VanMoof S3

Fork Cable Inspection & Steering Limiter Installation

A novice-friendly, at-home guide without a bike stand or specialist workshop equipment



Prepared from a real owner repair • September 2026

About this guide

This guide documents the removal and refitting of the VanMoof S3 front fork so the internal cable-routing area can be inspected and a steering limiter installed. It is written for owners who are comfortable carrying out careful mechanical work but may never have removed a bicycle fork before.

The bike photographed for this guide was successfully completed at home. Its cable openings were already smooth, so no material was removed. Inspection should always come before polishing: if an opening is smooth and free of burrs, leave it alone.

> IMPORTANT This is an independent community guide and is not affiliated with or endorsed by VanMoof. Work carefully, photograph each stage, and verify safety-critical fasteners and torque settings for your exact bike before riding.

What you will be doing

- Remove the handlebar/stem and headset components.
- Free the handlebar-button wiring and front light.
- Remove the front mudguard and prepare the motor cable with a guide wire.
- Remove the fork and inspect the cable passage for sharp edges or burrs.
- Install the steering limiter.
- Refit the fork and correctly route the button, motor and light cables.
- Reassemble the front end and carry out final steering, brake and electrical checks.

Useful items

Normal hand tools for the S3 front end, electrical tape, a long thin guide wire, good lighting, a clean work area, and something soft to support the frame and handlebars. A plastic brake-piston spreading tool can also be useful if the front brake lever is accidentally operated while the wheel is out.

> BEFORE YOU BEGIN Power the bike off. Keep small headset parts in removal order. Do not squeeze the front brake lever while the wheel/rotor is removed.

01 Remove the handlebar / stem assembly

Begin by loosening and removing the handlebar/stem assembly from the top of the fork steerer. Support the handlebars as they come free; do not let them hang from the brake hoses or button cables.



Start at the stem/steerer area.



Loosen the stem hardware carefully.



Lift the assembly, disconnect cables and secure it.



The headset and cable area is now exposed.

TIP Take a clear photograph before removing the next layer. It is much easier to copy your own original arrangement during reassembly than to rely on memory.

02 Record and remove the headset components

Remove the headset components one at a time. Keep them in exactly the order and orientation in which they came off. Pay close attention to the way the button cables pass through and around the components.



Headset removal reference 1.



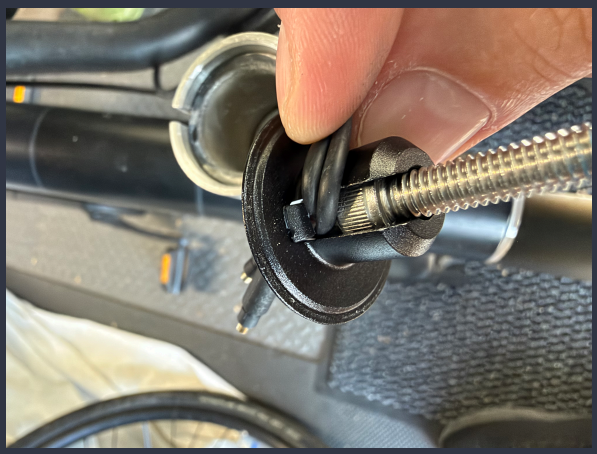
Headset removal reference 2.



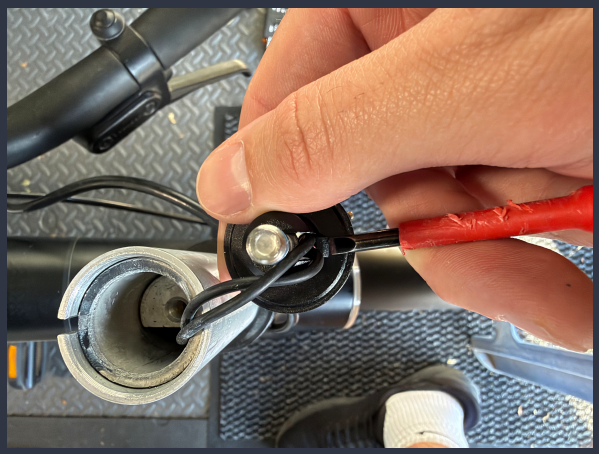
Headset removal reference 3.



Headset removal reference 4.



Headset removal reference 5.



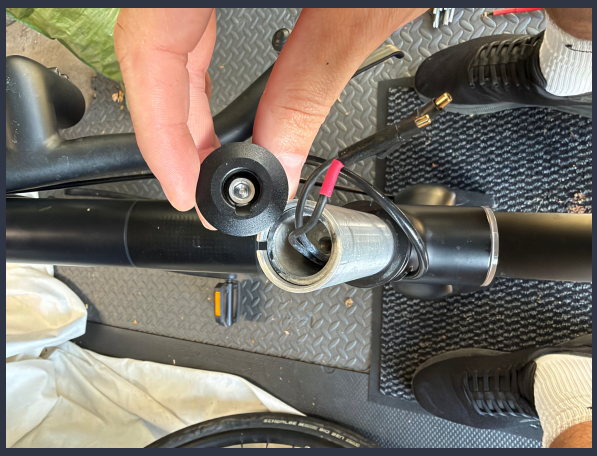
Headset removal reference 6.



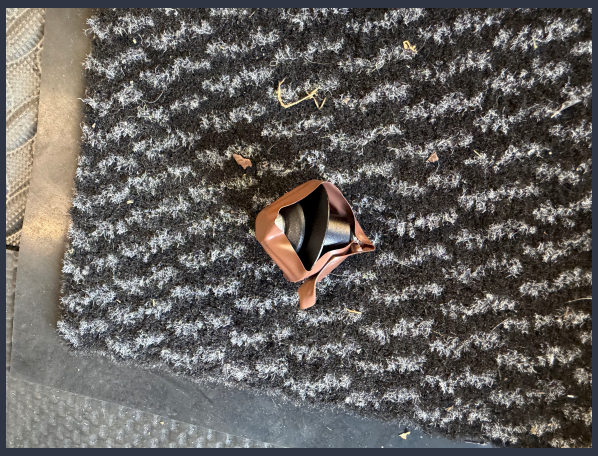
Headset removal reference 7.



Headset removal reference 8.



Headset removal reference 9.



Headset removal reference 10.

TIP Lay the parts out from left to right as they are removed and tape components together. Do not force a headset part past a cable; manoeuvre the cable through or around it as required.

03 Free the button wiring

With the upper headset parts removed, carefully free the two handlebar-button cables so the fork can later be lowered away from the frame. Handle connectors by their bodies rather than pulling on the wires.



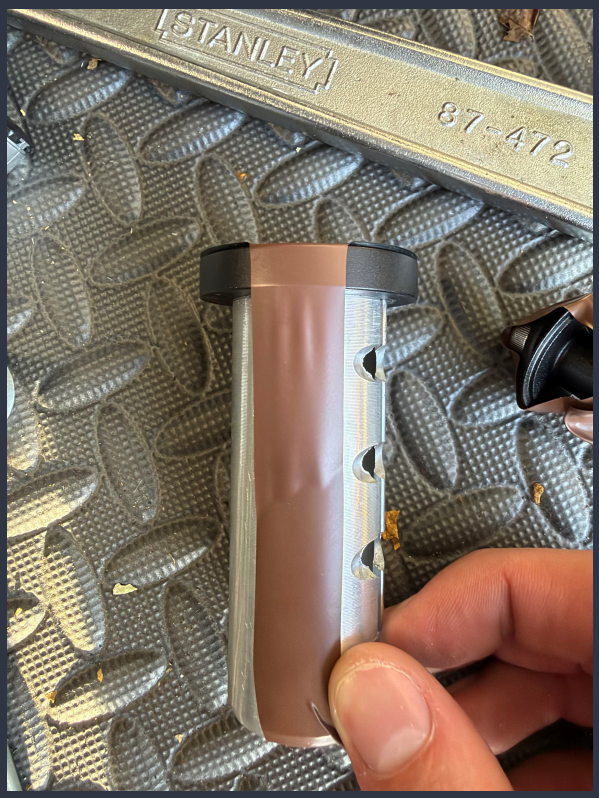
Expose and identify the button wiring.



Remove all components.



Keep track of the original routing.



Secure components together.

ROUTING NOTE During reassembly, both button cables will travel upwards through the shared steerer cable opening towards the handlebars. Do not pull all available slack upwards; the steering area still needs enough cable movement to turn freely.

04 Remove the front light

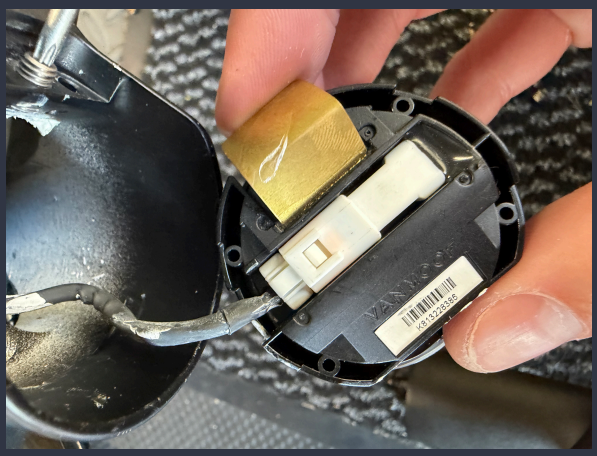
Remove the front light from its mounting position and disconnect it carefully. Hold the connector bodies rather than pulling on the wires. Set the light somewhere safe.



Remove the front-light mounting hardware.



Support the light as it comes away.



Locate the light connection.

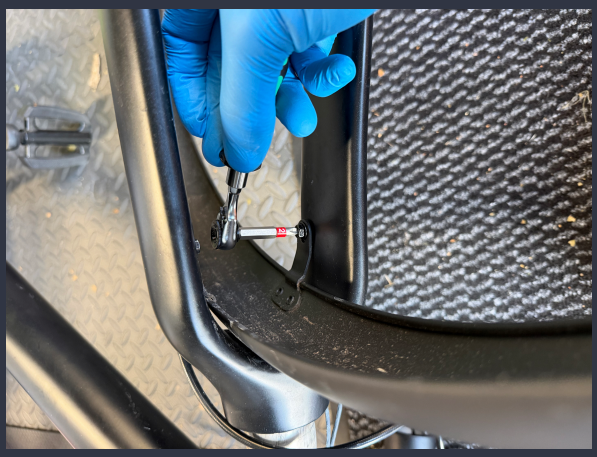


Disconnect by the connector body and secure both parts.

REMEMBER The front-light cable is separate from the motor/button cable route. Note exactly where yours sits before moving it so you can reproduce the routing later.

05 Remove the front mudguard

Remove the front mudguard/fender mounting hardware and carefully withdraw the mudguard from between the fork legs. Keep its hardware together. Removing it gives much better access to the lower motor-cable opening.





Remove the mudguard hardware.

06 Prepare and withdraw the motor cable

Disconnect the motor cable at the front wheel. Before withdrawing it through the fork, attach a long guide wire to the connector. The guide wire should remain inside the fork so it can be used to reinstall the motor cable later.



Lay the frame on its side for proper access.



Prepare access before pulling the cable through.



Ensure the button cables are not snagged.



There is access to the cable route from under the fork.

CRITICAL Do not pull the motor cable out without leaving a guide wire through the fork. A bare guide wire is easy to feed through later; getting the large motor connector back through the internal passage is much harder.

07 Remove the fork

Support the frame securely, then slowly lower the fork and steerer out of the head tube. Watch every cable as the fork moves. The weight of the fork must not be allowed to pull on the wiring.



You will see the motor cable passing through the fork.



A small tool can help to free this part of the motor cable.

08 Inspect the cable-routing area

With the fork removed, inspect the openings and surfaces contacted by the motor and button cables. Use a bright light and look for sharp edges, burrs, casting or machining imperfections, shiny rub marks, cuts, flattened insulation or anything that could act as a cutting edge as the steering moves.



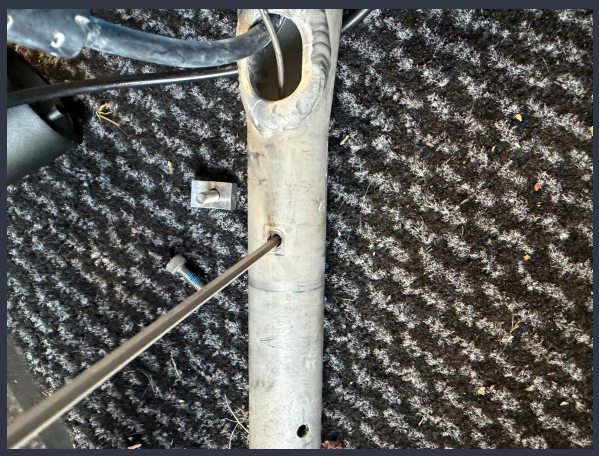
Inspect the exposed cable passage closely.



Look for burrs, sharp edges and evidence of rubbing.



Remove the factory limiter.



Ensure the stand off for the limiter does not move with an Allen key.

IF IT IS SMOOTH, LEAVE IT ALONE The bike used for this guide did not need polishing. Do not file, grind or enlarge an opening simply because the fork has been removed. Only address a genuine sharp edge or burr, and remove the minimum material necessary.

09 Install the steering limiter

Fit the steering limiter in its intended position while the fork is accessible. Its job is to stop excessive handlebar rotation before the internal cables are twisted, stretched or pulled hard against the cable opening.



Fit the limiter in the steering area.



Check that it is correctly seated before reassembly.



Confirm the limiter can act as the steering stop.



The final cable-slack check is done after reassembly.

KEY PRINCIPLE At full steering movement, the limiter should stop the handlebars – not the wiring.

10 Refit the fork and route the cables

Reassembly is broadly the reverse of removal, but cable routing deserves extra care. The motor cable and both handlebar-button cables pass through the same cable openings in the steerer/fork area. From that shared route, the button cables go upwards to the handlebars while the motor cable goes down through the fork towards the front wheel.

- Feed the button cables upwards through the shared opening and recover their connectors above the headset.
- Keep enough slack in the steering area for the cables to move gently as the bars turn.
- Route the motor cable downwards through the fork using the guide wire left in place during removal.
- Keep the front-light cable on its original separate route rather than bundling it through the motor/button path.
- As the fork is raised into the frame, repeatedly check that no wire is trapped between the steerer, bearing, headset component or frame.

DO NOT FORCE IT If a cable or connector stops moving, back it up slightly and change its orientation. Forcing a connector through an obstruction risks damaging the connector, cable or internal socket.

11 Pull the motor connector back through the fork

This was the most difficult part of the job without the official VanMoof routing tools. The guide wire itself passes easily; the motor connector is much larger and can catch on internal features.



Use the retained guide wire to lead the motor connector down the fork.



A thin, tapered taped joint is much easier to pull through.



The motor connector successfully routed back through the lower fork opening.

The method that worked

1. Attach the guide wire securely to the motor connector.

2. Use a single thin layer of electrical tape to form a long, smooth taper. Avoid a bulky shoulder or loose tape flap.
3. Apply only light tension to the guide wire while feeding the motor cable from above. The wire should guide the connector, not drag it through by force.
4. If the connector stops, release the tension, back it up by roughly 10–20 mm, rotate the cable slightly and try again.
5. Change the angle of the fork if useful so gravity helps the connector find the clearer side of the passage.
6. Once the connector appears at the lower opening, stop pulling on the guide wire and handle the connector itself. Remove the tape carefully without cutting or nicking the cable.

LESSON LEARNED A bulky taped connection repeatedly caught inside the fork. A smooth, single-layer tapered joint passed through successfully. Keep the guide wire afterwards and label it for the next time the fork has to come off.

12 Reassemble the headset and handlebars

Replace the headset components in the reverse order of removal, using your photographs as the reference. As each part goes back, check that no cable is sitting under a bearing, spacer or other clamping surface. Reconnect the button cables and refit the handlebar/stem assembly.

CABLE-SLACK CHECK Before final tightening, slowly turn the handlebars from one limiter stop to the other. The button cables should move gently rather than winding tightly around the steerer. The motor cable and brake hoses must not become taut. If anything tightens before the limiter is reached, correct the routing before continuing.

13 Refit the light, mudguard, motor connection and front wheel

Return the front-light cable to the route you recorded during disassembly and reconnect the light. Refit the mudguard and its hardware. Reconnect the motor cable at the wheel and return it to its protected position. Refit the front wheel, making sure the axle is fully seated in both dropouts and the anti-rotation hardware is correctly positioned before tightening.

BRAKE REMINDER Do not use the axle nuts to pull a badly positioned wheel into place. If the brake lever was squeezed while the wheel was out and the disc no longer fits between the pads, carefully reset the pistons with a clean plastic/piston-spreading tool. Keep oil and grease away from the disc and pads.

14 Final checks

Before riding, check the complete front end. The handlebars should move smoothly until the new limiter reaches its stop in each direction. The cables and brake hoses must remain relaxed throughout the steering range.

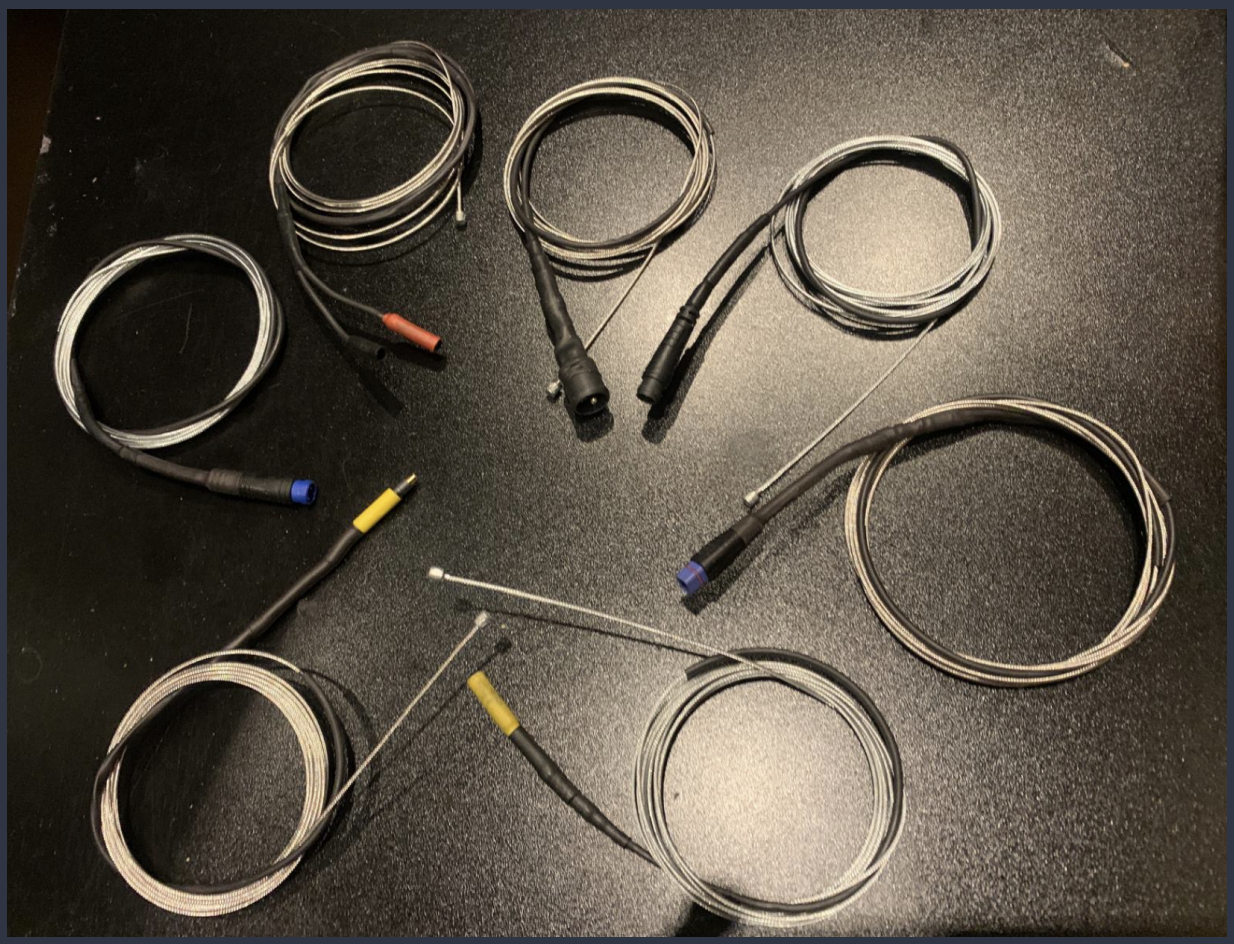
- Headset has no unwanted play and turns smoothly.
- Handlebars/stem are secure and aligned.

- Front wheel is fully seated and securely fastened.
- Front brake operates normally and the rotor runs correctly between the pads.
- Motor connector and front light are fully connected.
- Bell and boost buttons operate correctly.
- Lights and motor assistance operate normally.

Begin with a slow test ride. Afterwards, recheck the steering, headset, front wheel, brake operation and cable movement before returning the bike to normal use.

VanMoof workshop cable-routing tools

The tools pictured below are the original-style VanMoof workshop cable-routing tools used to feed wiring through the bike. Their long flexible leads terminate in mating connectors, producing a much smoother joint than an ordinary guide wire taped to the bike connector.



VanMoof workshop cable-routing tools. These do not appear to be readily available as normal consumer service tools.

If you can obtain or borrow the correct tool, it should make cable routing considerably easier. It is not essential: the repair in this guide was completed with an ordinary guide wire, electrical tape, patience and careful feeding from both ends.

Useful resources

These are the videos I found useful while working through the repair. They are included as additional visual references; compare what you see with your own bike before copying a procedure.

- Helpful VanMoof S3 repair video 1
- Helpful VanMoof S3 repair video 2
- Helpful VanMoof S3 repair video 3
- Helpful VanMoof S3 repair video 4
- Helpful VanMoof S3 repair video 5
- Helpful VanMoof S3 repair video 6
- Helpful VanMoof S3 repair video 7

Found this guide useful?

This guide was created and shared freely to help other VanMoof S3 owners repair and maintain their bikes.

If it helped you and you would like to say thanks, you are welcome to buy me a coffee. There is absolutely no obligation – I would much rather see another VanMoof kept on the road rather than being split for parts.

buymeacoffee.com/jamiesissons