

qidi 6.08 mono resin vat

N Nikdfish

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Summary

A DIY resin vat for the Qidi 6.08 Mono resin printer

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NOTE:

I have tested the installation & tensioning of an FEP sheet and tested the assembly for leaks using water (no leaks found), but I have not yet used it for a print in my printer. I may wait a few days to see if it remains stable and doesn't warp.

This thing consists of components to assemble a resin vat for use with a Qidi 6.08 Mono resin printer.

This design uses all M3 flat head (aka countersunk) screws. The FEP frame uses either 28x M3 6mm threaded inserts (C1) or 28x M3 nuts (C2). The vat can be printed to use either 8x M3 6mm threaded inserts (version A1) or M3 nuts (version A2). I believe the version using M3 nuts (A2) is probably the more robust design with regard to tensioning the FEP sheet.

A high wall count is suggested for wall integrity. I used 7 walls. I also used Cura settings to print 100% infill in the areas immediately surrounding the threaded insert/nut locations on the vat. I used 20% infill for the rest.

I used 200x140mm 0.15mm FEP film for assembly

Parts List by Alpha reference:

A1 - vat with thermal inserts
A2 - vat with M3 nuts
B1 - top FEP frame 5mm thick
B2 - top FEP frame 4mm thick
C1 - bottom FEP frame 6mm thick with thermal inserts
C2 - bottom FEP frame 6mm thick with M3 nuts
C3 - bottom FEP frame 4.5mm thick with M3 nuts
D - FEP installation jig 12mm thick FEP support with base
D2 - FEP installation jig 12mm thick FEP support without base

This object was made in Tinkercad. Edit it online <https://www.tinkercad.com/things/k43sZVHbOEF>

Post-Printing

All parts are marked on one corner with an asterick (*). For proper alignment of holes, please orient parts so that the mark is on the upper surface of each & all at the same corner during assembly.

The FEP frame (composed of parts B & C) is assembled with M3 screws. Screw length should be chosen consistent with the assembly thickness. Sizes may range from 8mm to 12mm (screw length measured end to end). The lower frame (C) can be assembled with either threaded inserts (C1) or M3 nuts (C2). Frame B1 is 5mm thick Frame B2 is 4mm thick. B2 might be useful if FEP tension is too high before the frame assembly top edge is even with the vat bottom.

The assembled FEP frame is installed onto the vat (part A) with 8x 18mm (for threaded inserts, A1) or 20mm screws (for M3 nuts, A2). If thinner components are used, a shorter length may be appropriate.

A small amount of CA glue (aka superglue), applied around the edges, may be needed to retain M3 nuts in the lower FEP frame. I recommend doing such work on a silicon matt ...

You will probably want to chase thermal insert holes with an appropriately sized drill bit for the threaded insert being used in the vat and lower FEP frame (not necessary if using M3 nut versions). You will also probably want to chase all the screw holes in the upper FEP frame with an appropriate drill bit for M3 screws.

With regard to setting threaded inserts in the vat (A1), if you don't have a dedicated tool, the best insertion method I found was as follows:

- Drill the hole to the proper size for your insert.
- Put the insert on the end of a longer screw (like 35mm)

- Heat the insert to 20 or 30 degrees C above normal print temp (I used a hot air rework tool) or about 30 seconds with a heat gun.
- Place the insert in the hole & press down hard until at the desired level. -

Let it cool & then remove the long screw. Use of the long screw assists in getting proper orientation, something hard to do if you are using a soldering iron tip in the close quarters of the vat. Heating the insert & using pressure help get it in place with the least disruption of surrounding material.

That being said, I believe the vat version using M3 nuts (A2) is probably the more robust design with regard to tensioning the FEP sheet.

A 12mm FEP support (part D) can be used to assist in assembling the FEP sheet in the FEP framework with appropriate slack. A version that has a base plate permits the FEP assembly to be clamped in place while installing the screws and initially tensioning the FEP sheet.

Before installing the FEP sheet, be sure to thoroughly deburr & chamfer edges the FEP sheet will contact. Use a deburring tool, sandpaper, scraper or your preferred method to ensure the FEP will only contact a smooth surface with no puncture/wear potential.

Category: 3D Printing

Model files



scratch-built-qidi-608-vat-a1.stl



scratch-built-qidi-608-vat-a2.stl



scratch-built-qidi-608-vat-b1.stl



scratch-built-qidi-608-vat-b2.stl



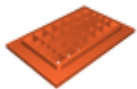
scratch-built-qidi-608-vat-c1.stl



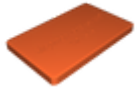
scratch-built-qidi-608-vat-c2.stl



scratch-built-qidi-608-vat-c3.stl



scratch-built-qidi-608-vat-d.stl



scratch-built-qidi-608-vat-d2.stl



608_vat_cover.stl

Other files



qidi-608-mono-vat-notes.txt

[Find source .stl files on Thingiverse.com](#)

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