

Motor & Controller Faults

Diagnosing CEMOTO motor cut-outs, stuttering, loss of power under load, and controller-related error codes.

Related error codes

Code	Meaning
E07	Motor Error
E09	Controller Error
E12	BMS Communications Error

Full definitions: [Display & Error Codes](#).

Symptom: motor cuts out under load

Power is fine on the flat, but the motor cuts when climbing or accelerating.

Check in this order

1. Battery voltage sag Measure pack voltage while the fault occurs. A battery that reads normal at rest but collapses under load has a failing cell group or a BMS that is tripping on over-current or under-voltage. Charge fully and retest; if the fault persists on a full charge, the battery needs assessment.

2. Over-current protection The controller limits current to protect the motor and itself. Parameter **P14** sets the controller current limit (default 12A, range 1–20A). An incorrect value can cause nuisance trips or, conversely, allow damaging current. Only change this with guidance.

3. Motor phase wires Inspect the three thick phase wires between controller and motor:

- Check the connector for burned, discolored or partially withdrawn pins.
- Check for chafing where the harness passes the swing arm pivot.
- A loose phase wire causes stuttering, harsh noise and heat at the connector.

4. Hall sensor wiring The motor uses hall sensors to report rotor position. A fault here produces **E07 Motor Error** or rough, juddering operation from standstill.

5. Over-temperature The controller derates or cuts when hot. The finned controller housing is designed to dissipate heat — confirm it is not packed with mud, and that airflow is not blocked. Riding continuously at low speed with high current heats the controller faster than open trail riding.

Video: *CEMOTO E07 Error — Motor & Wiring Troubleshooting Guide* — see [Technical Guides](#).

Symptom: E09 Controller Error

E09 indicates a controller-internal or controller-detected fault.

Before replacing the controller, verify:

1. **Power supply is correct.** Battery voltage at the controller input matches the expected nominal voltage (48V or 72V). An incorrect or fluctuating supply can trigger E09.
2. **No short circuit downstream.** Inspect the motor phase wires and the throttle / brake / light circuits for a short to ground or to each other. A short in a peripheral circuit can present as a controller fault.
3. **All connectors are seated.** Reseat the display, motor, throttle, brake and battery connectors.
4. **Parameter values are sane.** Check **P03** (voltage level), **P06** (wheel diameter) and **P14** (current limit). A misconfigured voltage level can trigger spurious faults. See [Display & Settings](#).

Video: *E09 Error — Check These Before Replacing the Controller* — see [Technical Guides](#).

“ **Warranty:** The controller carries a 12-month warranty. A warranty claim requires the fault to be a performance failure or quality problem attributable to the product that cannot be repaired. See [Warranty Claims](#).

Symptom: E12 BMS Communications Error

The controller cannot communicate with the battery management system.

1. **Check the battery connector.** Unplug, inspect for corrosion and damaged pins, and reseal firmly.
 2. **Check the BMS signal wiring** for continuity and chafing.
 3. **Confirm the battery is properly seated and latched.**
 4. If the error persists with a known-good battery, the BMS or its wiring is faulty.
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Symptom: motor is noisy

Reproduced from the owner manual:

Possible cause	Solution
Chain drying	Apply lubricant to the chain
Motorcycle is overloaded	Do not exceed the rated load limit

Additional causes to consider:

- **Loose chain tension.** Chain slack should be approximately **15 mm**.
 - **Worn chain or sprocket.** Worn teeth hook or clatter under load.
 - **Loose motor mounting bolts.** Check motor mount fasteners for correct torque.
 - **Damaged wheel bearings.** Rough bearing noise that changes with wheel speed rather than motor speed points to bearings, not the motor.
 - **Phase wire fault.** A rhythmic growl or judder that scales with throttle suggests a phase or hall issue rather than a mechanical fault.
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Symptom: the motor runs but the bike will not move

The motor turns but there is no drive to the wheel. See [Drive & Transmission](#) — this points to the chain, sprocket, tensioner or freewheel rather than the motor.

Motor installation and removal

Step-by-step video walkthroughs are available for hub motor service:

Video	Applies to
How to Install a CEMOTO Motor — Step-by-Step Tutorial	D-series
How to Remove a CEMOTO Motor — Step-by-Step Tutorial	D-series
DIY hub motor replacement	eBikes

These are listed in [Technical Guides](#).

“ **Warranty notice:** Motor warranty is void where the coil is burned, or where the fault results from demagnetization, short circuit, open circuit, abnormal noise, material damage, deformation or fracture caused by external factors.

Unauthorized disassembly voids coverage. See [Warranty](#).

Motor warranty period

The motor carries a **12-month** warranty on the D-series, covering performance failure or quality problems attributable to the product that cannot be repaired.

Related pages

- [Display & Error Codes](#)
 - [Drive & Transmission](#)
 - [Battery Care & Charging](#)
 - [Warranty](#)
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