



C05AC

Brake Blending Separation Valve Stuck Closed

The antilock braking system (ABS) control module has detected that the brake blending separation valve is stuck in the closed position, preventing normal hydraulic pressure modulation between the regenerative and friction braking systems. This valve is responsible for isolating the friction brakes during regenerative braking events, and when it fails to open, the module stores code C05AC and may disable certain brake blending functions.

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

Symptoms you may notice

- Illumination of the ABS warning light and possibly the traction control or stability control warning light
- A noticeable reduction in regenerative braking efficiency, leading to lower fuel economy in hybrid or electric vehicles
- A firm or unusually high brake pedal feel during light braking applications
- Inconsistent brake pedal response when transitioning between regenerative and friction braking
- Often no symptoms besides the warning light, especially if the valve stuck closed during a non-critical driving condition

Common causes, most likely first

- 1 Contamination or debris lodged in the valve seat, preventing the valve from opening
- 2 Internal corrosion of the valve components due to moisture in the brake fluid
- 3 Electrical failure of the valve solenoid or its wiring harness
- 4 A stuck or binding valve spool caused by lack of use or infrequent actuation
- 5 Faulty ABS control module driver circuit that cannot command the valve to open
- 6 Mechanical binding of the valve due to degraded seals or internal component wear



How to diagnose and fix it

- 1 Perform a visual inspection of the valve, wiring, and connectors for obvious damage or corrosion
- 2 Check for related diagnostic trouble codes (DTCs) in the ABS module and verify power and ground at the valve solenoid
- 3 Use a scan tool to command the valve open and closed while listening for an audible click; no click indicates an electrical or mechanical fault
- 4 Test the valve solenoid resistance with a multimeter and compare to manufacturer specifications
- 5 Flush the brake fluid and perform an ABS bleed procedure to remove contaminants and air from the hydraulic system
- 6 If the valve remains stuck, remove and inspect the valve for debris or corrosion; clean or replace as necessary
- 7 After repair, clear codes and perform a road test to verify the valve operates correctly and the code does not return

Why a Stuck Valve May Not Be the Valve's Fault

- A stuck-closed separation valve is frequently caused by contaminated brake fluid that has absorbed moisture over time, leading to internal corrosion and debris accumulation.
- The valve may only stick intermittently, so the code can set during specific driving conditions such as a panic stop or a regenerative braking event, making it difficult to reproduce in the shop.
- A weak or failing ABS pump motor can reduce hydraulic pressure available to actuate the valve, mimicking a stuck valve and leading to misdiagnosis.
- Some vehicles require a bidirectional scan tool to properly command the valve during diagnosis; without it, technicians may replace the valve unnecessarily.
- The code can be set by a software glitch in the ABS module, so checking for and applying any available software updates should be part of the diagnostic process.

Can I keep driving with C05AC?

You can usually continue driving to a repair facility, but avoid heavy braking or emergency stops because the valve may not open to allow full friction braking assist. If the brake pedal feels abnormally firm or braking performance is noticeably reduced, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with bidirectional control and ABS capabilities
- Digital multimeter
- Brake fluid pressure gauge
- Factory service information for valve testing and bleeding procedures
- Basic hand tools for component access



Reading C05AC

- 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.
- AC** 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 · **C05A9** ABS Pump Motor Supply Voltage Circuit A/B Correlation · **C05AB** Brake Blending Separation Valve Performance

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c05ac/>

