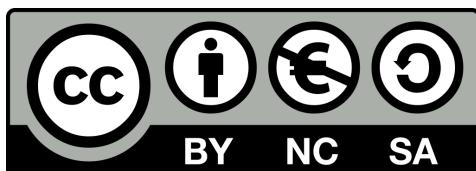


**Your Open Source Arcade Stick**



Module  
Pi Pico & GP2040-CE  
OSA-Connector V1

Needed Parts  
&  
Assembly Instructions

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## Compatibility List

According to <https://gp2040-ce.info/> with this module and this software the joystick is compatible with the following systems:

- Windows
- Linux
- MacOS
- SteamOS
- Android
- PS Mini
- PS 3
- Nintendo Switch
- MiSTer
- Sega Genesis/MegaDrive Mini
- NEOGEO Mini
- PC Engine/Turbografx 16 Mini
- EGRET II Mini
- ASTROCITY Mini

## Needed Files

You'll find the needed files for this module in the folder "/Cases/Multi/Modules/USB - MiSTer - PC - Mini Consoles".

### Needed Files:

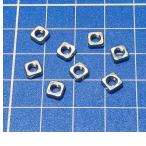
- For the front you need "Module Front DB25".
- For the bottom of the case you need "Module L - Bottom - Pi Pico"
- For the button in the bottom of the case you need "Module L - Bottom - Pi Pico - Button"
- For the top of the case you need "Module L - Top - Switch And 3 Buttons 16.5mm"

### Optional Files:

- For fixing the module to the slot, you can use a M3 x 12 screw and print the file "Head Mounting Screw".
- Thd file "Standoff - 4mm x 3.5mm x 13mm" brings the bottom of the module to the same height as the bottom of the arcade stick.
- If the rubber pads of your arcade stick are the printed ones, then you can print this rubber pad to have the same height "Rubber Pad - 13mm x 3.5mm x 4mm (2.5mm)"

## Needed Parts

You need these parts for the case:

| Part  | Details   | Quantity | Link  |
|---|---|----------|---|
|    | Knurled Nut<br>M3 x 5mm x 4,5mm   | 6        | <a href="https://amzn.to/400whf0">https://amzn.to/400whf0</a> |
|    | Knurled Nut<br>M2 x 4mm x 3,5mm   | 4        | <a href="https://amzn.to/43LEg1Z">https://amzn.to/43LEg1Z</a> |
|    | Pan Head Screws<br>M3 x 6mm   | 2        | <a href="https://amzn.to/45jiSIT">https://amzn.to/45jiSIT</a> |
|   | Pan Head Screws<br>M2 x 6mm   | 4        | <a href="https://amzn.to/3HKSAiU">https://amzn.to/3HKSAiU</a> |
|  | Countersunk head screw<br>M3 x 10mm   | 6        | <a href="https://amzn.to/3FySwSF">https://amzn.to/3FySwSF</a> |
|  | Square nut<br>M3 DIN 562  | 2        | <a href="https://amzn.to/4jLmIYC">https://amzn.to/4jLmIYC</a> |
|  | Raspberry Pi Pico   | 1        | <a href="https://amzn.to/43TuCck">https://amzn.to/43TuCck</a> |
|  | DB25 Connector<br>Male  | 1        | <a href="https://amzn.to/4kGMgr1">https://amzn.to/4kGMgr1</a> |
|  | Cables<br>26 AWG<br>38cm Black + 25cm Red<br>+ 30cm White + 24cm Green<br>+ 28cm Blue + 32cm Yellow | 177cm    | <a href="https://amzn.to/4e5MmpR">https://amzn.to/4e5MmpR</a> |

## Optional Parts

These parts are optional for the case:

| Part  | Details                         | Quantity        | Link  |
|---|---------------------------------|-----------------|---|
|  | Rubber Foot<br>11mm x 9mm x 6mm | 2<br>(Optional) | <a href="https://amzn.to/43R3UTf">https://amzn.to/43R3UTf</a> |

## Filaments

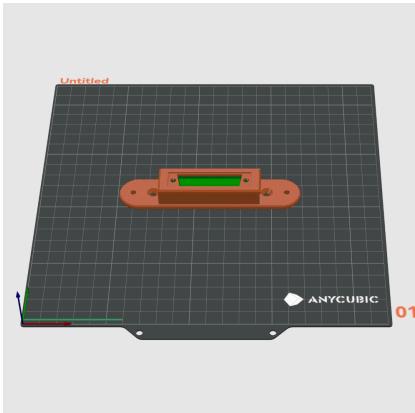
These are the filaments that worked well for me. You should be aware that the softer the filament, the more difficult it is to print. Therefore, I modified my printer slightly for printing with 85A TPU. I positioned the spool above the printer and fed the filament directly into the print head without going through the pipe.

| Part        | Filament     | Link   |
|-------------|--------------|--|
| Case        | PLA+<br>PETG | <a href="https://amzn.to/3FALqgp">https://amzn.to/3FALqgp</a><br><a href="https://amzn.to/4jV2oU">https://amzn.to/4jV2oU</a> |
| Rubber Pads | TPU 85A      | <a href="https://amzn.to/3SHNPsy">https://amzn.to/3SHNPsy</a>  |

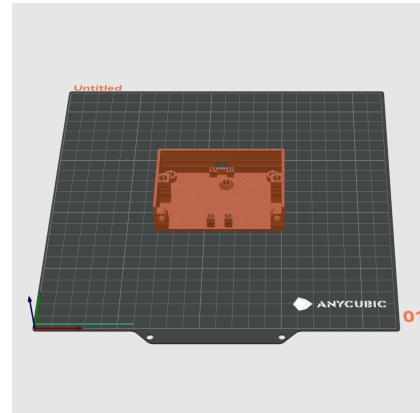
## Printing Instructions for the case

Print the different parts as shown here. Your print bed should be at least 230mm x 230mm. Since each material from each manufacturer behaves slightly differently, I am not providing any information on printing temperatures and speeds here.

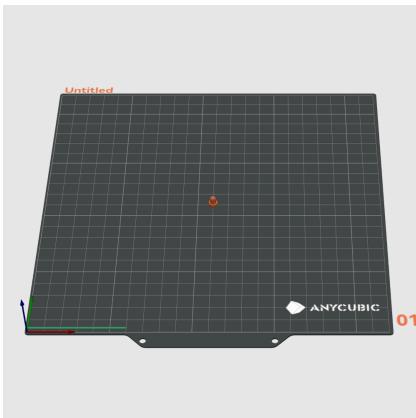
Print this part in this direction with support.



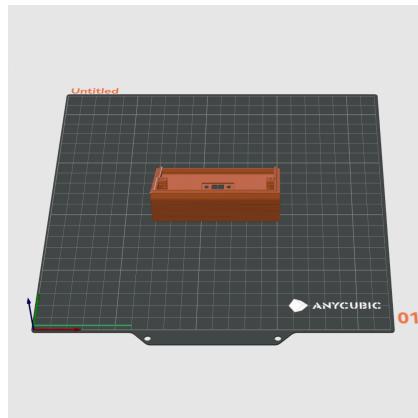
Print this part in this direction.



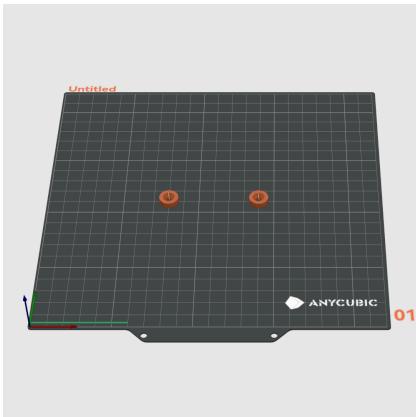
Print this part in this direction.



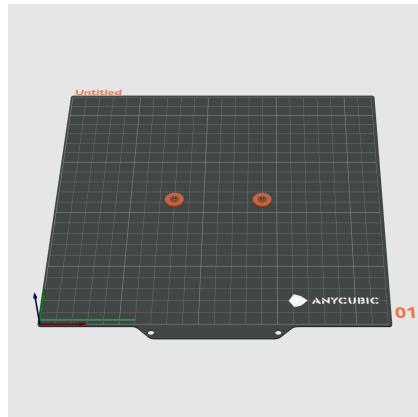
Print this part in this direction.



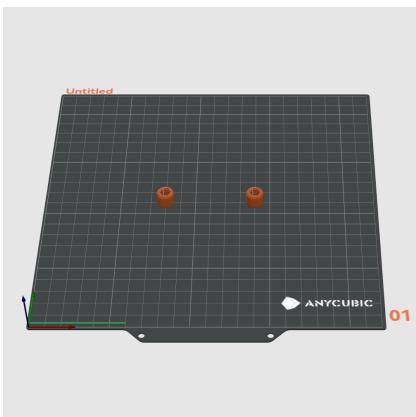
The standoffs can be printed like this.



The rubber pads can be printed like this.



The screw-heads can be printed like this.



## Preparations

Cut the wires to the following lengths and tin both ends to a length of approximately 3mm:

Black: 1 x 7cm + 1 x 10cm + 1 x 15cm + 2 x 3cm

Red: 1 x 10cm + 1 x 15cm

White: 3 x 10cm

Green: 4 x 6cm

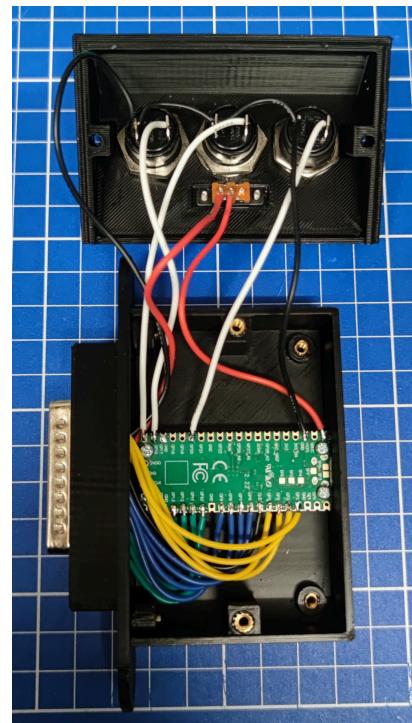
Blue: 4 x 7cm

Yellow: 4 x 8cm

## Assembly

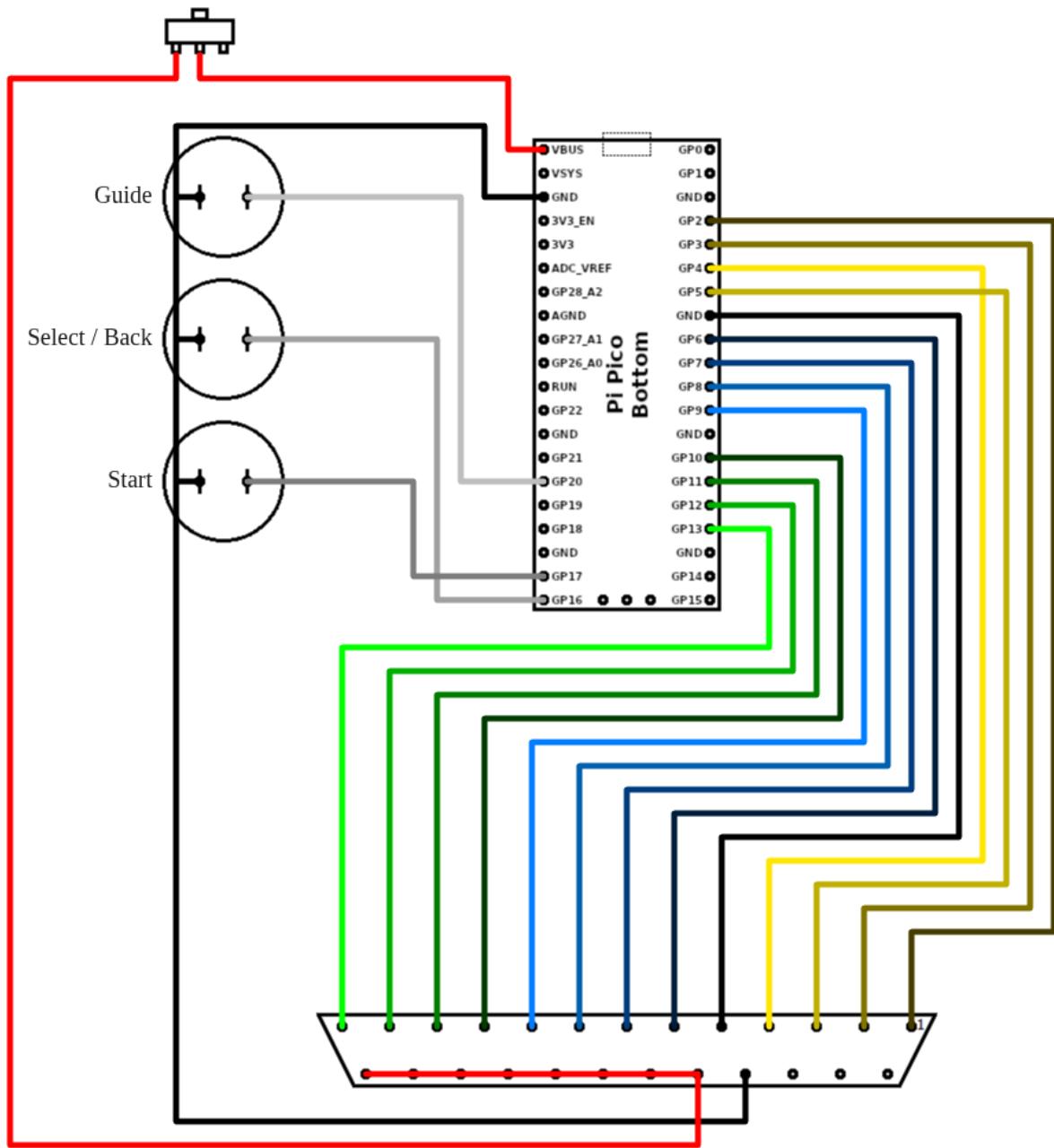
In my experience, the following procedure is the easiest:

- Melt all knurled nuts in the appropriate places and let everything cool down.
- Solder the cables to the DB25 connector and after this screw this connector to the front of the case.
- Screw the front to the lower part.
- Connect the needed cables to the buttons in the upper part of the case.
- Connect all cables to the Pi Pico.
- Screw all case parts together.



## Circuit

This is the complete circuit with all connections.



## Software

To use this module, you need to download and install the GP2040-CE software from here:  
<https://gp2040-ce.info/downloads>

Installation is easy. Simply connect your brand-new Pi Pico to your USB port and drag and drop the downloaded file onto the drive that appears. If the Pi Pico is not new, press the button on the Pi Pico when plugging it in.