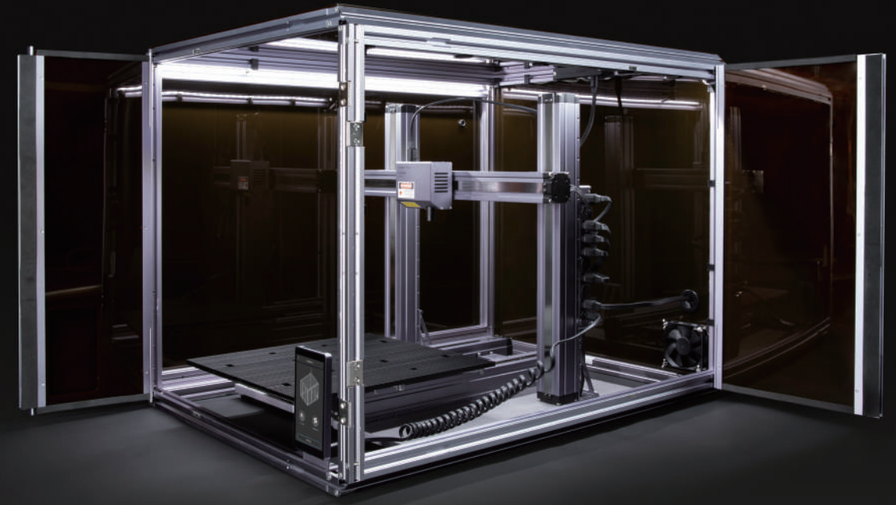
snapmaker | Enclosure

QUICK START GUIDE

A250 / A350



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Make Something Wonderful

Make Something Wonderful

Three years ago, when we were designing the Snapmaker Original, we broke the rules of traditional desktop 3D printers and created the first modular 3-in-1 3D printer on the market. At first, The Verge and a lot of other reviewers doubted that “Snapmaker is an upcoming Kickstarter project with a lofty goal: to be the holy trinity for at-home makers by using detachable modules to convert between a 3D printer, a CNC carver, and a laser engraver,” and “At the price that Snapmaker is selling, it’s possible the whole thing is too good to be true.” We knew people had a lot of uncertainty about our project and were hesitant to back us because of the complexity of designing and making such a product. Despite all the doubts, we worked hard on pushing the boundaries of possibility and we eventually made the impossible possible. Not only did we fulfill all the rewards, but we also sold over 10,000 units all over the world in 2018.

And in 2019, we launched the Snapmaker 2.0. We went beyond our limits once again. Our goal is to build a system behind our modular 3D printers and give you the best maker tools that can work for all your projects. As creatives we all desire to make something wonderful and creativity makes us feel alive. The Snapmaker 2.0 will help you turn your ideas into reality. This quick start guide will guide you through your maker journey. Congratulations on becoming part of the Snapmaker community! Thousands of people like you are using the Snapmaker to explore, make, and share in the world of making. We are strong believers that wonderful things will happen when creative minds meet the ideal tools. Have fun making and see you out there!

Team Snapmaker

Welcome to the world of making

Happy Making

This machine is built for innovators. Our goal is to assist you to make the world a better place with a machine we built with love. The difference could be something as small as a Christmas gift, or something as ambitious as exploring unknown territories of our mankind. Dream big and make it happen.

Modular System

Snapmaker is not only a 3D printer, but also a powerful machine that you can modify with all kinds of addons. You can equip your Snapmaker with an enclosure to protect you and your family from laser and dirt particles. New addons are coming soon with more exciting features. Please stay tuned.

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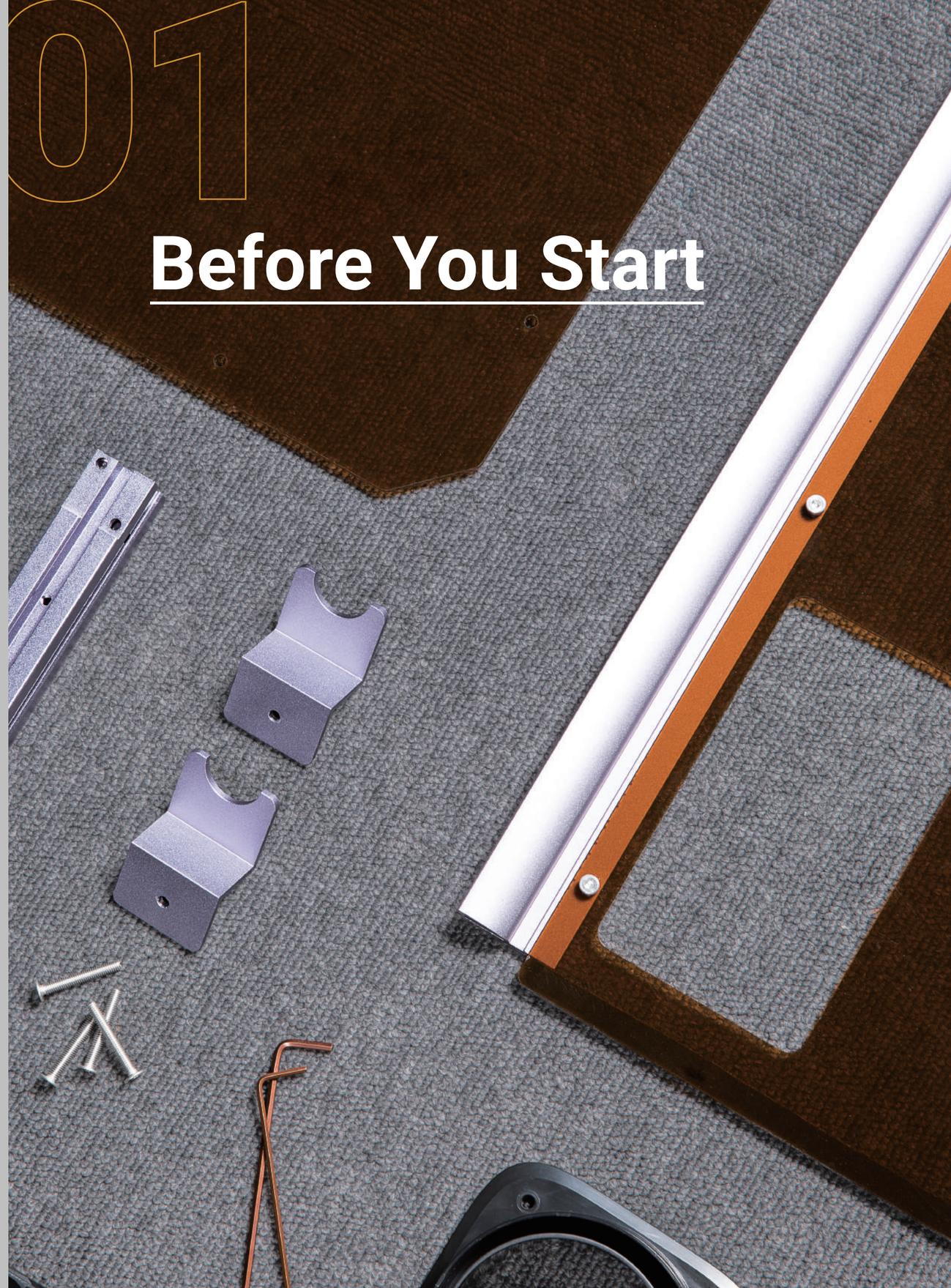
01

Before You Start



1.1 Parts List

> ⚠ The enclosure for Snapmaker A350 is used as a demonstration in this manual. All illustrations are applicable to both enclosures for Snapmaker A250 and A350 models.

Quick Start Guide × 1

24 Beam A350-1 × 2

24 Beam A350-2 × 3

24 Beam A350-3-Hall Switch × 1

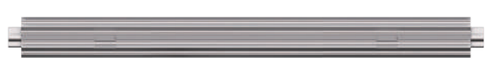
24 Beam A350-4 × 1

24 Beam A350-4-Enclosure Converter × 1

48CA Beam A350-1 × 1

48CA Beam A350-2 × 1

48CA Beam A350-3 × 1



48CA Beam A350-4 × 1

Cable Clip × 20

Handle Hose Clamp × 1

Folding Door Slider × 12

Snap Bushing × 1

M4 Wing Nut × 4

M4 × 20 Hex Socket Head Screw × 16

M3 Hex Nut × 8

M3 × 10 Hex Socket Head Screw × 8

A350 : M4 × 12 Hex Socket Round Head Screw × 34
A250 : M4 × 12 Hex Socket Round Head Screw × 30

M4 × 28 Hex Socket Short Head Screw × 32

M4 × 35 Hex Socket Head Screw × 4

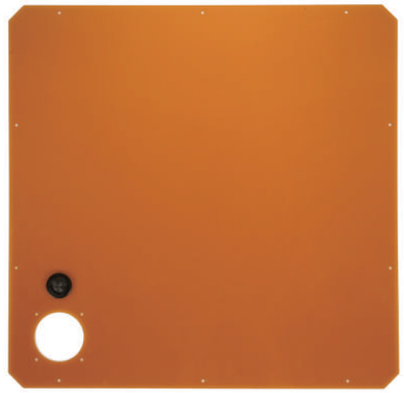
Exhaust Duct (2m × 0.075m) × 1

H2.0 Hex Key × 1

H2.5 Hex Key × 1

Front Folding Door × 1

Side Folding Door × 1



Back Panel × 1

Side Panel × 1

80 × 20 Exhaust Fan × 1

Touchscreen Holder × 1

Exhaust Duct Connector × 1

Foot Fixture × 4

SMH Expansion Cable × 1

Top Panel × 1

LED Strip Cable × 2

1.2 Disclaimer

Please read and understand the contents of the manual of this product carefully. Failure to read the manual may lead to personal injury, inferior results or damage to the Snapmaker products. Always make sure that anyone who uses this product knows and understands the contents of the manual to make the most out of it.
The conditions or methods used for assembling, handling, storage, use, maintaining or disposal of this product are beyond our control. For this reason, we do not assume responsibility and expressly disclaim liability for loss, injuries, damage, or expense arising out of or in any way connected with the assembly, handling, storage, use, maintaining or disposal of this product.
The information in this document was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

1.3 Safety

- ⚠ **Do not move the enclosure with a machine inside.**
- ⚠ **Avoid sharp edges when handling the acrylic boards, aluminum beams and door handles.**
- ⚠ **Avoid collision between the acrylic boards and other hard objects. Sharp edges of the broken acrylic sheet may cause injury to human body.**
- ⚠ **Do not place the power module inside the enclosure when using the machine.**
- ⚠ **Do not place heavy objects on the enclosure, since it is of low weight-bearing capability.**
- ⚠ **Hanging objects on the enclosure's folding doors may cause damage to or break the door sliders and acrylic boards.**
- ⚠ **Do not put any objects or body parts into the exhaust fan when the enclosure is operating.**
- ⚠ **Make sure to keep the cables away from the exhaust fan blades to avoid the damages of LED strips, exhaust fan and other parts of the enclosure.**

1.4 Video Tutorial

We provide both the video tutorial and Quick Start Guide to help you get started. You can either read this Quick Start Guide to set up the enclosure, or watch the video tutorial at https://snapmaker.com/document.

1.5 Used Symbols

	CAUTION	Ignoring this type of message might result in malfunction or damage of the machine and injuries to users.
	NOTICE	Details you should be aware of throughout the process.
	TIPS	Tips offer you convenient operations and additional options.
		Make sure that the highlighted part is facing the right way.
		Do not tighten the screws when this symbol appears. Always tighten the screws when it is absent.
		Tighten the screws that are roughly attached in previous steps.

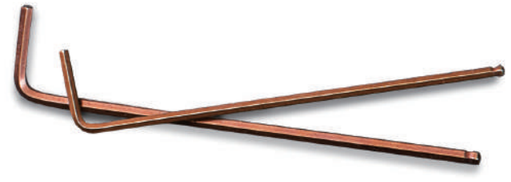
	Rotate the enclosure parts vertically to a certain degree as shown.
	Rotate the enclosure parts horizontally to a certain degree as shown.

1.6 Get Ready

1.6.1 Prepare Screwdriver

It is recommended to use the multi-bit screwdriver provided with the machine for the enclosure assembly. Make sure the screwdriver bit holder has been put back inside of the handle before use.

If the multi-bit screwdriver is unavailable, please use the two hex keys provided with the enclosure.

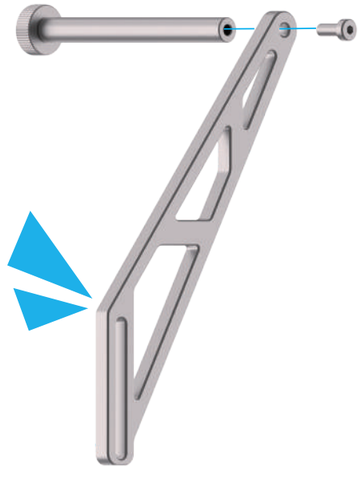


H2.5 screwdriver bit applies to M4 screws, while H2.0 bit is for M3 screws.

1.6.2 Prepare Machine

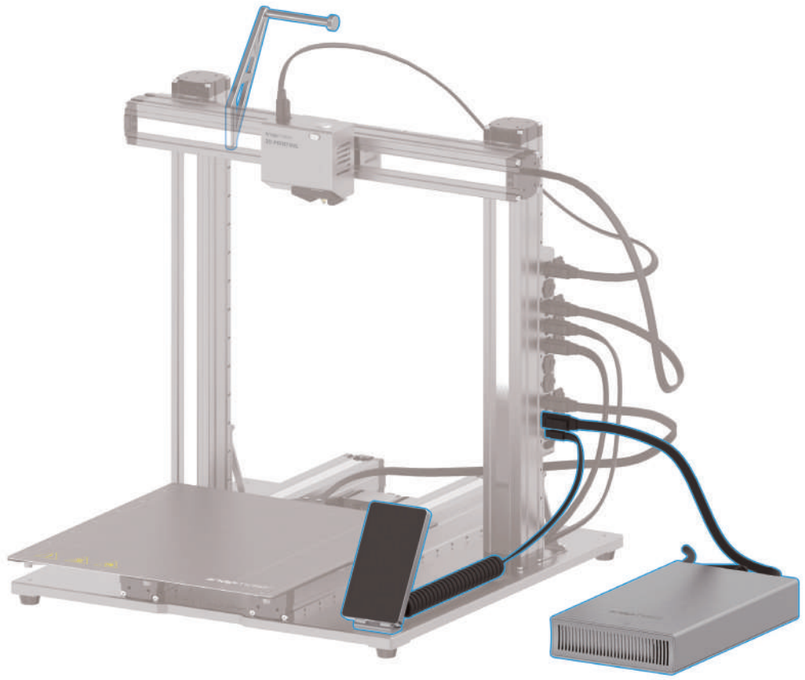
(1) Detach Filament Holder

- If the filament has been inserted into the 3D printing module, follow Section 3.2.2 "Load Filament" in the Quick Start Guide of the machine to unload the filament. When completed, take the filament off the Filament Holder and keep it properly.
- Detach the filament holder from the machine.
- Detach the filament holder tube and fix it on the other side of the filament holder sheet. The filament holder will be used in subsequent assembly process.



(2) Detach Touchscreen

- Switch off the power and unplug the DC Power Cable.
- Disconnect the touchscreen cable from the machine controller and detach the touchscreen.
- Detach the touchscreen holder from the machine, and keep it properly.



02

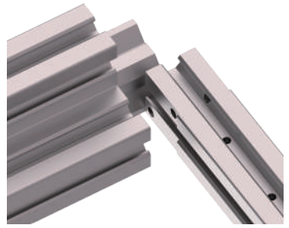
Enclosure Assembly

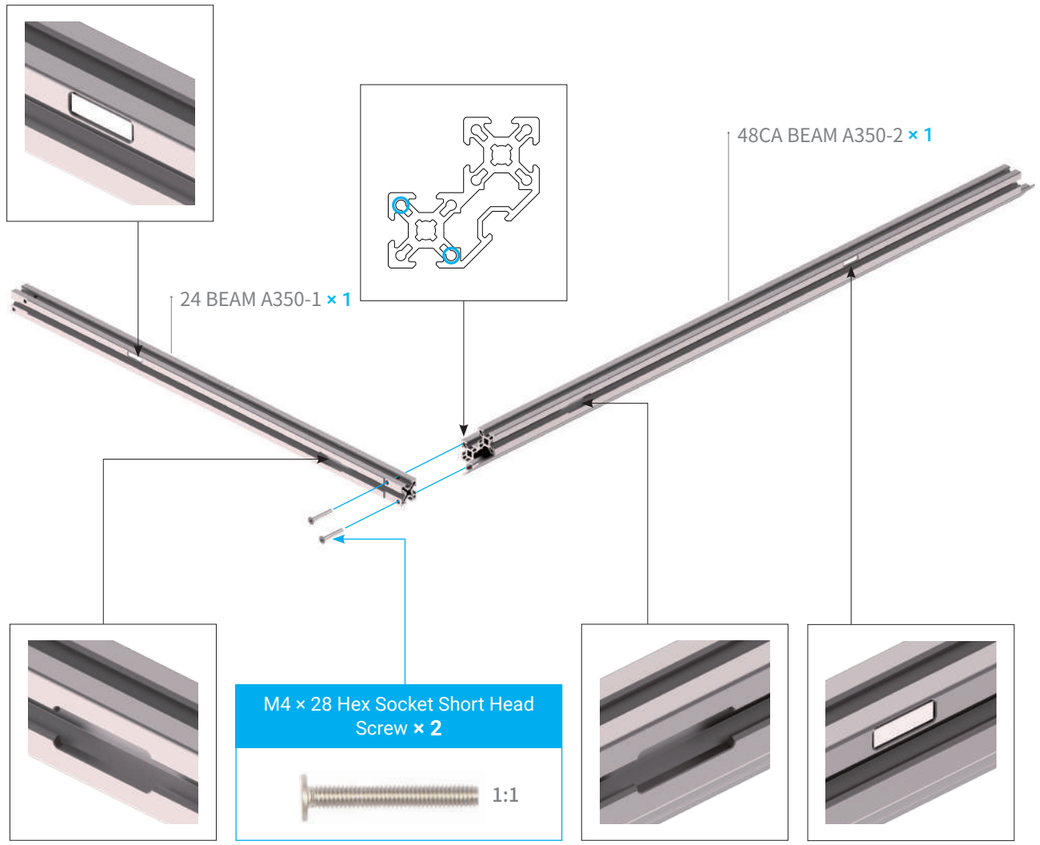
01/32

Assemble the bottom rectangular frame – 1.

> **Each beam of the enclosure frame is engraved with its model name, which helps you find the parts accurately. Make sure to identify the beams by their names when assembling.**

> **Make sure the 48CA Beams are accurately mounted onto the grooves of the 24 Beams when assembling.**

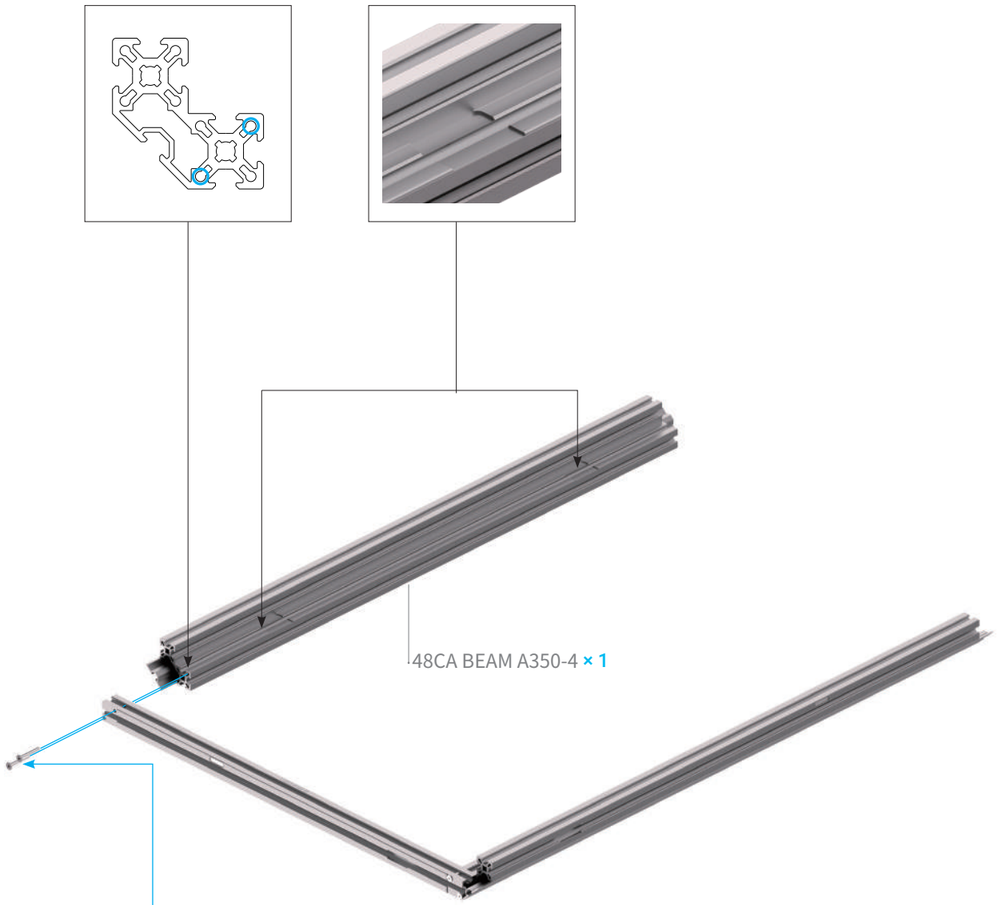




M4 × 28 Hex Socket Short Head Screw **× 2**

02/32

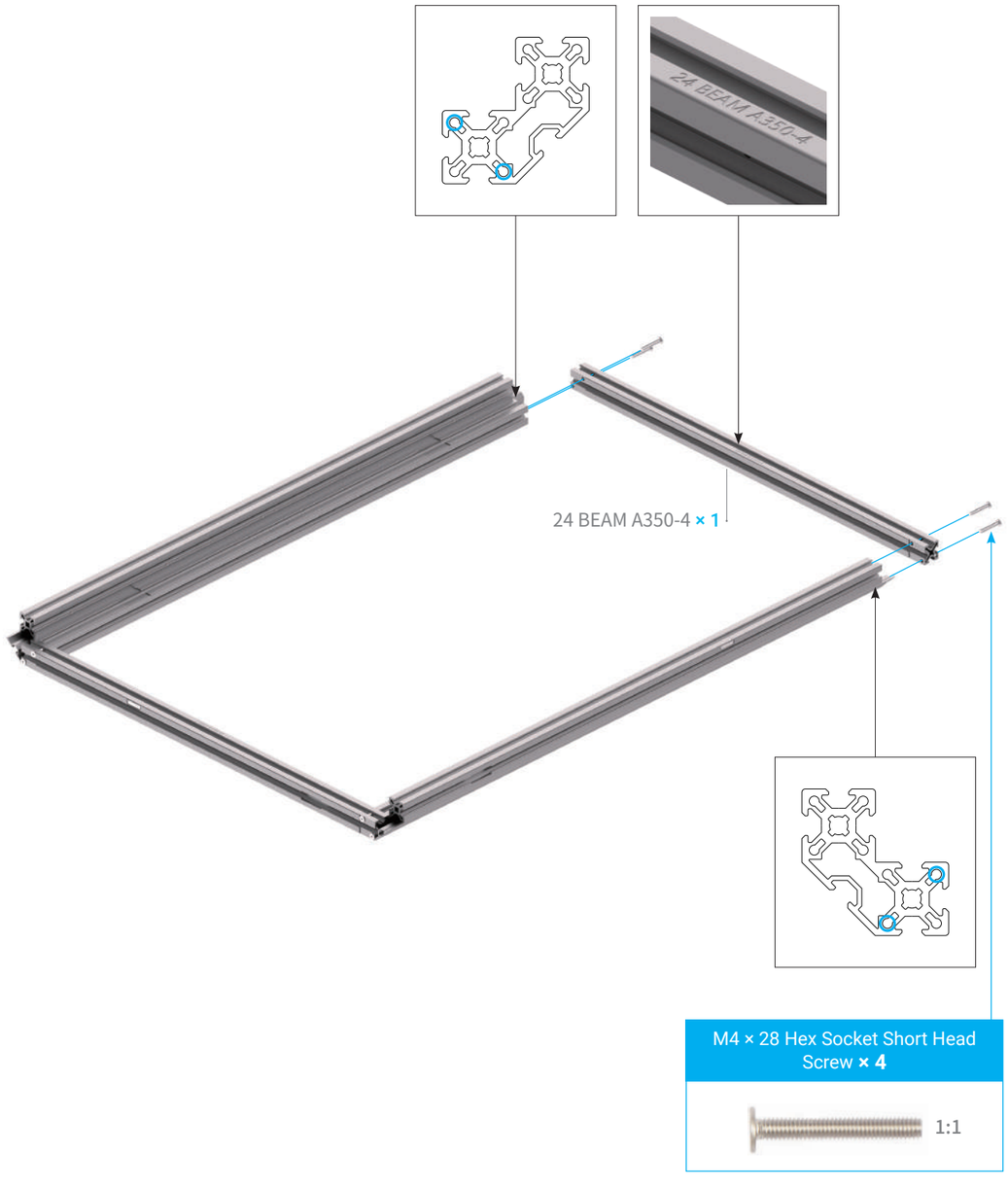
Assemble the bottom rectangular frame – 2.



M4 × 28 Hex Socket Short Head Screw **× 2**

03/32

Assemble the bottom rectangular frame – 3.



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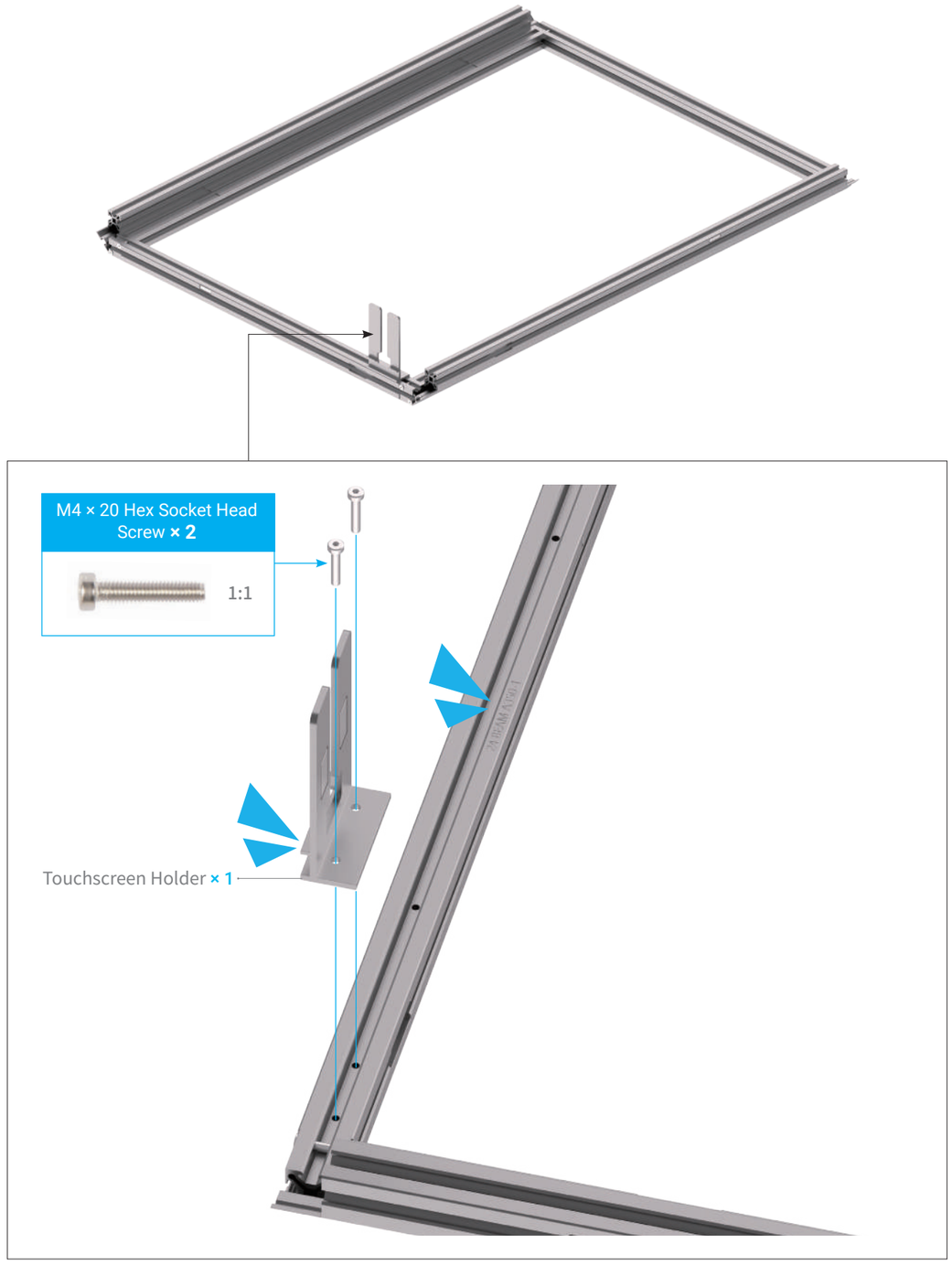
Attach the Touchscreen Holder.



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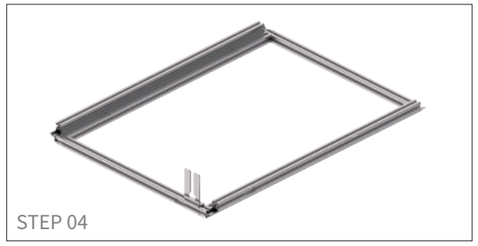
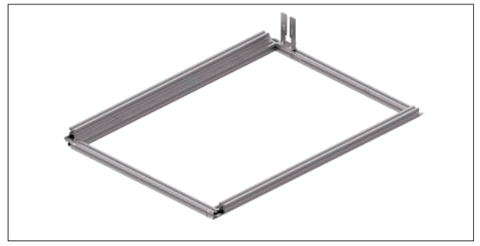
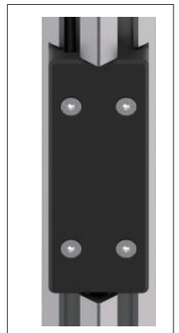
Attach four 24 Beams.

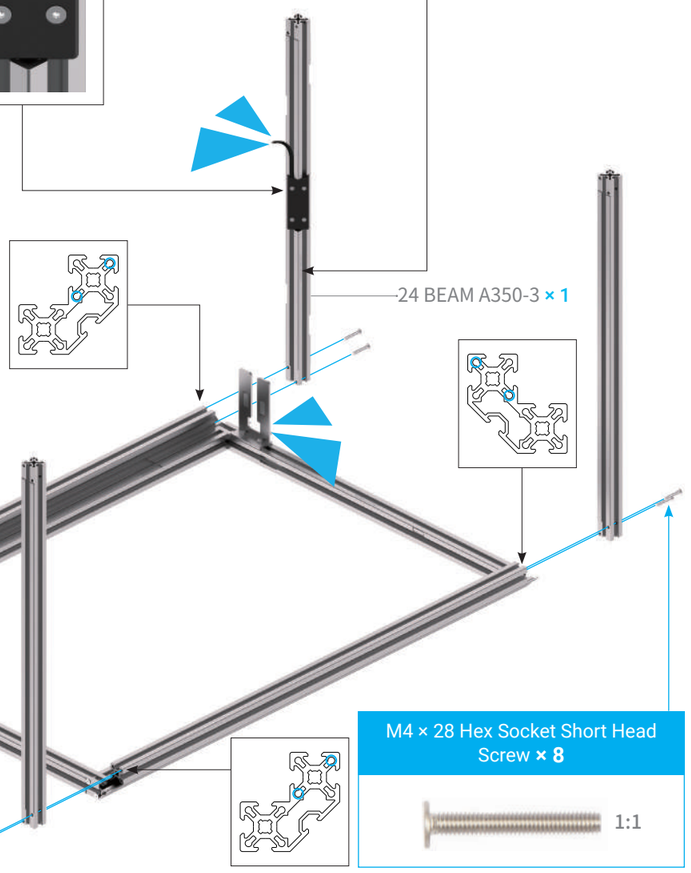




Do not tighten the screws until Step 9.



Make sure to place the 24 BEAM A350-3 in accordance with the direction of the text, with the Hall Switch's outer covering towards the inside.



M4 × 28 Hex Socket Short Head Screw **× 8**

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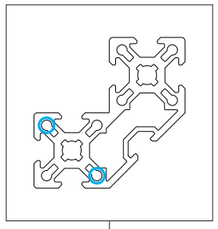
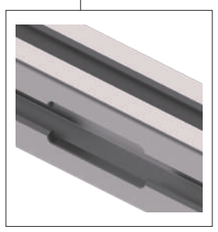
Assemble the top rectangular frame – 1.

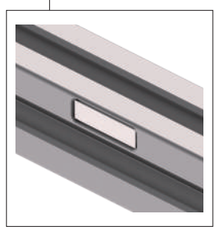


Notice the position of the LED Strip Port.

24 BEAM A350-1 × 1

48CA BEAM A350-3 × 1





M4 × 28 Hex Socket Short Head Screw **× 2**

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Assemble the top rectangular frame – 2.

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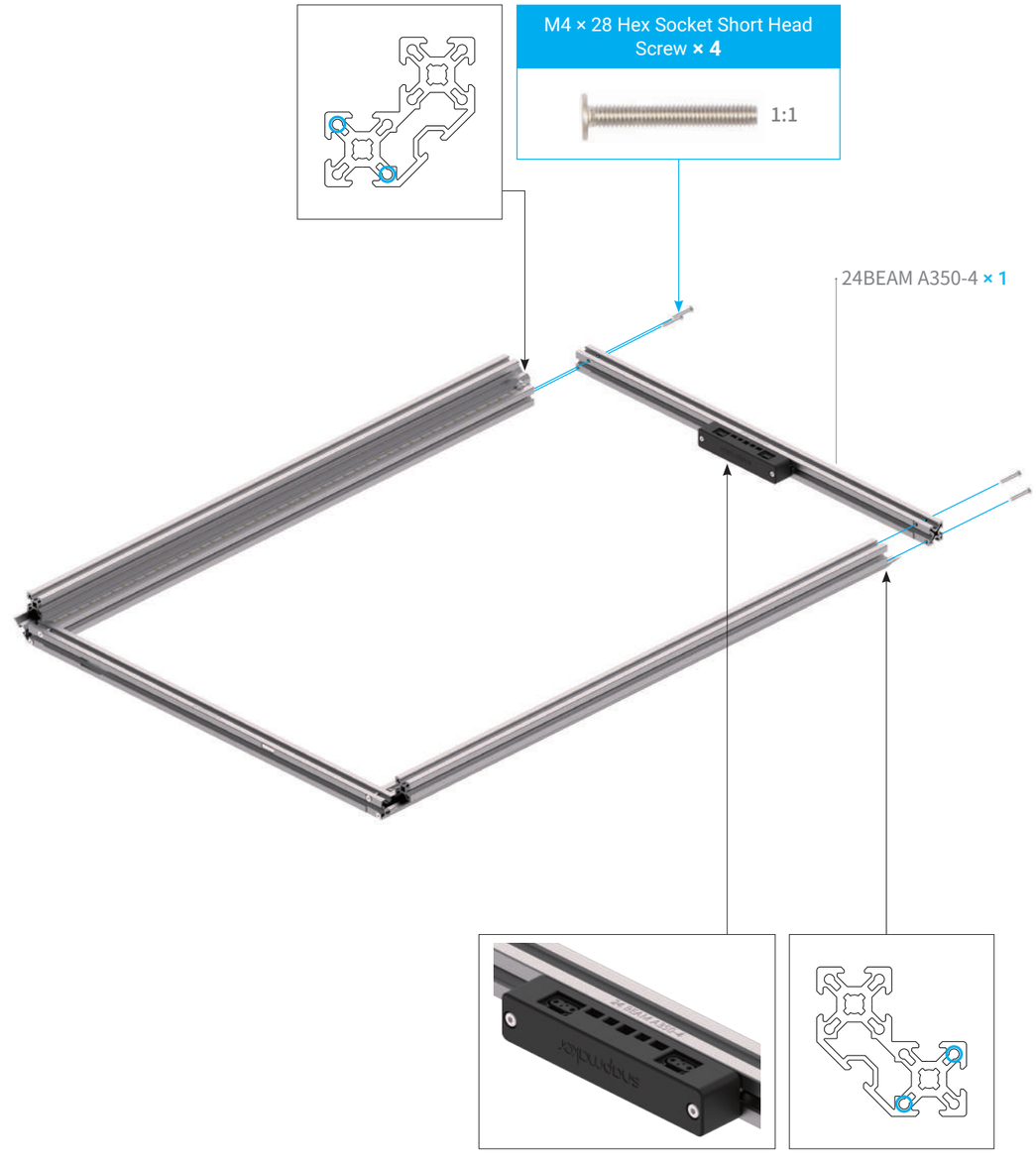
Assemble the top rectangular frame – 3.



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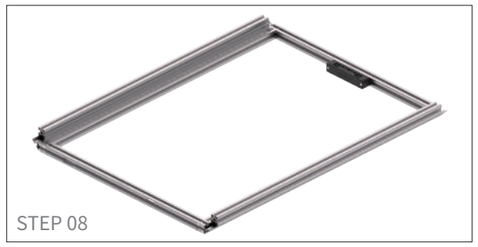
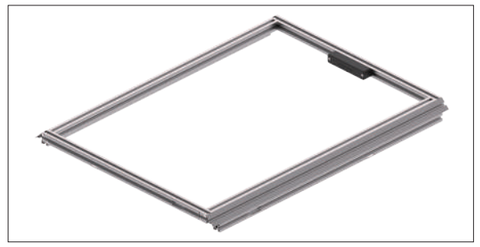
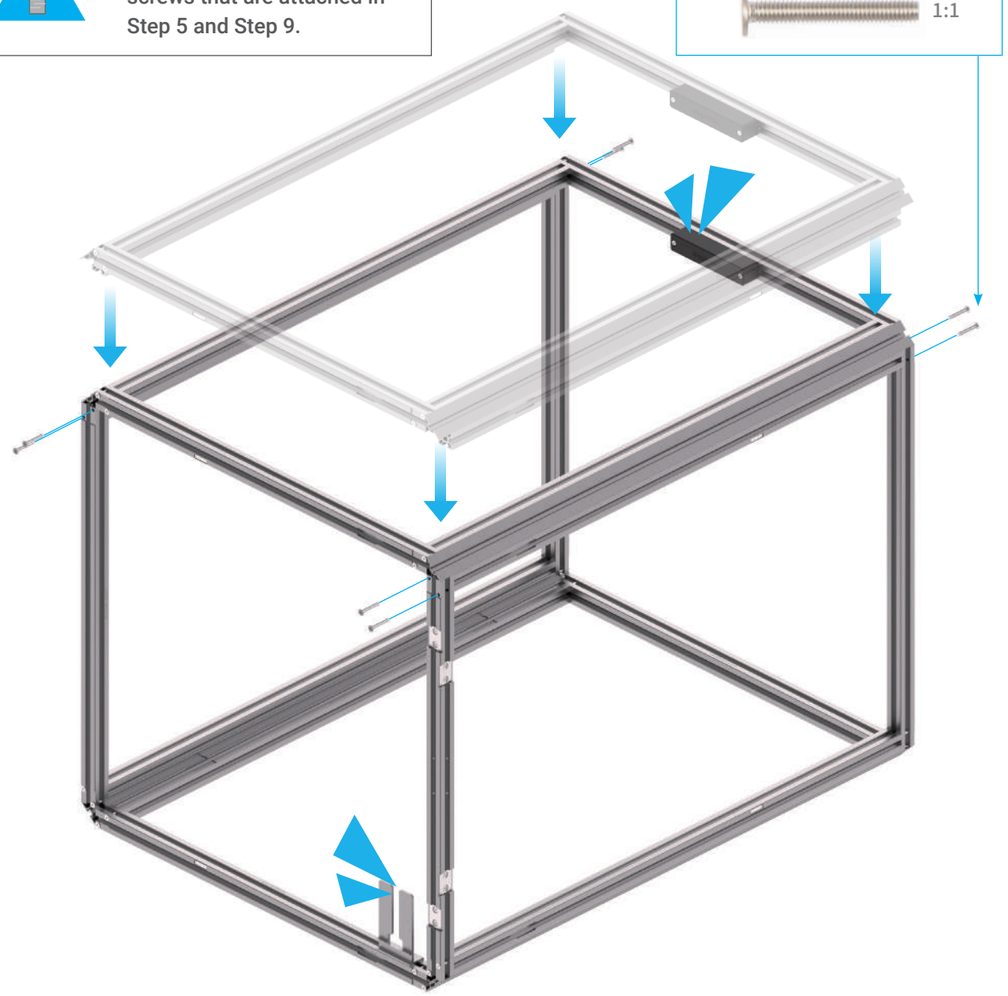
Fix the top rectangular frame.





Attach 8 M4 × 28 screws, and tighten all the 16 M4 × 28 screws that are attached in Step 5 and Step 9.

M4 × 28 Hex Socket Short Head Screw **× 8**



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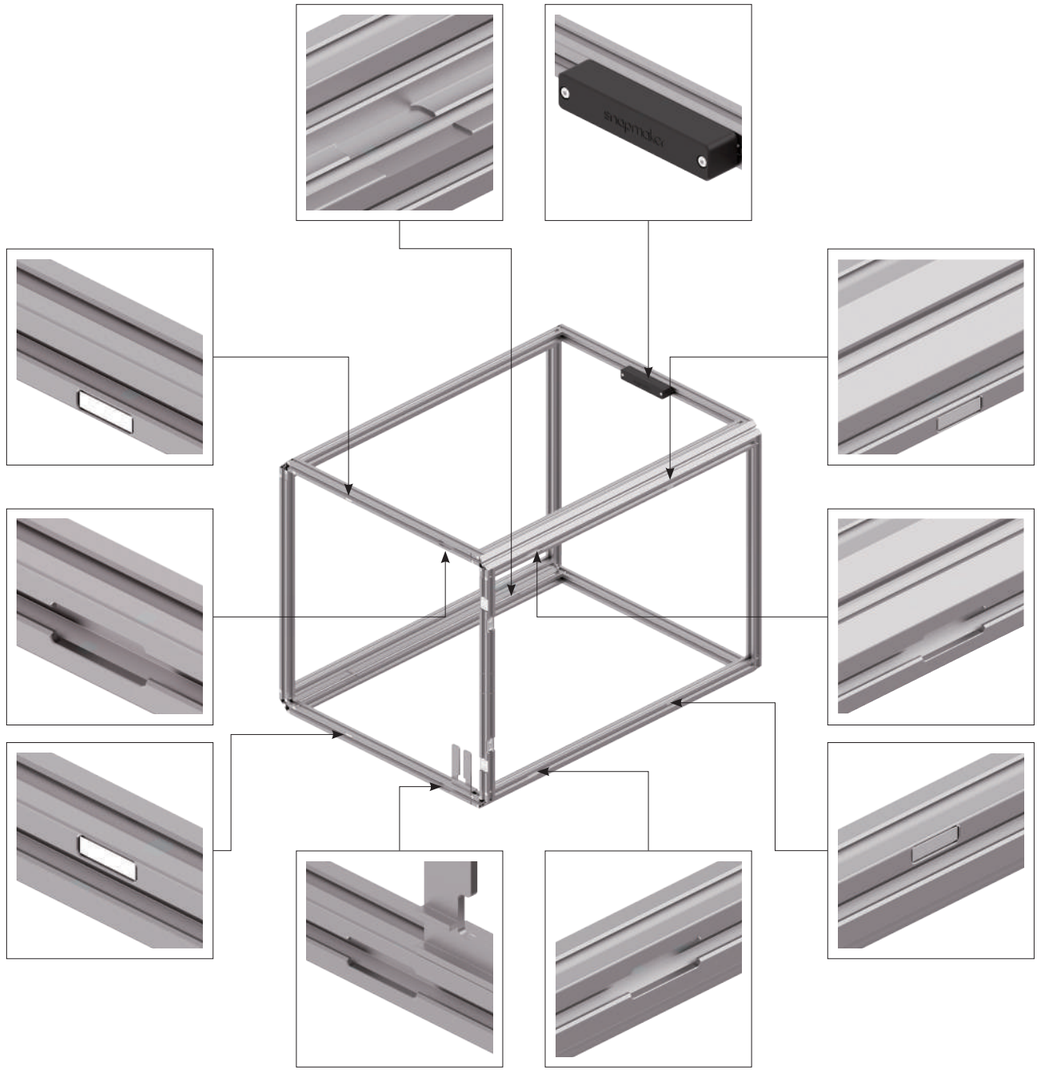
Make sure the Enclosure frame is properly assembled by checking the features below.



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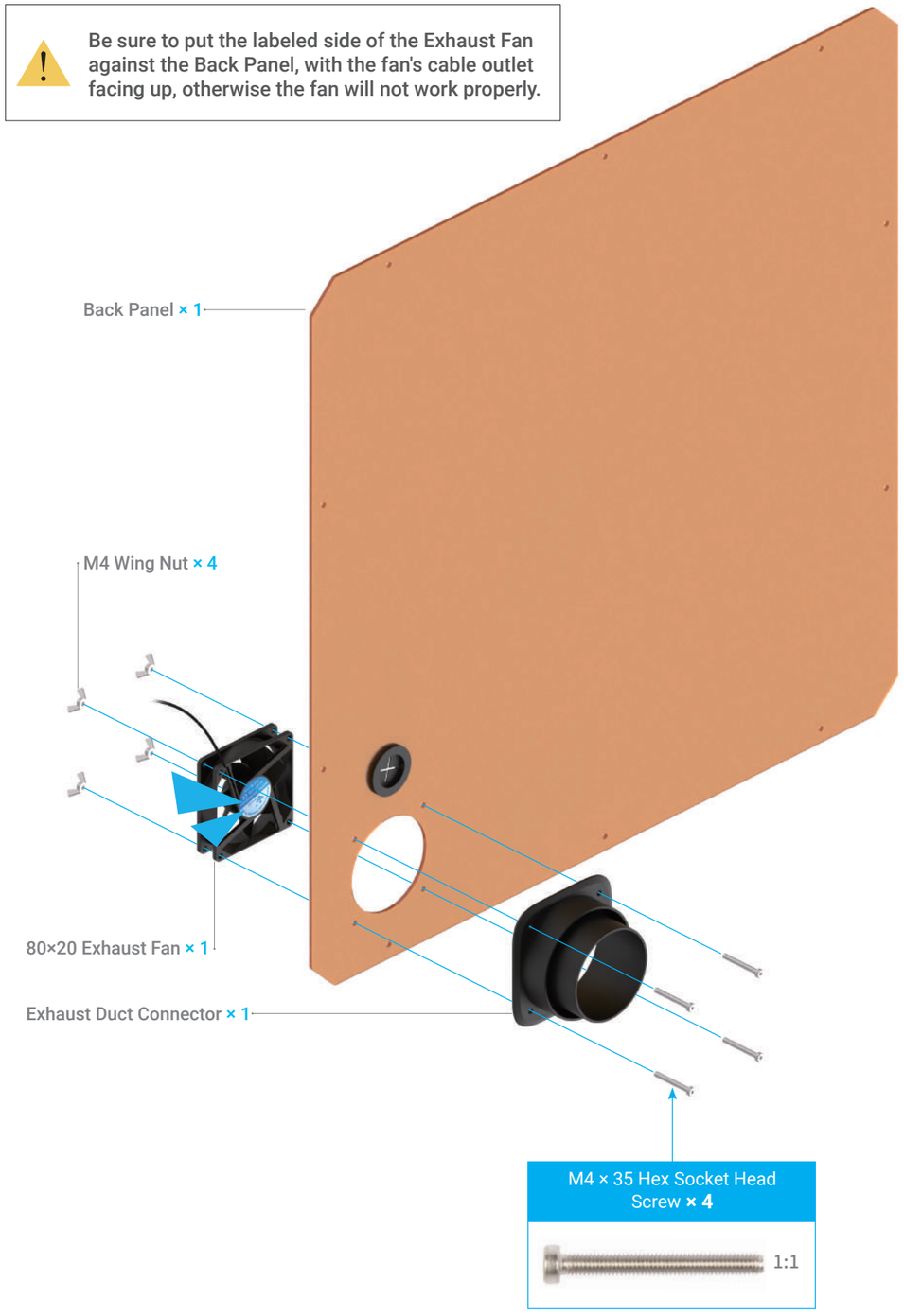
Assemble the Back-Panel Kits.

> ⚠ **Be sure to put the labeled side of the Exhaust Fan against the Back Panel, with the fan's cable outlet facing up, otherwise the fan will not work properly.**



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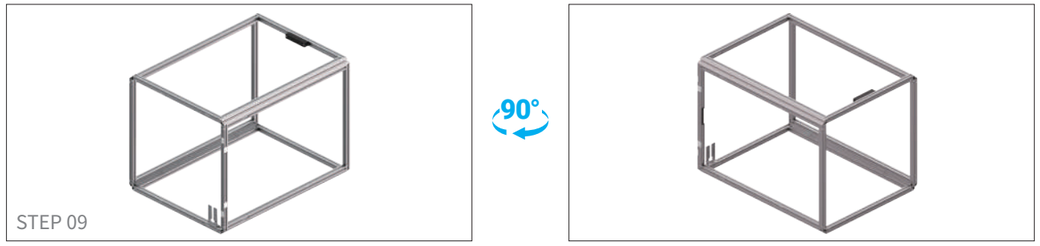
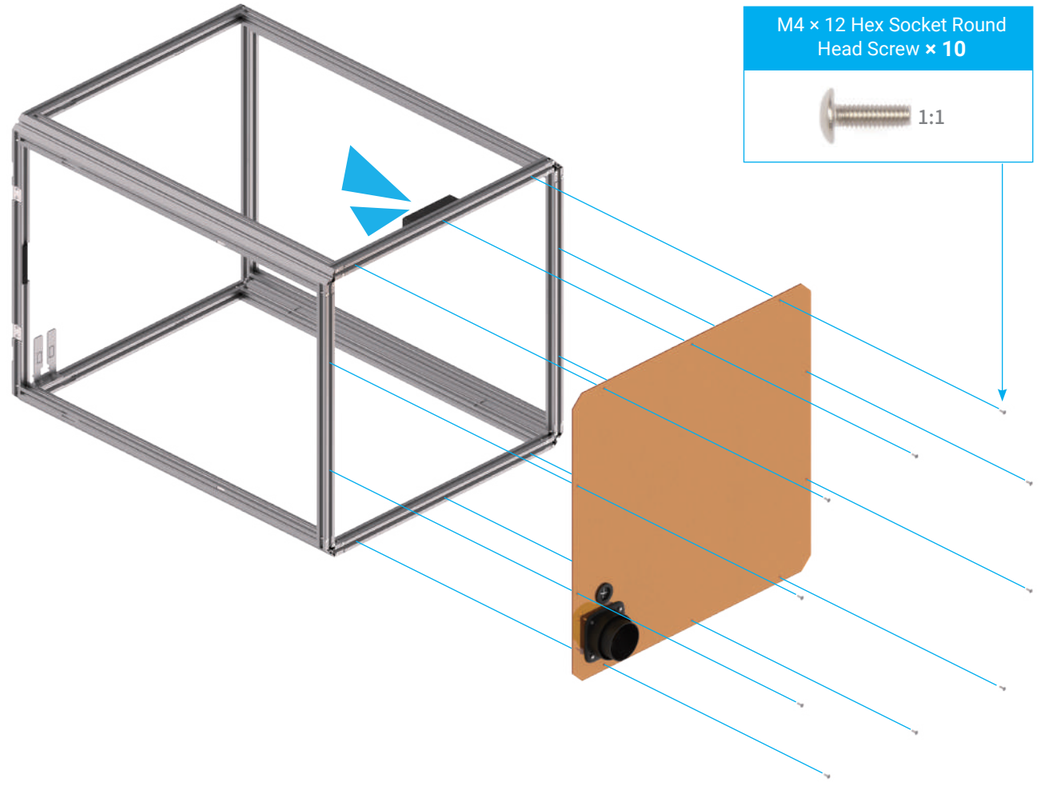
Fix the Back-Panel Kits to the frame.





> ⚠ **Do not tighten the screws excessively lest the acrylic boards should be damaged.**
>
> **It's recommended not to tighten the screws until all 10 screws are attached onto the frame.**
>
> **When having difficulty in aligning the Back Panel's screw holes with those of the frame, it's suggested to slightly loosen the screws that are attached in Step 5 & Step 9 and fine-tune the shape of the frame.**

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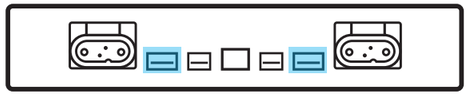
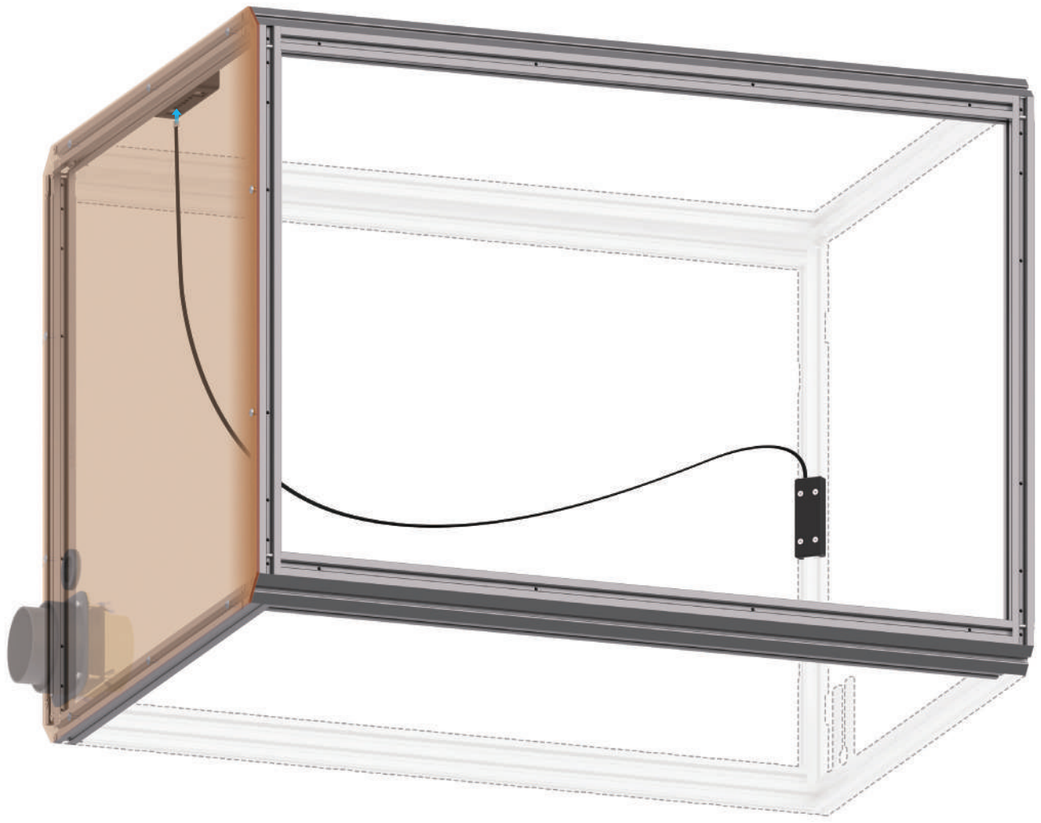
Connect the Door Switch Cable to either Door Switch Port of the Enclosure Converter.





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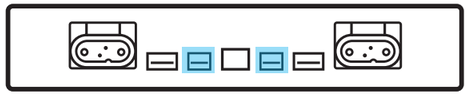
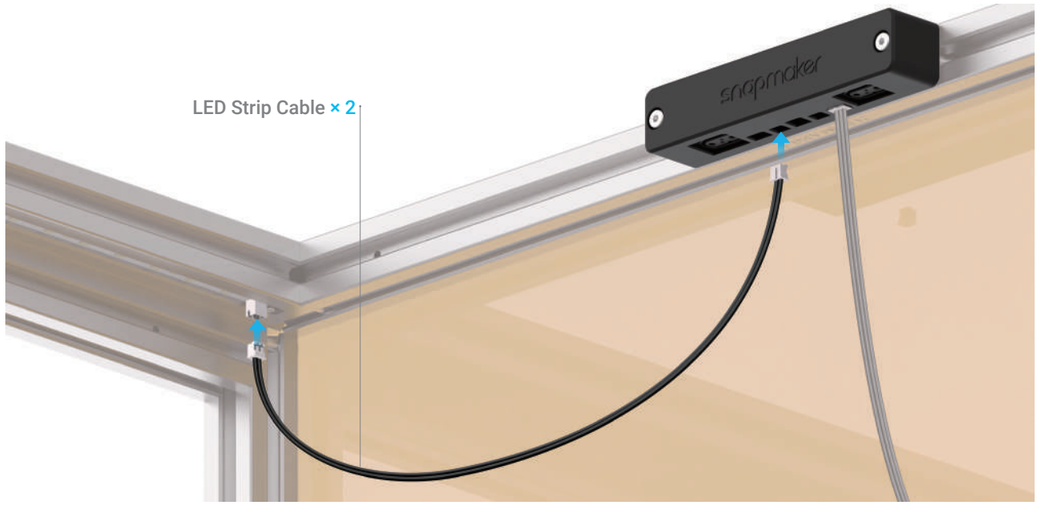
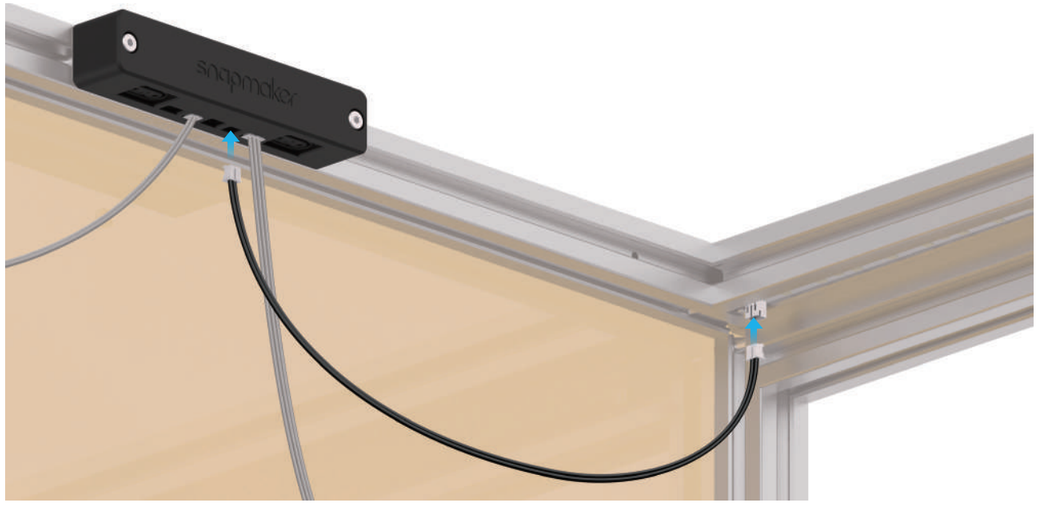
Connect the LED Strips with the Enclosure Converter using two LED Strip Cables.







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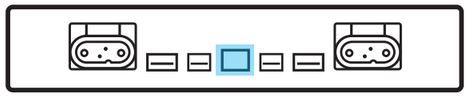
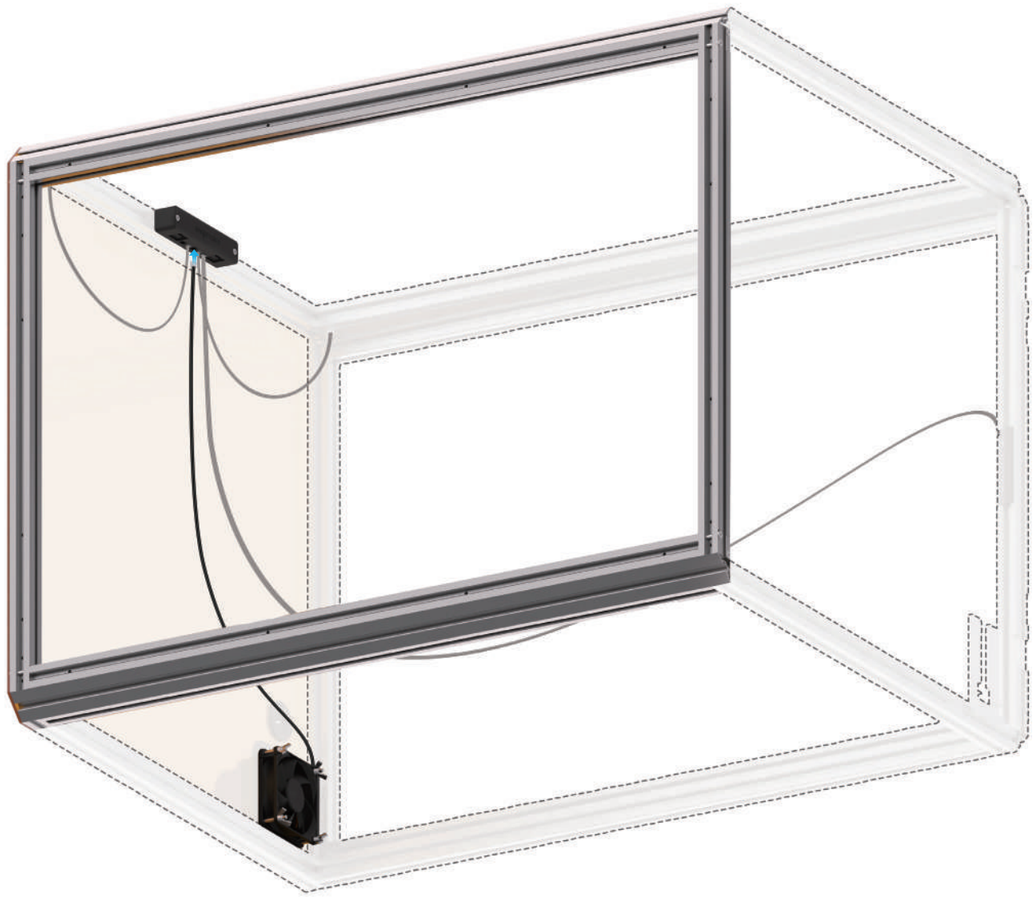
Connect the 80×20 Exhaust Fan to the Enclosure Converter.





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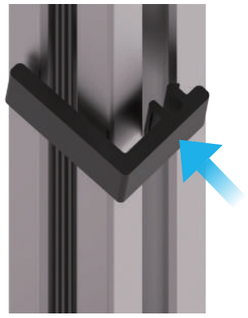
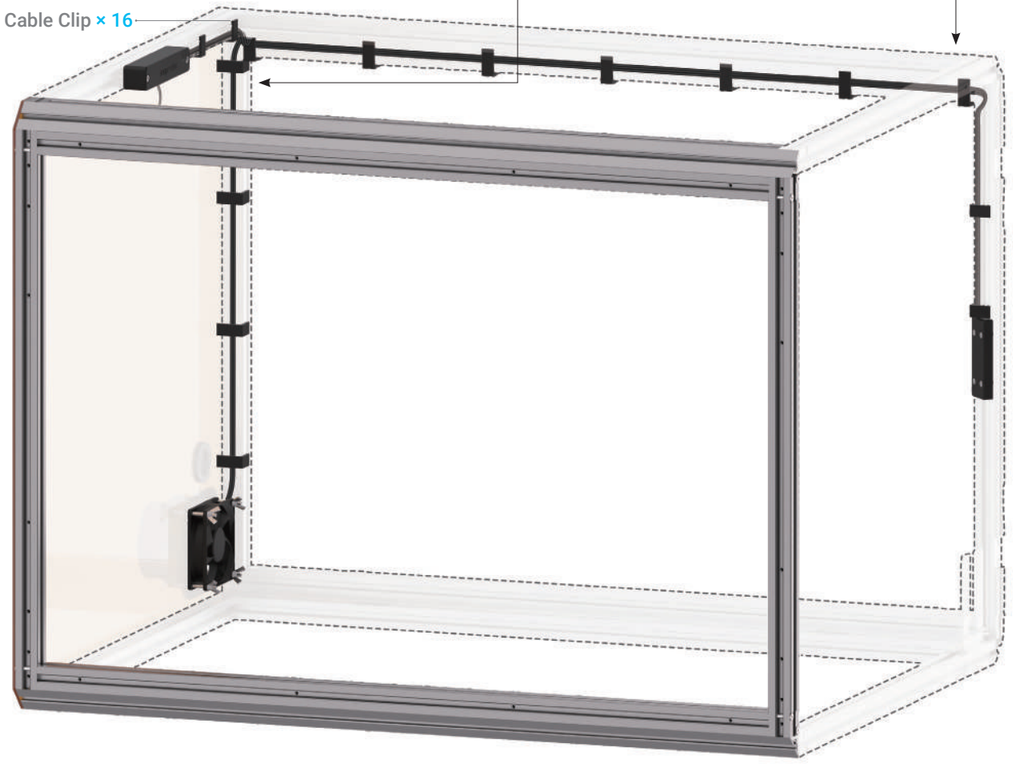
Bury the Door Switch Cable, Exhaust Fan Cable and the right LED Strip Cable into the grooves of the beams. Fix the cables with Cable Clips.



Tilt the snap joint of the Cable Clip and press it against the groove of the beam to clip it in. The sheet of the Cable Clip should hold the cable inside the adjacent groove.

Cable Clip × 16



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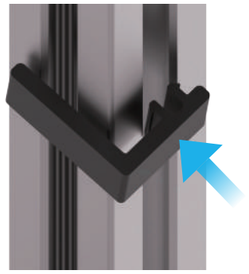
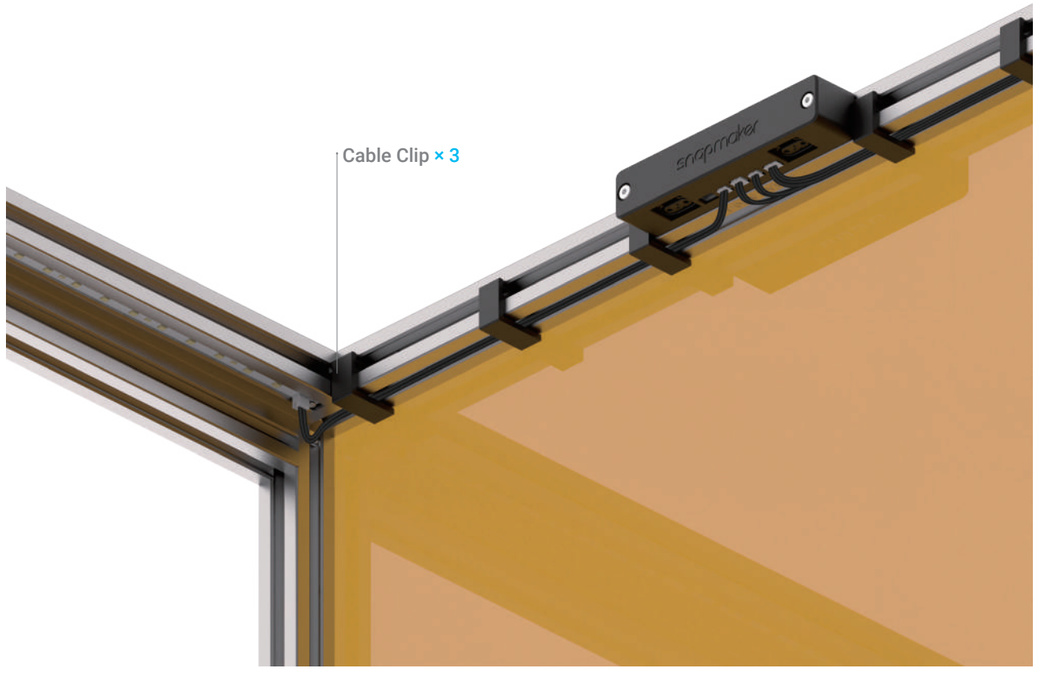
Bury the left LED Strip Cable into the groove of the beam. Fix the cable with Cable Clips.



Tilt the snap joint of the Cable Clip and press it against the groove of the beam to clip it in. The sheet of the Cable Clip should hold the cable inside the adjacent groove.



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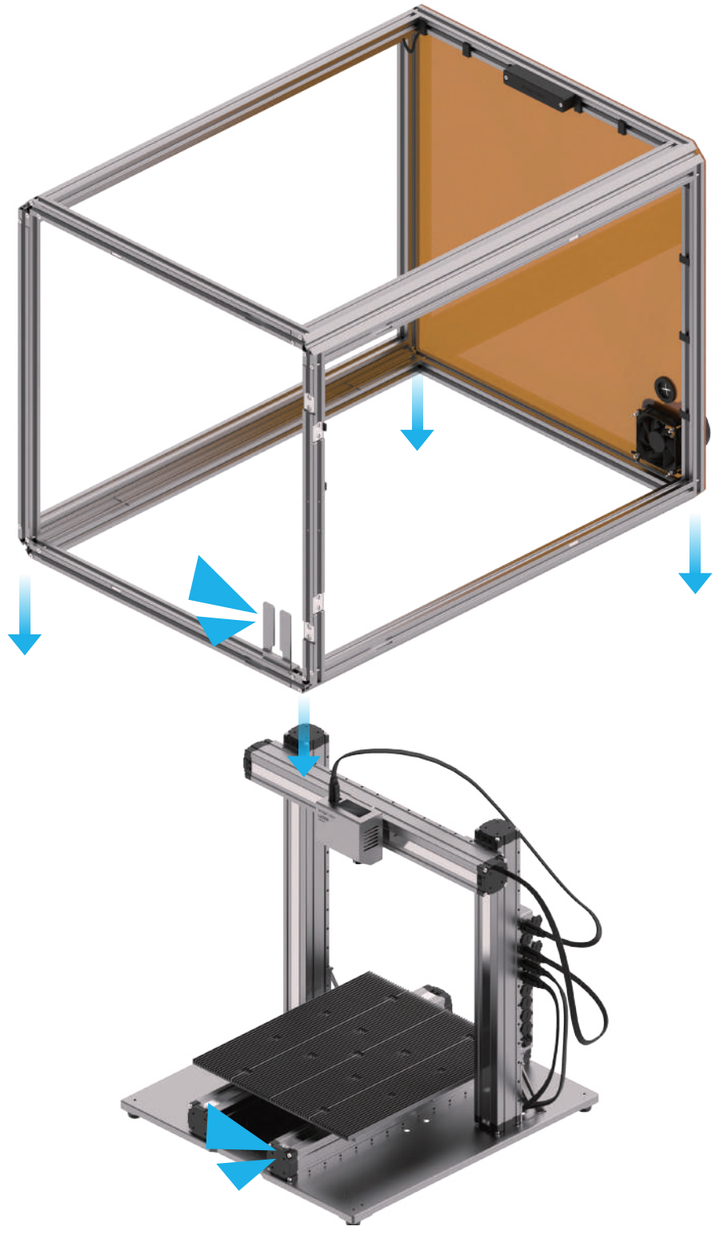
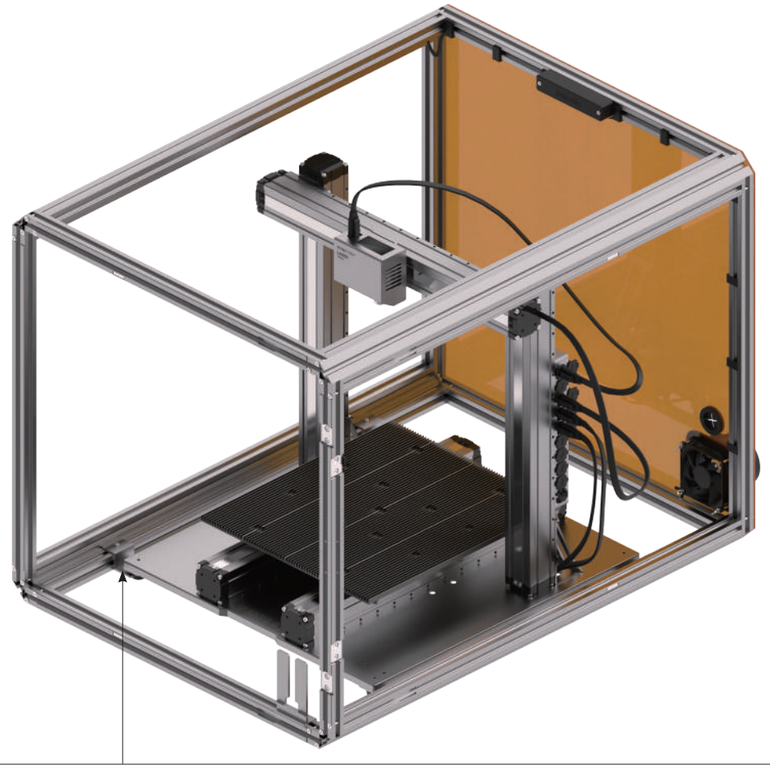
Transfer the machine to a proper place and enclose the machine with the frame from above.

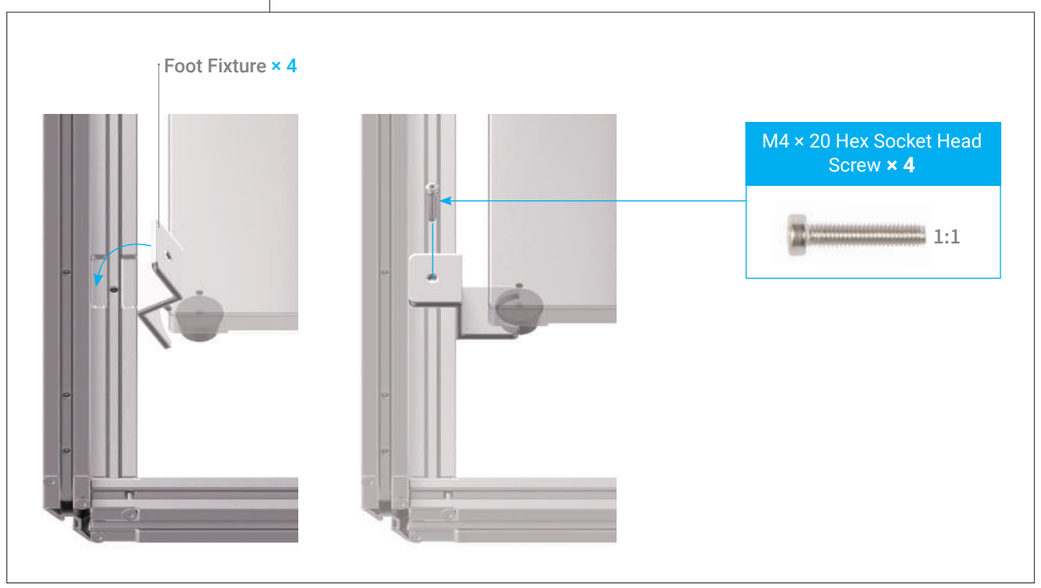
The provided exhaust duct measures 75mm in diameter and 2m in length. When exhausting outdoors, be sure to choose a proper exhaust location.



19/32

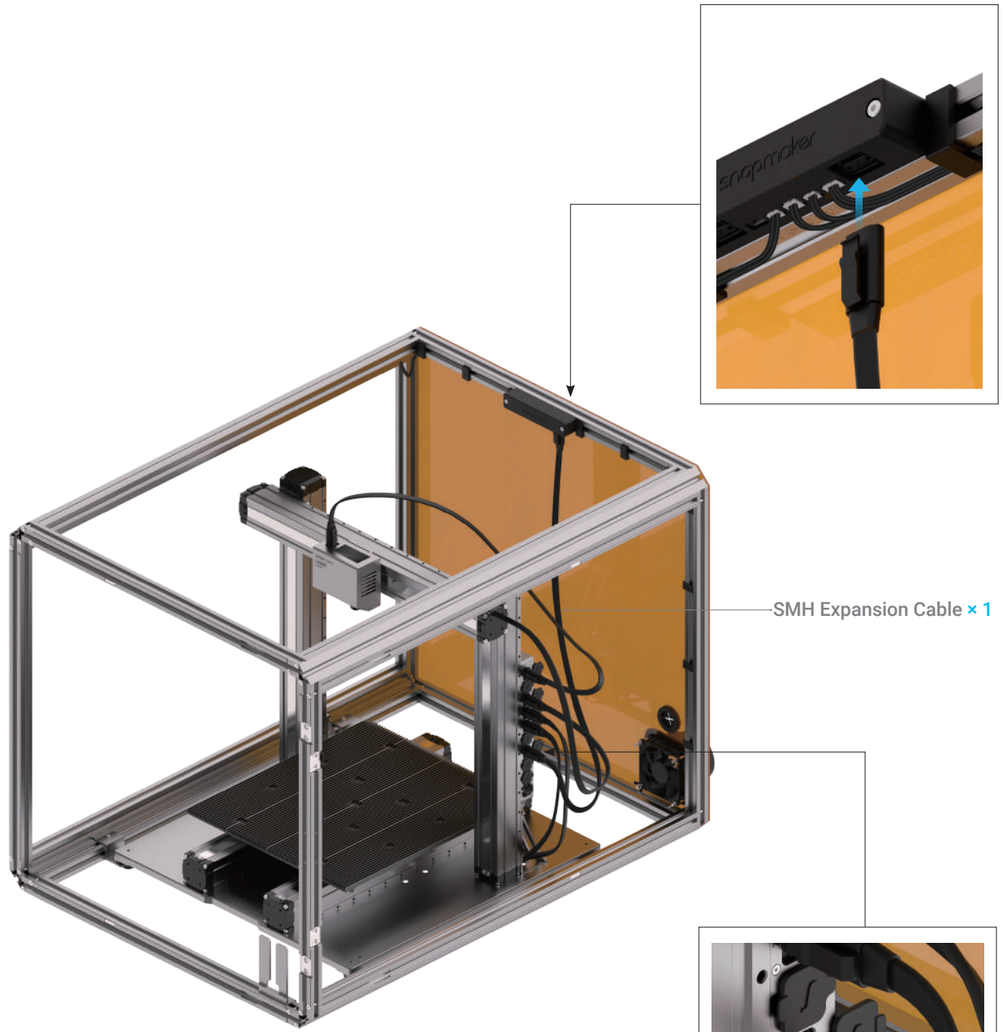
Clamp the Foot Fixtures onto the four feet of the machine, then fix the fixtures onto the enclosure.

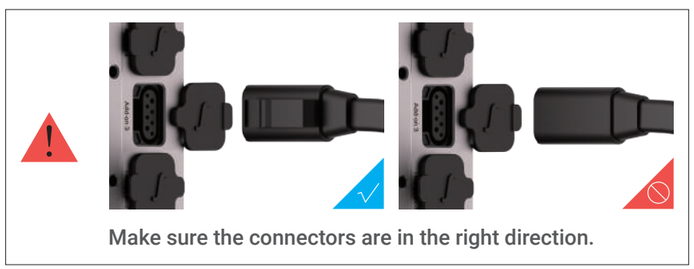




20/32

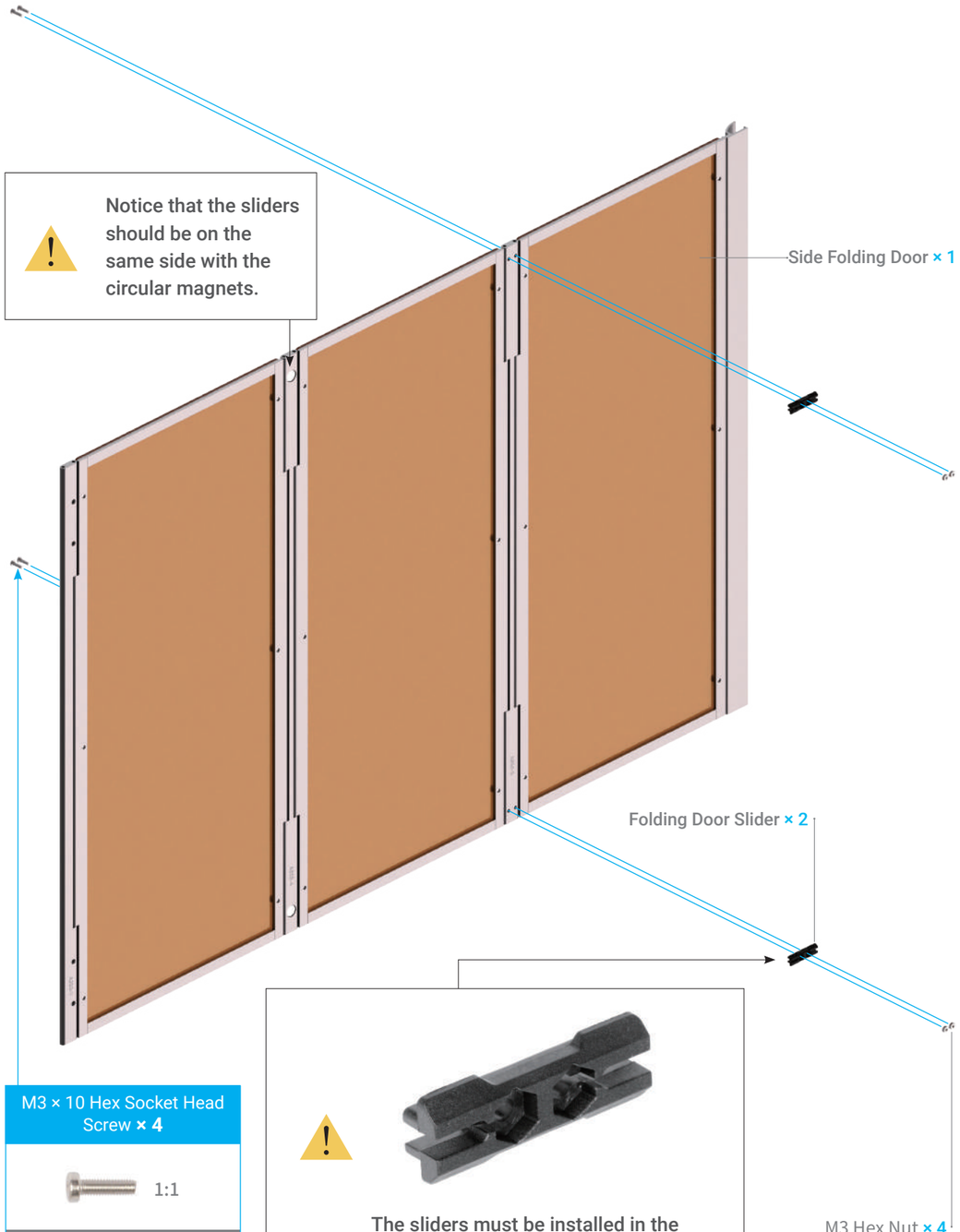
Connect the Enclosure Converter's Expansion Port and the Addon 3 Port of the machine's controller with the SMH Expansion Cable.





21/32

Attach Folding Door Sliders to the Side Folding Door.



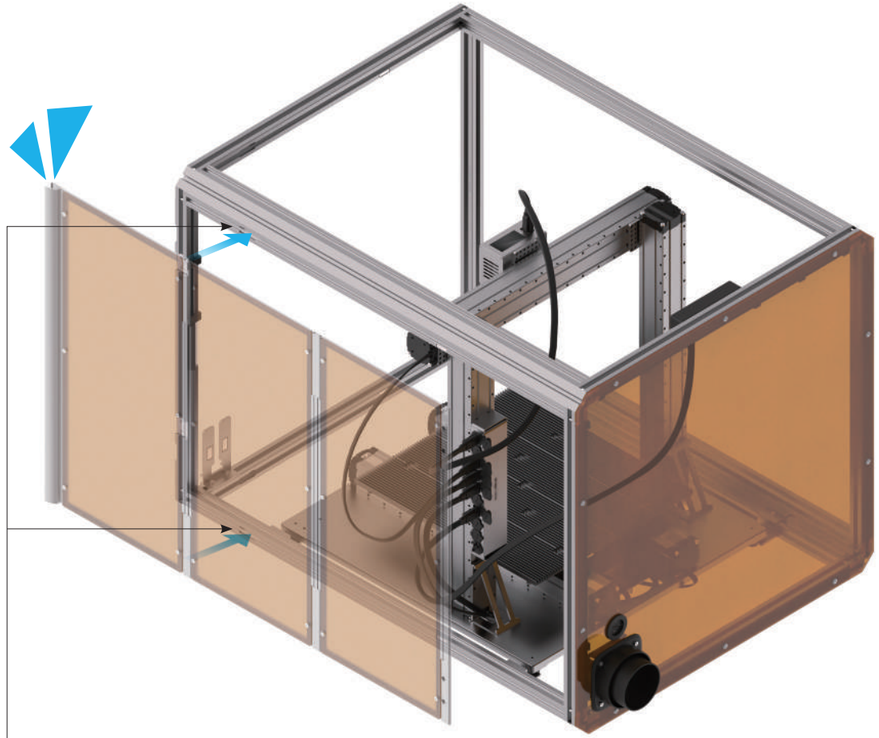
M3 × 10 Hex Socket Head Screw **× 4**

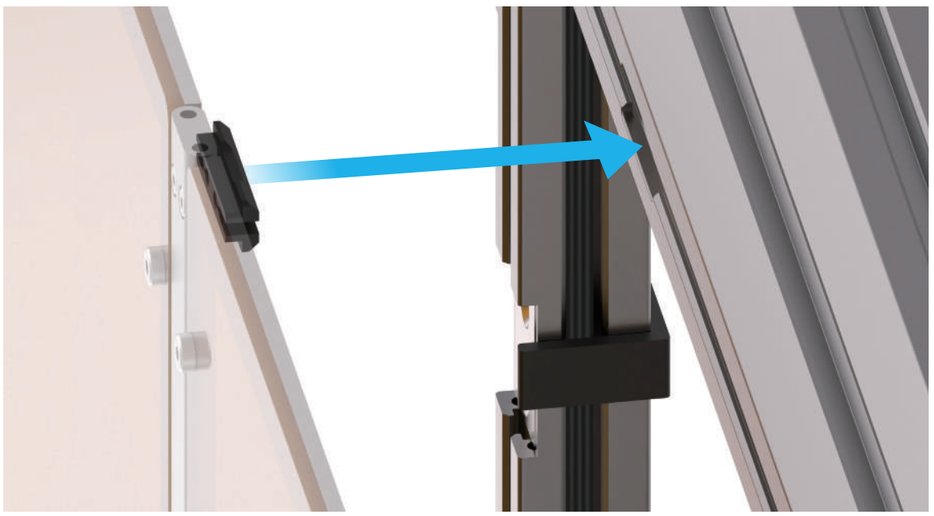
Use H2.0 screwdriver bit or H2.0 Hex Key.

The sliders must be installed in the right direction as shown above.

22/32

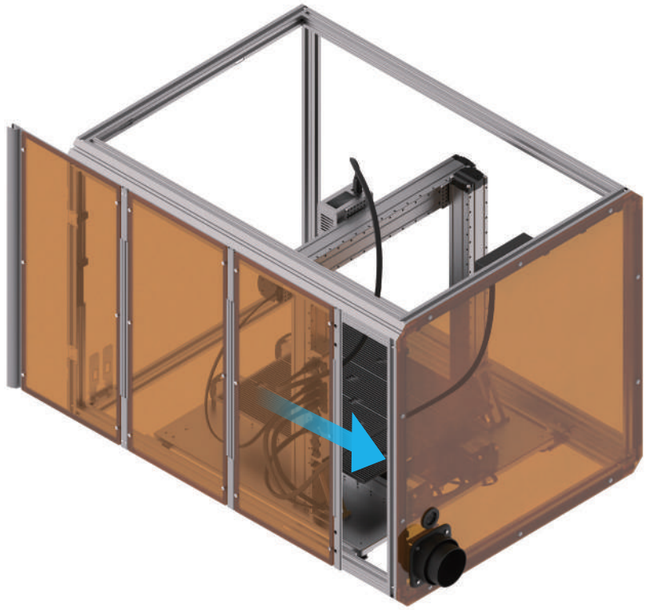
Mount the two Folding Door Sliders into the slider grooves of the beams.

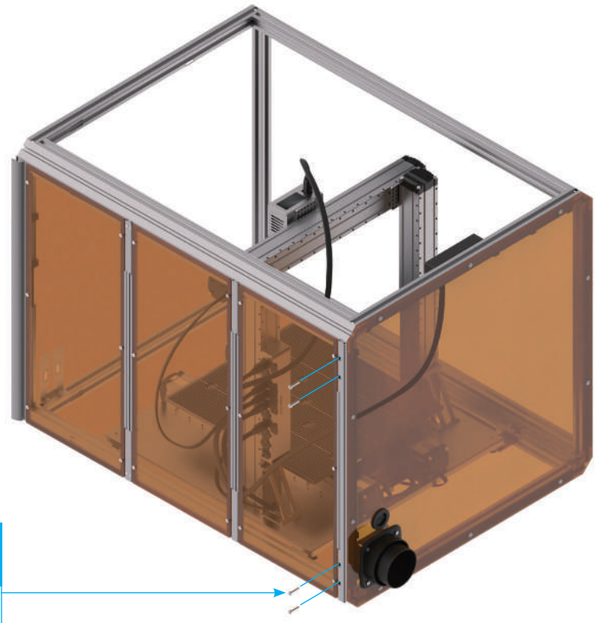




23/32

Move the Side Folding Door horizontally to the right until it aligns with the frame, then fix the Side Folding Door with screws.



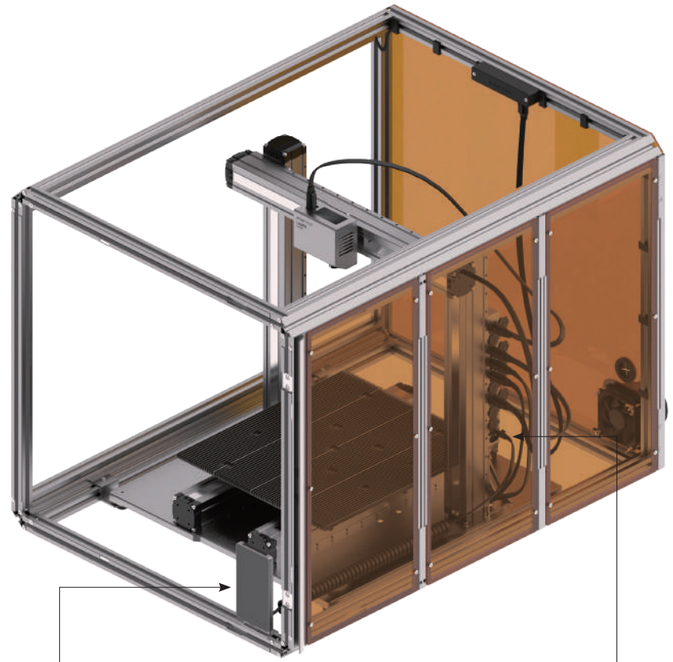


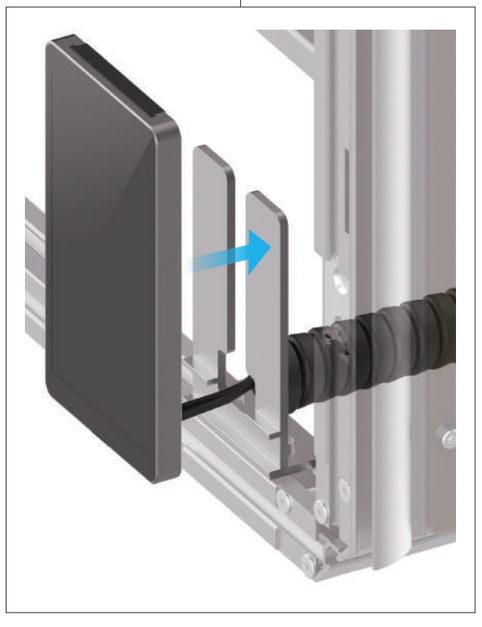
M4 × 20 Hex Socket Head Screw **× 4**

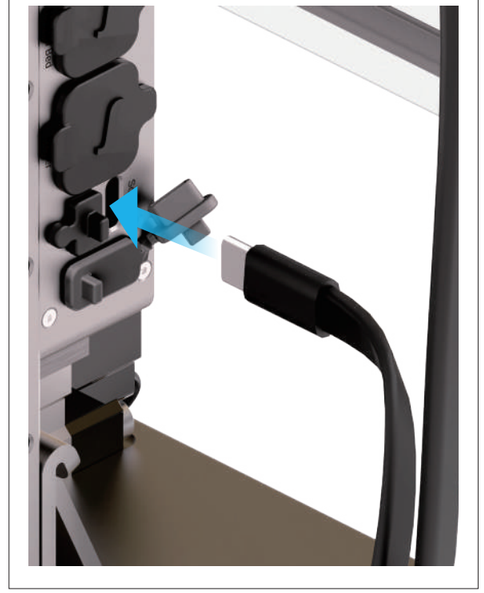
1:1

24/32

Connect the Touchscreen to the machine's Controller and place it on the Touchscreen Holder of the enclosure.

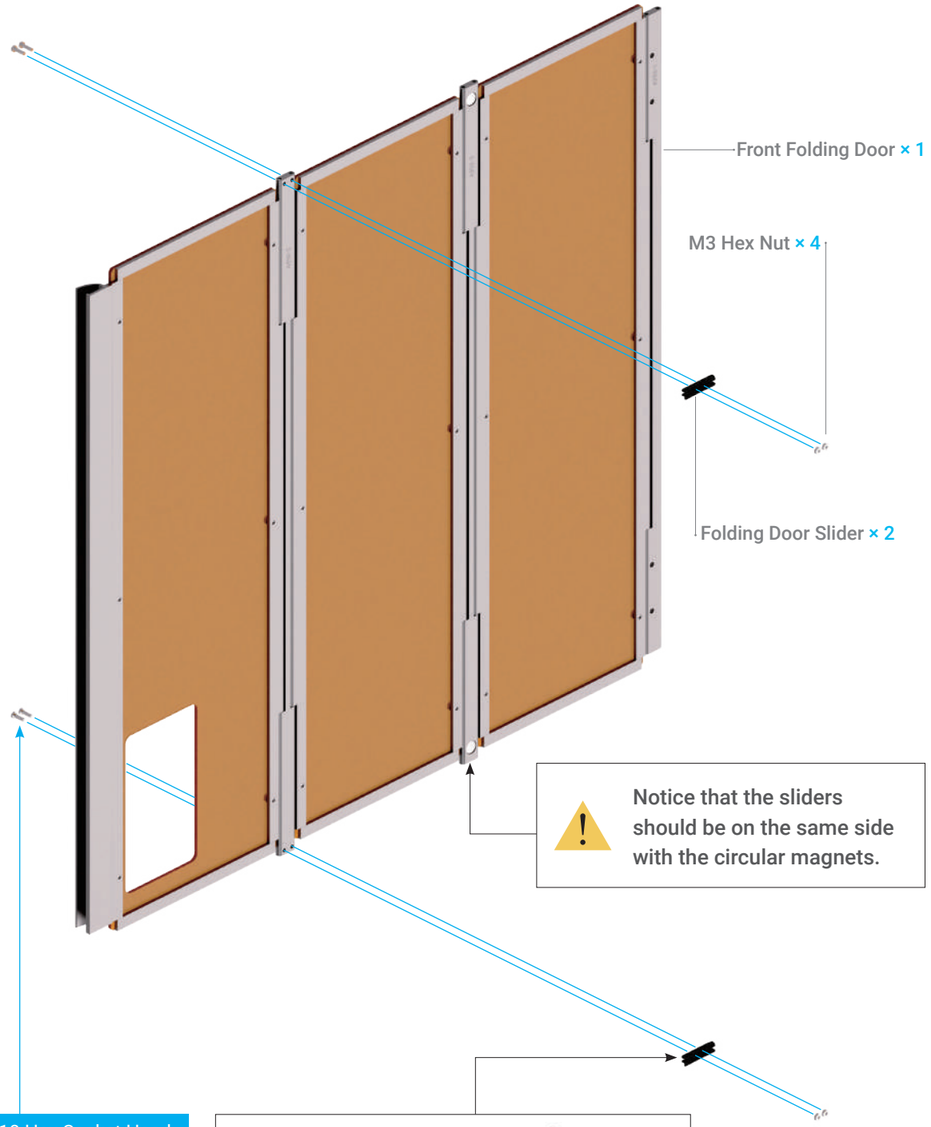






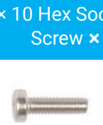
25/32

Attach Folding Door Sliders to the Front Folding Door.

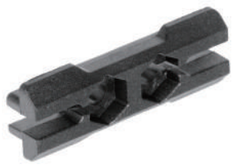


Notice that the sliders should be on the same side with the circular magnets.

M3 × 10 Hex Socket Head Screw **× 4**



Use H2.0 screwdriver bit or H2.0 Hex Key.



The sliders must be installed in the right direction as shown above.

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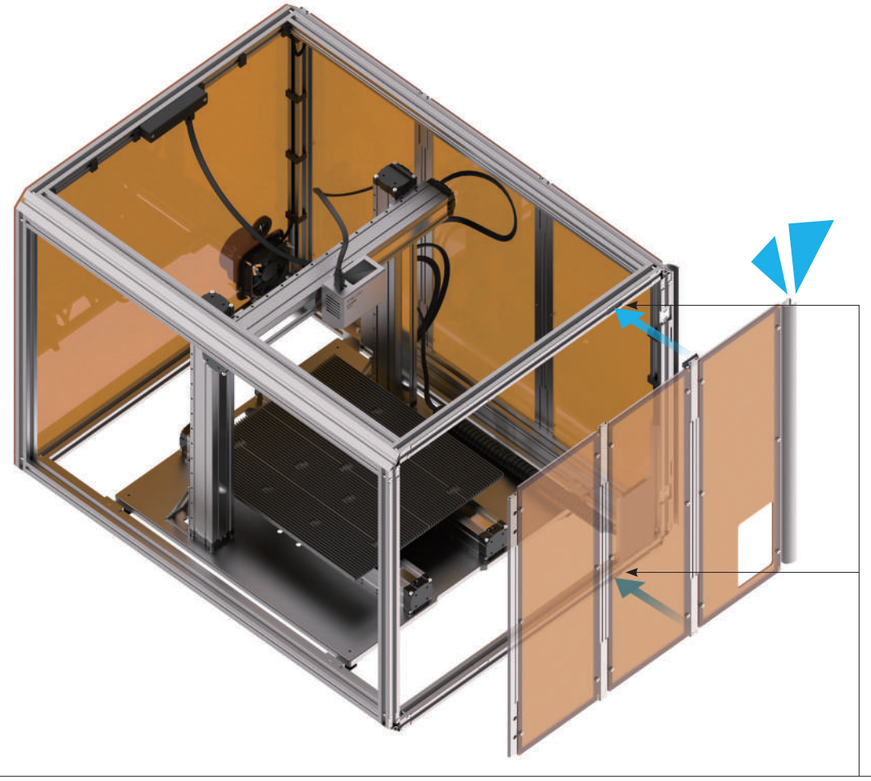
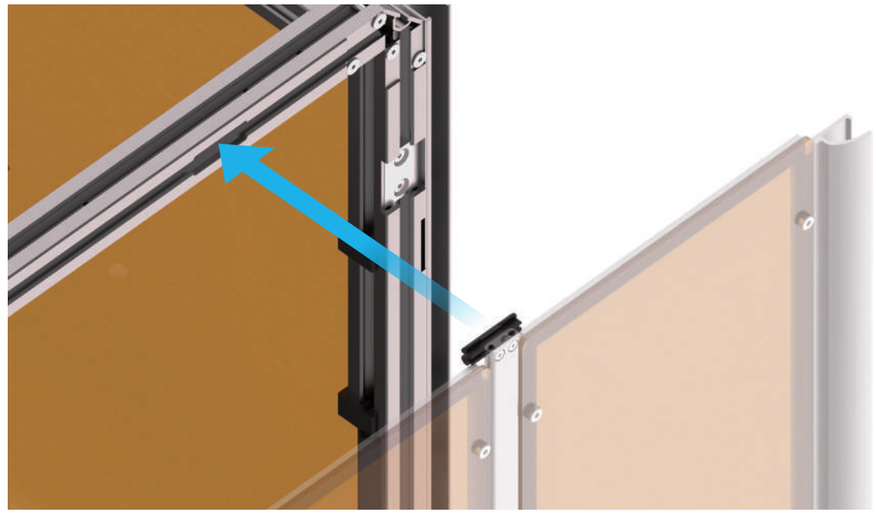
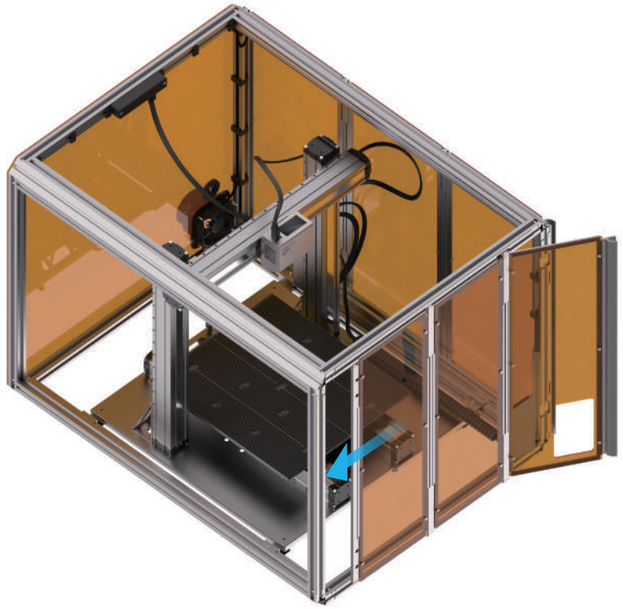
Mount the two Folding Door Sliders into the slider grooves of the beams.

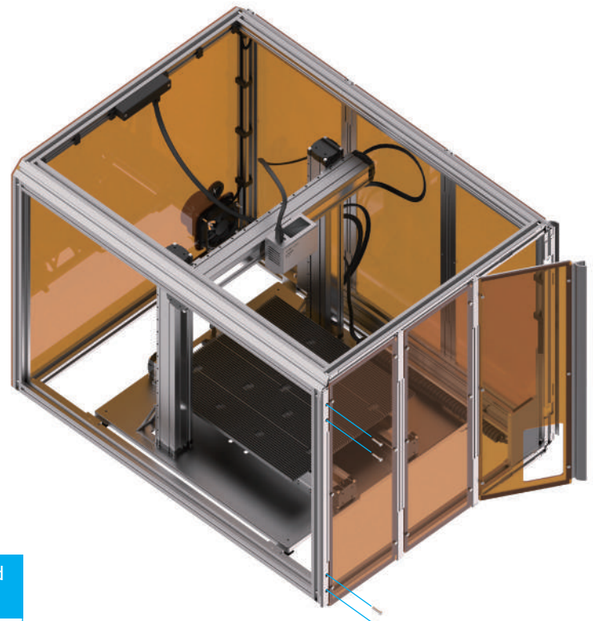




27/32

Move the Folding Door horizontally to the left until it aligns with the frame, then fix the Folding Door with screws.





M4 × 20 Hex Socket Head Screw **× 4**

1:1

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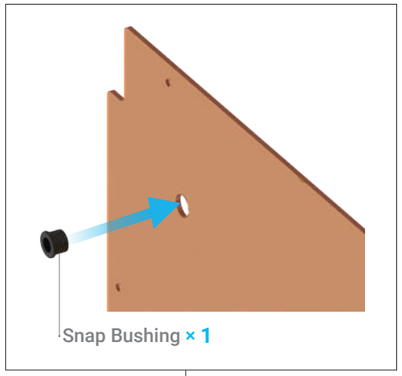
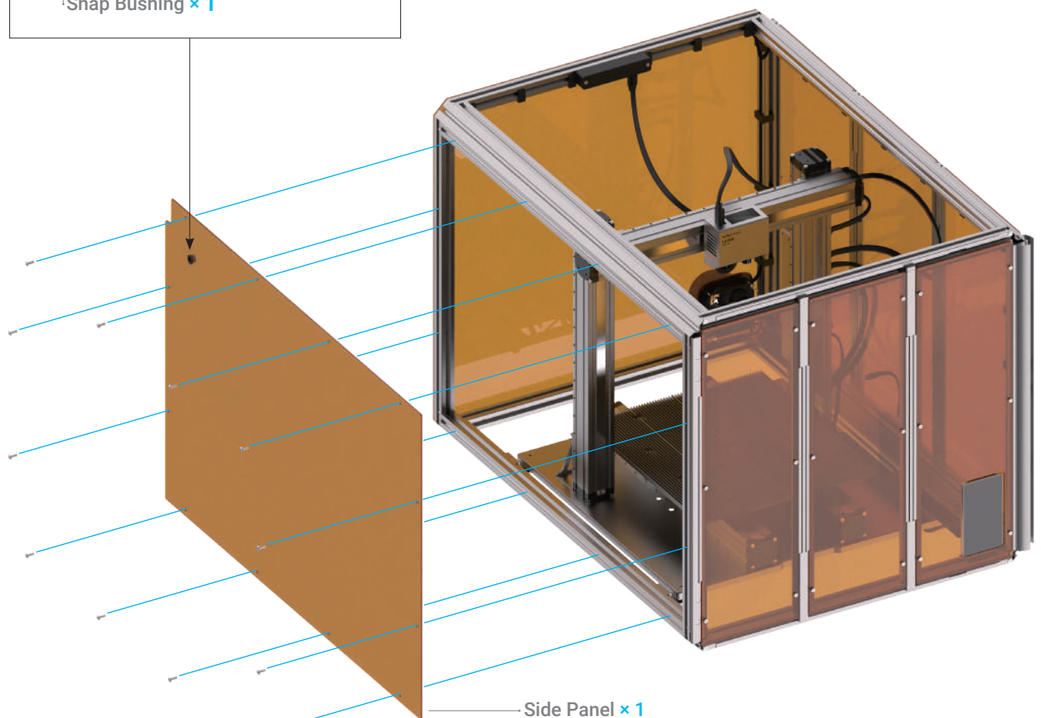
Attach the Side Panel.





A350: M4 × 12 Hex Socket Round Head Screw **× 12**

A250: M4 × 12 Hex Socket Round Head Screw **× 10**

1:1

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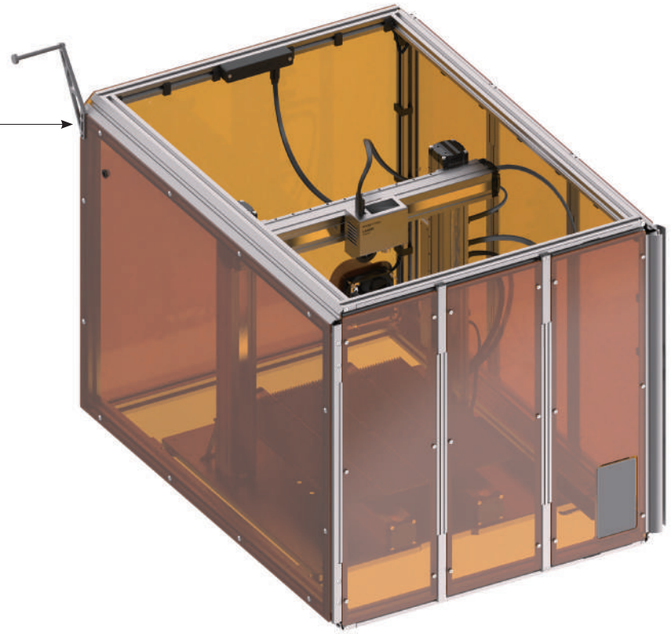
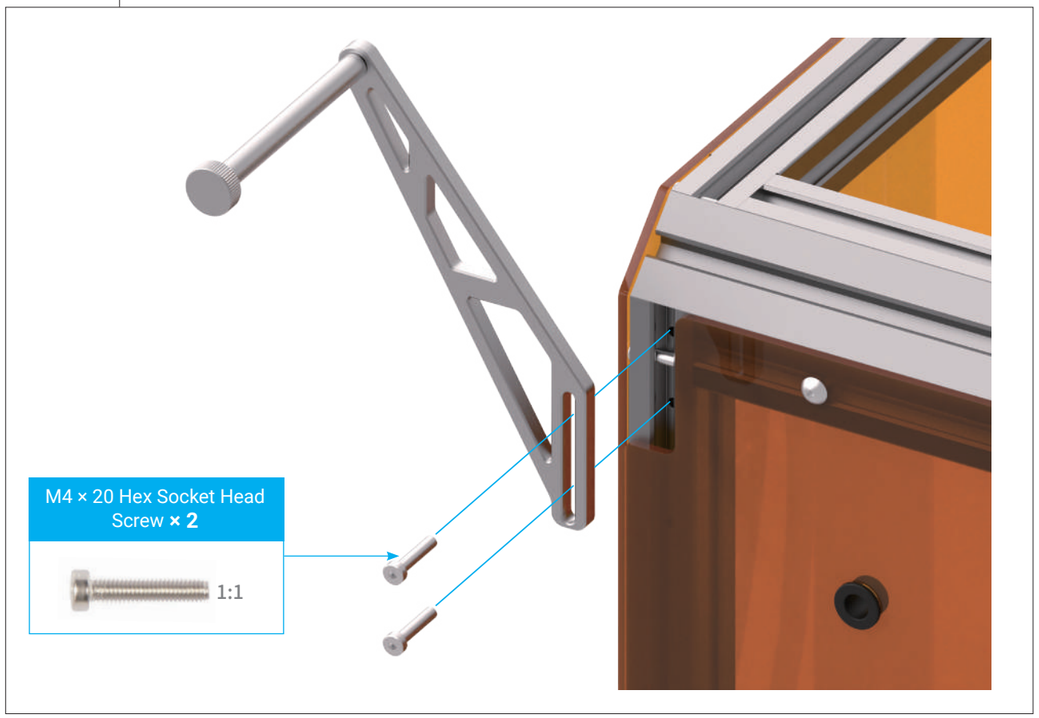
Attach the Filament Holder.





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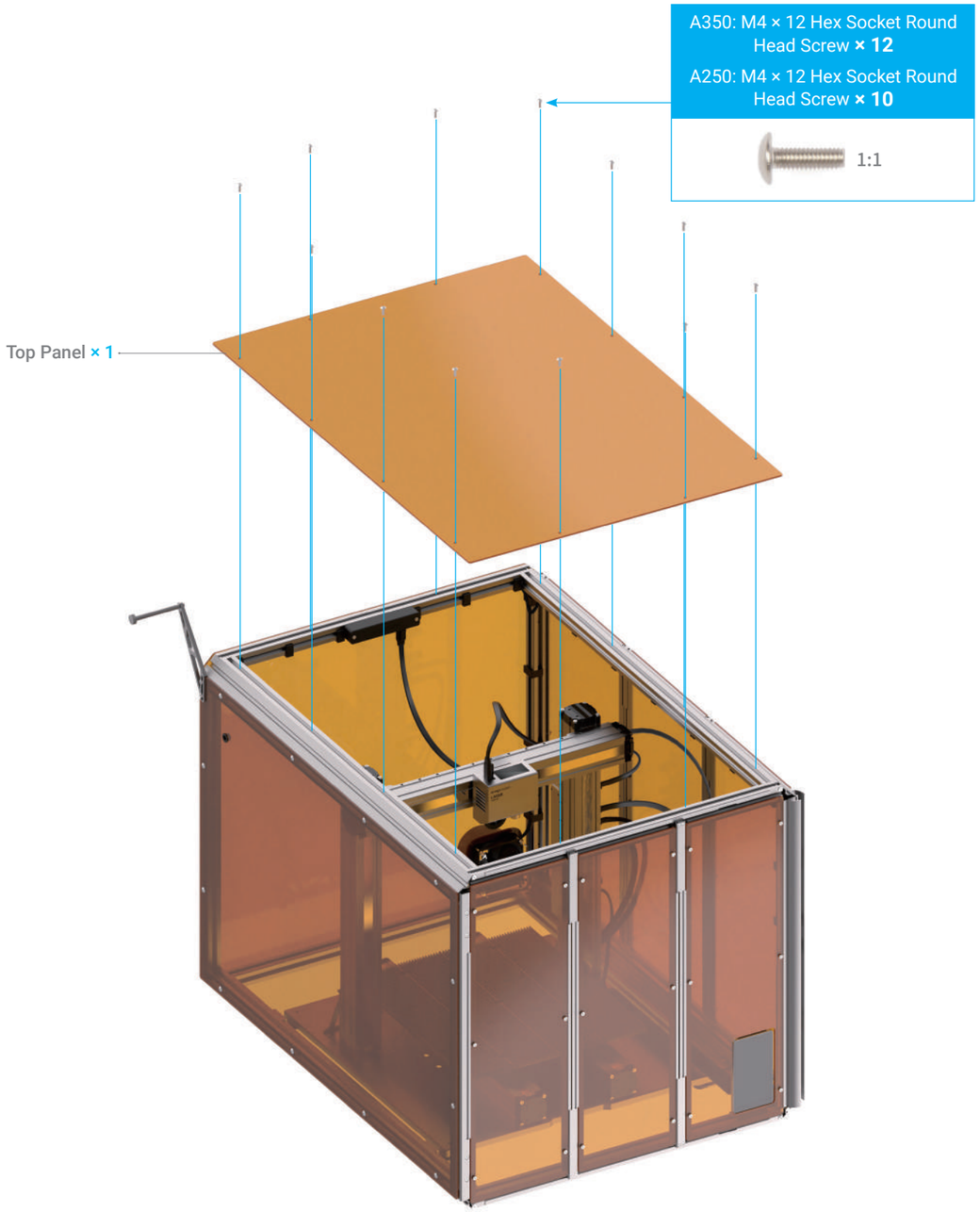
Attach the Top Panel.



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Put the Handle Hose Clamp around the Exhaust Duct, then enclose the Exhaust Duct Connector with both. Spin the handle clockwise to tighten the clamp.

Exhaust Duct × 1 Handle Hose Clamp × 1

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Connect the Power Module to the machine.

Make sure the connectors are in the right direction.

If you need to transfer the position of both the enclosure and the machine, follow the steps as below:
Switch off the power and unplug the DC Power Cable, the SMH Expansion Cable and the Touchscreen cable.
Detach the Foot Fixtures and move the machine into place.
Enclose the machine and fix the Foot Fixtures.

03

How to Use

3.1 LED Strips & Exhaust Fan

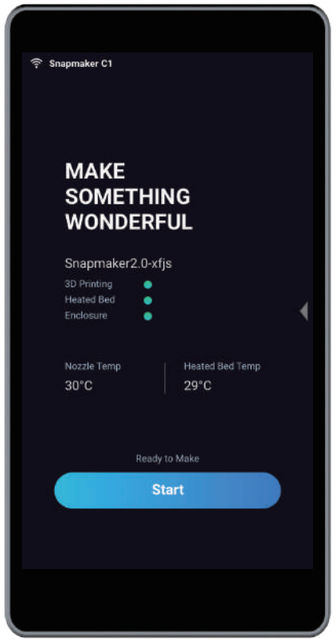
Guides & Pictures / Snapmaker

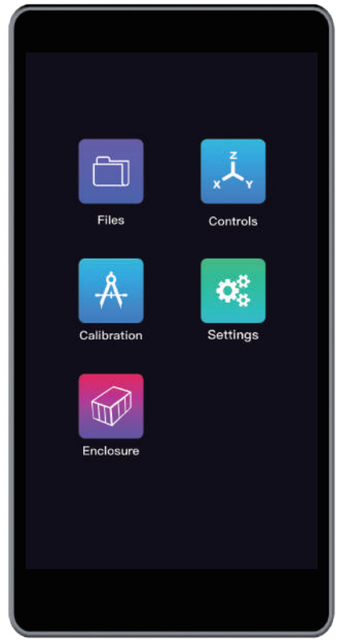
When the machine is not under a 3D printing, laser or CNC process, the LED Strips and the Exhaust Fan can be controlled by entering **Home** -> **Enclosure** -> **LED Strip** or **Exhaust Fan** on the touchscreen.

Before starting a 3D printing, laser or CNC process, it's recommended to switch **ON** the LED Strips for a better vision on the work status.

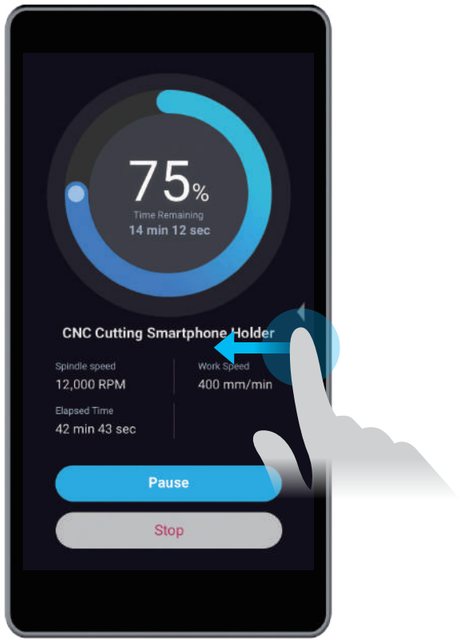
Before using the laser function, it's recommended to switch **ON** the Exhaust Fan to expel the waste gas coming from the laser.

Before using the CNC function, it's recommended to switch **OFF** the Exhaust Fan to avoid raising the dust in the enclosure.





When the machine is under working condition, you can swipe left on the Touchscreen to control the LED Strips and the Exhaust Fan.

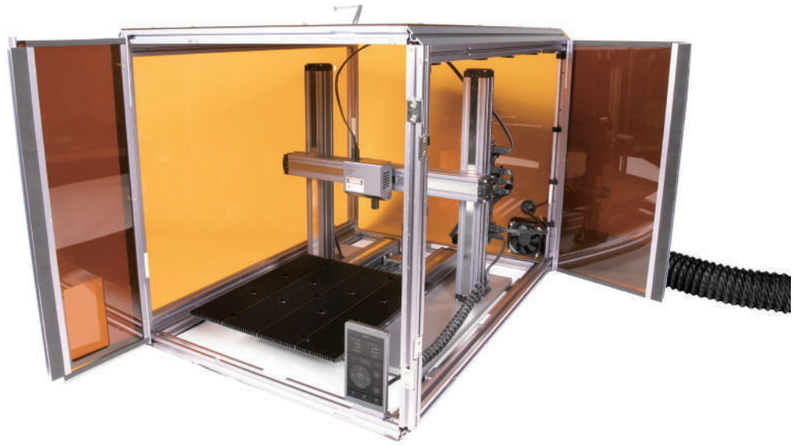


3.2 Change Machine Functions

To change the toolheads and the platforms when the machine is enclosed, follow the steps as follow. The H2.5 screwdriver bit will be used.

1. Fold and open two doors.

2. Enter **Home** -> **Controls** -> **Jog Mode** to move the toolhead and platform to proper places that are convenient for detaching.

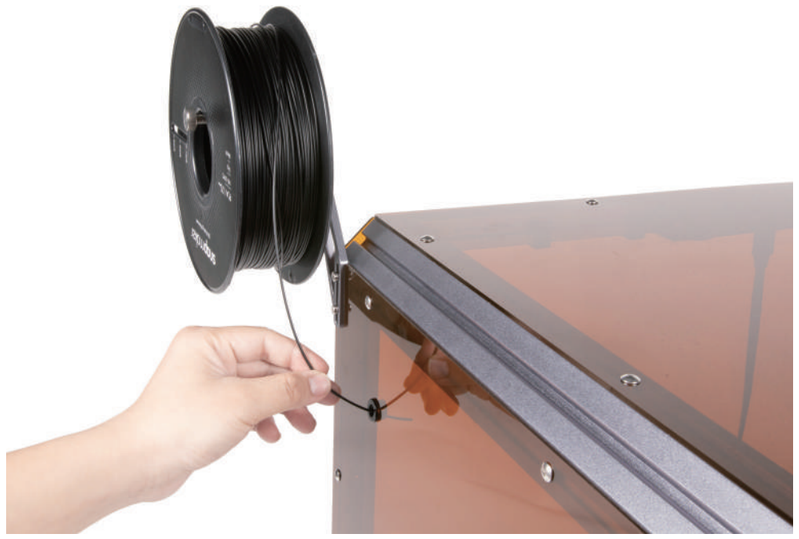


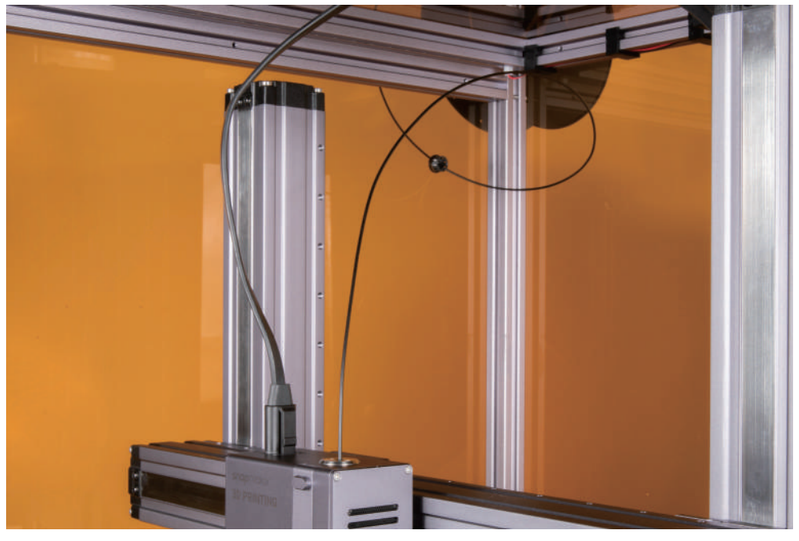
3. Switch off the machine, unplug the toolhead cable, then detach the toolhead and platform.

> **If the machine is currently equipped with 3D printing components, make sure to unplug the Heated Bed cable before detaching the Heated Bed.**
>
> **To avoid injury, make sure to remove the CNC bit before detaching the CNC module from the machine.**

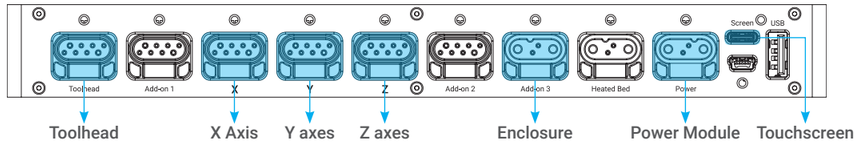
4. Attach the needed toolhead and platform, then connect the cable(s) to the controller.

To use 3D printing function inside the enclosure, please place the filament as below.





> **To attach the Heated Bed, make sure to switch off the machine before connecting the Heated Bed cable. Do not plug or unplug any cables with the machine powered on.**
>
> **Check if all the cables are properly connected before powering on the machine. Wrong connection may cause damage to the machine.**



3.3 Door Detection (For Laser & CNC)

A built-in smart sensor in the 24 BEAM A350-3 of the enclosure is designed to detect the status of the folding doors. When any one of the doors is opened, the laser or CNC process will stop automatically and a notification will be shown on the Touchscreen. To resume the process, close the door and follow the instructions on the Touchscreen.

If you need to open the door frequently and do not expect the ongoing process to be paused, you can enter Home -> Enclosure -> Settings to disable the Door Detection.

Safety Goggles must be worn before opening the door during a laser or CNC process.

Door Detection applies only to laser and CNC functions, excluding 3D printing. Moreover, Door Detection is applicable only when the machine is run through USB flash drive and Wi-Fi.

When the machine is connected to a computer with the USB cable, and is operated on a laser process through Snapmaker Luban, the Door Detection is not available. In this case, do not open the enclosure door, otherwise the laser will stop emitting, which leads to failure of the engraving job.

When the machine is connected to computer with USB cable, and is operated on a CNC process through Snapmaker Luban, the Door Detection is not available. In this case, the ongoing CNC process is not affected when any of the enclosure doors is opened/ closed.

Resources

This guide is subject to change. For the latest version, go to:
https://snapmaker.com/download

We are here for you whenever you need general information or technical support:
support@snapmaker.com

For any sales inquiries, you can reach out to us at:
sales@snapmaker.com

You can purchase products in our official online store:
https://shop.snapmaker.com

Share anything you want with other Snapmaker users at our forum:
https://forum.snapmaker.com