



## C05AE

### ABS Pump Motor Calibration Not Learned

The anti-lock braking system (ABS) control module has not successfully completed the calibration routine for the ABS pump motor, so it cannot verify that the motor operates correctly under all conditions. The module detects that the learned calibration values are missing or invalid, typically after a module replacement, reprogramming, or a fault that interrupted the calibration process.

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

### Symptoms you may notice

- The ABS warning light is illuminated on the dashboard, often accompanied by the traction control and stability control lights.
- The ABS system may be disabled, leading to conventional braking without anti-lock assistance during hard stops.
- A soft or inconsistent brake pedal feel may occur if the pump motor cannot be activated for self-test.
- Some vehicles may display a message such as 'ABS unavailable' or 'Service ABS system' in the driver information center.
- Often no symptoms besides the warning light, as the base braking system remains functional.
- In rare cases, the pump motor may run unexpectedly or not at all during the calibration attempt, causing noise or a stored pending code.

### Common causes, most likely first

- 1 The ABS control module was recently replaced or reprogrammed and the calibration procedure was not performed or was interrupted.
- 2 A low battery or unstable voltage during the calibration routine prevented the module from storing the learned values.
- 3 A faulty ABS pump motor or its electrical circuit (wiring, connector, or internal motor fault) prevents successful calibration.
- 4 A problem with the ABS wheel speed sensors or their circuits that prevents the module from completing the calibration prerequisites.
- 5 A software or firmware issue in the ABS module that requires a reflash or update to support calibration.
- 6 A defective ABS module itself that cannot retain calibration data due to internal memory failure.
- 7 Corrosion or water intrusion in the ABS module connector or pump motor connector causing intermittent calibration failure.



## How to diagnose and fix it

- 1 Verify battery voltage and charging system performance; a weak battery is a common cause of failed calibration.
- 2 Connect a capable scan tool and check for other ABS-related codes, especially wheel speed sensor codes, that must be resolved first.
- 3 Inspect the ABS pump motor connector and wiring for corrosion, damage, or loose pins; repair as needed.
- 4 Perform the manufacturer's specific ABS pump motor calibration or learn procedure using a scan tool that supports bidirectional control.
- 5 If calibration fails, check the pump motor's resistance and power/ground circuits according to the service information.
- 6 Reprogram or update the ABS module software if a known calibration issue exists for the vehicle.
- 7 If all else fails, replace the ABS pump motor or module as directed by the manufacturer's diagnostic flow.

## Calibration fails for reasons beyond the pump

- A weak battery is the most overlooked cause; the ABS module may abort calibration if system voltage drops below a threshold during the procedure.
- The code can set after a simple battery replacement if the module loses its learned values and the calibration is not automatically re-run.
- Wheel speed sensor faults, even if they do not set their own codes, can prevent the calibration from completing because the module needs valid wheel speed inputs.
- Some vehicles require the calibration to be performed with the vehicle on a level surface and with all doors closed to avoid module sleep mode interference.
- A pump motor that runs during calibration but does not produce the expected pressure change can indicate a hydraulic issue rather than an electrical one.

## Can I keep driving with C05AE?

The vehicle remains drivable with conventional braking, but the ABS and stability control systems are disabled, which increases stopping distance on slippery surfaces. Avoid hard braking or emergency maneuvers and have the system diagnosed promptly.

## Tools that help

- OBD-II scan tool with ABS bidirectional control and calibration capabilities
- Digital multimeter for voltage and resistance checks
- Battery charger or power supply to maintain stable voltage during calibration
- Service information for the specific vehicle's calibration procedure
- Basic hand tools for connector and wiring inspection



## Reading C05AE

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

## Often seen with

**C0035** Left Front Wheel Speed Sensor Circuit Range/Performance · **C0040** Left Rear Wheel Speed Sensor Circuit · **C0050** Right Rear Wheel Speed Sensor Circuit Malfunction · **C0110** ABS Pump Motor Circuit Malfunction · **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/c05ae/>

