

# Assembly instructions – Fabscan 100

## Content:

List of material

Assembly group 1: Turning Table

Assembly group 2: Camera/Laser Bracket

Assembly group 3: Housing

Final Assembly

## List of material:

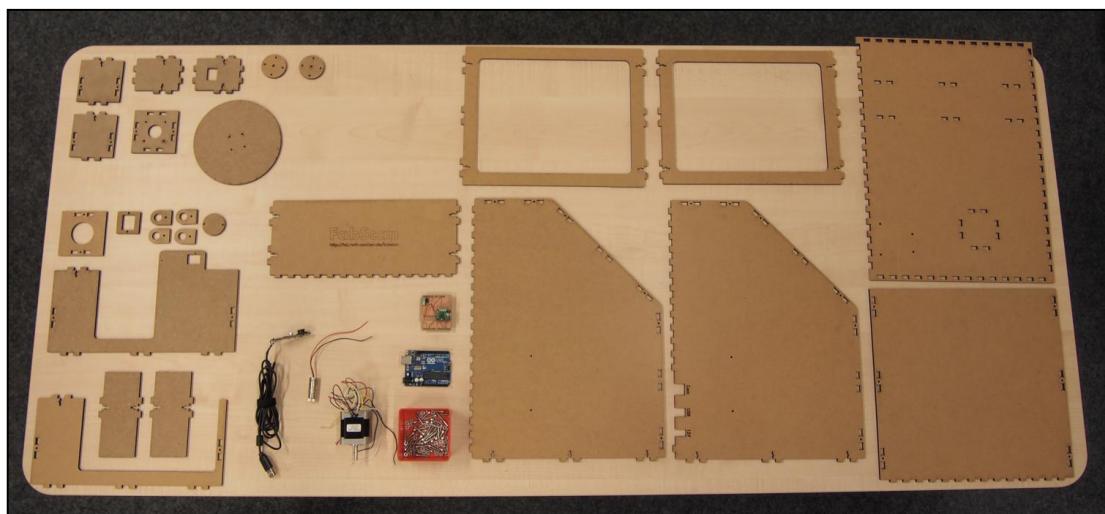


Figure 1: Material needed for the assembly. Note: Housing middle is not in the picture.

Part name:	Included in:	No:
Screws DIN 965 M3x20 + nuts		4 + 4
Screws DIN 965 M3x8 + nuts		4
Screws DIN 965 M2x20 + nuts		2 + 6
Screws DIN 965 M3x16 + nuts		4 + 6
Screws DIN 912 M3x25 + nuts		1
Screws DIN 912 M3x16 + nuts		36 + 36
Turning Table Circle		1
Turning Table Circle small		2
Bracket Laser Holder parts		4
Bracket Laser Holder frame		1
Bracket Laser Holder circle		1
Bracket front		1
Bracket back		1
Bracket top		1
Bracket left/right		2
Box bottom		1
Box left side		1
Box right side		1
Box Top		1
Box Slope		1
Box Front		1
Box Back		1
Box Middle		1
Motor Housing		5
Fabscan Shield		1
Laser		1
Camera		1
Arduino Uno		1
Motor Nema 17		1

## 1. Turning Table

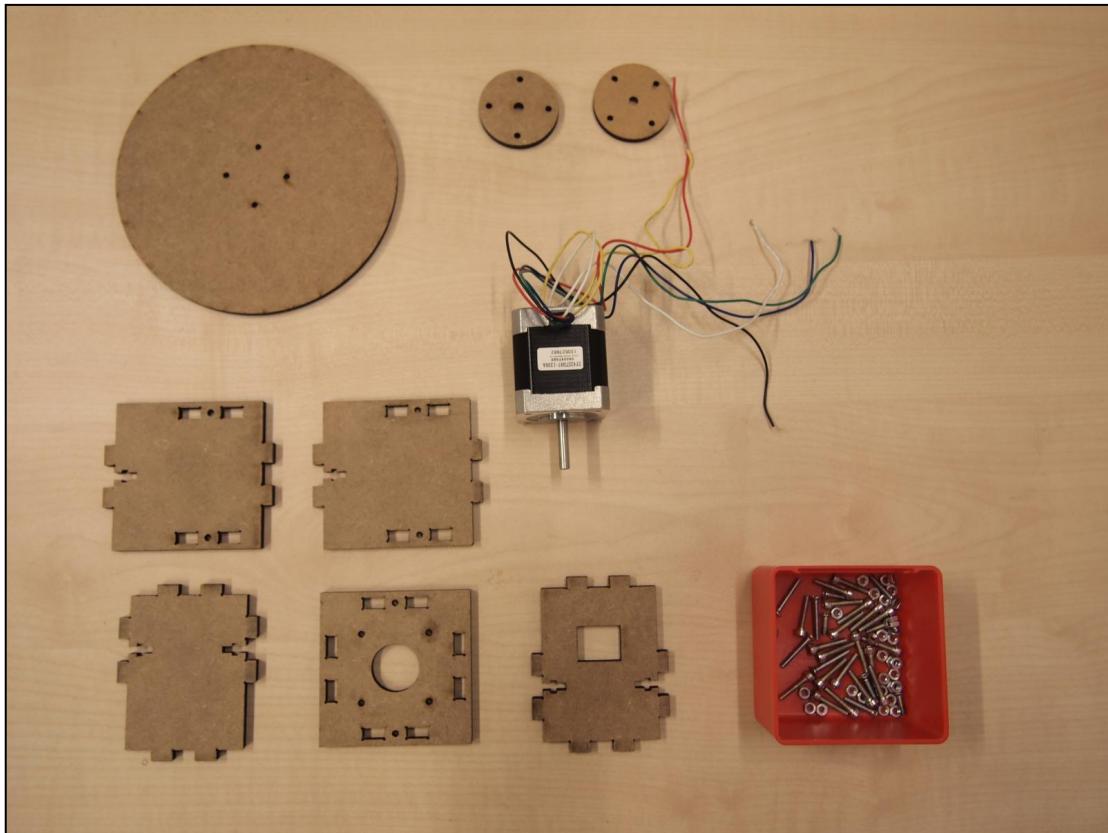


Figure 2: Parts needed for the assembly group 'Turning Table'.

Part name:	Included in:	No:
Assembly Turning Table:		
Turning Table Circle small		1
Turning Table Circle		1
Turning Table Circle small		2
Motor Housing		5
Motor Nema 17		1
Screws DIN 965 M3x20 + nuts		4 + 4
Screws DIN 965 M3x8 + nuts		4
Screws DIN 912 M3x16 + nuts		6 + 6

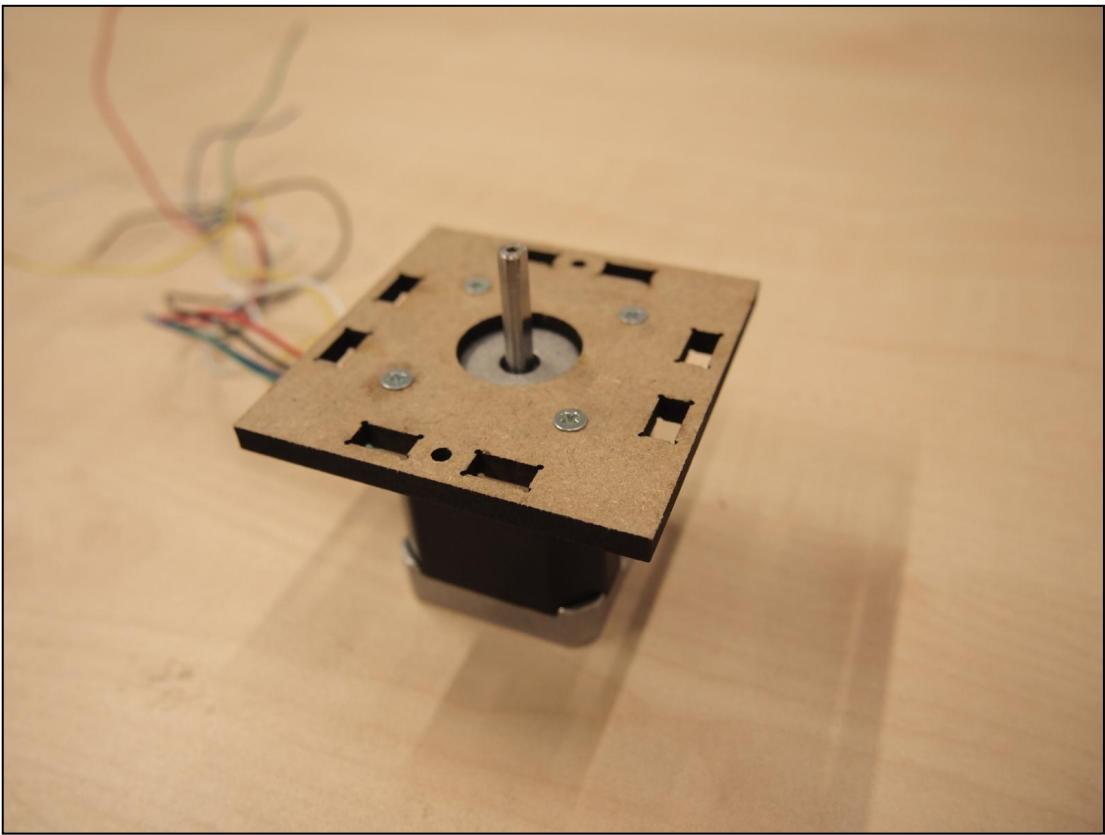


Figure 3: Use four DIN965 M3x8 Screws to connect the motor housing top with the Nema 17 stepper motor.

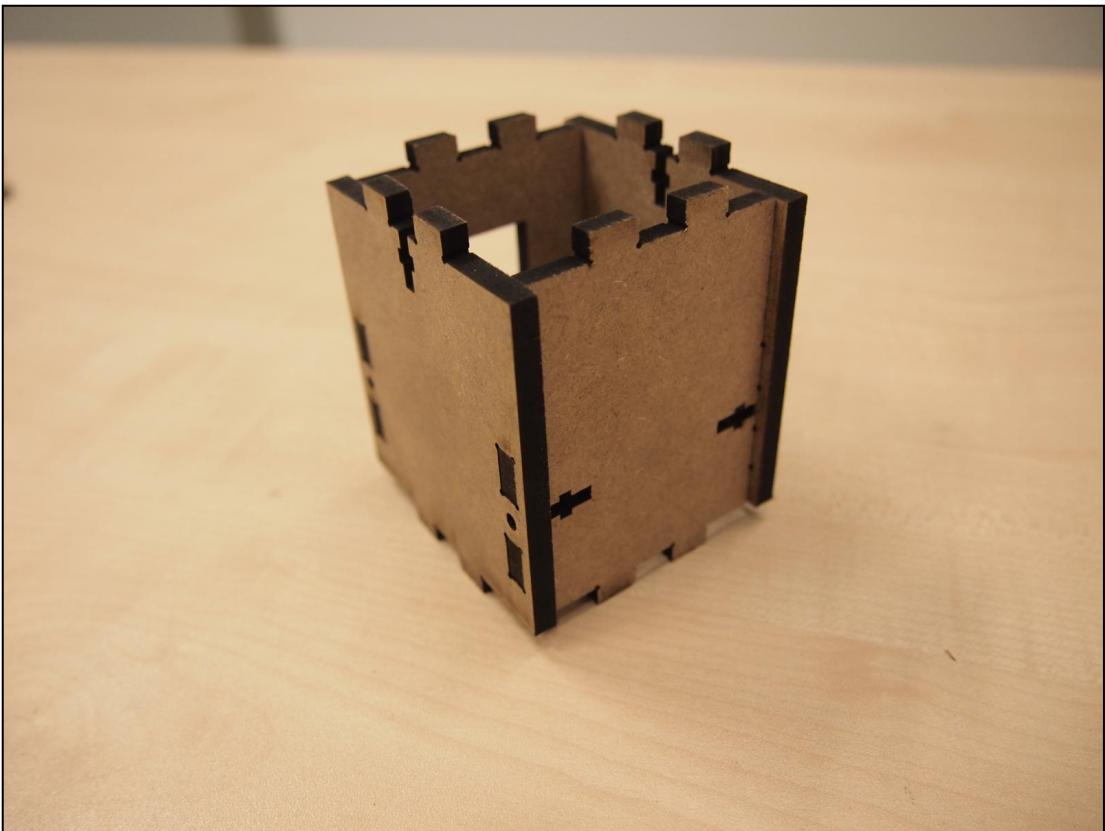


Figure 4: Connect the four parts of the motor housing as shown.

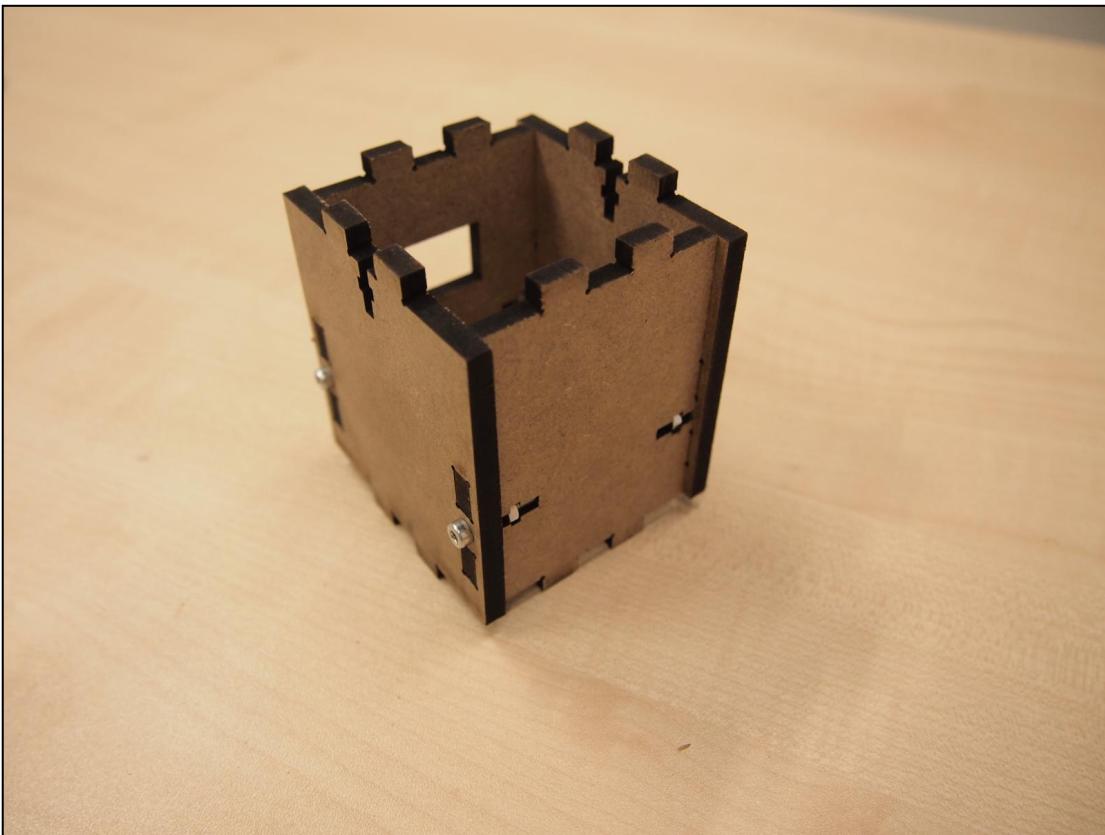


Figure 5: Use four DIN 912 M3x16 screws and nuts to secure the housing.

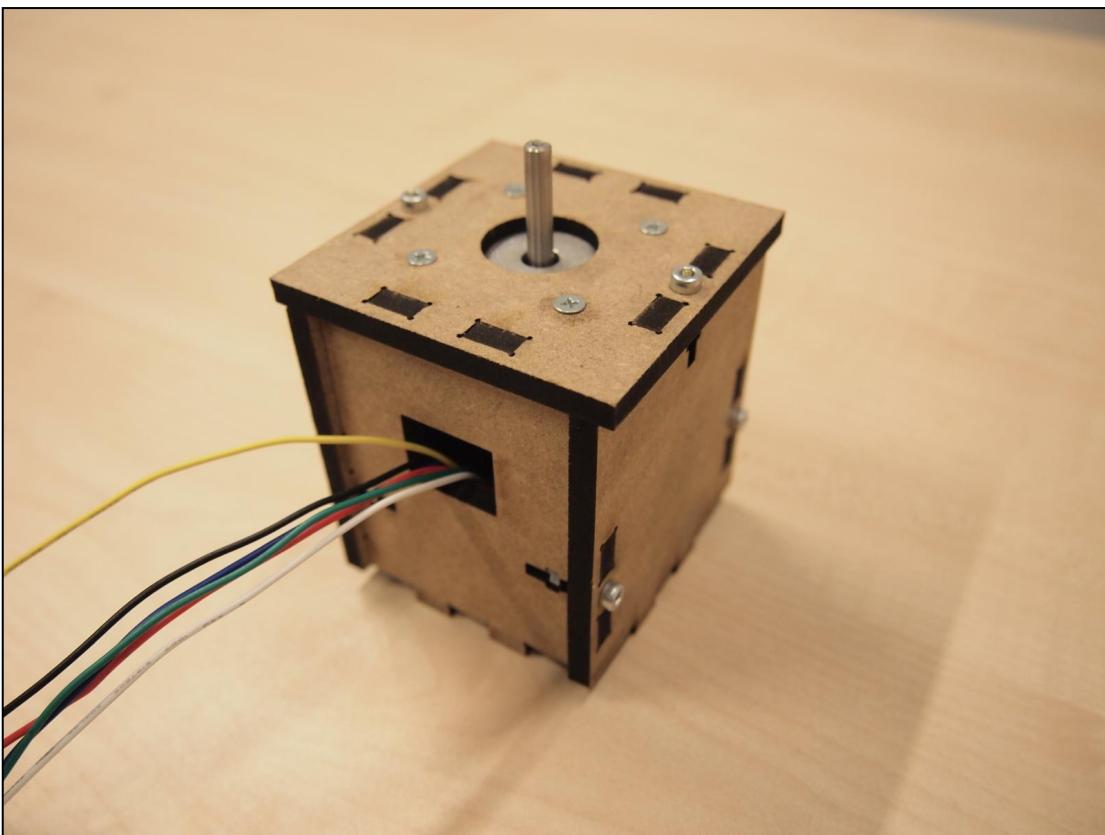


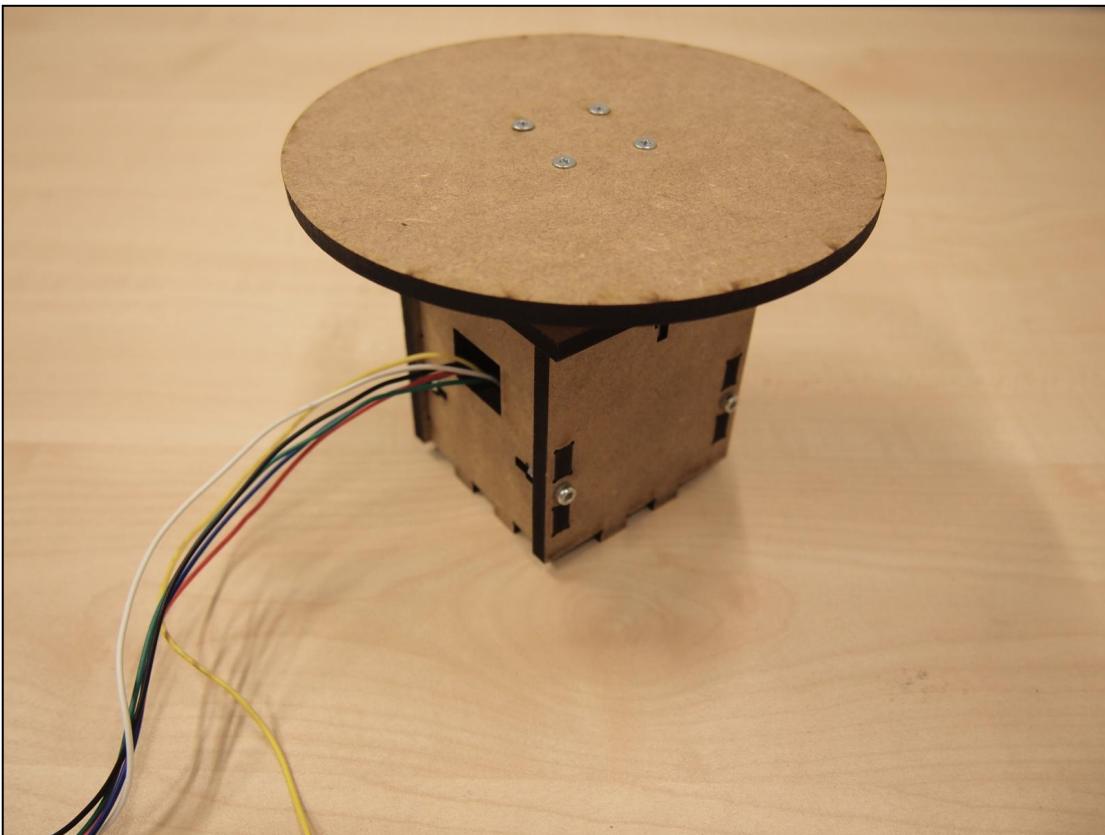
Figure 6: Attach the Top part of the housing and secure it with two DIN 912 M3x16 screws and nuts.



**Figure 7:** Take the two small turning table circles and align them the way shown. Make sure the circle in the middle is aligned correctly!



**Figure 8:** Attach the two small turning table circles to the big turning table using four DIN 965 M3x20 screws and nuts. Make sure the screws are leveled to the surface.



**Figure 9:** Now attach the turning table to the motor shaft.

## 2. Camera / Laser Bracket

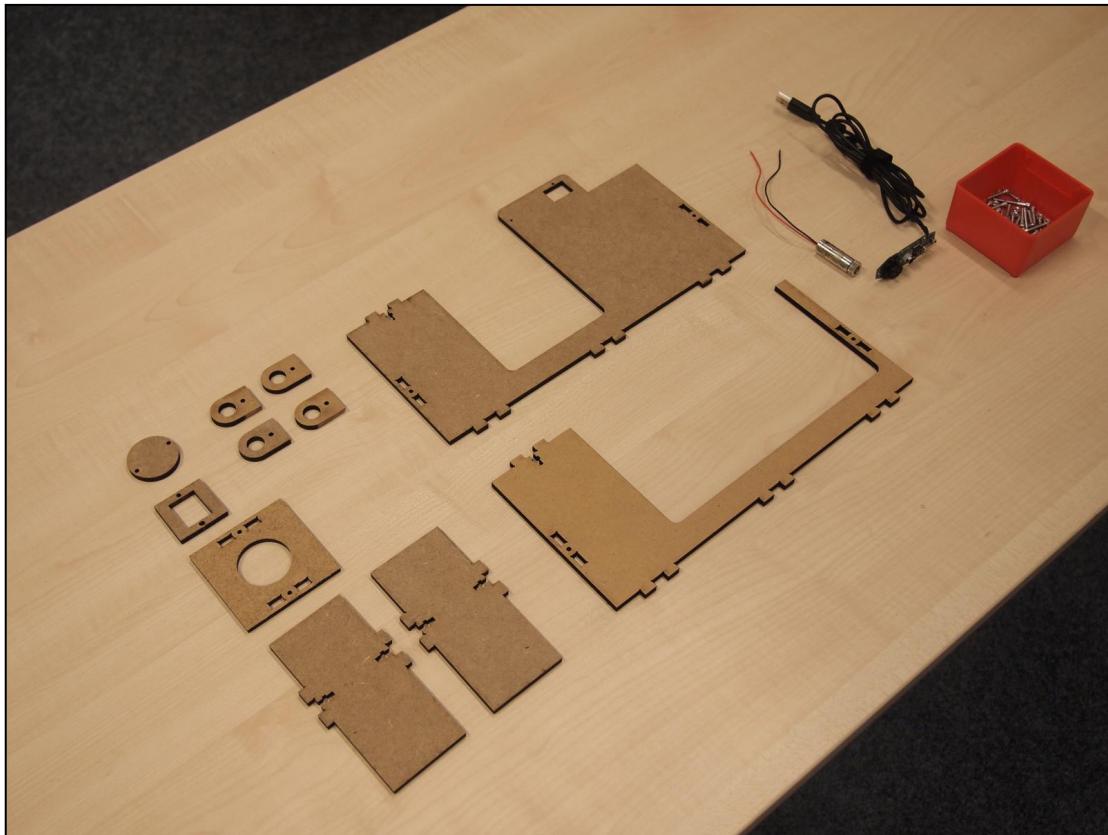
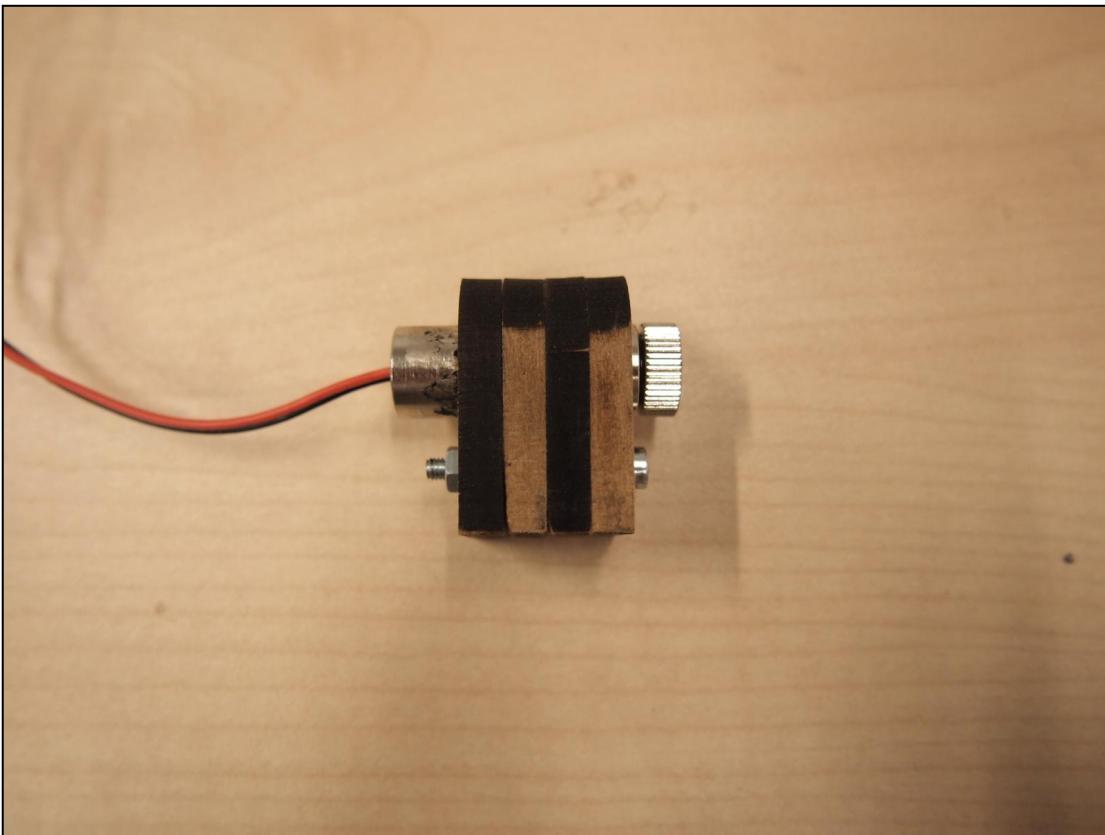
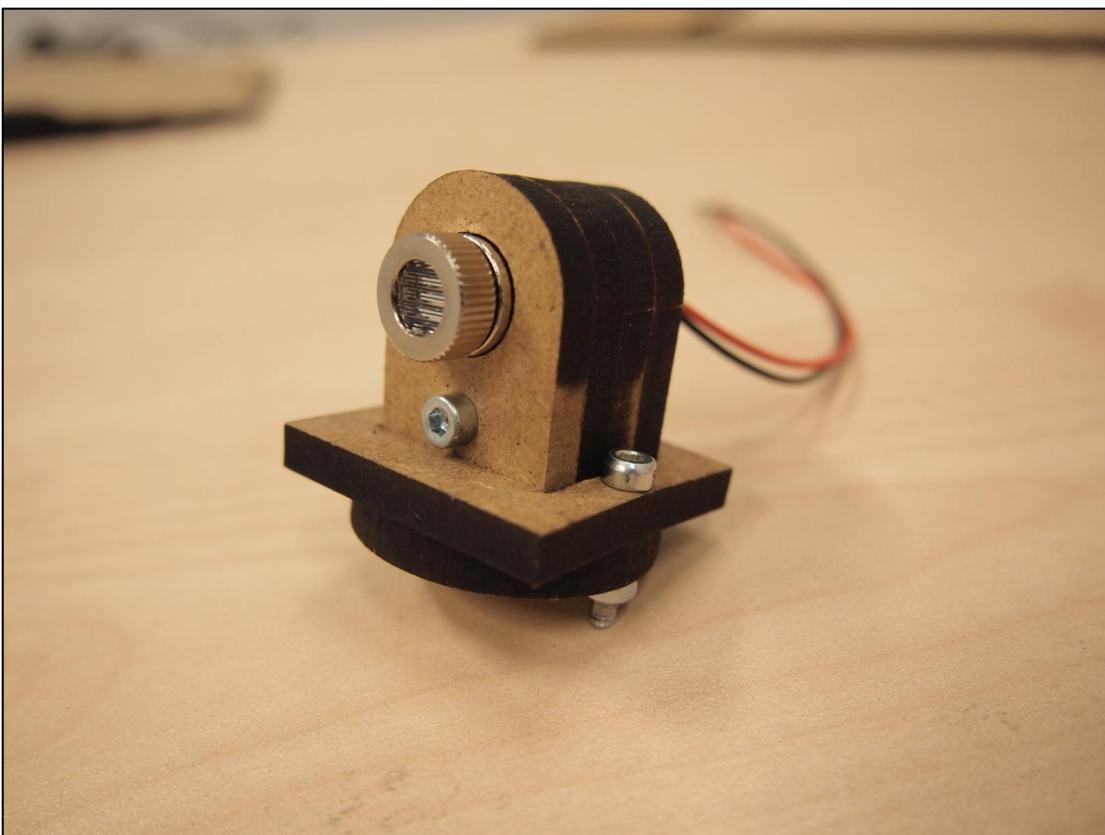


Figure 10: Parts needed for the assembly group ‘Camera / Laser Bracket’.

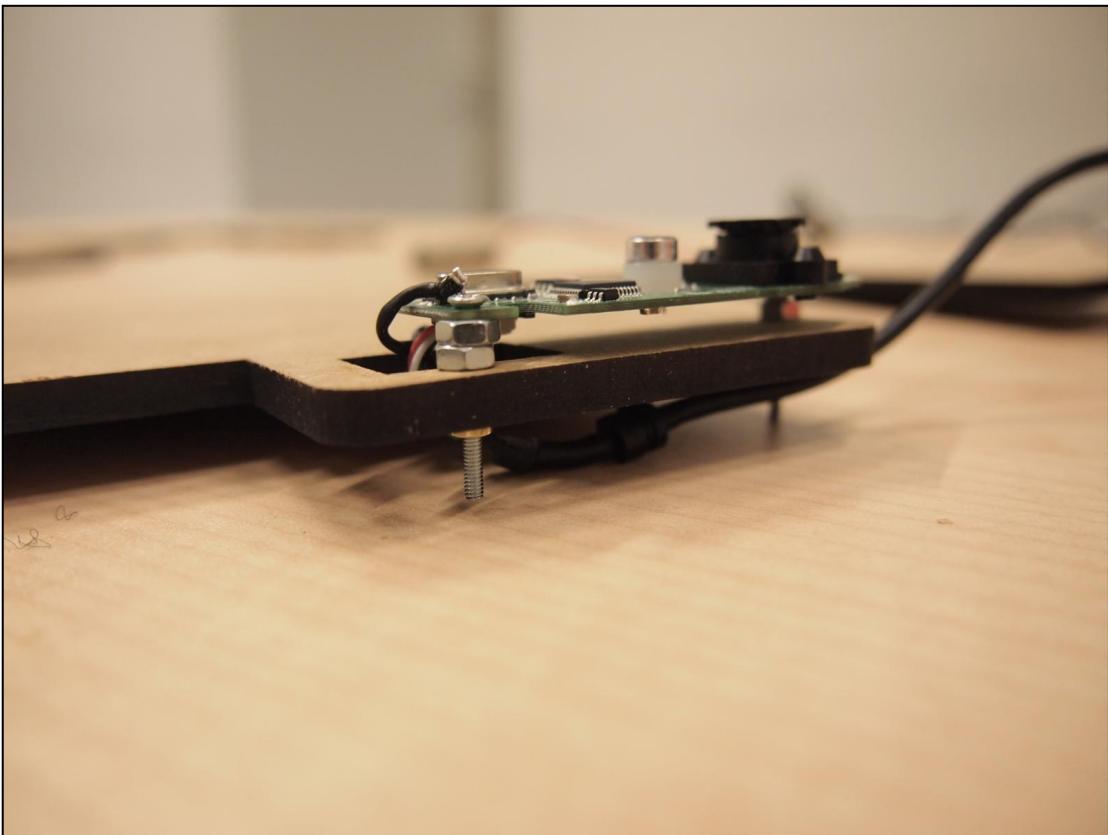
Assembly Camera / Laser Bracket:		
Bracket Laser Holder parts		4
Bracket Laser Holder frame		1
Bracket Laser Holder circle		1
Bracket front		1
Bracket back		1
Bracket top		1
Bracket left/right		2
Screws DIN 965 M2x20 + nuts		2 + 6
Screws DIN 912 M3x16 + nuts		8 + 8
Screws DIN 912 M3x25 + nuts		1
Laser		1
Camera		1



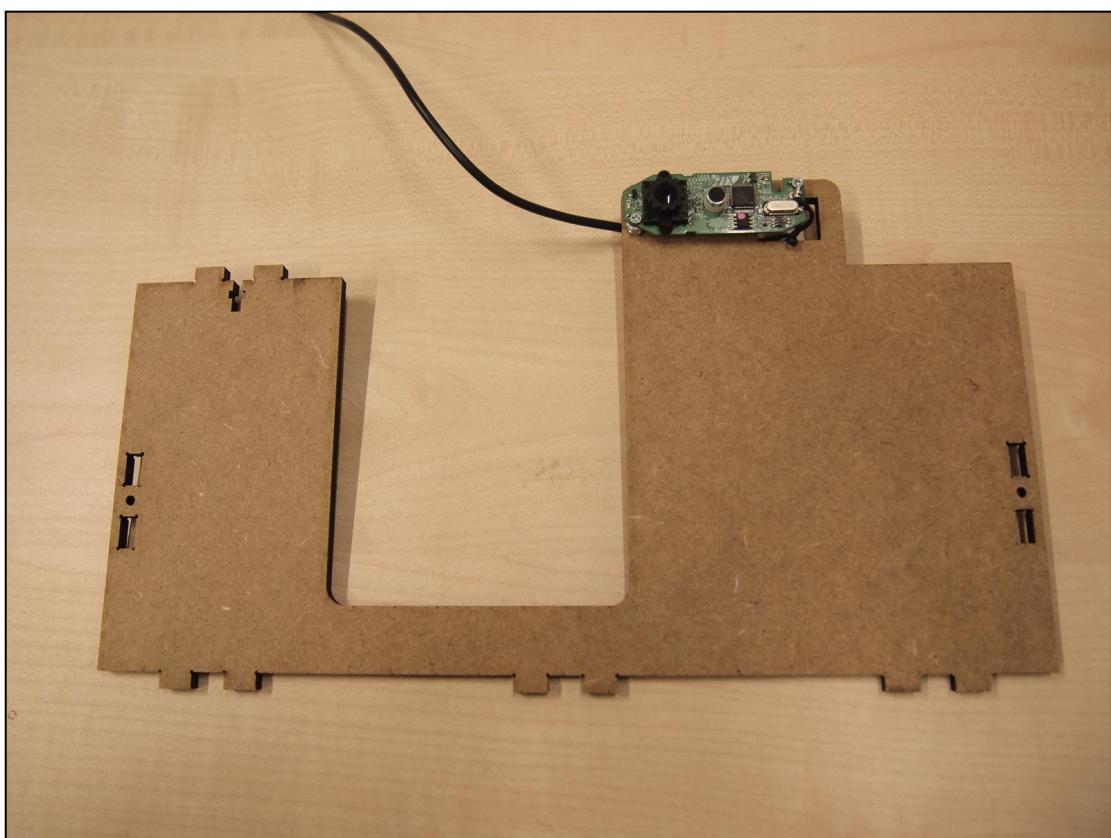
**Figure 11:** Take the four laser holder parts and connect them using the DIN 912 M3x25 screw and nut. Insert the laser the way shown.



**Figure 12:** Now insert the laser holder in the laser holder frame and circle. Fasten two DIN 965 M3x16 screws and nuts the way shown.



**Figure 13:** Attach the disassembled camera to the bracket back with two DIN 965 M2x20 screws and nuts. Use four M2 nuts as spacers.



**Figure 14:** The bracket back should now look like this.

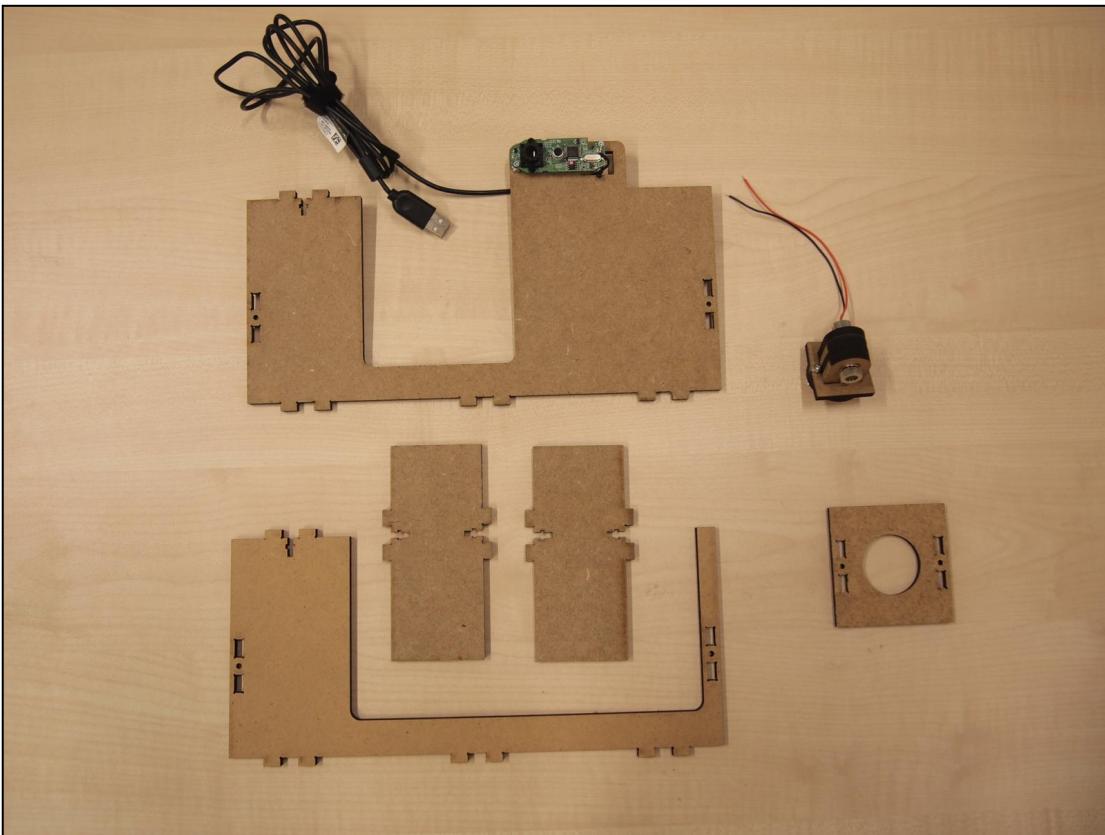


Figure 15: Take the parts left for this assembly group...

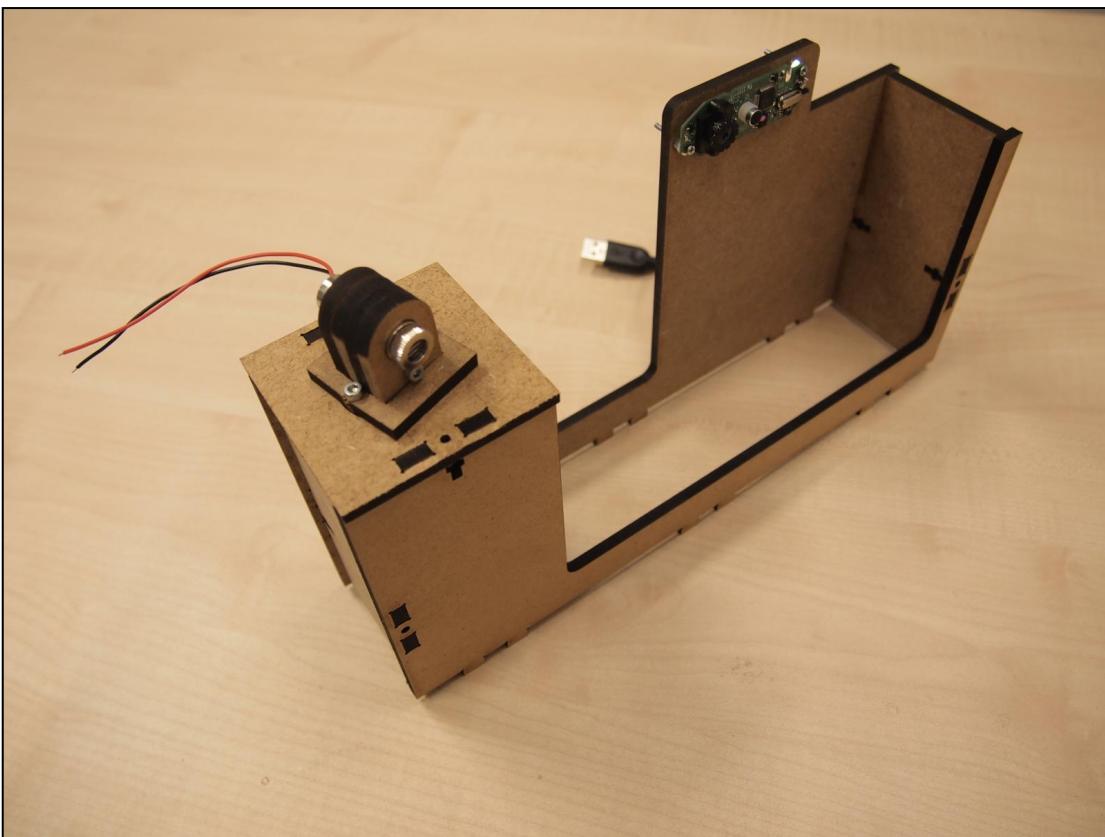


Figure 16: ...and assemble them as shown. Use six DIN 912 M3x16 screws and nuts to secure the bracket.

### 3. Housing

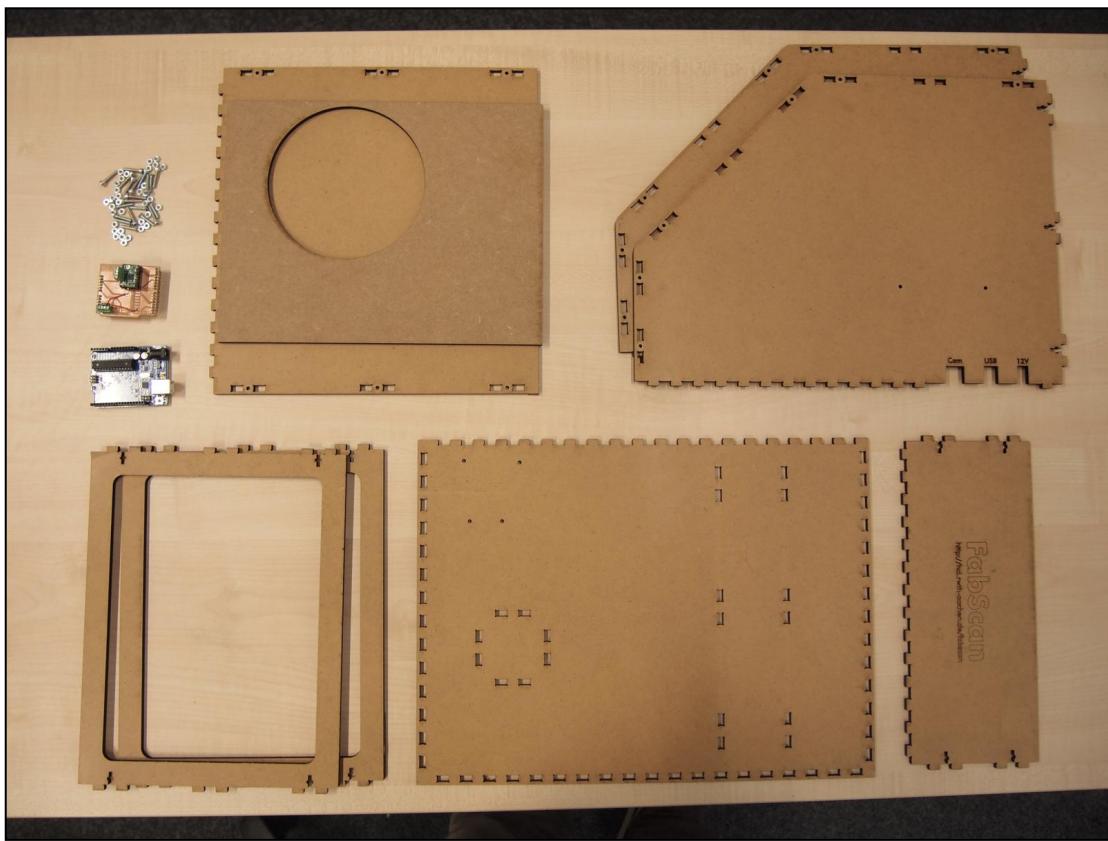


Figure 17: Parts needed for the assembly group 'Housing'.

Assembly Housing		
Box bottom		1
Box left side		1
Box right side		1
Box Top		1
Box Slope		1
Box Front		1
Box Back		1
Box Middle		1
Arduino UNO		1
FabScan Shield		1
Screws DIN 965 M3x16 + nuts		4 + 6
Screws DIN 912 M3x16 + nuts		22 + 22

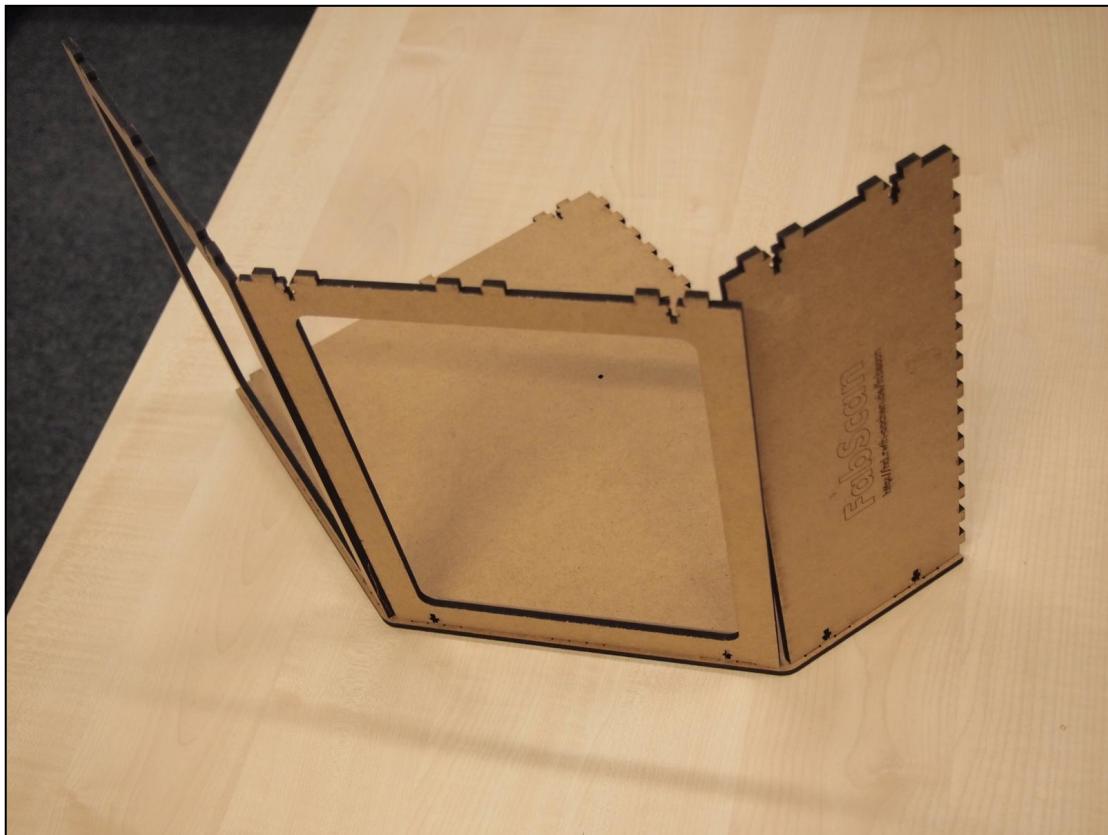


Figure 18: Attach the Box top, slope and front to the Box left or right side.

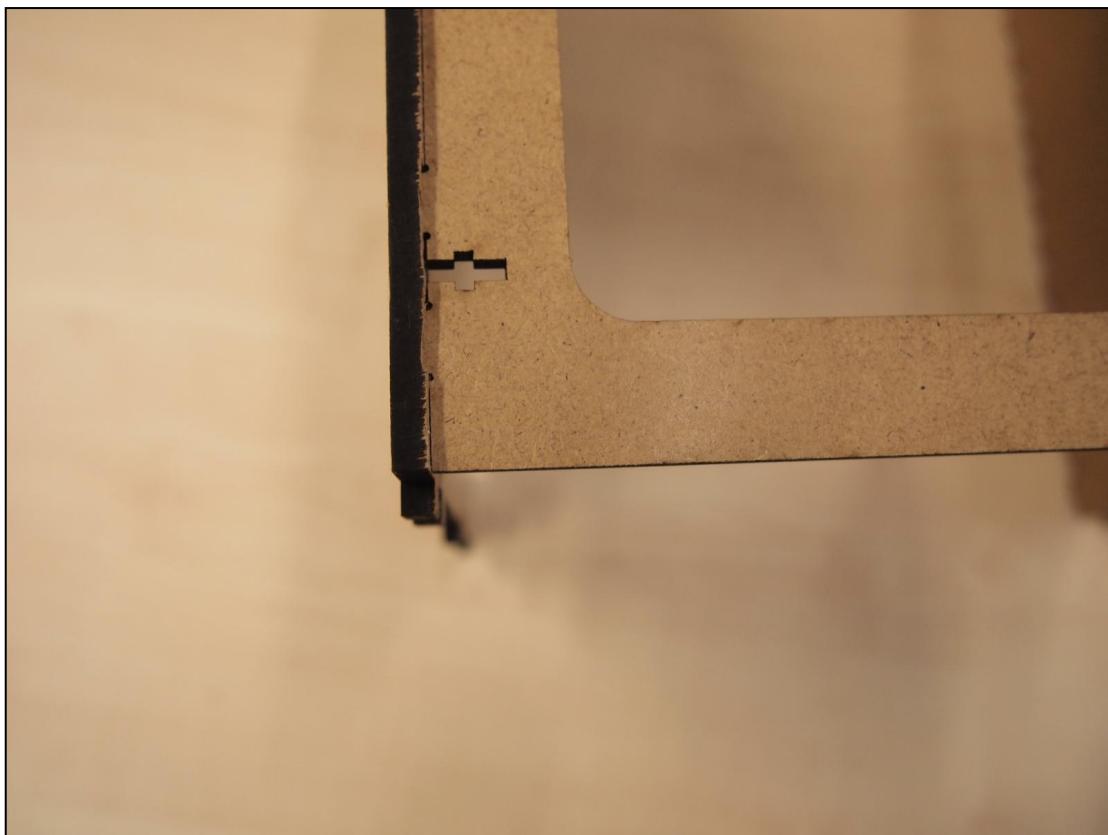


Figure 19: Make sure the box top flush with the Box left or right side. If it doesn't fit you may have mixed up the Box slope and Box top part.

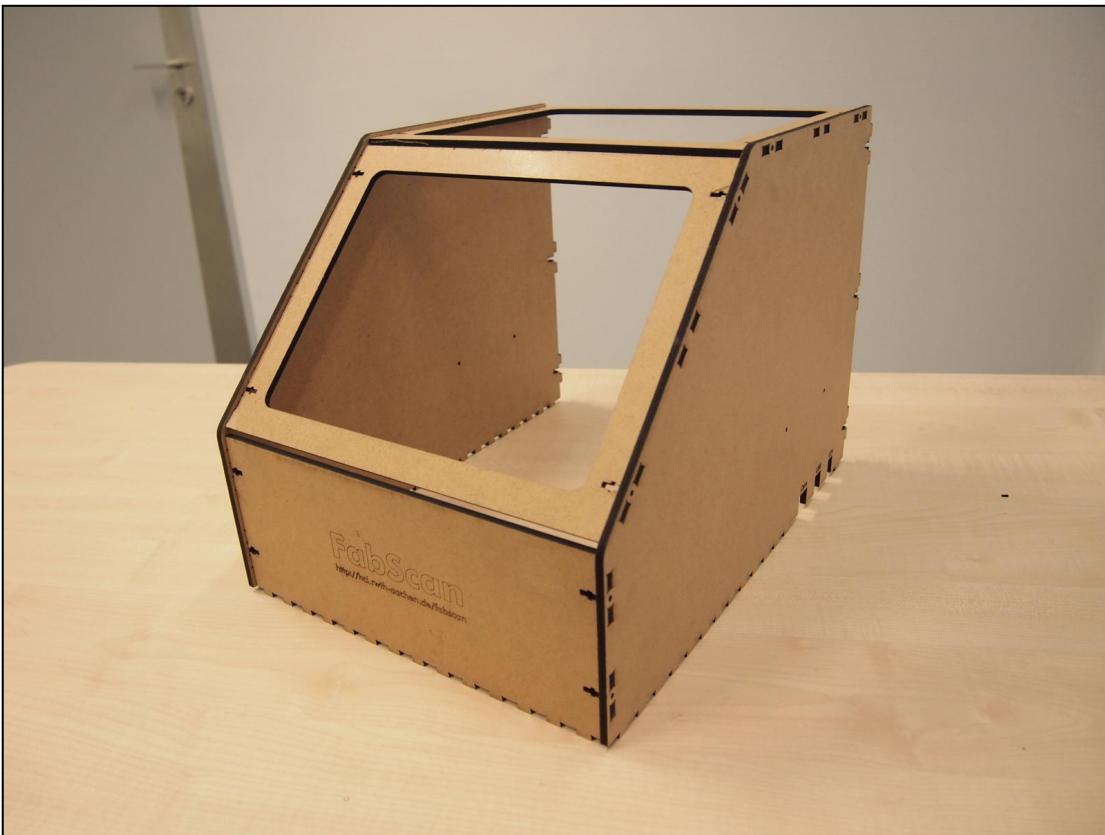


Figure 20: Now attach the missing side part.

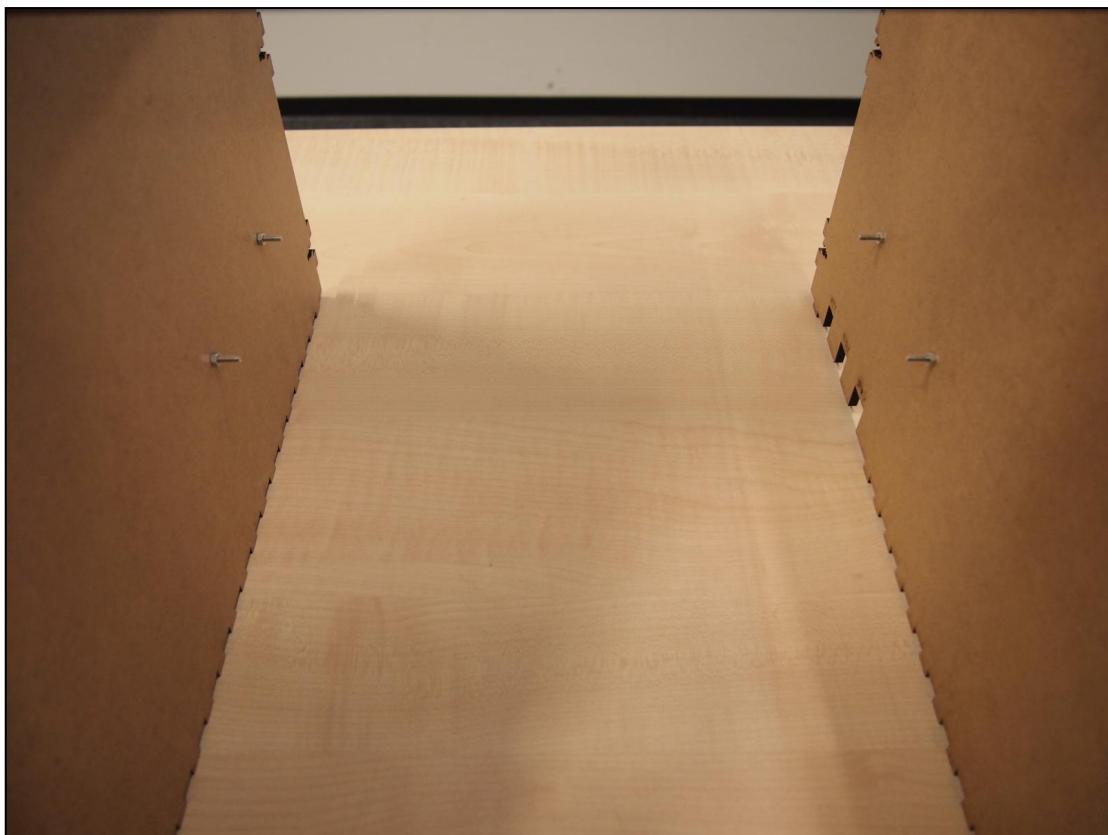


Figure 21: Insert four DIN 912 M3x16 screws and nuts in the holes on the side parts as shown.

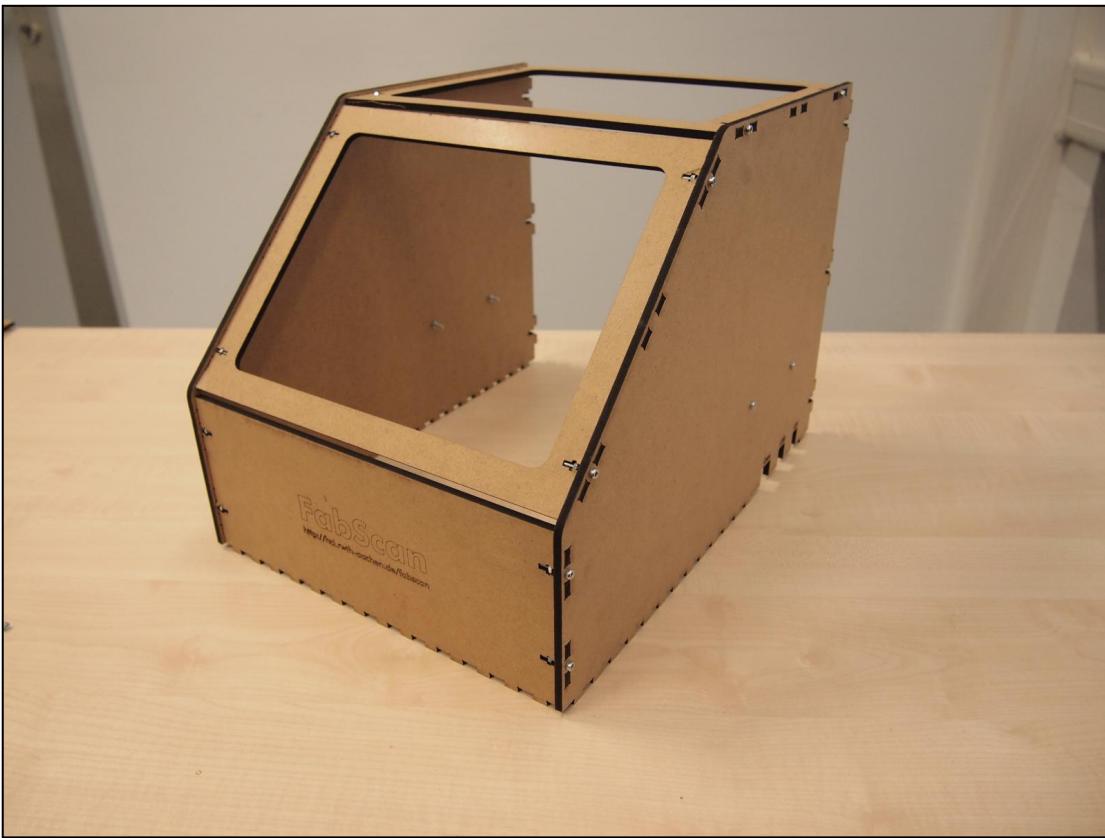


Figure 22: Use 12 DIN 912 M3x16 screws and nuts to secure the housing.

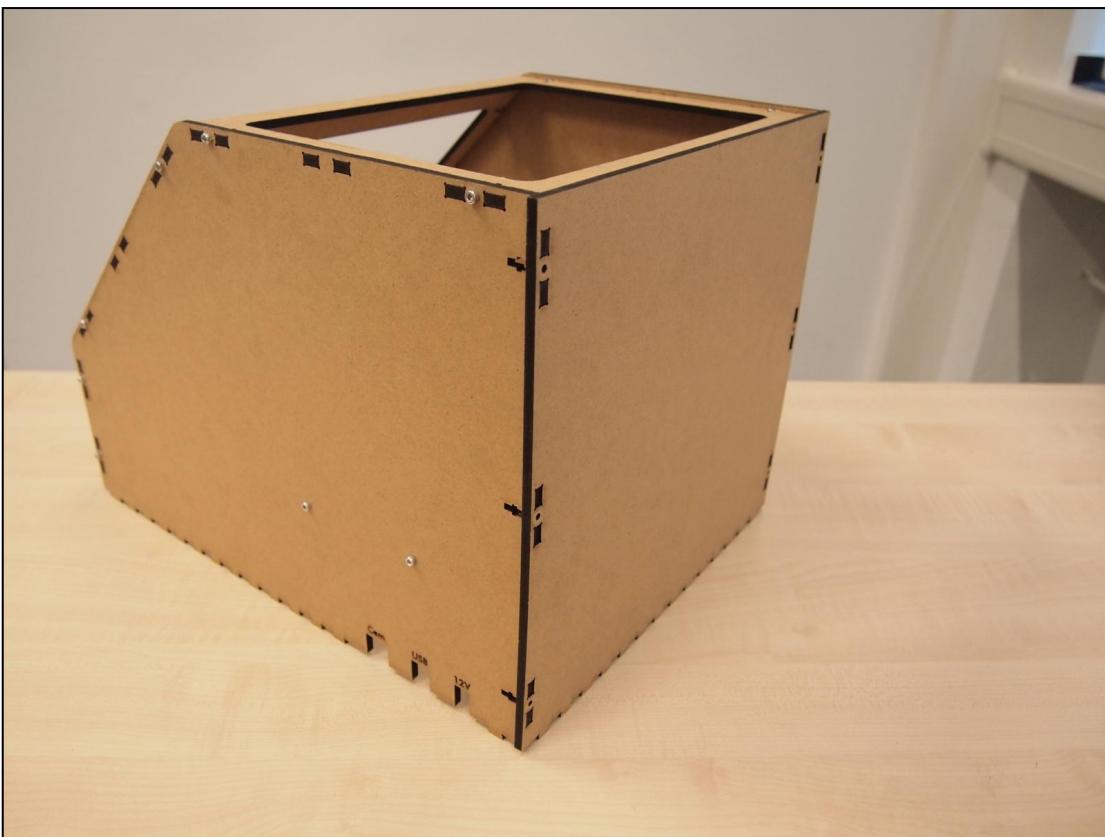


Figure 23: Attach the Box back plate.

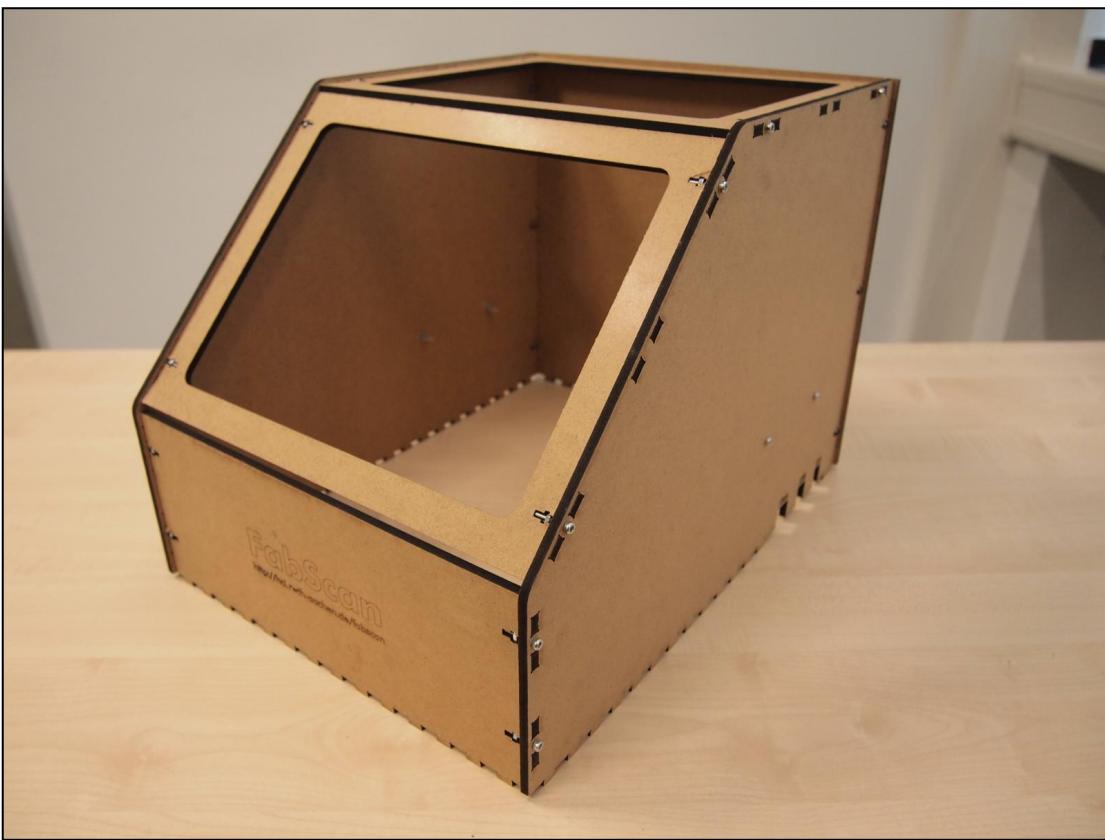


Figure 24: Fasten four DIN 912 M3x16 screws and nuts.

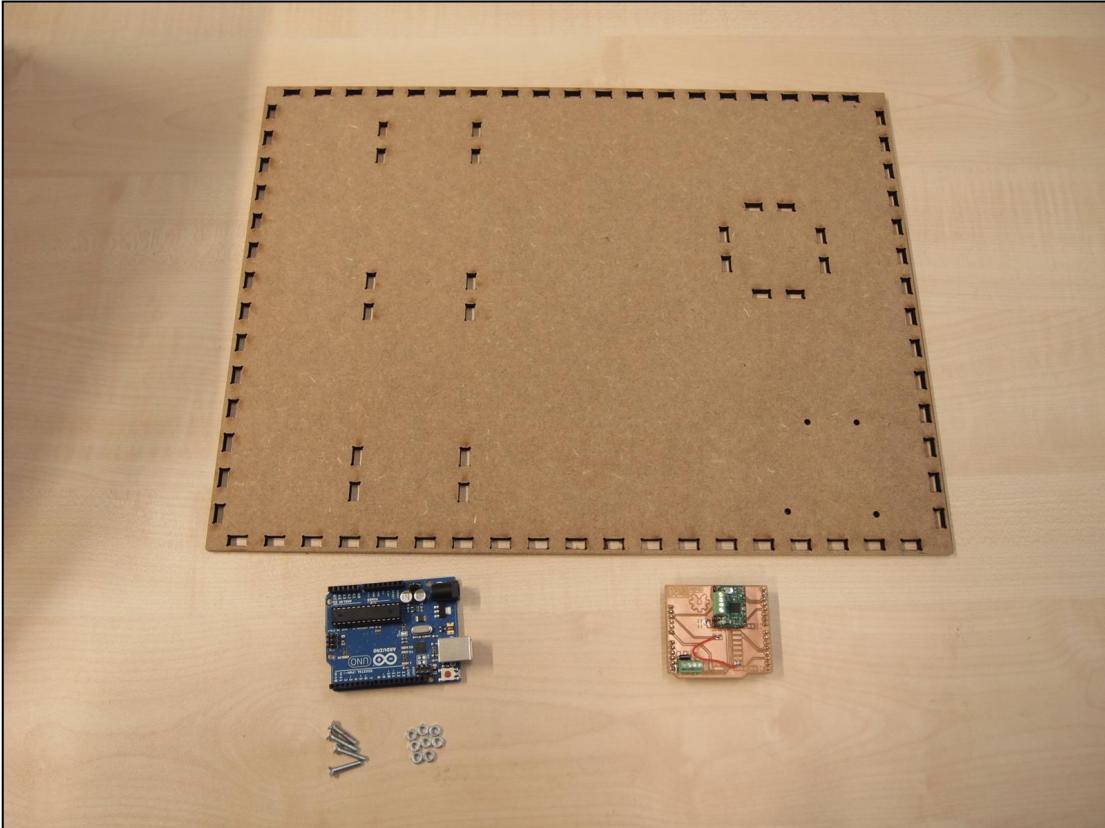
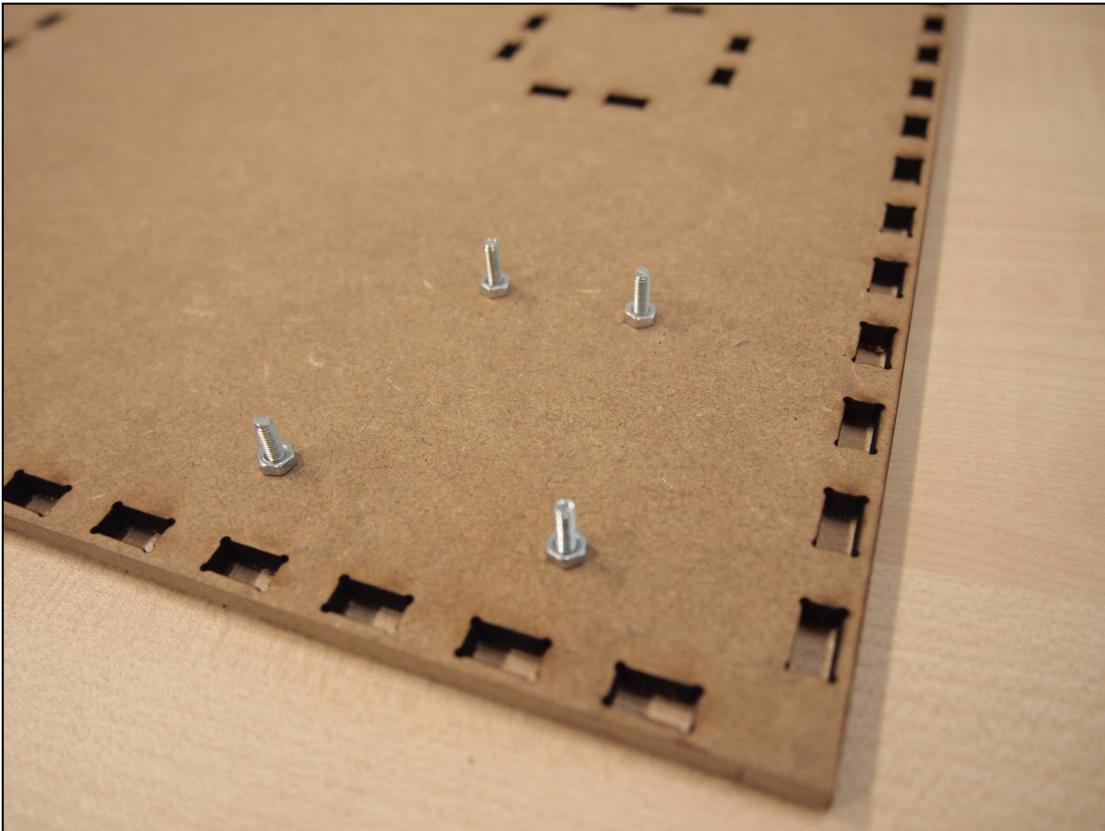
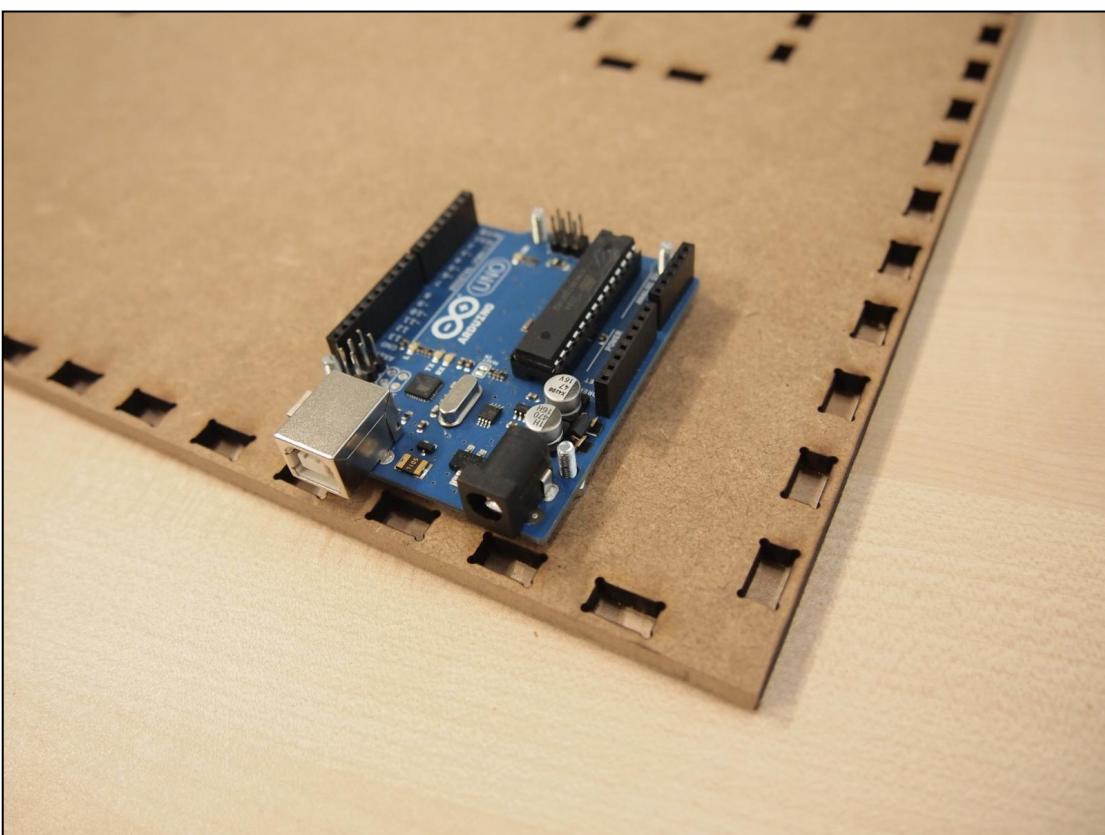


Figure 25: Take the Box bottom, the Arduino + Fabscan Shield as well as four DIN 965 M3x16 screws and six nuts.



**Figure 26:** Insert four DIN 965 M3x16 screws in the holes on the Box bottom and fasten them with four nuts. Make sure the bottom surface is flat.



**Figure 27:** Position the Arduino on the screws.

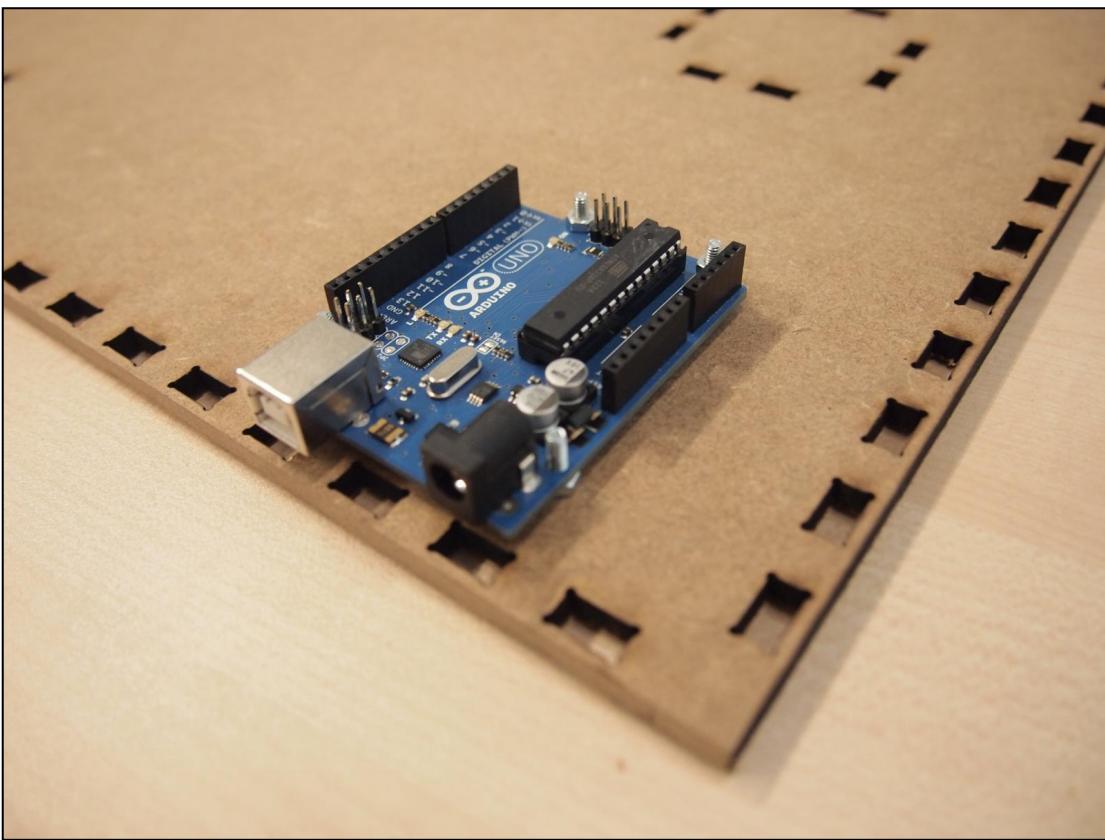


Figure 28: Use two nuts to secure the Arduino.

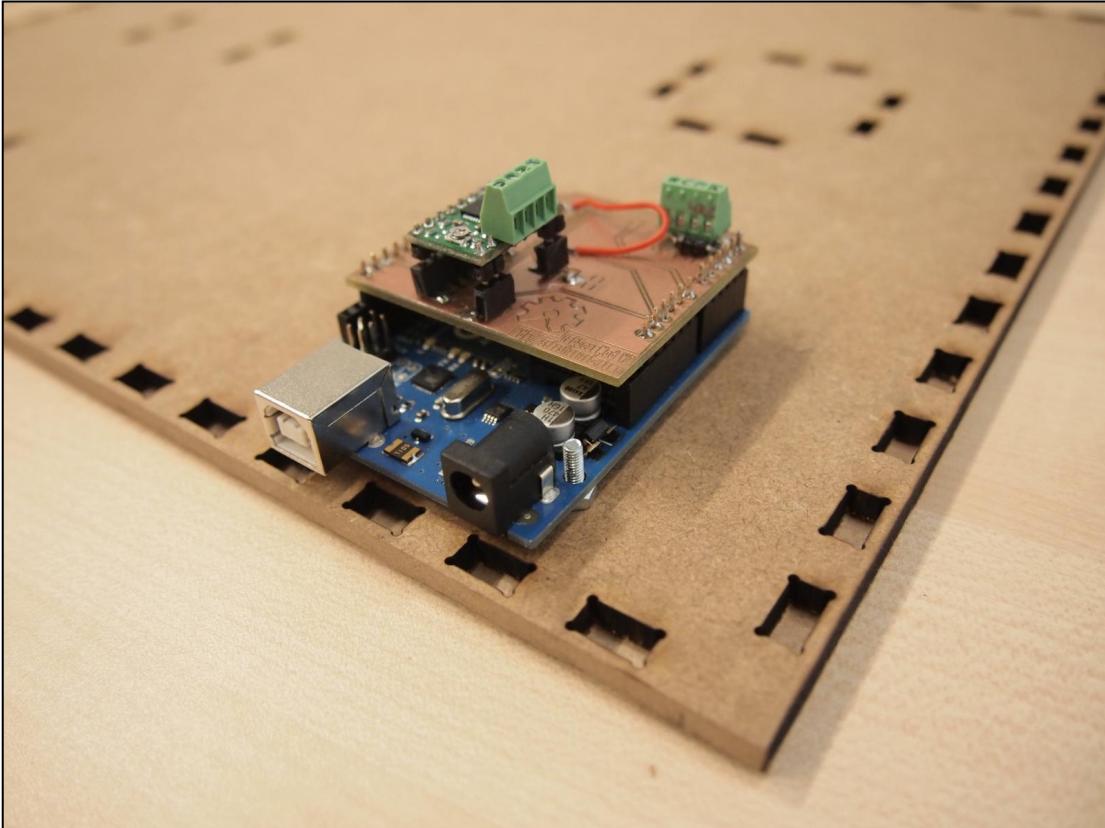


Figure 29: Attach the Fabscan Shield to the Arduino.

## 4. Final assembly

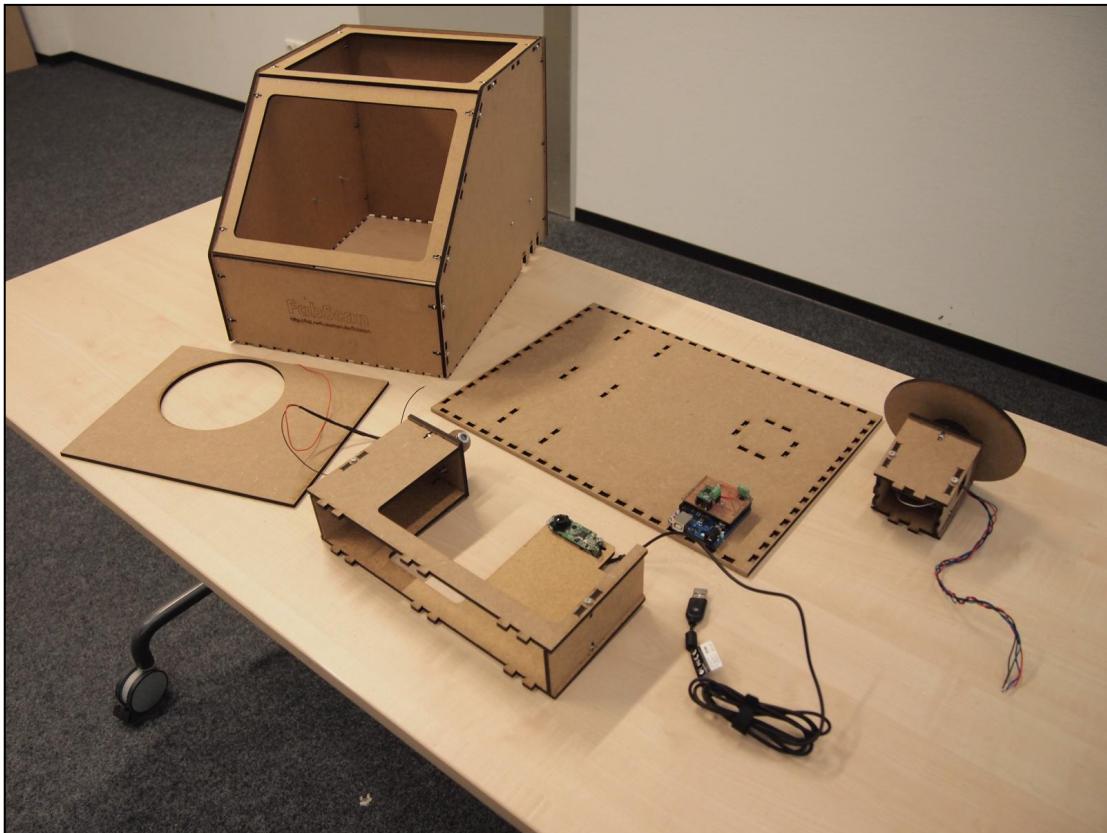


Figure 30: Your workspace should now look like this.

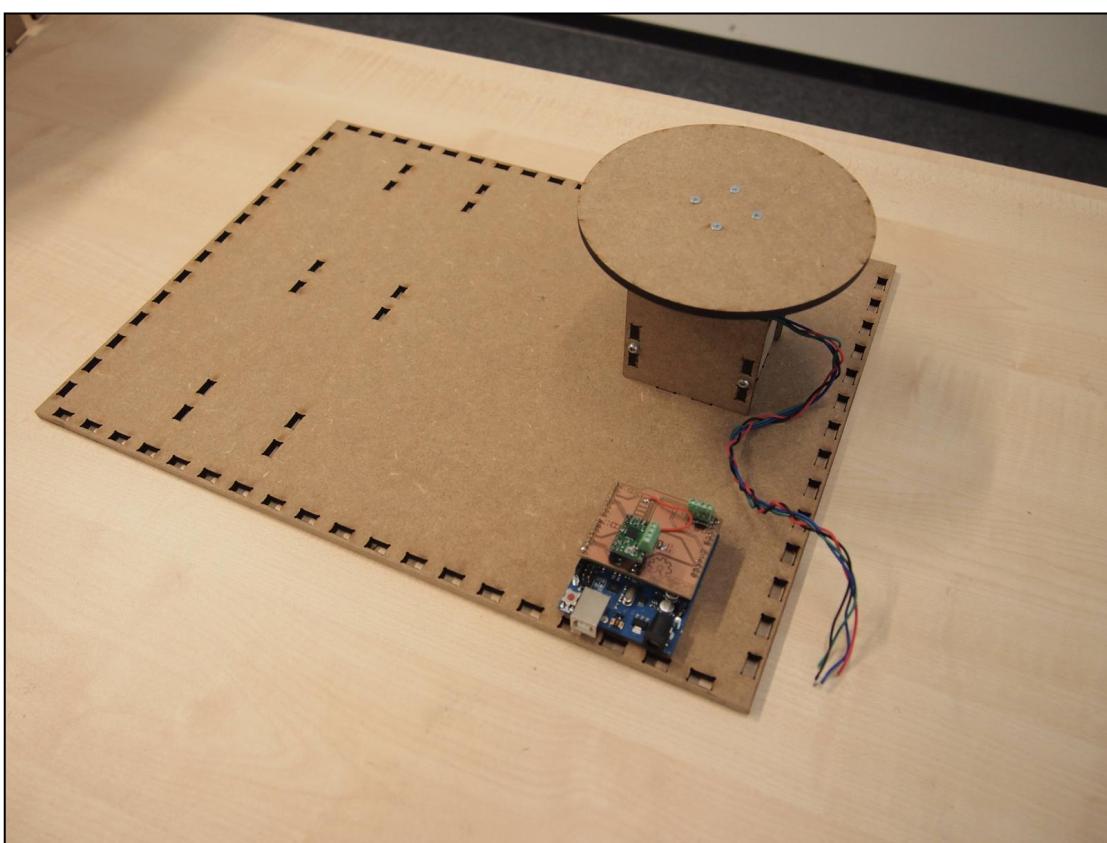


Figure 31: Place the assembly group 'Turning Table' on the Box bottom.

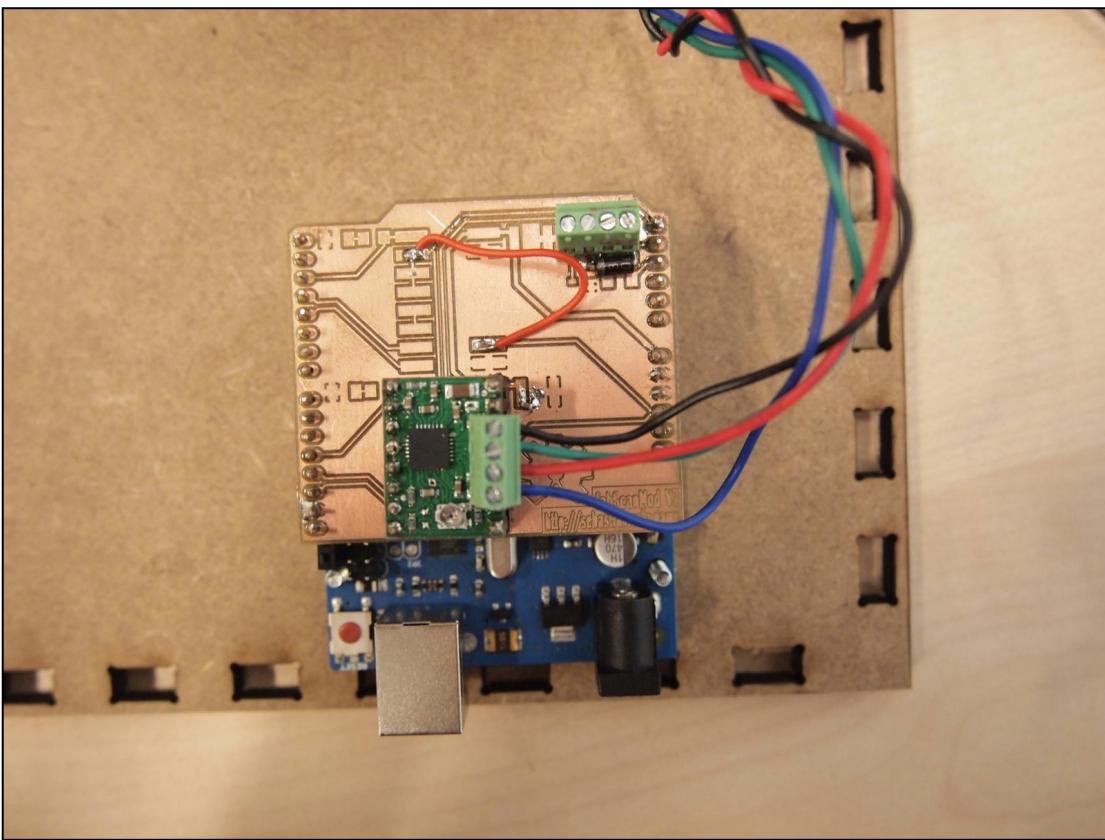


Figure 32: Connect the stepper motor cable with the Fabscan shield.

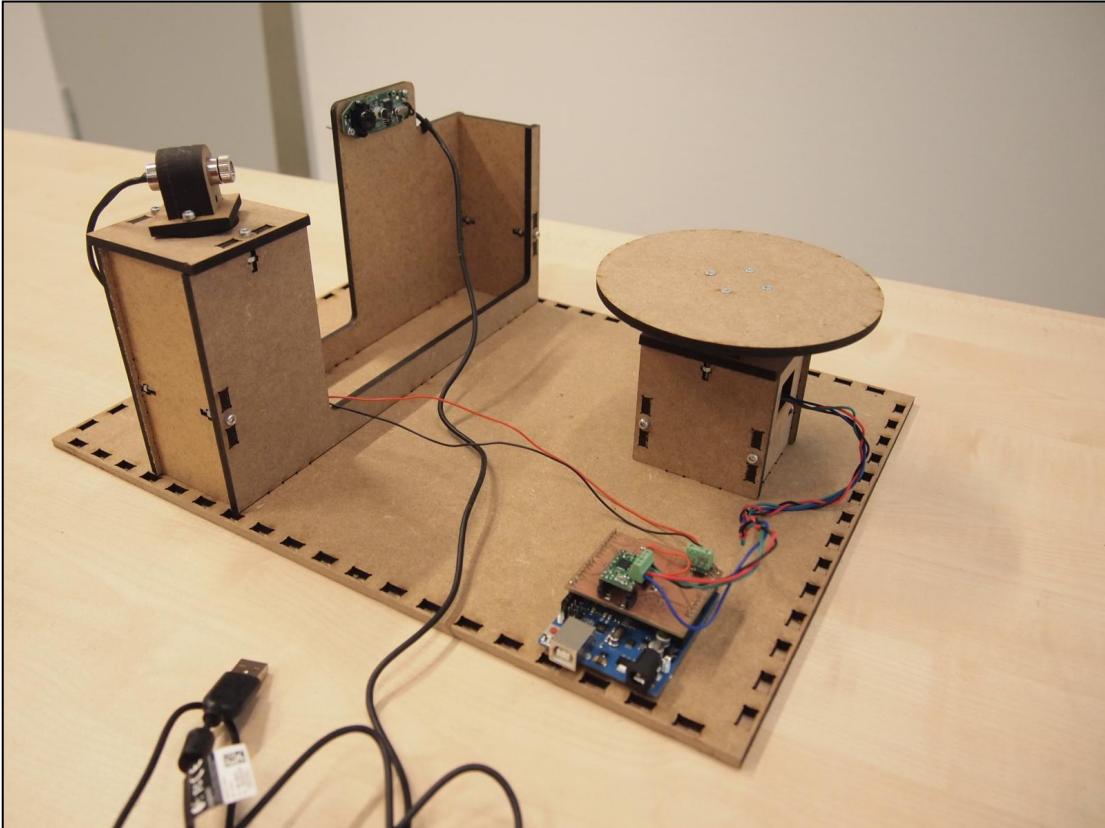


Figure 33: Now attach the 'Camera / Laser bracket' assembly group to the Box bottom.

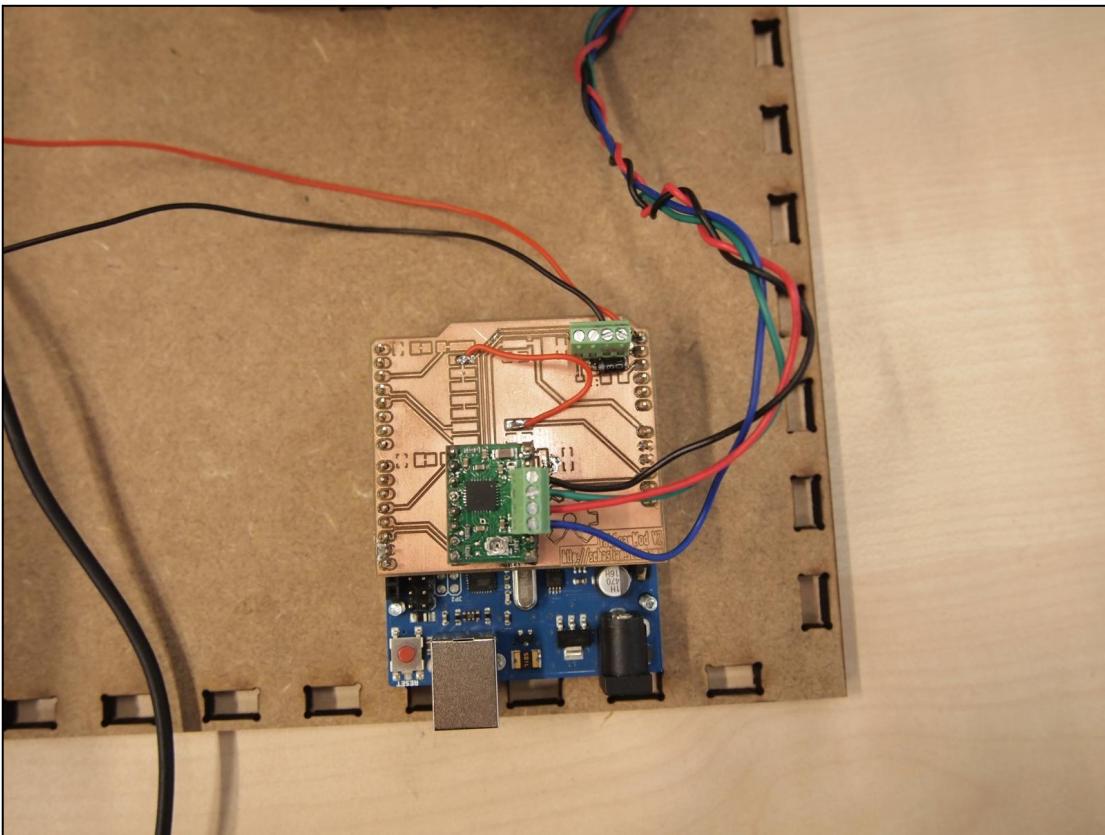


Figure 34: Connect the Laser with the Fabscale shield as shown.



Figure 35: Insert the housing middle in the assembly group 'Housing'.

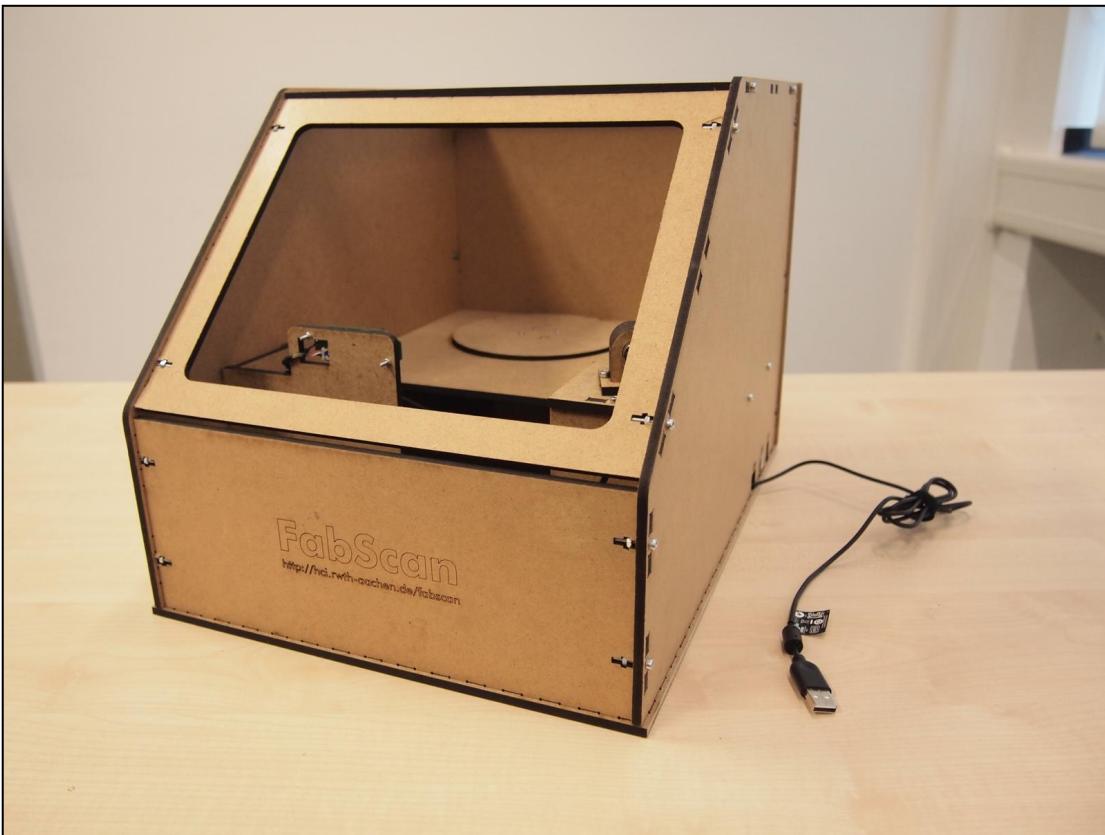


Figure 36: Place the 'Housing' assembly group to the Box bottom.



Figure 37: Congratulation, you're done! :)