



Aquila quick tool change with magnetic cooling shroud



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Summary

How to quickly remove hot end and replace it with laser or a pen ? Or make the nozzle way more accessible for cleaning?

[3D Printers](#) > [3D Printers - Upgrades](#)

Tags: [aquila](#) [cooling](#) [hotend](#) [voxelabaquila](#)

Update 9.8.2022

Printed a Y axis limit switch holder (STL aded) in order to adjust the bed position to new hotend position. The original stepper motor cover/end switch mount must be cut on bottom side in order to clear the new end switch position.

I found on Proper Printing Youtube channel and Desktop Inventions some great ideas for upgrades on my Aquila. So i decided to modify and fit them.

I adopted the Multitool made for the ender 3 by Proper printing to fit on Aquilla.

I made the tolerances for the locking lever and the chanel for the back plate of hot end and extruder tighter - the locking lever moves hard which

means the tool is held much more firmly- I suggest using a bit of lubricant during assembly of the lever. All parts are made thin as possible to reduce the loss of print volume.

Remodified the tool bracket for standard hot end to fit Sherpa mini to convert Aquilla to direct drive.

Then I modified the magnetic cooling duct made by Desktop Inventions to fit on new hot end back plate. Also he tested Noctua and stock Creality blowers - I recommend seeing that video.

The height of BL touch needed to be modified to fit on Aquilla. Also remade the mounting for the hot end cooling fan. Now it is possible to use 4010 or 4020 cooling fan - original was only 4010. With magnetic fixation it is quite easy to remove the cooling fan when access to hot end is needed.

For Ender 3 they needed to do some adjustments for the Y-axis limit switch which is not necessary for the Aquilla. The switch works as is.

It works great but I decided to upgrade current design even further:

use the D-sub connector. So the wiring from the removed tool will detach automatically.

relocating BL touch probe to the fixed mounting plate. It does not need to detach from the tool. Perhaps even redesigning the touch probe to use other sensor than BL touch.

Model files



locking-handle.stl



bracket-for-sherpa-mini-with-standard-hotend.stl



quick-tool-change-base.stl



part-and-hot-end-cooling.stl



y-axis_offset_limit_switch-aquila.stl

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