

GENERIC · CHASSIS

C05CF

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C05CF

Brake Master Cylinder Piston Position Sensor B Circuit Range/Performance

The C05CF code indicates that the antilock braking system (ABS) module has detected an out-of-range or performance fault in the electrical circuit for the brake master cylinder piston position sensor B. This sensor reports the travel and position of the master cylinder piston to the ABS module, which uses that signal to modulate brake pressure and assist with stability control. The computer sets this code when the signal from sensor B does not match expected values during key-on self-tests or while the vehicle is in motion.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- Illumination of the ABS warning light, and often the traction control and stability control lights as well
- A soft or low brake pedal feel, or a pedal that requires extra travel to stop the vehicle
- Reduced or disabled antilock braking function, which may only become apparent during hard braking or on slippery surfaces
- The stability control system may intervene unnecessarily or fail to activate when needed
- Often no symptoms besides the warning light, especially if the fault is intermittent or only affects a redundant circuit

Common causes, most likely first

- 1 A faulty brake master cylinder piston position sensor B, either due to internal wear or contamination
- 2 Damaged, chafed, or corroded wiring in the sensor B circuit, including the harness connector at the master cylinder
- 3 A poor electrical connection at the sensor or at the ABS module connector, often caused by water intrusion or terminal fretting
- 4 A failing brake master cylinder that allows excessive piston travel or binding, which drives the sensor signal out of range
- 5 Low brake fluid level or air in the hydraulic system, which can alter piston position and trigger a performance fault
- 6 A software calibration issue or internal fault in the ABS control module that misinterprets a valid sensor signal



How to diagnose and fix it

- 1 Check the brake fluid level and inspect the master cylinder for leaks or external damage before any electrical diagnosis
- 2 Perform a visual inspection of the sensor B harness and connector, looking for chafing, corrosion, or loose pins
- 3 Use a scan tool to read live data from the piston position sensor B while slowly pressing and releasing the brake pedal, comparing the signal to the expected range
- 4 Measure resistance and voltage on the sensor B circuit at the sensor and at the ABS module to isolate a wiring or connector fault
- 5 If the sensor signal is erratic or out of range, remove and inspect the sensor for debris or damage, then replace it if necessary
- 6 Bleed the brake system thoroughly after any hydraulic work to remove air that could affect piston position readings
- 7 Clear the code and perform a road test that includes ABS activation to verify the repair and confirm the code does not return

What the piston position sensor really does

- Many technicians replace the master cylinder when the actual fault is a five-dollar connector pin that has lost tension, so always load-test the circuit before condemning hydraulic parts.
- A piston position sensor B code can be set by a perfectly healthy sensor if the brake fluid is low enough to let the piston travel farther than the module expects during normal braking.
- On some vehicles, the piston position sensor is not serviceable separately from the master cylinder, which makes an accurate circuit diagnosis even more important before replacing the entire assembly.
- An intermittent code that only appears during cold starts often points to a failing sensor rather than a wiring fault, because the sensor's internal electronics can drift with temperature.
- The ABS module may store this code as pending without turning on the warning light, so a full scan of all modules is the only way to catch it before it becomes a hard fault.

Can I keep driving with C05CF?

You can usually drive the vehicle to a repair shop, but the antilock braking system may be disabled, so leave extra following distance and avoid hard braking or slippery conditions. If the brake pedal feels soft or travels farther than normal, stop driving and have the vehicle towed.



Tools that help

- OBD-II scan tool with ABS live data capability
- Digital multimeter with back-probing pins
- Brake fluid level tester and clean brake fluid
- Socket set and line wrench for brake line fittings
- Vehicle-specific service information for sensor circuit pinouts

Reading C05CF

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.
CF	The exact fault within that area.

Often seen with

C0040 Left Rear Wheel Speed Sensor Circuit · **C0051** Front Left ABS Solenoid 1 Circuit Malfunction · **C05CE** Brake Master Cylinder Piston Position Sensor B Circuit Voltage · **C05D0** Brake Master Cylinder Piston Position Sensor A/B Correlation · **P0571** Brake Switch 'A' Circuit

See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c05cf/>

