



Uvex Bionic Filtered Air System



ppaukstelis

[VIEW IN BROWSER](#)

updated 28. 7. 2021 | published 28. 7. 2021

Summary

Simple particulate filtration system for use with Uvex Bionic face shields

[Household](#) > [Outdoor & Garden](#)

Tags: [woodworking](#) [bionic](#) [filtration](#) [woodturning](#) [faceshield](#)
[uvex](#)

Many people use the Uvex Bionic face shield for wood working. It is cheap and works well, but I always had my eye on the >\$1300 face shields with integrated air filtration. Rather than plunking down the money, I decided to attempt a DIY approach. This is the first version, instructions will be minimal as of now.

Features:

- Does not require modification of the face shield in anyway
- Uses 5V 7530 blower fan (inspired by John Pickens' Happy Face blower on thingiverse)
- Uses a cheap pool filter (Type D I believe) for filtration. This means it is particulate only.
- Requires the use of some flexible filament (TPU), but may be able to get away with HIPS or other slightly more flexible filaments that can open a bit to wrap around the edge of the shell.
- Uses 25mm/1" ID tubing.

- Hardware are a few 10mm M3s, M3 square nuts, and a couple of 12mm M4s.
- You'll need some mostly non-porous cloth to seal up under the chin along with some elastic.

To create the parts I first 3D scanned the shell. This was harder than I hoped and the results were somewhat marginal, but I have included that scan as it might be useful for others that may want to do something similar.

Parts labeled 'uvex' are for the face shield. Parts labeled 'blower' are for the blower unit. Assembly is pretty straightforward for the printed parts. The cloth and elastic are probably the hardest part to get right. Once I have a better feel for what works I'll put an SVG with a pattern. There are some M3 (unthreaded) mounting holes on the bottom side of the top piece that the elastic can be attached to, but I am going to explore other options to improve the sealing.

Model files



uvex-water-center.stl



uvex-tpu.3mf



uvex-topback.3mf



blower-tpu.3mf



blower-petg.3mf

License

This work is licensed under a
Creative Commons (4.0 International License)



Attribution-ShareAlike

- ✗ | Sharing without ATTRIBUTION
- ✓ | Remix Culture allowed
- ✓ | Commercial Use
- ✓ | Free Cultural Works
- ✓ | Meets Open Definition