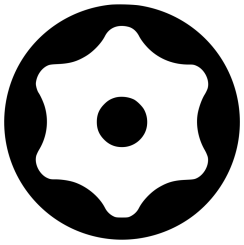
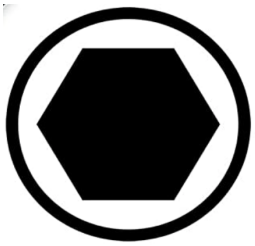
Manual for motor cable connector refitting

In this manual, we will check the motor cable connector and ensure it is properly connected to the Smartunit Main ECU. Underneath the top tube of the bike, you will find the Smartunit Main ECU. This is basically the computer of the bike. There are multiple components connected to the Smartunit Main ECU, including the motor cable.
For this manual, we used the VanMoof S5 as an example, but the procedure is the same on the Vanmoof A5

Required tools			Optional Tools
Safety Torx #10	Allen Key #3	Needle nose pliers	Flashlight
			

Summary of the steps:
1. Preparing the bike
2. Removing the screws
3. Lowering Smartunit Main ECU from the top tube
4. Pushing up the motor cable
5. Refitting the motor cable connector
5. Connecting the new Smartunit Main ECU
6. Refitting the Smartunit Main ECU
7. Securing the Smartunit Main ECU into the frame
8. Refitting the motor cable cover

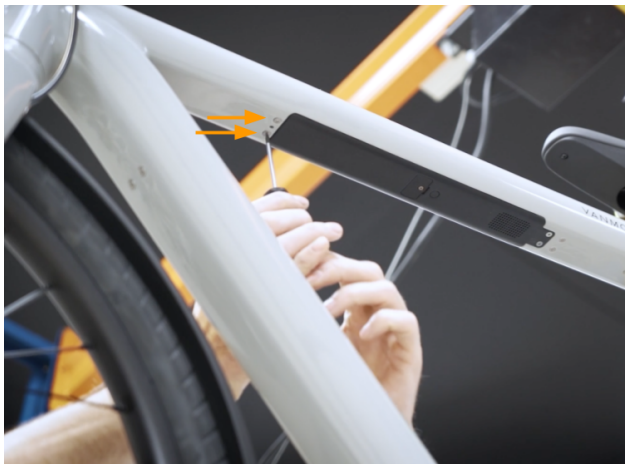
1. Preparing the bike

	Before you start the repair, ensure the bike is turned off. And do not press any buttons on the handlebars or Smartunit Main ECU during the procedure. Make sure the bike stands straight on the kickstand and not upside down.

2. Removing the 4 screws

Required tool for this step: Safety Torx #10

Let's start with removing the 2, silver-colored, screws that are mounted through the frame and into the front end of the Smartunit Main ECU.

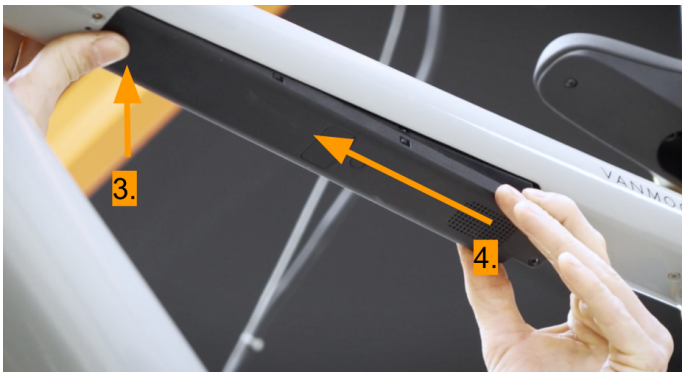


Next, unscrew the 2 **black** screws at the rear end of the Smartunit Main ECU.
!! Do not remove the 2 other, silver-colored, screws next to it.

3. Lowering the Smartunit Main ECU

1. Push the front end of the Smartunit Main ECU 0,5cm upwards

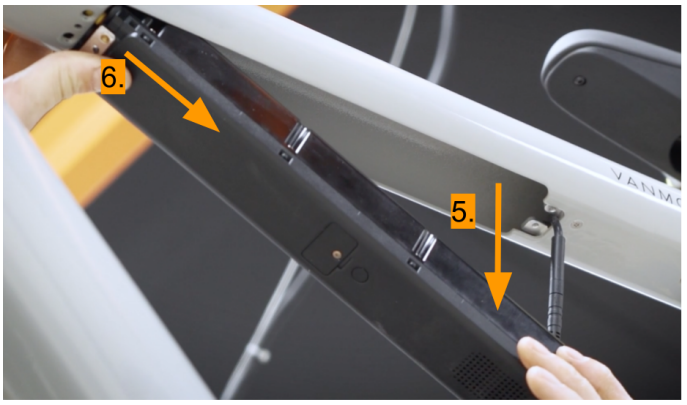
2. Drop the rear end of the Smartunit Main ECU 1cm



3. Push the front end of the Smartunit Main ECU 0,5cm upwards.

4. Push the front end of the Smartunit Main ECU 1cm into the frame.

!! For the next step: **Do not** try to pull the front end of the Smartunit Main ECU further out of the frame than 1 cm as you might risk disconnecting multiple connectors.



5. Now you can lower the rear end of the Smartunit Main ECU.

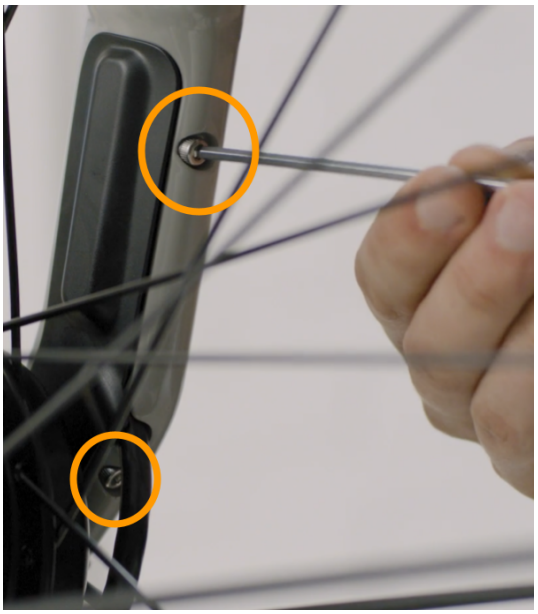
6. If you feel resistance, pull the front end of the Smartunit Main ECU out of the frame, but for now not more than 1 cm.

For the S5: You can leave the ECU hanging on the rear light cable

For the A5: you can gently lower the rear end of the Smartunit Main ECU up to the frame, as shown in the picture.

4. Pushing up the motor cable

Required tool for this step: Allen Key #3

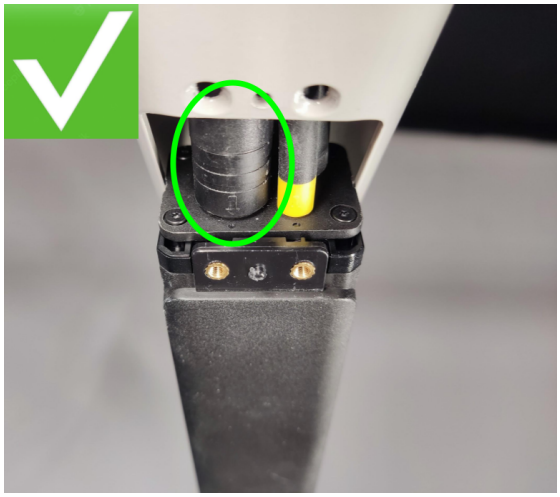
	Remove the motor cable cover from the front fork, by unscrewing the 2 screws. Use Allen key #3 for these.
	Keep the motor cable connector connected, and push the connector up into the front fork as shown in the picture.

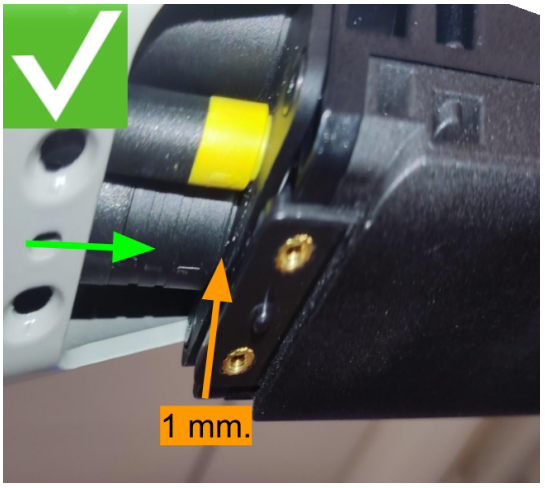
5. Refitting the motor cable connector

Required tool for this step: Needle nose pliers
Optional tool for this step: Flashlight

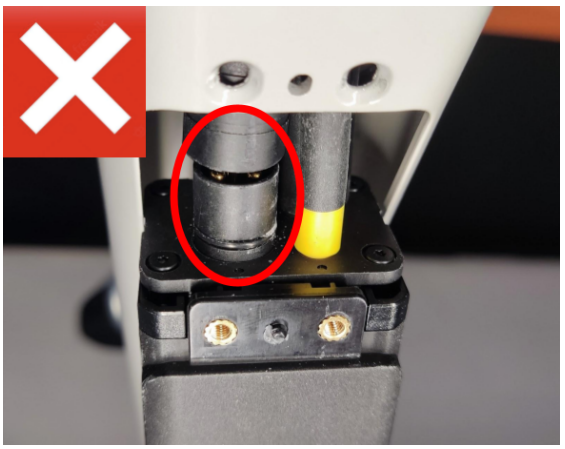
Now make sure the Smartunit Main ECU is pulled out, for **not more than 2-3 cm**, under an angle of 45°, so the connectors are partly visible as shown in the picture.

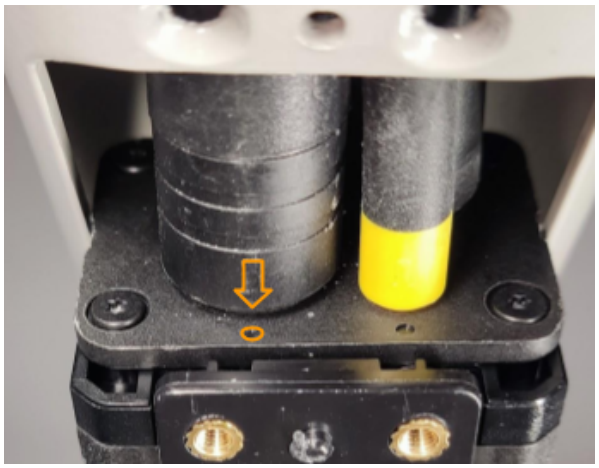
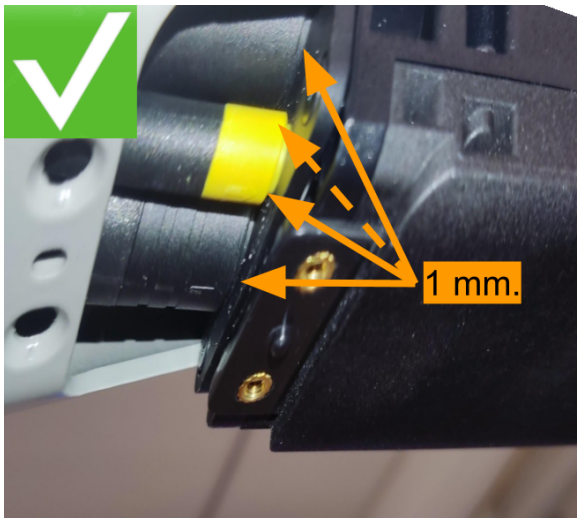
Now let's check the motor cable connection. There are 4 connectors at the front end of the Smartunit Main ECU. The motor cable connector is the biggest of the 4 connectors, positioned next to the small yellow connector, see picture. The gap between the connector and the Smartunit Main ECU should not be more than 1mm. If there is a bigger gap, the connector is not connected properly.





If the motor cable is not installed correctly anymore as shown in the examples below, it needs to be refitted.



	If the motor cable connector is fully disconnected it needs to be placed back onto the Smartunit Main ECU. Look for the small black arrow on the connector and align this with the black dot on the Smartunit Main ECU. When they are aligned, you can push the connector with the needle nose pliers back onto the Smartunit Main ECU. To see it better, a flashlight can come in handy. **!!** If the arrow and dot are not perfectly aligned before connecting, the motor cable connector and/or the Smartunit Main ECU might get damaged, and need to be replaced.
	Use a pair of needle nose pliers to grab the motor cable connector and push it all the way back on the Smartunit Main ECU.
	Do a final check on also the other connectors. Also for these goes: the gap between the connector and the Smartunit Main ECU should not be more than 1mm. If not, push them back on before you install the Smartunit Main ECU again.

6. Refitting the Smartunit Main ECU

	Great, now the Smartunit Main ECU can be placed back into the frame. Push the front end of the Smartunit Main ECU into the frame as shown in the picture.
 	Then position the rear light connector into the backside of the frame while you push up the Smartunit Main ECU rear end.
	Now push the front end of the Smartunit Main ECU upwards and slide it into the frame, 1 cm beyond its mounting point. This way you can push the rear end of the Smartunit Main ECU all the way up.

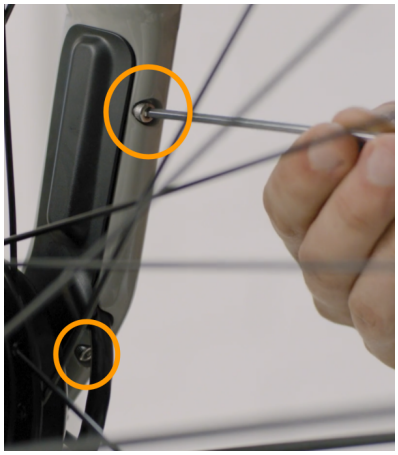
	Ensure the backlight cable goes through the recess in the mounting bracket. And hold the Smartunit Main ECU in position.

7. Securing the Smartunit Main ECU into the frame
Required tool for this step: Safety Torx #10

	Attach the Smartunit Main ECU with the 4 screws. Start with the 2 black screws at the back of the Smartunit Main ECU. Tighten them to 0.45Nm
	Followed by the 2 at the front end of the Smartunit Main ECU. Tighten these also to 0.45Nm

8. Refitting the motor cable cover

Required tool for this step: Allen Key #3

	Leave the motor cable connector in the position it is in, do not pull it down. Place back the motor cable cover and tighten both screws with an Allen Key #3.

You have now successfully refitted the motor cable. Great job. Now you can go for a test ride to see if all functions work.