

GENERIC · CHASSIS

C05AD

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C05AD

Brake Blending System Performance

The C05AD code indicates that the brake blending system, which coordinates traditional hydraulic braking with regenerative braking in hybrid and electric vehicles, is not performing as expected. The computer monitors the interaction between friction brakes and electric motor deceleration and sets this code when the actual brake force or pedal feel deviates from the programmed strategy.

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

Symptoms you may notice

- Illumination of the brake system warning light or a generic check engine light
- A noticeable change in brake pedal feel, such as a soft or unusually firm pedal
- Inconsistent braking effort, especially during the transition between regenerative and friction braking
- Reduced or absent regenerative braking effect, leading to lower efficiency
- Often no symptoms besides the warning light, with normal braking performance maintained

Common causes, most likely first

- 1 Faulty brake pedal position sensor or stroke sensor providing incorrect input to the blending system
- 2 Air trapped in the hydraulic brake system or low brake fluid level affecting pressure modulation
- 3 Malfunctioning ABS (Anti-lock Braking System) pump or hydraulic control unit unable to modulate pressure correctly
- 4 Software calibration issue in the brake control module or hybrid control module
- 5 Worn or contaminated brake pads or rotors causing inconsistent friction braking force
- 6 Failed wheel speed sensor or steering angle sensor supplying erroneous data to the blending algorithm
- 7 Communication fault on the CAN (Controller Area Network) bus between the brake control module and hybrid control module



How to diagnose and fix it

- 1 Verify brake fluid level and condition; top up or flush if contaminated
- 2 Perform a visual inspection of brake pads, rotors, and calipers for wear or leaks
- 3 Use a scan tool to read live data from the brake pedal sensor and compare to specified values
- 4 Check for and bleed any air from the hydraulic brake system using a pressure bleeder
- 5 Inspect wiring and connectors at the brake control module and hybrid control module for corrosion or damage
- 6 Run the manufacturer's brake system calibration or relearn procedure with a capable scan tool
- 7 If calibration fails, diagnose the ABS pump and hydraulic control unit for proper operation

Brake Blending Faults Often Misdiagnosed

- A common oversight is assuming the code points to a failed ABS module when a simple low brake fluid level or air in the system is the actual cause.
- The brake blending system relies on accurate wheel speed data, so a faulty wheel speed sensor can set C05AD without any ABS codes being present.
- After replacing brake pads or calipers, the blending system may require a relearn procedure; skipping this step can trigger C05AD even with correct hardware.
- In some vehicles, a weak 12-volt battery or poor ground connection can cause voltage drops that disrupt communication between modules and set this code.
- The code does not always indicate a hydraulic fault; software bugs in the brake control module can cause performance deviations that are resolved with a reflash.

Can I keep driving with C05AD?

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 towing. If braking performance is noticeably degraded or the pedal feels unsafe, stop driving and have the vehicle towed.

Tools that help

- Scan tool with live data and bidirectional control capabilities
- Brake pressure bleeder
- Digital multimeter
- Wheel speed sensor tester
- Manufacturer-specific diagnostic software



Reading C05AD

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

Often seen with

C0040 Left Rear Wheel Speed Sensor Circuit · **C0050** Right Rear Wheel Speed Sensor Circuit Malfunction · **C0110** ABS Pump Motor Circuit Malfunction · **P0571** Brake Switch 'A' Circuit · **U0121** Lost Communication With Anti-Lock Brake System (ABS) Control

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/c05ad/>

