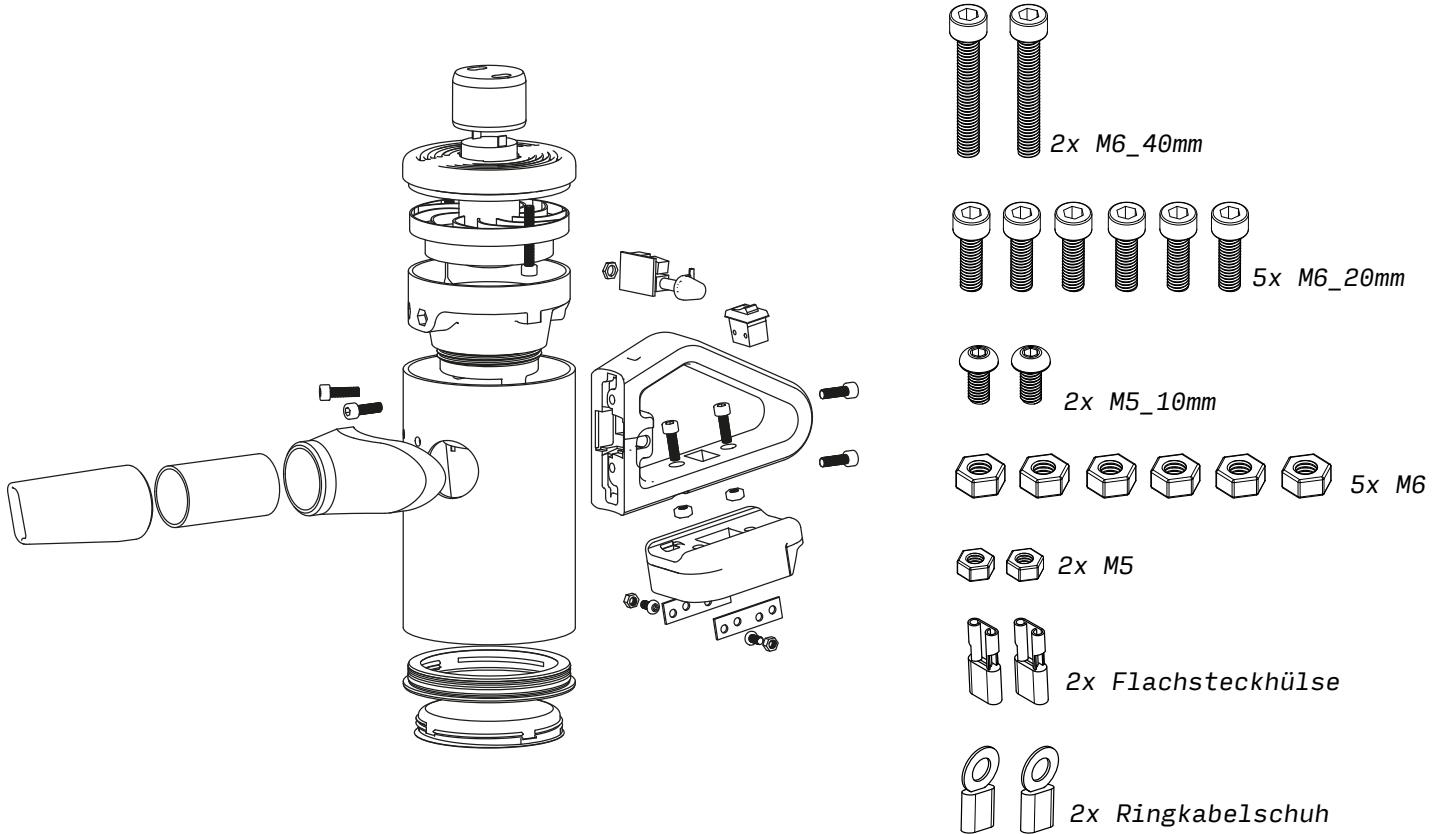


# Opencyclone Manual

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## Plastic Parts

1. Adapter
2. Handle
3. Knob
4. Filter Holder 1
5. Filter Holder 2
6. Lid
7. Bottom External Thread
8. Bottom Internal Thread
9. Connector
10. Attachment
11. Motor Cover
12. Large PVC Pipe
13. Small PVC Pipe

## Tools

1. Allen Key 5mm
2. Allen Key 3mm
3. Open-End Wrench 10mm
4. Flathead Screwdriver (small)
5. Hole Saw with Arbor 42mm

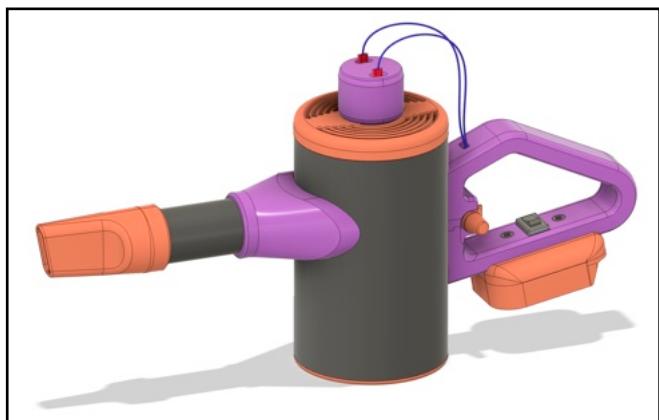
## Screws/ Metal parts

- 6x M6 20mm DIN 912 Socket Head Cap Screw
- 2x M6 40mm DIN 912 Socket Head Cap Screw
- 6x M6 DIN 934 Hex Nut
- 2x 50x14x1.5mm Flat Connector (Kaisertal)
- 2x M5 10mm ISO 7380-1 Button Head Screw
- 2x M5 DIN 934 Hex Nut

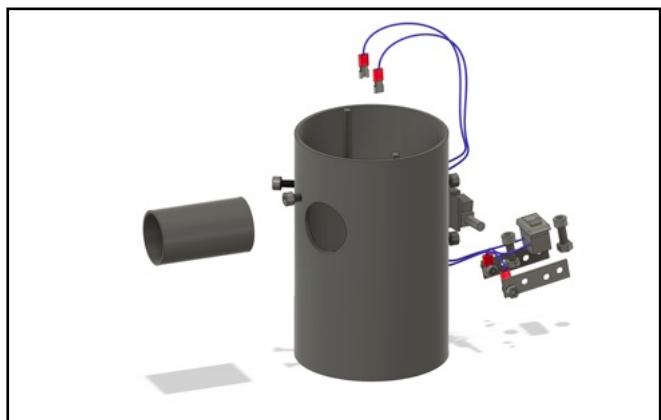
## Electronics

1. Cable 1mm<sup>2</sup> 14/24/34 mm
2. 2x Ring Terminal
3. 2x Spade Connector
4. Makita Lithium-Ion Battery BL1815N
5. Makita Motor DCL180
6. Speed Controller
7. Switch

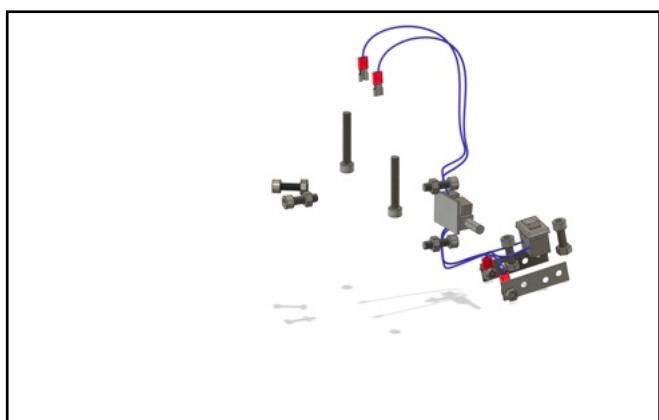
## Technical structure



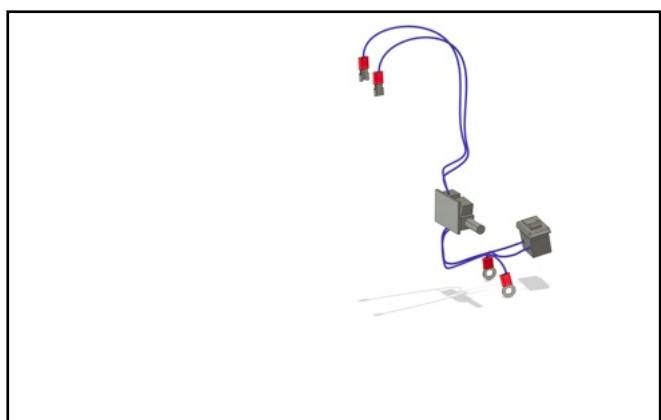
3D Printing / PVC Pipes / Screws / Electronics



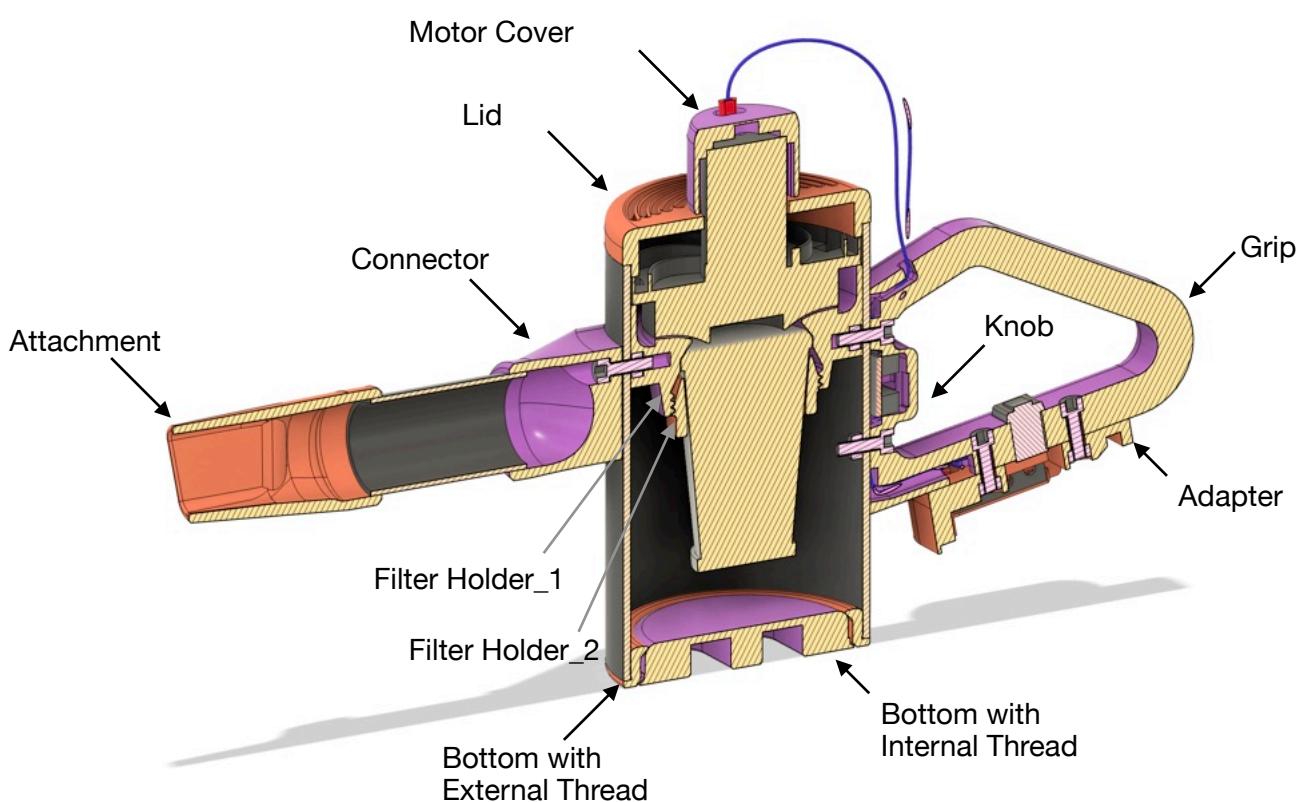
PVC Pipes / Screws / Electronics



Screws / Electronics



Electronics



## Preparation of Prefabricated Parts

1.



(Filter) Remove these two hooks before further processing. They can easily be snipped off with pliers.



2.



(Motor) Snip off the plastic bridge on the motor as well using pliers.

3.

Cut the cables to the specified lengths and strip the insulation. Strip about 5 mm from the ends that will be screwed in, and about 10 mm from the ends that will be crimped.

5cm

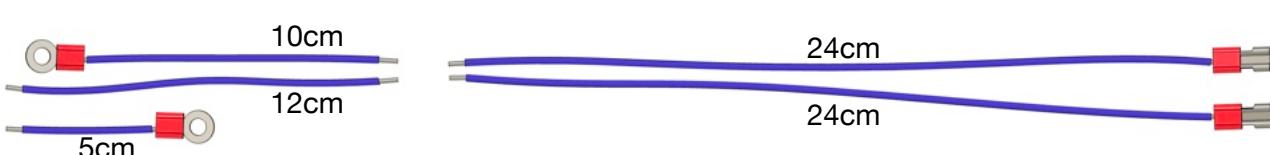
10cm

12cm

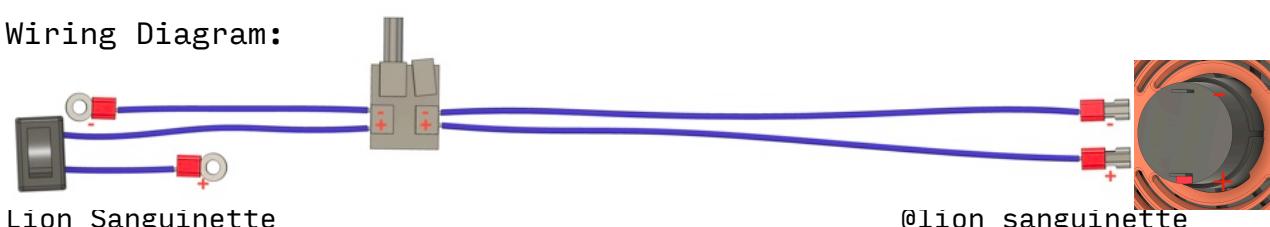
24cm

24cm

Attach ring terminals or spade connectors to the cables according to their length and crimp them (see illustration below).



Wiring Diagram:

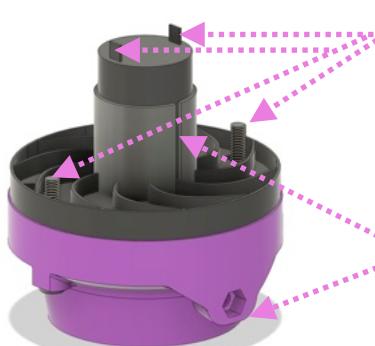


Lion Sanguinette

@lion\_sanguinette 3

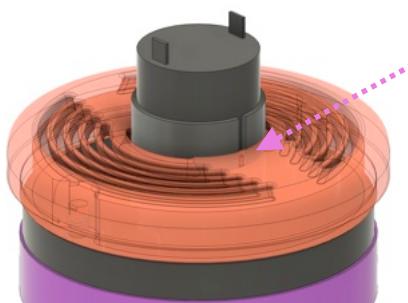
**1) Fasten Filter Holder 1, Motor, and Lid using a 5 mm Allen key.**

Insert 2x M6 40 mm screws through the filter holder (purple) and the motor. Important: The screws must be aligned with the motor contacts. The notch on the motor determines the orientation of the filter holder.

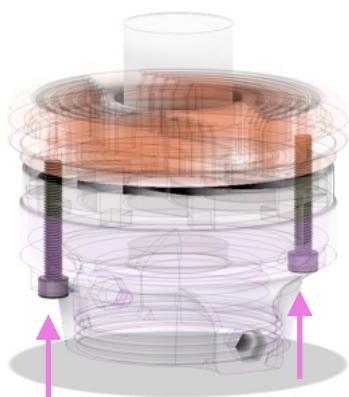


Align the motor's positive and negative contacts in line with the M6 screws.

Place the Lid (orange) onto the motor. The marked tab fits into the notch on the upper part of the motor.

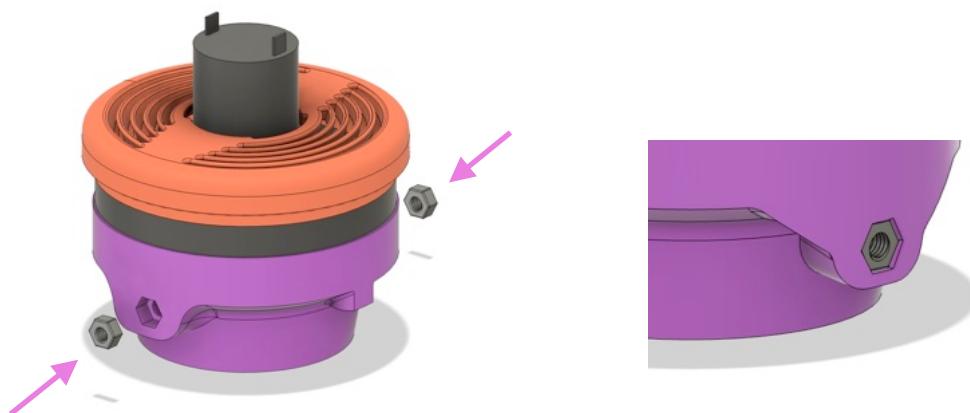


Screw the bolts into the two holes in the lid using a 5 mm Allen key. Important: Do not tighten the screws completely—leave a gap of about 4 mm between the motor and the lid. This gap will be fully closed later.



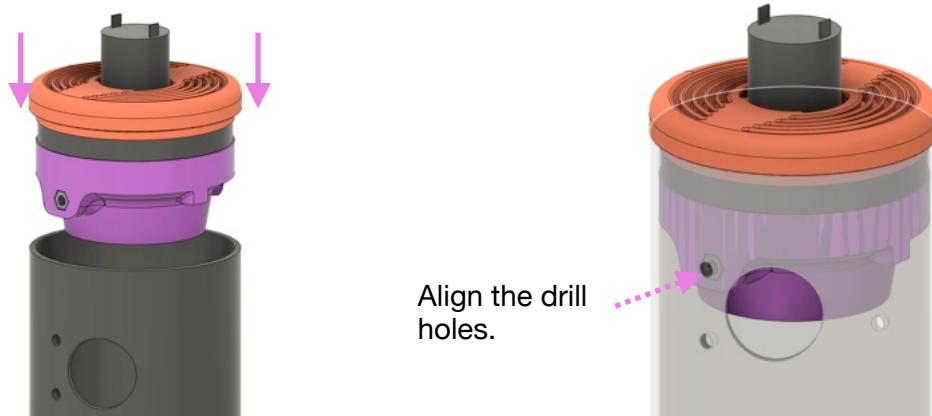
**2) Insert into the large PVC pipe (5 mm Allen key).**

Insert M6 hex nuts into Filter Holder 1.



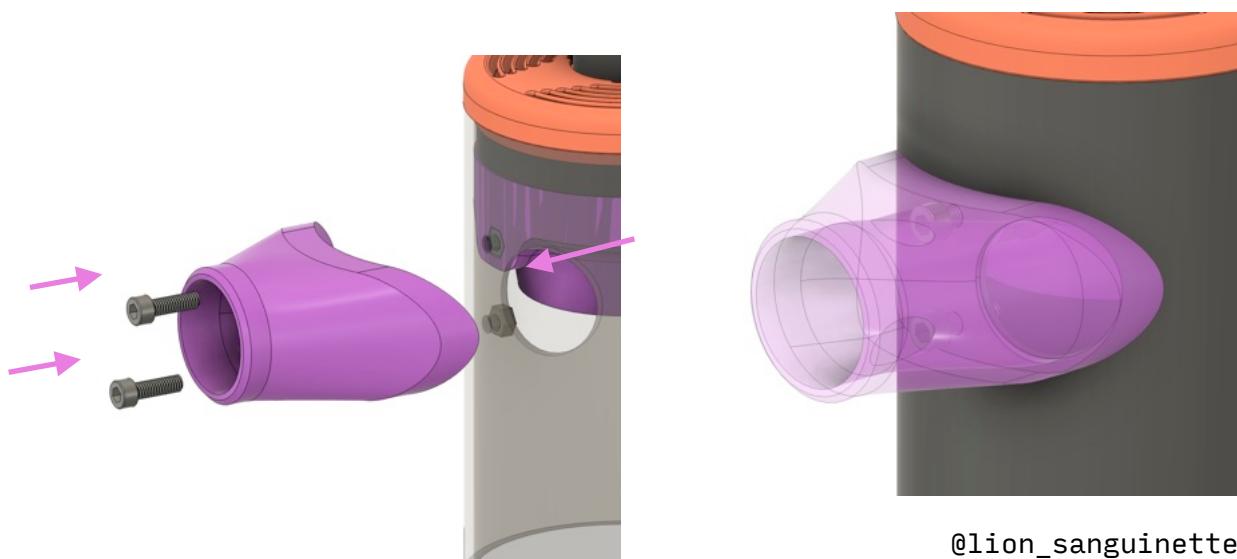
Insert the assembled parts into the PVC pipe.

Important: The drill holes in the PVC pipe and the hex nuts must be perfectly aligned. The filter holder can be adjusted by reaching in from below.

**3) Attach the connector (5 mm Allen key/ 10 mm open-end wrench).**

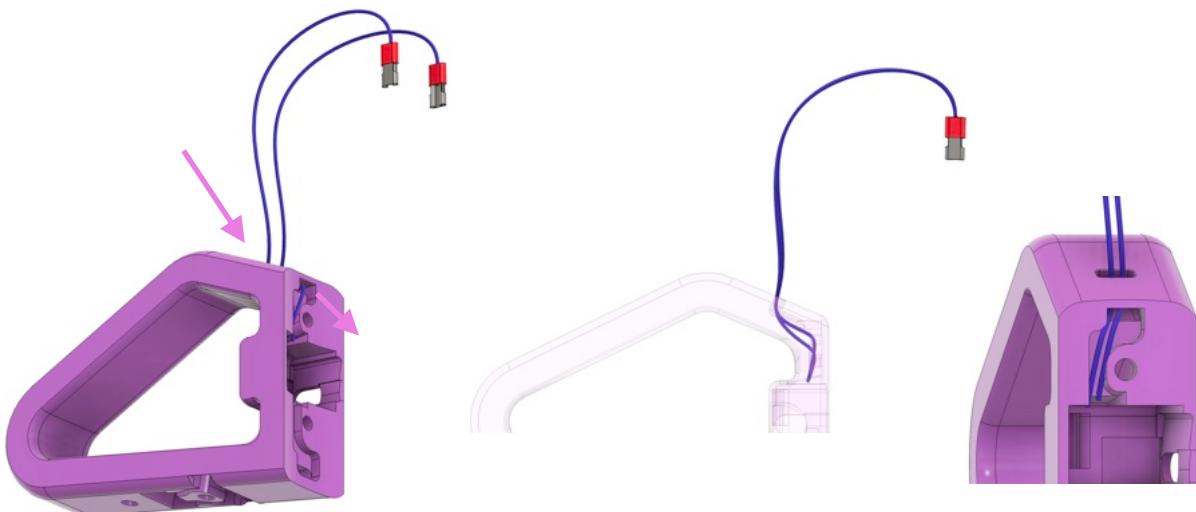
Secure the connector (purple) onto the pipe using two M6 × 20 mm screws. Additionally, fasten with another M6 nut.

Important: Tighten hand-tight only.



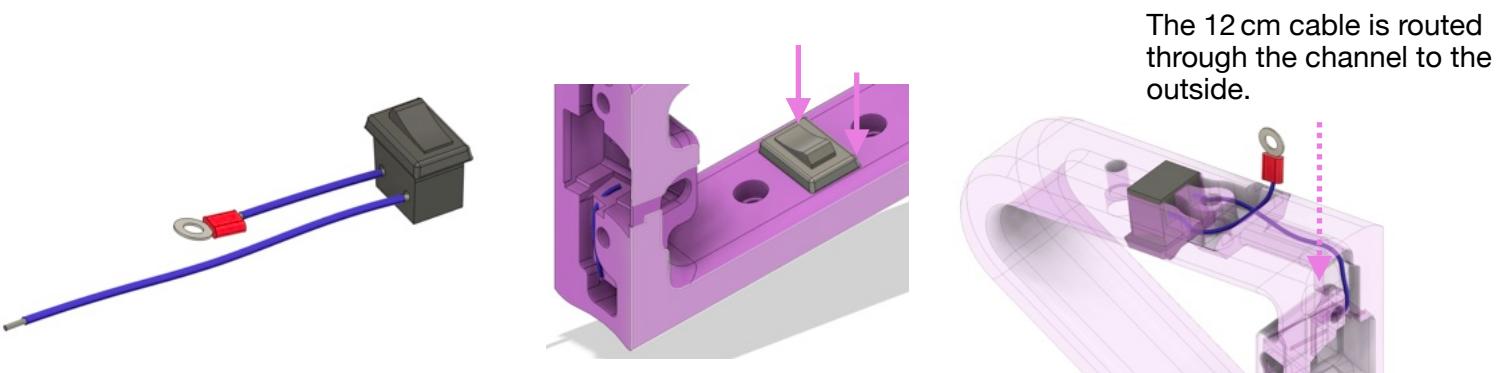
#### 4) Guide the cable through the handle.

Feed the two 24 cm cables through the upper channel in the handle.



#### 5) Attach the cables to the switch using a flathead screwdriver.

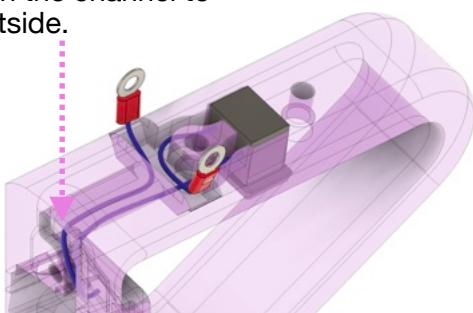
Open the switch's contact terminals using a flathead screwdriver and securely fasten the 5 cm and 12 cm cables. Then insert the switch into the handle (feed the cables through the cutout first).



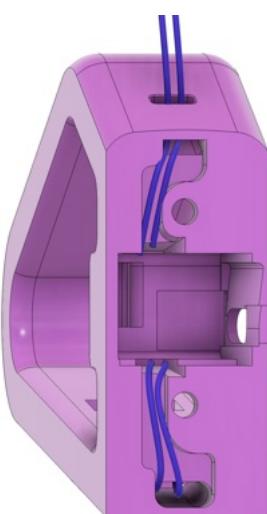
#### 6) Insert the 10 cm cable.

Route the 10 cm cable through the channel from below.

Route the 10 cm cable through the channel to the outside.

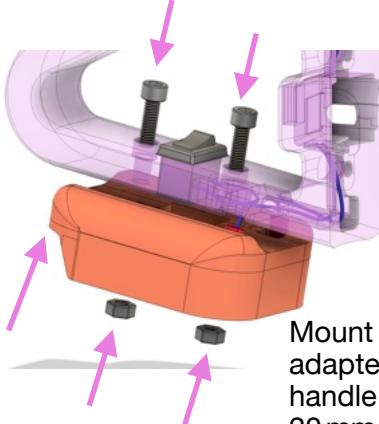


In the end, everything should be arranged approximately like this.

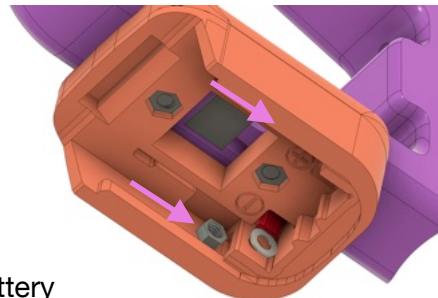


### 7) Attach the adapter (refer to the wiring view).

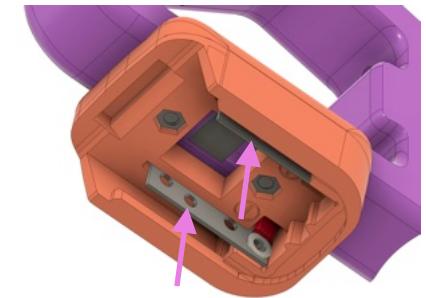
Guide the ring terminals through the battery adapter and toward the flat connector on both sides. Make sure that the two cables are connected to the correct poles on the battery adapter (see wiring view on page 3).



Mount the battery adapter (orange) to the handle using two M6 20mm screws and nuts.

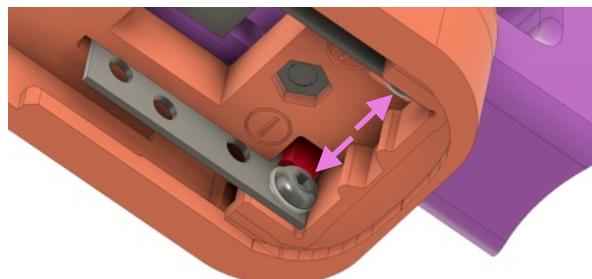
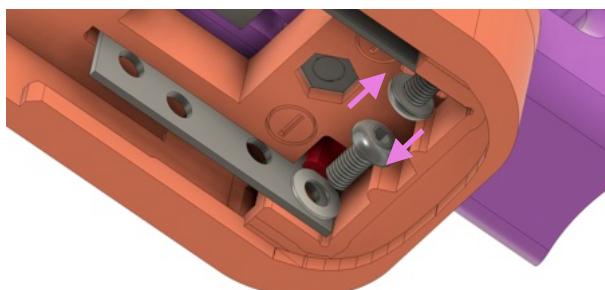


Insert two M5 nuts into the recesses and place the flat connectors.



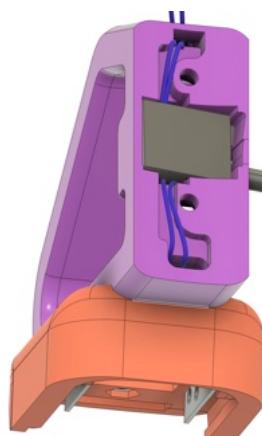
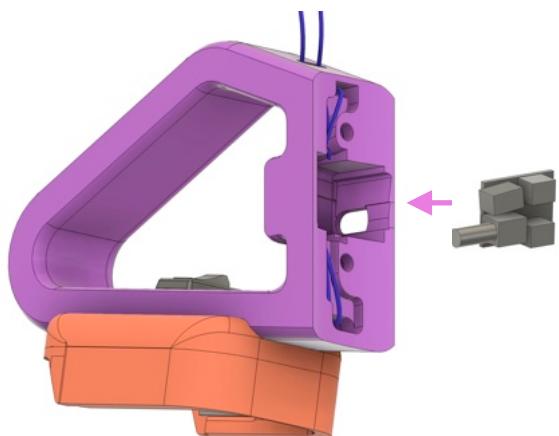
### 8) Attach the flat connectors (3 mm Allen key).

Tighten the flat connector with an M5 button head screw.



### 9) Screw the cables to the speed controller (Screwdriver (small))

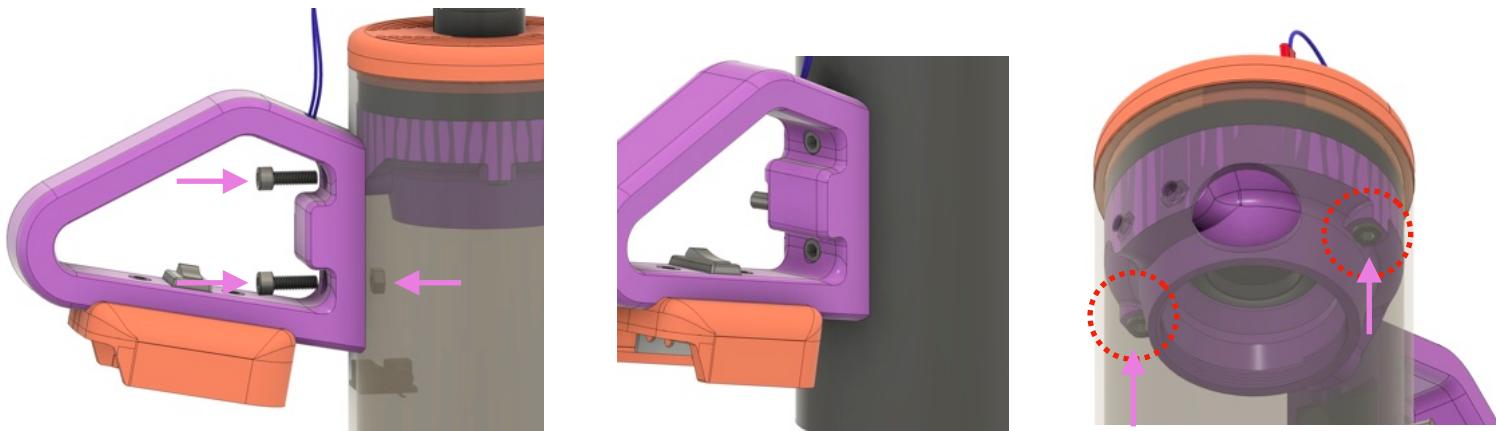
**Important:** Pay close attention to the polarity (see wiring diagram on page 3). The speed controller is a tight fit. It is recommended to pull the two long cables through a bit further, connect all cables first, and only then insert the speed controller. Make sure the speed controller sits fully in the recess.



### 10) Attach the handle to the PVC pipe.

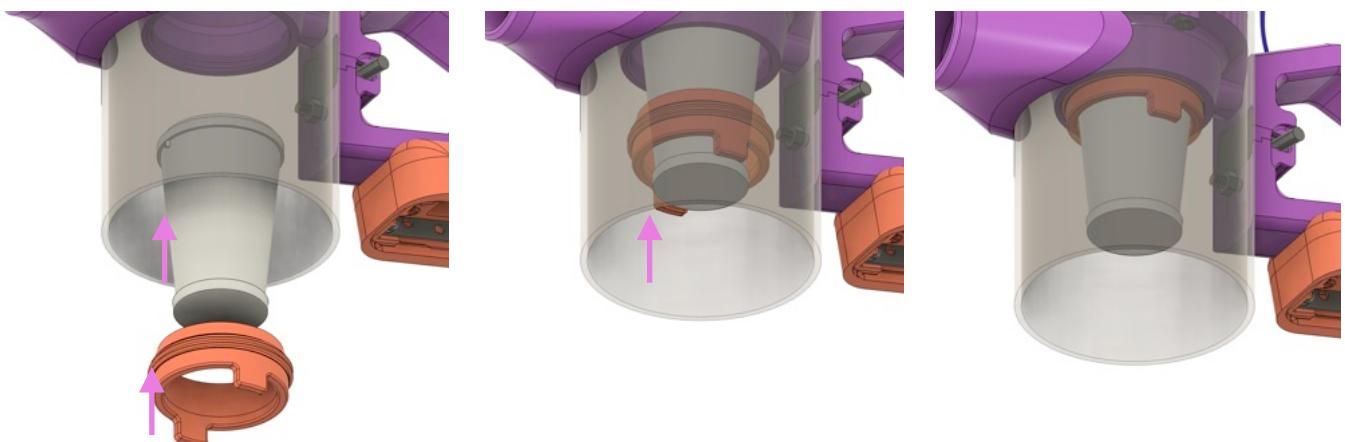
The upper M6 screw can simply be screwed into the existing nut in the filter holder (tighten hand-tight only).

The lower M6 screw is secured from the inside using an additional M6 nut. Afterward, the two M6 × 40 mm screws can also be tightened to their stop, hand-tight.



### 12) Insert the filter.

Insert Filter and secure it with the Filter Holder 2. The Filter can be swapped or cleaned every few cleaning sessions.



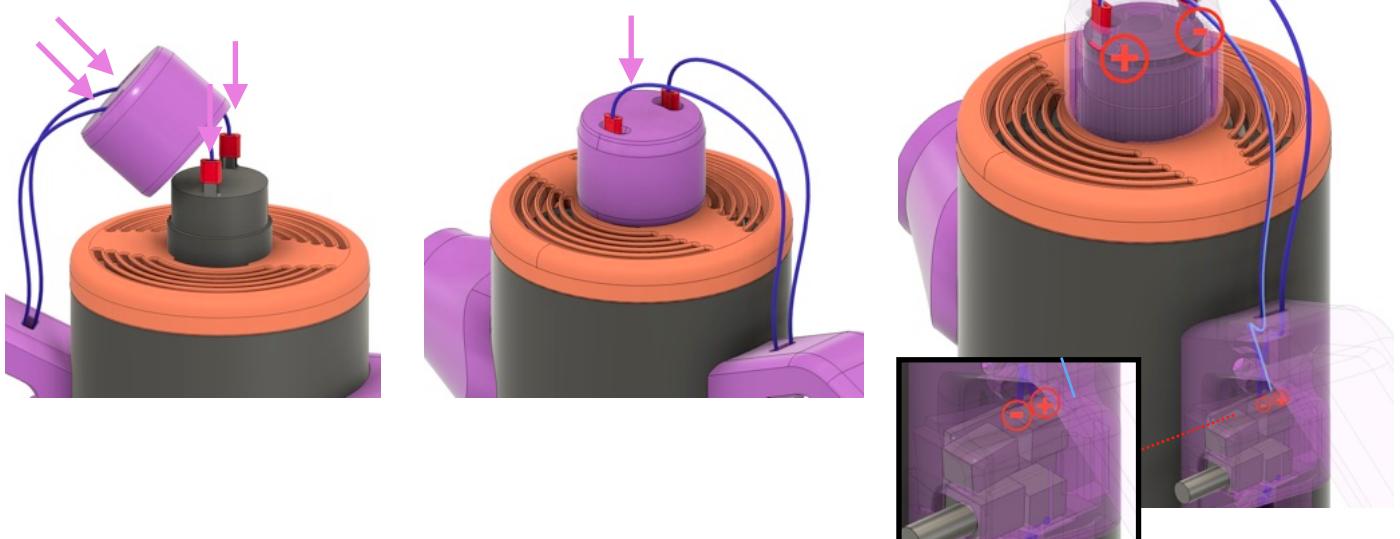
### 13) Press/screw in the bottom piece.

The bottom external thread (orange) must be pressed in with pressure. You can place it on a table and press the PVC Pipe on it. Then the bottom internal thread (purple) can be screwed onto it.



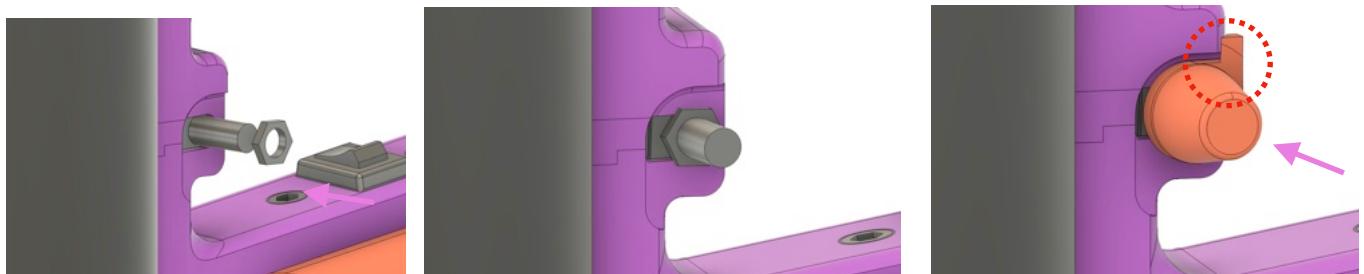
#### 14) Attach the spade connectors and place the motor cover.

Connect the spade connectors to the motor with the correct polarity (see wiring view on page 3). Important: Red indicates positive. If the cables are connected incorrectly, the motor will rotate counterclockwise (as seen from above) and only achieve 50% of its suction power.



#### 15) Attach the control knob.

Important: First, turn the potentiometer fully counterclockwise until it clicks. Then turn it slightly clockwise until it clicks again. Now attach the knob so that its stop aligns directly with the handle.



Secure the potentiometer using the supplied nut.

Turn the potentiometer fully closed (until it clicks), then open it slightly again (until it clicks).

Attach the knob so that the stop aligns with the handle.

#### Why the stop on the control knob?

The vacuum cleaner's electronics do not have integrated low-voltage protection. Even when the speed controller is fully turned off (until it clicks), a standby current of around 7 µA still flows. This means: If the speed controller is not fully disconnected from the power supply via the toggle switch, the 18 V battery can slowly discharge over time and suffer permanent damage.

Since the speed controller is always active as long as it's in the circuit, the stop helps ensure you don't forget to turn off the toggle switch—providing an extra layer of protection.

***Disclaimer & Safety Notice***

*This product is a DIY kit intended for educational and non-commercial use only.*

*Please note:*

*Assembly and use are at your own risk. Basic knowledge of tools and electronics is recommended.*

*The device is powered by 18 V lithium-ion batteries, which can be dangerous if mishandled. Never short-circuit, puncture, or expose the battery to high temperatures.*

*This device does not include integrated undervoltage protection. To prevent battery damage, always disconnect the power supply after use.*

*Do not use the device unattended or in environments with flammable dust or vapors.*

*Ensure all wiring and connections are secure before operating the vacuum.*

*This project is not certified or tested for commercial or professional use.*

*By building or using this project, you agree that neither the creator nor any contributors are liable for damages, injury, or legal consequences resulting from its use.*