reduced power assist and a firmer pedal, and you should avoid towing or heavy loads until the fault is repaired. If the pedal effort becomes excessive or the warning light is accompanied by a hard pedal, stop driving and have the system inspected promptly.



Tools that help

- Scan tool capable of reading brake control module codes and performing calibrations
- Digital multimeter with back-probing pins
- Wiring diagram and connector pinout for the brake booster circuit
- Breakout box or terminal test kit
- Hand tools for trim and harness access

Reading C0587

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

Often seen with

C0586 Brake Booster Motor B Phase U-V-W Circuit Range/Performance · **C0588** Brake Booster Motor A Position Sensor Circuit Low · **C0589** Brake Booster Motor A Position Sensor Circuit High · **C0590** Brake Booster Motor A Phase U-V-W Current High · **C0591** Brake Booster Motor A Phase U-V-W Current Low

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0587/>

