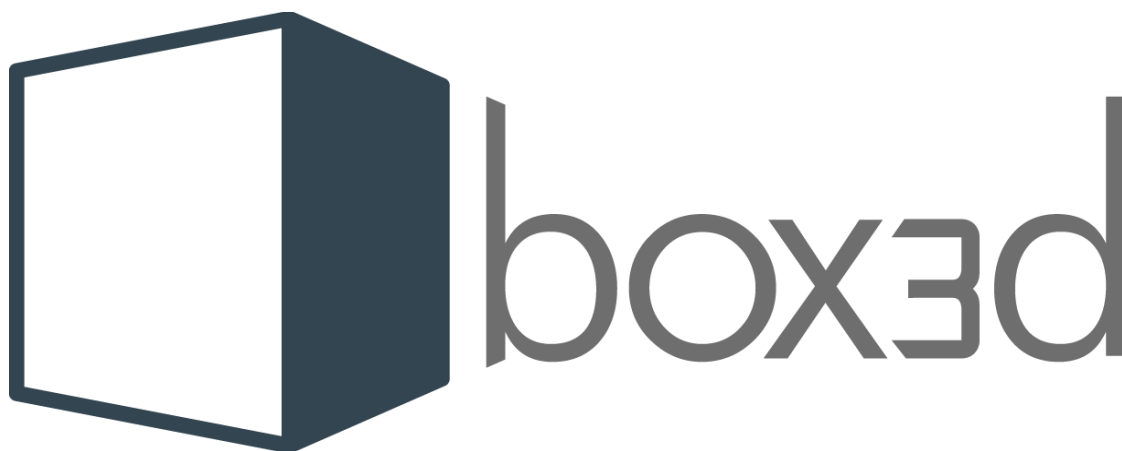


Box3d building instructions

For box3d 500 and box3d XL

(version may 2018)



Box3d B.V.
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info@box3d.eu
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Safety instructions

Assembling your box3d requires some experience with technical tools and common sense. These building instructions will guide you through the process of assembling your box3d 500 or box3d XL. We have made this process as easily and accessible as possible. However, we cannot be responsible for any harm during assembly or operation of box3d. Make sure you are confident at each step, or ask a more experienced builder for help.

Box3d operates at 12V, so the user should never be involved with high voltage. However, current can still be dangerous, so be careful at all times. Never plug in the power adapter into box3d during these assembly.

Box3d includes a fan which regulates the temperature inside. Depending on the settings in the controller, the fan can turn very fast with high power. So be careful not to touch the fan when box3d is on.

We do not recommend to leave your printer and box3d running unattended.








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Parts list







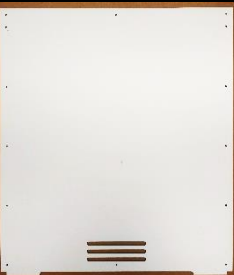
#	Parts	Qty 500	Qty XL	
A	Inbus M4x10	87	87	
B	Nut M4	93	93	
C	Magnet + magnet ring	1	1	
	Inbus M4x16	12	12	
	Inbus M4x50	2	2	
	Washer M4	2	2	
	Washer M4 plastic	4	4	
	Metal screw M3x12	1	1	
	Washer M3	1	1	
	Nut M3	1	1	




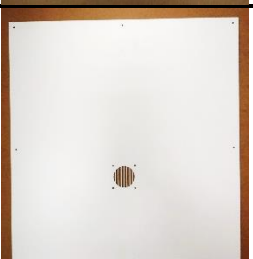



D	Hinge	2	2	
	Inbus wrench M4	1	1	
	Inbus wrench M5	1	1	
	Inbus M5x16	4	4	
	Inbus M5x20	4	4	
	Washer M5	14	14	
	Nut M5	8	8	
	Handle with 2 screws	3	3	

E	Controller	1	1	
	Switch	1	1	
	Power connector	1	1	
	Sensor	1	1	
	USB cable	1	1	
	Power cable (red/black)	1	1	
	Switch cable	1	1	

F	Gland	1	1	
	O-ring	1	1	
	Tiewrap	1	1	













G	Carbon filters (optional)	2	2	
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Seperate parts	Power adapter	1	1	
	Fan	1	1	
	Foam sheets	4	6	
	Window	1	1	
	Rubber seal	1	1	
	Front panel	1	1	
	Back panel	1	1	

Left panel	1	1	
Right panel	1	1	
Bottom panel	1	1	
Top outside panel	1	1	
Top inside panel	1	1	
Hepa filter (optional)	1	1	
Cutting template	1	1	

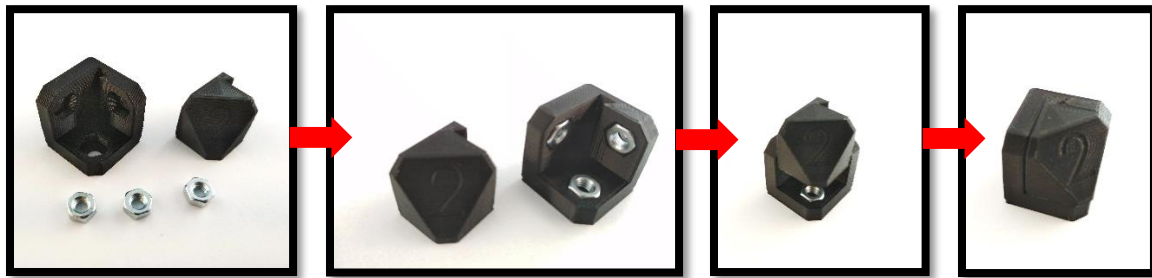
Print your parts

- Go to box3d.eu to download the STL files for box3d.
- Print all files as shown in the table below. The “grouped” folder contains parts #1 - #6 in the correct quantities, which might make it easier to print.

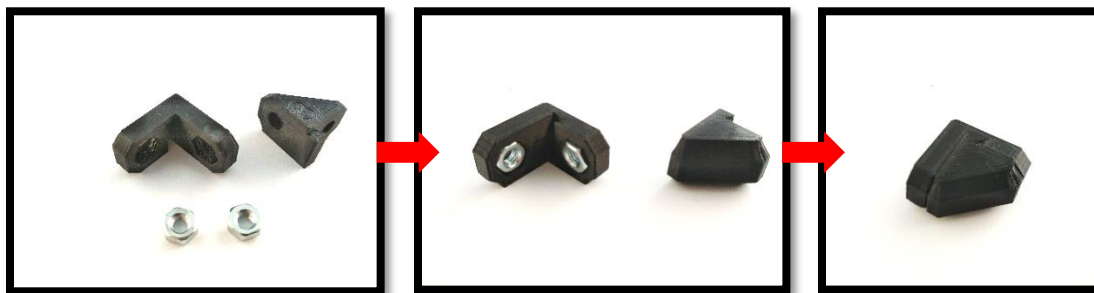
#		Qty		3D printing remarks
1	corner	12		No support needed
2	insert 2	12		No support needed
3	insert 3	29		No support needed
4	side connector	15		No support needed
5	magnet holder	1		No support needed
6	side connector high	4		No support needed
7	hinge spacer	2		No support needed
8	controller spacer	4		No support needed
9	fan outlet	1		Use support material
Optional	tube connector 120mm	1		No support needed
Optional	tube connector 100mm	1		No support needed
Optional (filter version)	filter housing + filter clip	1		No support needed

Pre-assembly

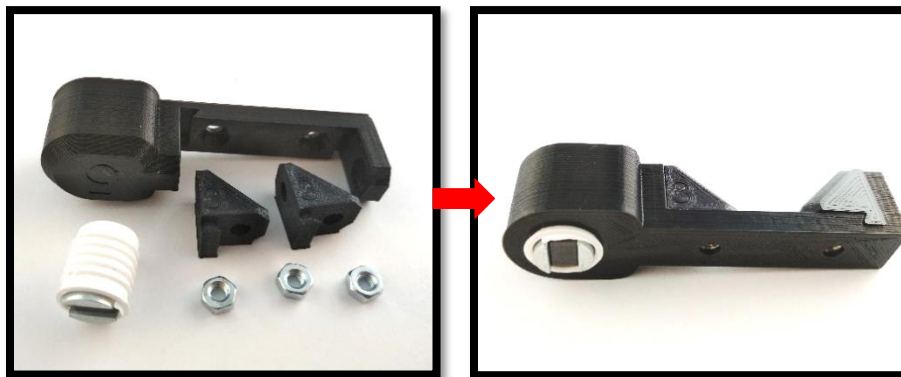
- Fill every #1 with 3 M4 nuts, and lock them with #2. (12x #1, 12x #2, 36x nut M4)



- Fill every #4 with 2 M4 nuts, and lock them with #3. (15x #4, 15x #3, 30x nut M4)



- Insert 3 M4 nuts in #5, and lock them with #3. (1x #5, 2x #3, 3x nut M4)
- Insert the magnet in #5. A hard push is necessary to fully insert the magnet.



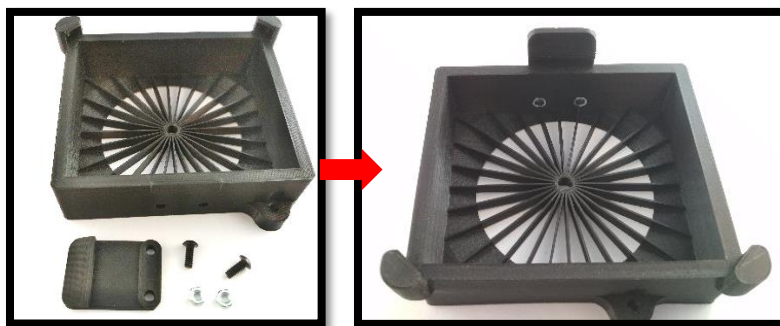
- Fill very #6 with 3 M4 nuts, and lock them with #3. (4x #6, 8x #3, 12x nut M4)



- Insert 4 nuts in the fan outlet, and lock them with #3. (1x fan outlet, 4x #3, 4x nut M4)

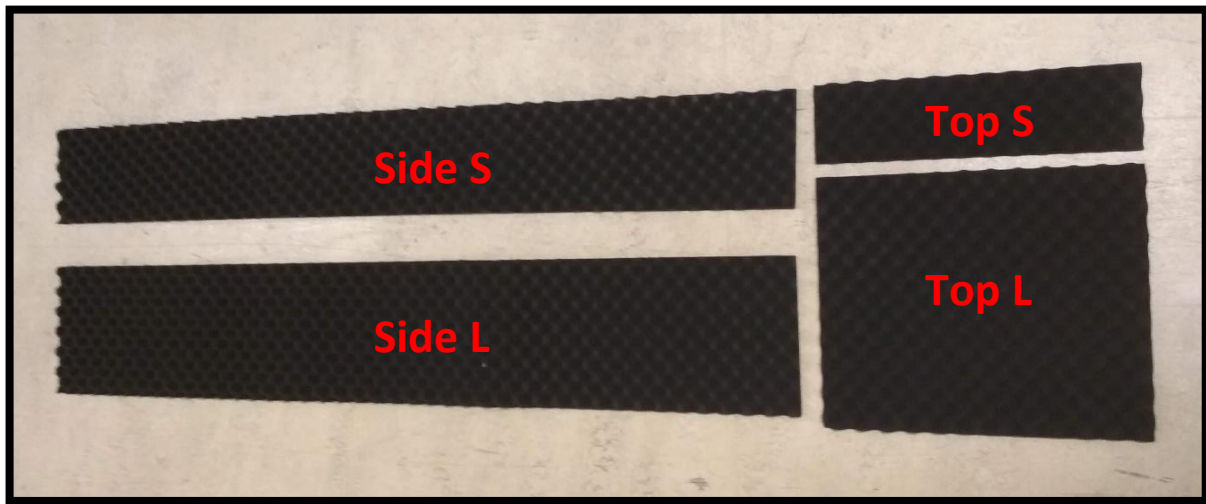


- Only if you have the filter version: Attach the filter clip to the filter housing, with 2x M4x10 inbus screws and 2x M4 nuts.



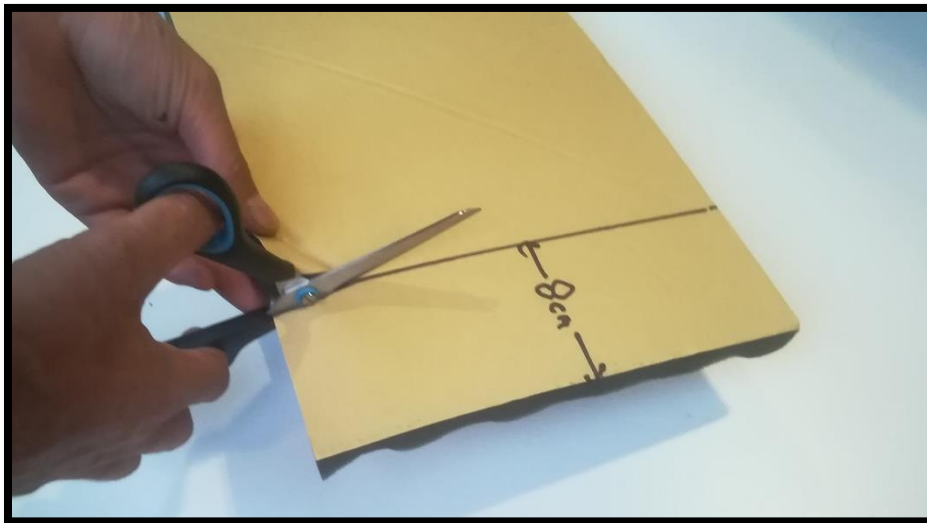
Foam preparation

Box3d 500 contains the following foam panels:



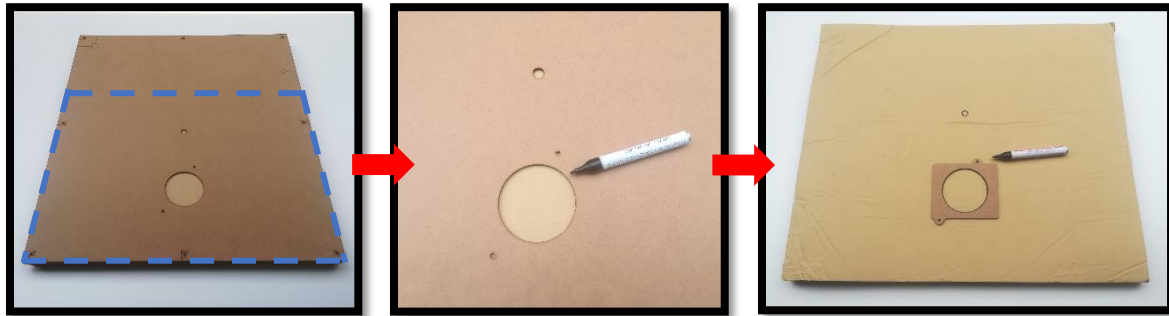
Note: for box3d XL, Side S and Side L are divided in 2 or 3 pieces.

Note: For box3d 500, Side S and Side L need to be shortened by 8cm. Use scissors to cut the panels as shown below:

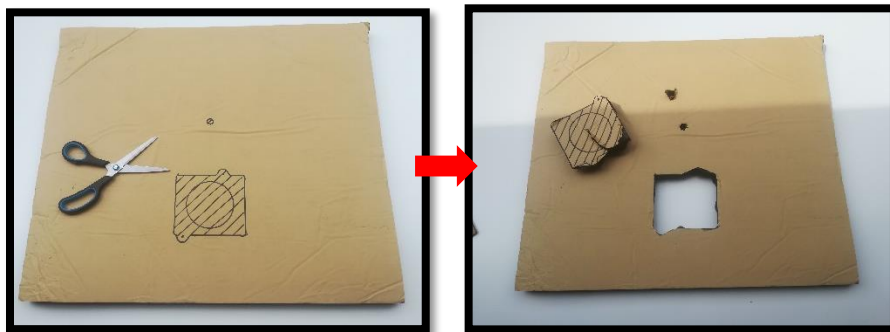


Top panel foam

Place the top inside panel on top of the Top L foam panel. Align the sides and bottom as in the figure below. The blue dotted line represents the top L foam panel. Trace the contours of the holes with a marker. Use the template to trace the contours of the filter housing with a marker. (this step can be skipped for box3d without filter. Without this step future upgrade to HEPA filter is not possible, therefore we suggest everyone to do this step).

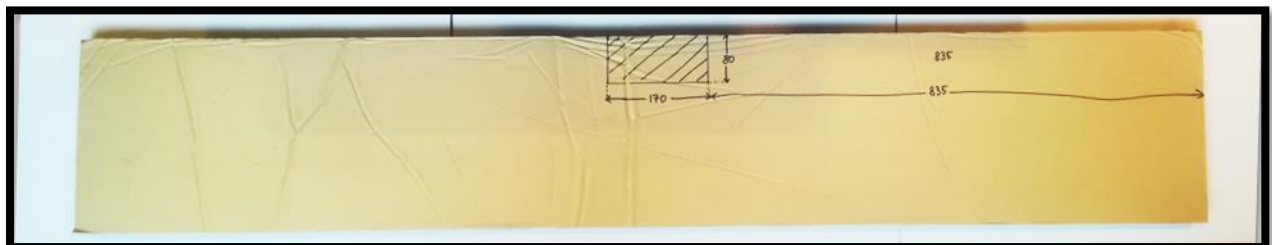


Use a scissor to cut out the shaded areas.



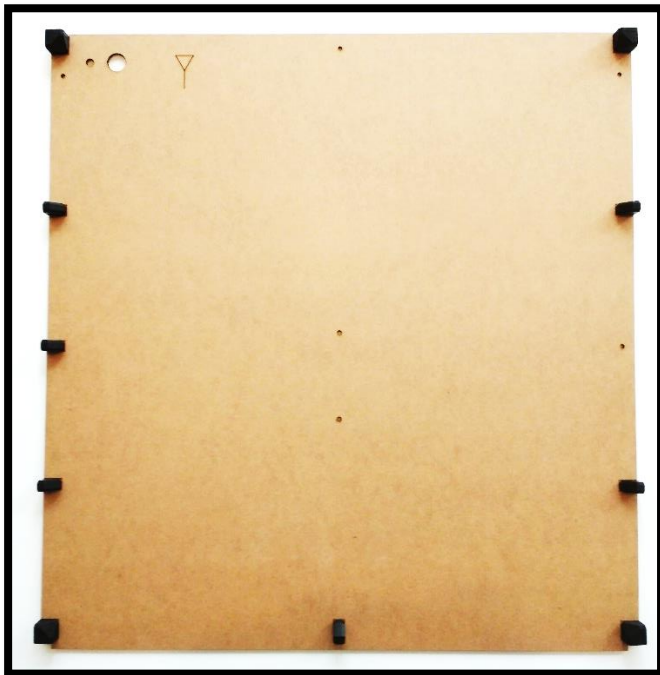
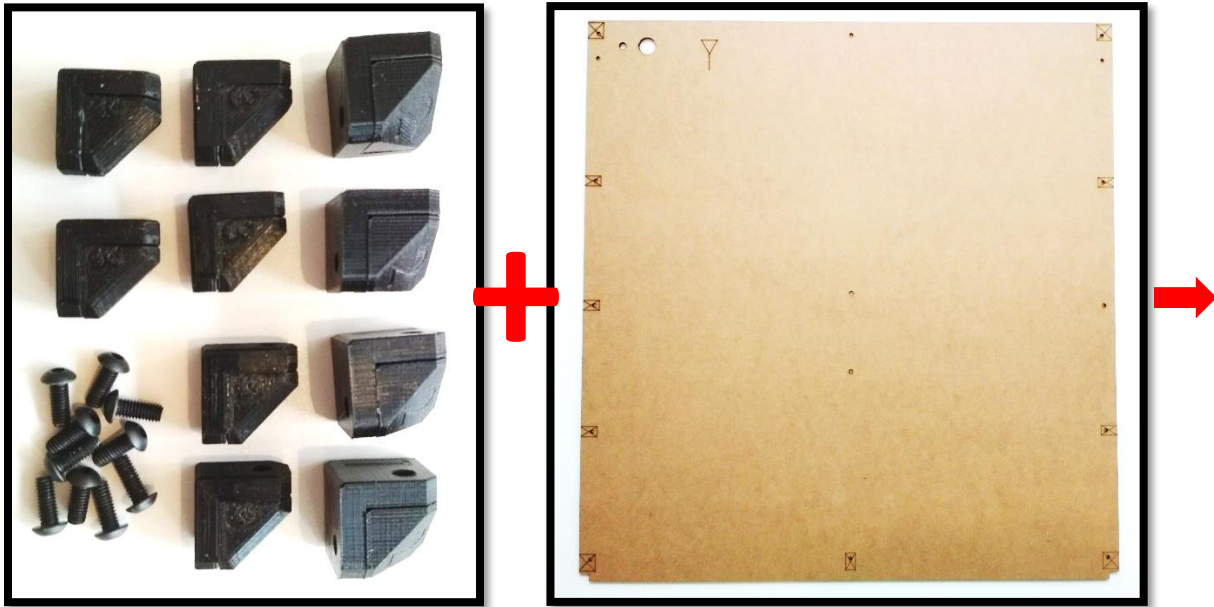
Air inlet cutout

Take the Side L foam panel and draw the air outlet of 170mm x 80mm at **[835mm for box3d 500, 1020mm for box3d XL]** from the right end of the panel. Use scissors to cut out the air inlet. Do not throw away the cut part.



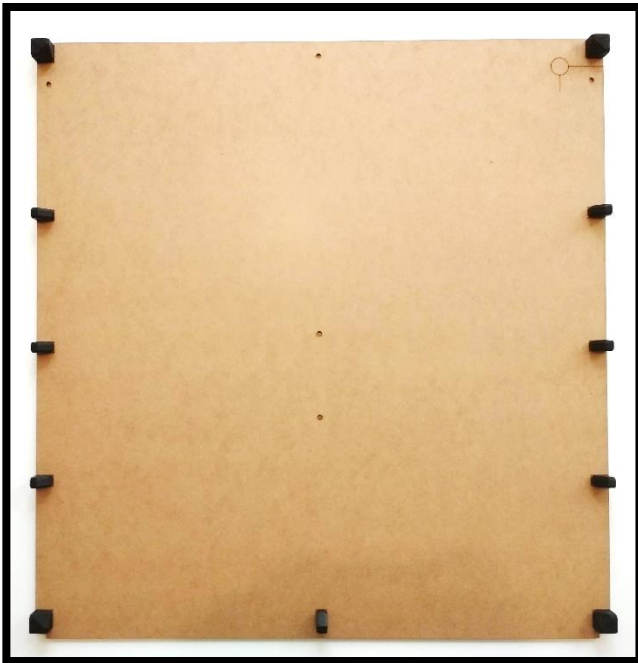
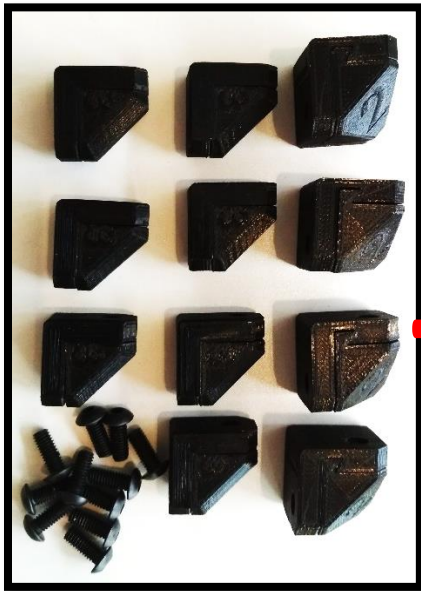
Panel 1 (right panel)

- Mount the corner pieces (#1+#2, and #4+#3) on places marked with an "X". Use M4x10 inbus screws. The shape of the "x" shows the orientation of the part.
 - o 4x #1+#2
 - o 6x #4+#3
 - o 10x inbus screw M4x10
 - o 1x Right panel



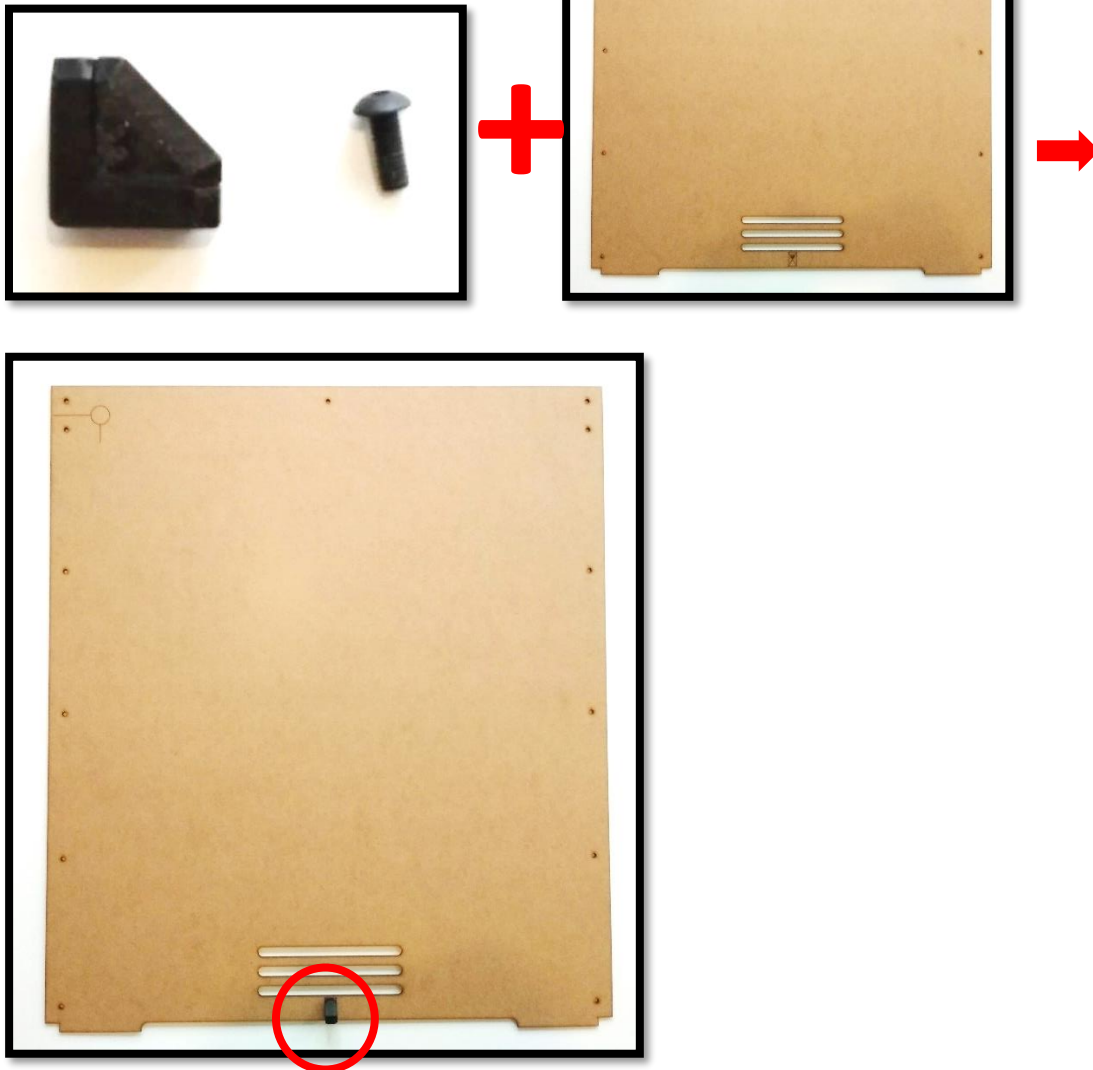
Panel 2 (left panel)

- Mount the corner pieces (#1+#2, and #4+#3) on places marked with an "X". Use M4x10 inbus screws. The shape of the "x" shows the orientation of the part.
 - o 4x #1+#2
 - o 7x #4+#3
 - o 11x inbus screw M4x10
 - o 1x Left panel



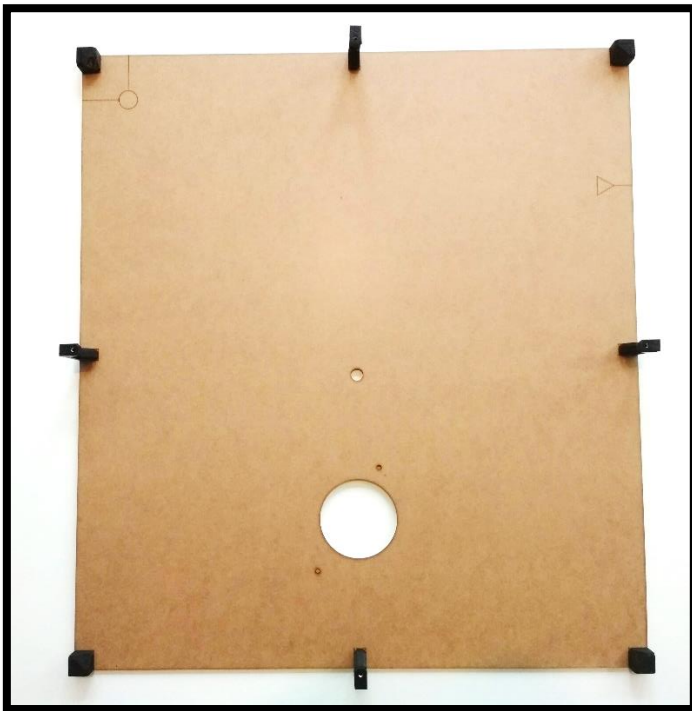
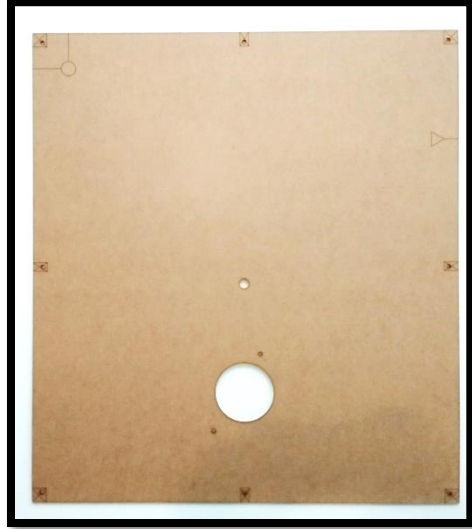
Panel 3 (rear panel)

- Mount one corner piece (#4+#3) with an M4x10 inbus screw. The shape of the "x" shows the orientation of the part.
 - o 1x #4+#3
 - o 1x inbus screw M4x10
 - o 1x Rear panel



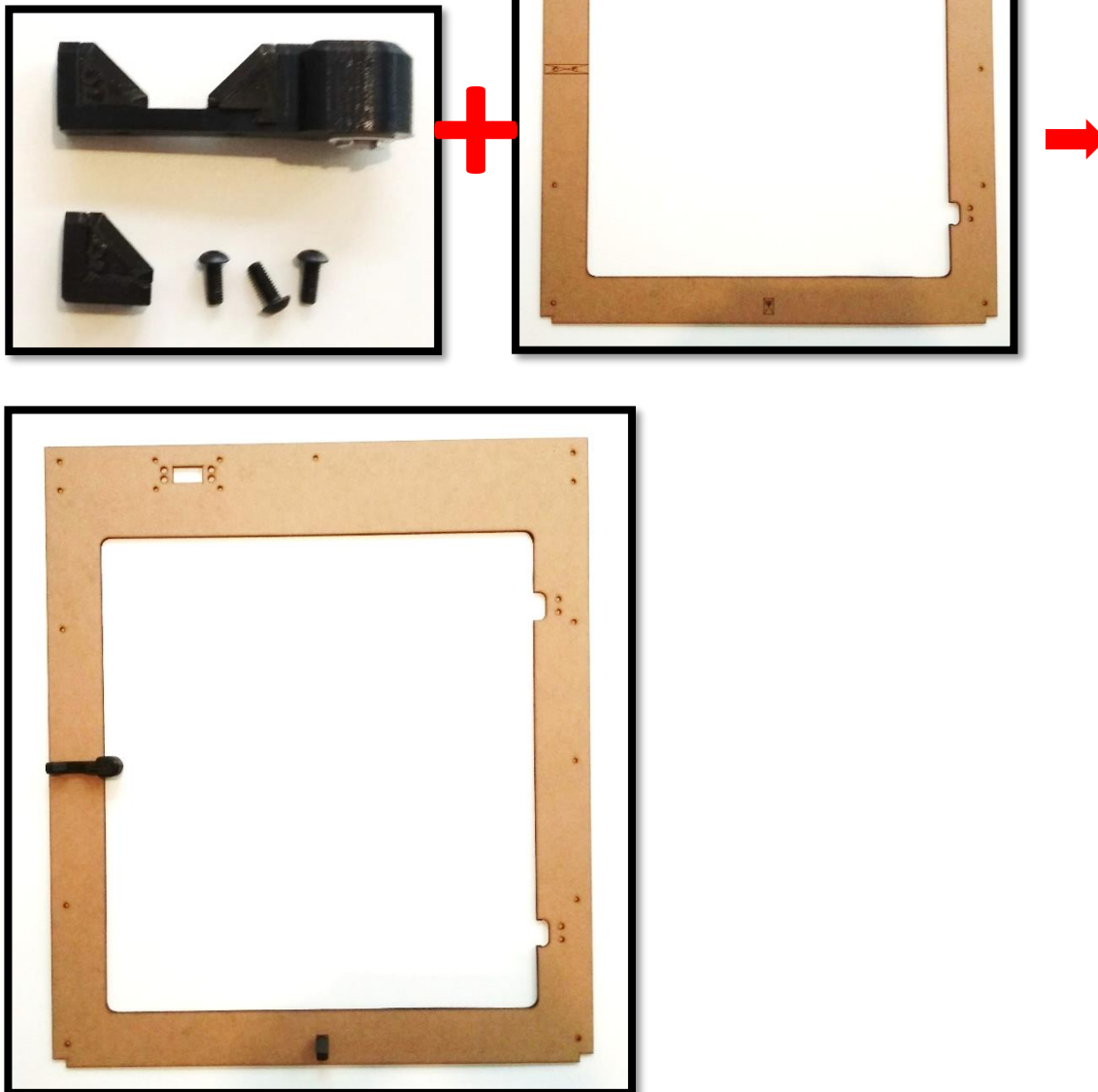
Panel 4 (top inside panel)

- Mount the corner pieces (#1+#2) on the four corners, and mount the four high corner pieces (#6+#3) on the four remaining "X" spots. **Note: make sure the orientation of the high corner pieces is correct (see picture)**
 - 4x #1+#2
 - 4x #6+#3
 - 8x inbus screw M4x10
 - 1x top inside panel



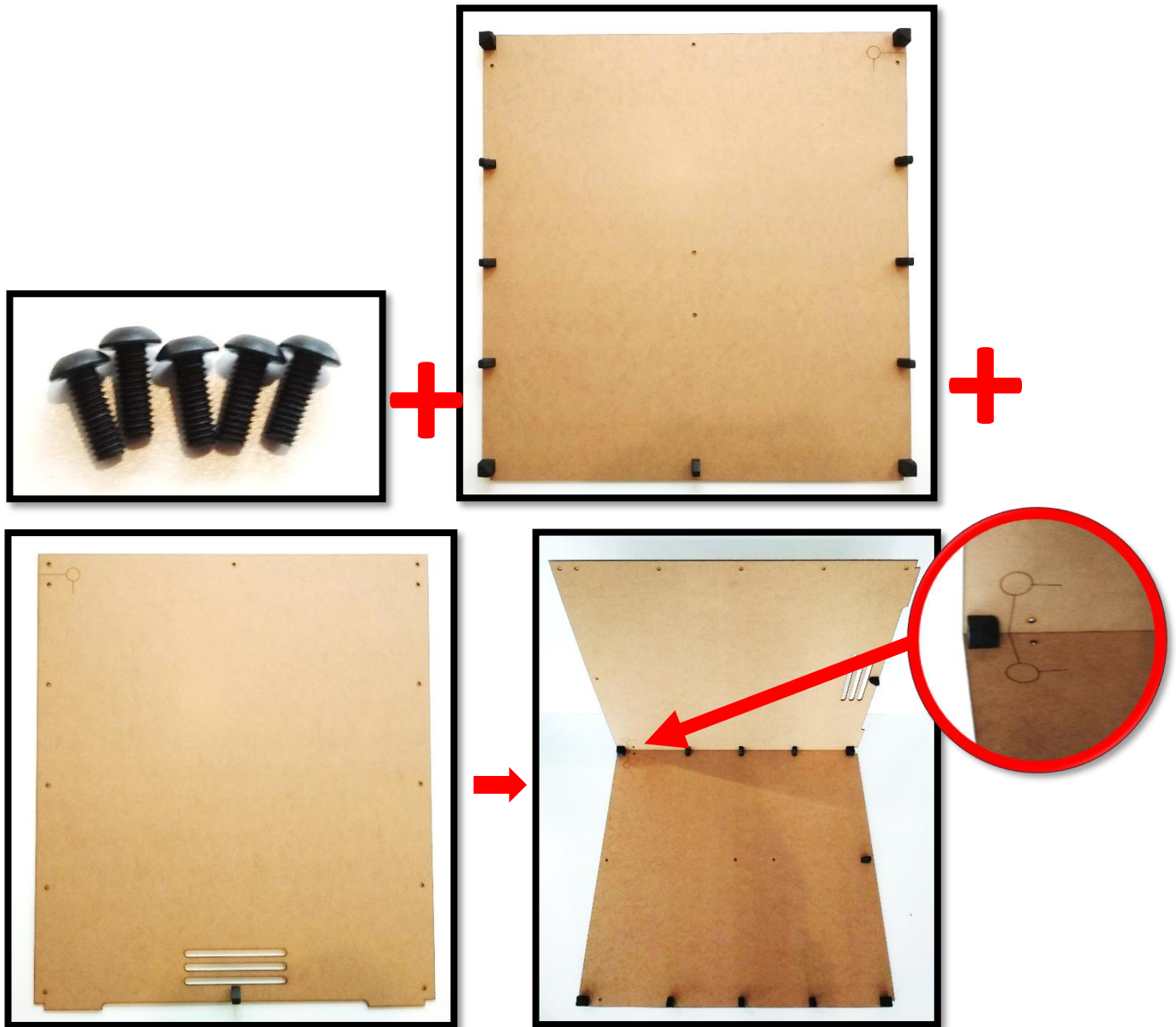
Panel 5 (front panel)

- Mount the piece with the magnet on the large "x", and a corner piece (#4+#3) on the small "X".
 - o 1x #5+#3
 - o 1x #4+#3
 - o 3x inbus screw m4x10
 - o 1x Front panel

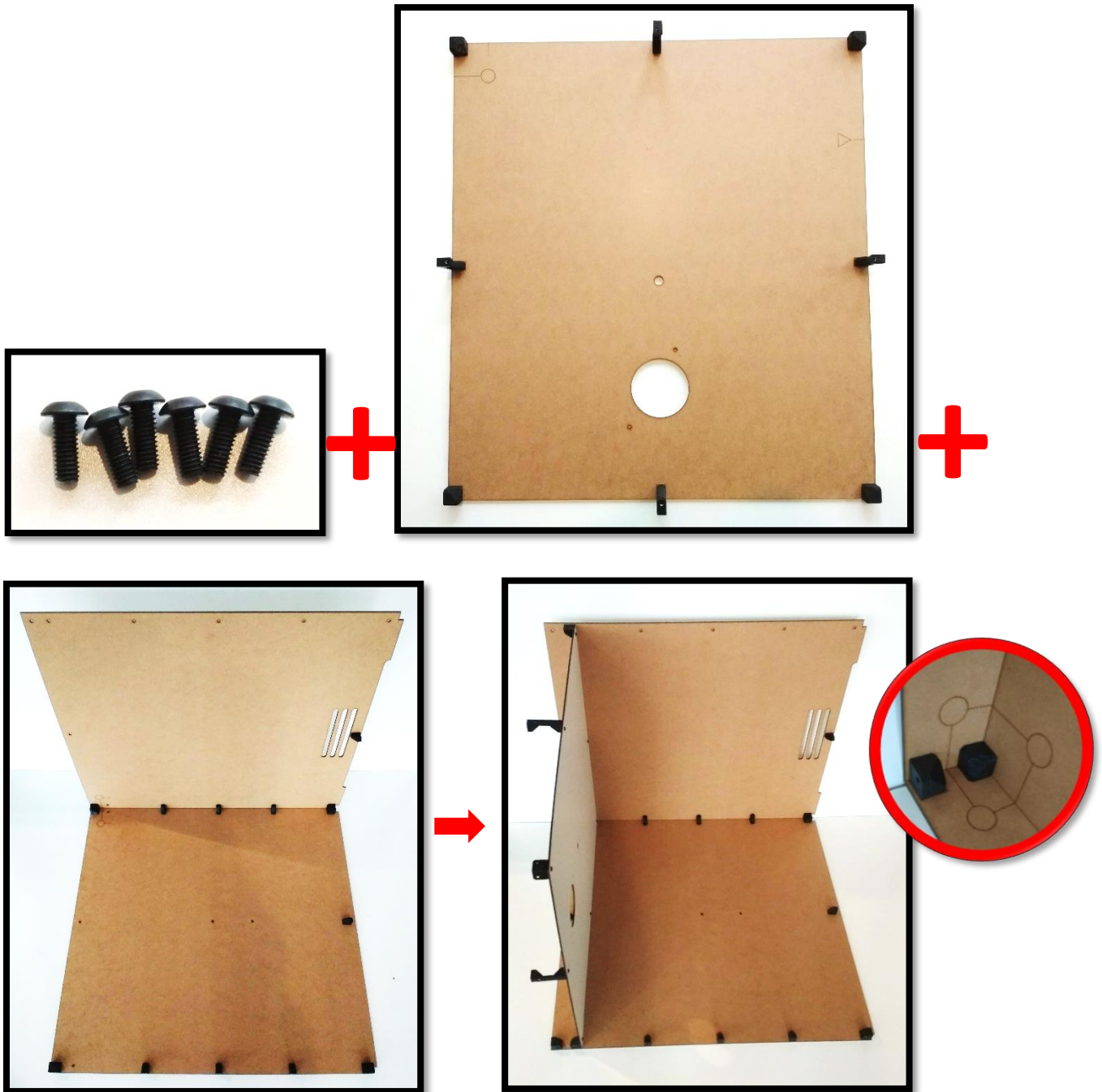


Connecting panels

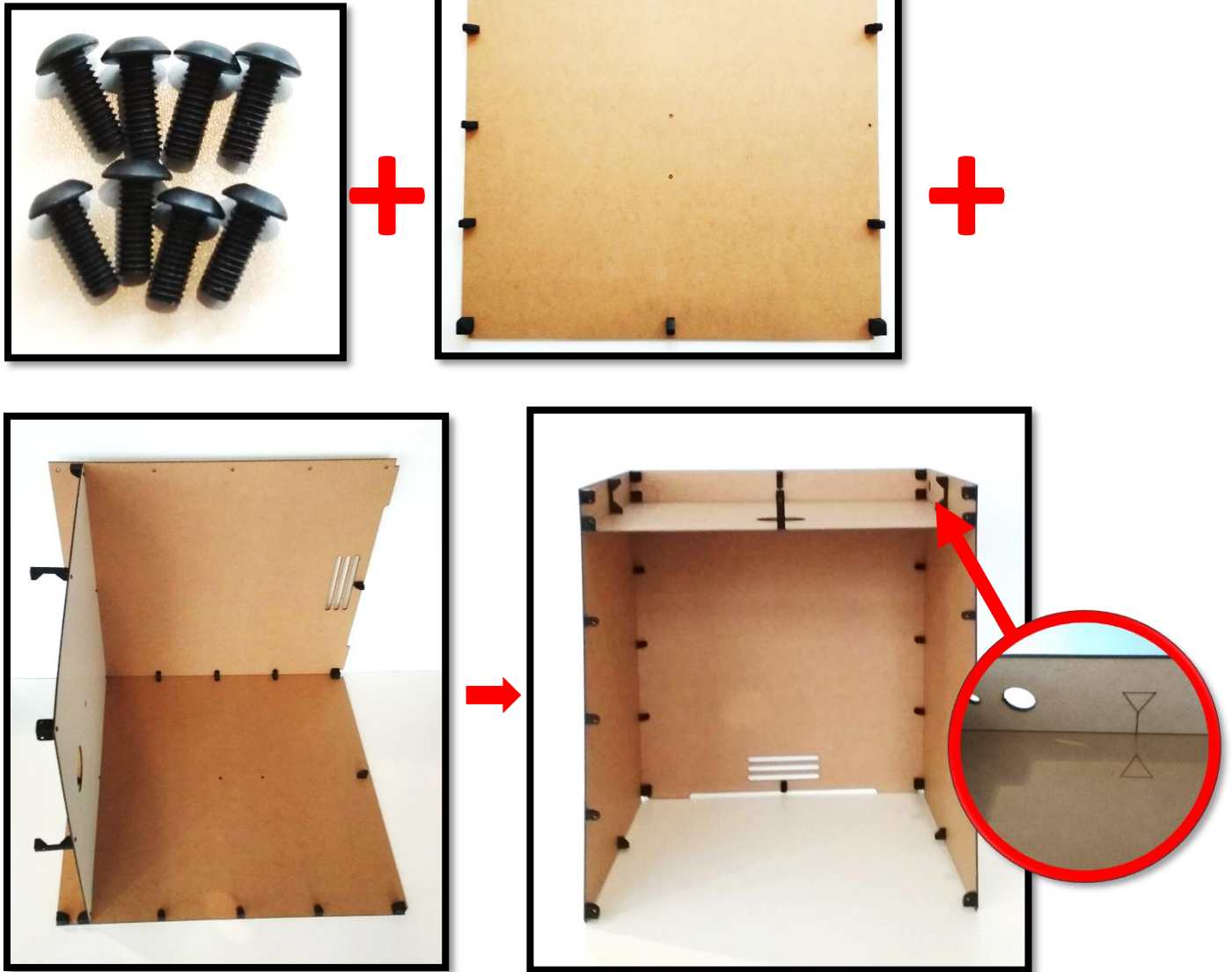
- Connect the left panel to the back panel with 5x M4x10 inbus screws. (make sure the shapes are aligned).
 - o 5x inbus screw M4x10
 - o 1x left panel
 - o 1x back panel



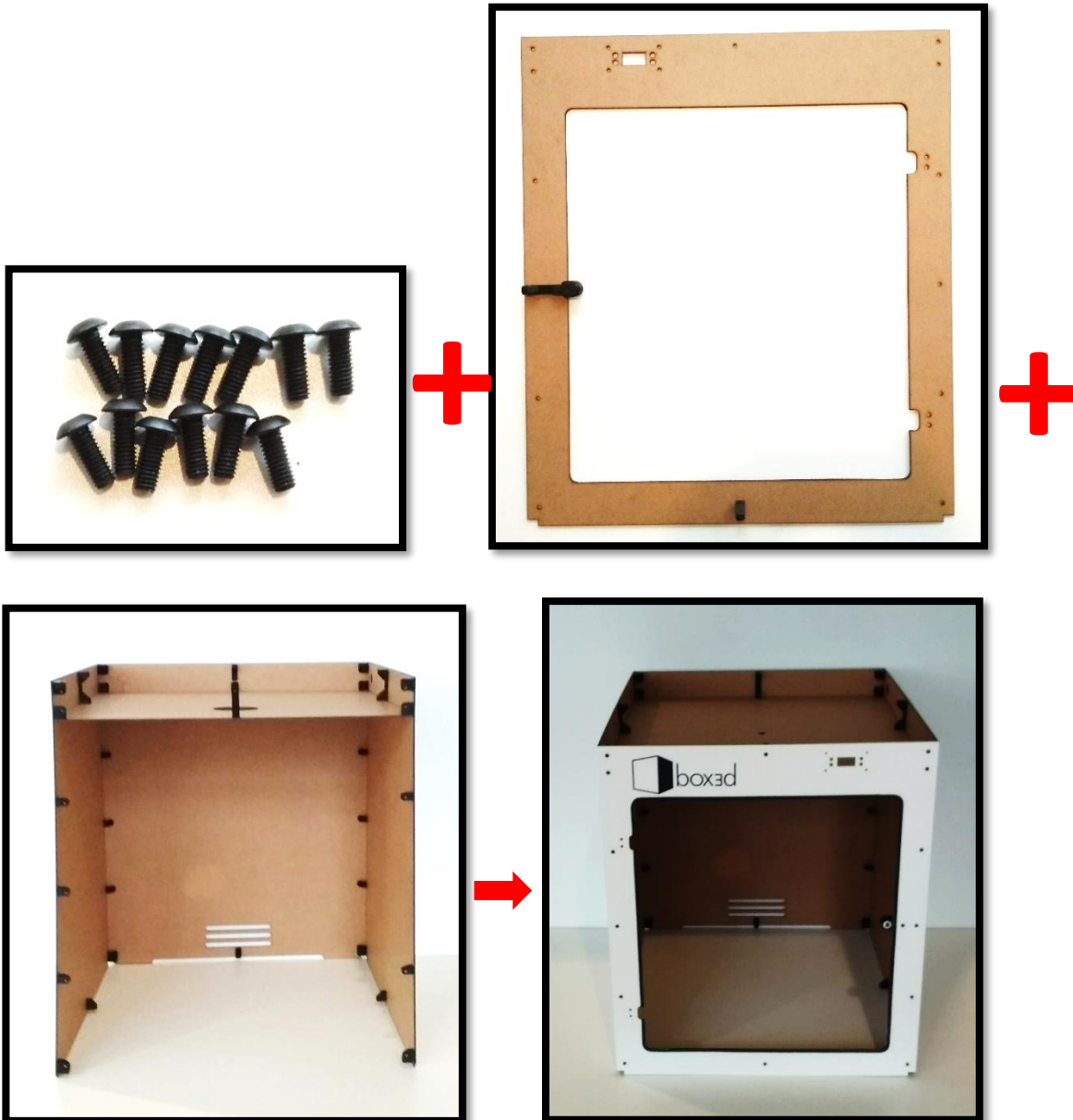
- Connect the top inside panel to the back and left panel with 6x M4x10 inbus screws. (make sure the shapes are aligned)
 - o 6x M4x10 inbus screws
 - o 1x top inside panel
 - o 1x Back+Left panel



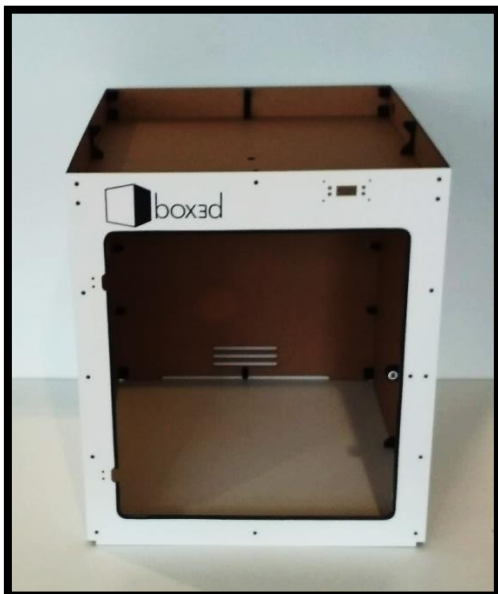
- Connect the right panel to the back and inside top panel with 8x M4x10 inbus screws. (make sure the shapes are aligned)
 - o 8x M4x10 inbus screws
 - o 1x Right panel
 - o 1x Back+Left+Mid panel



- Connect the front panel to the left, right, and inside top panel with 13x M4x10 inbus screws.
 - o 13x M4x10 inbus screws
 - o 1x Front panel
 - o 1x Back+Left+Mid+Right panel



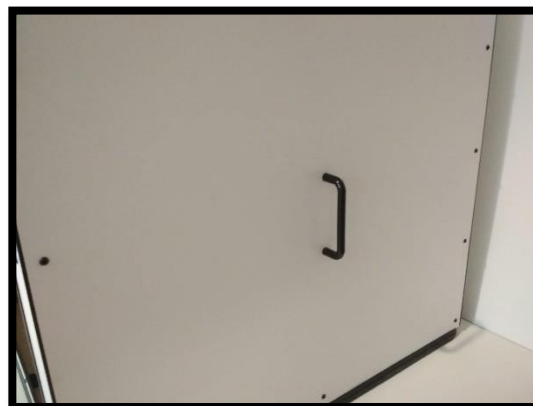
- Put the assembly upside down, and connect the bottom panel with 8x M4x10 inbus screws to finish the box3d assembly.
 - o 8x M4x10 inbus screws
 - o 1x Bottom panel
 - o 1x Back+Left+Mid+Right+Front panel



- Firmly press the rubber seal around the bottom edges, starting at the back panel.
 - o Rubber seal
 - o Box3d assembly

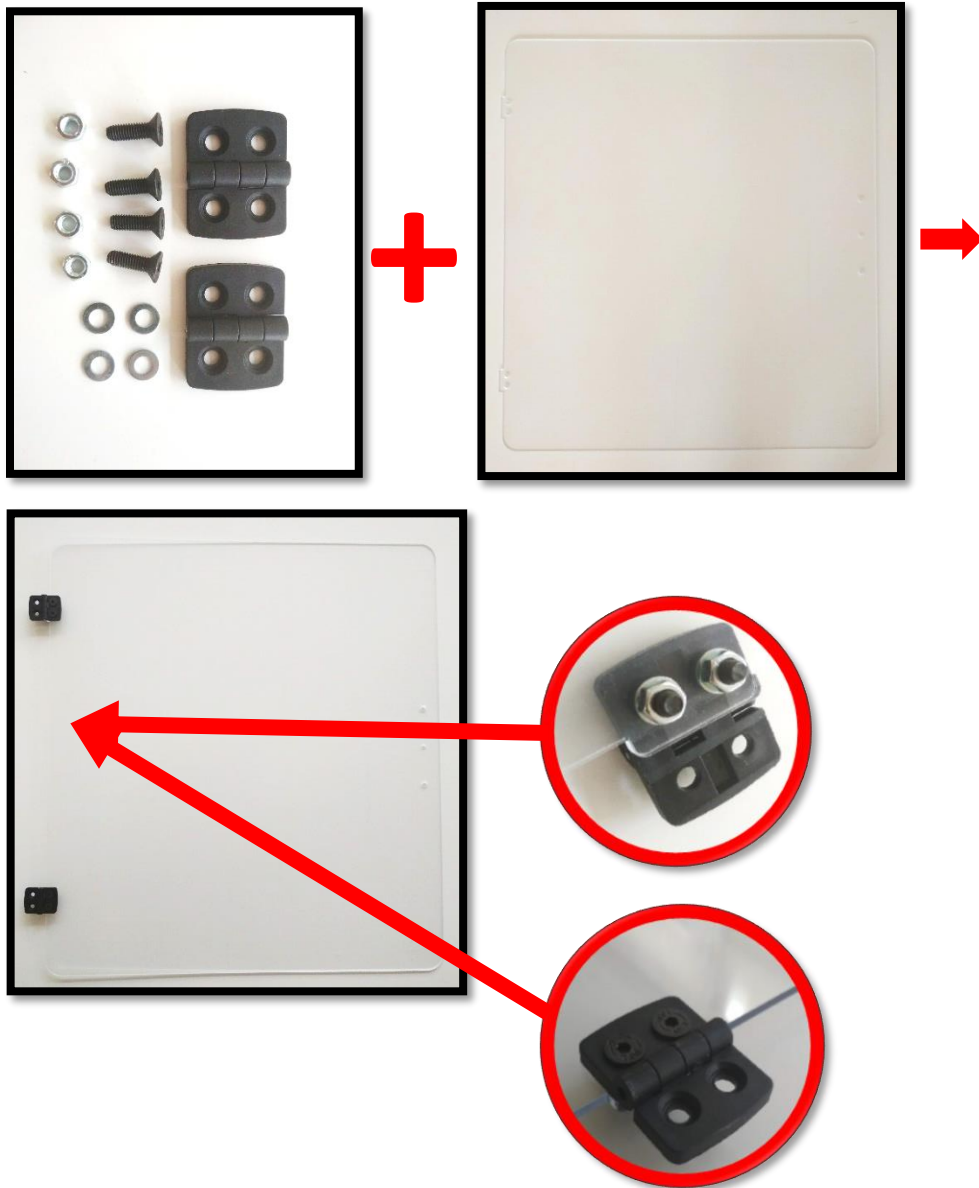


- Mount 2 handles on the left and right panel with 4x the supplied screws and 4x M5 washers.
 - o 2x Handle with 2 screws
 - o 4x M5 washer
 - o Box3d assembly

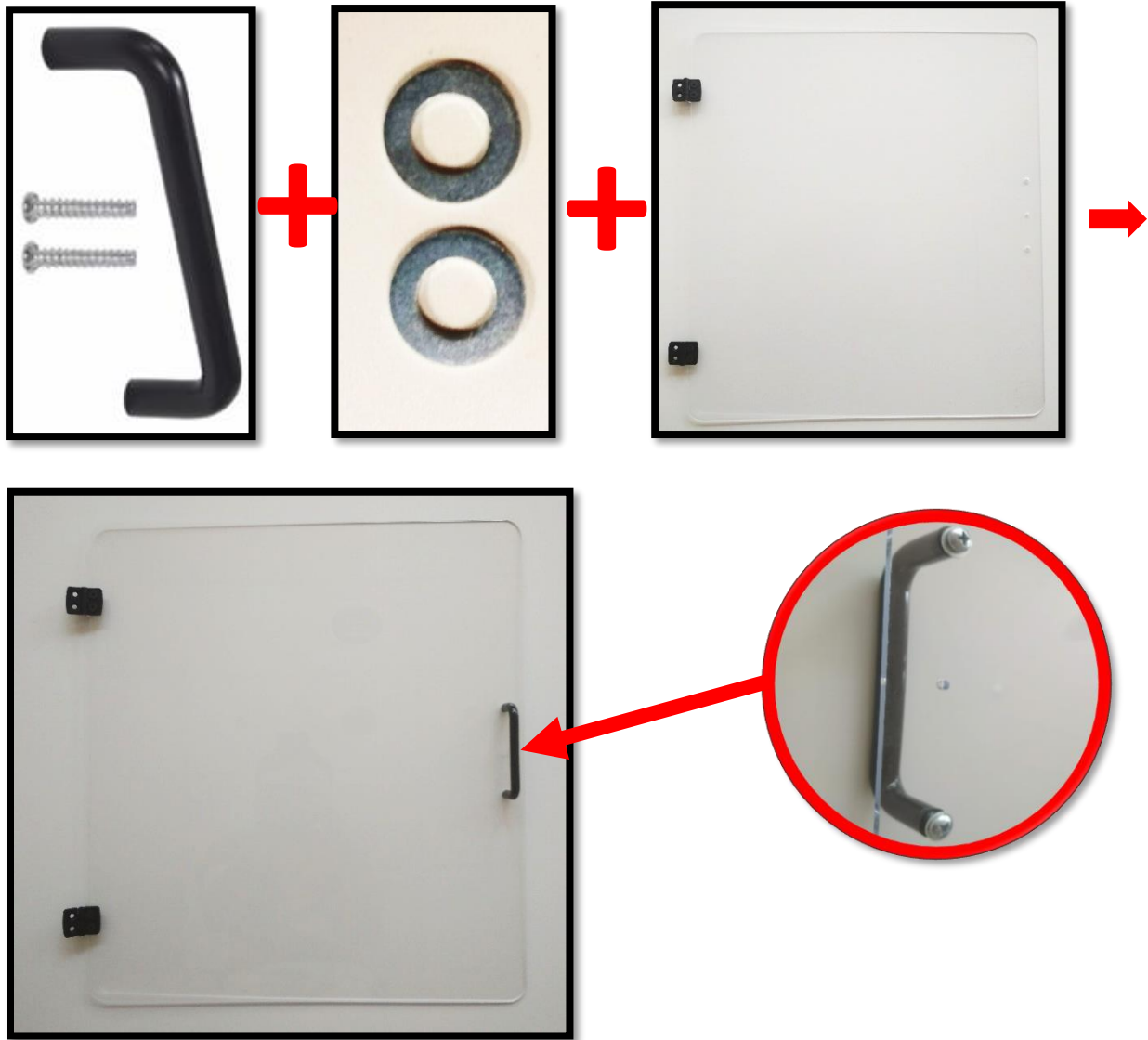


Installing the door

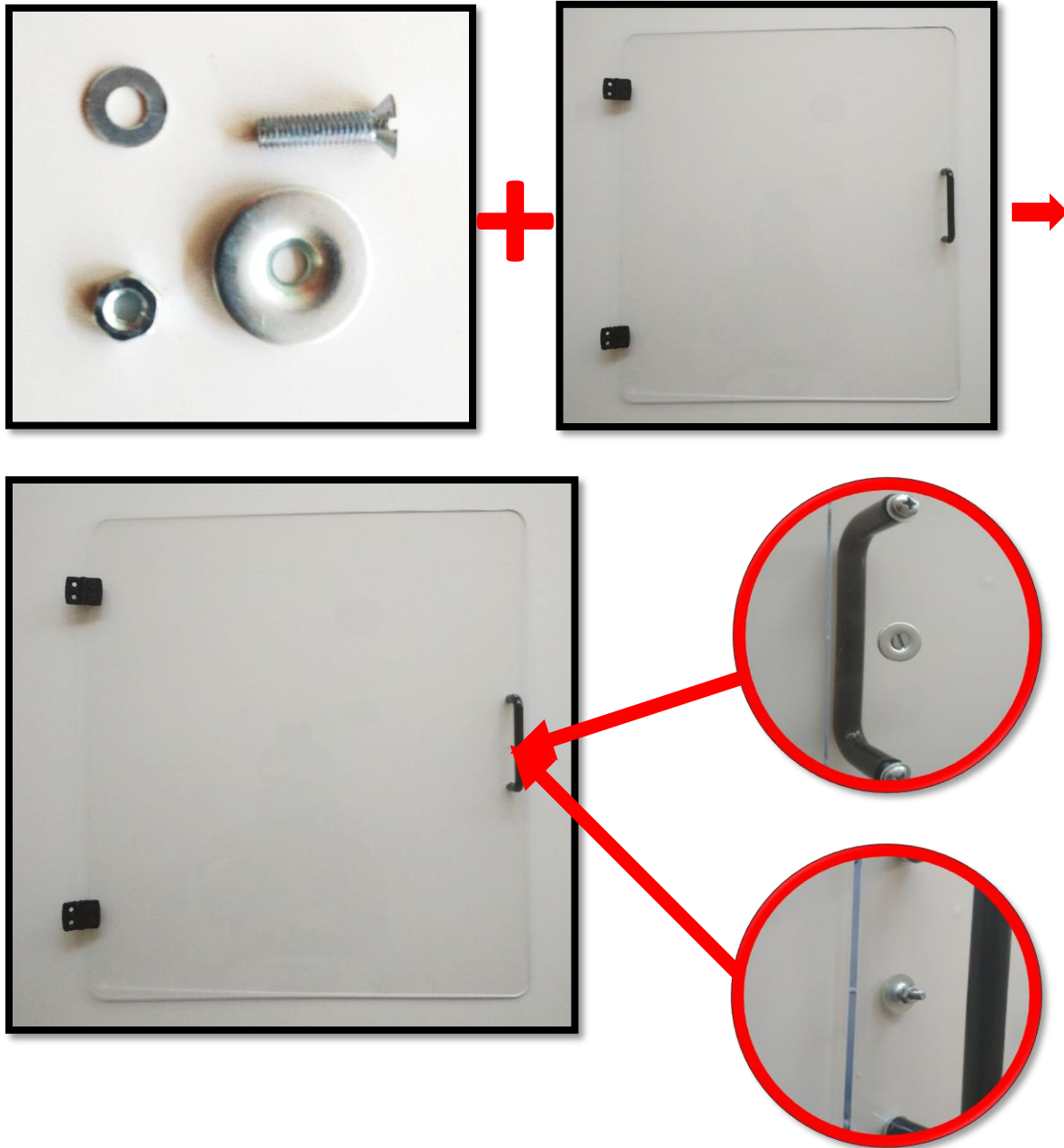
- Remove the protecting film from both sides of the door panel. Mount the 2 hinges on the door with M5x16 inbus screws. Use M5 washers and M5 nuts to secure the hinges. **Note: make sure the door is not upside down. Hold the door in front of box3d to check if the hole for the magnet is aligned. If not, flip the door.**
 - o 2x hinge
 - o 4x M5x16 inbus screw
 - o 4x M5 washer
 - o 4x M5 Nut
 - o 1x door panel



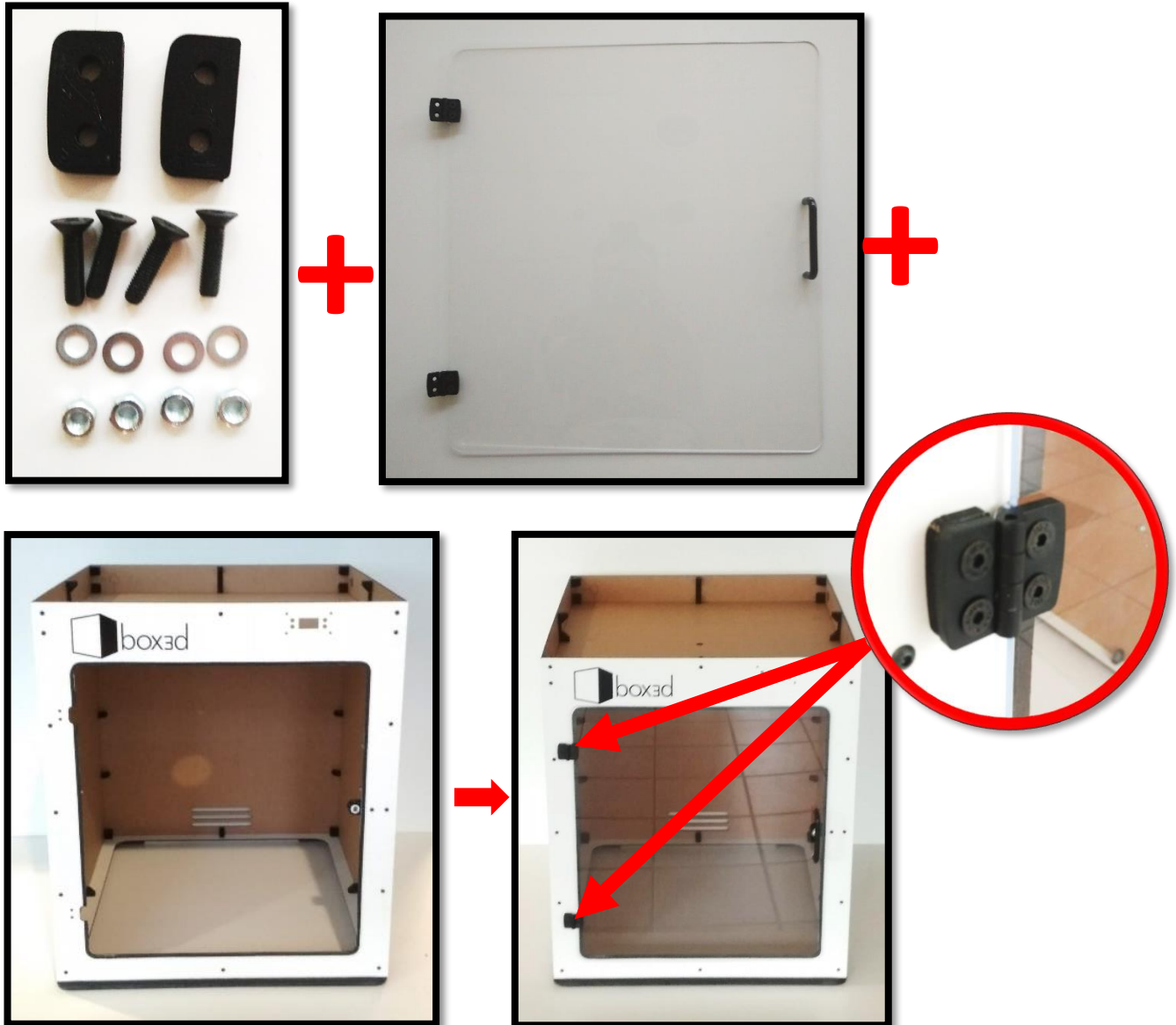
- Mount the handle on same side as the hinges on the door with the supplied screws, and 2x M5 washers.
 - o 1x Handle with 2 screws
 - o 2x M5 washer
 - o 1x door panel



- Mount the magnet ring on the opposite side of the door handle, in the remaining hole. Use 1x m3x12 screw, 1x washer m3, and 1x nut m3 to secure the magnet ring.
 - o 1x M3x12 screw
 - o 1x M3 nut
 - o 1x M3 washer
 - o 1x magnet ring
 - o 1x door

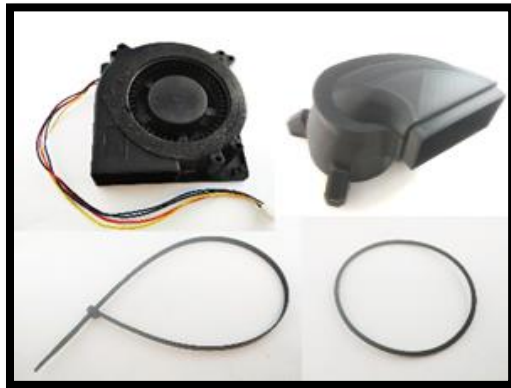


- Mount the door to the front panel with 4x M5x20 screws, 4x M5 washers, and 4x M5 nuts. Use the hinge spacers between the hinges and the front panel.
 - o 4x M5x20 inbus screw
 - o 4x M5 washer
 - o 4x M5 Nut
 - o 2x hinge spacer
 - o 1x door panel
 - o 1x box3d assembly

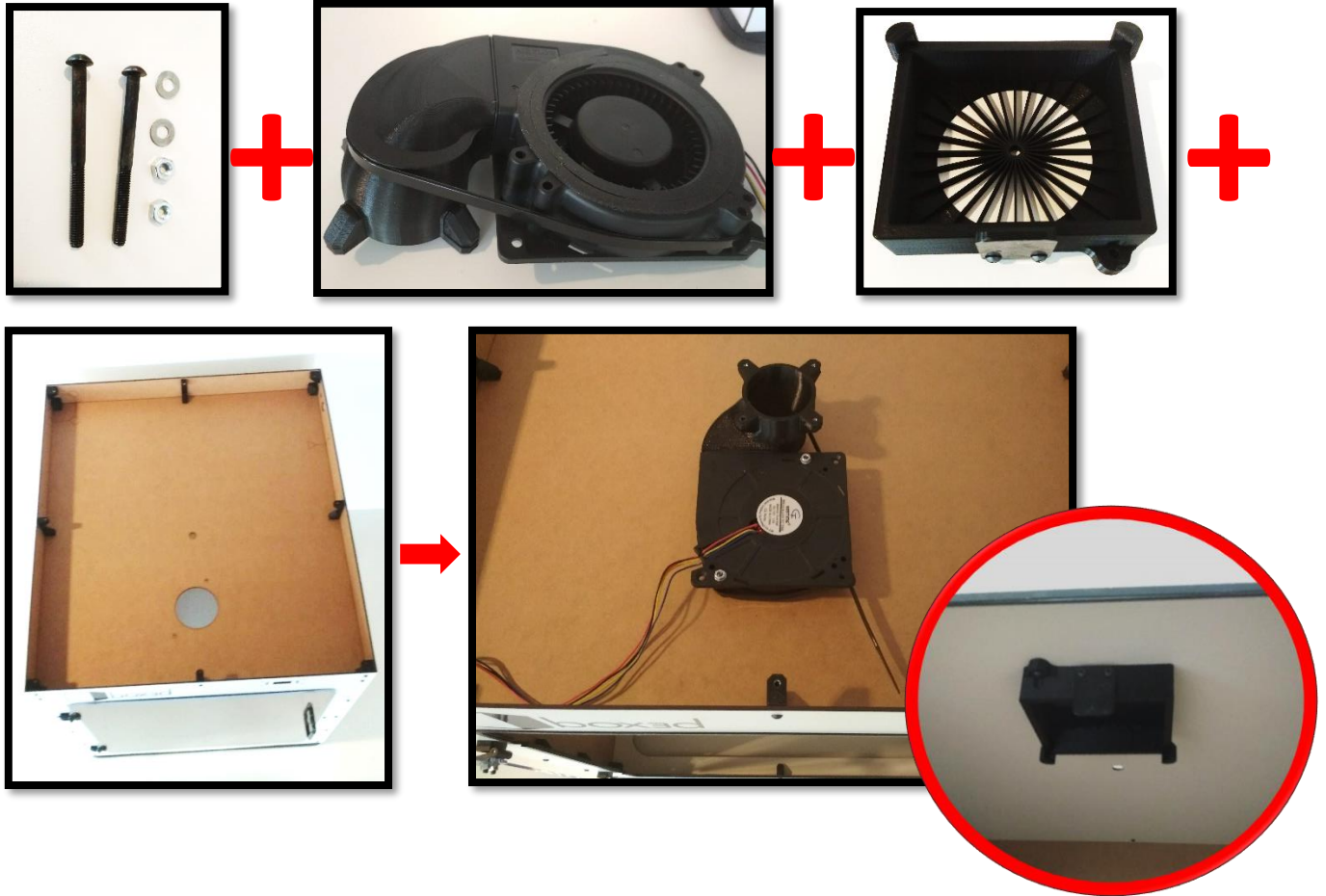


Electronics

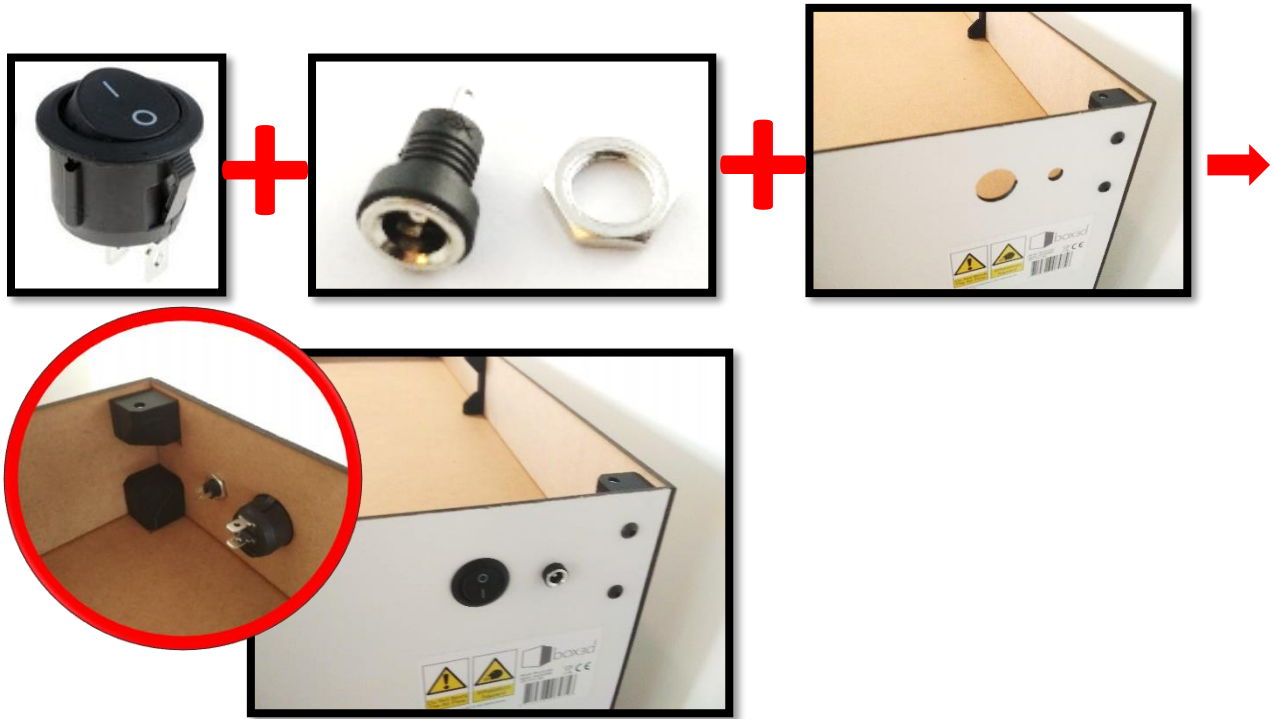
- Attach the fan outlet to the fan, using the O-ring as a seal, and the tiewrap to secure the fan outlet.
 - 1x Fan
 - 1x Fan outlet
 - 1x O-ring
 - 1x tiewrap



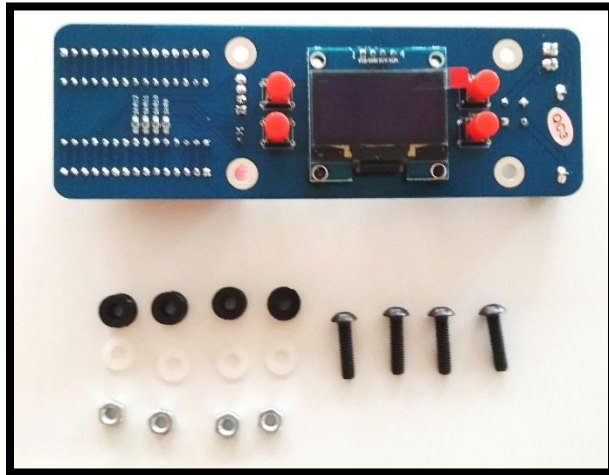
- Mount the fan on the inner top panel with 2x M4x50 inbus screws, 2x M4 washers, and 2x M4 nuts. If you the box3d with filter version, attach the filter housing on the bottom side of the panel with the same screws.
 - o 1x Fan assembly
 - o 2x M4x50 inbus screw
 - o 2x M4 washer
 - o 2x M4 nut
 - o 1x box3d assembly
 - o Optional: 1x filter housing



- Install the power connector to the right panel, and secure it with the supplied nut.
- Install the switch by pushing it in the hole in the right panel.
 - o 1x switch
 - o 1x power connector
 - o 1x box3d assembly



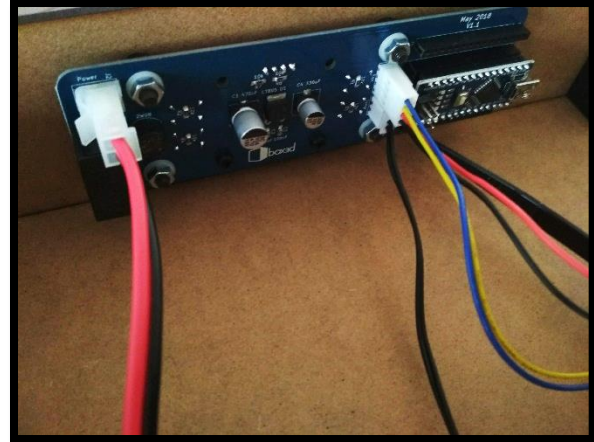
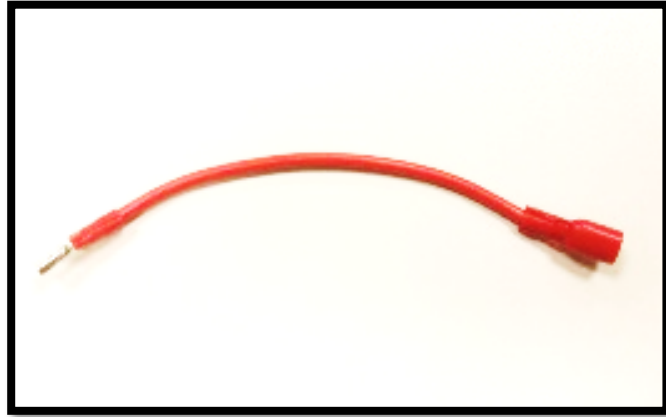
- Remove the protective film from the display of the controller. Install the controller with M4x10 inbus screws, plastic M4 washers, and M4 nuts, and the controller spacers.
 - o 1x controller
 - o 4x M4x16 inbus screw
 - o 4x M4 plastic washer
 - o 4x M4 nut
 - o 4x controller spacer
 - o 1x box3d assembly



- Mount the gland in to the inside top panel, and secure the temperature sensor, letting it stick out about 1cm. Connect the sensor to the controller, in the connector named "Temp".
 - o 1x gland
 - o 1x temperature sensor
 - o 1x box3d assembly



- Connect the power cable to the controller, switch and power connector.
- Connect the fan to the connector named "Fan".
- Connect the switch cable to the power connector and switch.
 - o 1x Power cable
 - o 1x Switch cable
 - o 1x Box3d assembly



Paste top foam

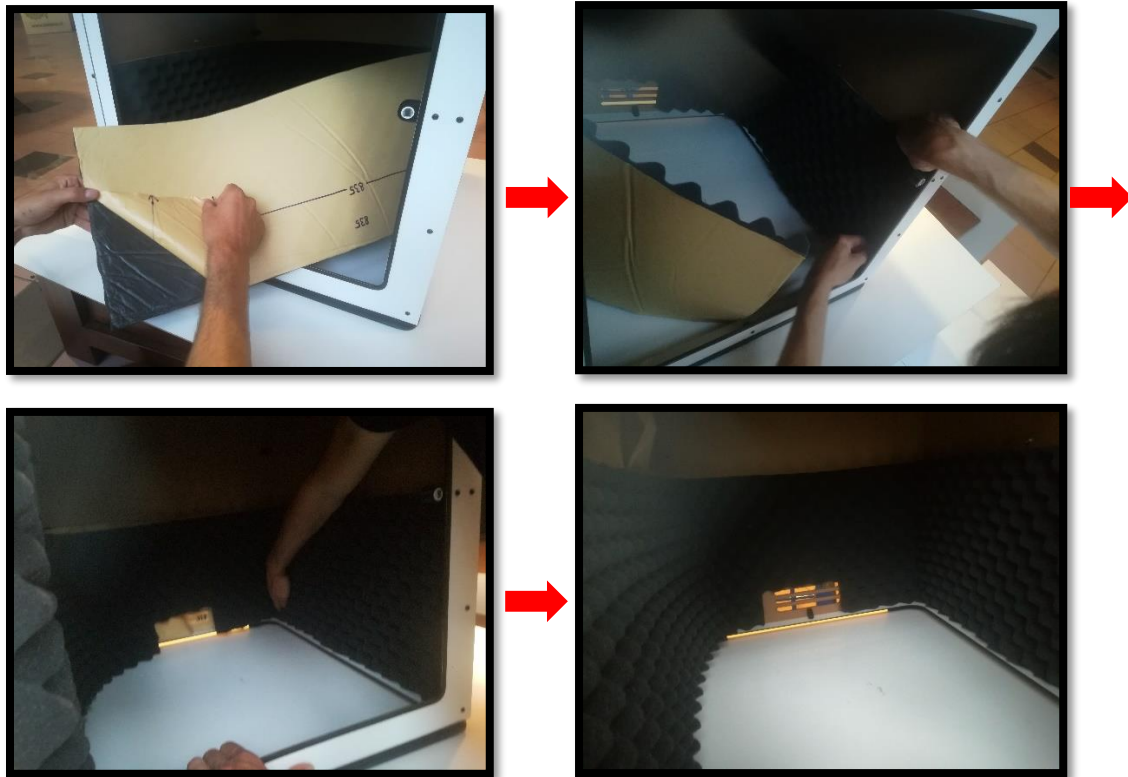
Paste the Top L foam panel on the white side of the inside top panel. Make sure to align the fan and sensor holes properly. Paste the Top S foam panel at the rear end of the inside top panel.



Paste sidewall foam

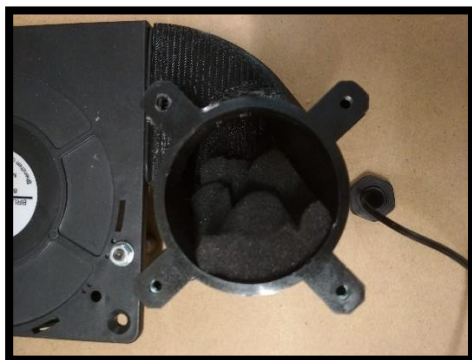
Paste the Side L foam panel inside box3d. Start by removing a small part of the protective paper. Paste the adhesive foam part at the lower right side of the Right panel. Continue to the back panel by carefully removing the protective paper from the adhesive foam. Firmly press the foam into the corners. Align the air intake and continue to the Left panel.

Note: for box3d XL, this takes two or three panels instead of one.



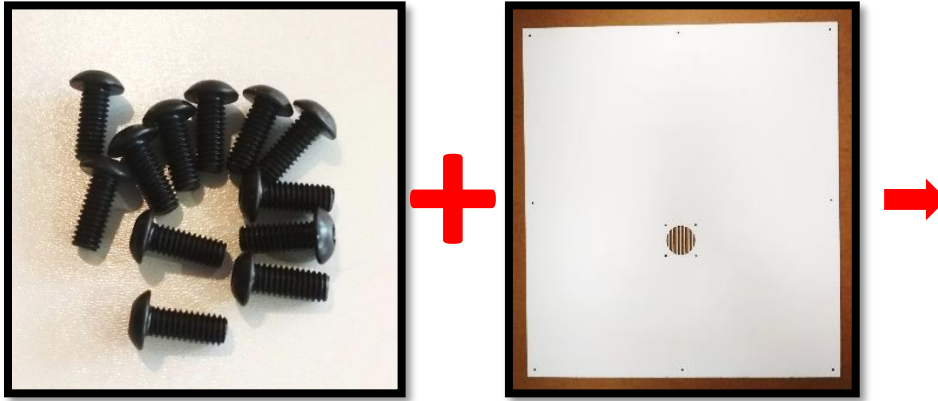
Use the same method to paste the Side S foam panel above the Side L foam panel.

Insert a piece of the leftover foam (5cm x 6cm) in the fan outlet. This is not necessary, but it reduces the sound of the fan. **Note: make sure the outlet is not blocked.**



Close the top

- Install the top panel, and secure it with M4x10 inbus screws. (If a hose connector is used, then use the M4x16 inbus screws for those attachments)
 - o 12x M4x10 inbus screws.
 - o Top panel
- If you have the filter version: Push the 2 carbon filter in the filter housing, and close it with the HEPA filter.



Congratulations! You have completed the box3d assembly.

Please read the user manual for operation instructions