

XYZ Platform for Bath Interferometers

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[VIEW IN BROWSER](#)

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Summary

Low-BOM three axis platform for Bath interferometers. Only M4 rods, screws and nuts are used.

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Tags: [bath](#) [xyz](#) [inteferometry](#)

Low-BOM printable XYZ platform for Bath Interferometers

Looking for the interferometer itself ? It's right there on Printables !

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Please know your printer and use the TOLERANCE TEST

You have to print **everything** flawlessly for smooth motion. To determine what STLs to use, please print the TOLERANCE TEST. It should slide freely, with a bit of sanding if you mis-placed the seam while slicing. **Pay attention to the seam position !** Seam traps are on the roadmap but not implemented yet.

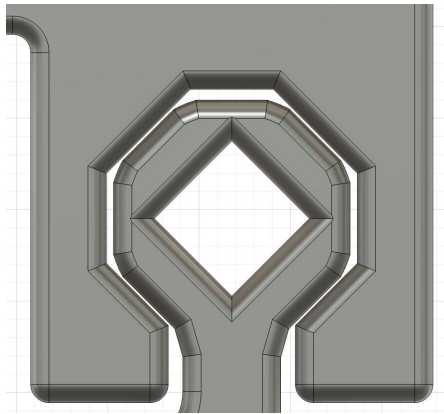
→ **assembly guide here** ←

Changelog :

- 2024-08-10 : **assembly guide**
- 2024-08-05 : ease of assembly changes

Why is the tolerance test so big ?

Good question : I found that my smaller tolerance tests (one rail only) did not give correct information as whether a whole stage would be smooth.



The tolerance is the fine space in this screenshot. The smallest you can print, the best :

Name	Value	Printed and tested
Tightest	0.07mm	(Bambu P1S)
Tight	0.1mm	
Easy	0.125mm	

Prints BOM

- Print the TOLERANCE TEST and choose accordingly
- Print everything in the Common folder in the quantities listed in file names
- Print everything in the folder corresponding to your chosen tolerance

Vitamins BOM

Design.	Quantity
M4 rod	3
M4 nut	12
M4 screw x 14mm	16
Superglue	Some


Only uses M4 rods and M4 screws as vitamins. Superglue is used to lock the nuts and suppress Z axis wobble at the joint with the Y axis.

A few tips :

- Dry your filament.
- Do not print too fast.
- Use PETG
- Re-tap the screw holes before assembly
- Tap the carrier blocks **with oil** before assembly

Thanks Paul for design advice !


Model files


 **Pre-sliced, correct seam, TIGHTEST, for P1S** 3 files

green_6hgcode.3mf

blue_6h23gcode.3mf

red_5h58gcode.3mf

 **Common** 5 files

 **handle_x3.stl**



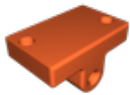
interferometer_carrier.stl



small_knob_x3.stl



big_knob_x3.stl



carrier_block_x3.stl

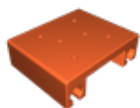


Tight

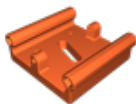
6 files



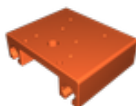
z_stage_a.stl



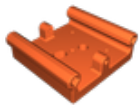
x_stage_high.stl



y_stage_low.stl



y_stage_high.stl



x_stage_low.stl



z_stage_b.stl

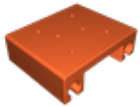


Easy

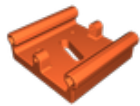
6 files



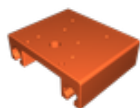
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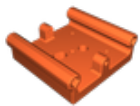
x_stage_high.stl



y_stage_low.stl



y_stage_high.stl



x_stage_low.stl

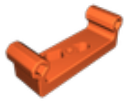


z_stage_b.stl

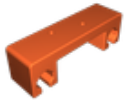


TOLERANCE TEST

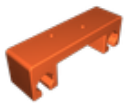
6 files



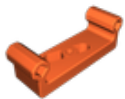
tolerance_test_tight_low.stl



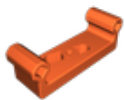
tolerance_test_tightest_high.stl



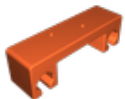
tolerance_test_tight_high.stl



tolerance_test_easy_low.stl



tolerance_test_tightest_low.stl



tolerance_test_easy_high.stl

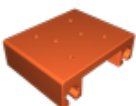


Tightest

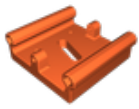
6 files



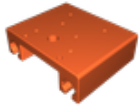
z_stage_a.stl



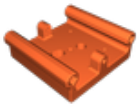
x_stage_high.stl



y_stage_low.stl



y_stage_high.stl



x_stage_low.stl



z_stage_b.stl

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