



## XYZ Platform for Bath Interferometers

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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](#) [interferometry](#)

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### 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.

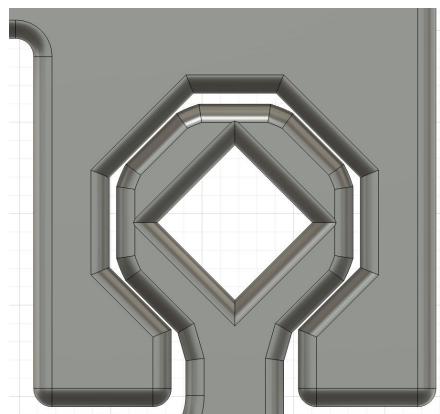
[→ assembly guide here ←](#)

## 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**



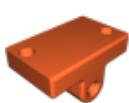
**interferometer\_carrier.stl**



**small\_knob\_x3.stl**



**big\_knob\_x3.stl**



**carrier\_block\_x3.stl**

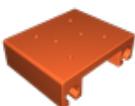


**Tight**

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**

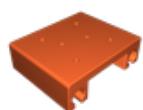


**Easy**

6 files



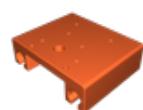
**z\_stage\_a.stl**



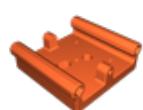
**x\_stage\_high.stl**



**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**

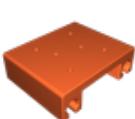


## Tightest

6 files



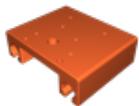
**z\_stage\_a.stl**



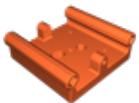
**x\_stage\_high.stl**



**y\_stage\_low.stl**



**y\_stage\_high.stl**



**x\_stage\_low.stl**



**z\_stage\_b.stl**

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