



siboor

SIBOOR

E3-SW Assembly Manual



INTRODUCTION



Before you begin on your journey, a word of caution. In the comfort of your own home, you are about to assemble a robot. This machine can maim, burn, and electrocute you if you are not careful.

Please, read the entire manual before you start assembly.

As you begin building, please check our Discord channels for any tips and questions that may halt, hinder or aid your progress. Most of all, good luck!

Thank you for spending the time to read this, I hope you have a happy building experience with us!

Feel free to contact us by email at emmaxu@siboor.com, we appreciate your valuable suggestions!

INTRODUCTION



SPECIAL THANKS

Thanks to VORON Design for creating a series of VORON aesthetics.

Thanks to DaRk_dOg for the design of Switchwire based on Ender3 Pro/V2 conversion.

SPECIAL THANKS

BETA TEAM MEMBERS

-小胖墩胖胖墩

-Richard

-Oldcrazyeye

-Omranello

-Psych0h3ad

-Rhys- Vision

Creations

-Ether

-RahimDamji

-Eds3D

-Rushmere3D

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PART PRINTING GUIDELINES

The Voron Team has provided the following print guidelines for you to follow in order to have the best chance at success with your parts. There are often questions about substituting materials or changing printing standards, but we recommend you follow these.

3D PRINTING PROCESS

Fused Deposition Modeling (FDM)

MATERIAL

ABS

LAYER HEIGHT

Recommended: 0.2mm

EXTRUSION WIDTH Recommended:

Forced 0.4mm

INFILL TYPE

Grid, Gyroid, Honeycomb, Triangle or Cubic

INFILL PERCENTAGE Recommended:

40%

WALL COUNT

Recommended: 4

SOLID TOP/BOTTOM LAYERS Recommended:

5

How to get help

How to find our SIBOOR community, where you can meet many E3-SW users like you if anyone have any issues do not hesitate to reach out , we welcome suggestions or feedback and we are happy to face and overcome our challanges to improve our products.



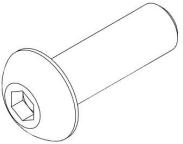
Official website: www.siboor.com

Siboor Official Store: <https://www.aliexpress.com/store/1101980497?spm>

SIBOOR Store: <https://siboor3dparts.aliexpress.com/store/1101683564?spm>

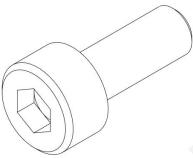
HARDWARE

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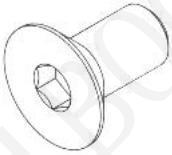
BUTTON HEAD CAP SCREW (BHCS)

Metric fastener with a domed shape head and hex drive. Most commonly found in locations where M5 fasteners are used.



SOCKET HEAD CAP SCREW (SHCS)

Metric fastener with a cylindrical head and hex drive. The most common fastener used on the Voron.



FLATHEAD COUNTERSUNK SCREW(FHCS)

Metric fastener with a cone shaped head and a flat top.



HEX NUT

Hex nuts couple with bolts to create a tight, secure joint. You'll see these used in both M3 and M5 variants throughout this guide.



POST INSTALL T-SLOT NUT

Nut that can be inserted into the slot of an aluminium profile. Used in both M3 and M5 variants throughout this guide.



PULLEY

GT2 pulley used on the motion system of the Voron.



SHIM

Not to be confused with stamped washers. These are used in all M5 call-out locations in this manual.



F695 BEARING

A ball bearing with a flange used in various gantry locations.



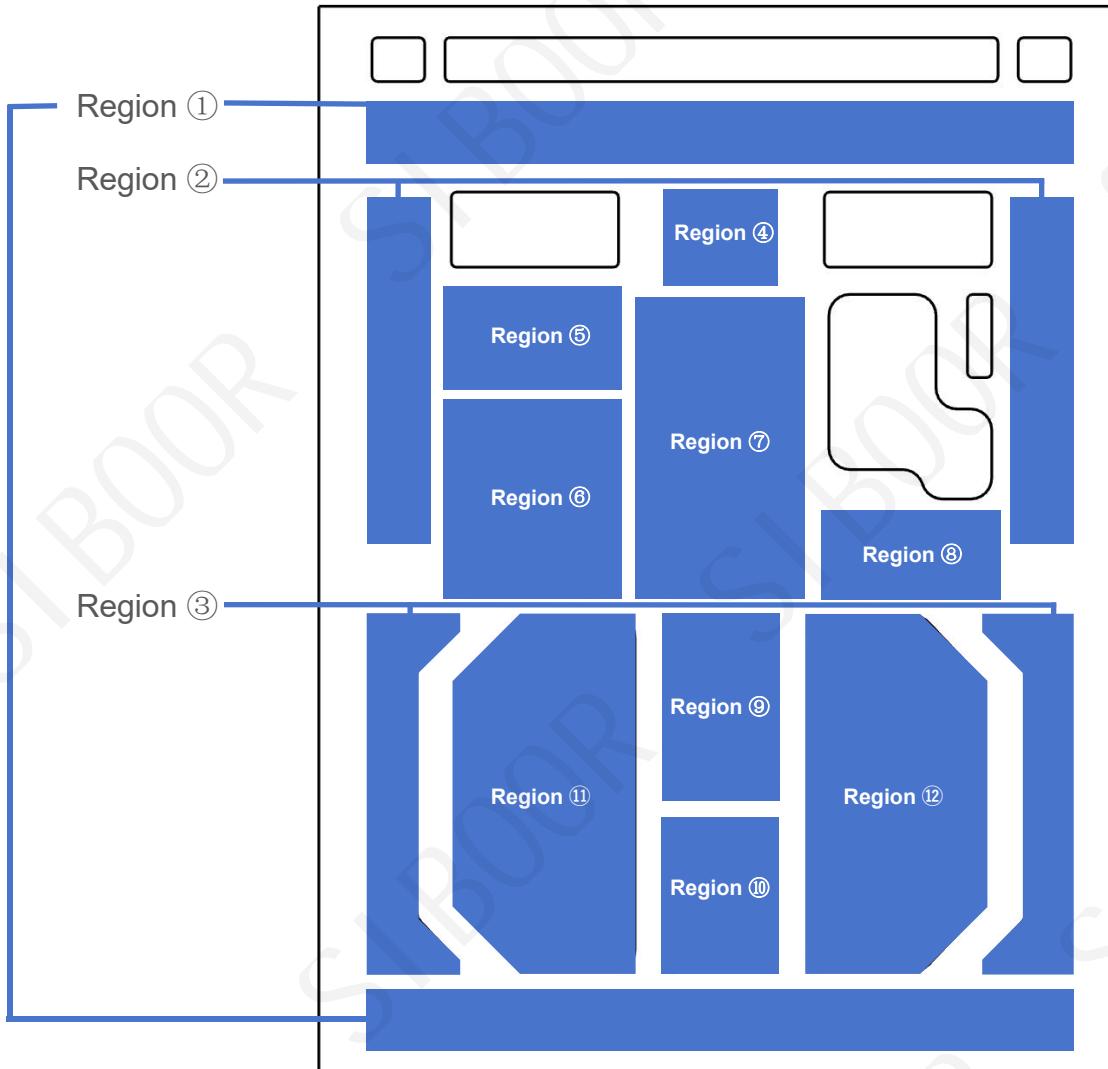
HEAT SET INSERT

Heat inserts with a soldering tip so that they melt the plastic when installed. As the plastic cools, it solidifies around the knurls and ridges on the insert for excellent resistance to both torque and pull-out.



SELF TAPPING SCREW

Fastener with a pronounced thread profile that is screwed directly into plastic.



PLEASE NOTE

This diagram defines the location of this area to make it easier to find the corresponding printed part in subsequent heat set inserts . However, the diagram is for reference only and does not actually match 100%. After heat set inserts is complete, it is recommended that the printed parts be returned to the package to avoid loss.

HEAT SET INSERTS

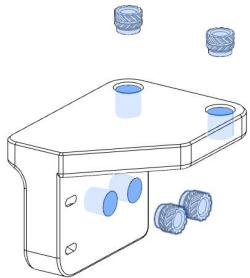
This design relies heavily on heat set inserts. If you have never worked with heat set inserts before, we recommend you watch a guide.



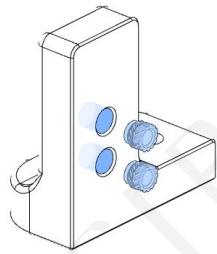
<https://voron.link/cubk4lh>

HEAT SET INSERT

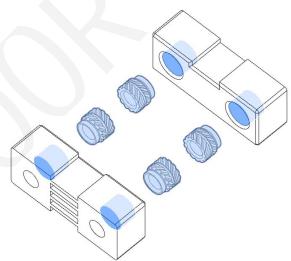
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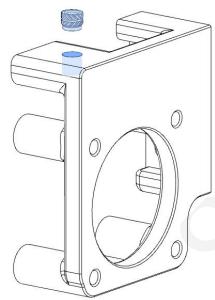
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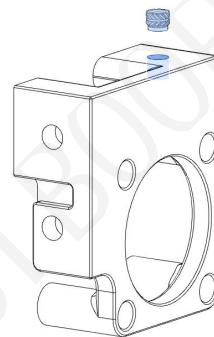
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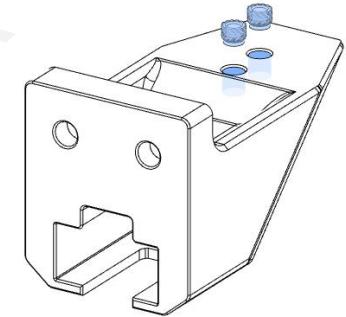
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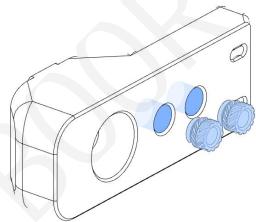
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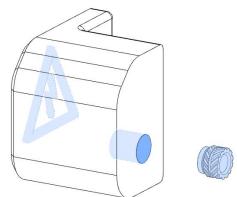
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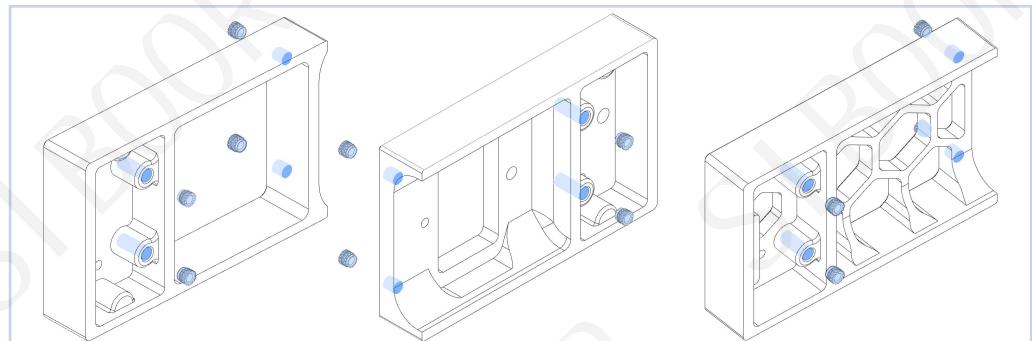
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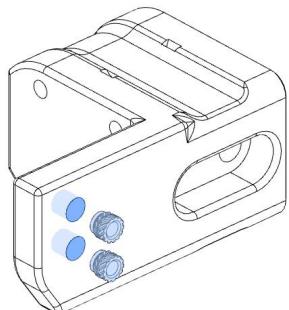
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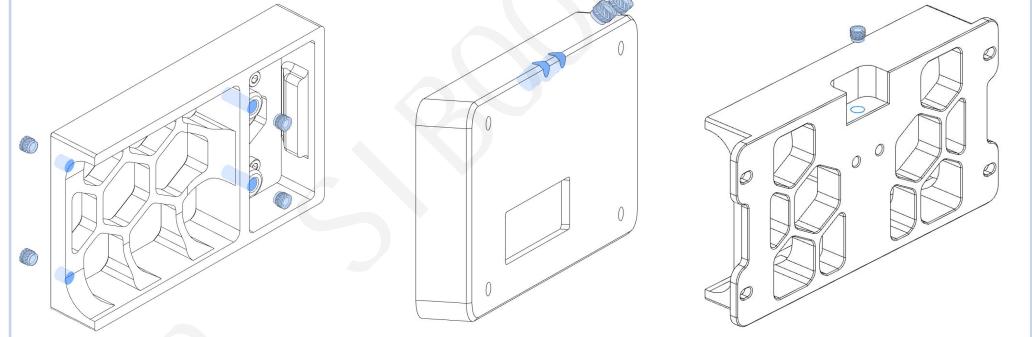
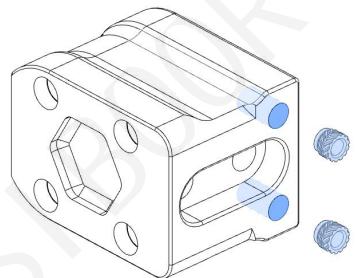
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Region ①

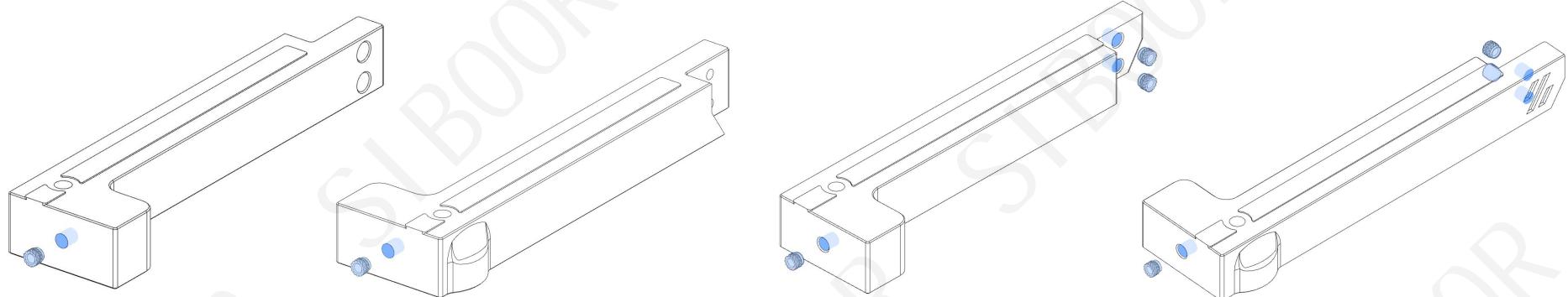


Region ⑤



HEAT SET INSERT

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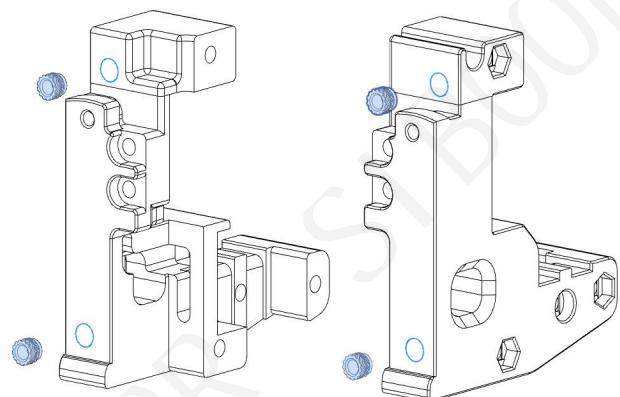
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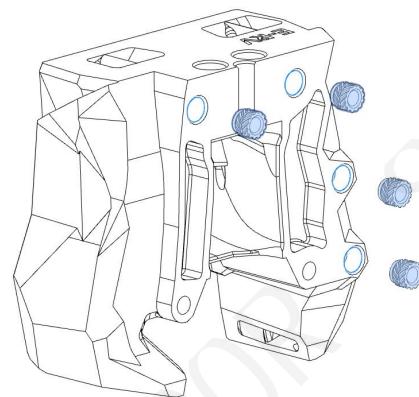
Region ③

HEAT SET INSERT (STEALTHBURNER)

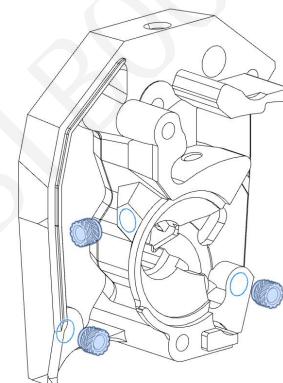
SIBOOR.COM



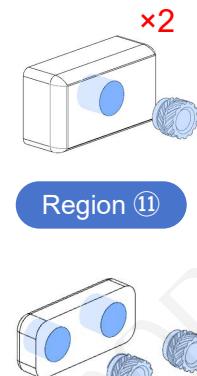
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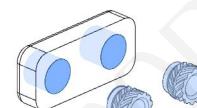
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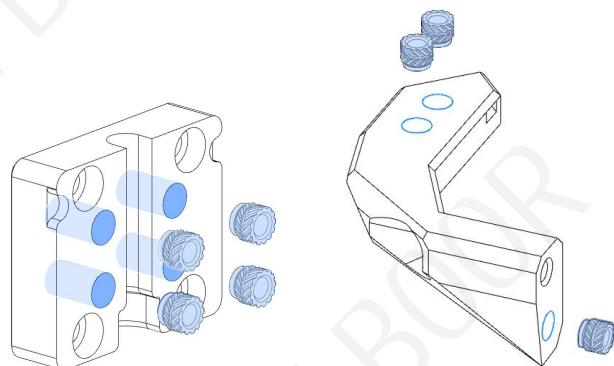
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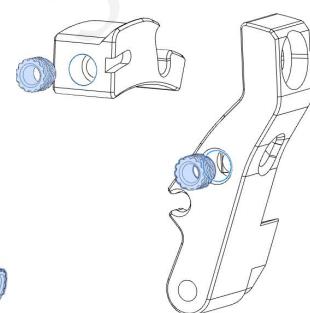
Region ⑪
x2



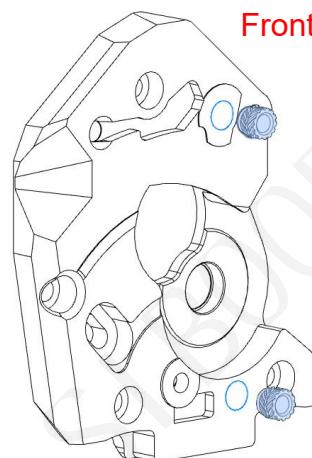
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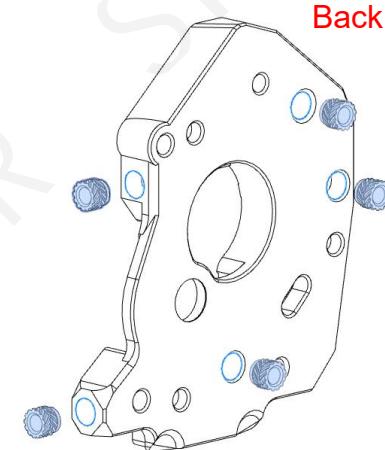
Region ⑩



Region ⑥



Front



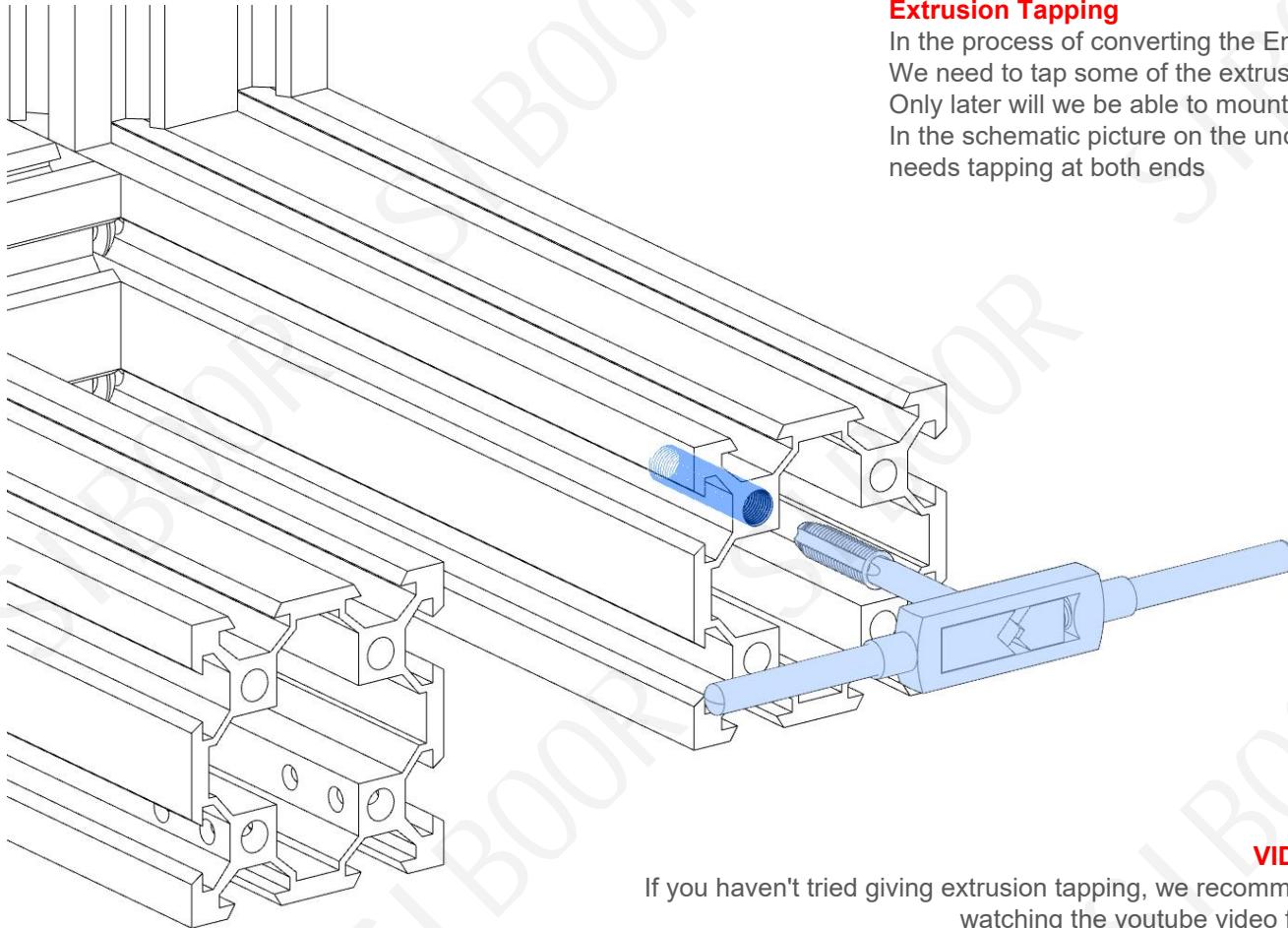
Back

Region ⑪

Region ⑧

EXTRUSION TAPPING

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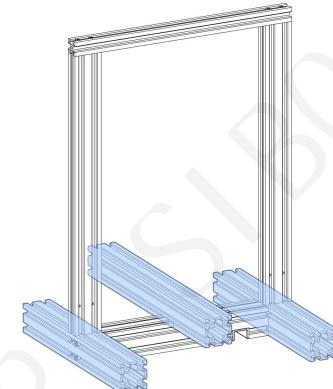
Extrusion Tapping

In the process of converting the Ender3 V2 to Switchwire.

We need to tap some of the extrusions.

Only later will we be able to mount the printed parts.

In the schematic picture on the under, the extrusion marked in blue needs tapping at both ends



VIDEO

If you haven't tried giving extrusion tapping, we recommend watching the youtube video first.

<https://www.youtube.com/watch?v=2dvbn0rWA60>

Video Source: NERO 3D



FRAME

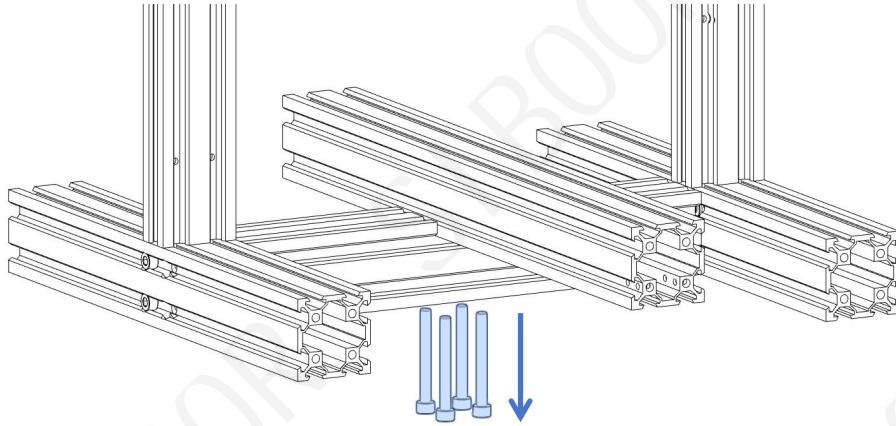
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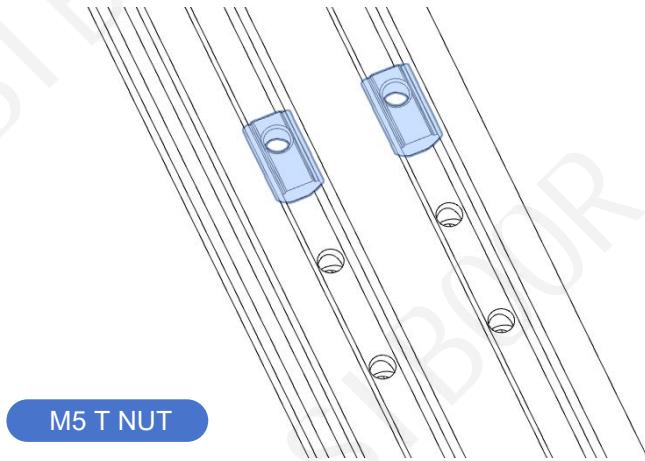
10% ↑

FRAME

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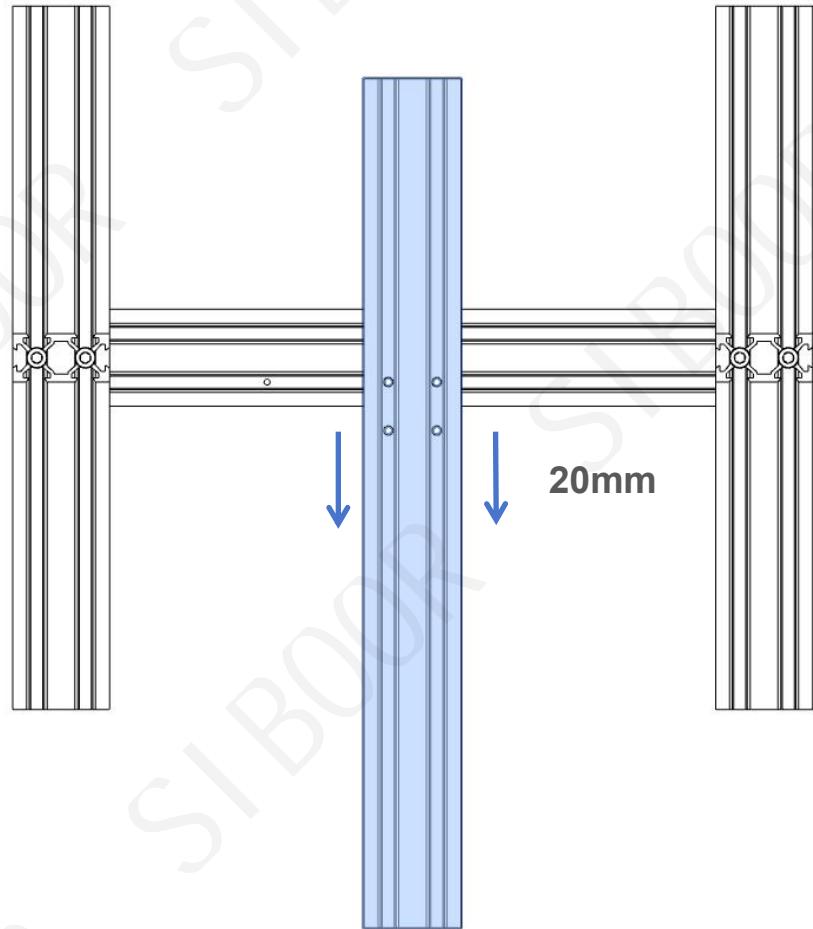


Place two T-nuts at the bottom of the Y-axis extrusion



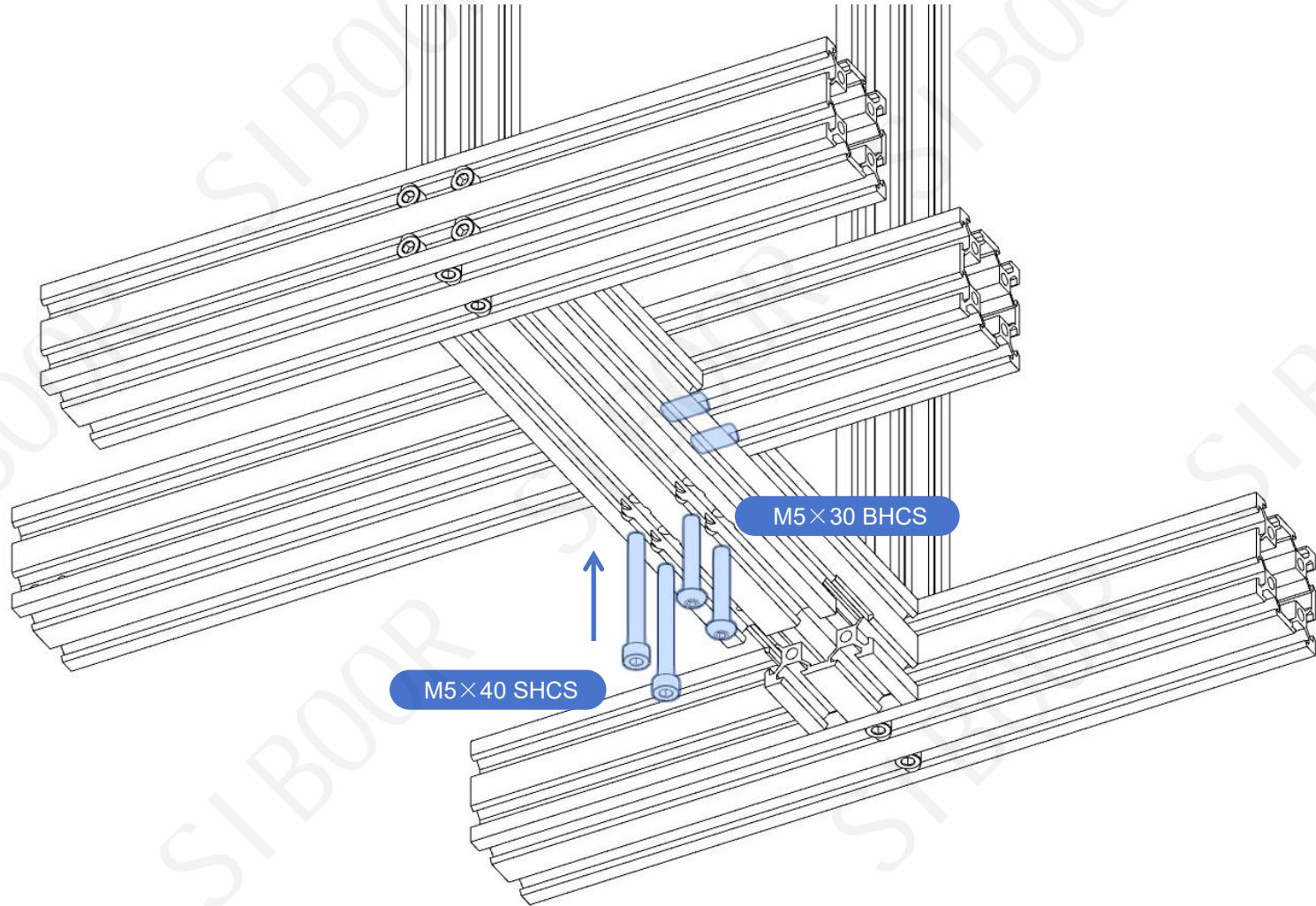
M5 T NUT

Move the Y extrusion forward 20mm.



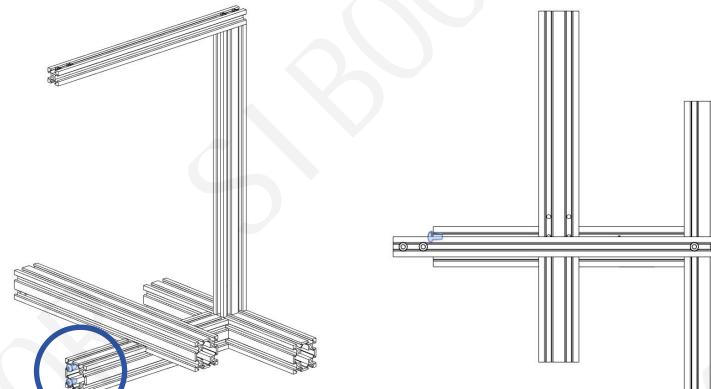
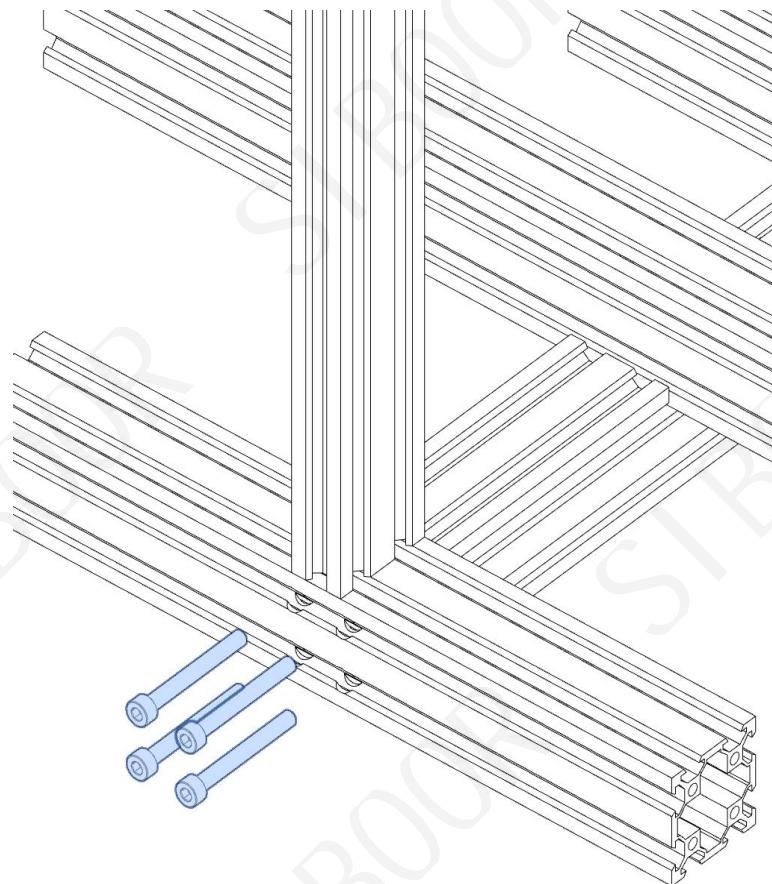
FRAME

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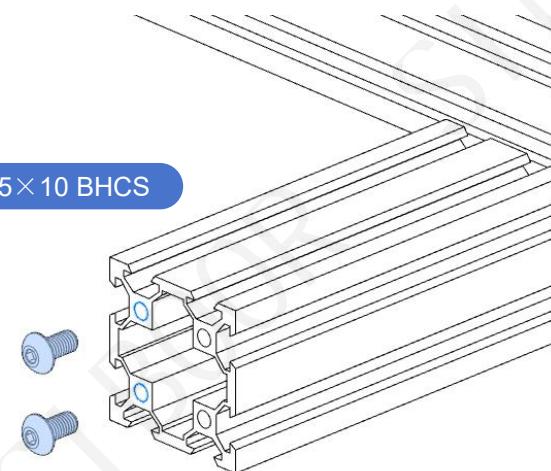


FRAME

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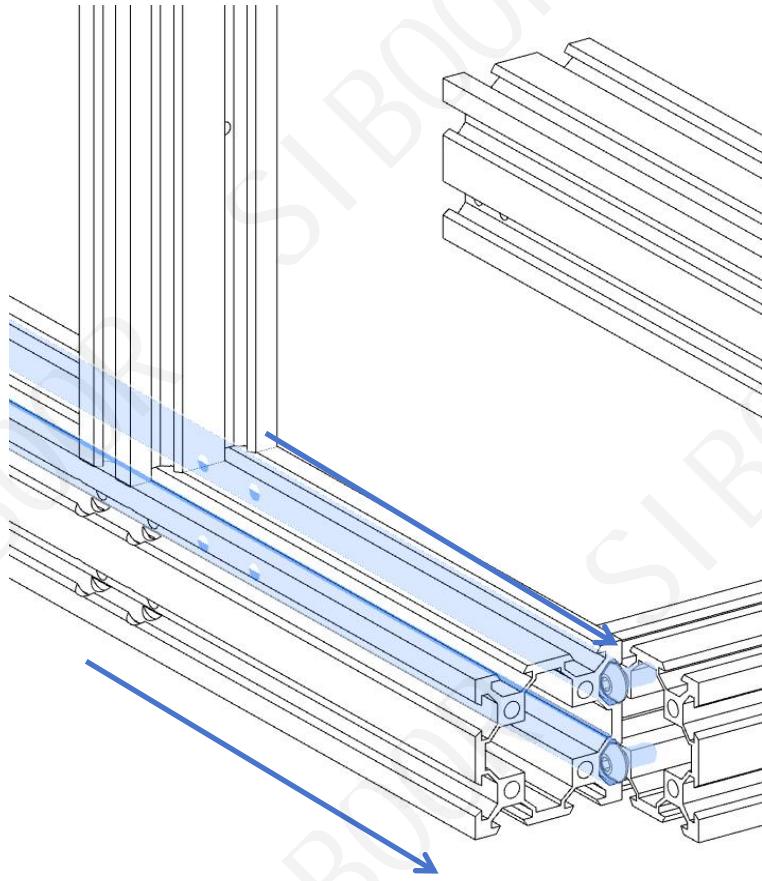
M5×10 BHCS



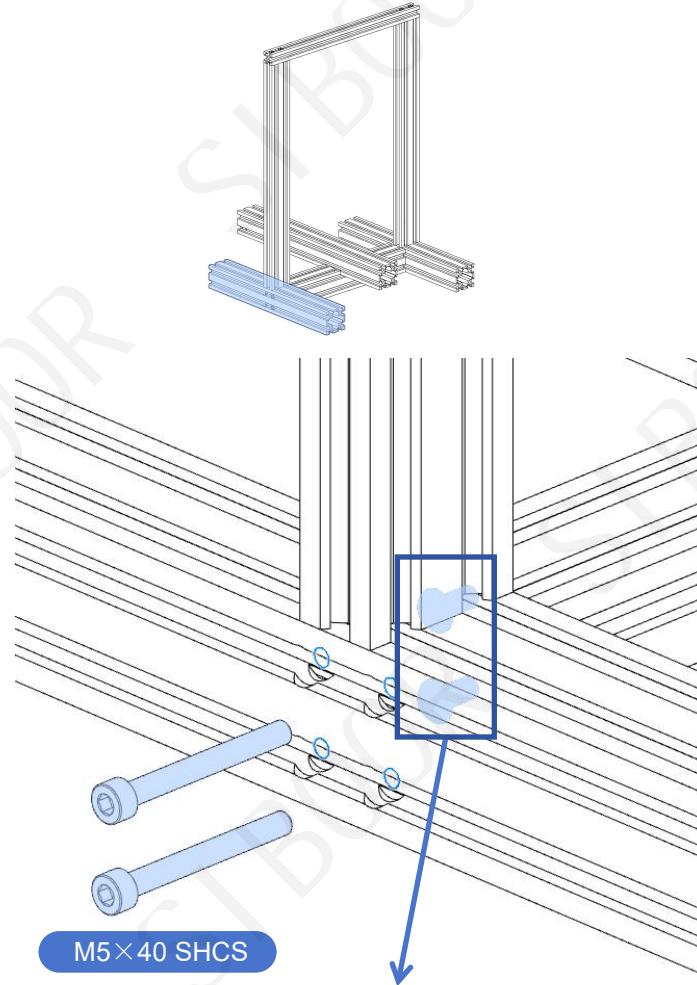
Do not tighten, leave a gap of 2-3mm

FRAME

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Pass the extrusion slot through the M5 x 10 BHCS



Tightening M5×10 BHCS with BALL-END DRIVER

MIND THE CARRIAGE

The carriages are designed to slide along the rail easily. This unfortunately also includes sliding off the rails.

Dropping the carriage likely irreparably damages it.

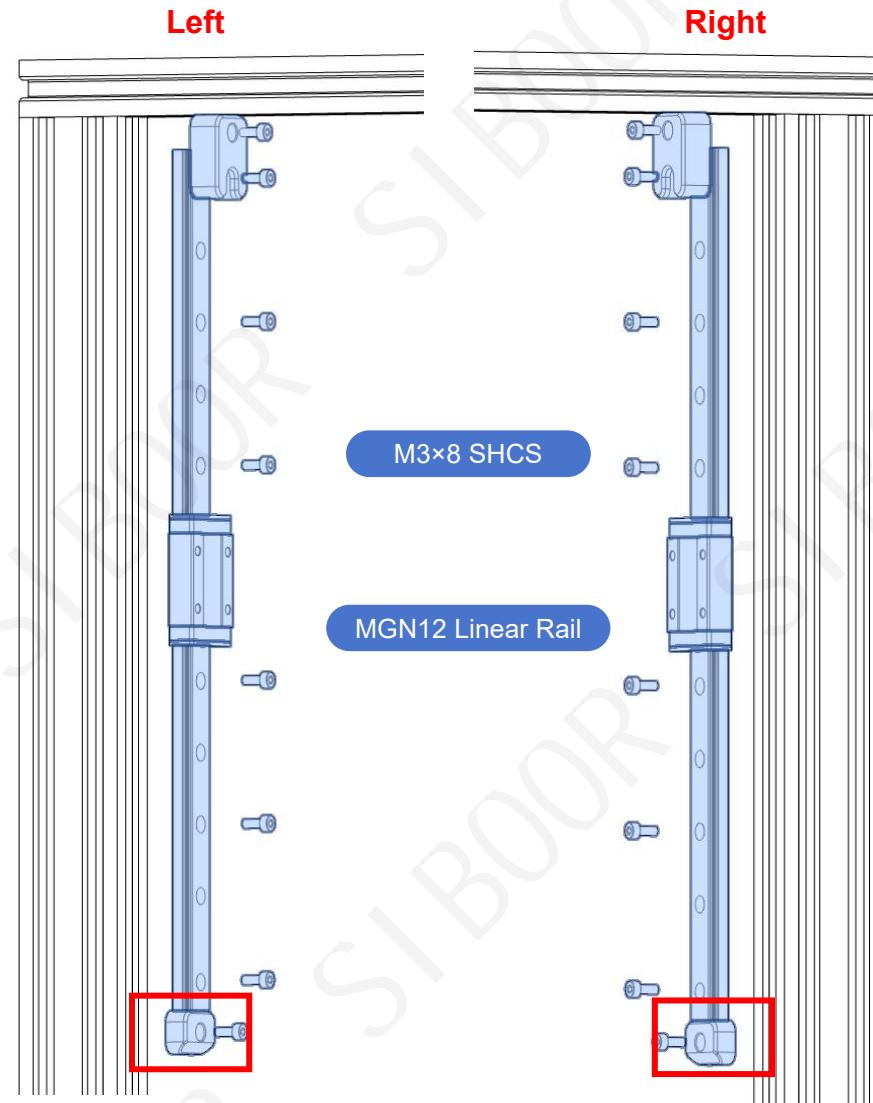
NO STOPPER ON LEFT RAIL

The left rail does not have a stopper in place to prevent the carriage from sliding off the rail.

Some rails come with little plastic stop pins, you can leave the bottom one in place.

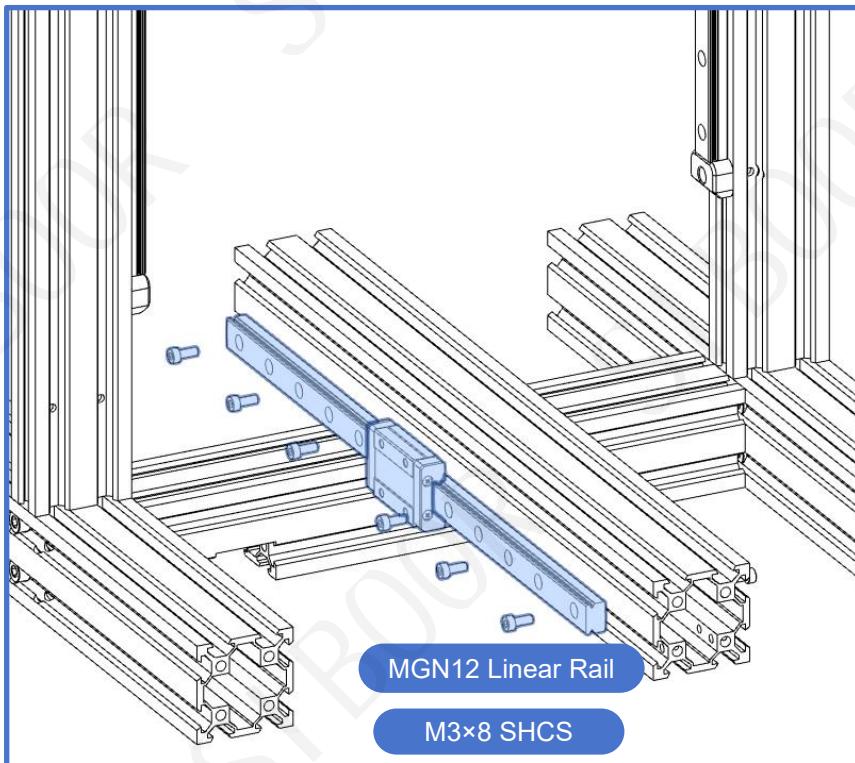
Tip: Mark the location with some tape to draw your attention to it later.

You can install the printed parts in the red box first, which can effectively prevent the slider from sliding off.

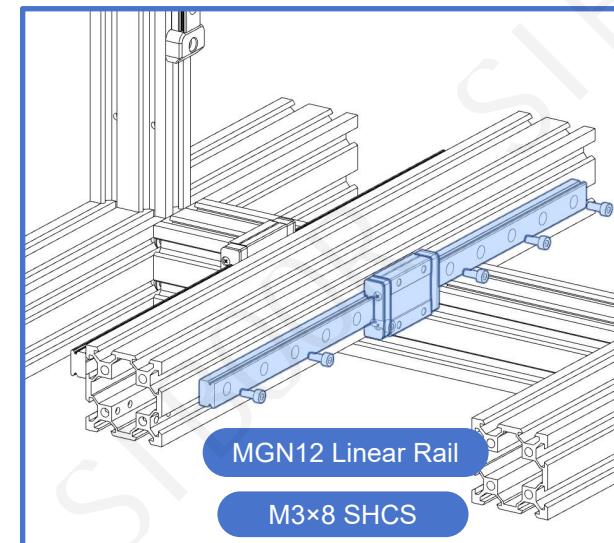


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Y AXIS

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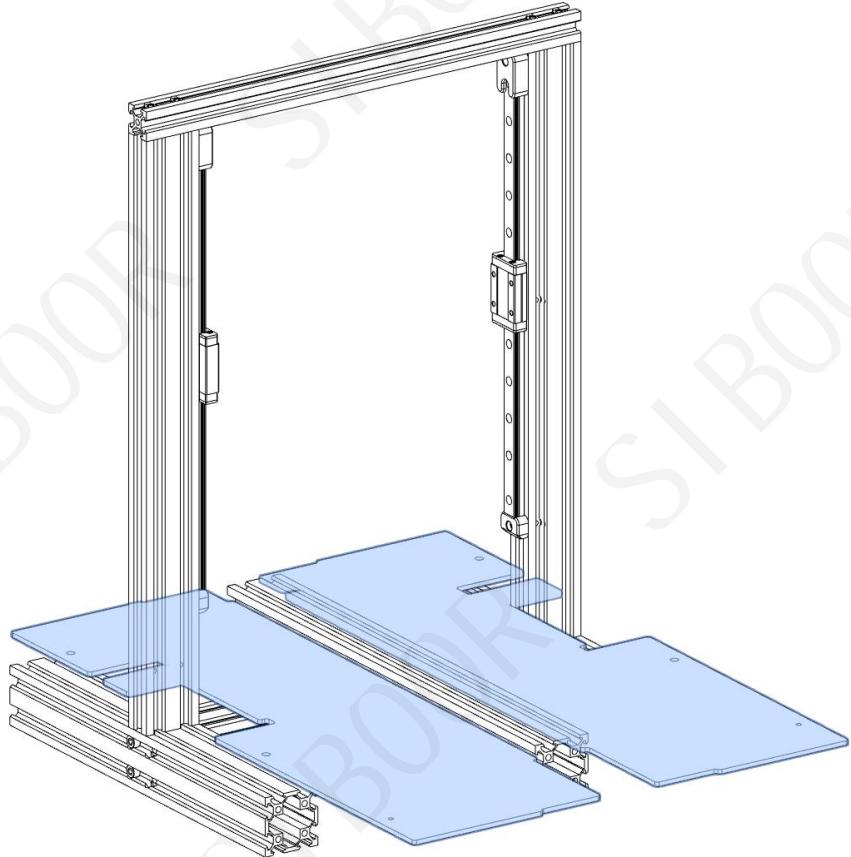


20%

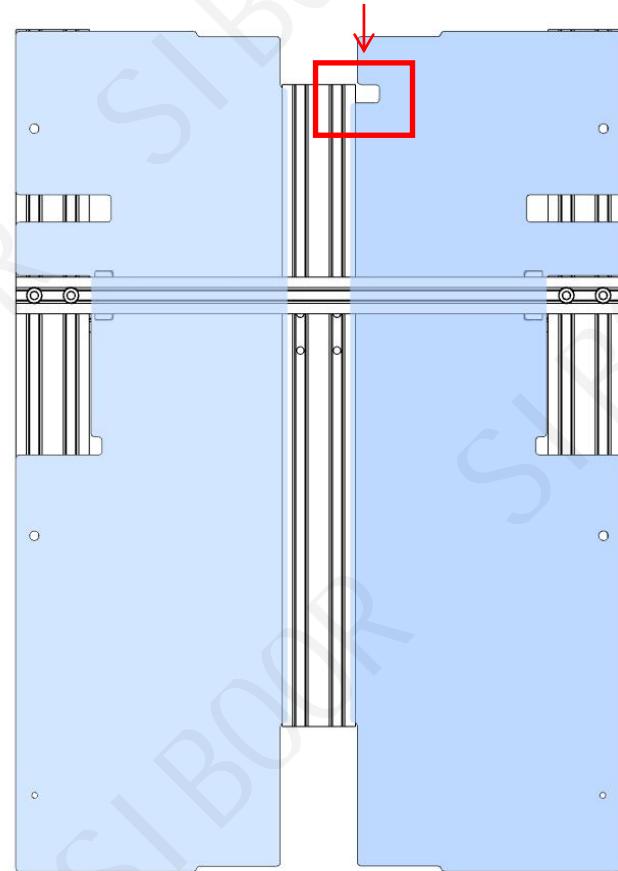


PANEL

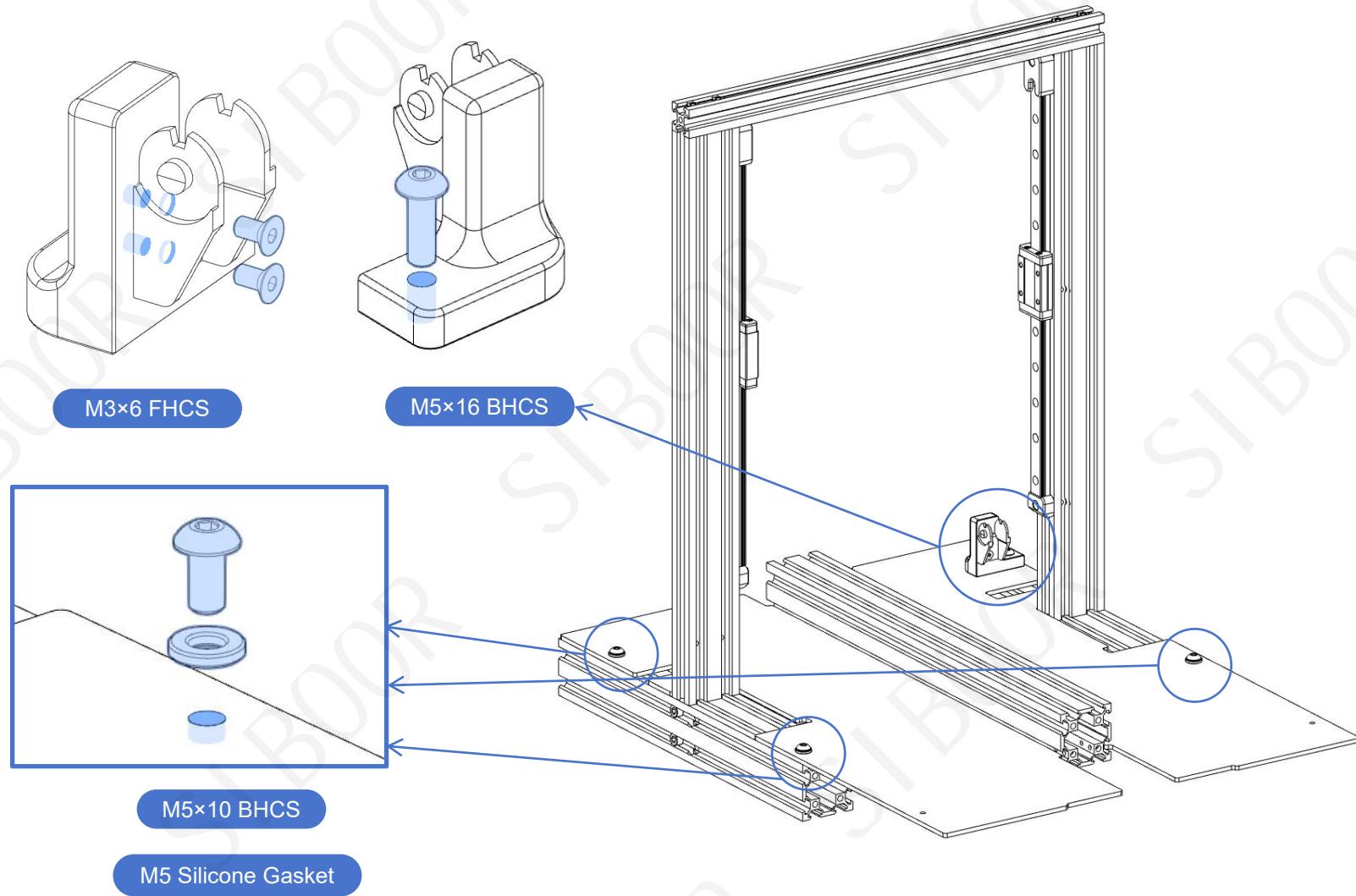
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Note the distinction between left and right panels

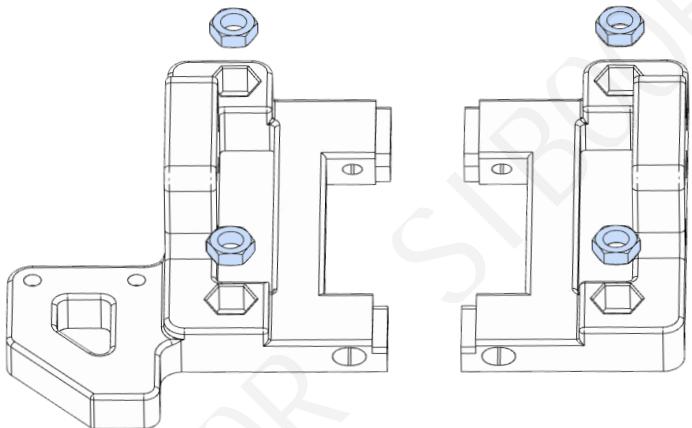


PANEL

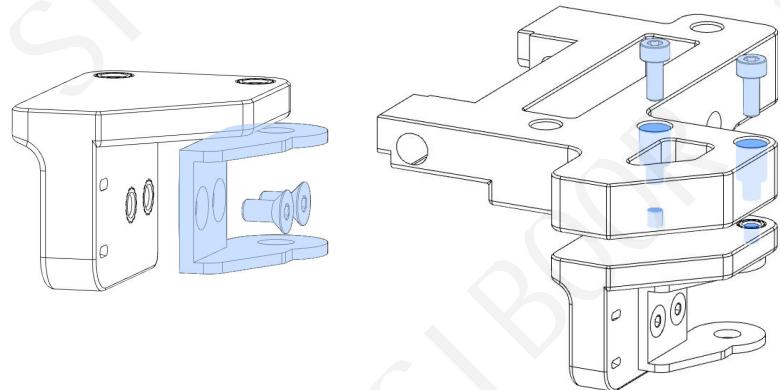


Y AXIS

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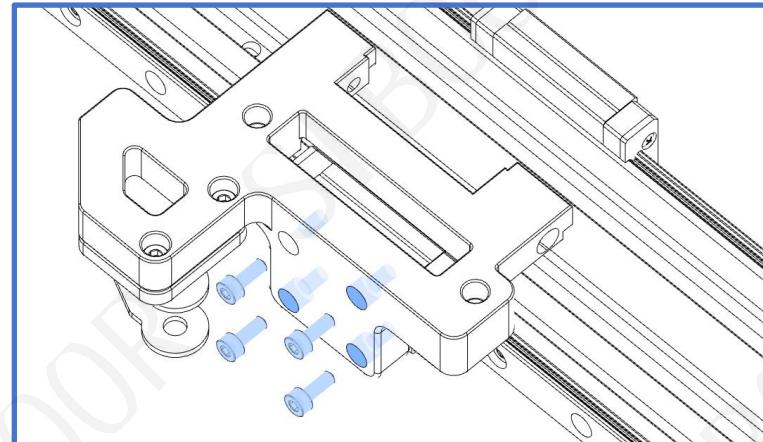


It is recommended to place the M5 nuts in advance at this step, as subsequent installation may become more difficult otherwise.

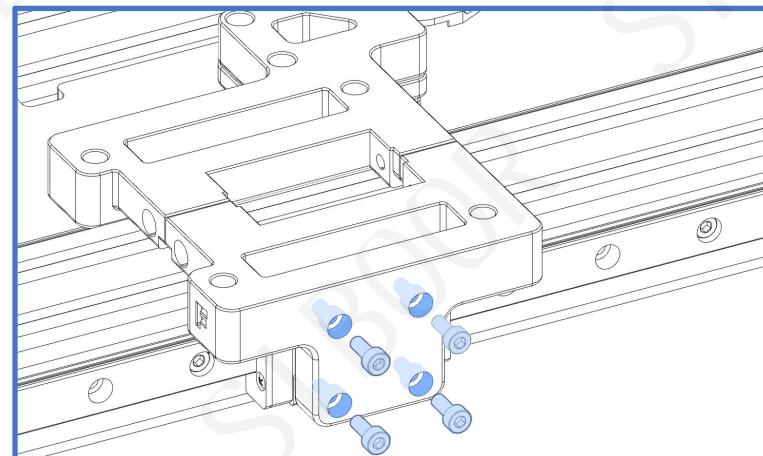


M3×8 F H C S

M3×8 SHCS



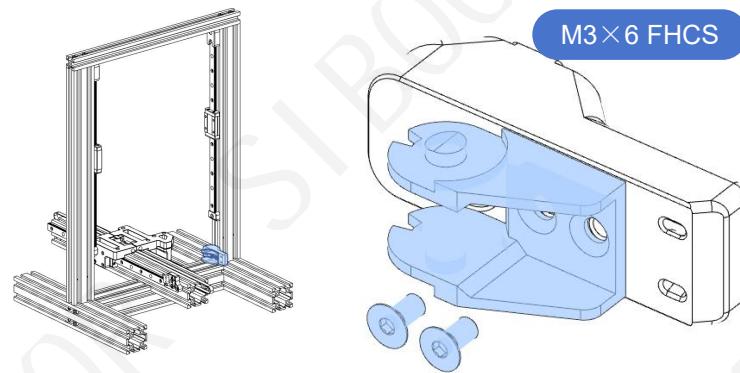
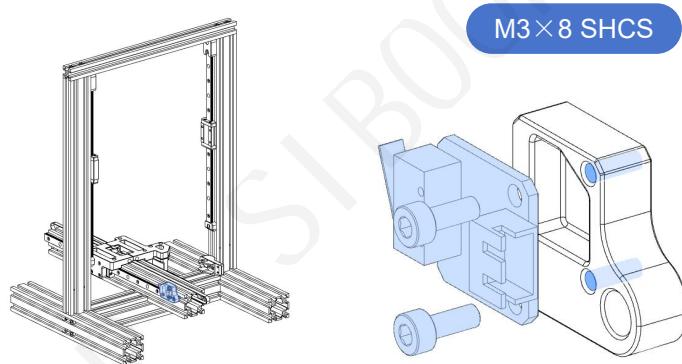
M3×8 SHCS



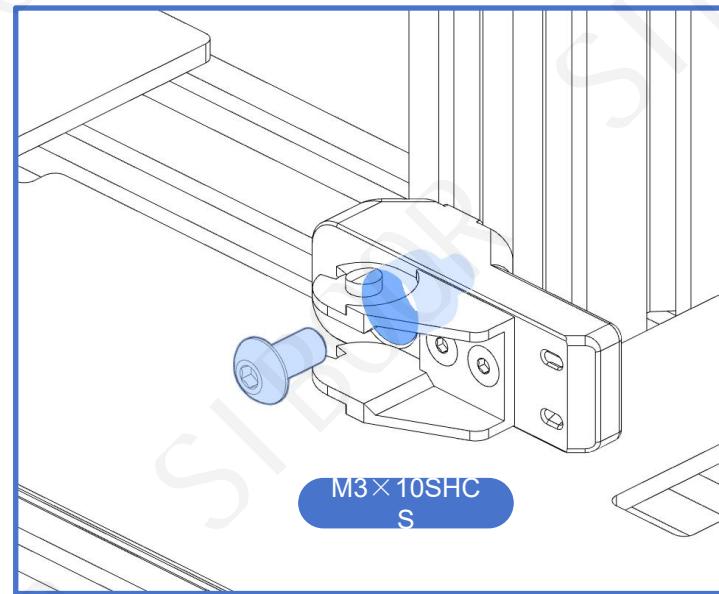
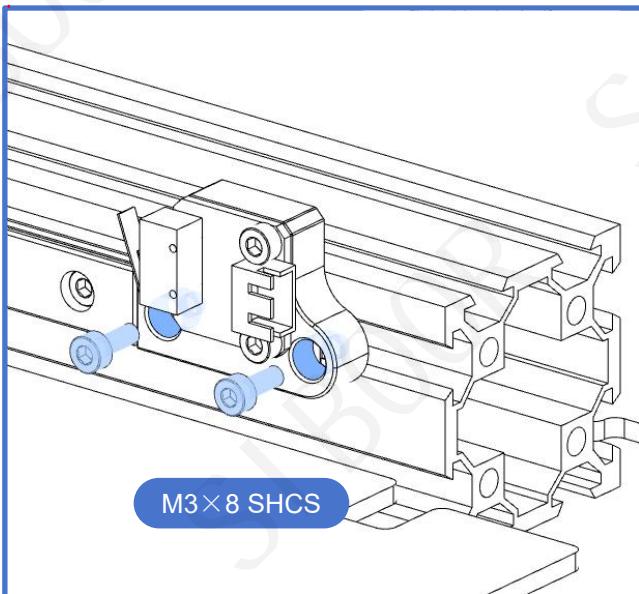
M3×8 SHCS

Y AXIS-Endstop

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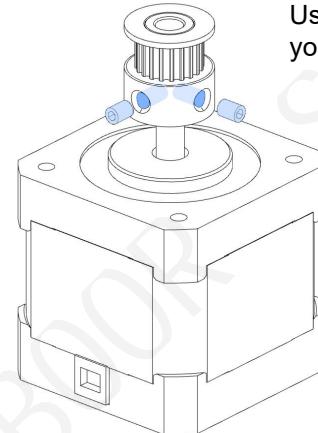
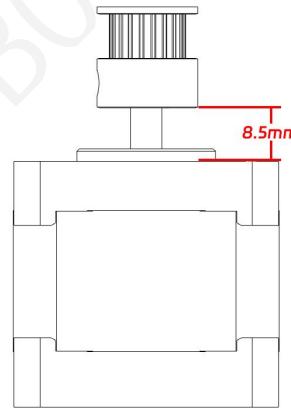
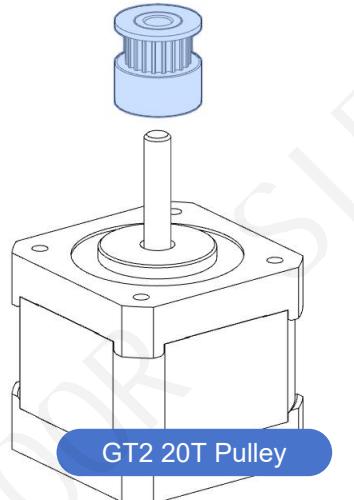


*This place uses the original limit switch PCB board from the Ender 3 V2



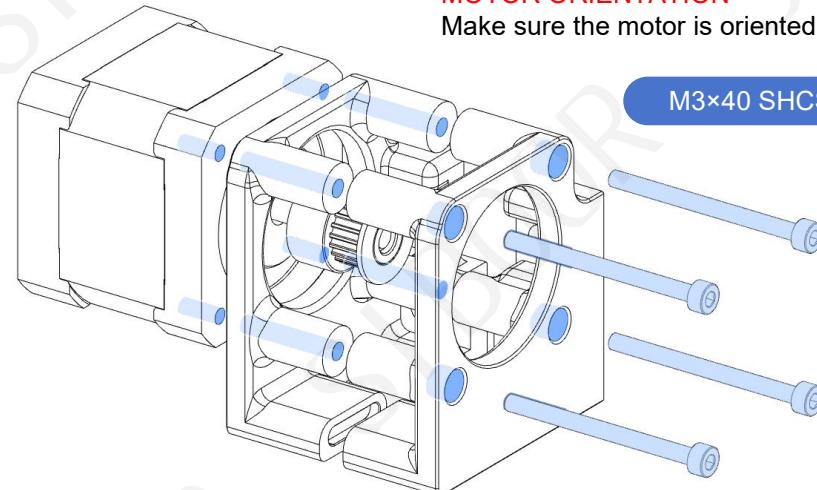
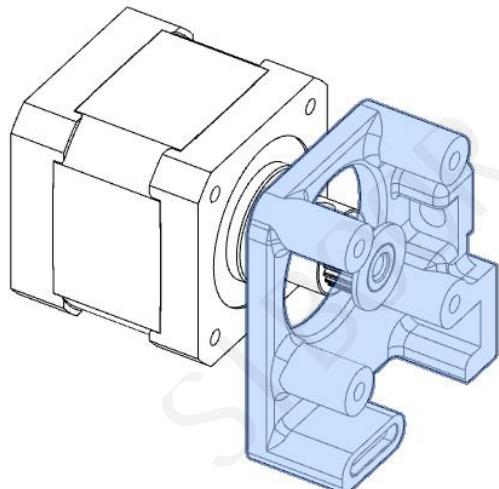
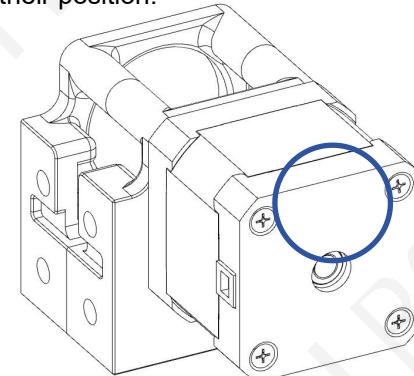
Y AXIS-Motor

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GRUB SCREWS aka the root of all issues

Use thread locker on all grub screws after you set their position.

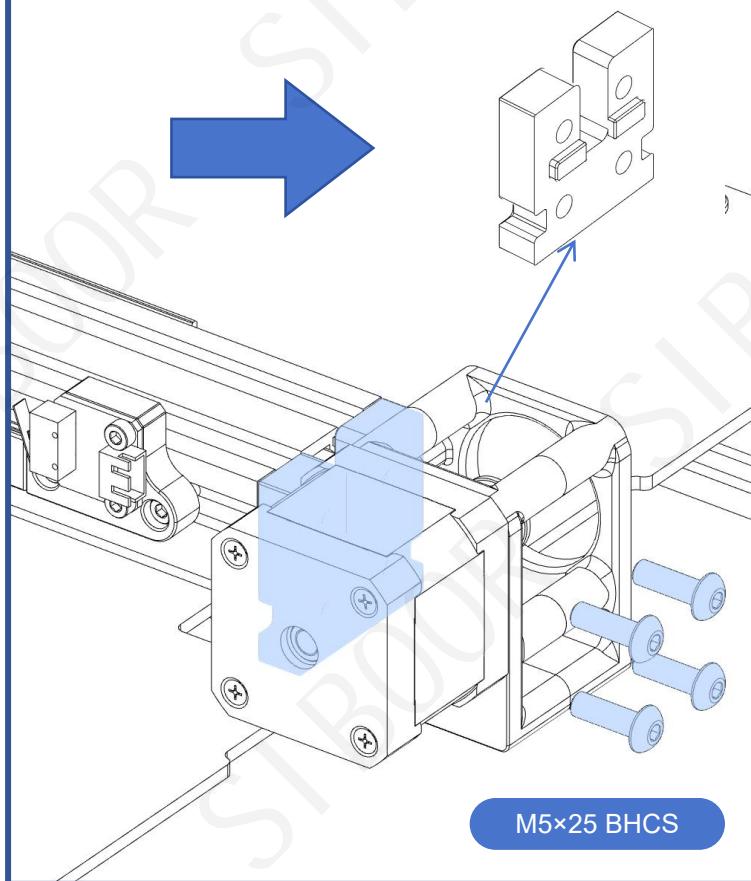


MOTOR ORIENTATION Make sure the motor is oriented as shown.

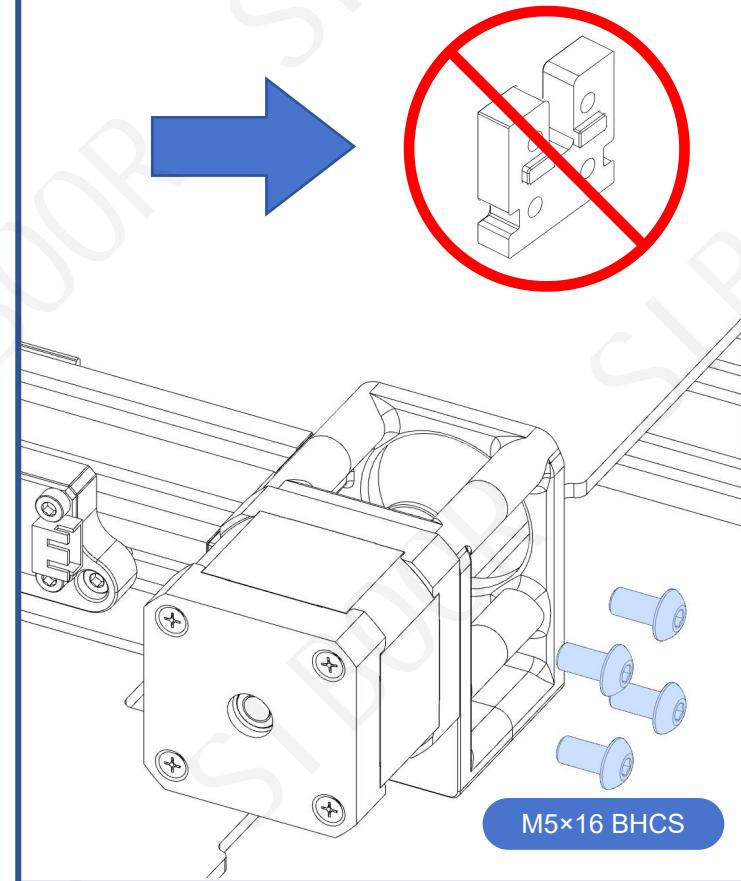
Y AXIS-Motor

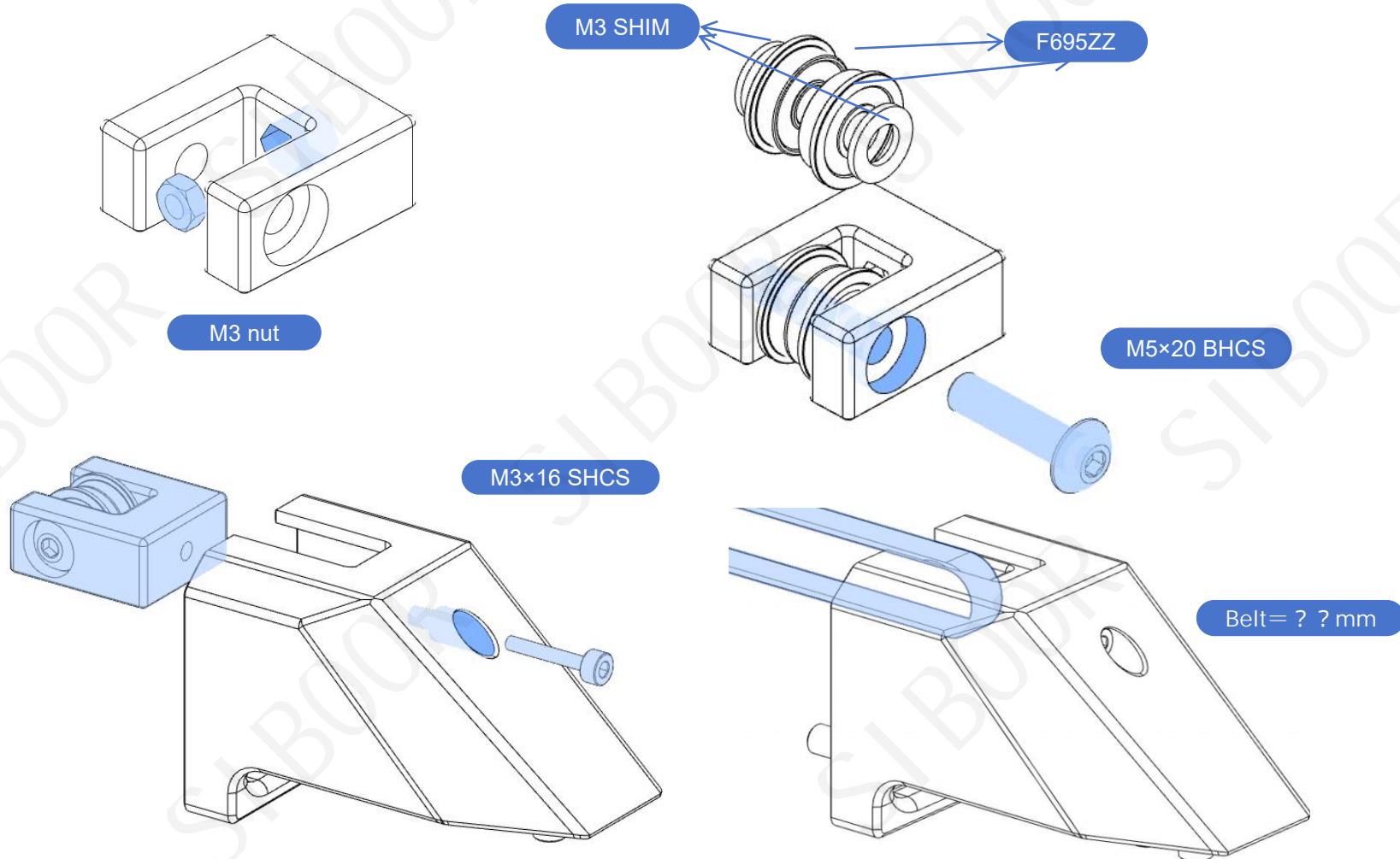
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ENDER3 V2



ENDER3 PRO

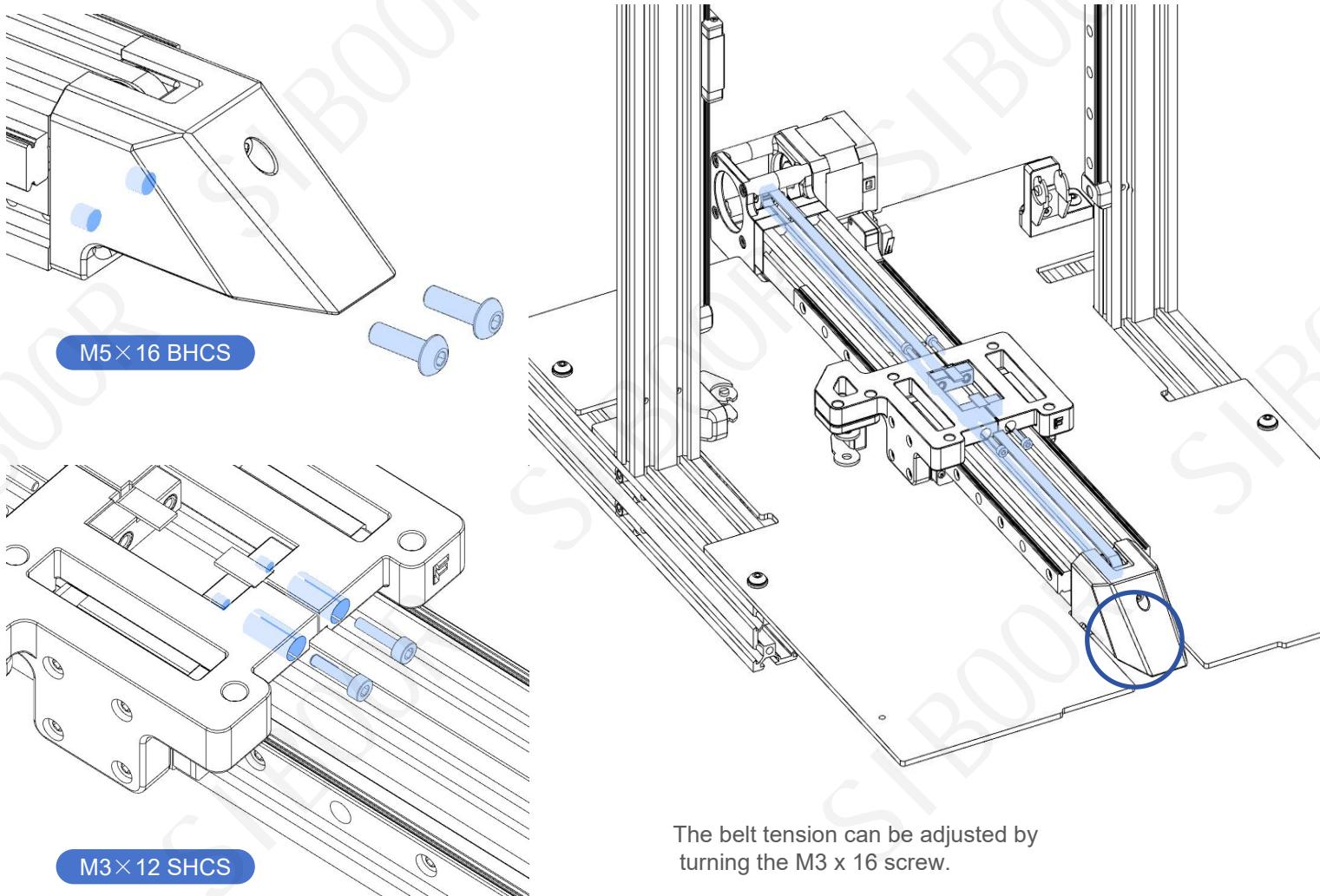




Cut the 4-meter synchronous belt into two segments, each 1.5 meters long, for the X-axis and Z-axis respectively. Then, utilize the remaining length for the Y-axis, ensuring it exceeds 850 millimeters. Due to the limited length of the synchronous belt, ensure precise cutting to avoid waste.

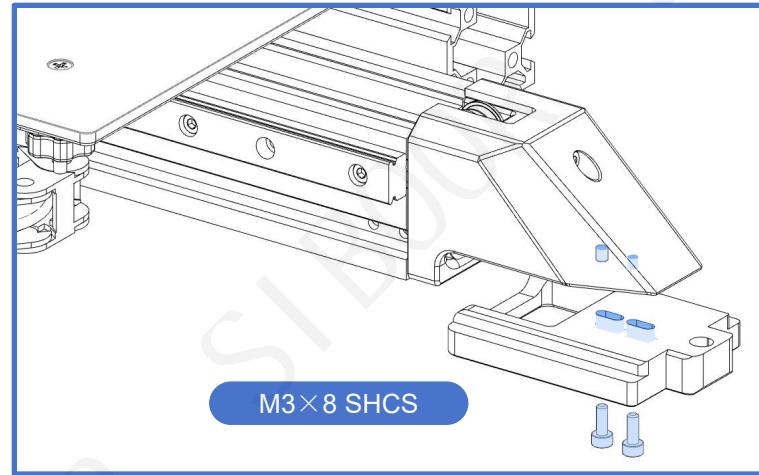
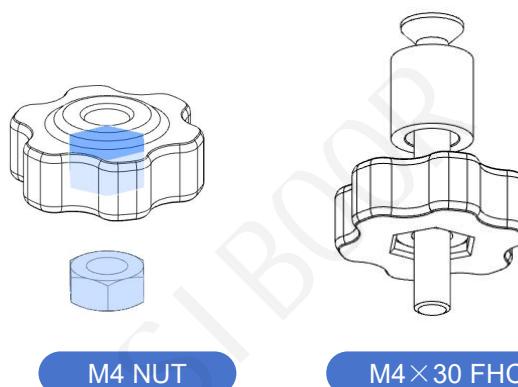
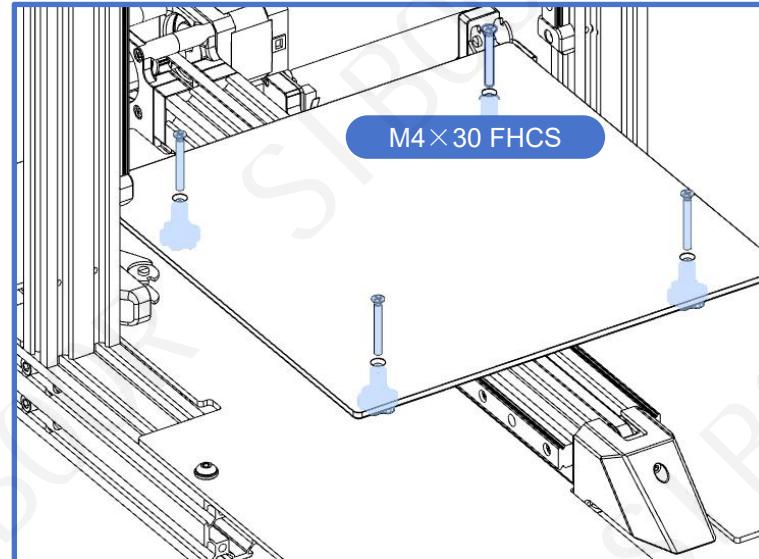
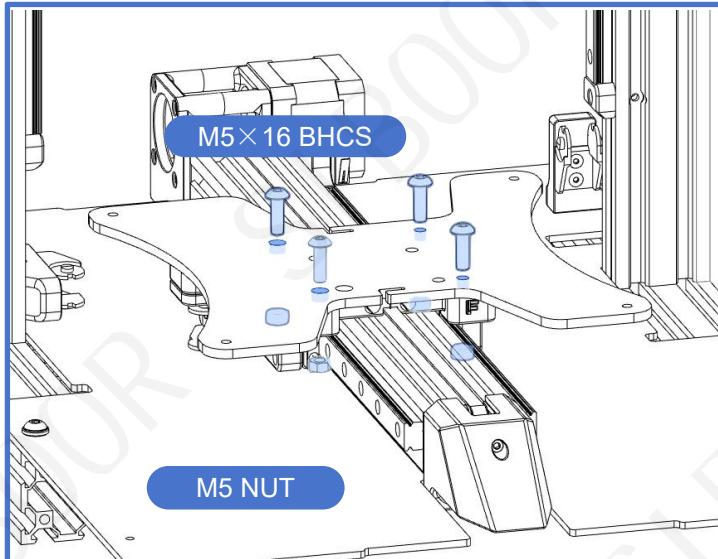
Y AXIS-Belt

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Y AXIS-Bed

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Y AXIS-DRAG CHAIN

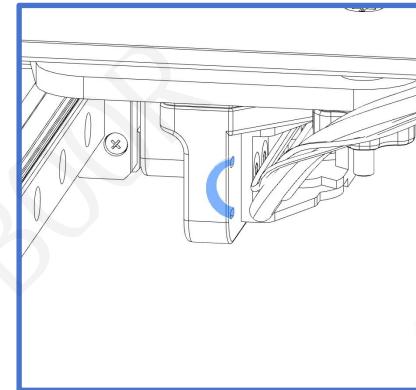
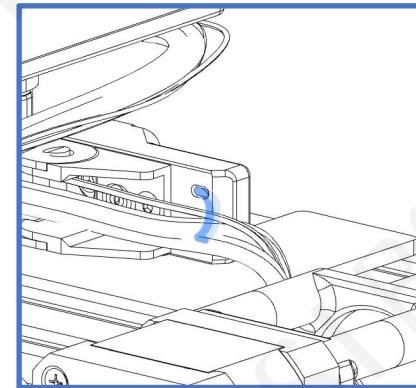
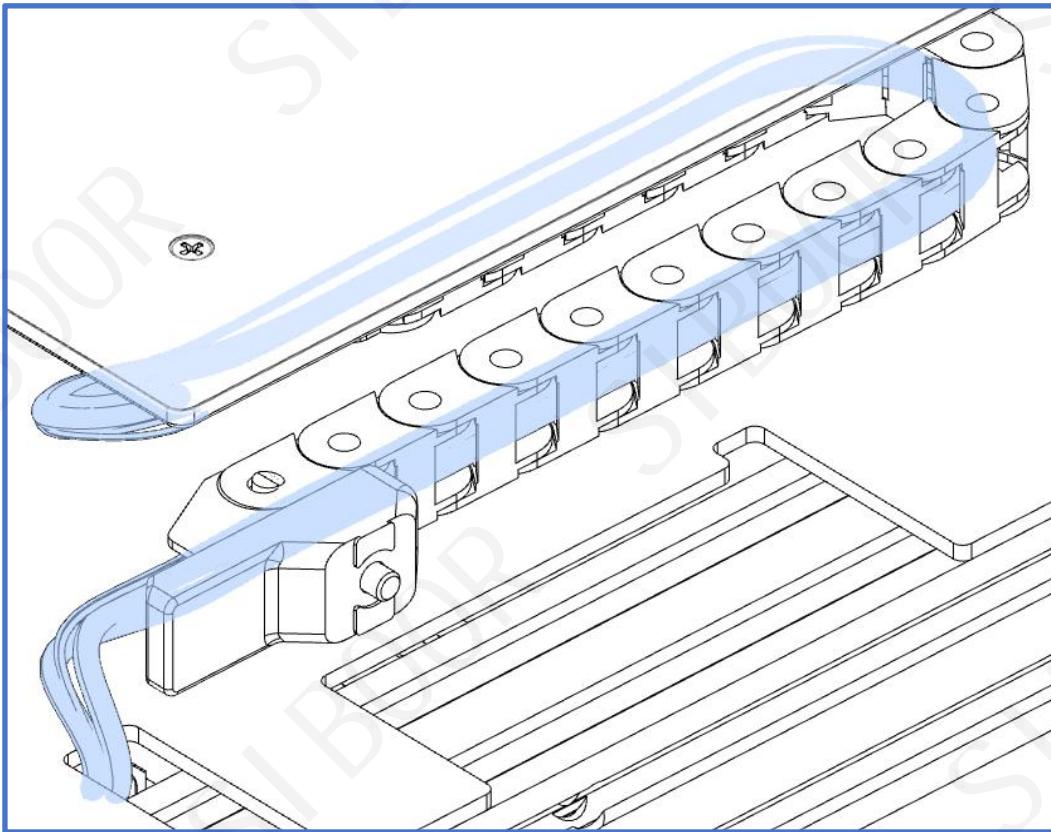
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Note!!!

*Before installing the drag chain, check if the drag chain has 17 sections. (exclusive of mounting ends)

*In some batches of Ender 3 V2, the cables for the hotbed and hotbed thermistor may not be long enough. It is preferable to extend the m by 10CM if possible.

Use nylon cable ties to secure cables



SKIRTS

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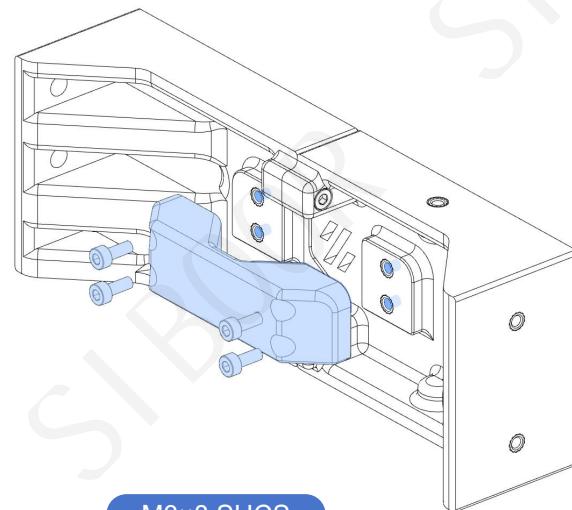
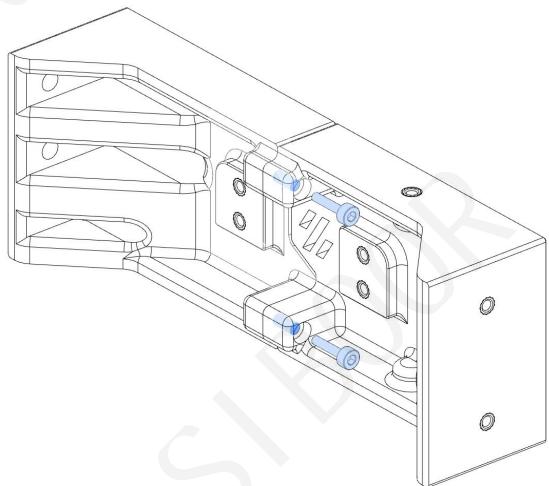
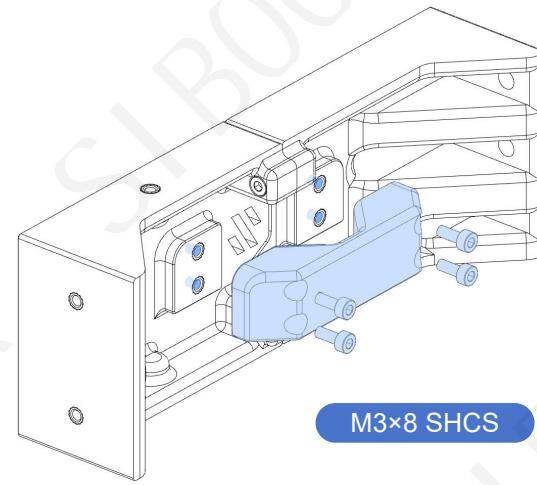
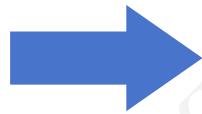
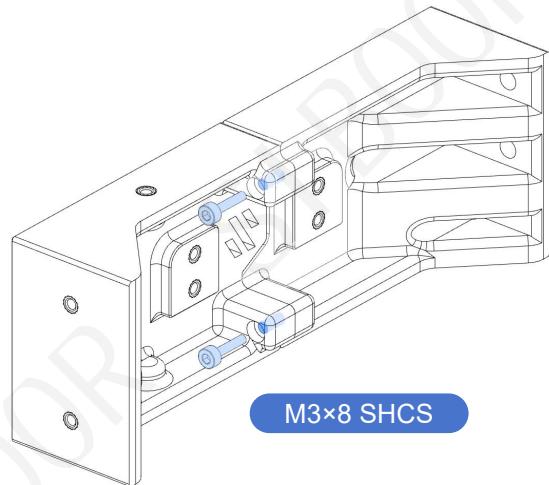


30%



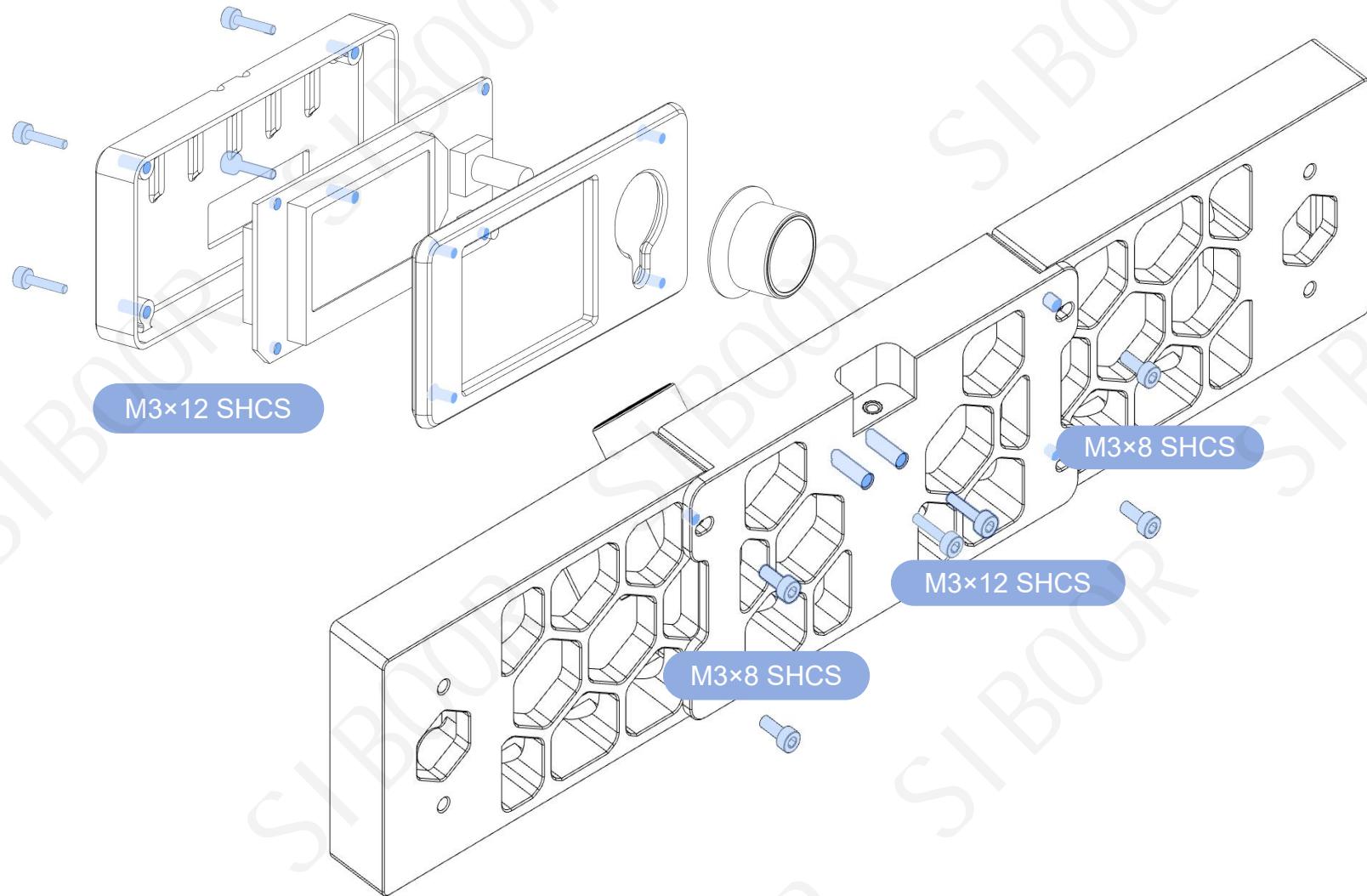
FRONT SKIRTS-LEFT&RIGHT

SIBOOR.COM



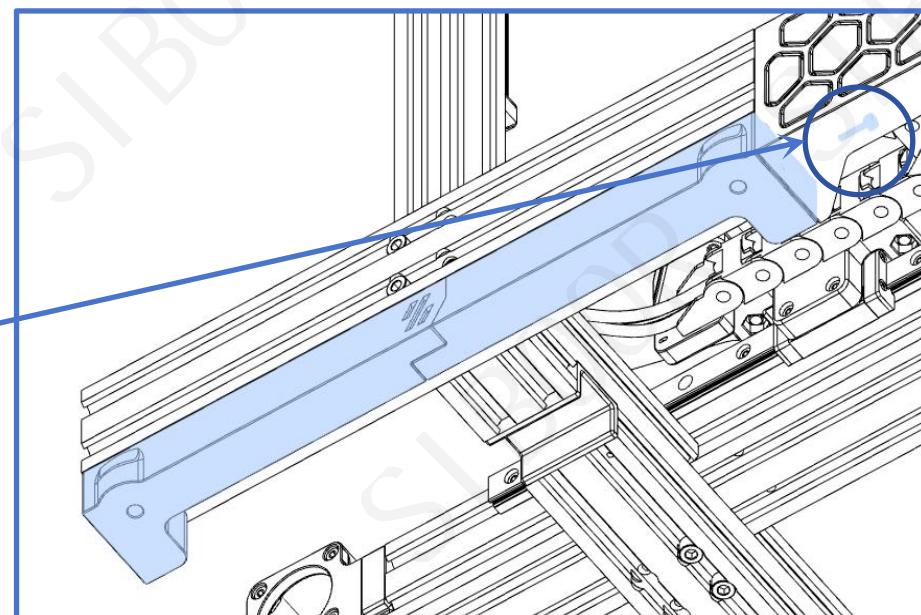
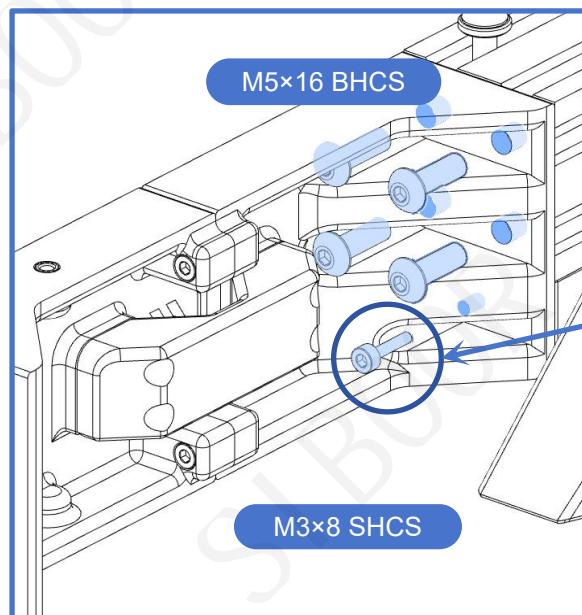
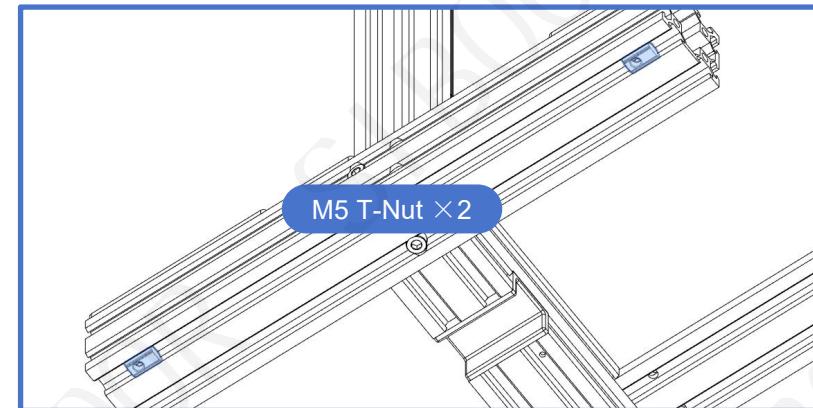
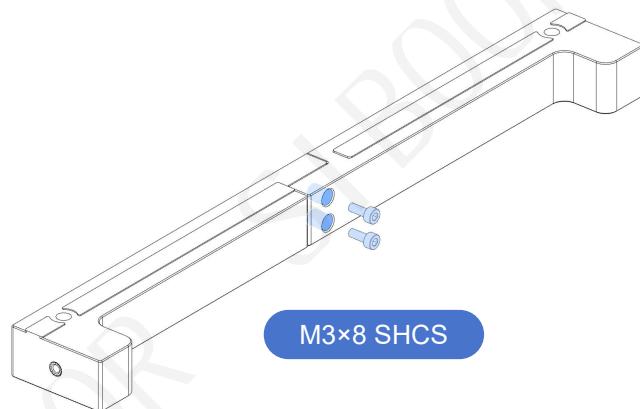
FRONT SKIRTS-Front

SIBOOR.COM



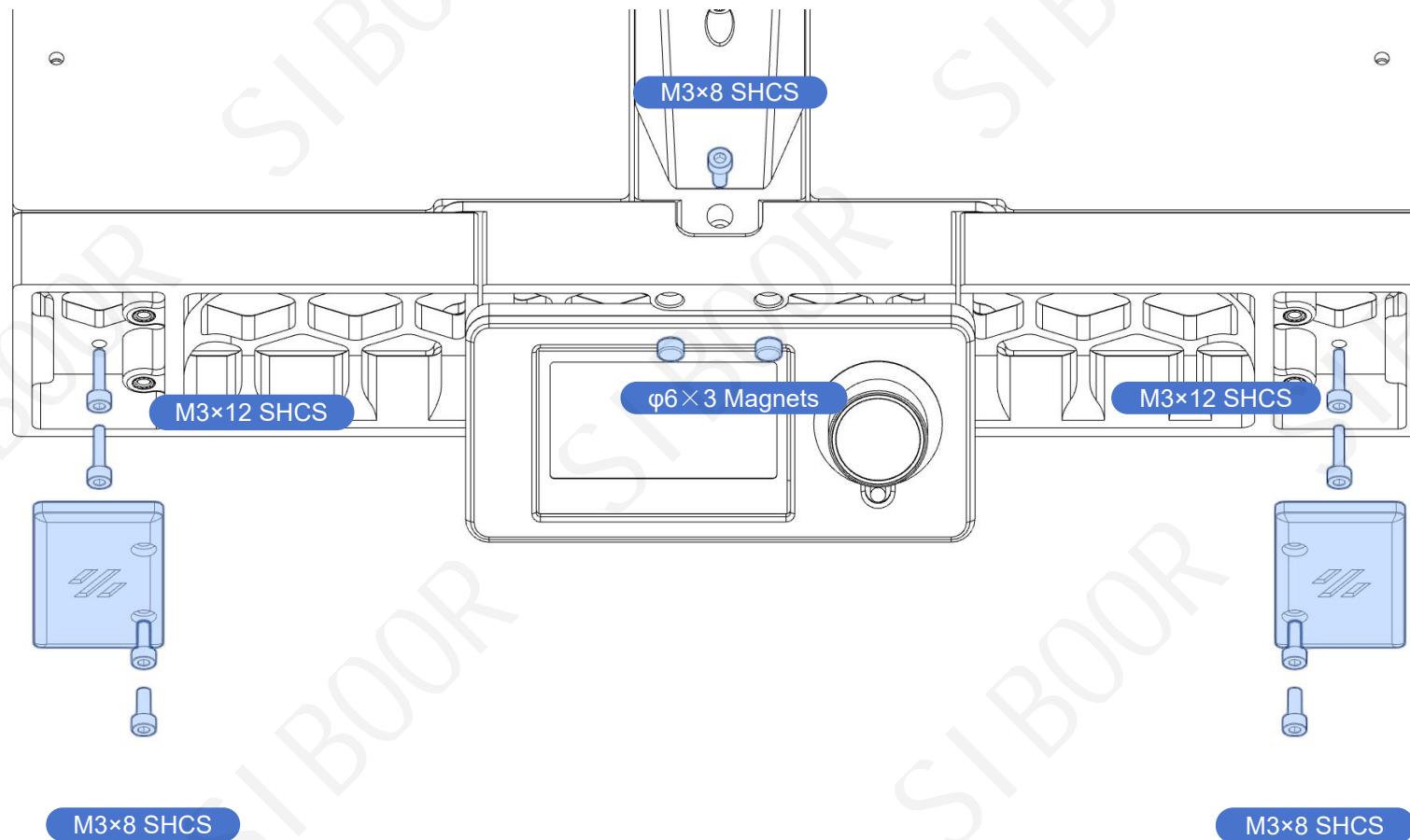
FRONT SKIRTS-Left & Right

SIBOOR.COM



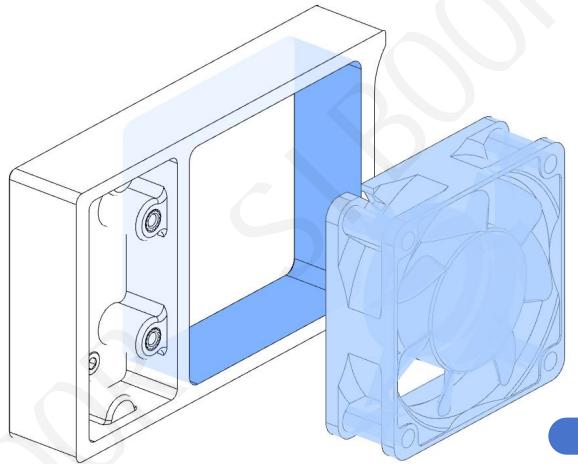
FRONT SKIRTS

SIBOOR.COM

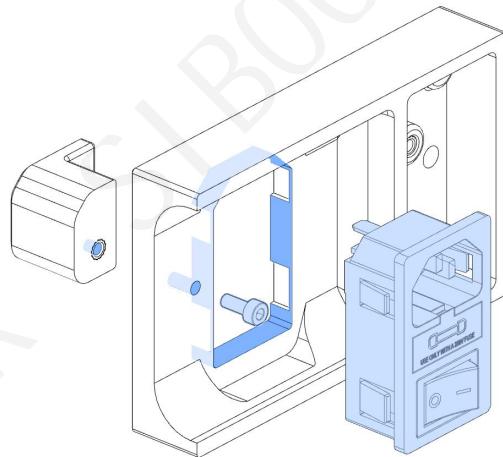


FRONT SKIRTS-Back

SIBOOR.COM

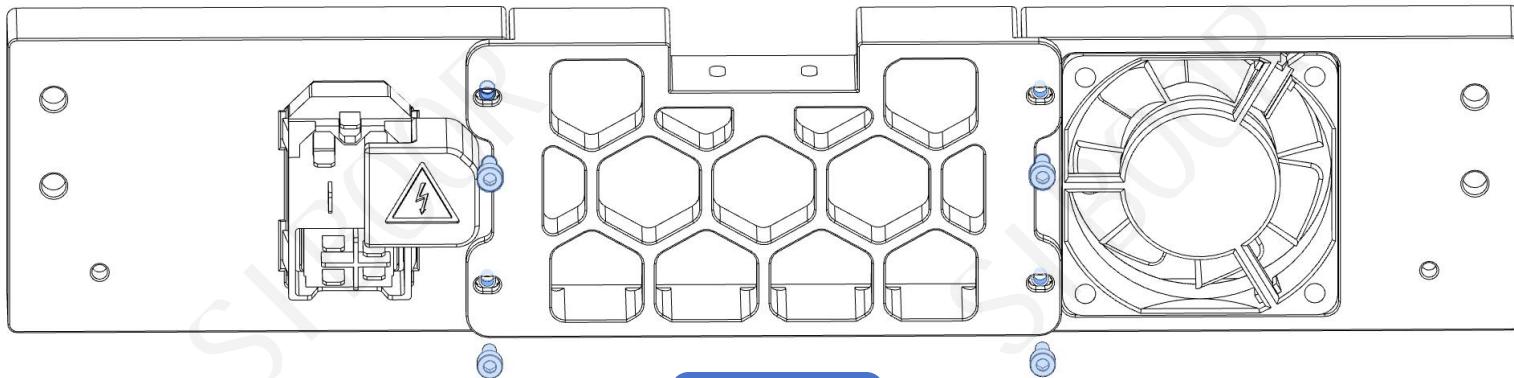


6020 Fan



M3×8 SHCS

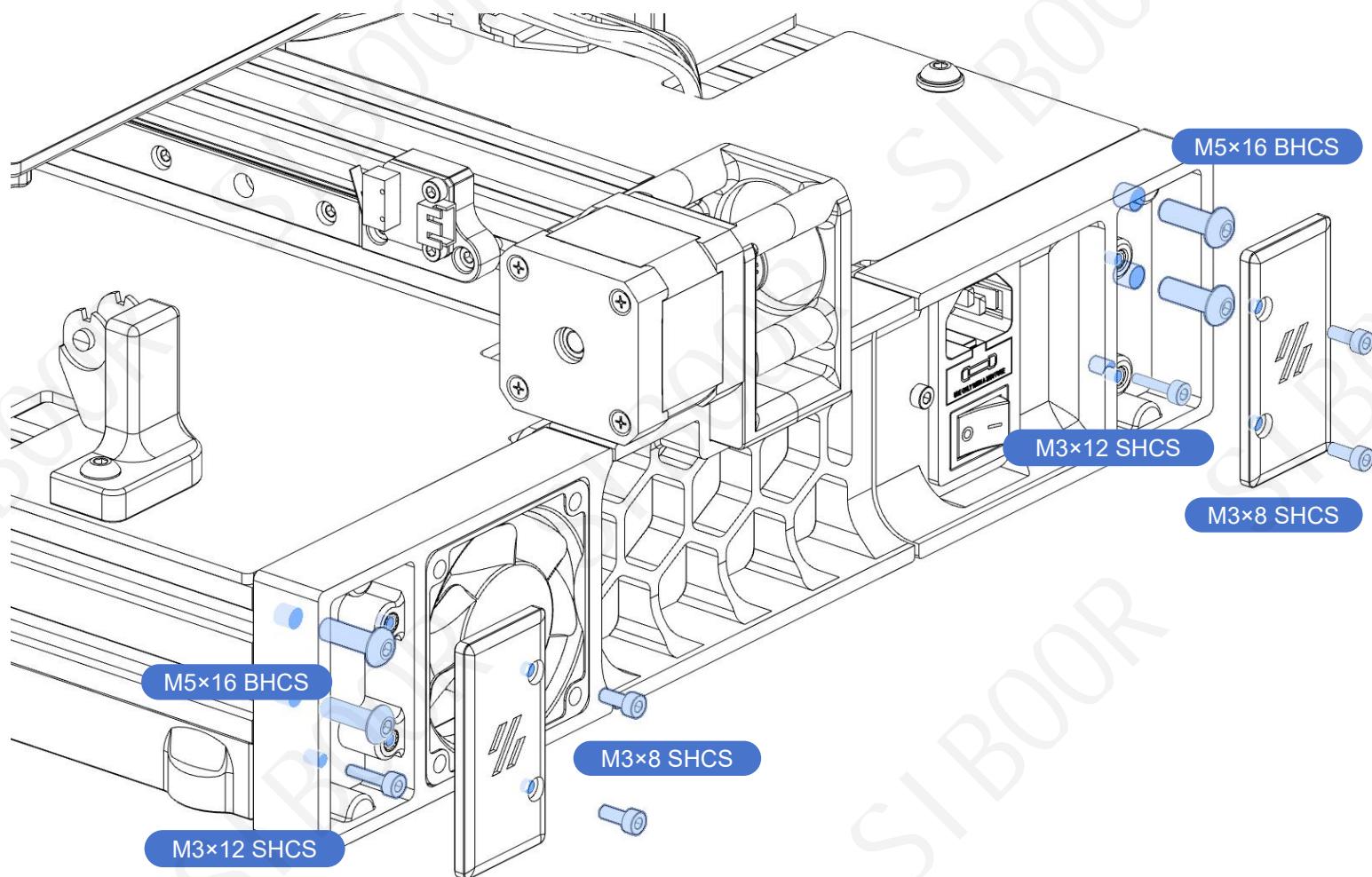
Mains Inlet



M3×8 SHCS

FRONT SKIRTS-Back

SIBOOR.COM



X&Z AXIS

SIBOOR.COM



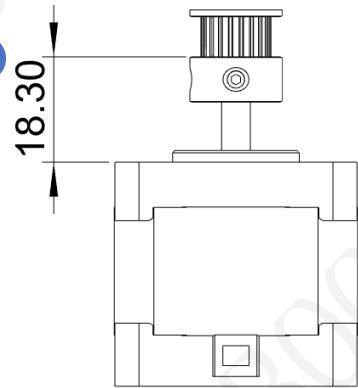
50% A blue upward-pointing arrow icon, positioned next to the text "50%", indicating a positive trend or progress.

“Z” MOTOR MOUNT

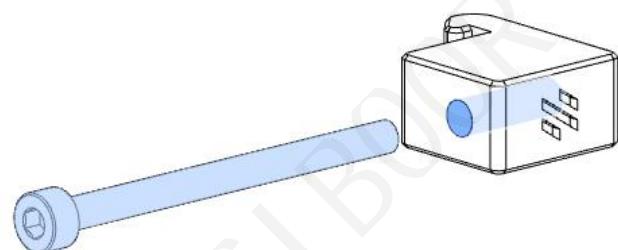
SIBOOR.COM



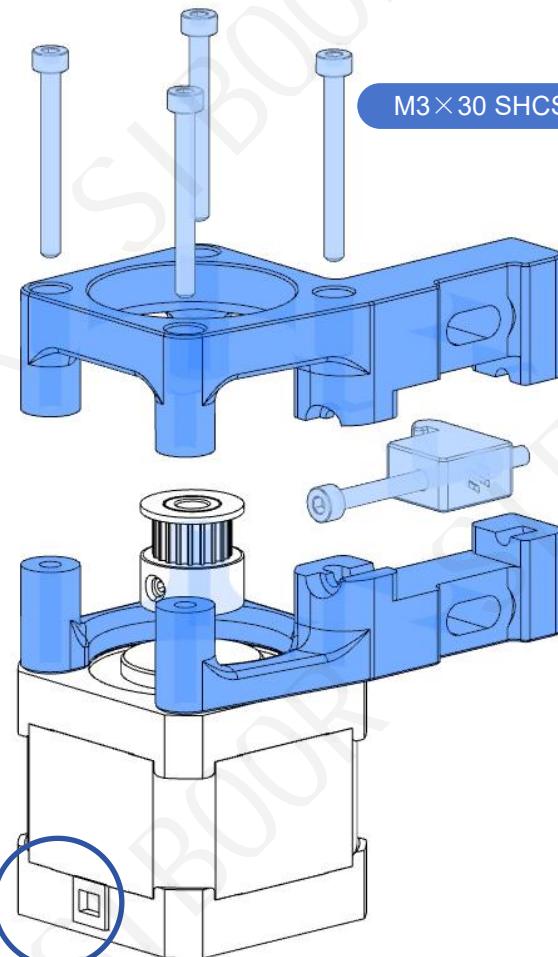
GT2 20T Pulley



18.30



M3×40 SHCS



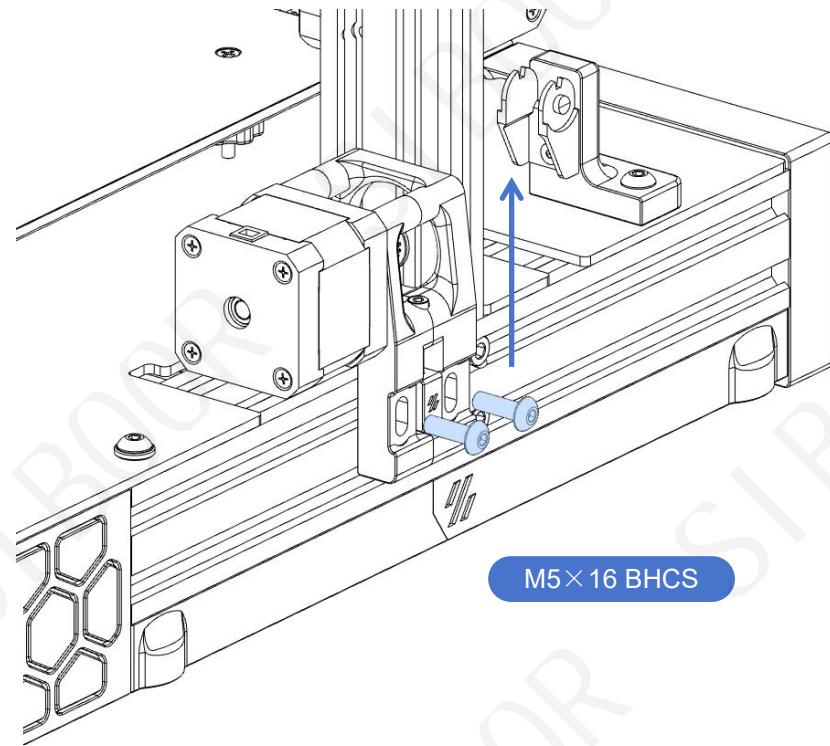
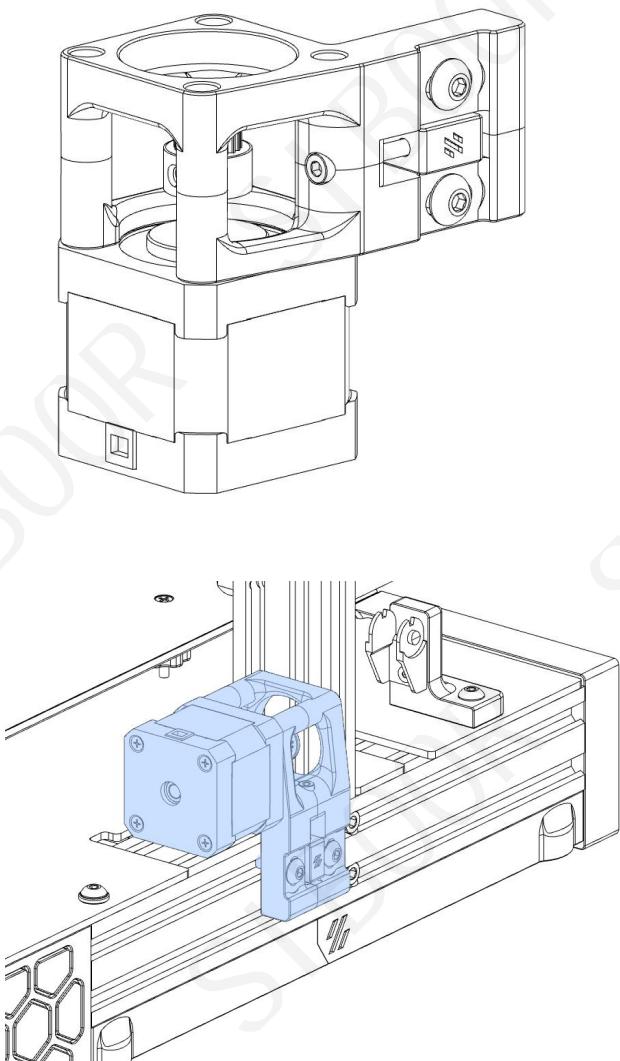
M3×30 SHCS

MOTOR ORIENTATION

Make sure the motor is oriented as shown.

“Z” MOTOR MOUNT

SIBOOR.COM

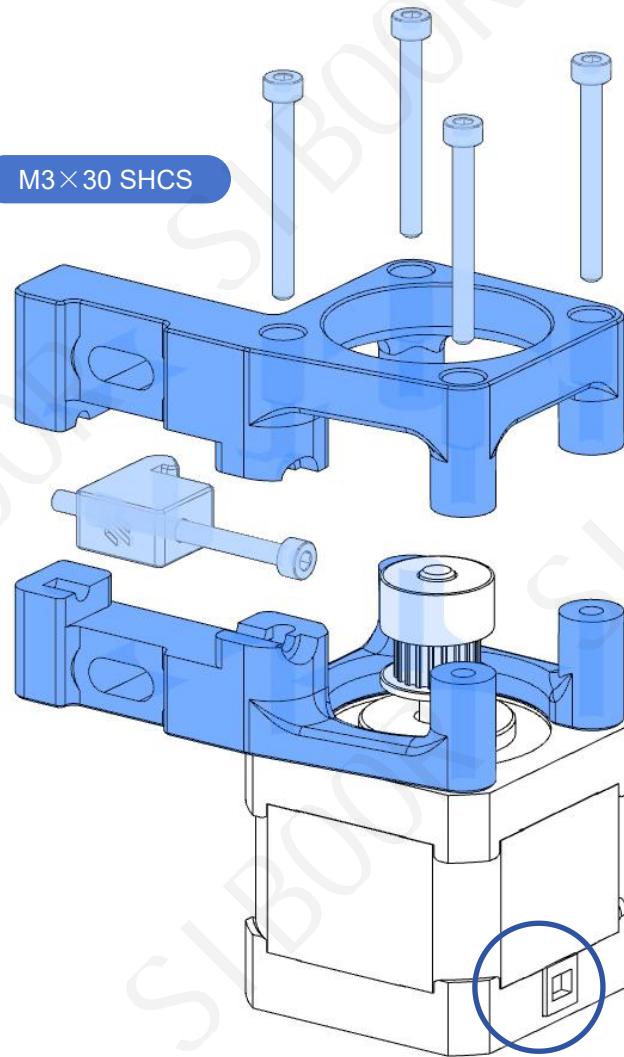
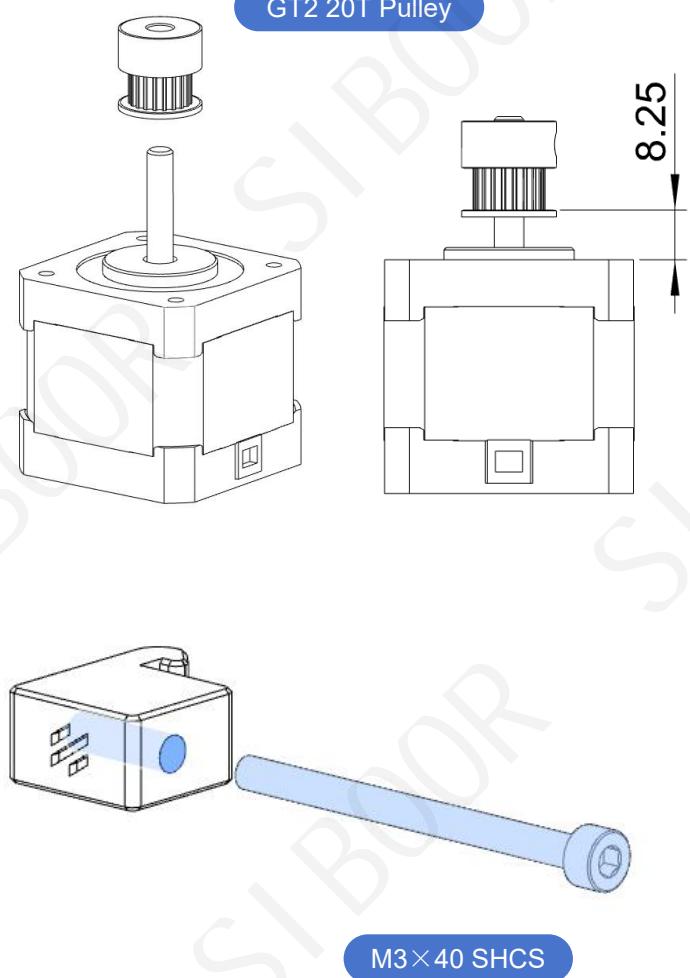


MOTOR MOUNT INSTALLATION

Push the motor mount as far up as the slots in the parts allow you to before fastening the bolts. You may need to turn the M3x40 counter clock wise to fully bottom out in the slot.

“X” MOTOR MOUNT

SIBOOR.COM

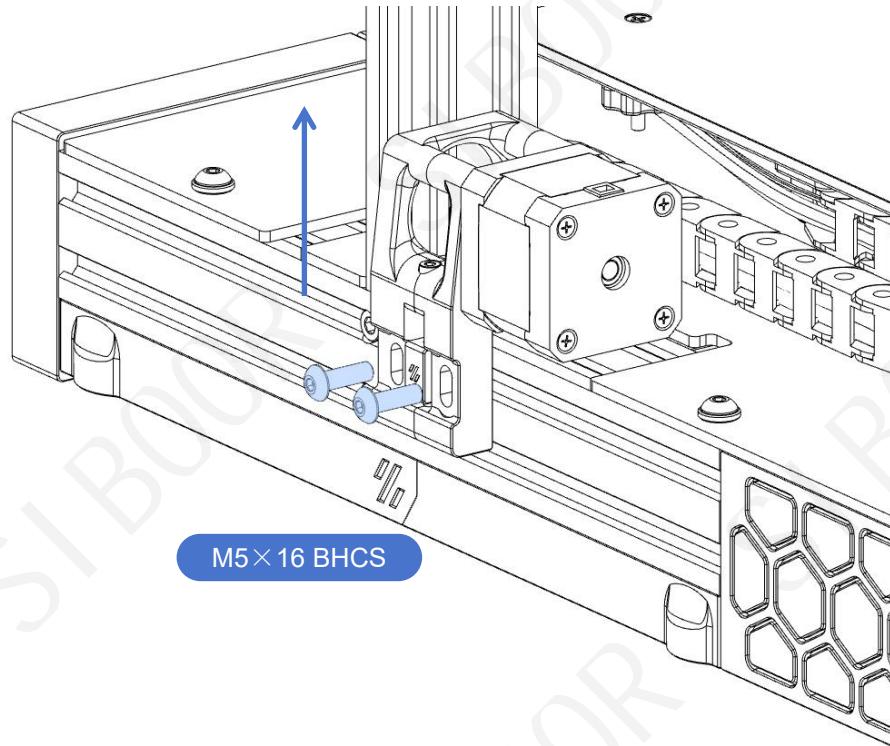
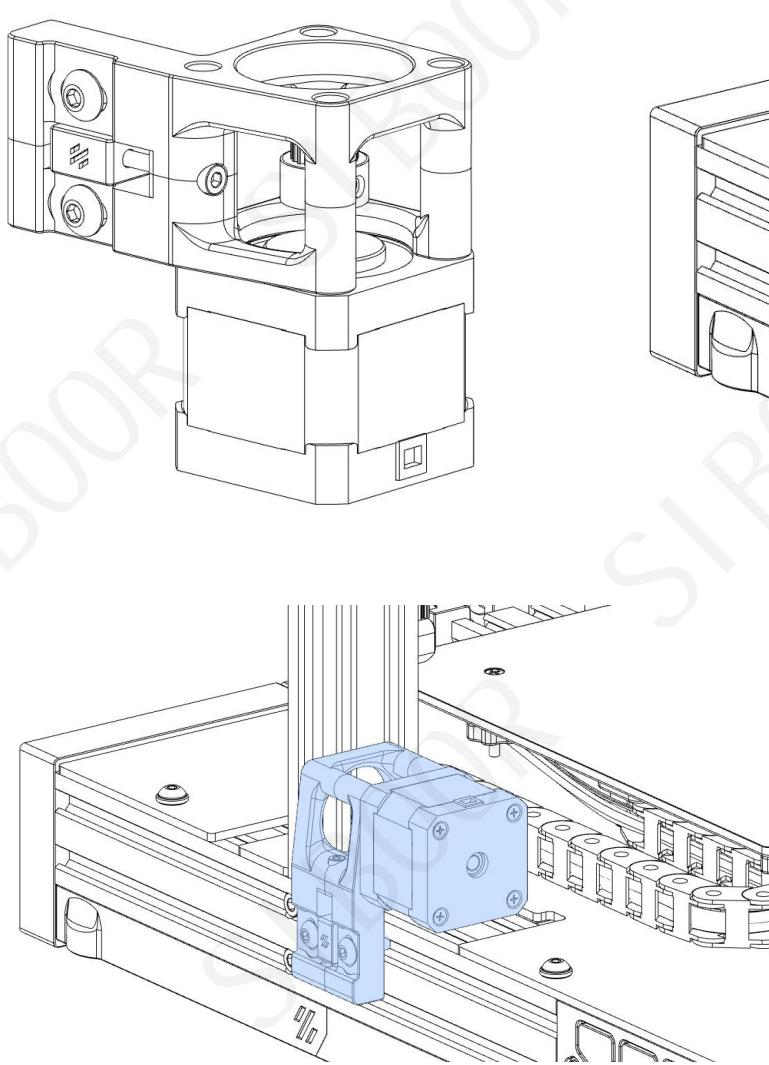


MOTOR ORIENTATION

Make sure the motor is oriented as shown.

"X" MOTOR MOUNT

SIBOOR.COM



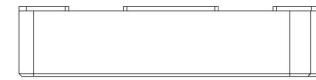
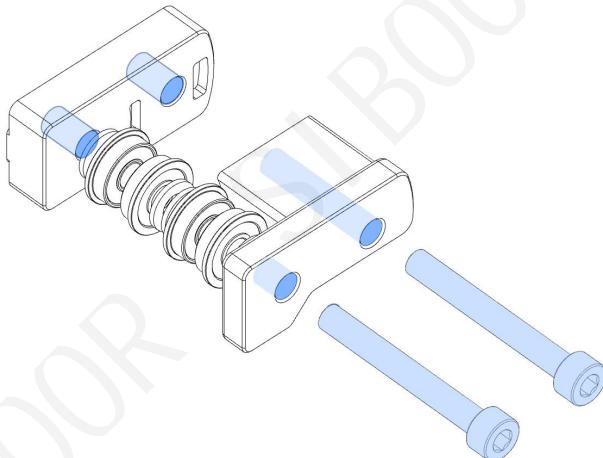
M5×16 BHCS

MOTOR MOUNT INSTALLATION

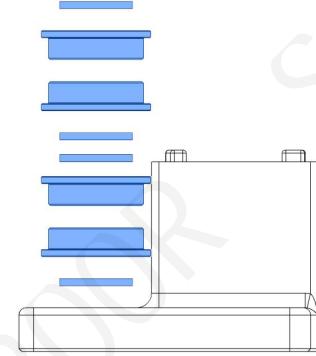
Push the motor mount as far up as the slots in the parts allow you to before fastening the bolts. You may need to turn the M3x40 counter clockwise to fully bottom out in the slot.

LEFT IDLER

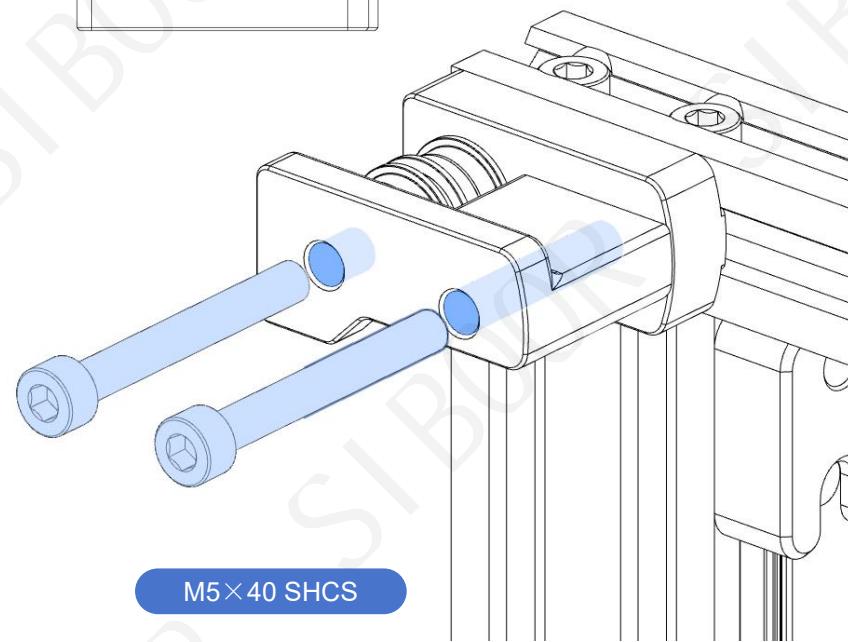
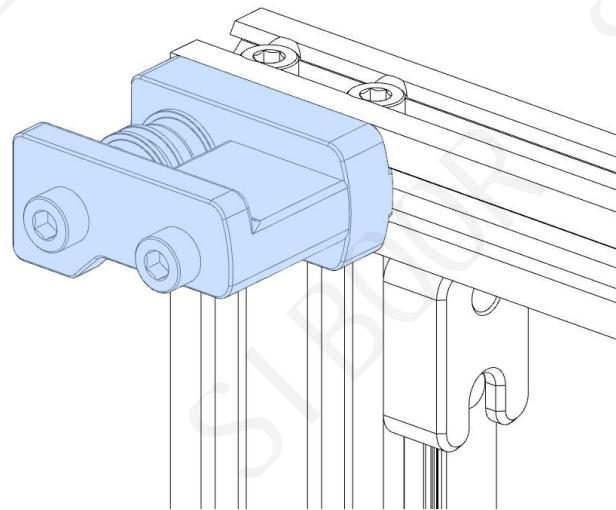
SIBOOR.COM



M5 Shim



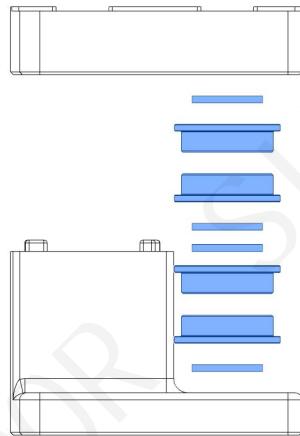
F695 Bearing



M5×40 SHCS

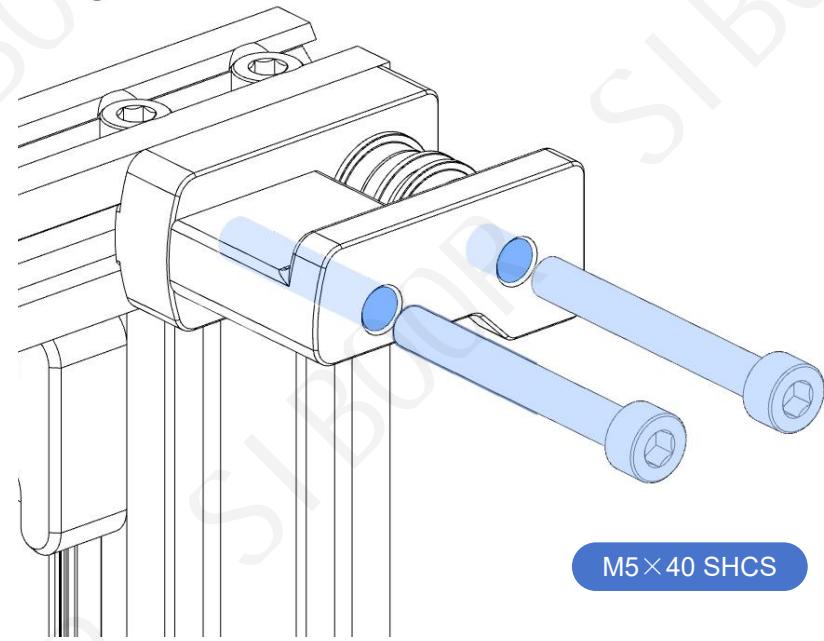
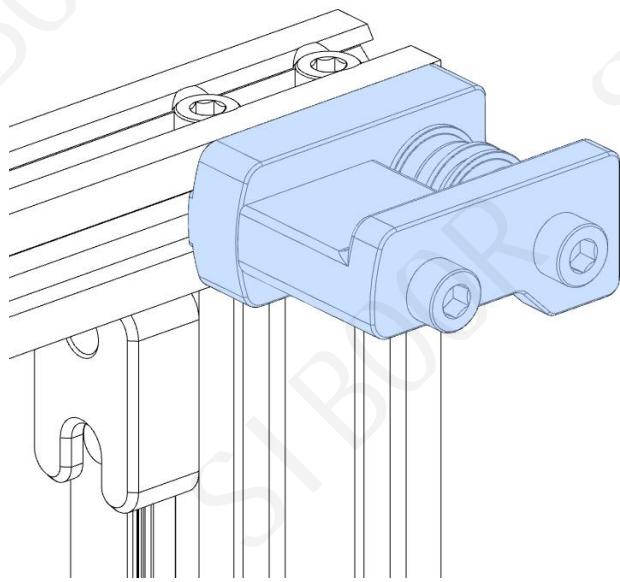
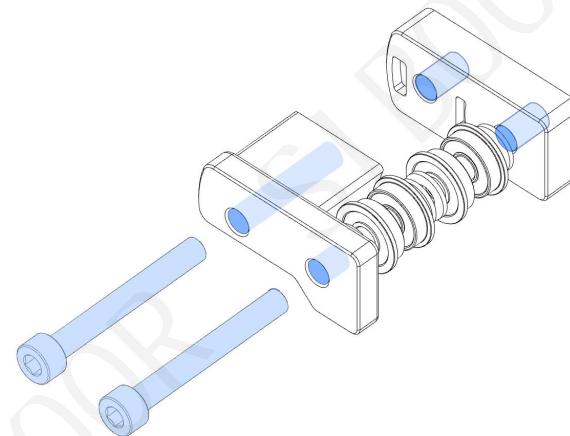
RIGHT IDLER

SIBOOR.COM

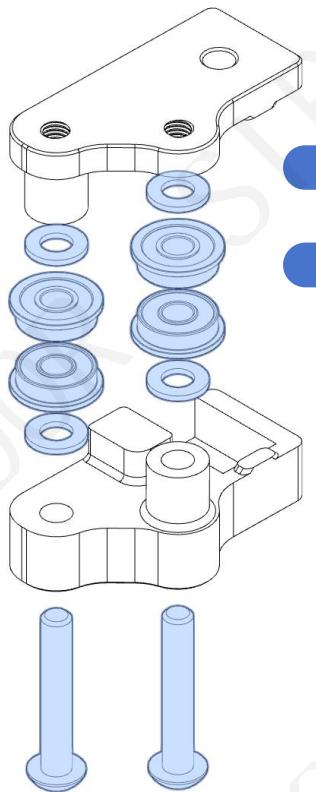


M5 Shim

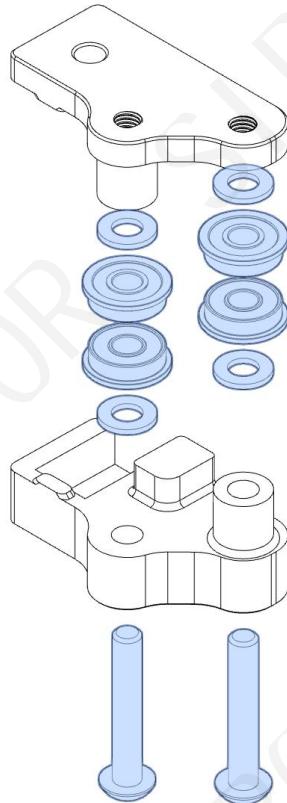
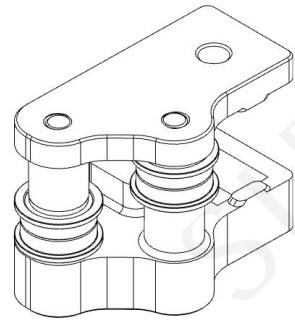
F695 Bearing



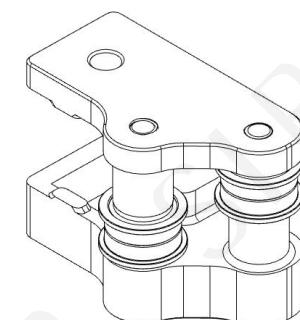
M5×40 SHCS



M5 × 30 BHCS

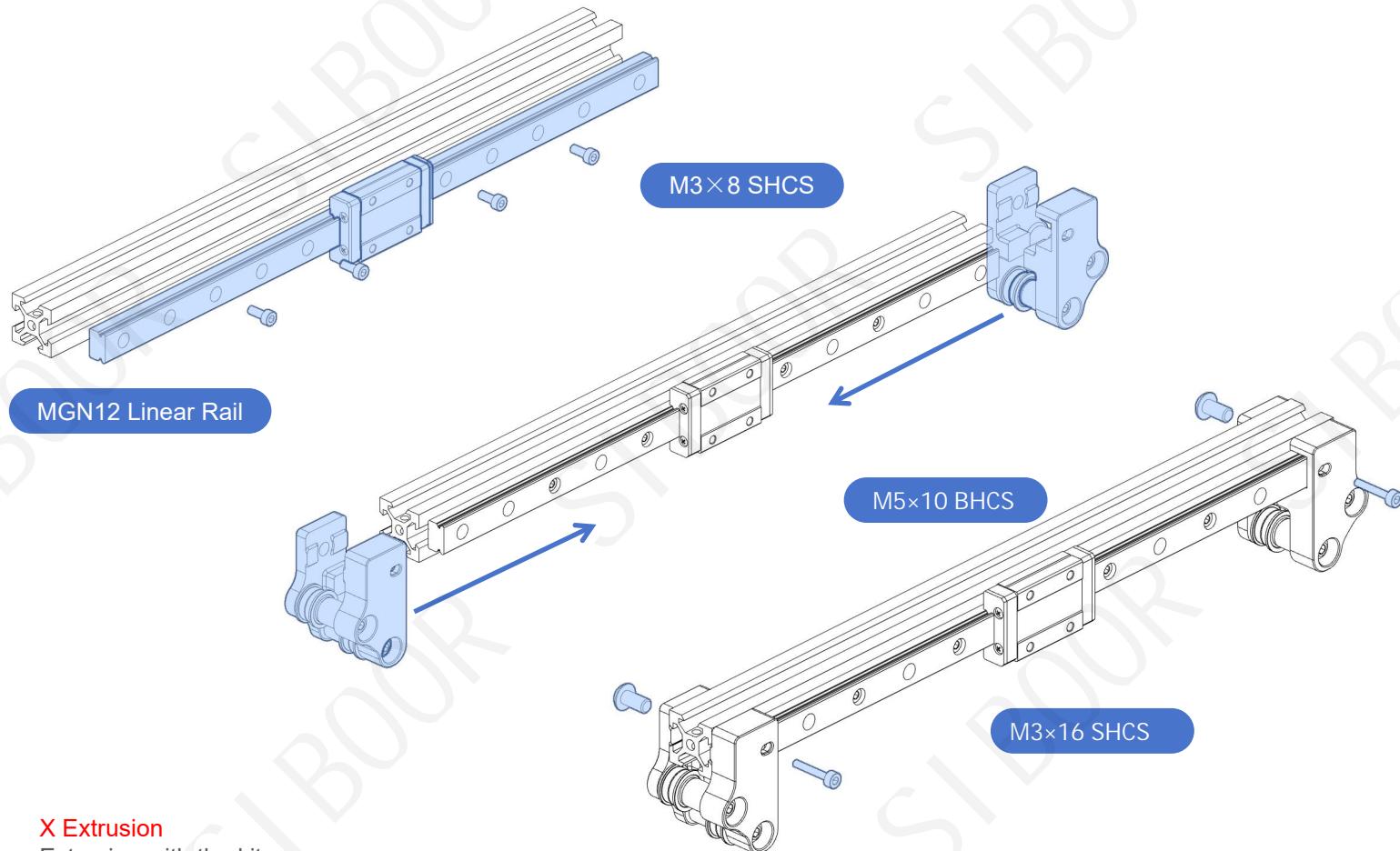


M5 × 30 BHCS



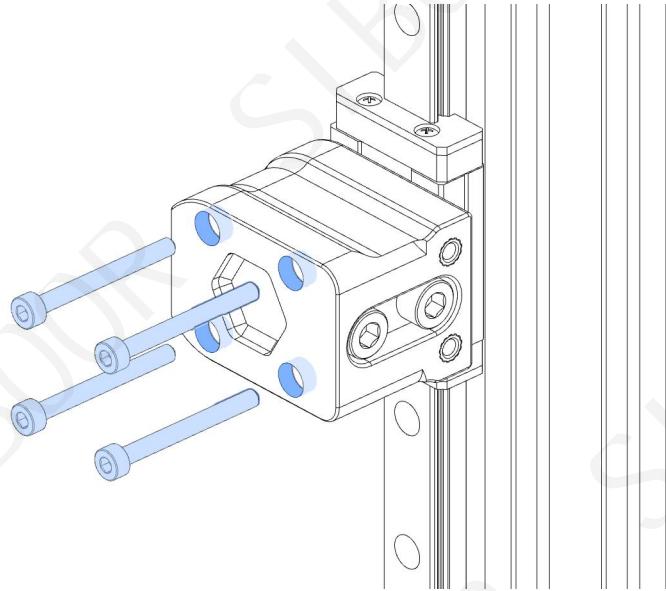
X AIXS

SIBOOR.COM

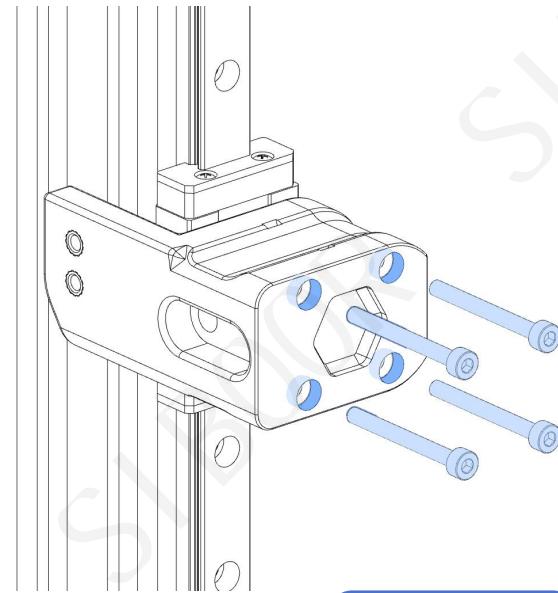


Z BEARING BLOCK

SIBOOR.COM



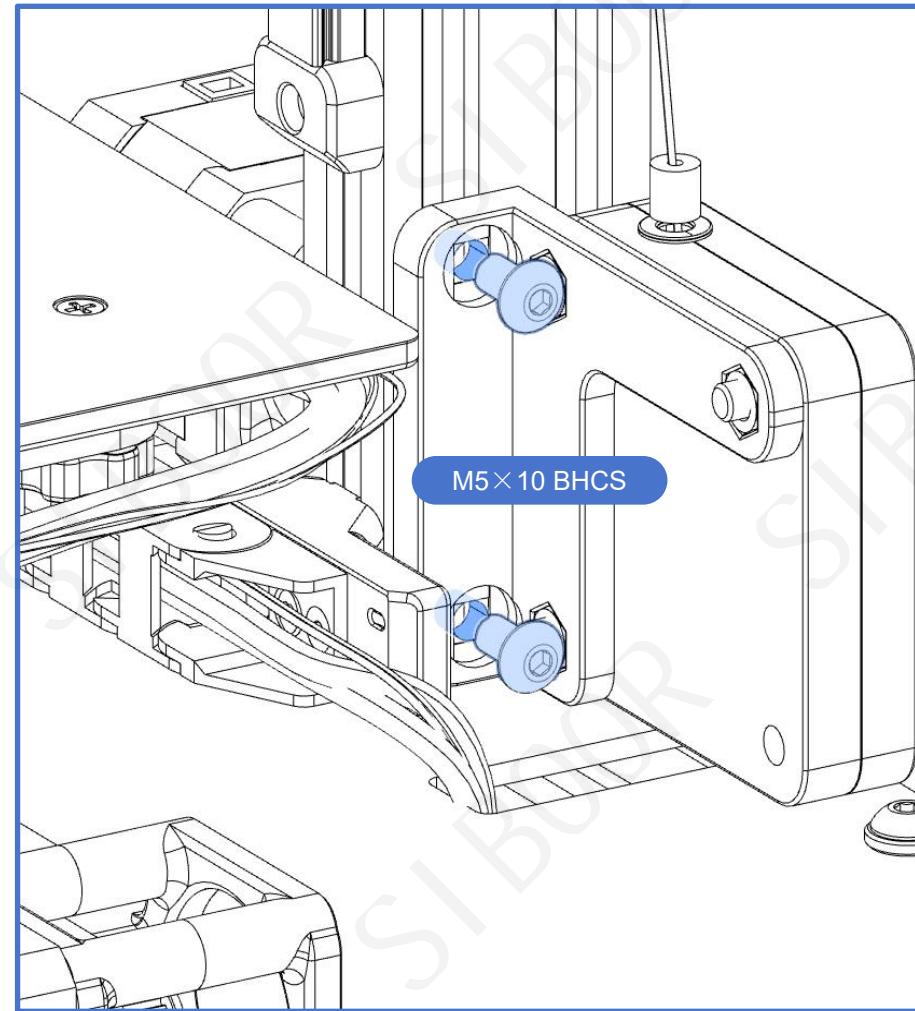
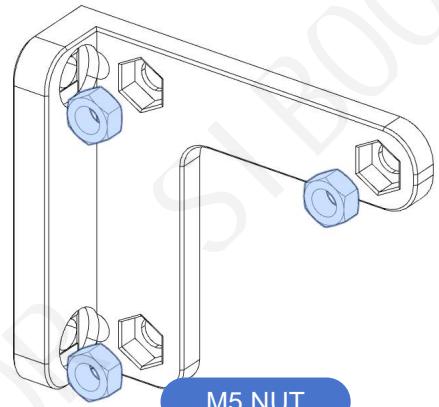
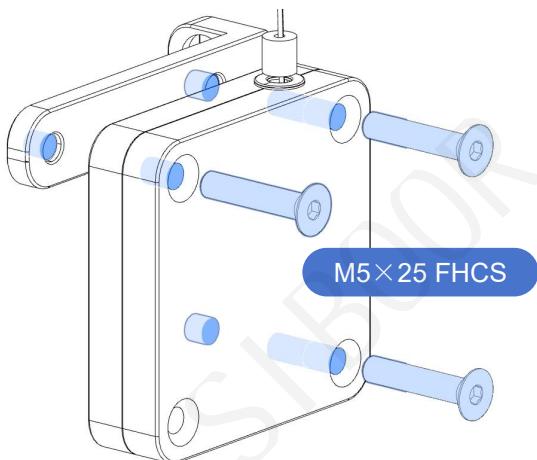
M3×30 SHCS

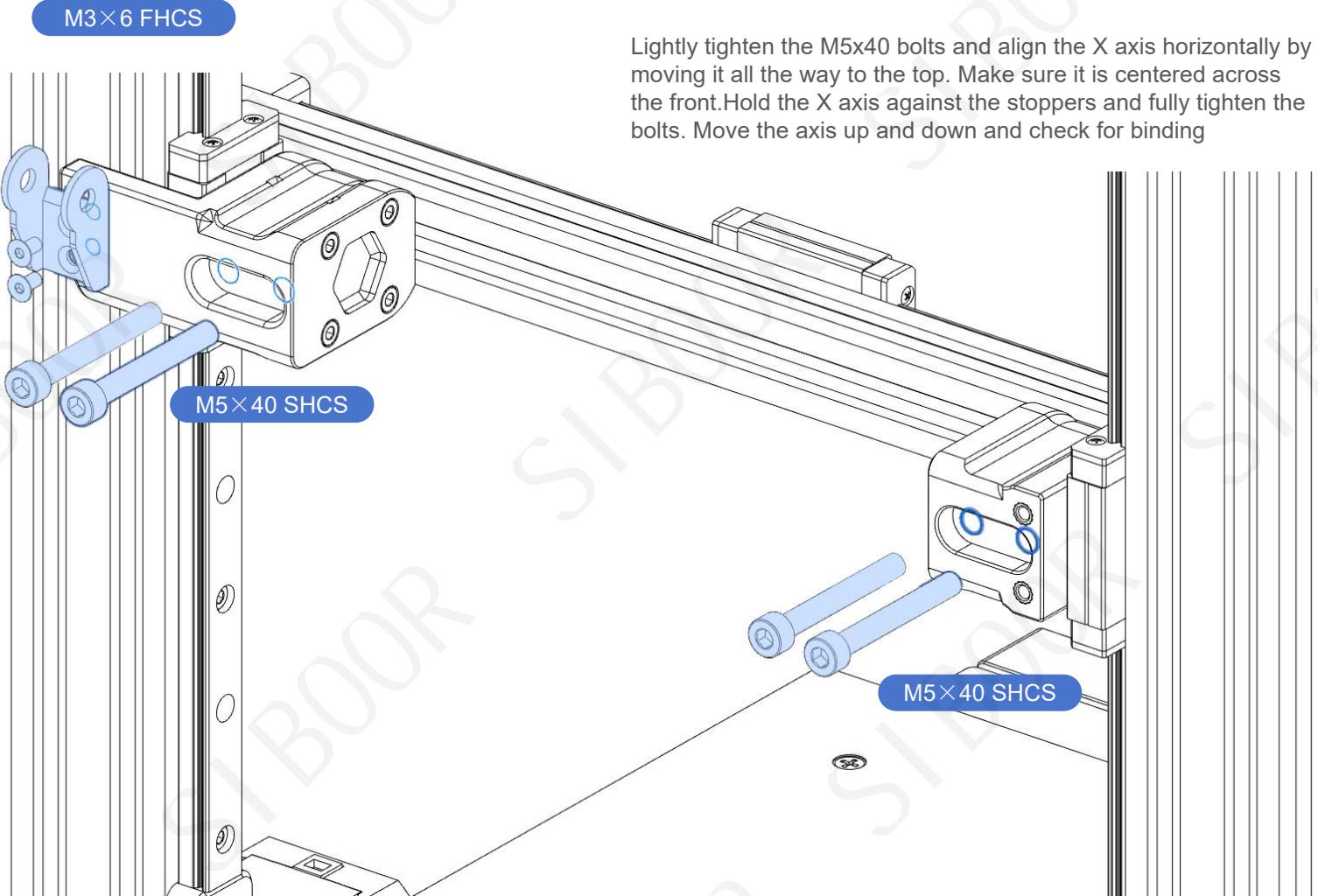


M3×30 SHCS

COUNTERWEIGHT IDLER

SIBOOR.COM



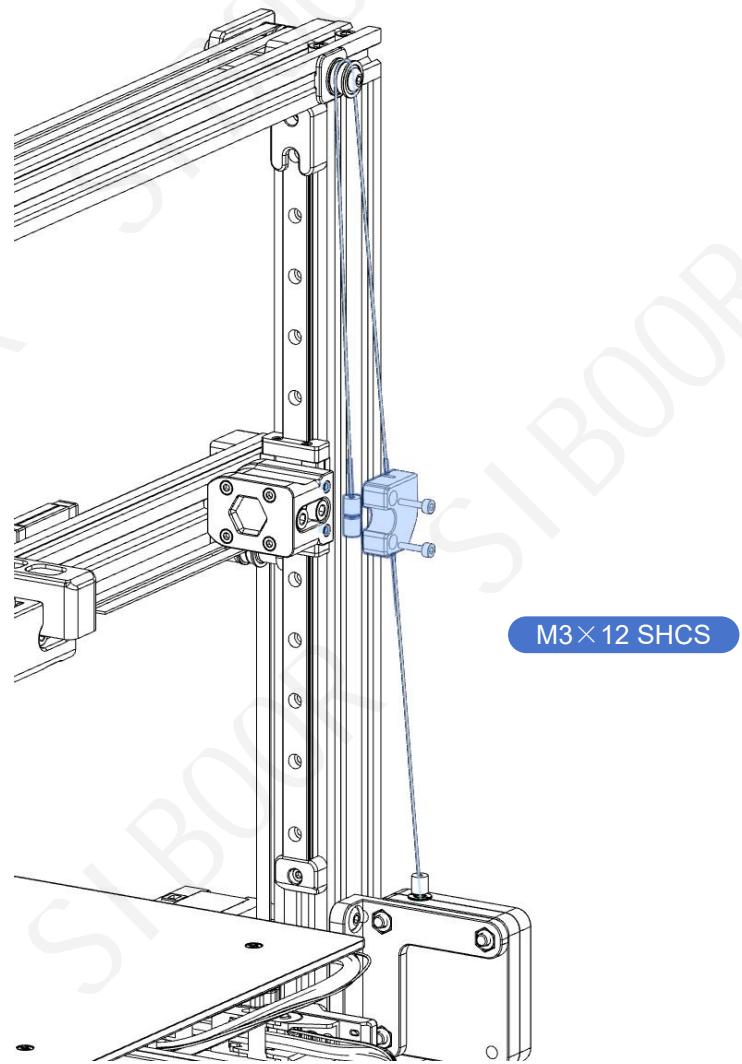
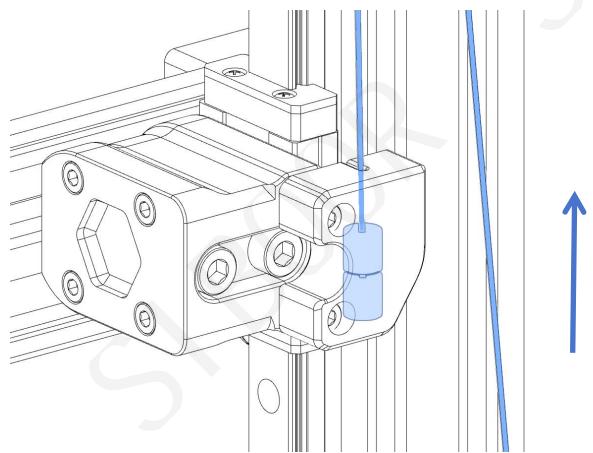
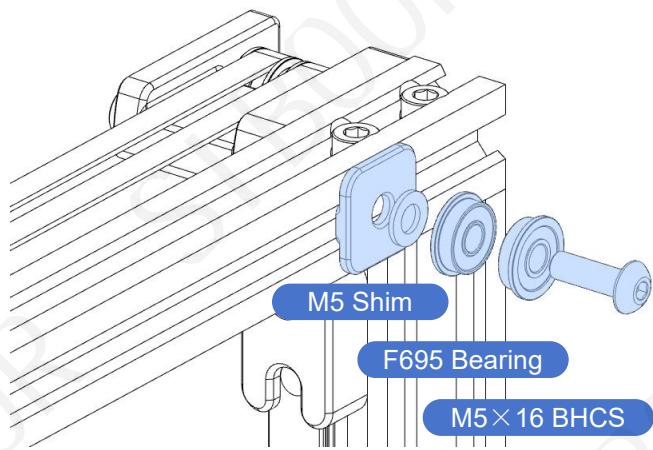


X AXIS INSTALLATION

Lightly tighten the M5x40 bolts and align the X axis horizontally by moving it all the way to the top. Make sure it is centered across the front. Hold the X axis against the stoppers and fully tighten the bolts. Move the axis up and down and check for binding

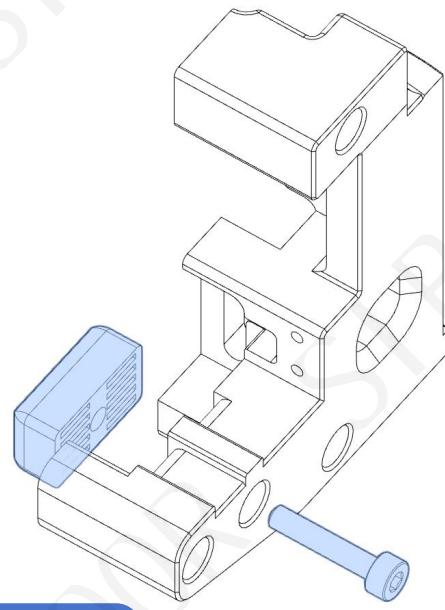
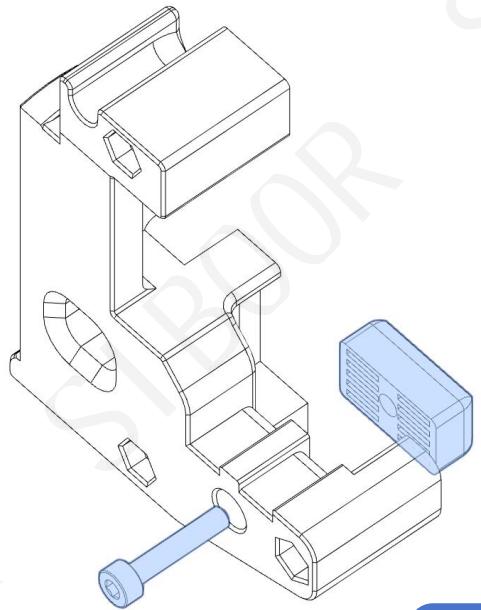
COUNTERWEIGHT IDLER

SIBOOR.COM



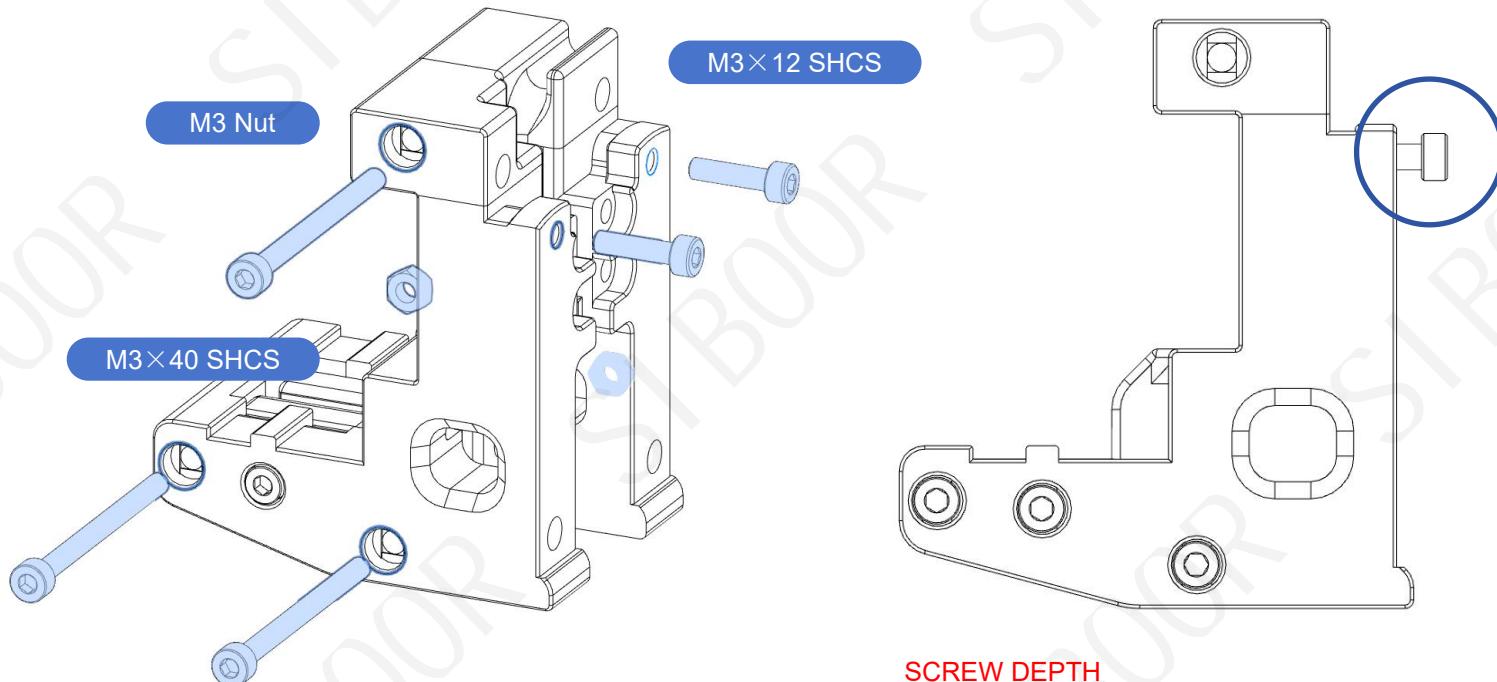
X CARRIAGE

SIBOOR.COM



X CARRIAGE

SIBOOR.COM

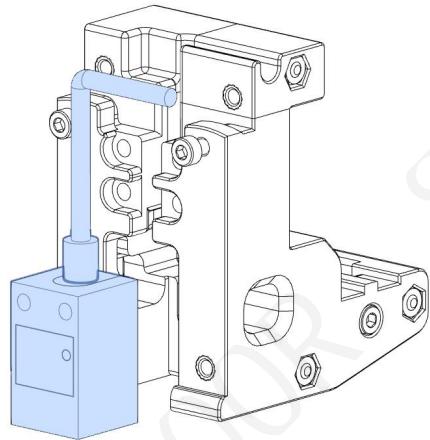
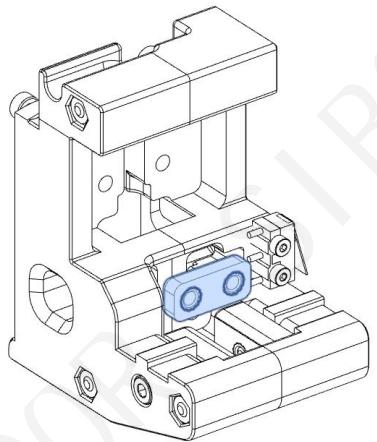


SCREW DEPTH

Don't tighten the bolts all the way.
Leave 3-4mm of exposed thread.

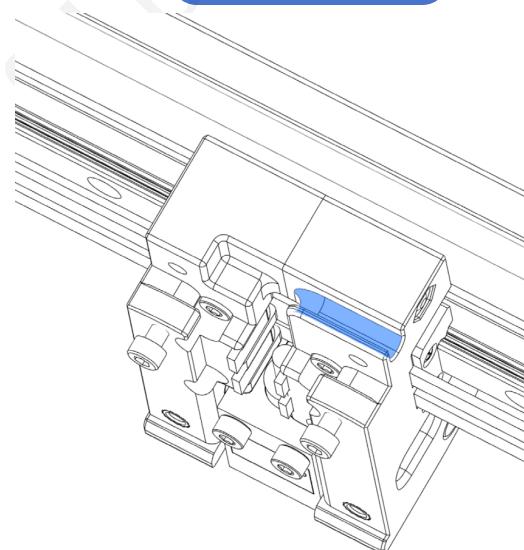
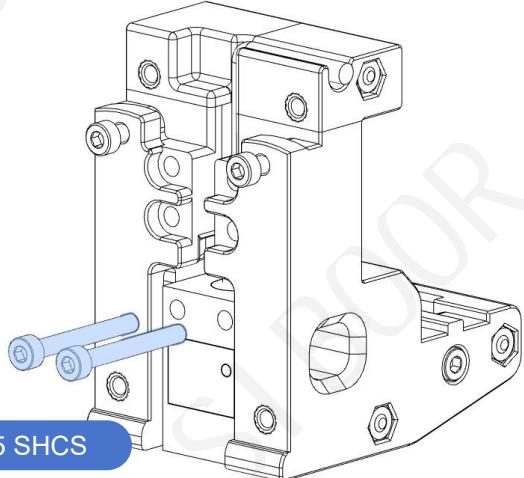
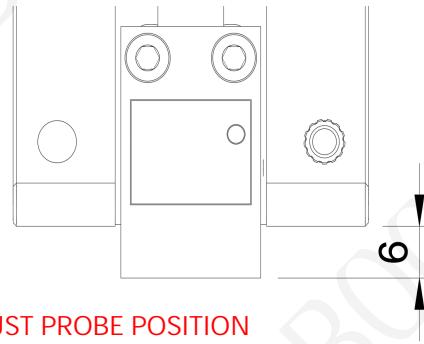
X CARRIAGE

SIBOOR.COM



ADJUST PROBE POSITION

The position can be fine-tuned later. Set an initial position of about 6mm below the plastic part.

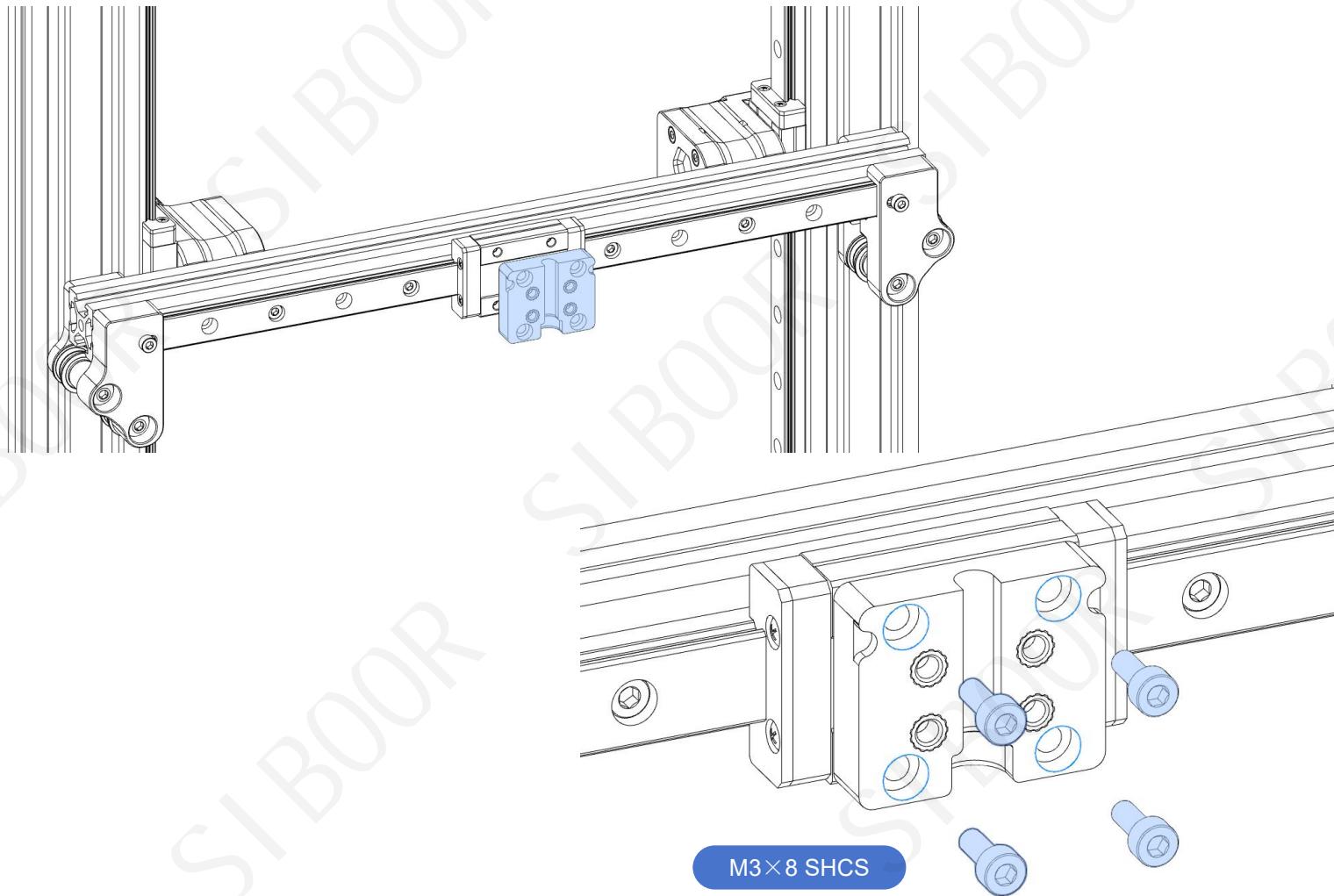


CHANNEL FOR PROBE CABLE

Guide the probe cable into the highlighted slot.

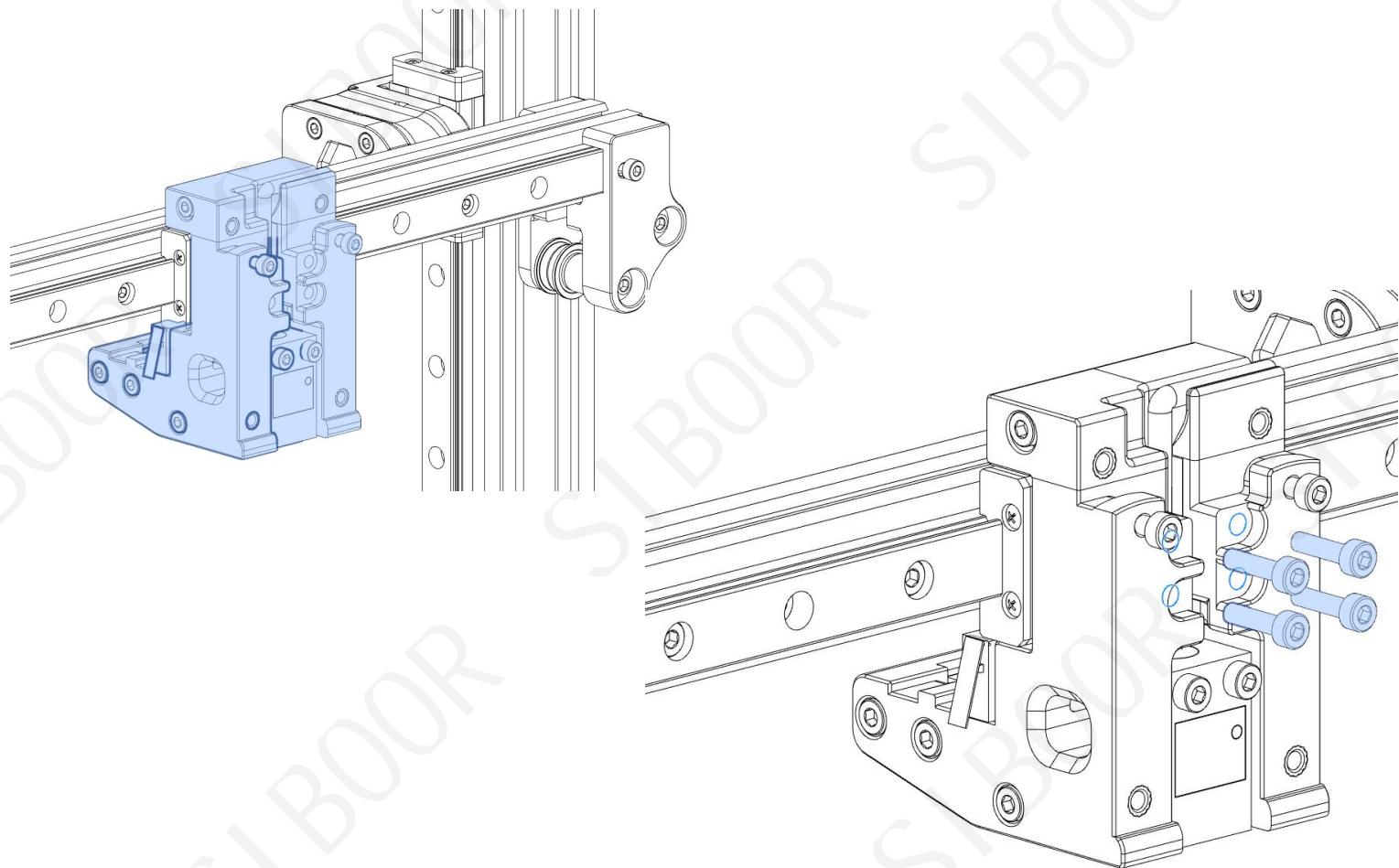
X CARRIAGE

SIBOOR.COM



X CARRIAGE

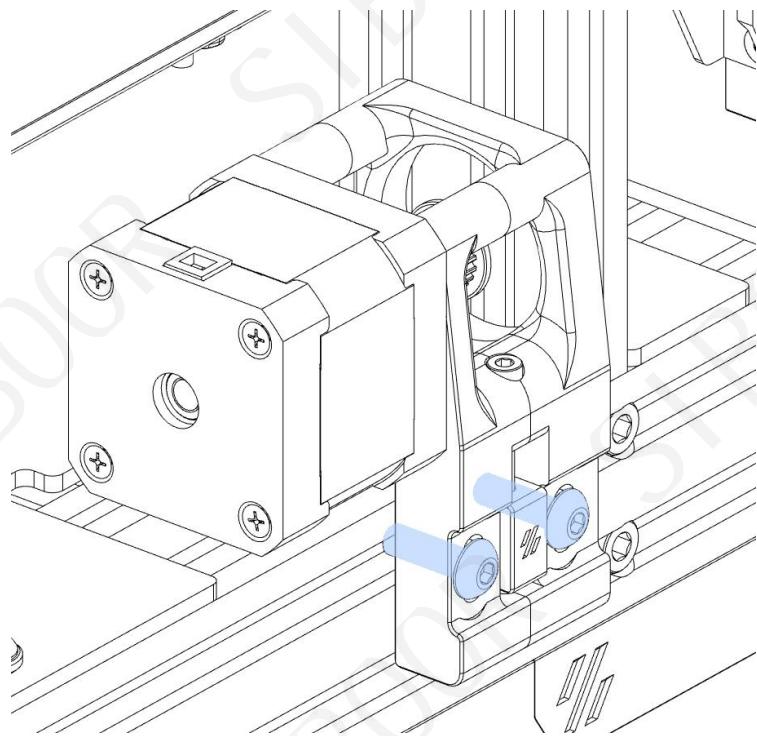
SIBOOR.COM



M3×12 SHCS

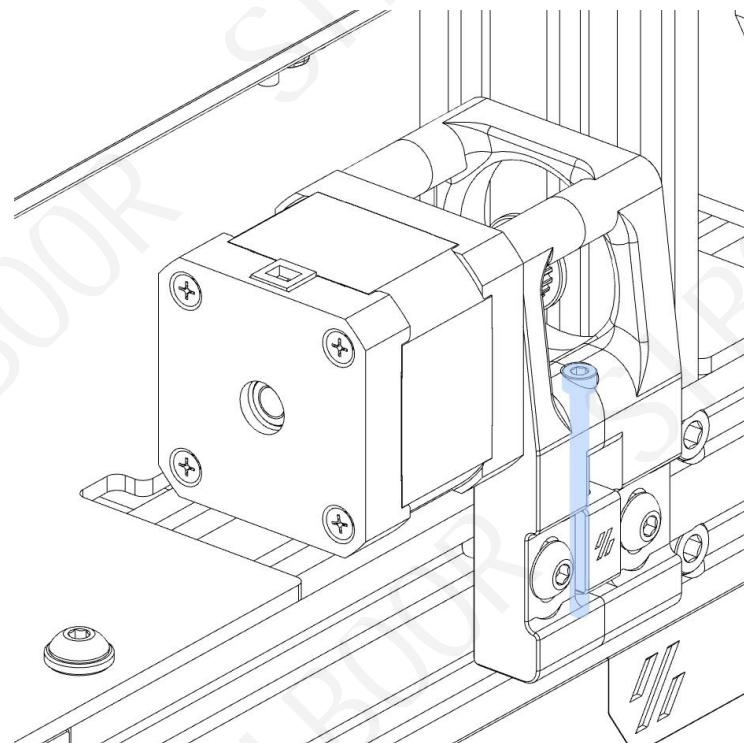
BELT TENTIONER FOR "X" AND "Z"

The motor mounts for the "X" and the "Z" motors have build in tentioners.



LOCK SCREWS

Slightly loosen these screws before adjusting the belt tension. Fasten them again after adjusting the tension.

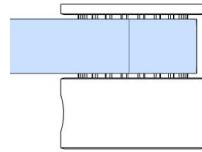


ADJUSTMENT SCREW

Turn the screw clockwise to pull a higher tension on the belt.

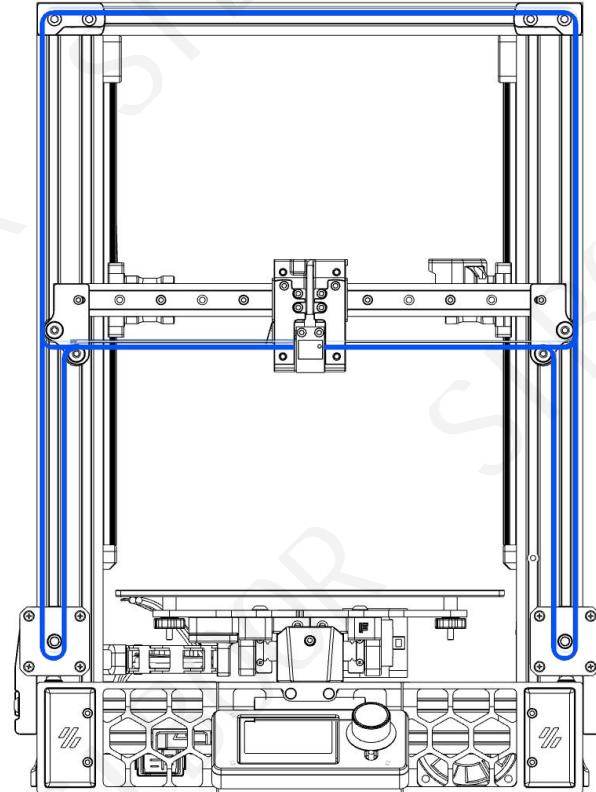
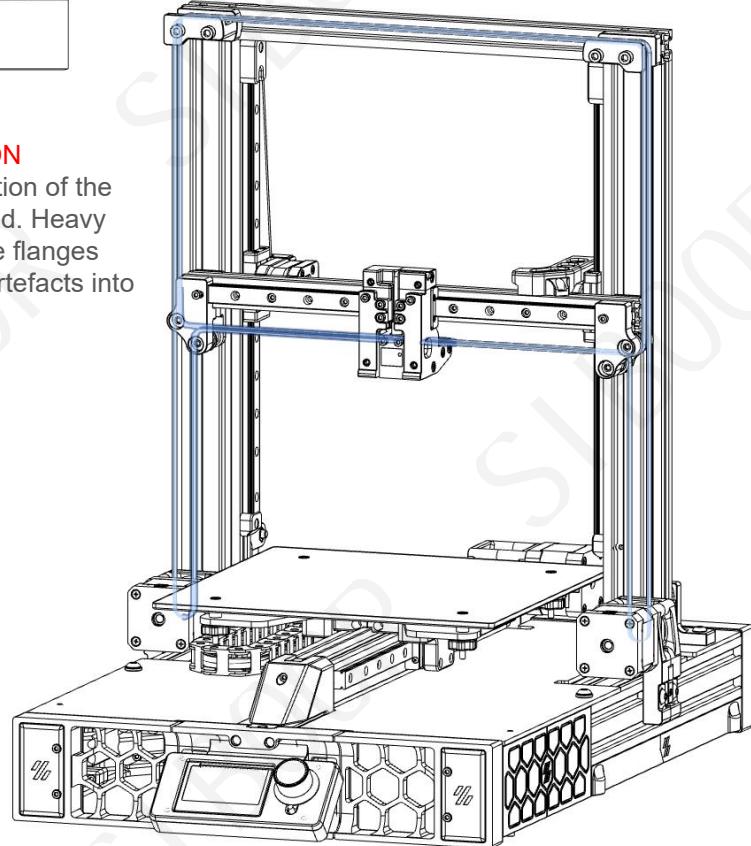
BELT PATH

SIBOOR.COM



BELT POSITION

Adjust the position of the pulley if required. Heavy contact with the flanges will introduce artefacts into your prints.

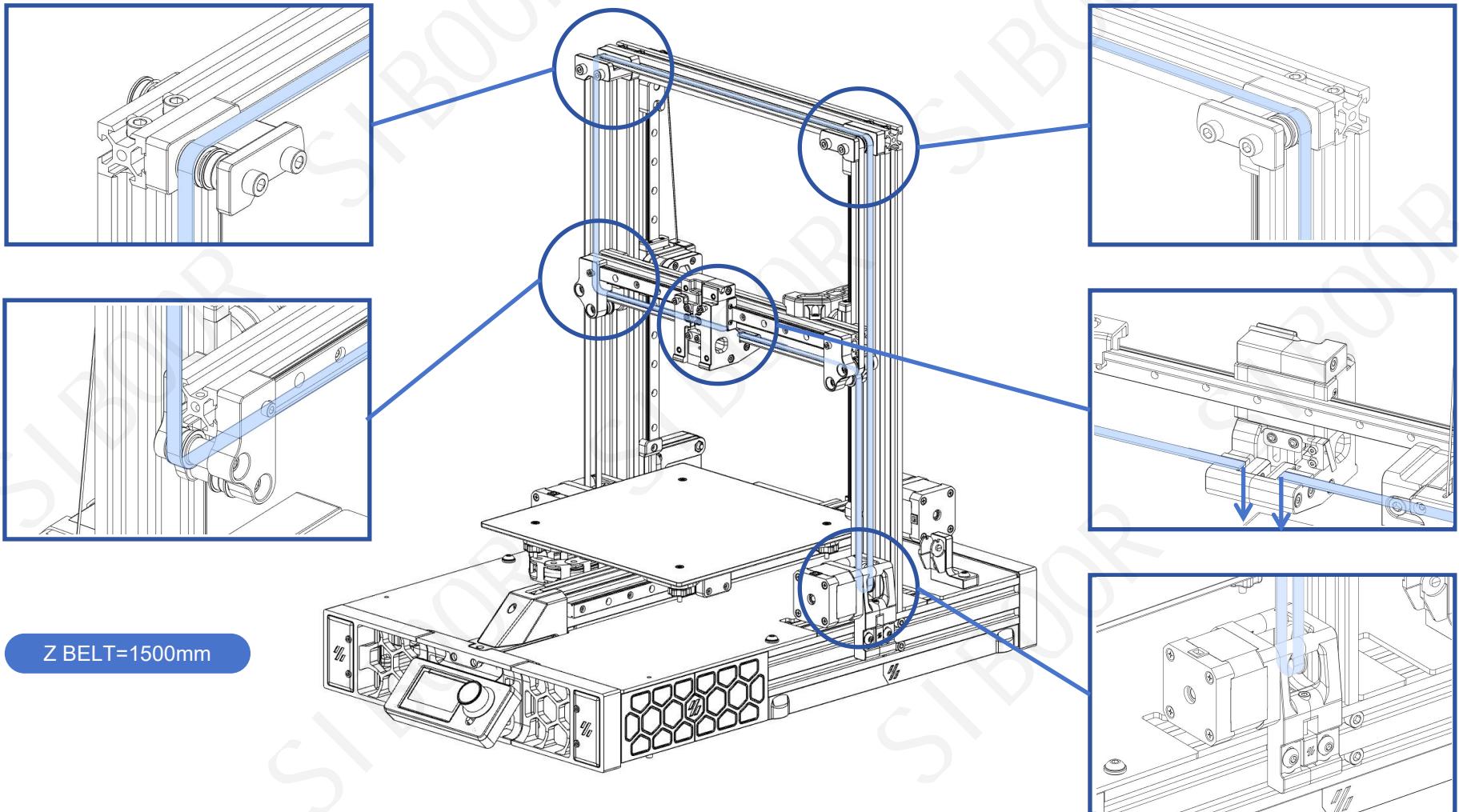


BELT PATH

Take your time and make sure your belt routing is as intended. Belts should never rub on plastic parts.

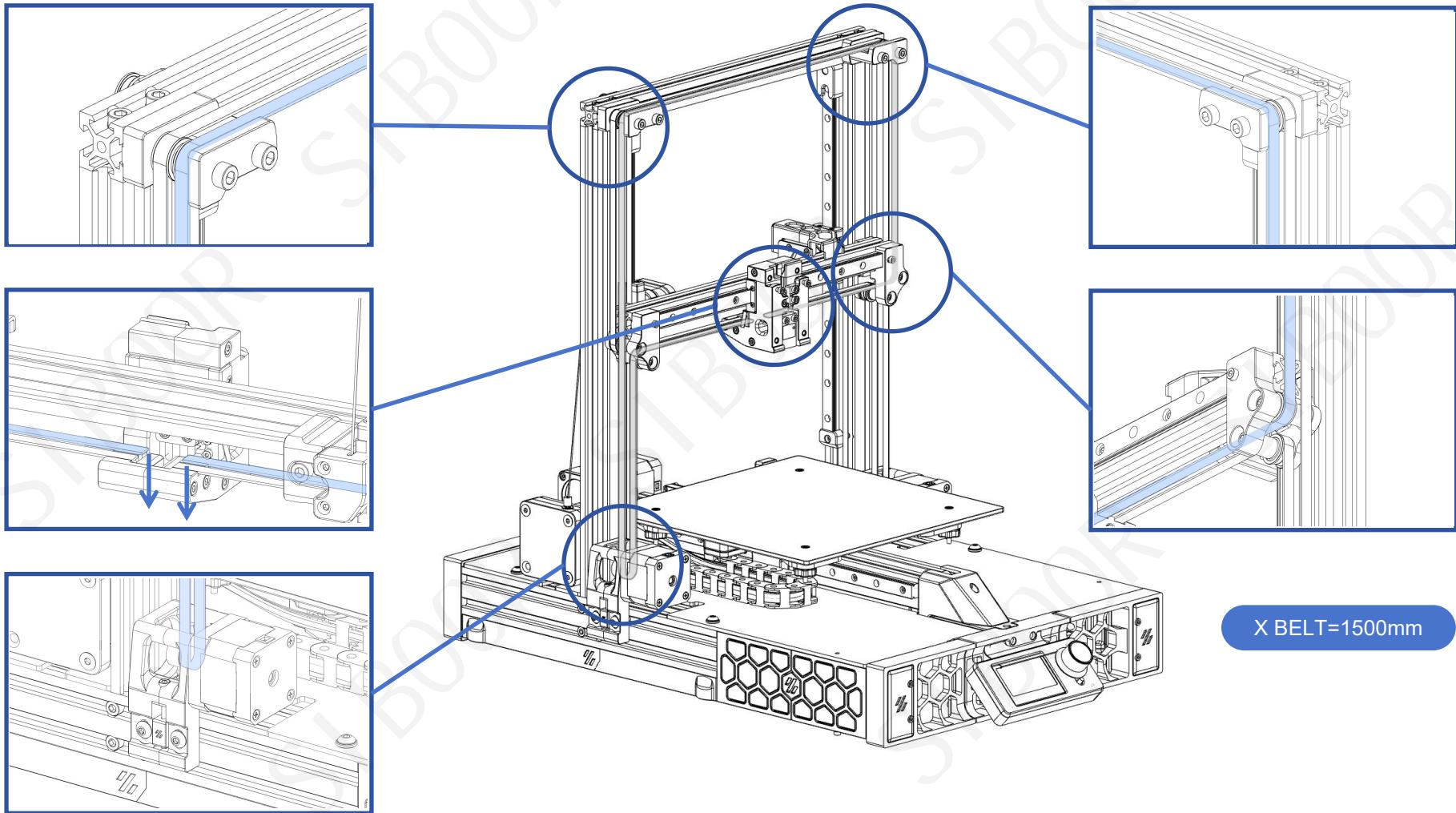
"Z" BELT

SIBOOR.COM



"X" BELT

SIBOOR.COM



STEALTHBURNER

SIBOOR.COM



65%
↗

UNIVERSAL TOOLHEAD

This printer uses the StealthBurner toolhead, which is compatible with several of the printers in the Voron lineup. To keep things organized, StealthBurner's files are maintained separately. Follow the StealthBurner assembly manual to build your toolhead, and return here to proceed



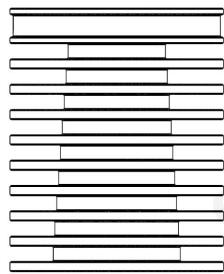
<https://voron.link/6hbi9n3>



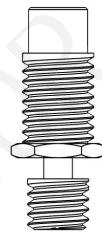
Note: The MR85 bearings on the BMG reduction wheels are well positioned and should not be removed or damage will result.

V6 HOTEND

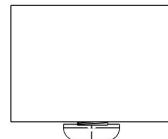
SIBOOR.COM



V6 Radiator



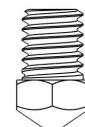
V6 Throat



V6 Heating block

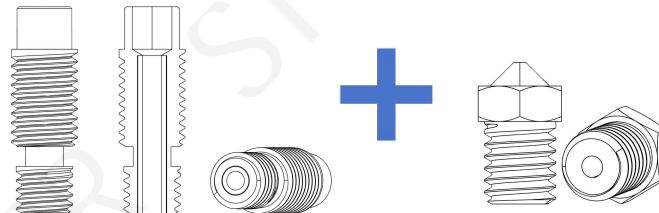


Silicone sleeve



V6 Nozzles

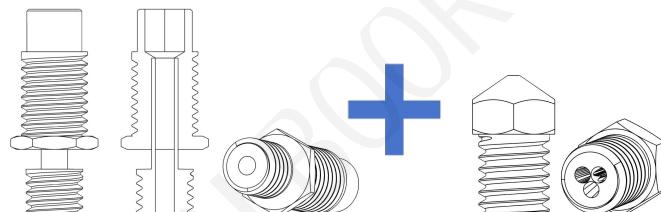
For PLA/TPU/PETG



Throat Heat
with Teflon

V6 nozzle
0.4mm

For ABS/ASA/PA

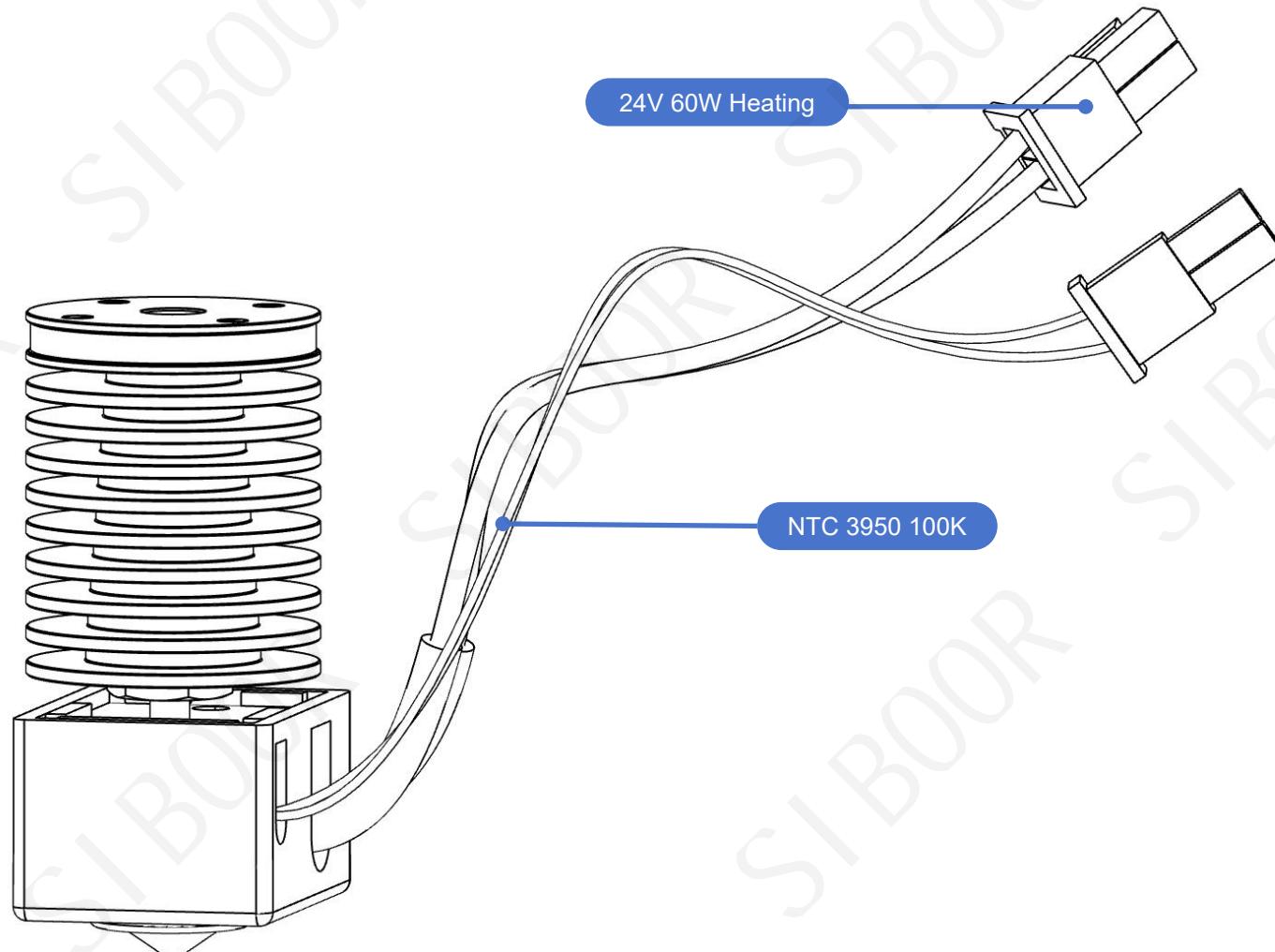


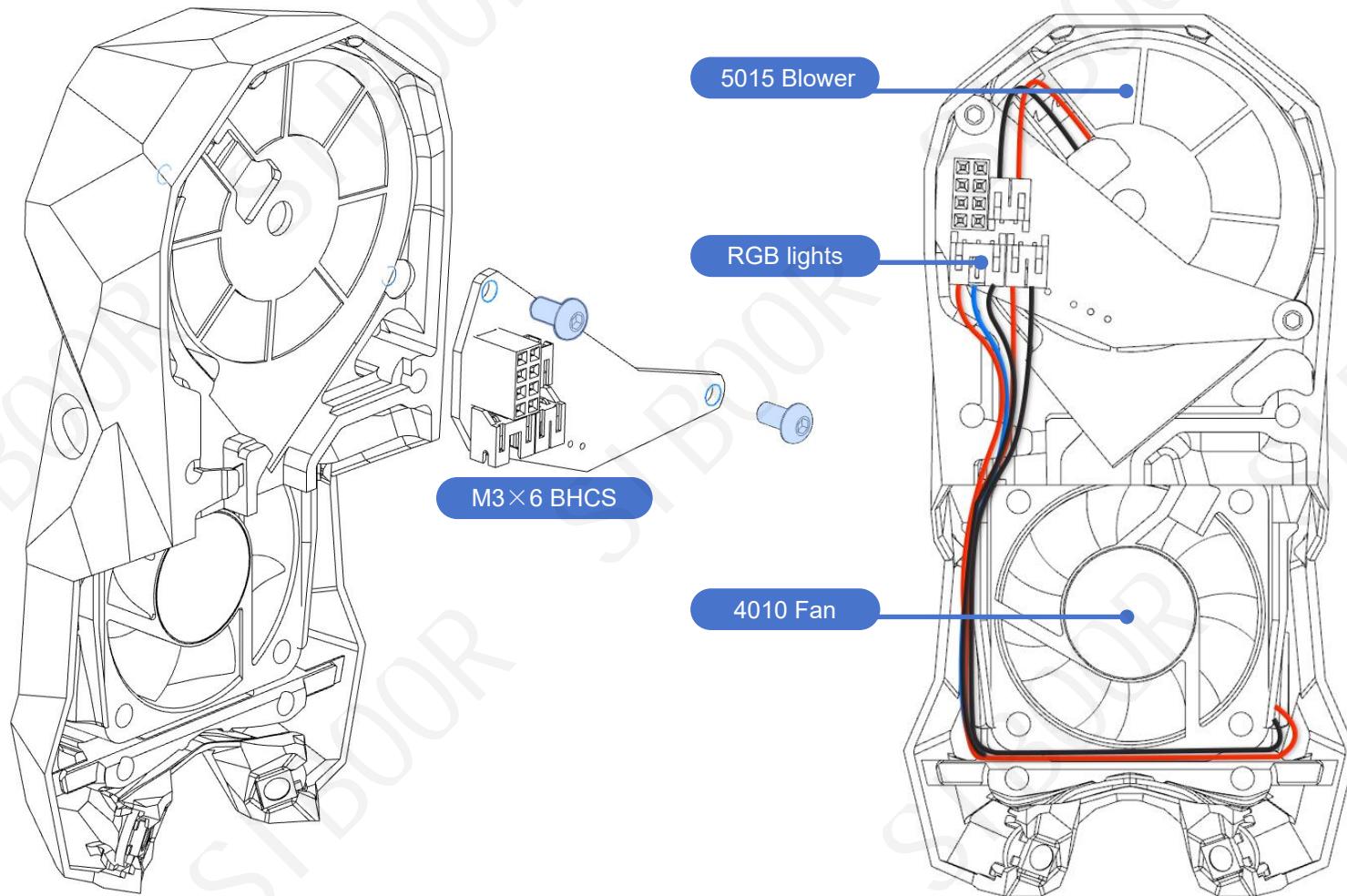
Throat Heat Break
Bi-Metal

CHT V6 Nozzle
0.4mm

V6 HOTEND

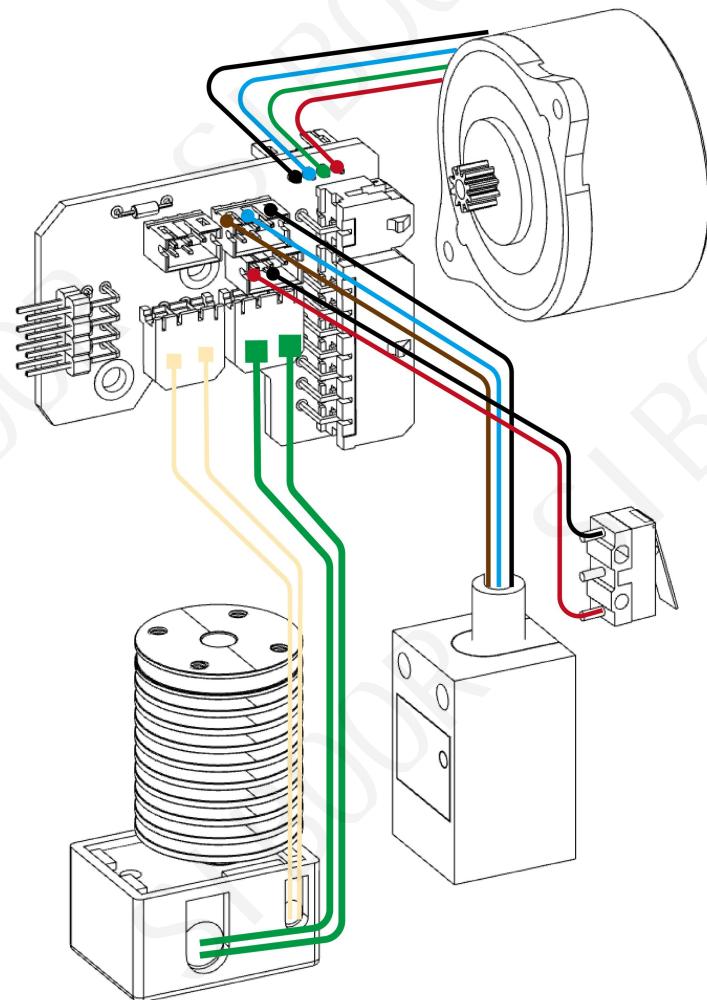
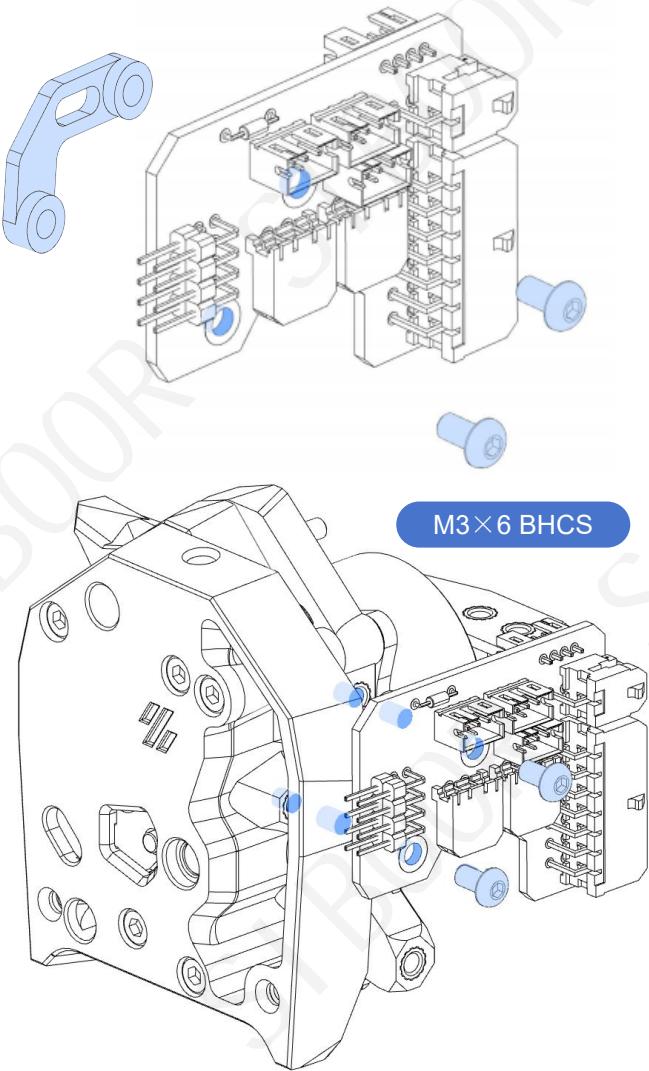
SIBOOR.COM

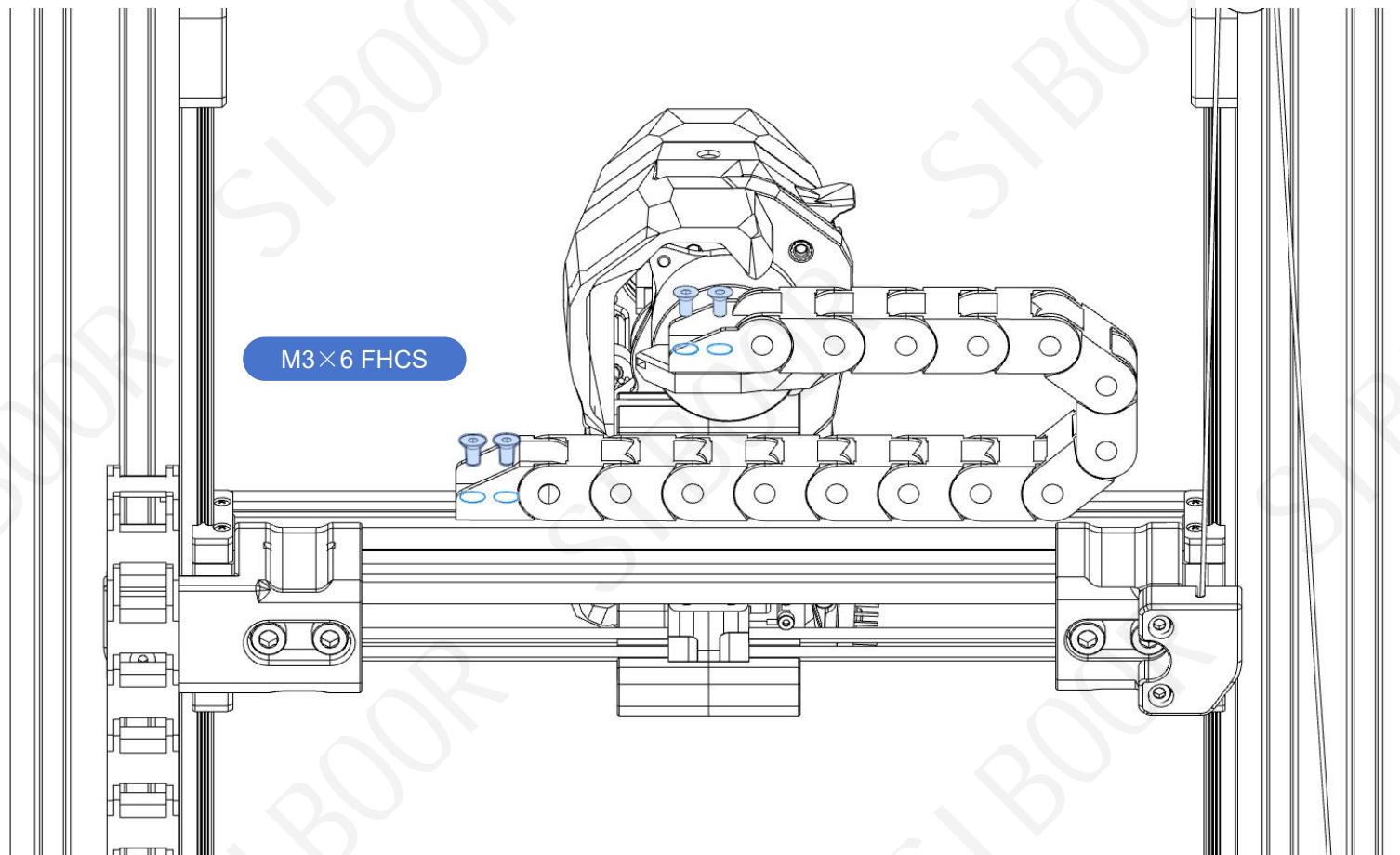




HOTEND TOOLING BOARD

SIBOOR.COM





Note!!!

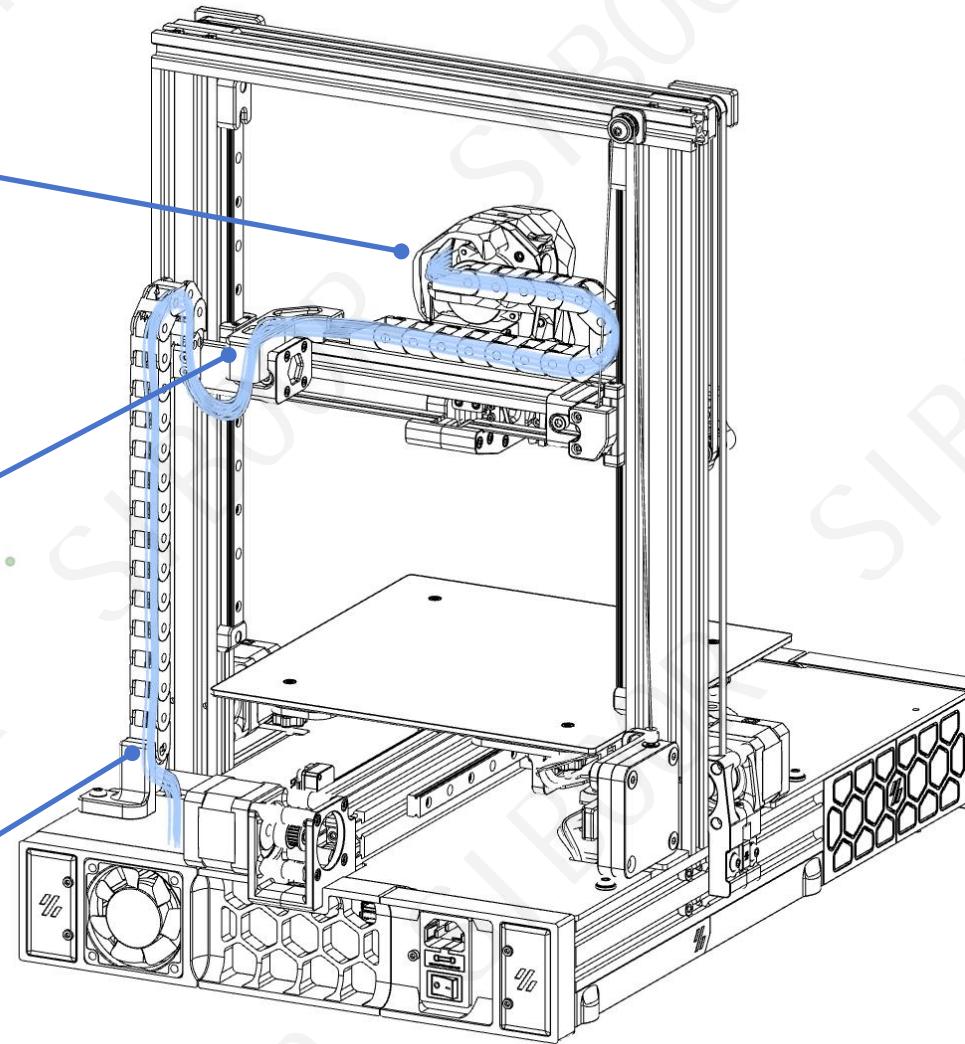
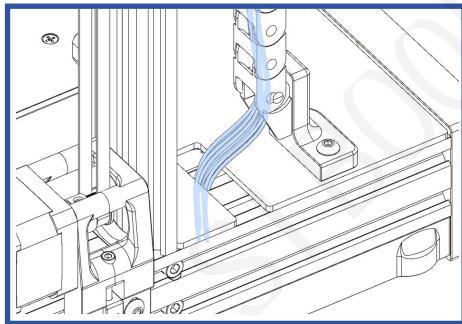
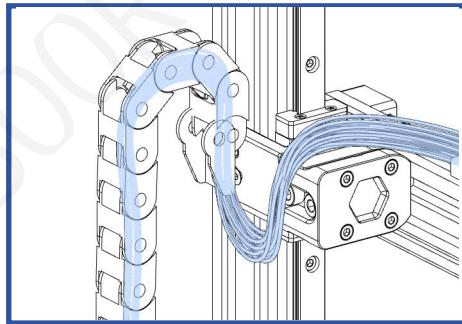
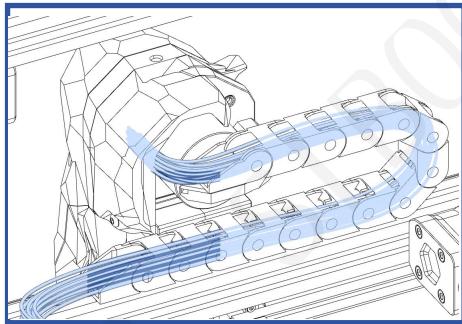
Recommended number of sections of drag chain: 15 sections (exclusive of mounting ends)

DRAG CHAIN & WIRE

SIBOOR.COM

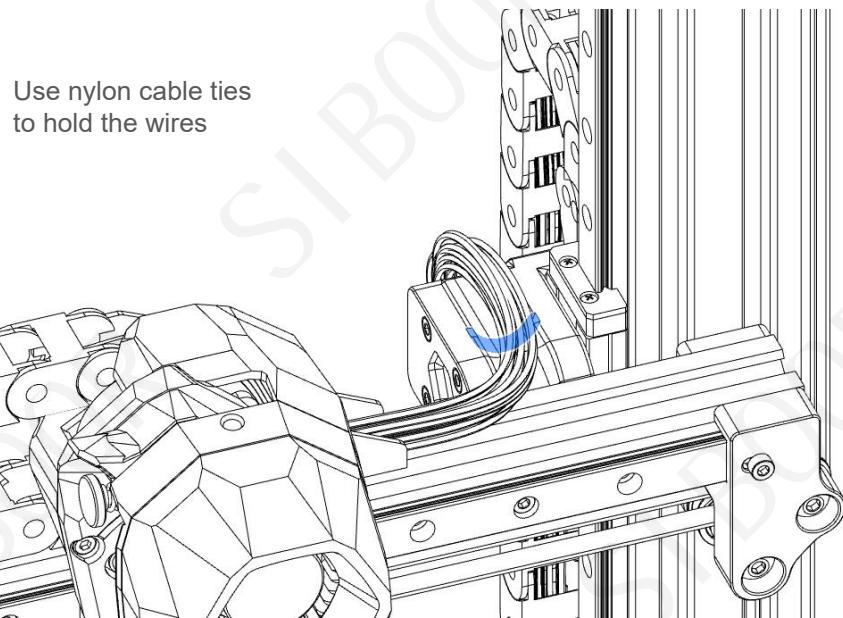
Note!!!

Recommended number of sections of drag chain: 2 1 sections (exclusive of mounting ends)

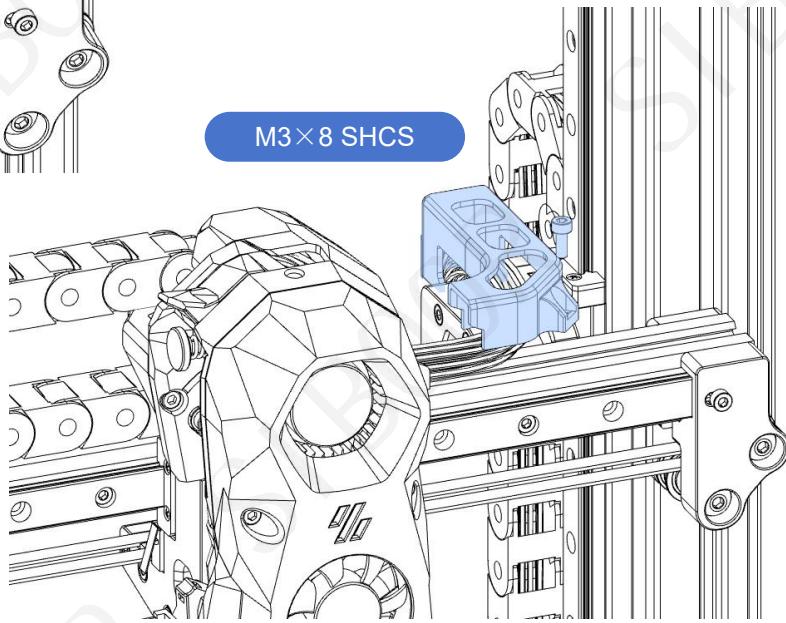


DRAG CHAIN & WIRE

SIBOOR.COM

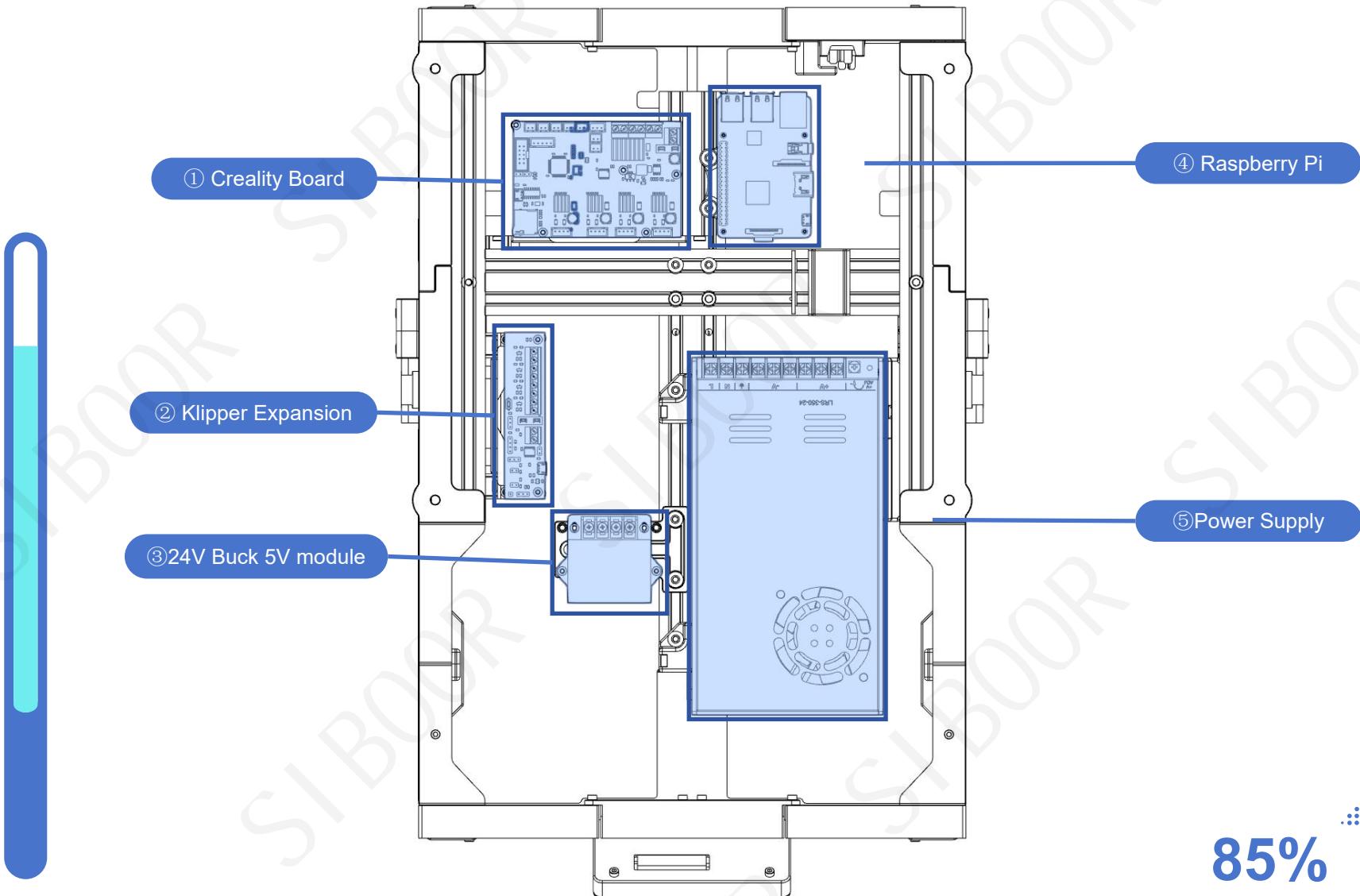


M3×8 SHCS



ELECTRICAL LAYOUT

SIBOOR.COM

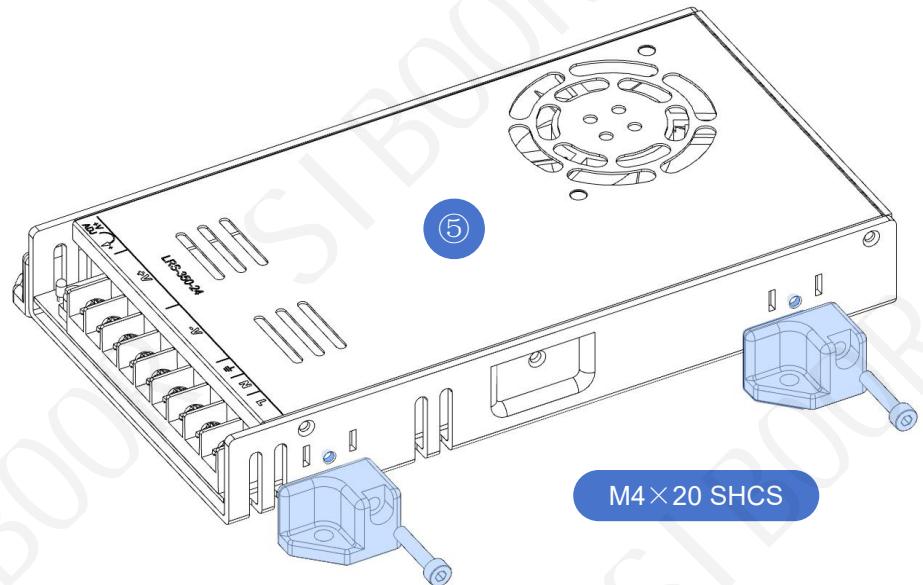


85%

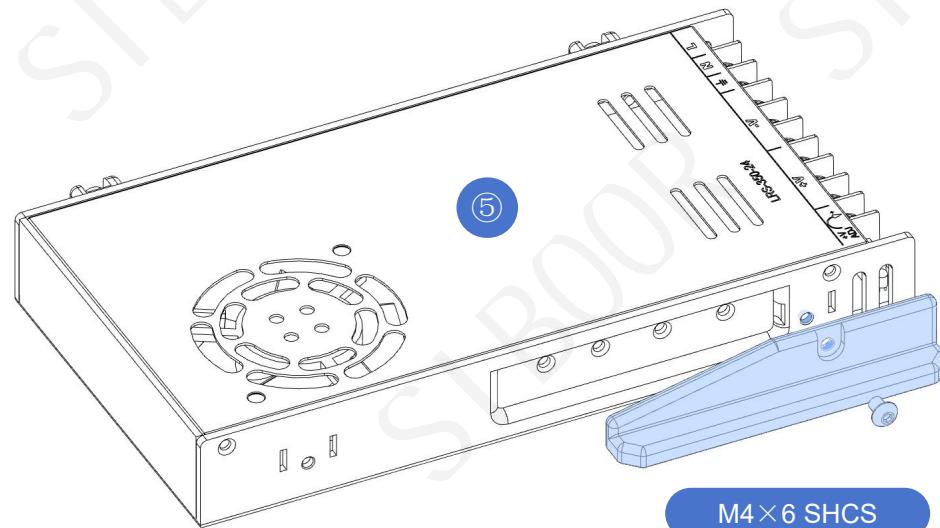


MAIN PSU

SIBOOR.COM



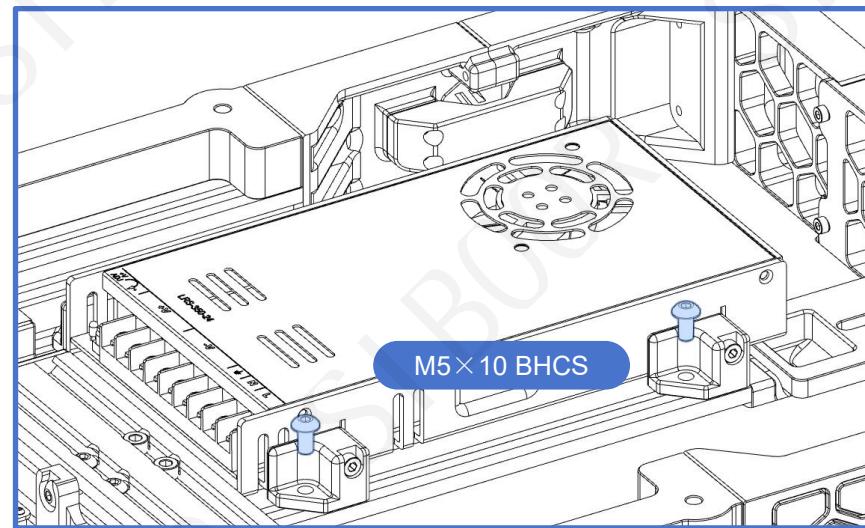
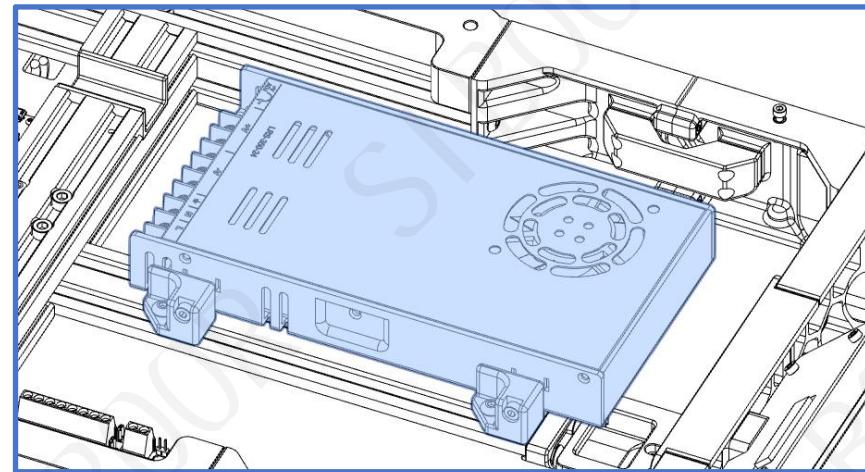
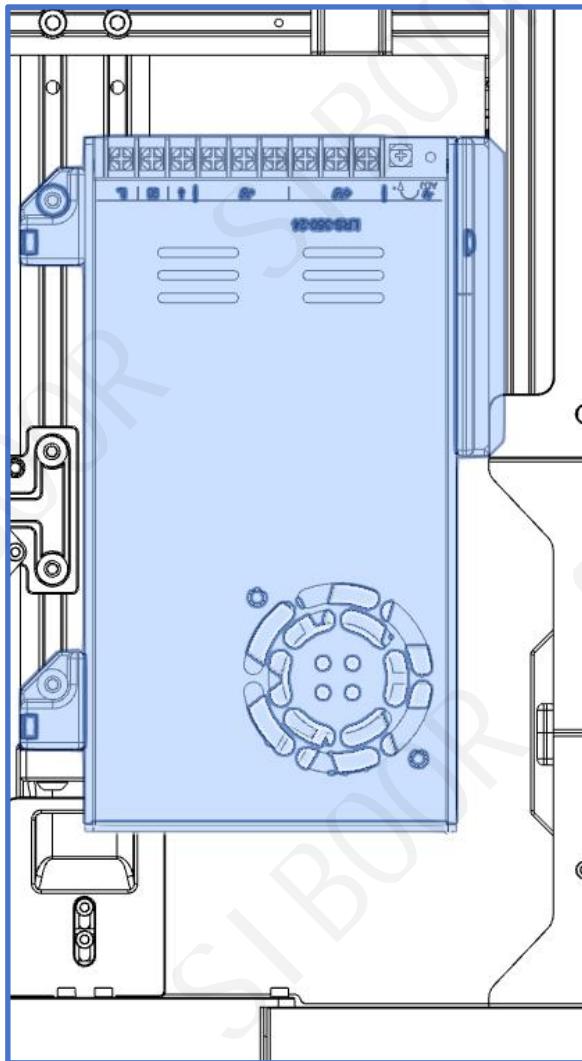
M4×20 SHCS



M4×6 SHCS

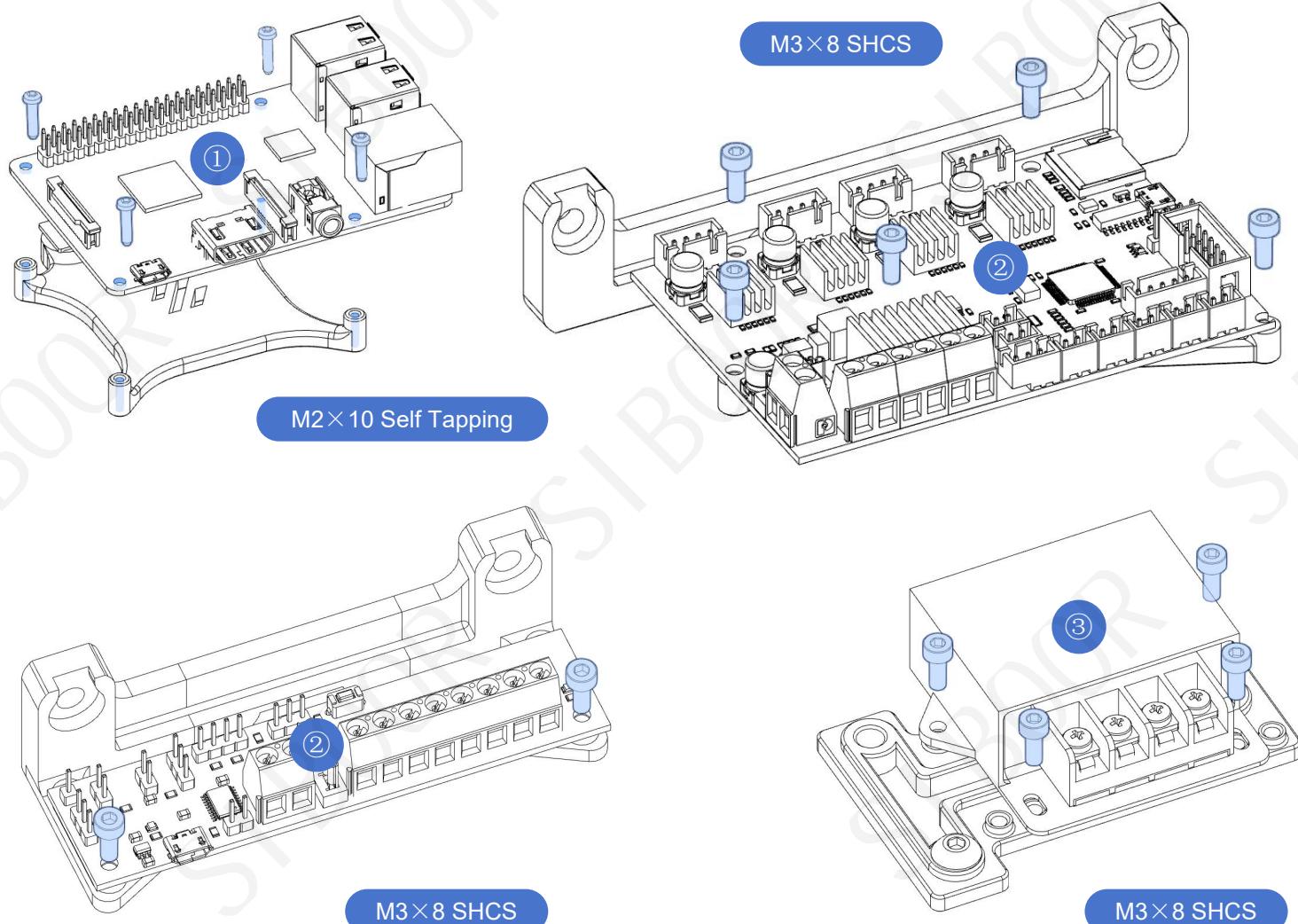
MAIN PSU

SIBOOR.COM



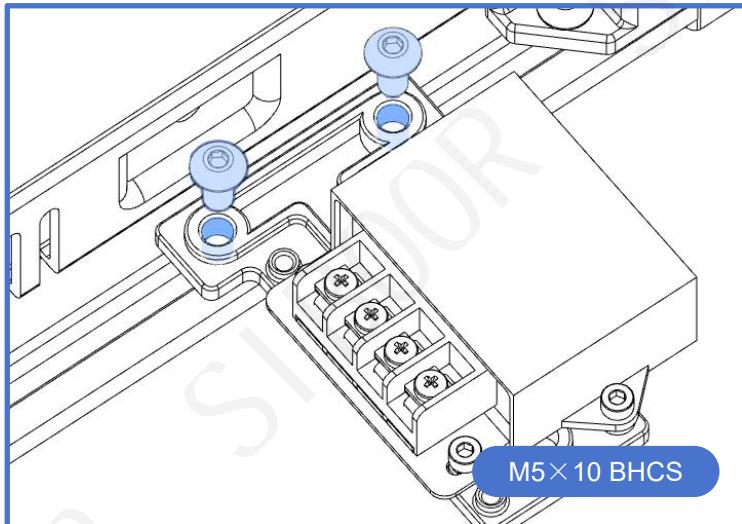
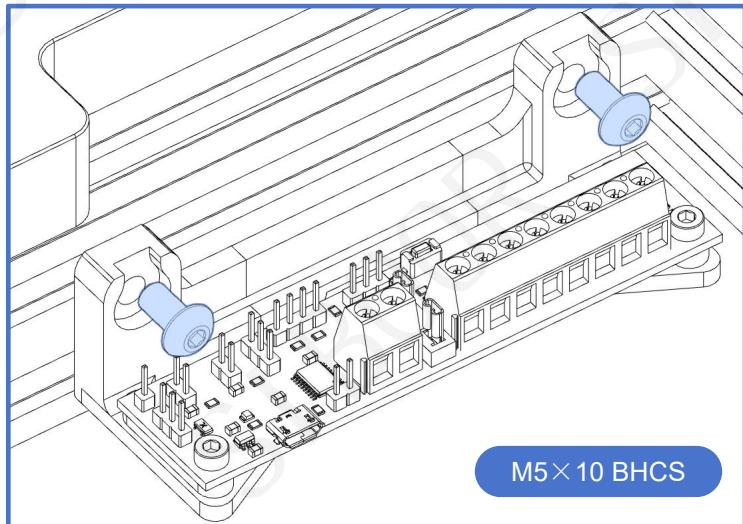
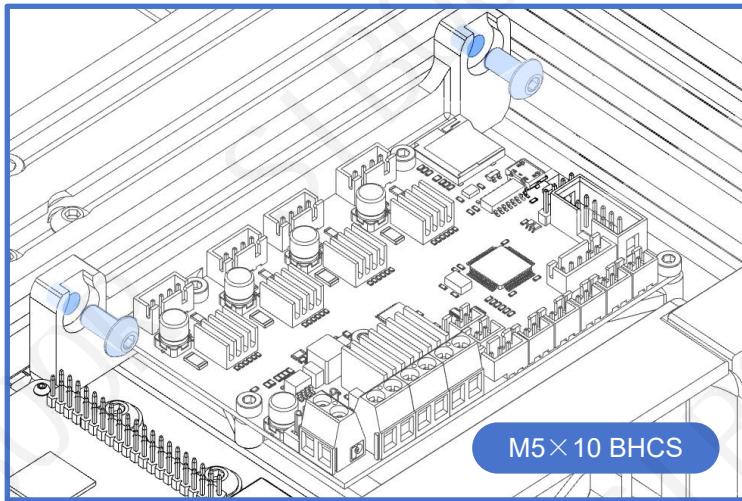
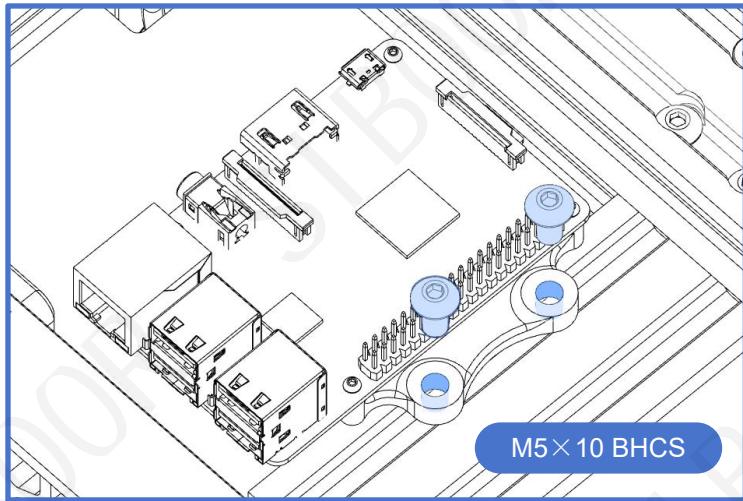
PI/KLIPPER EXPANSION/24V BUCK 5V MODULE/CONTROL BOARD

SIBOOR.COM



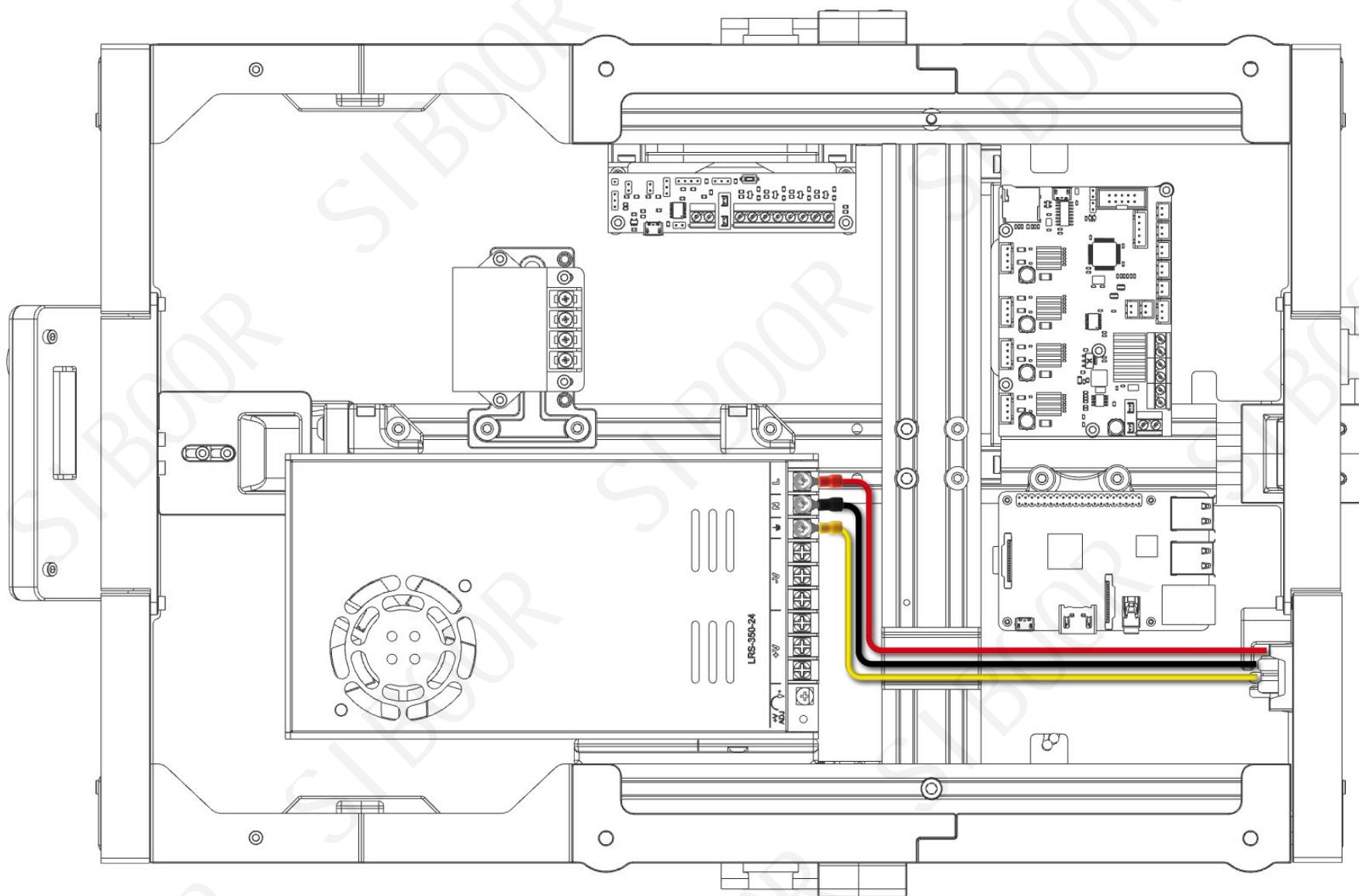
PI/KLIPPER EXPANSION/24V BUCK 5V MODULE/CONTROL BOARD

SIBOOR.COM



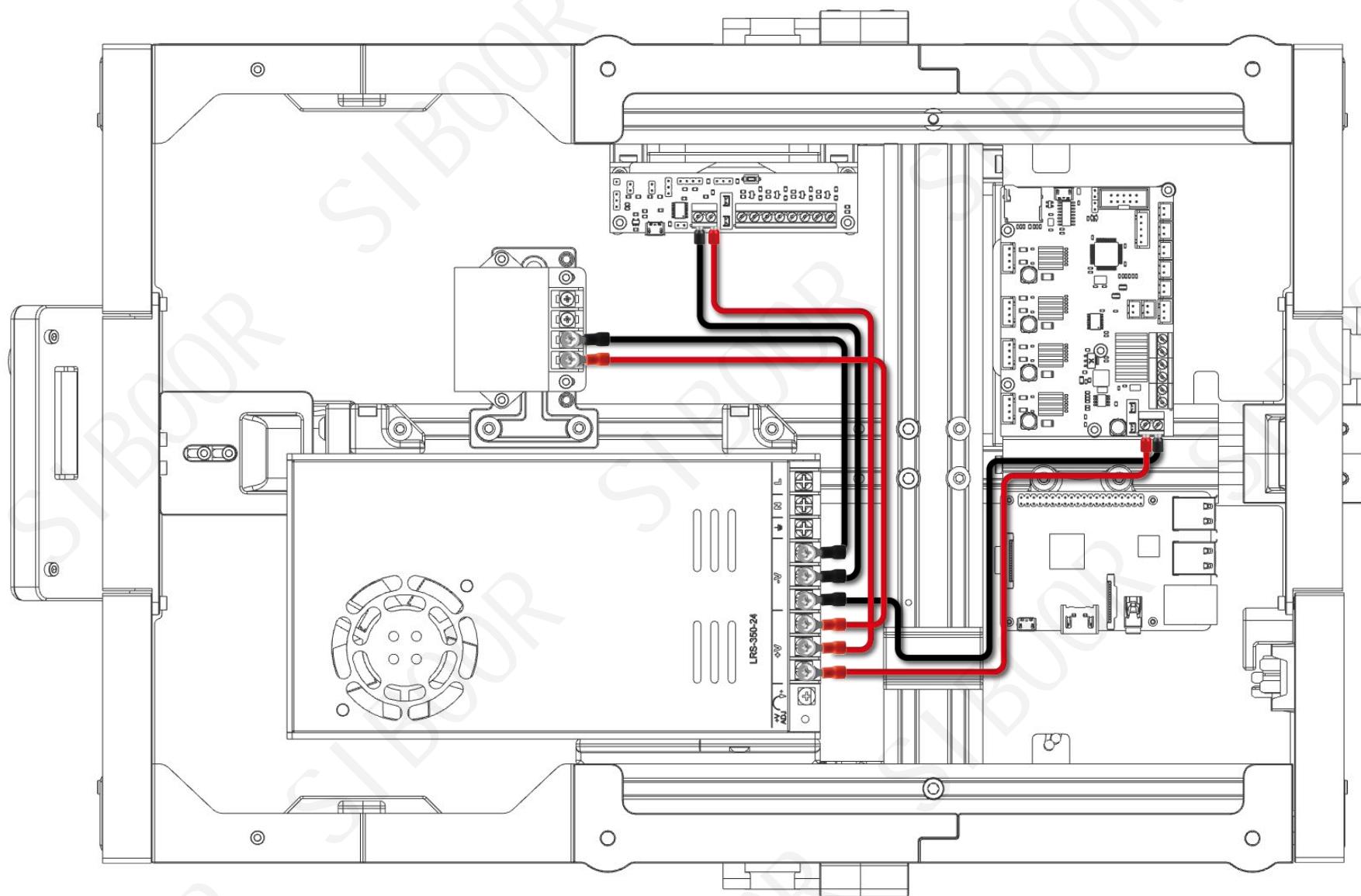
110/220V WIRING

SIBOOR.COM



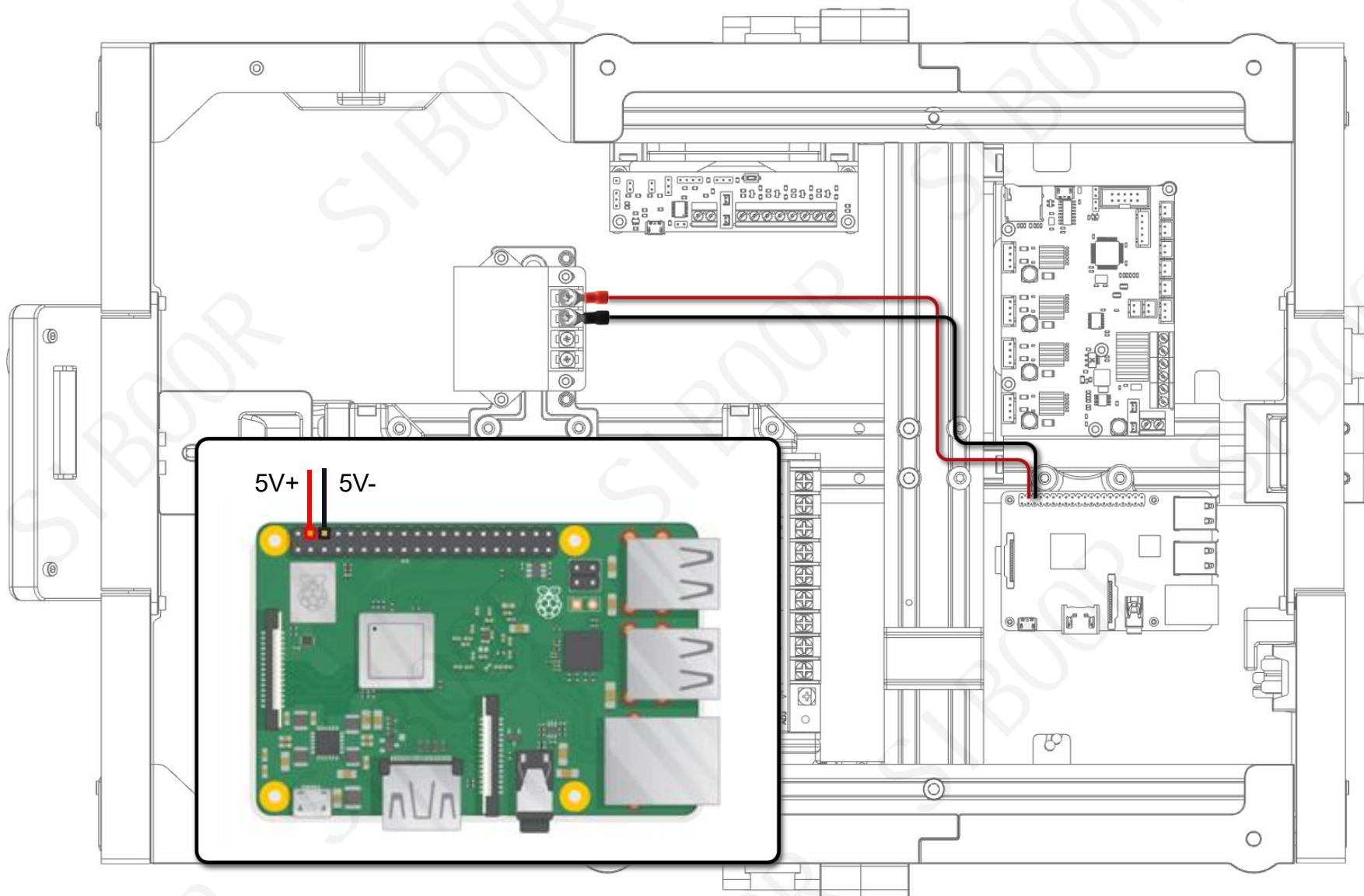
24V WIRING

SIBOOR.COM



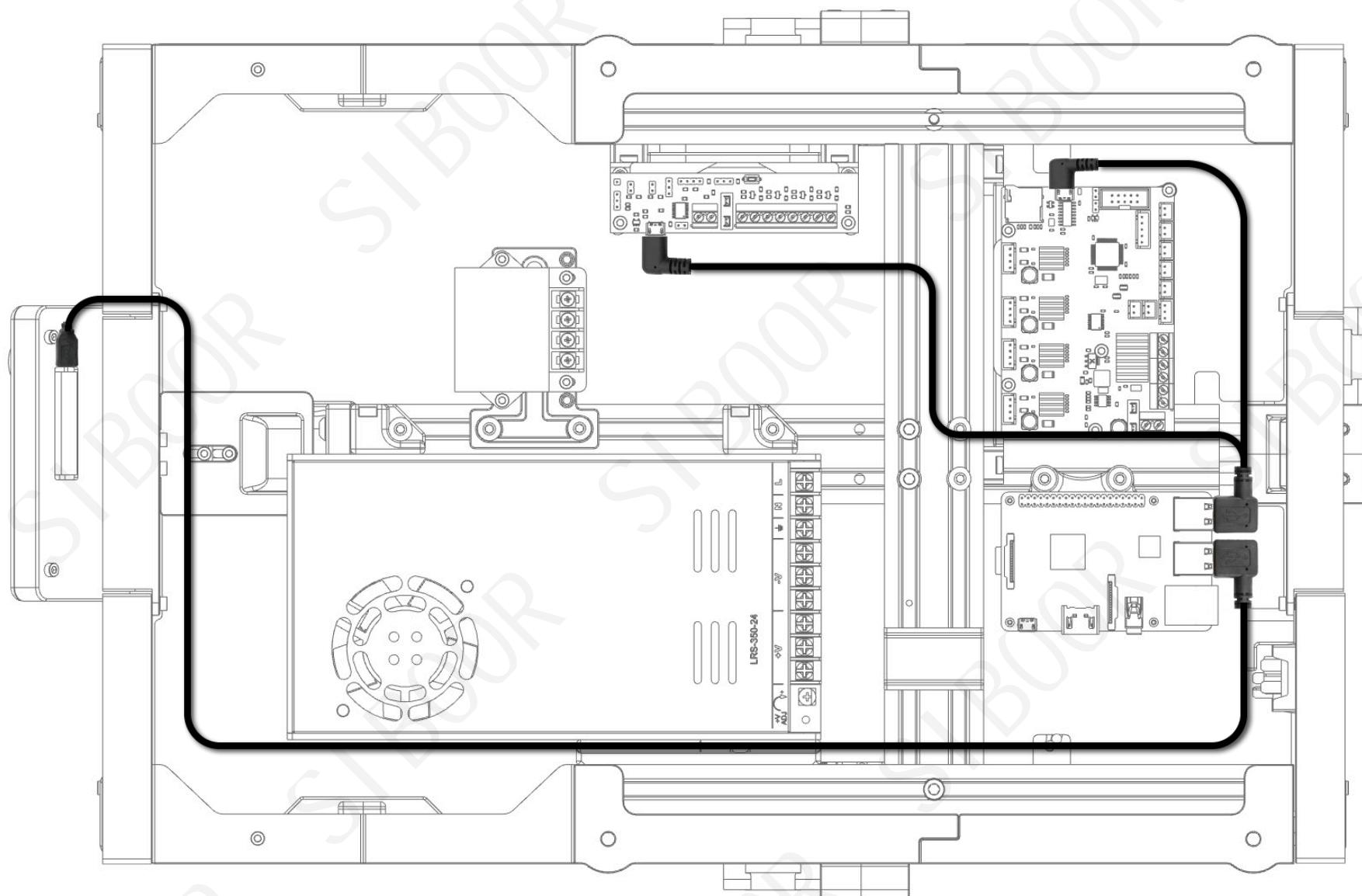
5V WIRING

SIBOOR.COM



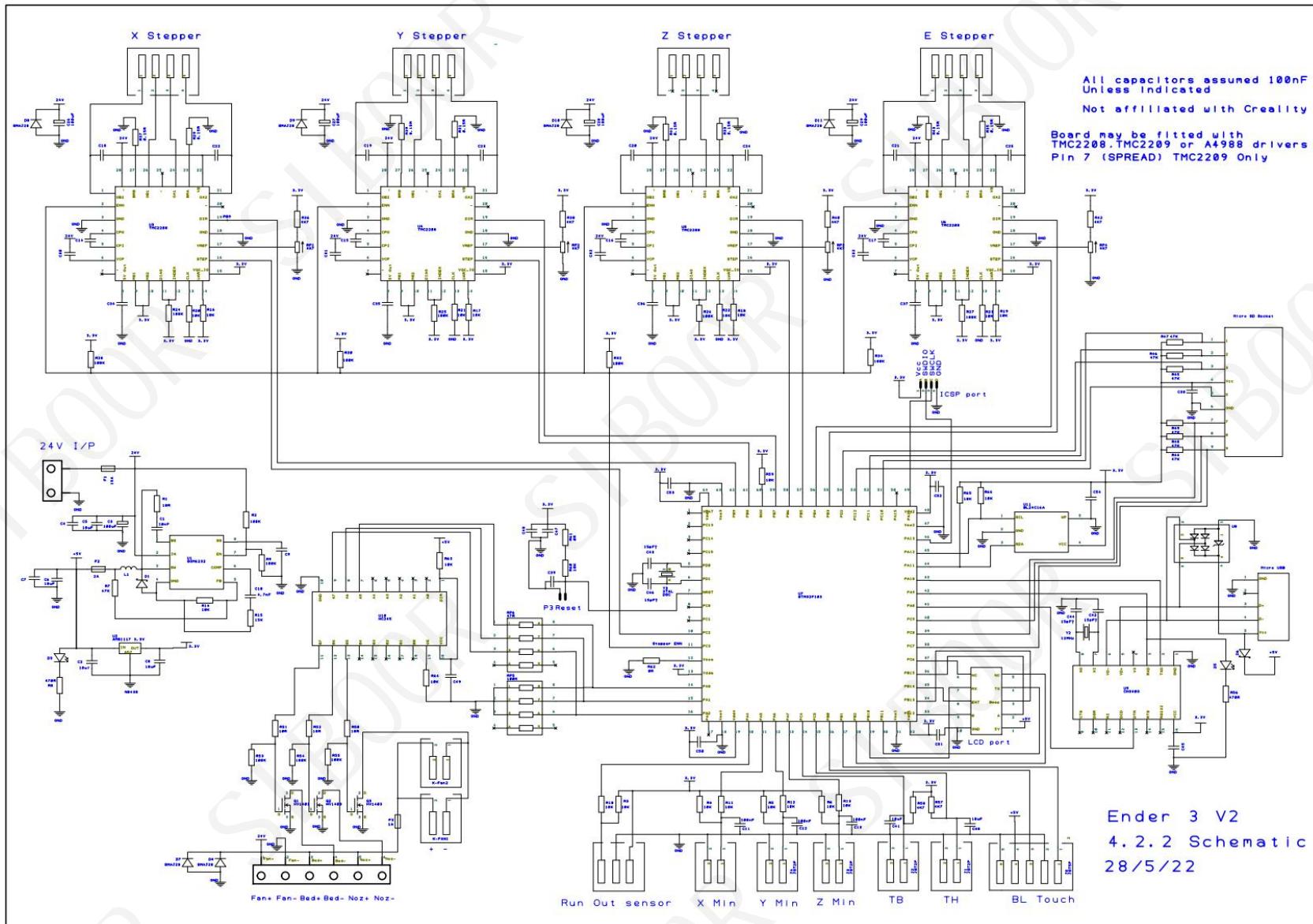
DATA CONNECTION

SIBOOR.COM



BOARD WIRING

SIBOOR.COM

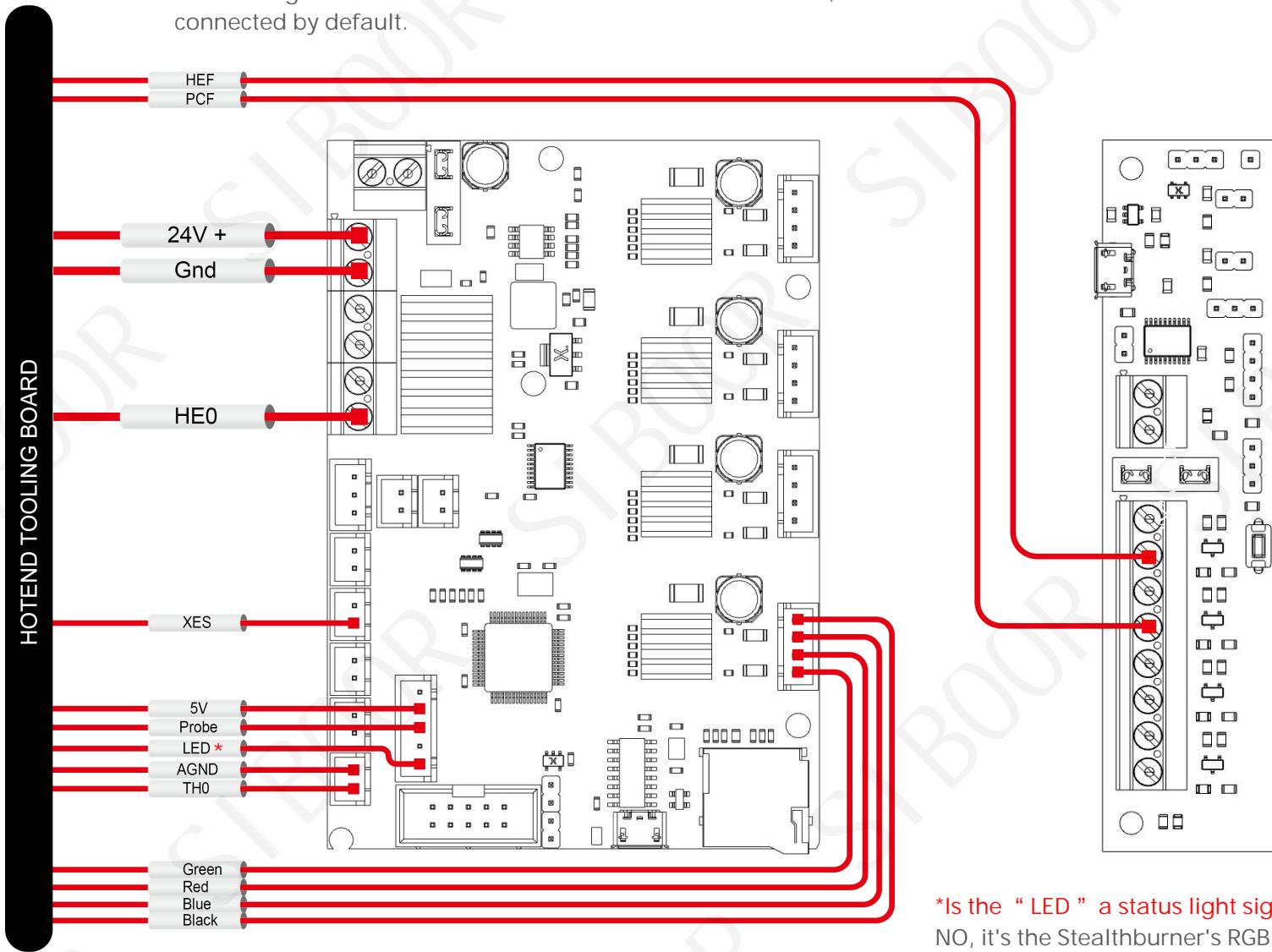


BOARD WIRING

SIBOOR.COM

Where did " FS " go?

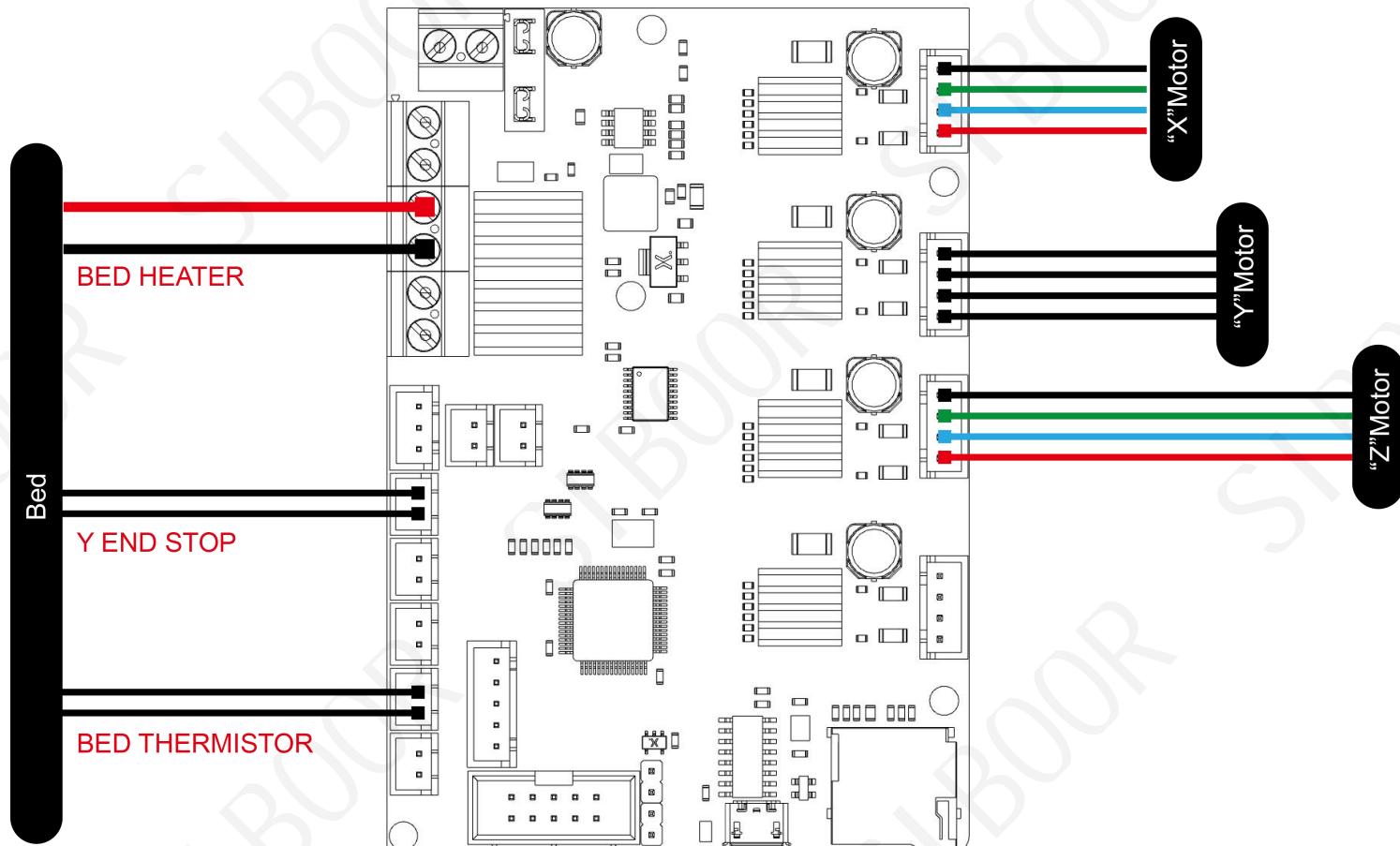
FS is the signal line reserved for the ERCF multicolour module, and does not need to be connected by default.



*Is the " LED " a status light signal for the Probe?
NO, it's the Stealthburner's RGB light signal.

CONTROLLER WIRING

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PANELS

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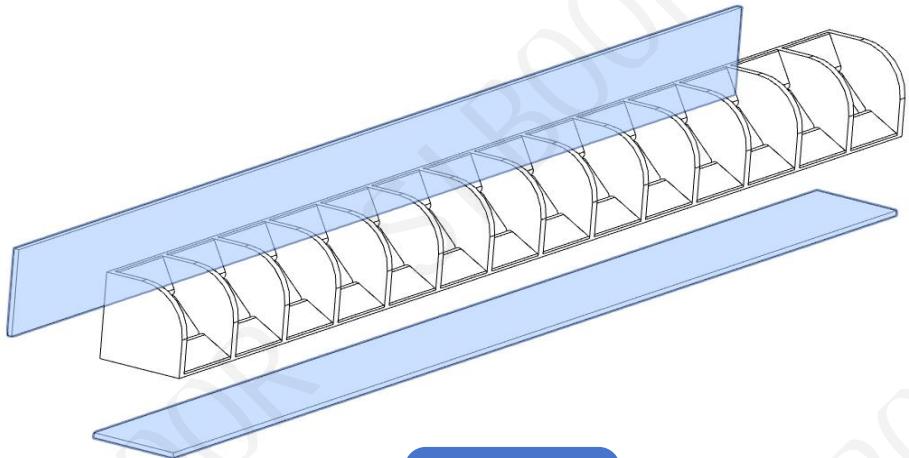


80%

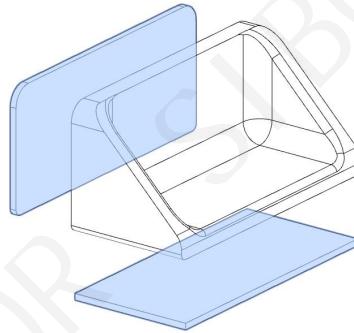


3M VHB TAPES

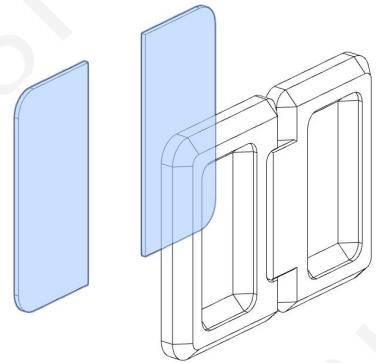
SIBOOR.COM



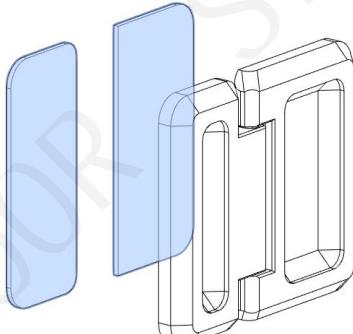
Light Bar×2



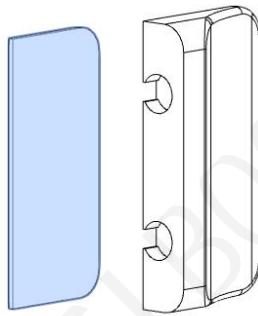
Rear Panel Bracket×5



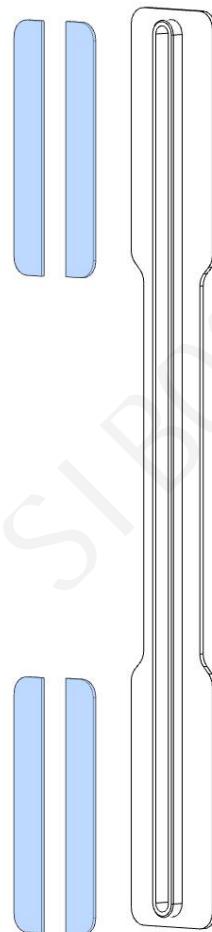
Side Strap×4



door_hinge×4



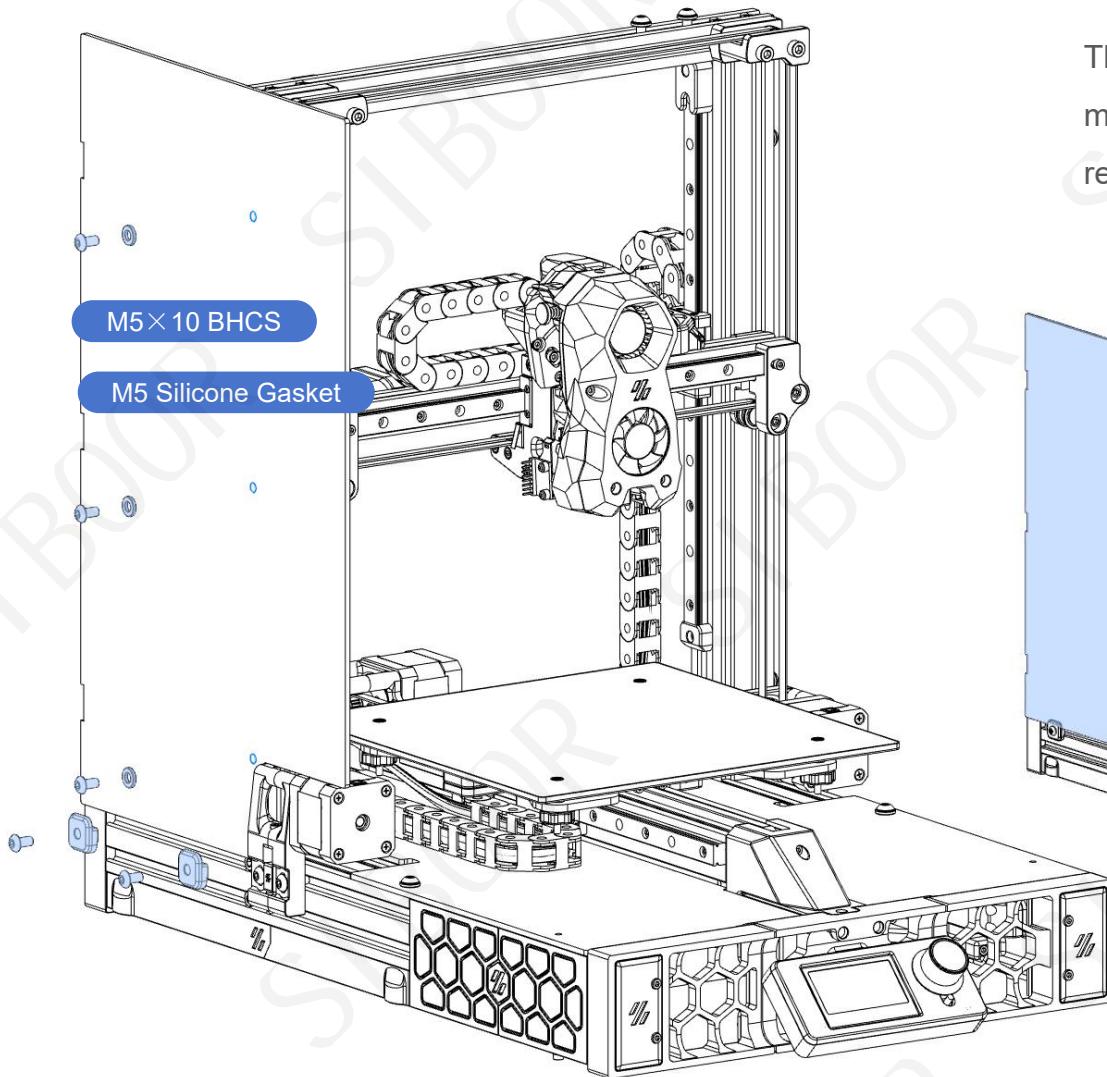
Top Door Latch×1



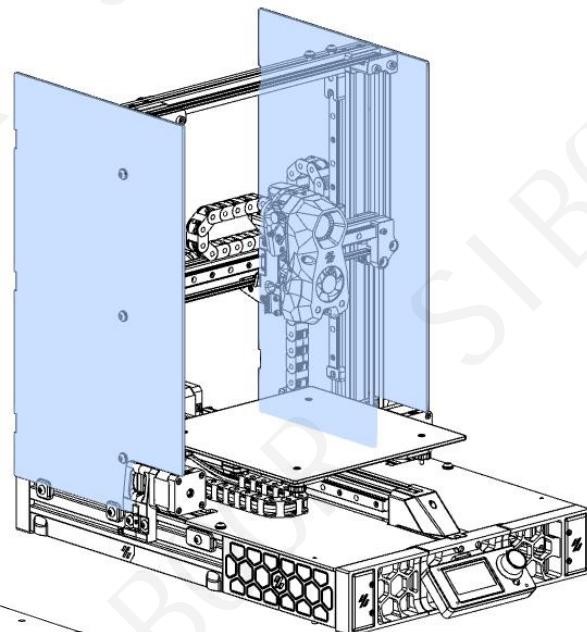
Feed Slot×1

SIDE REAR PANEL

SIBOOR.COM

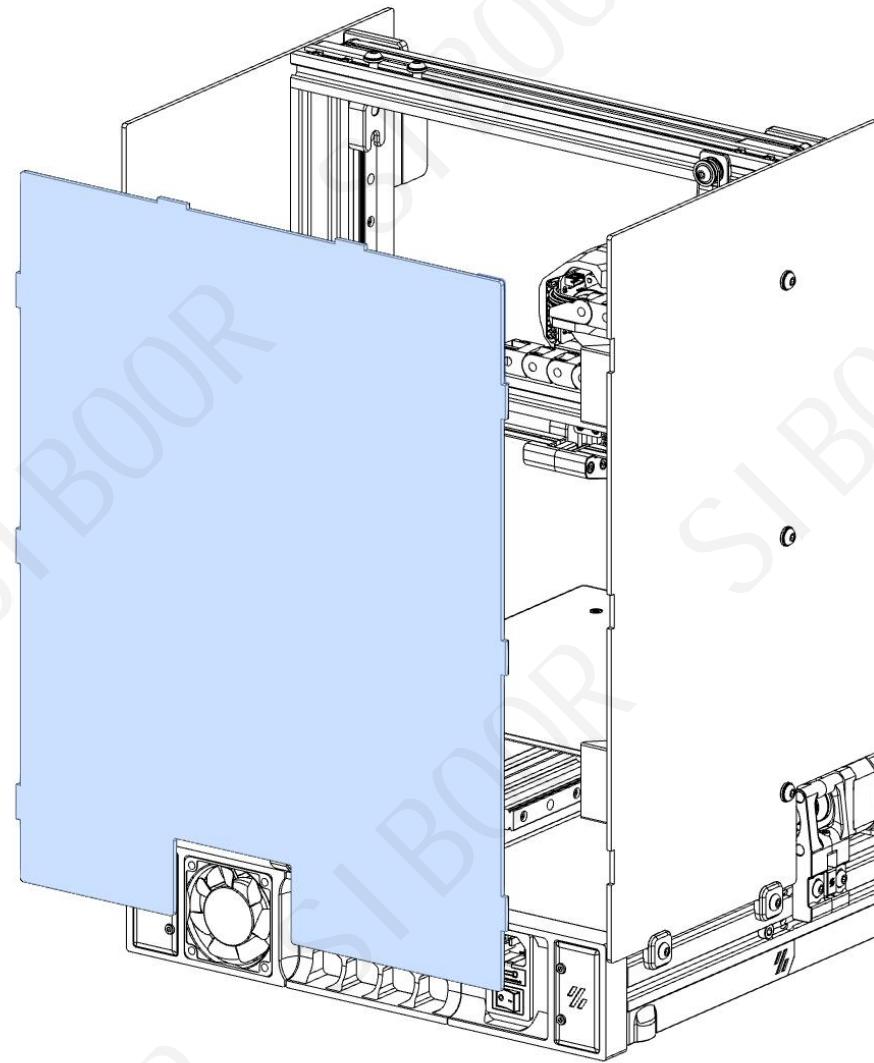
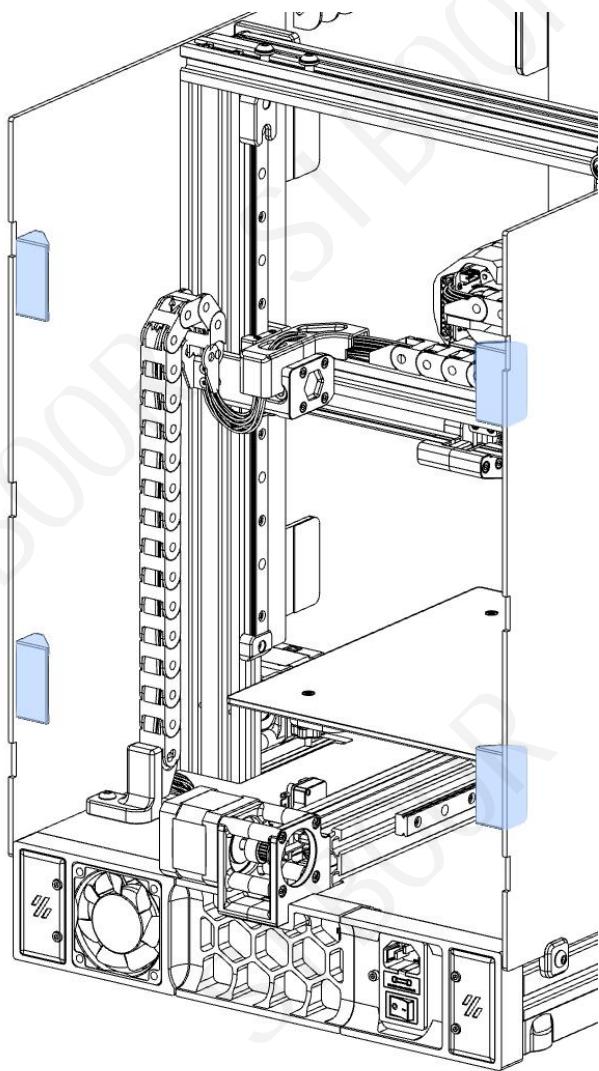


The right side rear panel installation method is the same and will not be repeated.



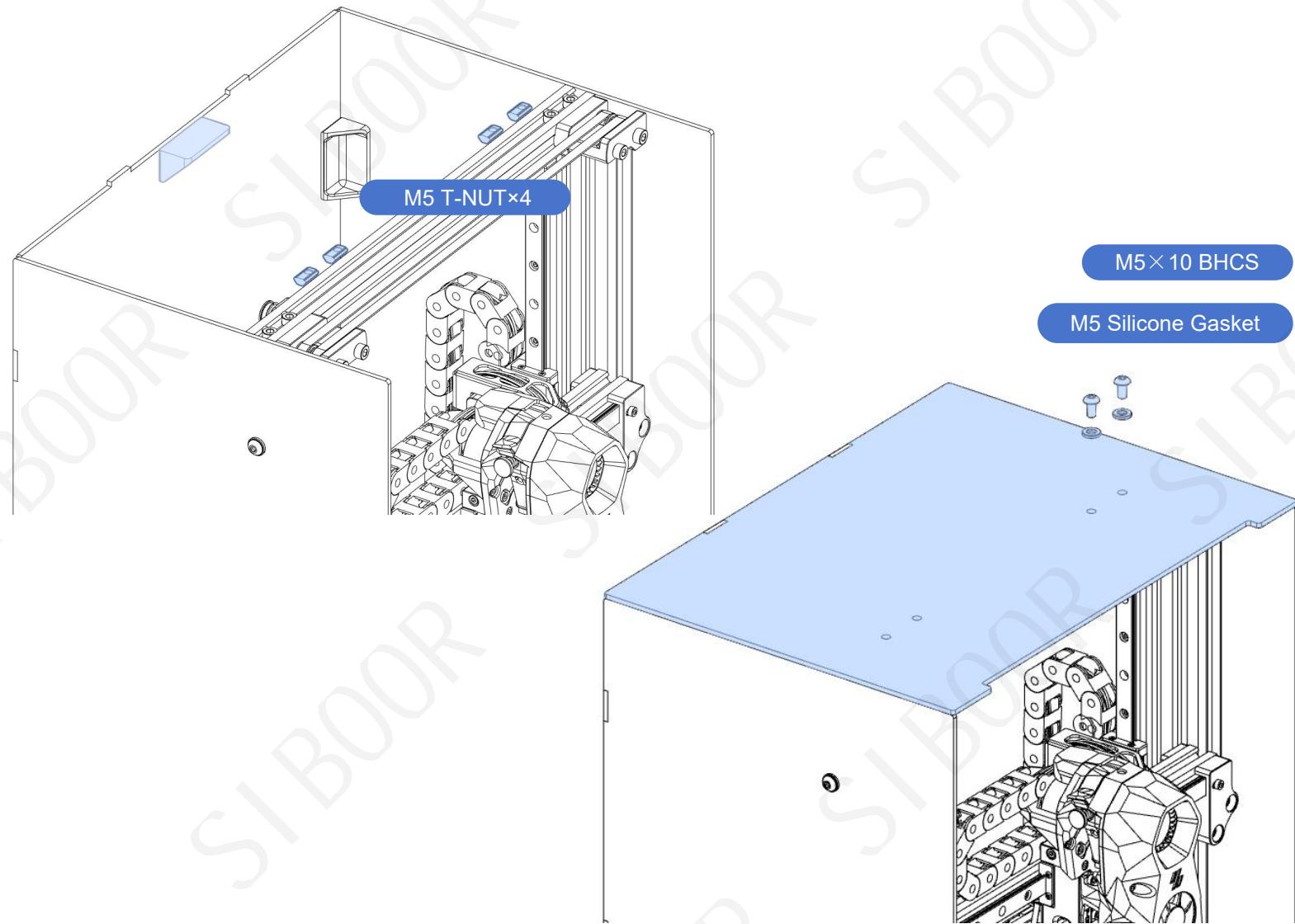
REAR PANEL

SIBOOR.COM



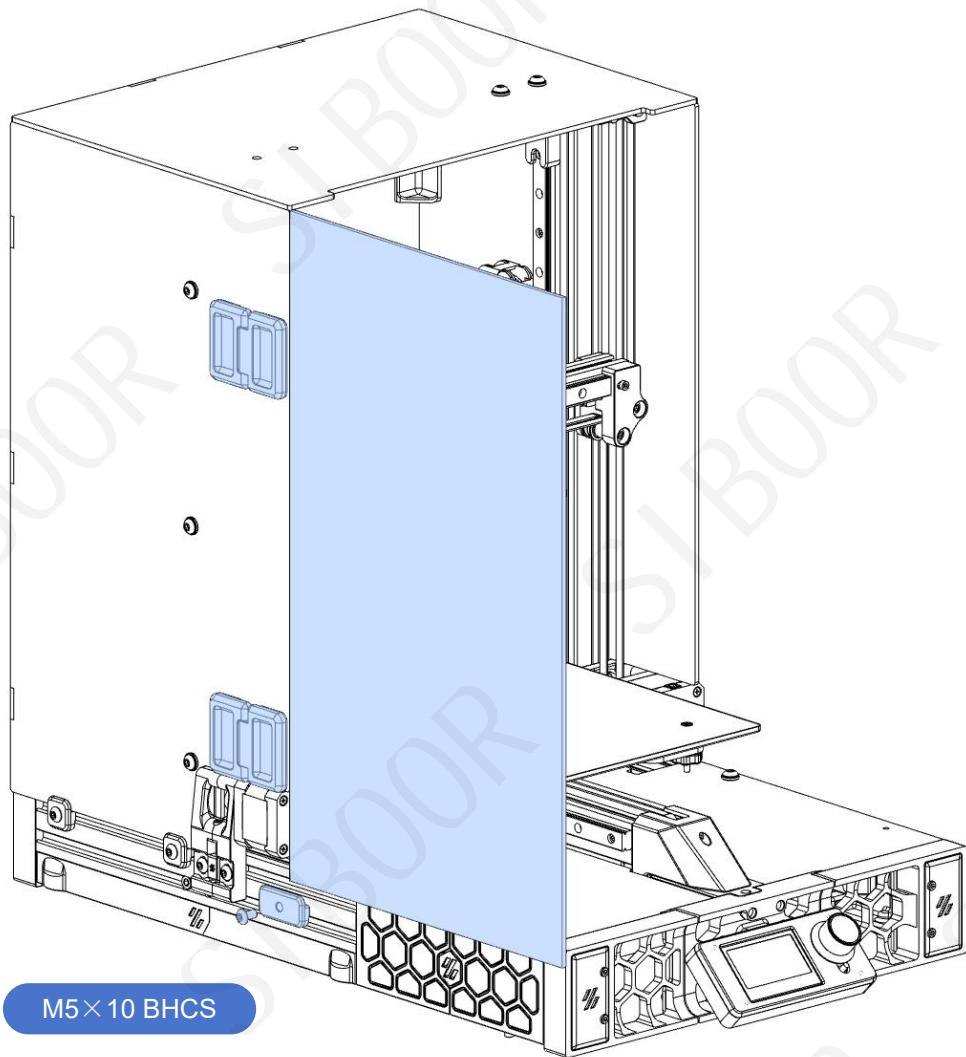
TOP REAR PANEL

SIBOOR.COM

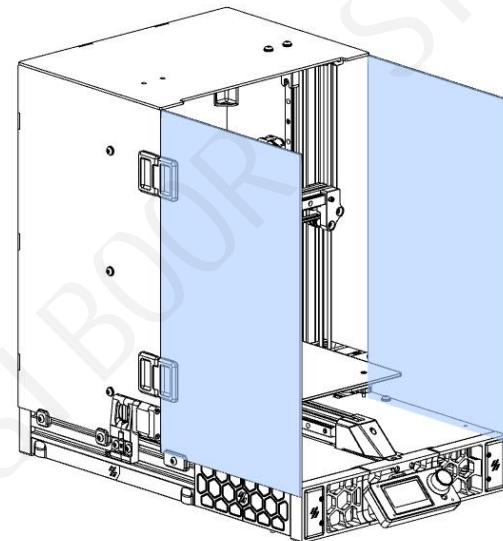


TOP REAR PANEL

SIBOOR.COM

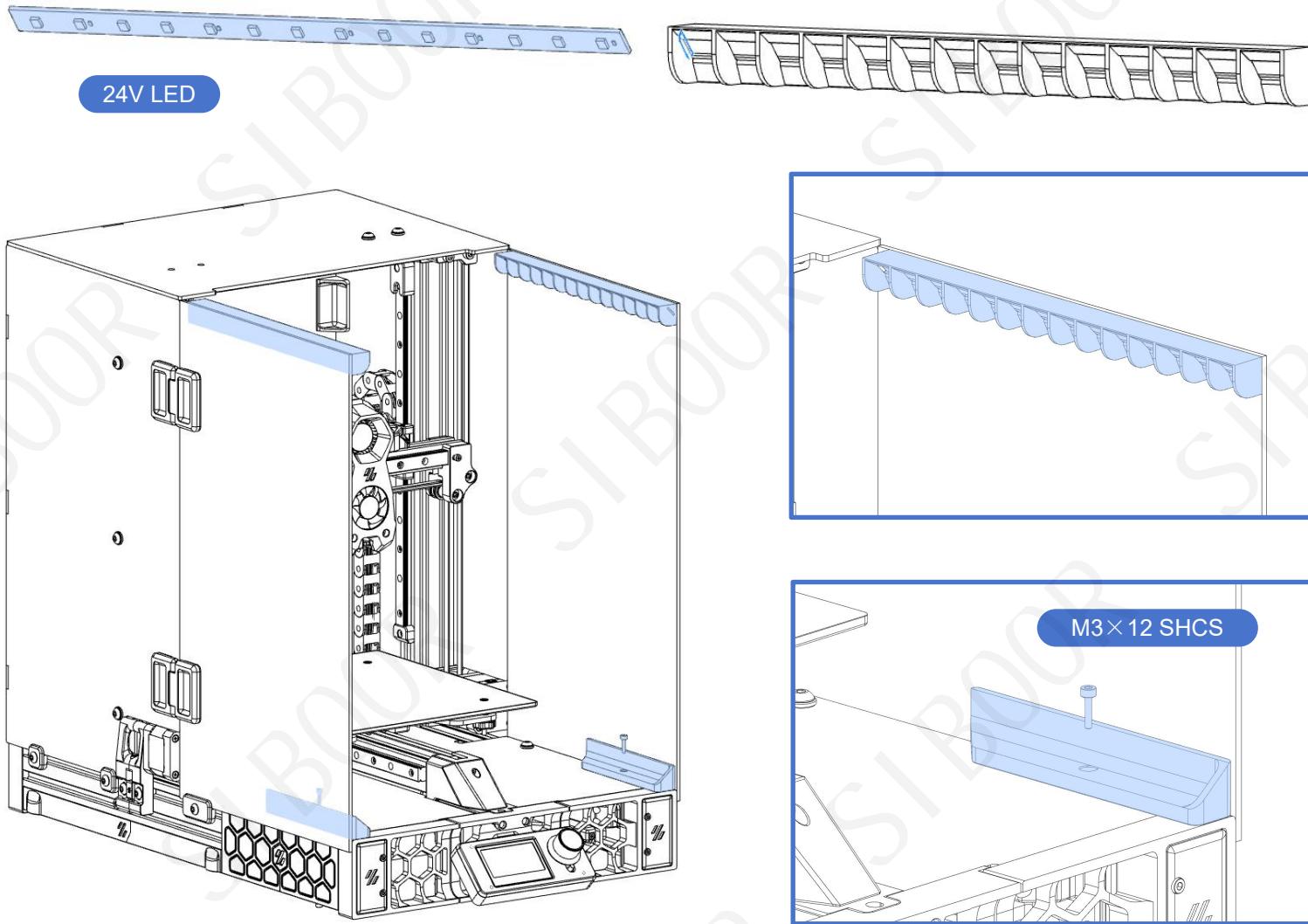


The right top rear panel installation method is the same and will not be repeated.



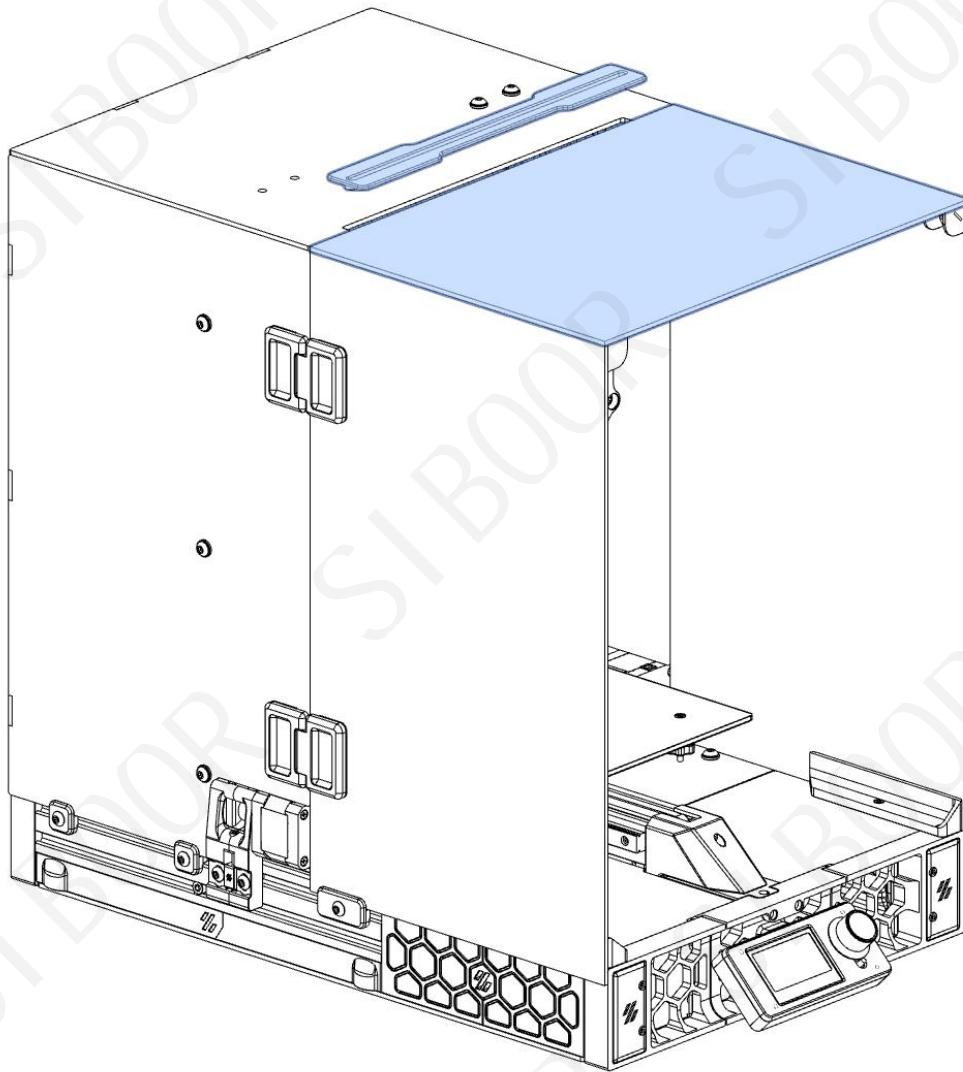
24V LED

SIBOOR.COM



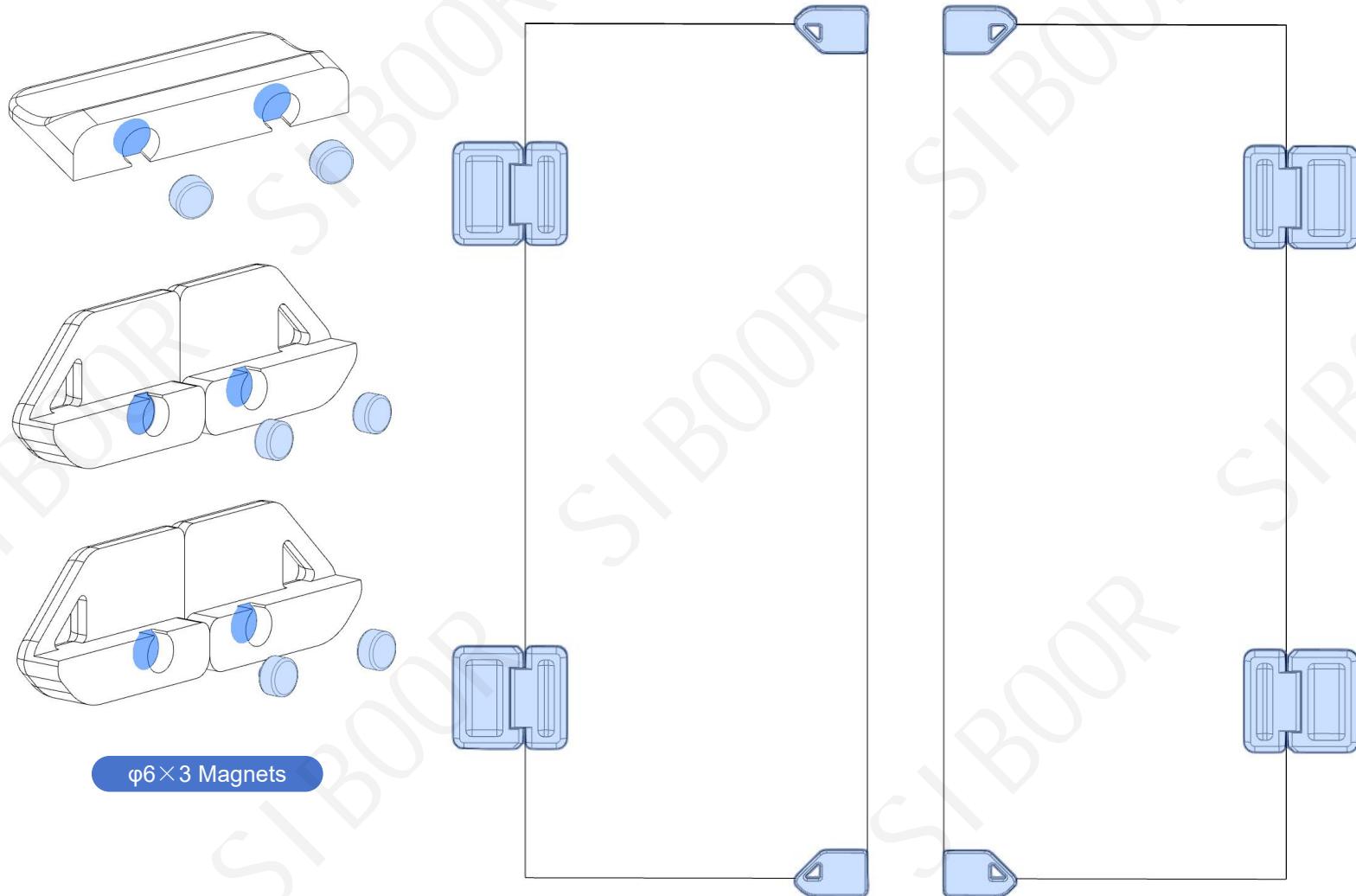
TOP CLEAR PANEL

SIBOOR.COM



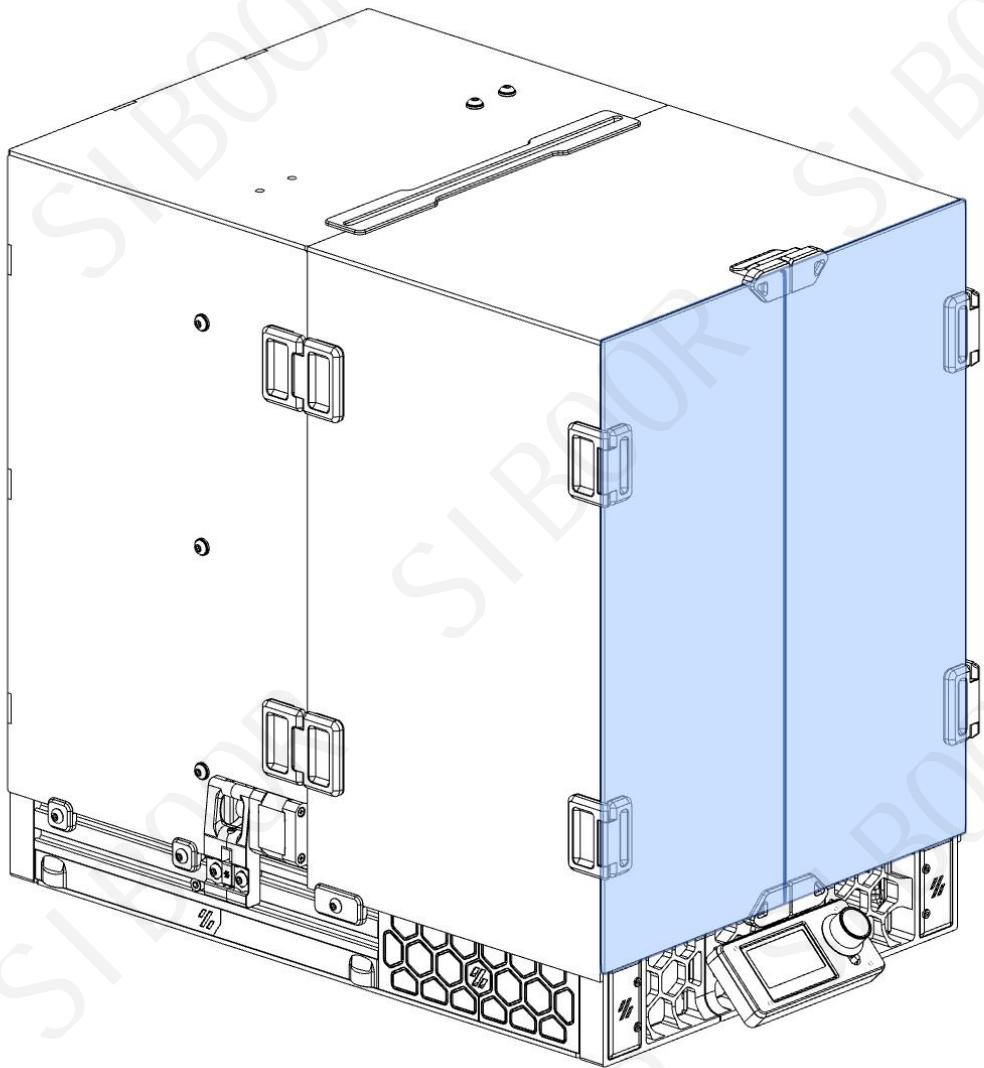
TOP REAR PANEL

SIBOOR.COM



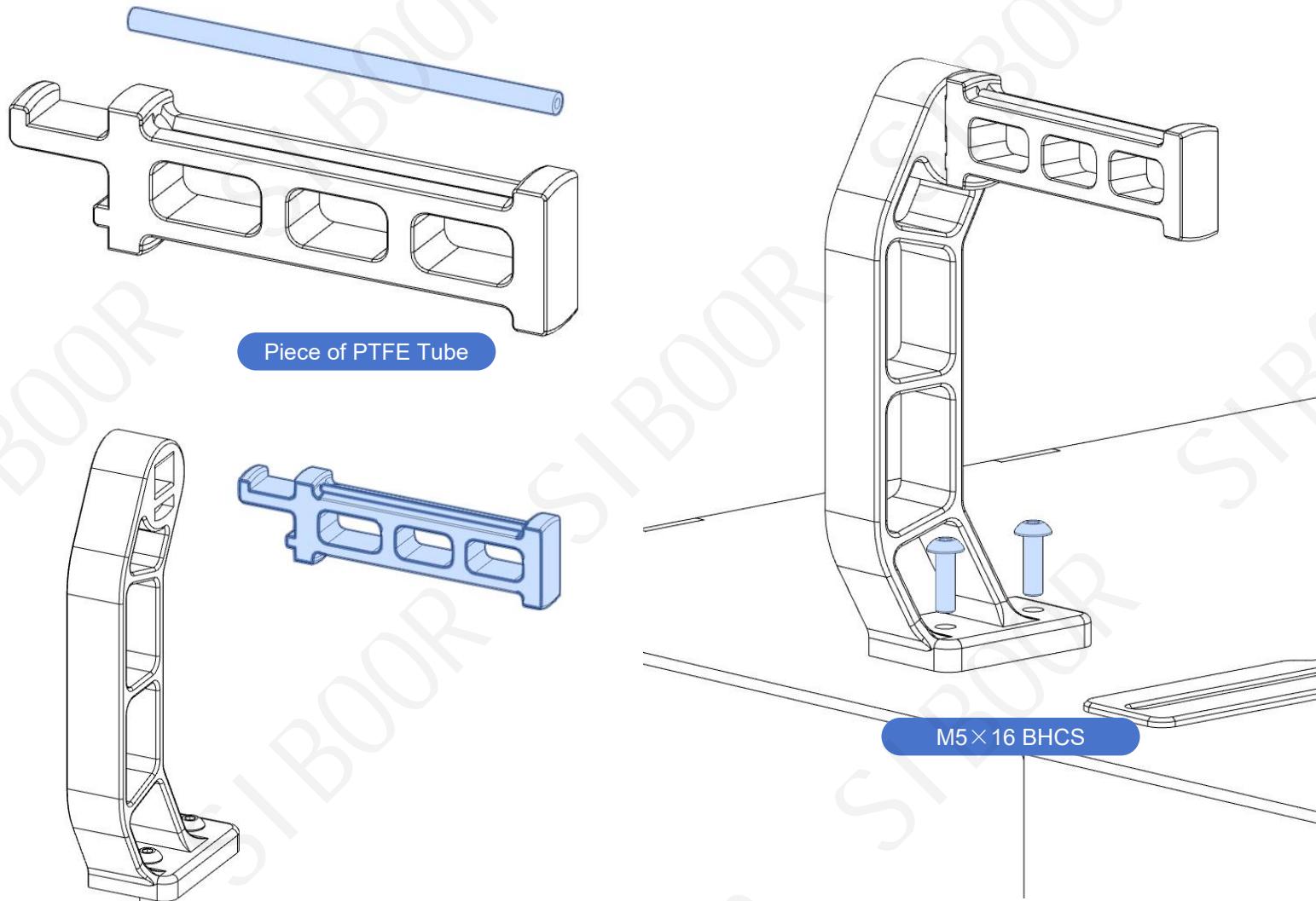
DOOR PANEL

SIBOOR.COM

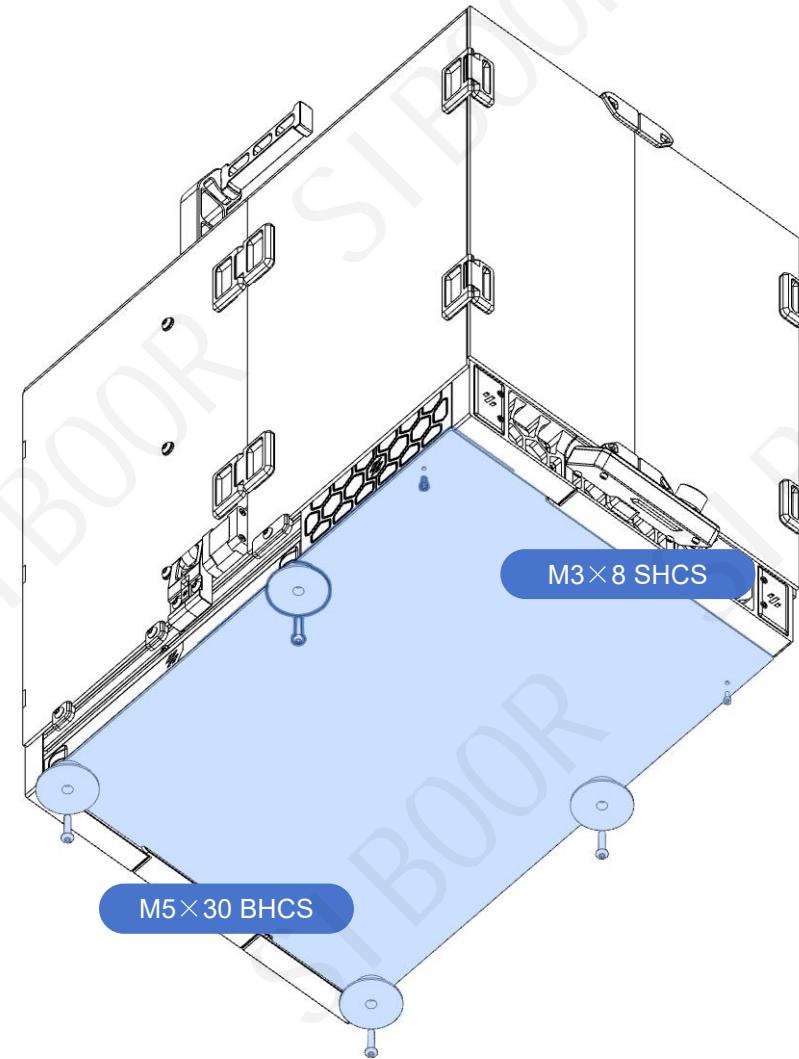
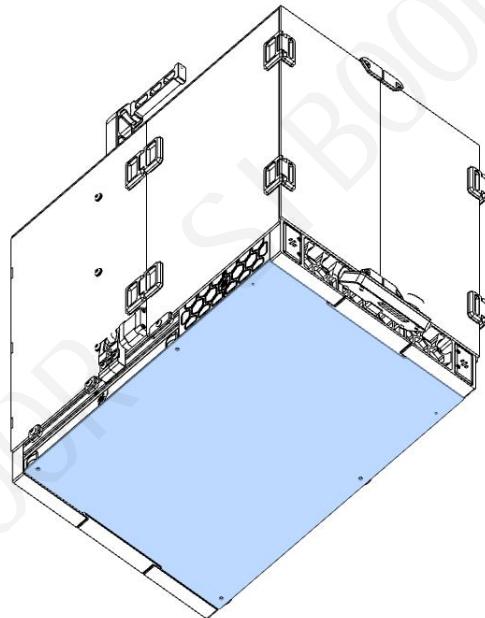


SPOOL HOLDER

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E3-SW Assembly Manual

