Assembling the calculator - IN-16 / B-5870 / IN-17 - versions

Things you will need

- Assembled boards
- High voltage power supply
- Keycaps
- Nixies soldered to the socket boards
- Connection Wires

ID	Qty	Wires	Mode	Comment
SWITCH	1	2	straight	
LED	1	3	straight	
KEYBOARD	1	5	straight	
DRIVER	1	6	straight	
TOHVPSU	3	1		
HV	1	1		IN-16, B-5870
HV	2	1		IN-17

Double-check the pin order and polarity of all connections before you power up the device.

- 3D printed case parts
- Additional parts

| ID	Qty	Description	Comment
1	2	Standoff, 10mm, female/male	
2	10	Standoff, 10mm, M3, female/female	
3	3	Standoff, 16mm, M3, female/female	
4	4	Pan head screw, 6mm, M3	
5	11	Pan head screw, 10mm, M3	
6	21	Screw, 6mm, M3	
7	10	Screw, 8mm, M3	
8	20	Sqare nut, M3, 5.5 x 5.5 x 1.8mm, DIN562	
9	2	Plastic screw, 8mm, M3	IN-16 underlighting
10	2	Plastic nut, M3	IN-16 underlighting
	1	Piece of transparent acrylic 203mm x 50mm x 3mm, gray 7C22	IN-16, B-5870
	1	Piece of transparent acrylic 203mm x 20mm x 3mm, gray 7C22	IN-17
	6	Rubber foot	
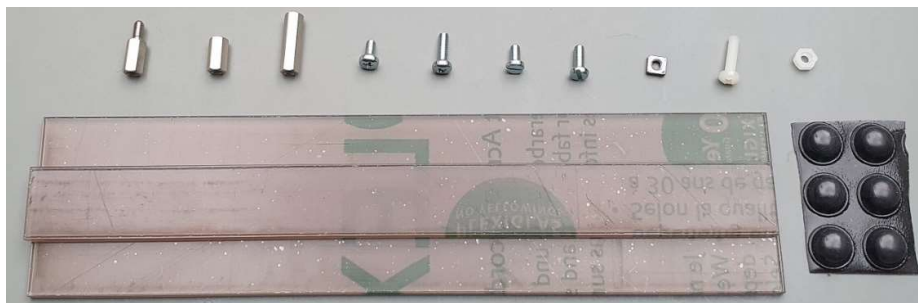
Assembly

Please don't over tighten the screws, it's PLA.

Mount the keycaps
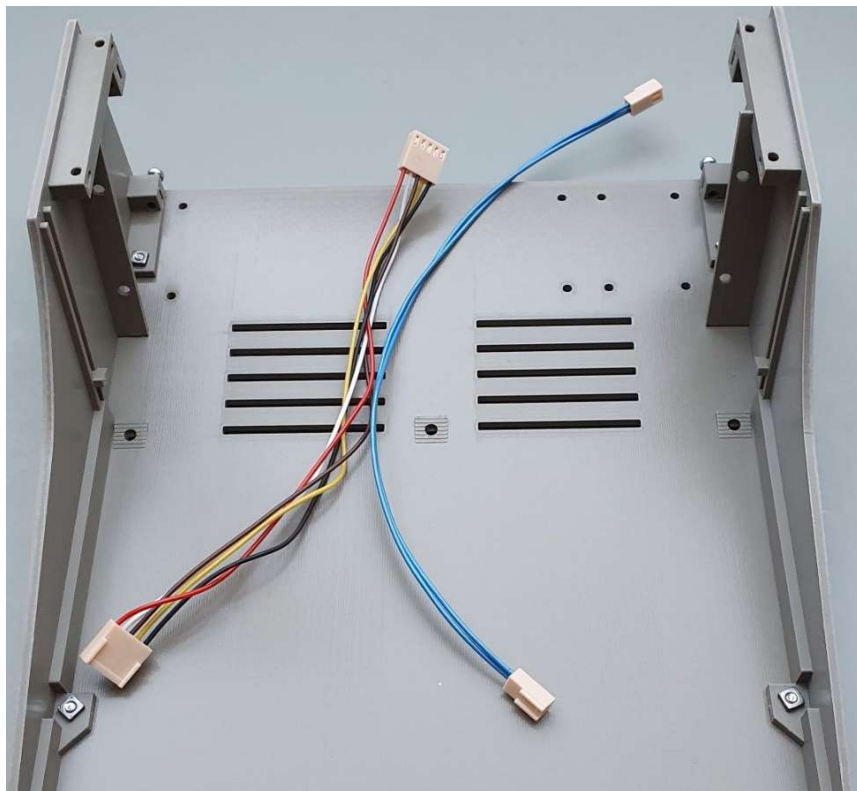

Install the side panels

Make sure you install the correct side panels for your version.
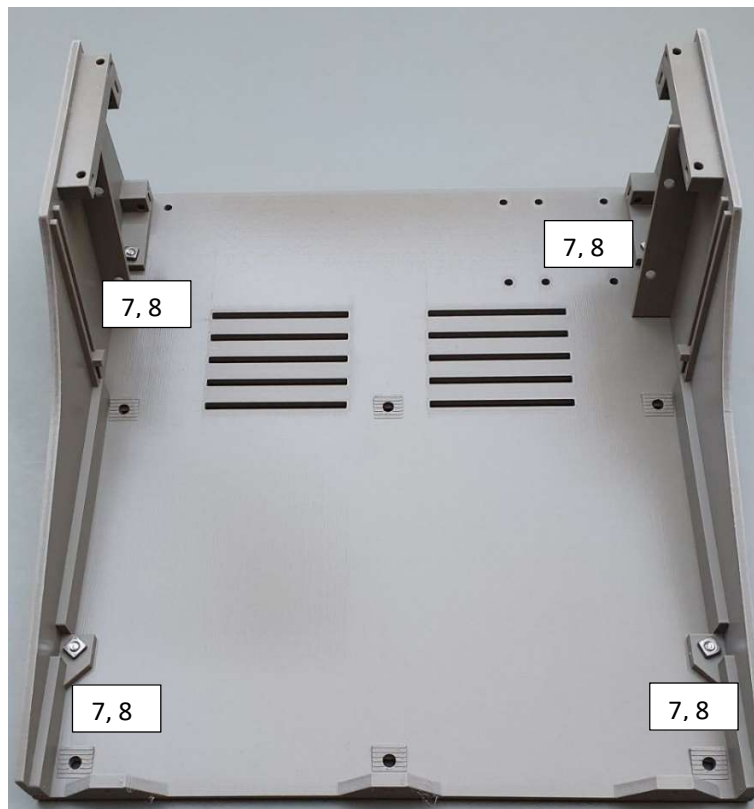
Place and secure two nuts in advanced

5, 8   5, 8

Place the KEYBOARD and SWITCH cables

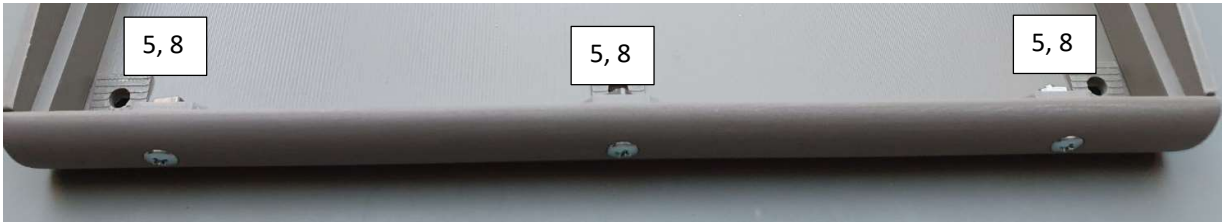Install additional LED board (for the IN-16 version with underlighting only)
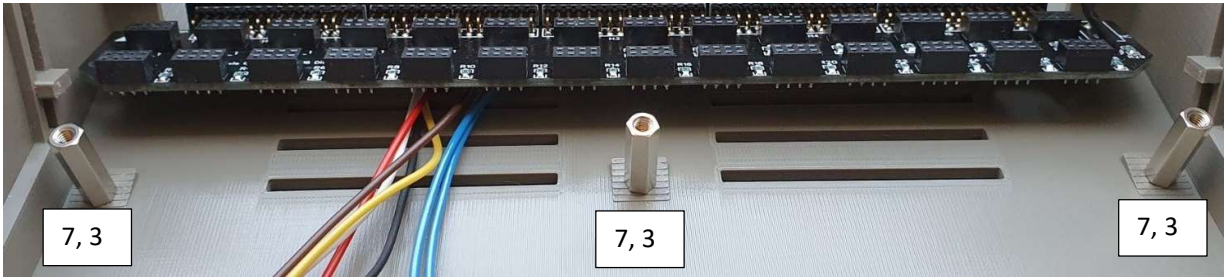

9, 10   9, 10
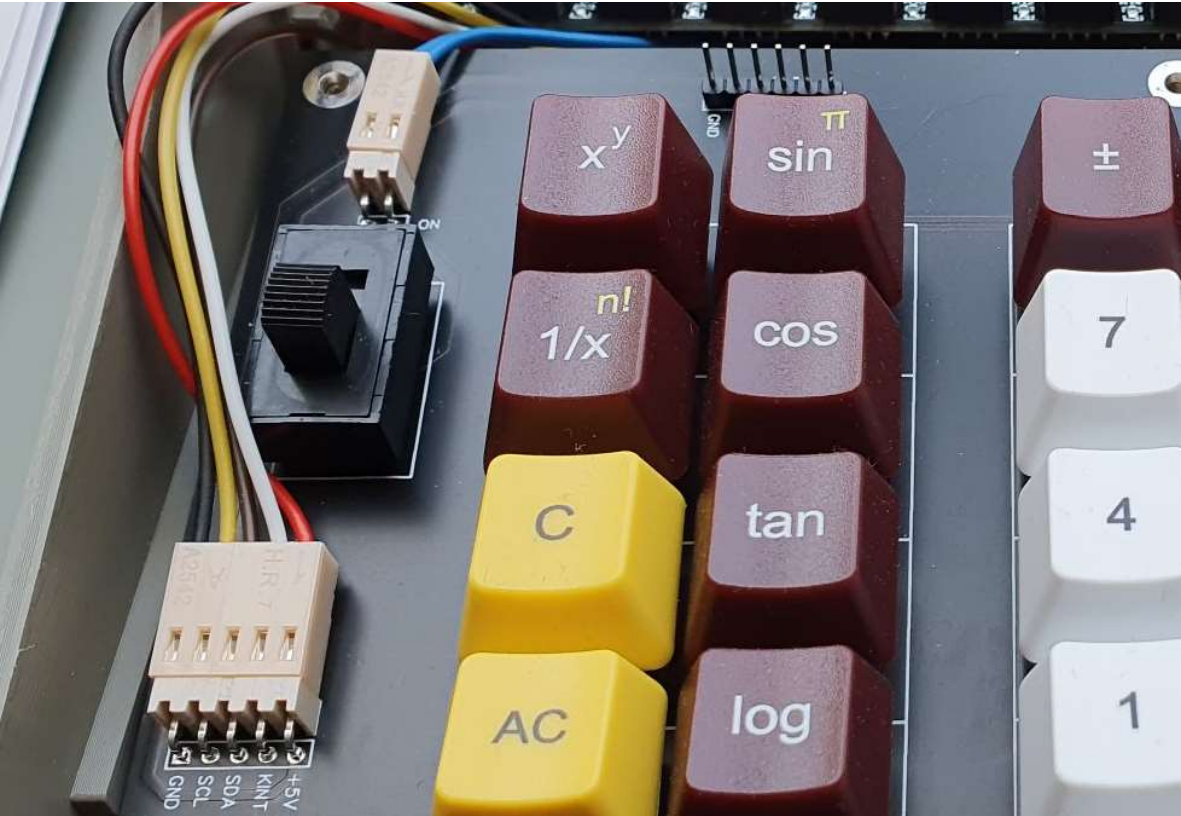
Also use the 3D printed spacers

Install display and driver board

6, 8
6, 8
6, 8
6, 8

Install the front

5, 8
5, 8
5, 8

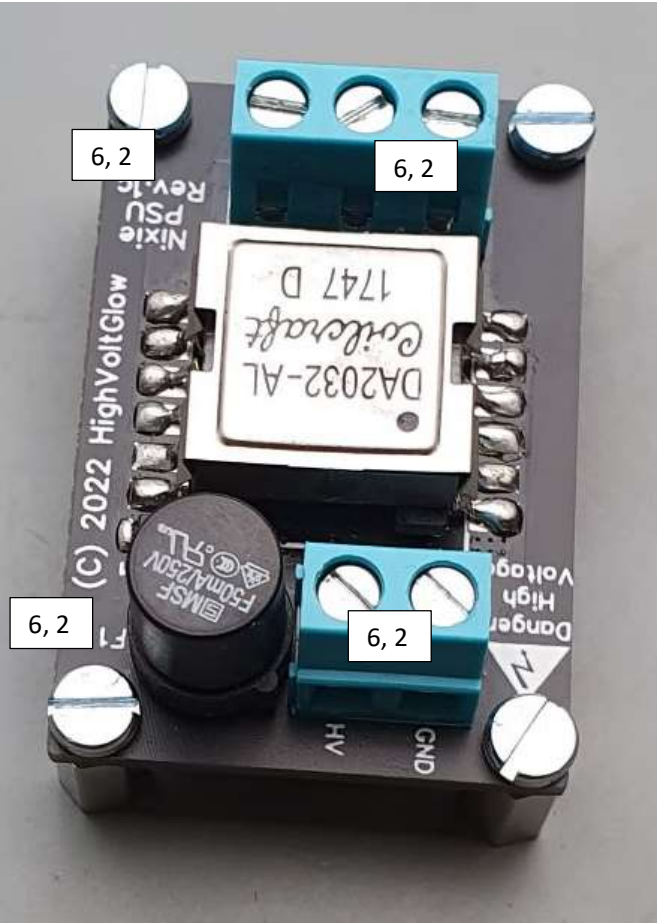## Install the keyboard standoffs

7, 3
7, 3
7, 3

Connect cables to the keyboard

Secure the upper keyboard side

Secure the lower keyboard side

Install the HV PSU standoffs (may not apply to your model)

6, 2
6, 2
6, 2
6, 2

Install the controller standoffs

6, 2
6, 2
6, 2
6, 2
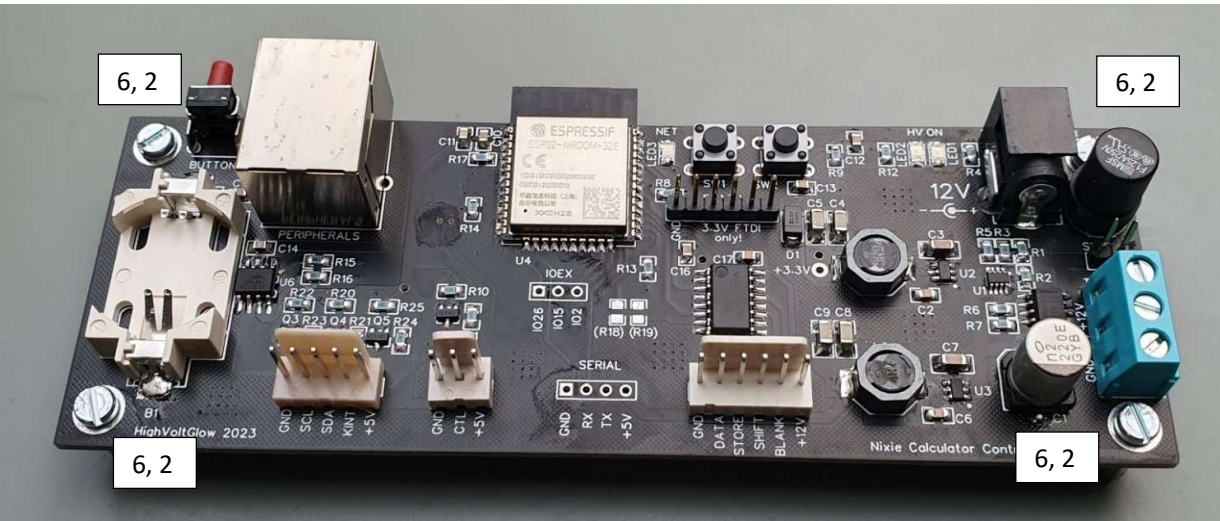
Connect the display HV wire(s) to HV power supply (could be different for your model)

For the IN-16 and B-5870 version only the HV wire is connected. For the IN-17 version you must also connect the ground wire.
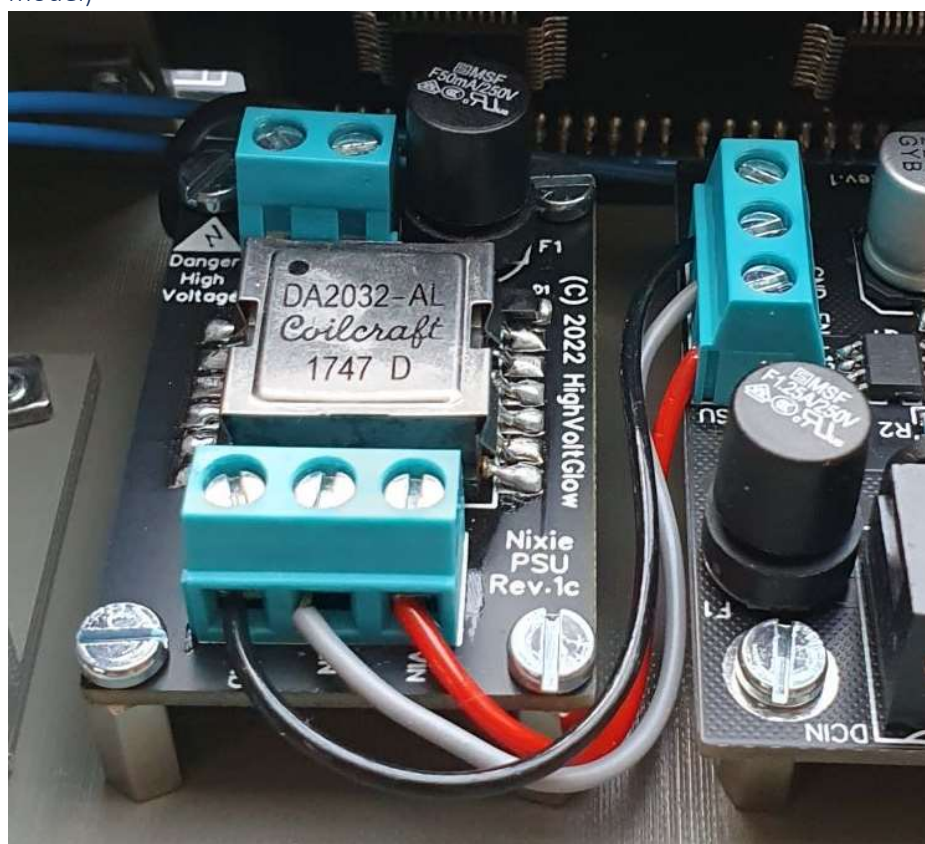

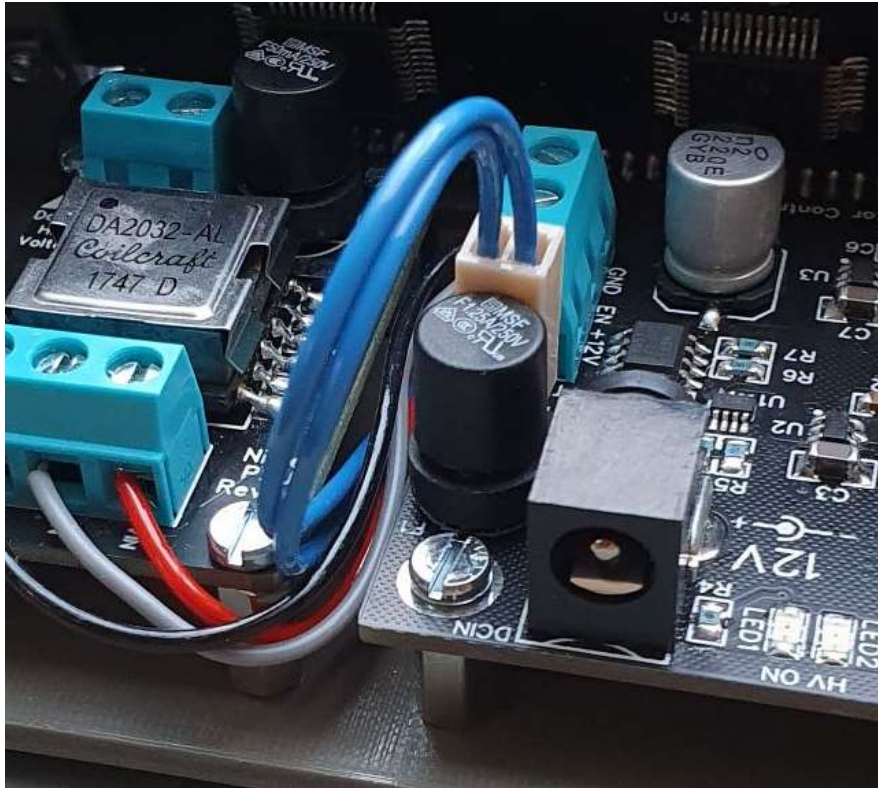## Secure the HV power supply (could be different for your model)
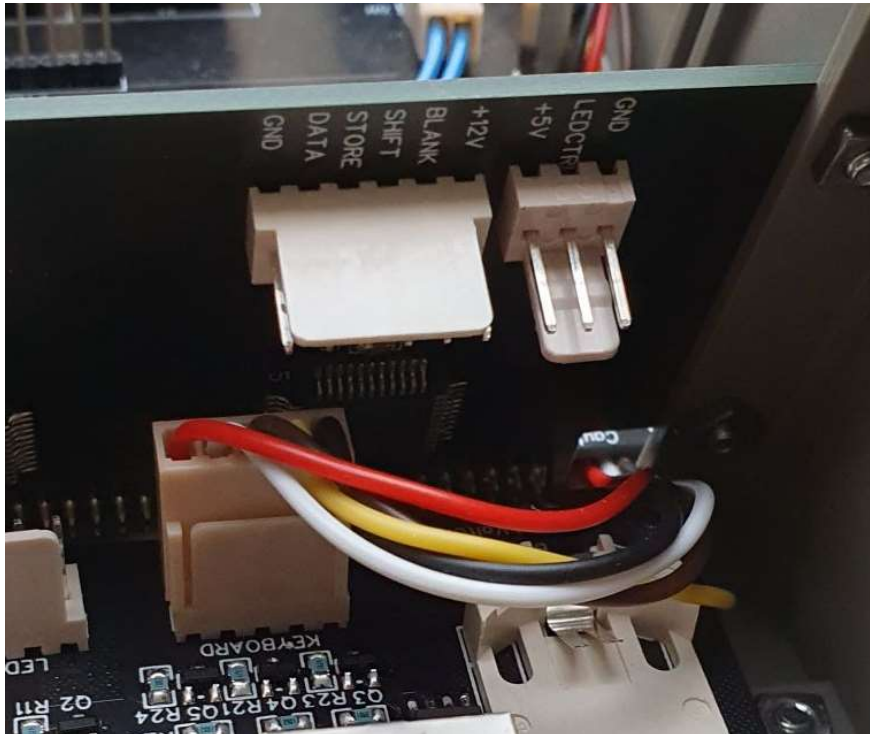
Secure the controller

Connect +12V, EN and GND from controller to the HV power supply (could be different for your model)
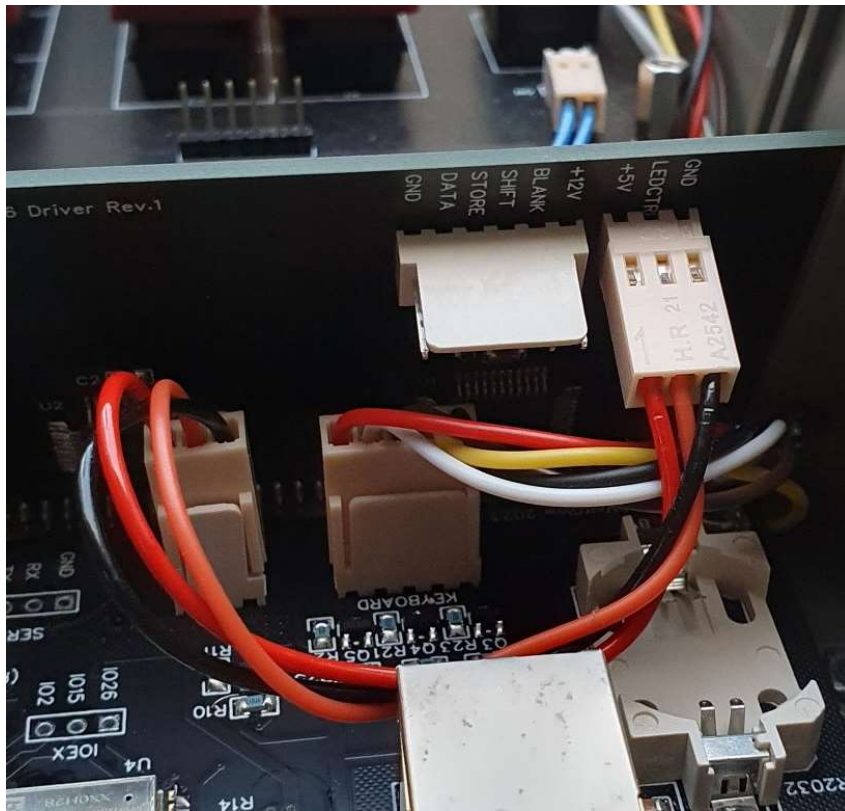
Connect the SWITCH wires to the controller

Connect the KEYBOARD wires to the controller

Connect the LED wires from the driver board to the controller

For the IN-16 version with underlighting connect the wires from the separate LED board to the controller.
For the other versions connect the wires between driver and controller board.

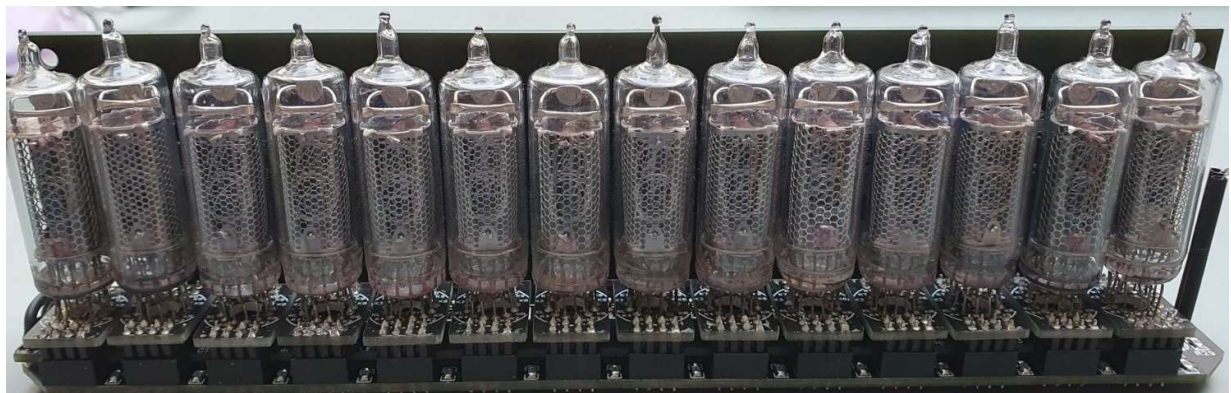## Connect the DRIVER wires from the driver board to the controller

Insert the nixies
B-5870

IN-17

IN-16

## Install the 3D printed socket cover (B-5870 version only)

Install the keyboard shield

Insert the acrylic panel

For the IN-17 version insert first the 3D printed "Nixie Calculator Case IN-17 Front Panel Bottom" part, then the 20mm acrylic and finally the "Nixie Calculator Case IN-17 Front Panel Top" 3D printed part. For the other versions just insert the 50mm acrylic part.
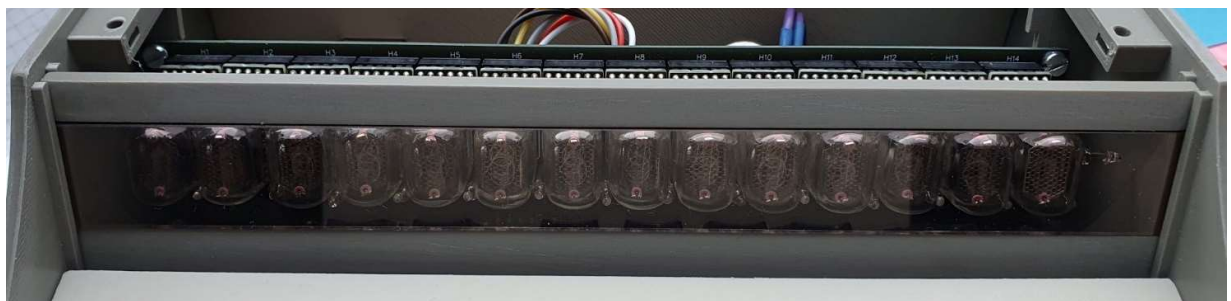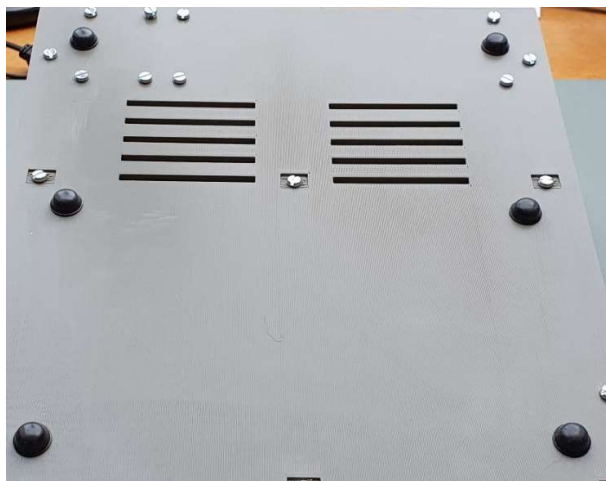
Install the back shield

5, 8   5, 8

5, 8   5, 8

Install the top shield

5, 8   5, 8

5, 8   5, 8

Glue the label board

HighVoltGlow

Place the rubber feet

Final adjustments

Check that everything is square and carefully tighten the screws.