

Drive & Transmission

Diagnosing chain, sprocket, tensioner and drivetrain faults on CEMOTO D-series electric dirt bikes.

How the D-series drivetrain is arranged

The D-series uses a hub motor with a **chain final drive** from the motor output to the rear wheel. The chain runs to a rear sprocket, and a **tensioner pulley** maintains tension on the run. This is a simple, serviceable arrangement — and almost all drivetrain problems are tension, lubrication or wear.

Chain tension

Item	Value
Correct chain slack	Approximately 15 mm

Adjusting chain tension

Reproduced from the owner manual:

1. Loosen the **rear axle nuts**.
2. Adjust the **chain tension screw** until the chain slack is correct (approximately 15 mm).
3. Confirm the wheel remains aligned in the swing arm — a misaligned wheel causes the chain to run off the sprocket and wears the tire unevenly.
4. **Tighten the rear axle nuts.**

“ **Correctly tighten the rear axle.** An under-torqued rear axle will move under drive load, changing chain tension and potentially locking the rear wheel. Replace the axle nut if its self-locking feature is worn.

Symptom: the motor runs but the bike does not move

This points to the drive, not the motor. Check:

- 1. **Broken chain.** Inspect the chain along its full length.
- 2. **Chain off the sprocket.** A slack or misaligned chain can derail.
- 3. **Sprocket failure.** Check for broken or worn teeth. Hooked teeth indicate the sprocket is worn out.
- 4. **Tensioner pulley.** Confirm the pulley turns freely and is not seized — a seized pulley will not maintain tension.
- 5. **Freewheel / hub failure.** If the chain and sprockets are intact but the wheel does not turn, the fault is internal to the hub. This requires professional service.
- 6. **Motor shaft splines or keyway.** Stripped splines on the motor output allow the motor to spin without driving the chain. This is usually accompanied by noise.

Symptom: noise from the drivetrain

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

Further causes:

Sound	Likely cause
Rhythmic clicking, once per chain revolution	A stiff or seized link; a damaged link should be replaced
Continuous whirring	Chain too tight — this loads the motor bearings and should be corrected immediately
Slapping under acceleration	Chain too loose
Rattle at the rear	Worn sprocket, or a loose tensioner

Sound	Likely cause
Scraping that scales with motor speed, not wheel speed	Motor or controller fault, not the drivetrain — see Motor & Controller Faults

Symptom: chain jumps or skips under acceleration

1. **Chain tension.** Slack allows the chain to ride up on the sprocket teeth.
2. **Worn sprocket.** Hooked or pointed teeth allow the chain to skip. Replace the sprocket and, normally, the chain at the same time — a new chain on a worn sprocket wears rapidly.
3. **Worn chain.** A chain that has stretched beyond its service limit no longer meshes correctly. Chains do not "stretch" — the pins and rollers wear, increasing pitch.
4. **Misalignment.** Confirm the rear wheel is square in the swing arm.

Symptom: the bike is noisy when I stop pedalling (eBikes)

This is characteristic of a freewheel or clutch issue rather than the chain. On eBikes with a derailleur drivetrain, check the derailleur adjustment and chain line as well.

Lubrication and cleaning

Task	Frequency	Notes
Lubricate the chain	After riding in wet or dusty conditions, and whenever the chain appears dry	Use a chain lubricant suited to your conditions. Wipe off excess — surplus lubricant attracts grit
Clean the chain	As needed	A dry brush first; avoid aggressive solvents that strip factory lubricant from inside the rollers

Task	Frequency	Notes
Inspect chain wear	Regularly	Check for stiff links, rust and elongation
Check tension	Frequently	Approximately 15 mm slack
Inspect the sprocket	With each chain service	Look for hooked, sharp or missing teeth

After off-road riding: clean the chain, the sprockets and the tensioner pulley of mud and grit. Grit is the primary cause of accelerated drivetrain wear.

Wear components and warranty

The following are **wear-and-tear parts and are excluded from warranty**:

- Chains and sprockets
- Tensioner pulley
- Bearings and cables
- Rubber seals and grips

They are available as replacement parts at cost — see [Spare Parts & Compatibility](#).

Related parts

CEMOTO supplies these D-series drivetrain components as spare parts:

Part
D03 chains for dirt bike
D03 tensioner pulley
D03 dirt bike motor
D03 motor protection cover
D03 front / rear axle sleeve

See [Spare Parts & Compatibility](#) for the full catalog and how to confirm compatibility with your model.

Related pages

- [Motor & Controller Faults](#)
- [Maintenance Schedule](#)
- [Spare Parts & Compatibility](#)
- [Technical Guides](#)

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