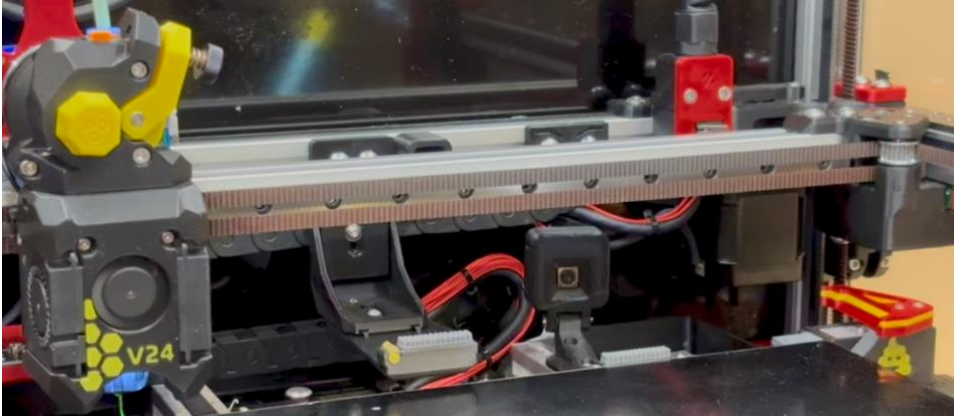


## Current setup

300mm 2.4: Klicky PCB dock on the extreme left, z-endstop, redesigned gantry wipe and nozzle rest (needs moved closer to blobifier once design/modifications are finalized), decontaminator purge bucket with A1 Mini wiper and remodeled mount to assist in detaching blobs that do not detach naturally, EREC (no toolhead cutter or depressor pin), and Yavoth hotend.



All macro changes identified by **NJ** initials, original code left in place commented out.

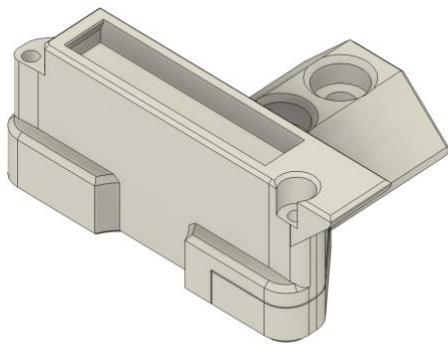
[https://github.com/ningpi/voron24/blob/master/macros/mmu\\_user\\_blobifier.cfg](https://github.com/ningpi/voron24/blob/master/macros/mmu_user_blobifier.cfg)

## Blobifier Enhancements

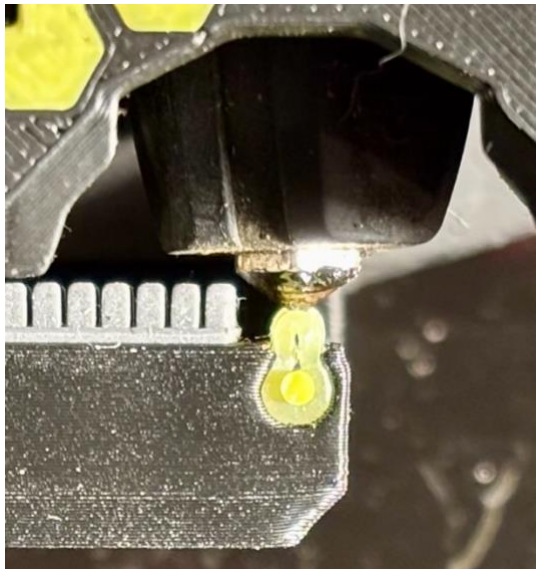
1. Orientation setting and logic to handle left hand (default) and right hand blobifier installations. In general x moves should always start by moving away from blobifier based on its orientation. E.g. wipe and other x moves  
**variable\_orientation: 1 (0 left, 1 right. Default 0)** Note: using this value in move calcs so need it to be 0 or 1. Happy to switch to other convention and translate.
2. Nozzle shake option with +/- x movement range from purge location & iterations to execute to help detach belligerent blobs. I only print abs and would occasionally get klingons coming along for the ride when moving away from blobifier. Bypass and ignore if iterations <= 0 & enforce 3mm clearance to avoid shaker arm (touching it on x move might also be beneficial).  
**variable\_nozzle\_shaker: 5, 2, 2 (mm left, mm right, shake iterations - Default 0, 0, 0.)**
3. Add iteration option to enable variable number of tray actions (in / out) to help with 2.  
**variable\_tray\_iterations: 2 (Default 1)**
4. Move servo dwell parameter up to main blobifier macro variable to simplify configuration. With my MG90s clones @ 5v, it needs to be 300ms. I also modified the base mount and played around with the DS041MG Servo but couldn't get it to work reliably over the full range required for blobifier with either the Klipper or mmb\_servo servo drivers. I basically needed to send the same command twice, pausing in between to get it to reliably move the full range which was around 135 degrees. It's a junk servo so gave up.  
**variable\_dwell\_time: 200 (Default 200)**
5. Now blobifier is part of the HH project perhaps it should use mmb\_servo driver by default? - It works same same
6. Set PA to zero before purging and restore afterwards to avoid interference
7. General tidy up of blobifier macro code. Noticed a duplicate set statement and changed restoration logic for printer settings to use values from original printer variables since jinga2 variable values remain unchanged

when referenced from the same macro and always reflect the value when the macro was initially executed e.g. PCF, Pressure Advance, Accelerations, etc

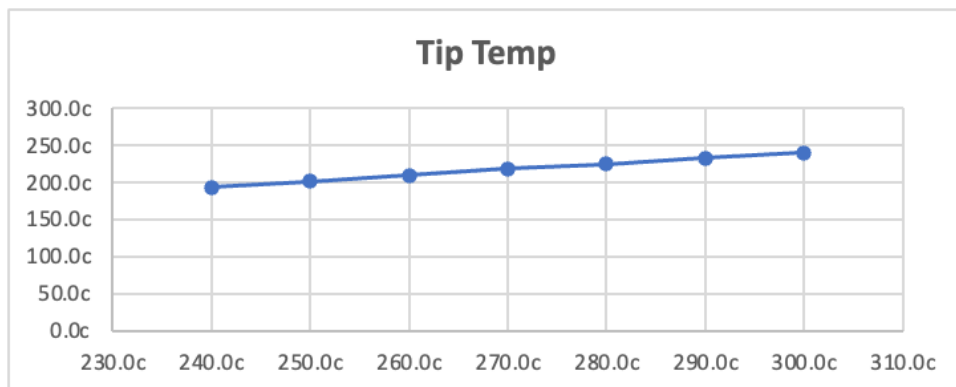
8. Move **G4 P{pressure\_release\_time}** up before descending back to the tray. Unsure if this is worthwhile or not by itself (rational was to allow time more for gravity to do its work before descending). However with the new nozzle shaker and tray cycle option it probably needs to be done before final attempts to release the blob
9. Consider moving servo command to extend tray before descending to reduce risk of nozzle collision on activation. Probably not necessary as it will collide anyway when the tray is retracted and extended to knock off the blob
10. To minimise lost print area, rethink **blobifier\_clean** / **blobifier\_park** macros to support gantry mounted wipe / nozzle rest option. Need to decide if it would be useful to support both options concurrently (e.g. wipe on fixed height before gantry wipe) or if it should be one or the other. Might be a little complicated as additional parameters would likely need to be defined to support both. Also need to keep park function generic so it can be called directly from HH. Will need new parameter to indicate option regardless. If gantry, set **safe.brush** to yes / true but make sure to increase z-hop if fixed brush is still installed to avoid collision. Support left and right nozzle park locations e.g park on left or right of wiper
11. Because of the occasional klingen and ABS blob that wouldn't detach from the nozzle, I added an extension to the side of the a fixed nozzle wipe facing blobifier to deflect and as a last attempt to knock them off.



11. Redesign excellent igiannakas gantry wipe and rest to incorporate:
  - a. dovetail sliders to make it easier to setup, reduce mounting hardware, and improve rigidity
  - b. internal voids in mount and arm to improve rigidity - 0.1mm 2x voids
  - c. A1 Mini block silicon wiper. While easier to mount and remove, its smaller and has shorter knobs and aren't sure if its as effective as the A1 nozzle wiper from the original. (I had a bag on hand from aliexpress)
  - d. test Dubro model aero/heli high temp silicon fuel tubing secured with filament pin for nozzle rest. Works surprisingly well but cant confirm max temp rating and has stood up to extended tests with 270c hotend for > 1 hour & soldering iron at 350c. No deformation of tube, abs pin or surrounding mount. Tubing is likely only rated to 200c but can survive prolonged contact with hot engine exhaust/tuned pipe headers. Silicon syringe or conical hole plugs options from aliexpress rated to 250c as possible alternatives. Might need to revise tubing position and move rest further away from the wiper as it's currently a trap for filament debris.



Captured data of actual external nozzle tip temperatures from 300c - 240c (started at 300c and dropping to lower temps - measured with multimeter and thermocouple between silicon tube and nozzle). External nozzle tip temperatures consistently 40c or so below actual HE temp



12. Create bucket shaker option for Yavoth hotend (CAD left hand, mirror x in slicer for right hand). Might still be a little close currently and may need to move 1mm further away.



## Macro To Do's

Core right-hand blobifier functions are working.

- Review and consider logic needed to avoid depressor pin for left / right hand configurations. Presume depressor will likely always be on left unless cable chains are replaced with umbilical setup. For klicky dock use case, depressor on front left??
- Incorporate orientation moves into [blobifier\\_shake\\_bucket](#) macro (currently hard coded position\_x for right hand operation while testing)
- Enhance and incorporate generic gantry option into [blobifier\\_clean](#) and [blobifier\\_park](#) macros. If gantry only, set [safe.brush](#) to yes/true to free print area. Wipe code currently commented out in [blobifier\\_clean](#) macro while testing callout to existing custom gantry wipe/park macro and efficacy of gantry only option
- Validate right and left hand safe\_descend calc's abd bound checks
- Get someone to test left hand orientation - purge, wipe, park