

GENERIC · CHASSIS

C0590

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0590

Brake Booster Motor A Phase U-V-W Current High

C0590 indicates that the brake booster motor's three-phase (U, V, W) current draw is higher than the manufacturer's specified limit, as detected by the control module monitoring the motor driver circuit. The computer compares commanded current to actual feedback and sets this code when the measured current exceeds the threshold for a calibrated time, signaling excessive load or a short in the motor or wiring.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Chassis	Generic (all makes)	High	Professional	Brakes, steering and suspension

Symptoms you may notice

- Illumination of the brake system warning light or a generic check engine light, often with no other symptoms besides the warning light.
- Reduced or absent power brake assist, requiring noticeably higher pedal effort to stop the vehicle.
- A whining, grinding, or humming noise from the brake booster area when the brake pedal is pressed or when the system performs a self-test.
- Intermittent brake pedal pulsation or a pedal that feels unusually hard or slow to return.
- The vehicle may enter a fail-safe mode that limits brake assist or disables certain driver-assist features.
- In rare cases, the brake booster motor may run continuously, draining the battery or overheating the motor.

Common causes, most likely first

- 1 Seized or binding brake booster motor bearings or internal mechanical drag, causing excessive current draw.
- 2 Short circuit or partial short to ground in the motor phase wiring (U, V, or W) or in the motor windings themselves.
- 3 Corroded, loose, or damaged electrical connectors at the brake booster motor or control module, increasing resistance and current.
- 4 Failed brake booster control module or power driver internal to the module, misreporting or delivering incorrect current.
- 5 Mechanical binding in the brake booster assembly or linkage, overloading the motor.
- 6 Water intrusion or contamination inside the motor housing, leading to corrosion and increased current draw.
- 7 Low system voltage or a weak battery causing the motor to draw higher current to produce the same torque.



How to diagnose and fix it

- 1 Verify battery voltage and charging system performance; a low battery can cause false high-current readings.
- 2 Inspect the brake booster motor wiring harness and connectors for chafing, corrosion, or loose pins; repair as needed.
- 3 Measure resistance across each motor phase (U-V, V-W, U-W) and compare to specifications; a shorted or open phase indicates a faulty motor.
- 4 Check for mechanical binding in the brake booster linkage and motor by manually operating the system where possible.
- 5 Use a scan tool to command the brake booster motor and monitor live current data to confirm excessive draw under controlled conditions.
- 6 If wiring and connectors are good, replace the brake booster motor assembly if the motor shows excessive current draw or mechanical drag.
- 7 If the motor and wiring test good, diagnose or replace the brake booster control module as the remaining suspect.

What Most Techs Miss on C0590

- A weak or failing battery often causes this code because the motor draws higher current to compensate for low voltage, so always load-test the battery before condemning the motor.
- Corrosion inside the motor connector can create resistance that mimics a failing motor, and simply cleaning and re-greasing the terminals may resolve the code.
- The code can be set by a momentary current spike during a system self-test, so check for a history of intermittent faults before replacing parts.
- After replacing the brake booster motor or control module, a calibration or learn procedure is often required; skipping it can cause the code to return immediately.
- Related codes such as C0591, C0592, or C0593 may indicate other phases or circuits, so address all stored codes together to avoid a comeback.

Can I keep driving with C0590?

If the brake pedal feels normal and the warning light is the only symptom, you may drive cautiously to a repair shop, but avoid heavy braking or long trips. If brake assist is reduced or the pedal is hard, stop driving and have the vehicle towed, as stopping distance increases significantly.

Tools that help

- OBD-II scan tool with live data and bidirectional control capability
- Digital multimeter with resistance and current measurement functions
- Battery load tester and charging system tester
- Wiring diagram and service information for the specific vehicle
- Basic hand tools and terminal cleaning supplies



Reading C0590

- 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.
- 90** The exact fault within that area.

Often seen with

C0591 Brake Booster Motor A Phase U-V-W Current Low · **C0592** Brake Booster Motor B Phase U-V-W Current High · **C0593** Brake Booster Motor B Phase U-V-W Current Low · **C0594** Brake Pedal Travel Sensor · **C0595** Brake Booster Internal Power Driver Range/Performance

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/c0590/>

