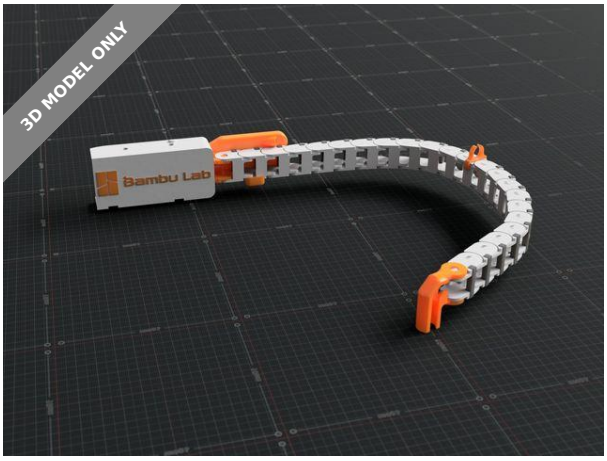


Bambu Lab P1P Cable Drag Chain Assembly - 5/9 Updated

Brody

VIEW IN BROWSER

updated 22. 9. 2023 | published 22. 9. 2023

Summary

Designed a few parts needed to add a cable chain similar to what the X1 has.

3D Printers > Bambu Lab Parts & Upgrades

Tags: cablechain dragchain bambu bambulab bambulabs p1p bambulabp1p bambup1p

Bambu Lab P1P Cable Chain Assembly (1/9/2023)

Designed a few parts needed to attach a cable chain, similar to the one seen on the X1. The chain helps keep the USB cable and PTFE tube completely inside the P1P, which is needed if you're going to use a covered top like the glass lid on the X1, also just like the way it looks!

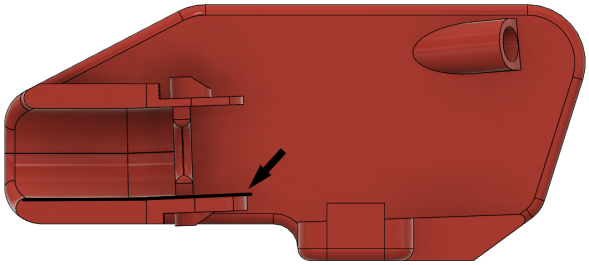
Latest Update

All previous updates will be posted at the bottom.

Update (5/9/2023)

*Updated File - Cable_Chain_Frame_Adapter_Front_2C to 3C

- Added a 2 degree incline to the chain, which should help further prevent sagging.



Files

Main Files

1. Cable_Chain_Frame_Adapter_Front_3C
2. Cable_Chain_Frame_Adapter_Rear_2D
3. Cable_Chain_PTFE_Clip_2B
4. Cable_Chain_Housing_Adapter_4A
5. USB_Cable_Cover_3E

Alternative Files

1. Cable_Chain_Frame_Adapter_Front_Inserts
    - Uses qty 2, 5x3 mm inserts
2. USB_Cable_Cover_Hygrometer
    - Hygrometer - https://www.amazon.com/dp/B07GNMKYCZ?psc=1&ref=ppx_yo2ov_dt_b_product_details
    - Most of the Amazon ones are the same, as long as the dimensions are 1.89" x 1.13" / 48mm x 28.6mm

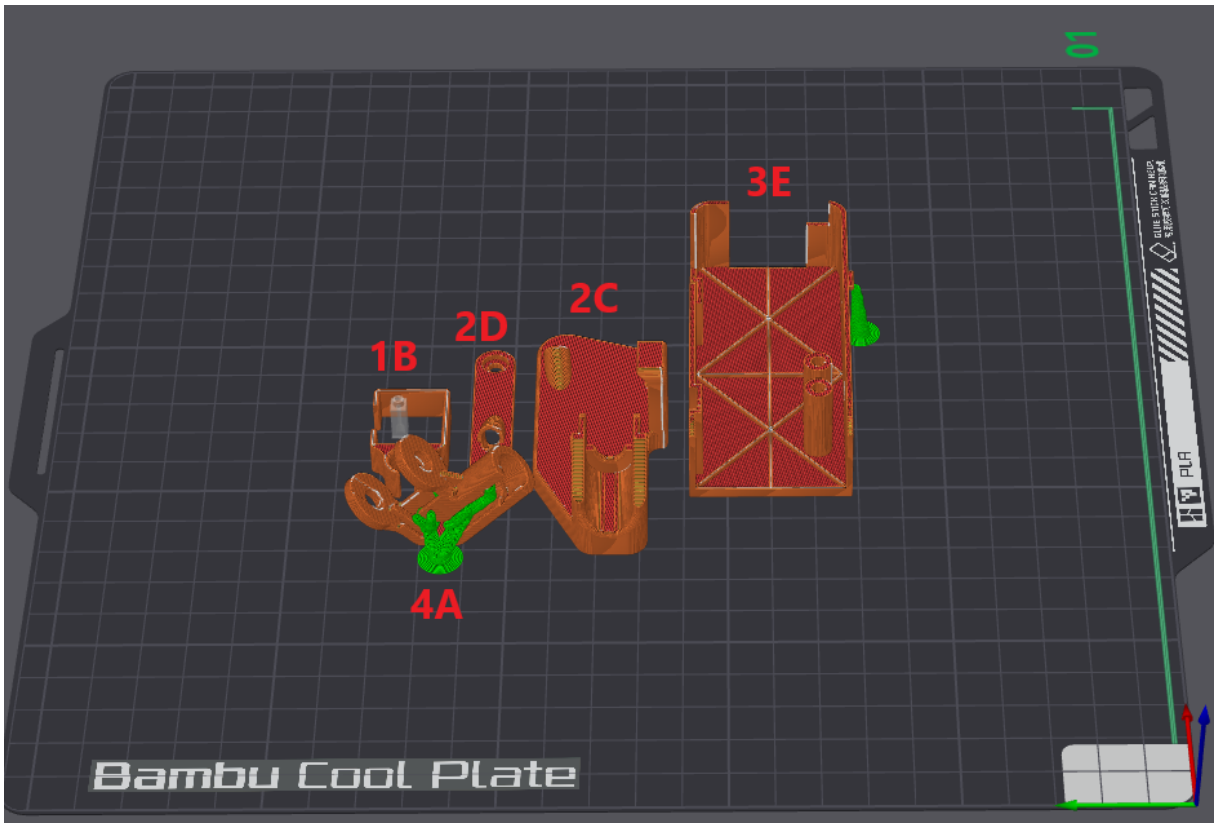
Print File

- Cable Chain Build Plate

Additional Parts

- Qty 1 : 10x11 Cable Chain - https://www.amazon.com/dp/B07QLGWQ1L?psc=1&ref=ppx_yo2ov_dt_b_product_details
    - Not needed if using printable version https://www.printables.com/model/385282-bambu-lab-p1p-printable-cable-drag-chain
- Qty 6 : M3*6 (M3*4 should also work)
    - If using the Hygrometer, you'll only need qty 5

Print Orientation



-Picture doesn't reflect current model numbers, use the letter to identify what is what.

Print Settings

DO NOT USE PLA, IT WILL BREAK. Please use PETG, ASA, PLA+ , etc.

I used Polylite Pro PLA+, eSun PLA+, Overture PETG

Quality

- Please see build plate file.

Support

- Please see build plate file.

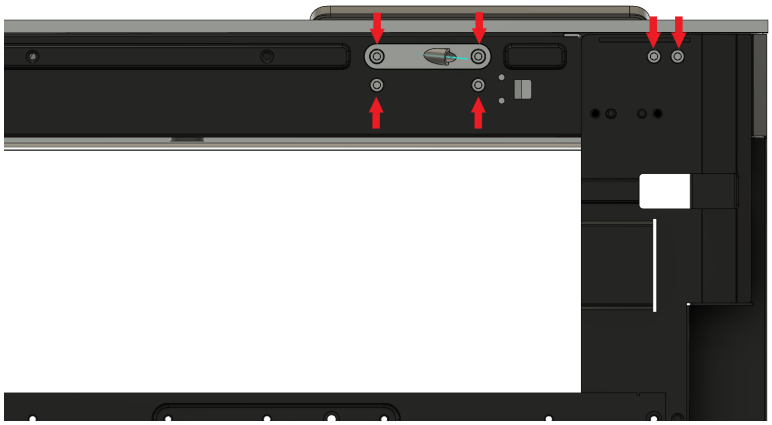
Other

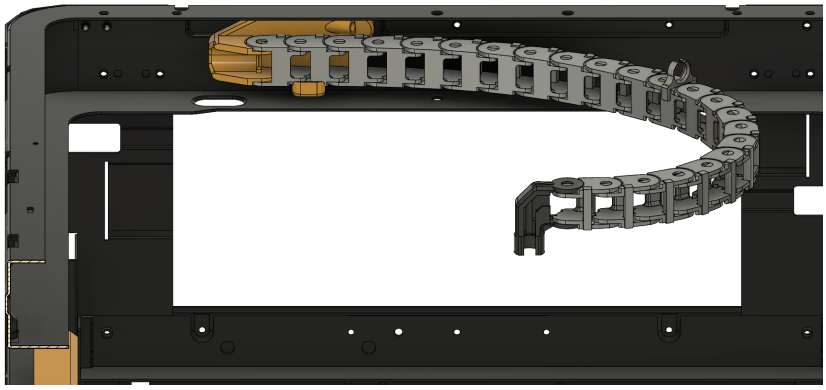
- Bed adhesion - use brim if you're having adhesion issues

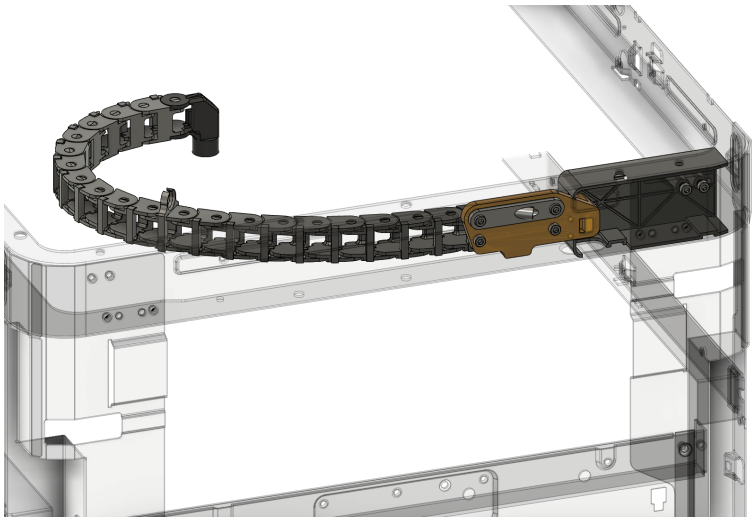
To remove the supports for 4A, grab the bottom of the support that printed on the bed and pull it outwards and upwards, you'll need to use some force but it wont break anything.

Assembly

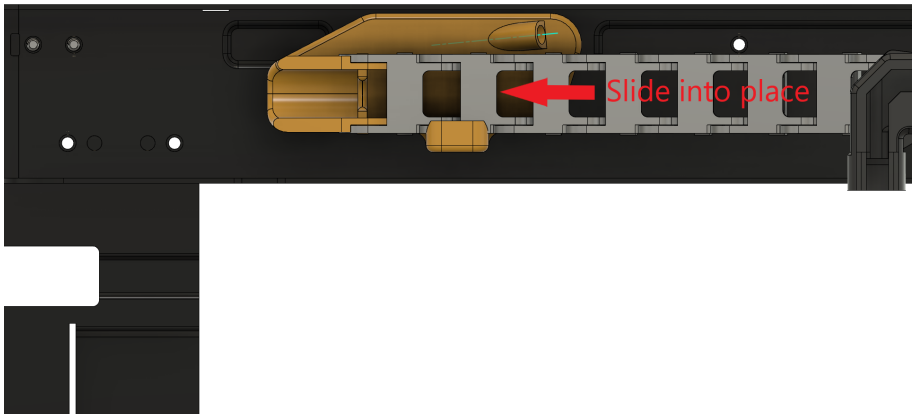
- Remove the tube anchor and PTFE tube (I'm not using the tube anchor anymore). https://wiki.bambulab.com/en/p1/maintenance/tube-anchor-assembly https://wiki.bambulab.com/en/p1/maintenance/ptfe-tube
- Remove the USB cable rubber bushing that holds the cable in place on the housing. https://wiki.bambulab.com/en/p1/maintenance/toolhead-housing
    - There's no actually way to remove it unless you want the cut it off so I just slid it to the other side of the cable
- 6 x M3*6

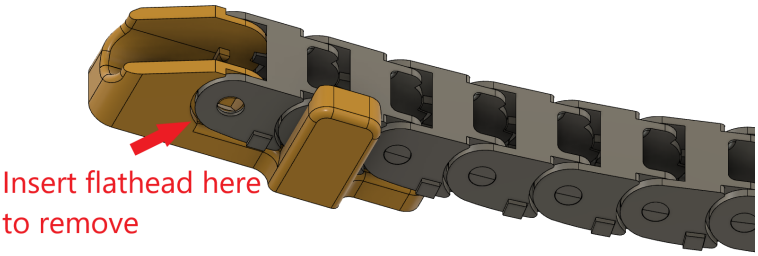






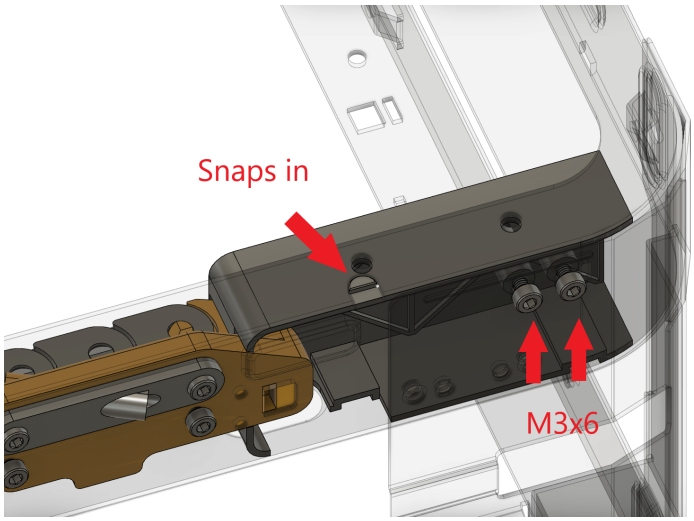
- The cable chain should be 22 links .





- Push the PTFE tube though the opening and out the back side & re-insert it back into the front housing
    - I have about 2in of the tube sticking out past the part.
- Insert the chain housing adapter 4A into place
    - Step 5 & 8 should clarify how to do this , simply press it into place . https://wiki.bambulab.com/en/x1/maintenance/replace-typec-cable
    - The little side brackets face outwards

- Attach the male end of the chain to 4A, open all the side brackets on the chain and put the cable in, close it up.
- Snap 2B (the clip) onto one of the chain links and push the PTFE tube in (I have it on the 11th link) .
    - I purposefully left the clip wider then the tube. During some testing it definitely seemed like the tube needed to be free of constraints (especially in back right corner of the frame). **The fit is tight as the clip needs to stay in place. I clipped it on horizontally then rotated it vertically**
- Lastly, attached 3E



Make sure to recalibrate after the chain is installed. Alternative location for the hygrometer

- **https://www.printables.com/model/463226-bambu-lab-p1p-x1-x1c-filter-cover**

If you like my designs and want to say thanks, you can buy me a coffee and help fund the filaments I need for prototyping. A donation of any amount to Buy Me a Coffee or PayPal would be greatly appreciated!

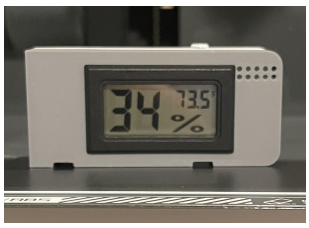
As always, given different printing environments, filaments, etc., prints may not work perfectly for everyone. If you are having issues please message or comment and I will try my best to resolve the issue.

Previous Updates

Update (4/25/2023)

*Added file - USB_Cable_Cover_Hygrometer

- Per @xXSMOGXx recommendation I added a cable cover version that can hold a hygrometer
  - Hygrometer - https://www.amazon.com/dp/B07GNMKYCZ?psc=1&ref=ppx_yo2ov_dt_b_product_details
  - Most of the Amazon ones are the same, as long as the dimensions are 1.89" x 1.13" / 48mm x 28.6mm



Update (3/29/2023)

*Updated file - Cable_Chain_PTFE_Clip_1B to 2B

- Shortened the height of the loop.
  - Looked like it was getting to close to the underside of the frame.
- Improved fitment with chain.

Update (2/8/2023)

*Updated file - Cable_Chain_Frame_Adapter_Front_1D to 2D

- Simplified mounting hardware needed (6 M3x6).
- Angled PTFE tube upwards slightly to help lift the chain.
- Added a bottom support for the chain, big improvement on any sagging.
  - **See 2nd picture, chain stays horizontal when fully looped 180 degrees. No sagging.**
- Integrated the chain mounting link into part 2D.
- All screw locations are on the back now, no nuts or washers. Will be posting a version with threaded inserts soon.

*Updated file - Cable_Chain_Frame_Adapter_Rear_1C to 2C

- Angled the PTFE tube downwards slightly, more direct path to the spool.

*Updated file - Cable_Chain_Housing_Adapter_3A to Cable_Chain_Housing_Adapter_4A.

- Added strength, cleaner print.

Revised instructions

Update (1/31/2023)

*Updated file - USB_Cable_Cover_2E to USB_Cable_Cover_3E

- Updated sizing to fit my printable p1p cable drag chain design.
- https://www.printables.com/model/385282-bambu-lab-p1p-printable-cable-drag-chain

Update (1/24/2023)

*Updated file - Cable_Chain_Housing_Adapter_2A to Cable_Chain_Housing_Adapter_3A.

- Reworked the tolerances to be a tighter fit between the printhead and adapter. Substantial improvement over 2A as it reduces sag in the chain, almost none now. Because the tolerances are tighter, there is a small “break in” period (~30 minute print) for the part to loosen and rotate more freely.
- Added additional support to keep the chain bending radius at 18mm. “They are designed for specific bends and such as to not harm the cable, if you design a chain wrong it could damage the cable more than not using one at all.” . 2A included this but I added another stop which subsequently increased the rigidity of the part.
- Increased the rings thickness slightly for additional strength and added small groves for easier assembly / removal of the chain.

*Updated file - USB_Cable_Cover_1E to USB_Cable_Cover_2E

- Users were stating the fit was unessecerally tight so I reworked it to go into place easier.

*Updated print settings for P1P OTA version 01.01.01.00

Update (1/11/2023)

*Updated file - Cable_Chain_Housing_Adapter_1A to Cable_Chain_Housing_Adapter_2A.

- Previously file 1A was able to rotate freely at both connection points. File 2A corrects this by adding a bend radius constraint of 18mm

between itself and the cable chain. Without this the cable could overbend.

Added file - USB_Cable_Cover_1E

- Covers the cable chain connection point to the frame and USB cable.

Added file - Cable_Chain_Frame_Adapter_Inserts

- Alternate version of 1D that uses threaded inserts instead of washers/nuts.
  - M3 x 3 x 5mm - https://www.amazon.com/dp/B07D683Q26?psc=1&ref=ppx_yo2ov_dt_b_product_details
    - Qty: 7
  - M2 x 4 x 3.5mm - https://www.amazon.com/dp/B094H1SRK4?ref=ppx_yo2ov_dt_b_product_details&th=1
    - Qty: 2 (optional)

Model files

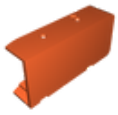
Current 5 files

cable_chain_housing_adapter_4a.stl

Current

cable_chain_ptfe_clip_2b.stl

Current



usb_cable_cover_3e.stl

Current

cable_chain_frame_adapter_front_3c.stl

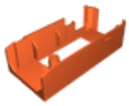
Current

cable_chain_frame_adapter_rear_2d.stl

Current

Alternative Files

2 files



usb_cable_cover_hygrometer.3mf

Alternative

cable_chain_frame_adapter_front_inserts.stl

Alternative

Print File

1 file

cable-chain-build-plate.3mf

Current

Archived

10 files

cable-chain-build-plate-old.3mf

Old

cable_chain_ptfe_clip_1b-old.stl

Old

cable_chain_frame_adapter_front_2c.stl

Old

cable_chain_housing_adapter_3a-old.stl

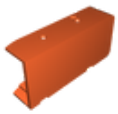
Old

cable_chain_housing_adapter_2a-old.stl

Old

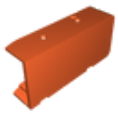
cable_chain_housing_adapter_1a-old.stl

Old



usb_cable_cover_2e-old.stl

Old



usb_cable_cover_1e-old.stl

Old

cable_chain_frame_adapter_front_1d-old.stl

Old

cable_chain_frame_adapter_rear_1c-old.stl

Old

License ©

This work is licensed under a
Creative Commons (4.0 International License)

Attribution—Noncommercial—No Derivatives

✖ | Sharing without ATTRIBUTION
✖ | Remix Culture allowed
✖ | Commercial Use
✖ | Free Cultural Works
✖ | Meets Open Definition