

MACRO PAD

Build Guide



BASILISK
By: Apex Invent

Whats in the box?



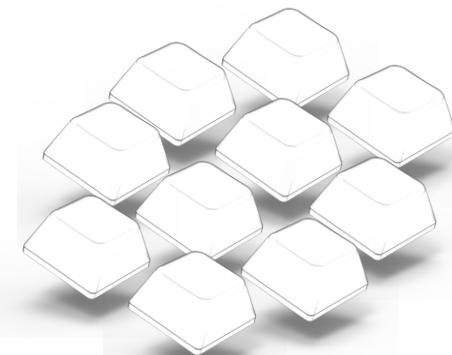
8x M3 cap screws



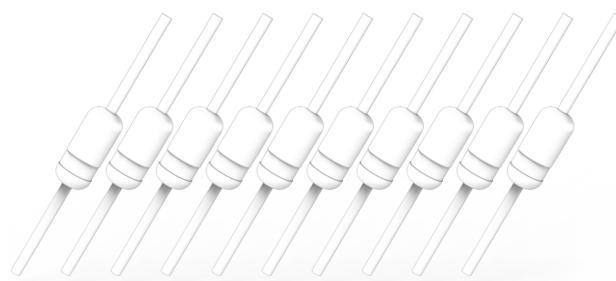
8x M3 heat inserts



3x RGB LED strips



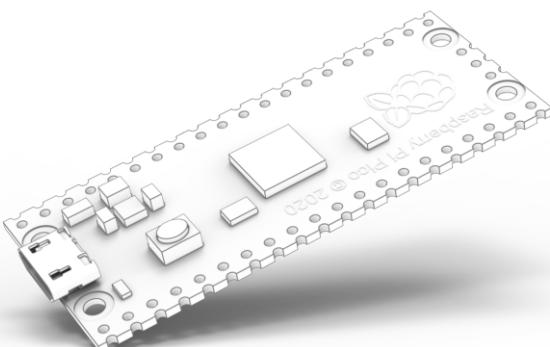
10x clear key caps



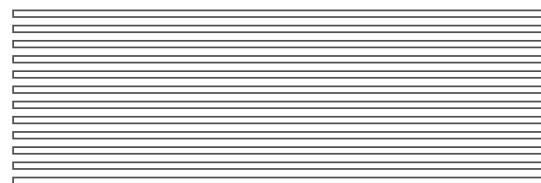
10x Diodes



10x MX style switches (Blue or Brown)



1x Pi Pico with Type C connector



26AWG wires for connections

What you will need:

Soldering Iron
Solder
Solder flux [Optional]

USB Type C cable
3D Printer [For the enclosure]
Time



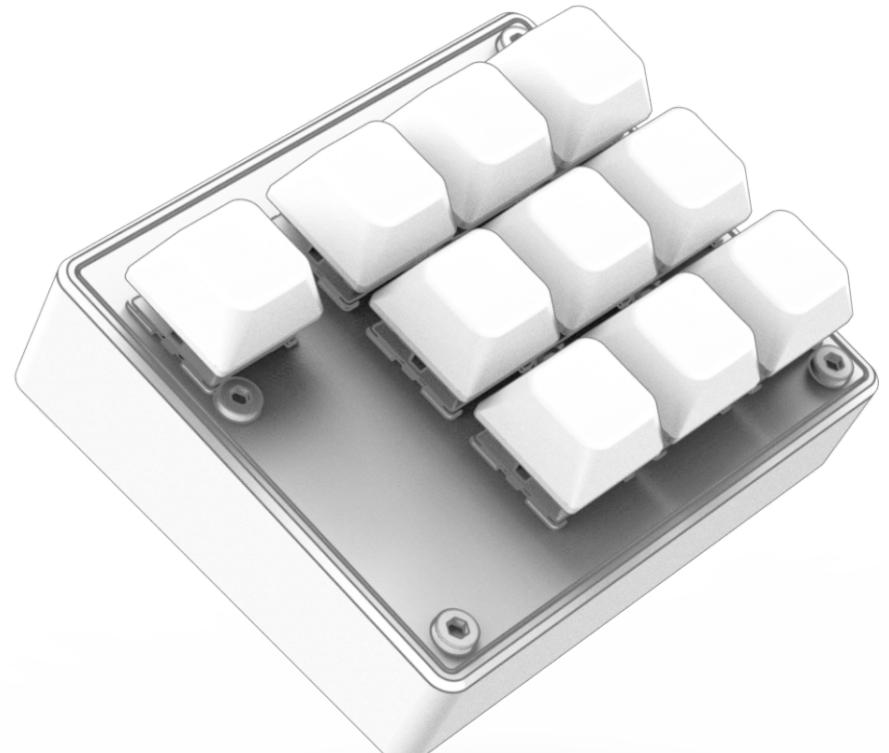
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Print your enclosure and get your parts ready!

Recommended print settings:

0.4mm Nozzle
0.24mm Layer Height
4 walls (you can do more)
4 top and bottom layers (you can do more)
25% Gyroid or honeycomb infill

Feel free to use whatever material you like at
whatever print speed works best for your machine.

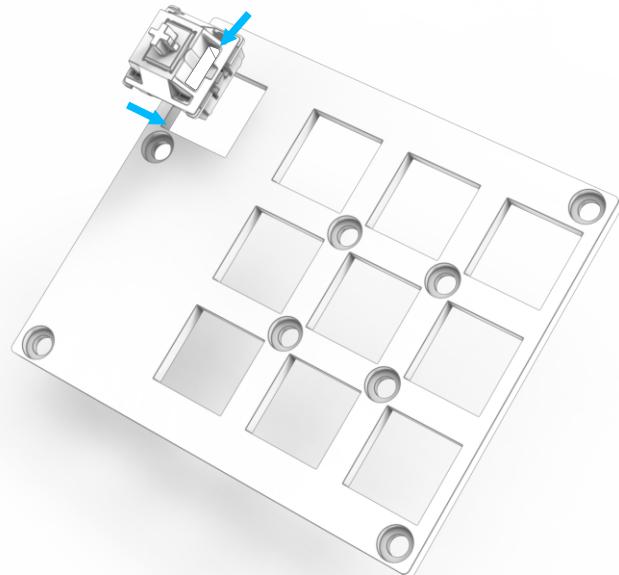


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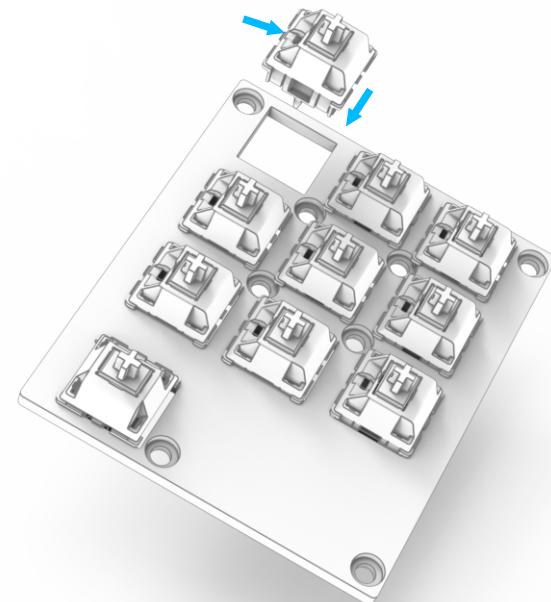
Inserting Keys.

Its time to start inserting the switches in the face plate.

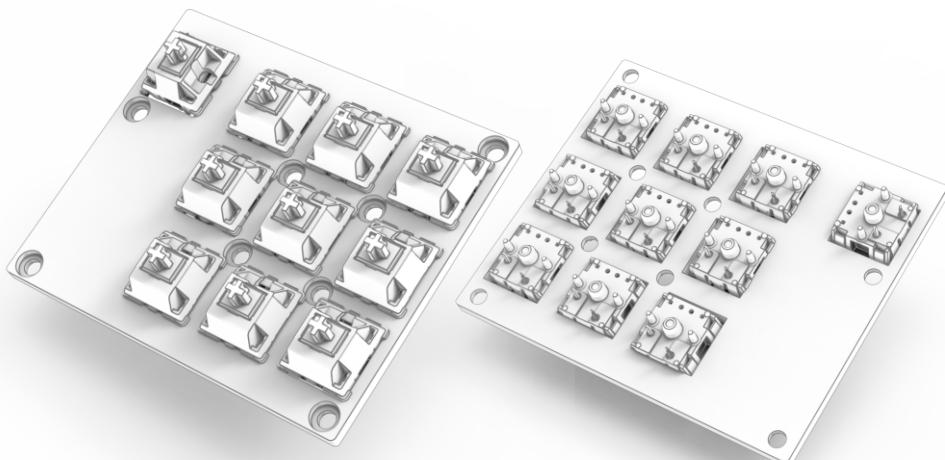
Your function button will be aligned with the switch LED hole facing the right hand side.
Align your switch and snap it into place, it should be a tight fit.



For the remaining 9 switches, all the LED holes should be facing the top of the face plate



Your switches should now resemble the below images with the 1 button facing the right and the rest all facing up.

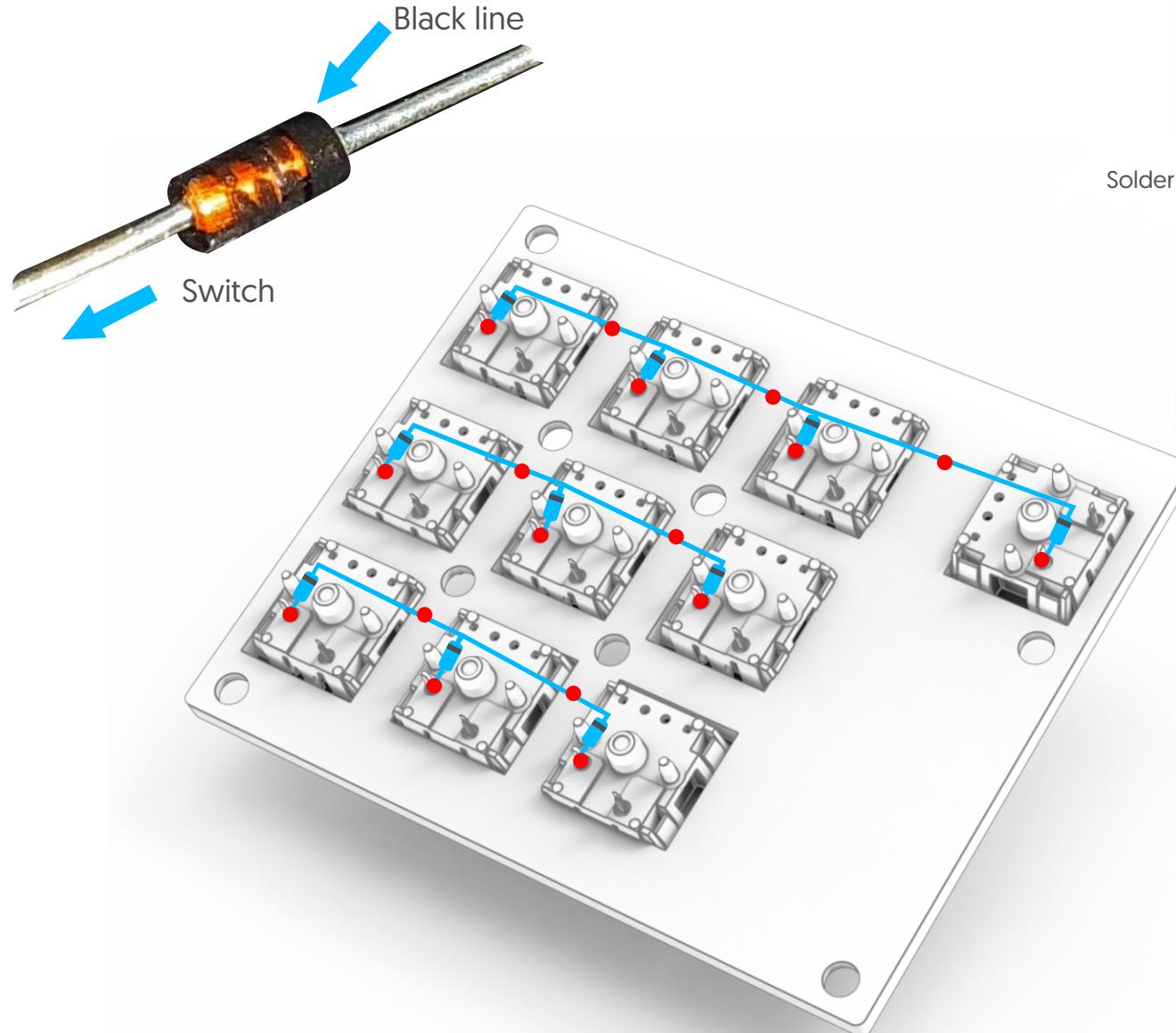


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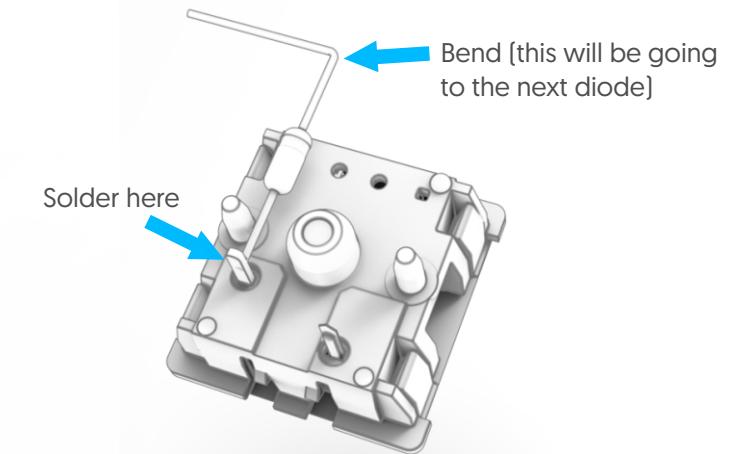
Soldering the Diodes.

Its time to start soldering the diodes on the switches.

Correct Diode direction, you will notice that each diode has a black line printed on it, this line should be facing away from the switch.



You want to solder the diode to the left leg on the switch and give it a 90 degree bend at the top.



Now solder up all of the diodes like the image to the left illustrates, be sure to pay attention to the direction of the diode and ensure the black line is pointing away from the switch

- DIODE
- DIODE LEAD/LEG
- SOLDER POINT

TIP:

Do not cut your leads until you are done soldering to ensure you can rectify any mistakes.

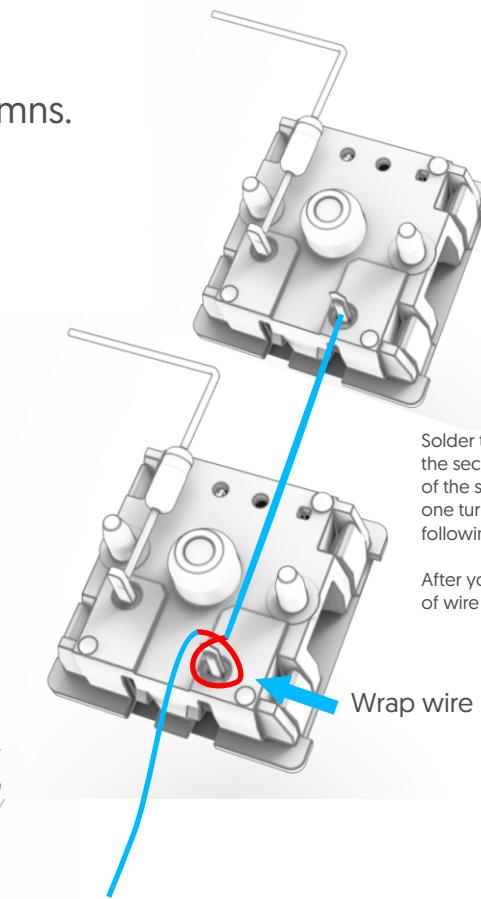
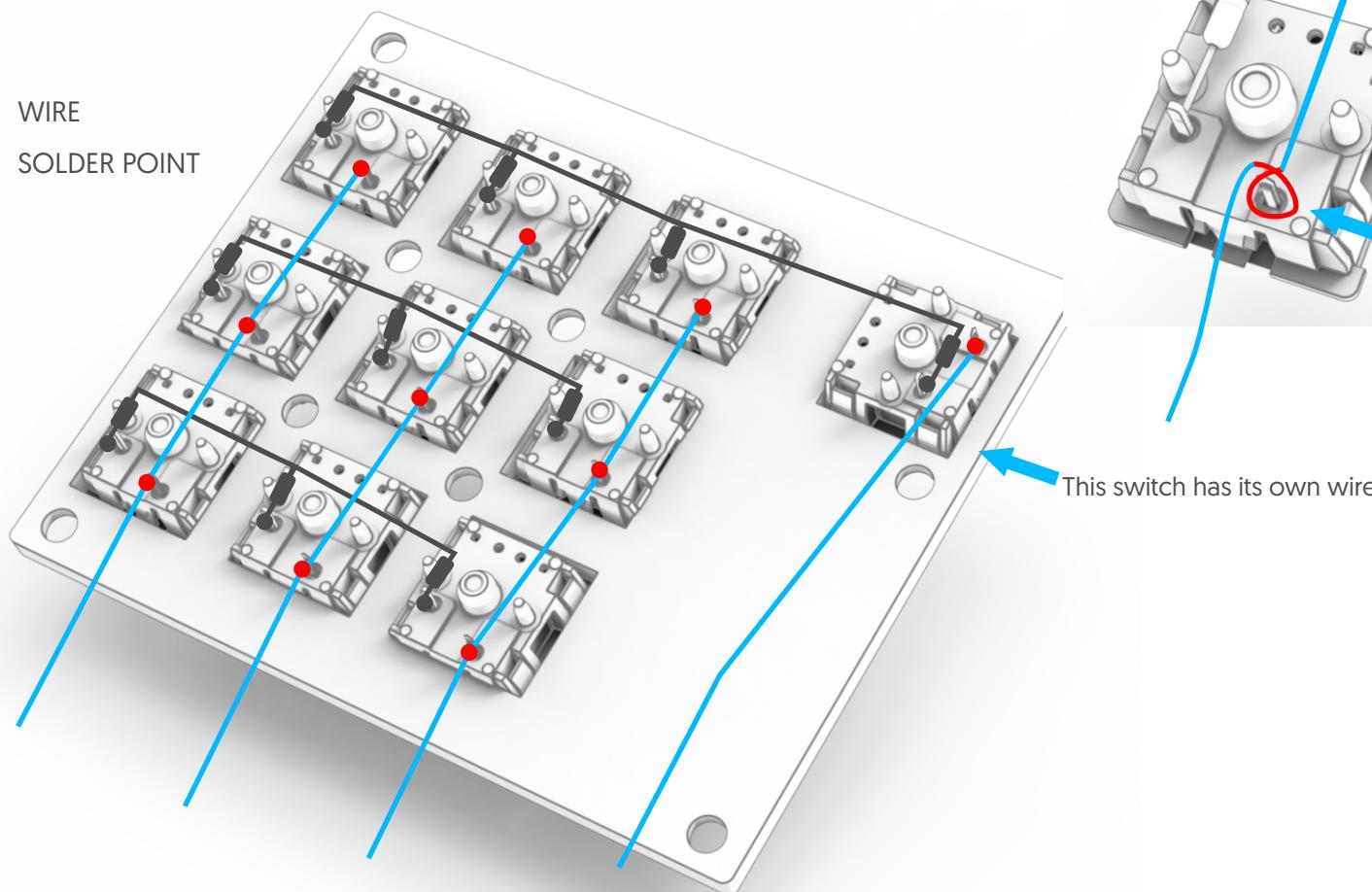


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Soldering the wires.

Connecting the columns.



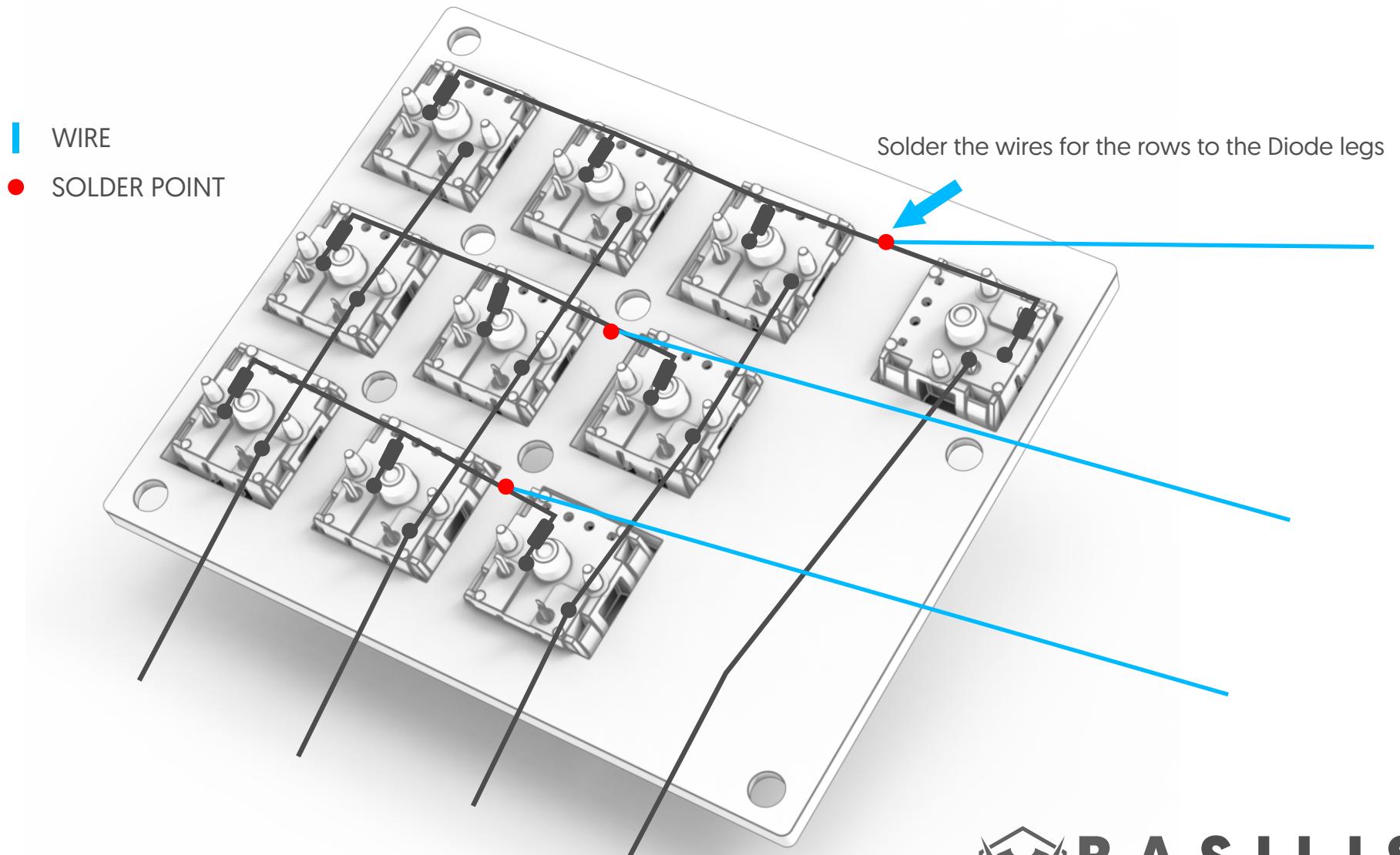
Solder the wire to the first switch, then pull it tight toward the second switch, use your finger nail to peel back aprox 5mm of the silicone around the wire at the second switch, now make one turn around the leg of the switch and move on to the third while following the same technique.

After your row is wrapped solder the wrapped wires, leave about 80mm of wire after each last switch, these will be connected to the Pico.

Soldering the wires AGAIN.

Connecting the wires for the rows.

Now you need to solder the wire to each row that will be connected to the Pico, try to keep it around 80mm to 100mm long.



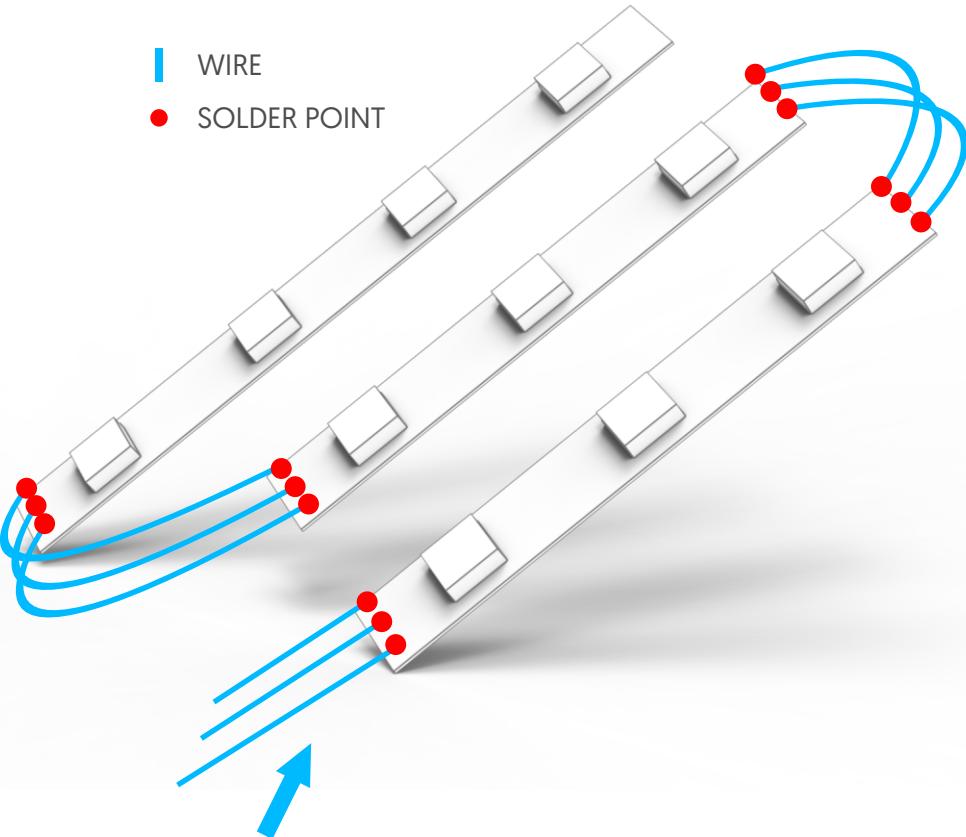
You should now be left with 7 wires that will be soldered to the Pico



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Prepping the RGB LEDs.

Getting ready to light it up!

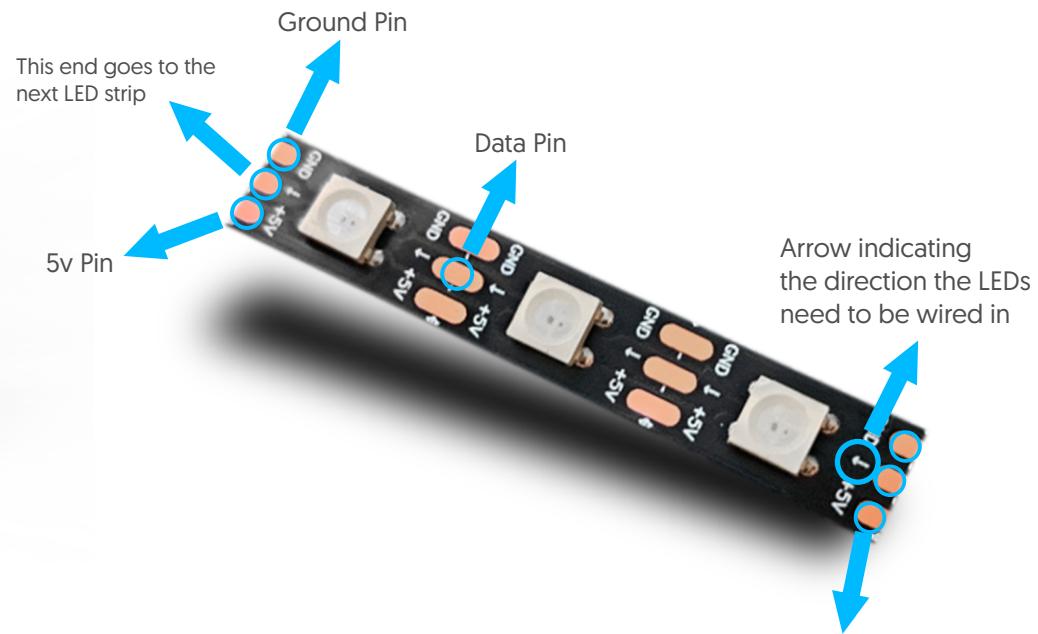


These wires are going to be soldered to the Pico

NOTE:

GND goes to GND on the next strip, Data to Data and 5v to 5v

You now need to solder together the 3 LED Strips. To do so connect them with 25mm pieces of wire soldered between the corresponding pins making sure to follow the direction of the arrow on the strip.



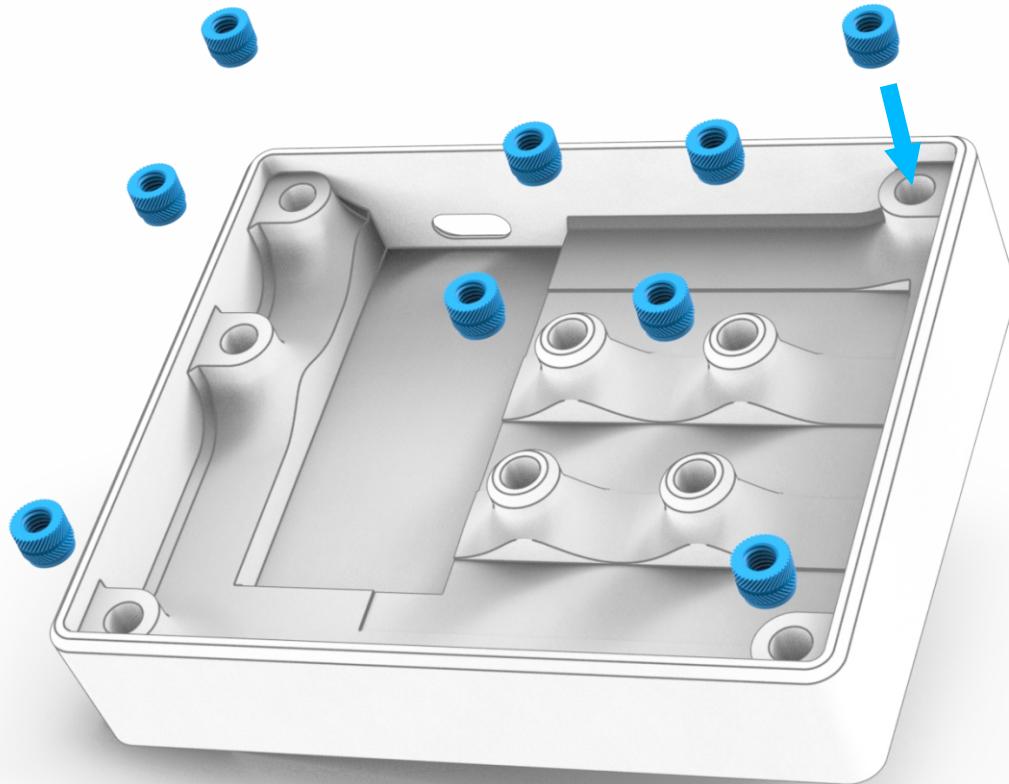
This side, where the arrow is pointing away from will be the side that gets connected to the Pico. Think of it as the direction the signal goes to power the LEDs, from the Pico through the strips.



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Setting the heatset inserts.

Heatset time!



Nice and simple! Each one of the eight heatset inserts need to be heated into the holes in the main body of the macro pad as shown in the illustration.

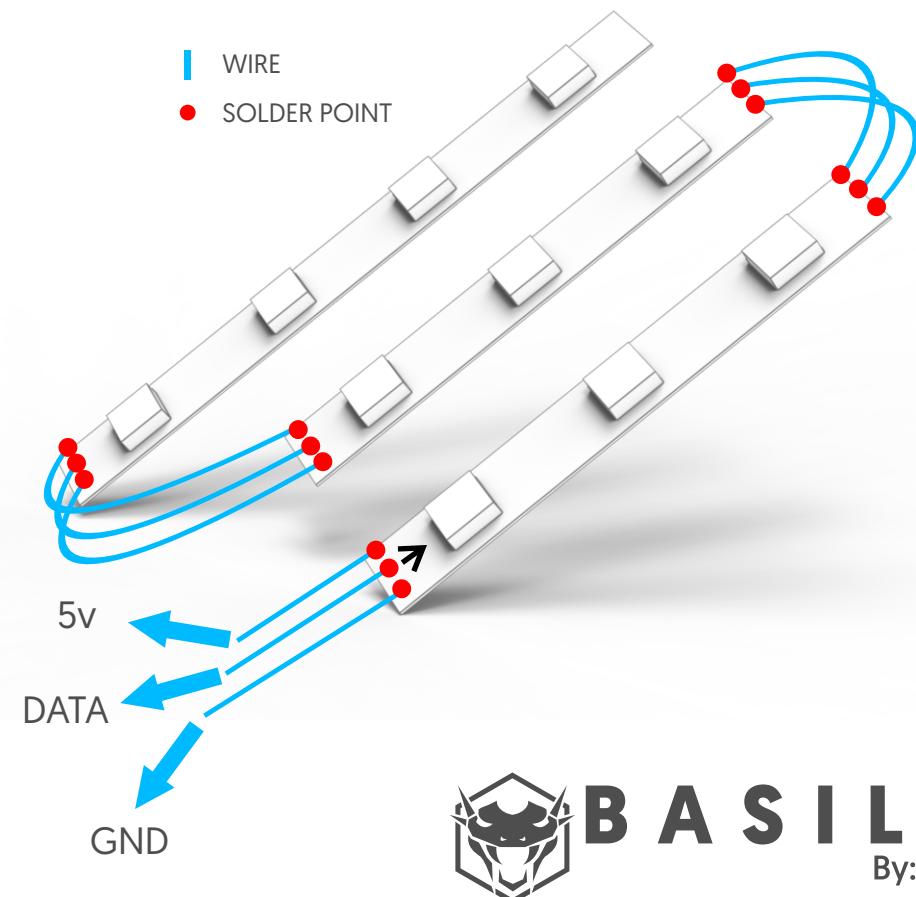
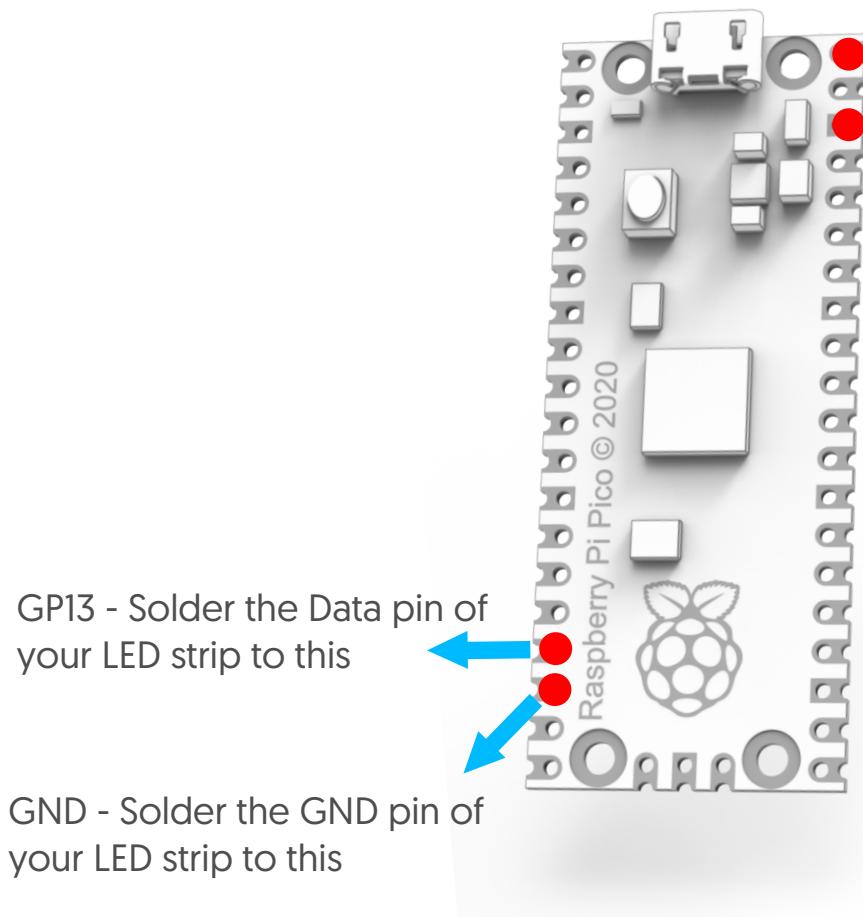


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Soldering the LEDs to the Pico.

You are almost there! Just a few more solder points!

Here are the important pins we will be using



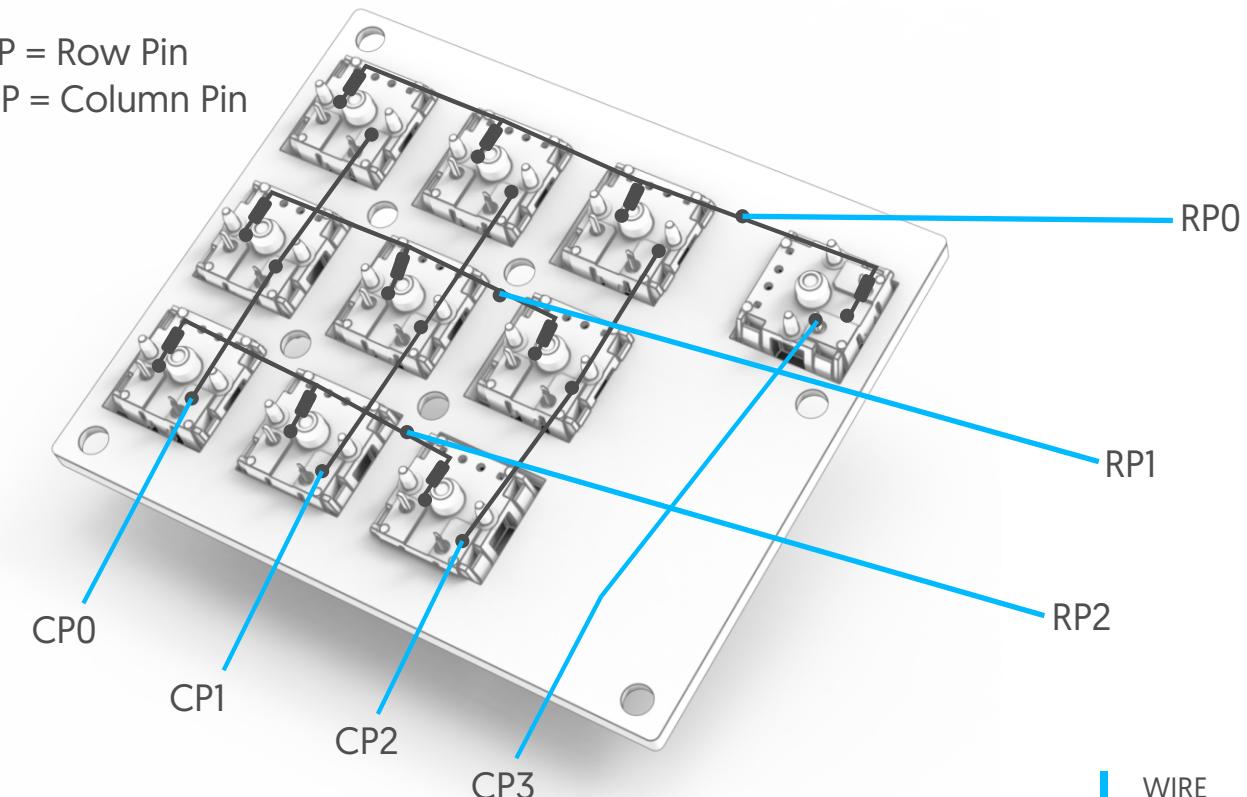
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Soldering the switch matrix to the Pico.

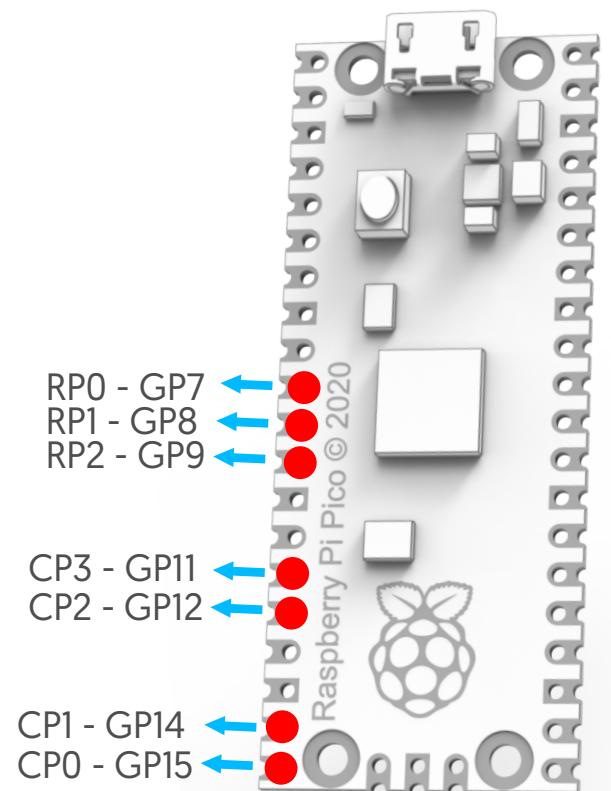
This is the last soldering step!

You now need to solder the switches to the Pico, below we have an illustration showing what wire goes to what pin RP meaning row pin and CP meaning column pin, refer to the Pico illustration to see what pins go where, RP and CP representing the corresponding switch pin and GP representing the GPIO pin on the Pico, this can also be seen printed on the back of the Pico.

RP = Row Pin
CP = Column Pin



Here are the important pins we will be using



WIRE
SOLDER POINT



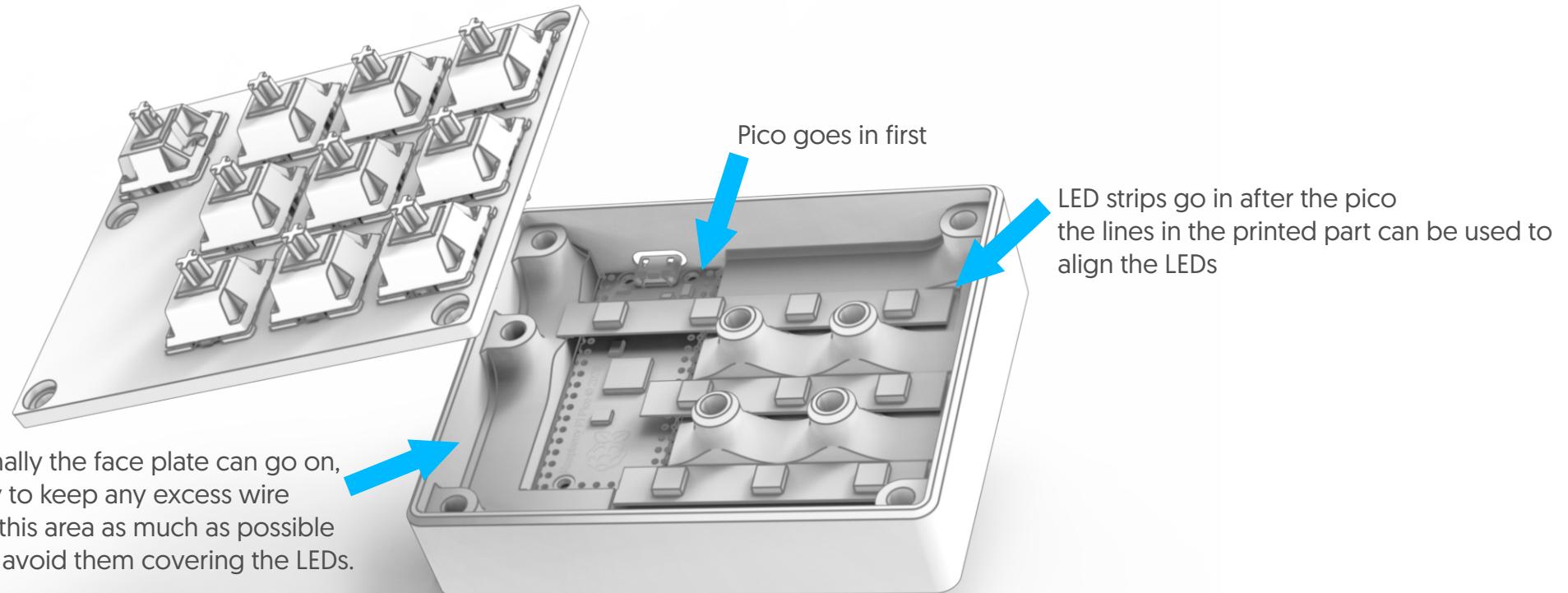
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Final Assembly.

The hard part is done!

All that is left to do now is to stick down the Pico with the supplied double sided tape, stick down the RGB strips and finally close up your Macro Pad with the included M3 Screws!

Stick the Pico down first, followed by the RGB strips, this can be tricky so take your time.



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You are done!

Congratulations on building your very own Basilisk Kit Macro Pad!

The Pico comes pre flashed with Circuit Python and the open source KMK firmware. Unfortunately due to the DIY aspect of the build, there will be some setup required from your end, namely setting up the configuration of your macro pad, this is done through a great open source software called POG by Jan Lunge.

POG can be downloaded here: <https://github.com/JanLunge/pog/releases/download/v1.9.4/pog-1.9.4.exe>

and the GitHub can be found here: <https://github.com/JanLunge/pog>

KMK GitHub can be found here: https://github.com/KMKfw/kmk_firmware

A detailed video will be created soon that will guide you through this, however until then feel free to check out the POG github and Discord for info



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