



Voron V0.2 R1 Pin Mod - LIGHT GANTRY



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Summary

An Elegant Mod to add Pins to your XY gantry

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Voron V0.2R1 Pin Mod

I first stumbled on this type of mod on the discord channel for the Voron Trident and was curious if it could be done.... well after some time in Fusion360 and a few different iterations I finally settled on a design I liked and one that was fairly easy to print.

I based my design around the original XY joint design (of the V0) but stripped away anything that was not necessary.
so these are lighter than the original parts.
I was careful not to change anything that would cause issues with homing so keeping installation as easy as possible.

the reduced size of the XY joints led me to redesign the front idlers in order to keep the original 120mm Y travel as it was possible to go beyond this, so they have been lengthened and contoured to keep things working

as the originals would have.

they also have a locating tab between the top and bottom printed parts to help align them making installation easier.

My PIN MOD for the idlers can be found here

<https://www.printables.com/model/848807-voron-v02-r1-custom-idlers-pin-mod#>

the XY joints use 3mm x 28mm silver steel pins / dowls for the bearing stacks and these help in a number of ways.

1. they are a much closer match to the ID of the bearing inner race so giving a much better fit compared to the standard screws used.
2. they help keep from accidentally over tightening the bearing stack as there is no screw to do this with so aiding motion performance and resonance.
3. they look cool!

there are no changes to the screws used only that you will no longer need the screws for the bearing stacks.

you may need to ream out the 3mm holes for the pins / dowls to get them to fit.

I have made the tolerance quite tight to have a good fit for the pins / dowls as you do not want any play in this area.

my advice would be to measure the drill bit / reamer to make sure that it is not bigger than your pin / dowl or you will run into problems.

as these parts are small I would suggest that you do the reaming by hand and not with a drill.

it is far too easy to go over board this way.

Installation

1. fit the bottom spacers (fillet towards the bottom)
2. press the pins / dowls into the bottom XY joints (they should bottom out with 22.8mm sticking out the top)
3. add 2 x washers / shims
4. add the bearings
5. add 2 x washers / shims
6. fit the top XY joints
7. screw in the self tapping screws in the small joiner piece between the top and bottom parts
8. now add the screws and nuts to fix to the extrusion / gantry
9. make sure to de-reck you gantry before tightening these down
10. add belts and tension and your ready to go!

As with all things Voron, Please follow the Voron Printing Guide lines

4 x perimeters

5 x top / bottom layers

40% infill

materials - ABS / ASA

All models are laid out on a V0 bed so simply download, slice and print!

if you like this mod leave me some feedback or upload your make!

happy printing!

CAD files can be found here on my GitHub...

<https://github.com/Driftrotor/Voron-V0.2r1-Gantry-Pin-Mod-With-Idlers/tree/main>

Model files



gantry-xy-joints.3mf

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