

GENERIC · CHASSIS

C0510

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0510

Hill Hold Function Disabled

C0510 indicates that the electronic stability control (ESC) module has disabled the hill hold function, which normally keeps the vehicle stationary for a moment when you release the brake on an incline. The computer detected a condition that prevents reliable hill hold operation, such as a missing input from the brake pedal position sensor, an implausible signal from the wheel speed sensors, or an internal fault in the ESC module.

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

Symptoms you may notice

- Hill hold assist warning light illuminated on the dashboard
- The vehicle rolls backward when you release the brake on a hill, as if the feature is not there
- A chime or message such as 'Hill Hold Disabled' or 'Hill Start Assist Unavailable' appears
- Often no symptoms besides the warning light, with normal braking and driving behavior
- Other stability control functions like traction control may also be disabled
- The brake pedal may feel slightly different if a brake switch fault is present

Common causes, most likely first

- Faulty brake pedal position sensor or brake light switch sending an implausible signal
- Malfunctioning wheel speed sensor or damaged reluctor ring causing erratic speed readings
- Low or uneven tire pressure affecting wheel speed signals
- Worn or failing battery causing low voltage to the ESC module
- Internal fault in the ESC module or its programming
- Damaged wiring or corroded connectors between the ESC module and sensors
- Steering angle sensor or yaw rate sensor out of calibration or faulty

How to diagnose and fix it

- Check for other stored codes in the ESC and related modules to identify the root cause
- Inspect and test the brake pedal position sensor and brake light switch for proper operation
- Check tire pressures and inspect wheel speed sensors and reluctor rings for damage or debris
- Test the battery and charging system to ensure stable voltage to the ESC module
- Inspect wiring and connectors at the ESC module and sensors for corrosion or damage
- Perform a steering angle sensor calibration and ESC system reset if applicable
- If all else fails, reprogram or replace the ESC module after confirming power and ground integrity



What most technicians overlook with C0510

- A weak battery or poor ground connection can cause the ESC module to disable hill hold without setting any other codes, so always load-test the battery first.
- The brake pedal position sensor often wears out gradually, producing a signal that seems normal during a quick check but fails under specific conditions like light pedal pressure.
- After replacing a wheel speed sensor or brake switch, the hill hold function may remain disabled until you perform a steering angle sensor calibration and clear the codes.
- C0510 can be set by a mismatched tire size or uneven tire wear, which alters wheel speed signals enough to confuse the hill hold logic without triggering a wheel speed sensor code.
- Some vehicles require a software update to the ESC module to correct false hill hold disabling, so check for technical service bulletins before replacing parts.

Can I keep driving with C0510?

You can generally continue driving safely because the hill hold function is a convenience feature and normal braking remains fully functional. However, be extra cautious on steep inclines since the vehicle may roll backward when you release the brake, and avoid relying on hill hold until the fault is repaired.

Tools that help

- OBD-II scan tool with ABS/ESC capability
- Digital multimeter
- Tire pressure gauge
- Brake pedal position sensor tester or multimeter
- Battery load tester
- Socket set and trim removal tools

Reading C0510

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.
10	The exact fault within that area.

Often seen with

C0050 Right Rear Wheel Speed Sensor Circuit Malfunction · **C0110** ABS Pump Motor Circuit Malfunction · **C0121** Valve Relay Circuit Malfunction · **C0161** ABS/TCS Brake Switch Circuit · **C0561** ABS Disabled Warning Indicator Request



See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0510/>

