

GENERIC · CHASSIS

C05BD

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C05BD

Brake Booster Motor B Position Sensor Supply Circuit Low

This code means the brake booster motor's position sensor supply circuit is reporting a voltage lower than the manufacturer's expected range. The control module monitors the reference voltage it sends to the brake booster motor position sensor, and when that voltage drops below the calibrated threshold, it stores C05BD and may disable the power brake assist.

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

Symptoms you may notice

- The brake warning light or a stability control warning light is illuminated on the dashboard.
- The brake pedal feels unusually firm or requires noticeably more effort to stop the vehicle.
- A message such as 'Brake System Fault' or 'Service Brake Assist' may appear in the driver information center.
- The brake booster motor may run continuously or not run at all, depending on the failure mode.
- Often no symptoms besides the warning light, especially if the low voltage is intermittent.
- The vehicle may enter a reduced-power or limp mode if the module interprets the fault as critical.

Common causes, most likely first

- A damaged or corroded wiring harness between the brake booster motor position sensor and the control module.
- A faulty brake booster motor position sensor with an internal short to ground or open circuit.
- A poor electrical connection at the sensor connector, such as loose pins or water intrusion.
- A failing brake booster motor assembly that is drawing excessive current and pulling down the sensor supply voltage.
- A low or unstable charging system voltage that causes the reference voltage to sag below the threshold.
- A defective control module that is not supplying the correct reference voltage to the sensor.
- Aftermarket or incorrect electrical accessories tapped into the brake system wiring causing a voltage drop.



How to diagnose and fix it

- 1 Inspect the brake booster motor position sensor connector and wiring for corrosion, chafing, or loose pins, and repair as needed.
- 2 Measure the reference voltage at the sensor connector with the key on and compare it to the manufacturer's specification.
- 3 Check the sensor ground circuit for excessive resistance using a voltage drop test.
- 4 Disconnect the sensor and verify that the reference voltage returns to normal, which confirms whether the sensor is loading the circuit.
- 5 Test the brake booster motor for excessive current draw or a shorted winding that could pull down the supply voltage.
- 6 Verify the charging system and battery condition to rule out low system voltage as the root cause.
- 7 If all wiring and components test good, follow the manufacturer's diagnostic flow chart for control module testing or replacement.

What the supply circuit low code hides

- A low reference voltage at the position sensor is often caused by a shorted sensor rather than a wiring problem, so disconnecting the sensor and watching the voltage return to normal is a quick confirmation.
- The brake booster motor and its position sensor share a common supply circuit on many vehicles, so a failing motor can pull down the sensor voltage and set this code even though the sensor itself is fine.
- This code can be set intermittently by water intrusion into the connector after a car wash or heavy rain, leaving no visible corrosion until the connector is opened.
- Technicians sometimes replace the brake booster assembly when the real fault is a chafed wire in the harness near the pedal box or firewall, so always perform a wiggle test on the harness while monitoring the voltage.
- A weak battery or failing alternator can cause a low reference voltage that sets this code without any brake component being defective, so check system voltage first.

Can I keep driving with C05BD?

Because this fault can reduce or disable power brake assist, you should not continue driving normally. If the brake pedal feels firm or stopping distance increases, stop driving and have the vehicle towed to a repair facility.

Tools that help

- Digital multimeter with voltage and resistance measurement
- Scan tool capable of reading brake system codes and live data
- Wiring diagram for the brake booster motor position sensor circuit
- Back probe pins or breakout leads for connector testing
- Battery load tester or charging system tester



Reading C05BD

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

Often seen with

C0040 Left Rear Wheel Speed Sensor Circuit · **C0045** Left Rear Wheel Speed Sensor Circuit Malfunction · **C05BC** Brake Booster Motor B Position Sensor Supply Circuit/Open · **C05BE** Brake Booster Motor B Position Sensor Supply Circuit High · **C05BF** Brake Booster Motor B Position Sensor Supply Circuit Range/P

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/c05bd/>

