

3D Printed parametric gas-mask - User manual

More information is available at <https://git.deuxfleurs.fr/distorsion/3D-printed-parametric-gas-mask>, and if you need to don't hesitate to contact us by email at distorsion@systemli.org. We are interested in suggestions and feedback !

1 - Quick start guide

1.a - When you receive your mask

When receiving a mask, a rubber band may be holding a protector around the tube ment to connecting the insufflation mask, to keep grease applied around it. You can remove this rubber band and protection when you want to connect an insufflation mask.

If there is no elastic strap attached to the mask, you can buy any elastic strap (around ~10-15mm wide) and tie it to the strap holder (a loop connecting the two top strap holder and a loop between the two bottom strap holder).

You can then connect a canister and start using your mask !

1.b - What to buy

Insufflation mask You can buy any standard "insufflation mask" (which can be found on medical supplies sites), which cost around 1 to 2 euros per mask.

There exist multiples adult sizes of insufflation mask, you can test and find the best size for you to comfortably use this mask, while having a good fitment. Note that typically the largest size is very large.

Canister If you didn't received a canister with your mask, you can buy a filtering canister made for "40mm gas masks", also sometimes called a "40mm NATO gas mask".

An adapter may have been included with your mask to connect to another standard of filtering canister. Typically this would be an adapter to 3m bayonet mount, which would allow you to mount 3m canisters or filters.

Usually one of the two threads ment to mount a canister will be blocked by a plug, if you intend on using two canister (which will make breathing easier), you will need to remove it.

2 - Maintenance of the mask

2.a - Testing

Before use, please do a pressure test : *Put on your mask and block the input of the canister without pushing the mask in any direction. If you feel any air entering your lungs, then the fit isn't perfect, and you may need to change the insufflation mask size or apply grease to threads or to the connector of the insufflation mask.*

2.b - Greasing

You will need to apply grease around threads ment to mount canisters, and around the threads of the one-way-valve (at the bottom of the mask), around the sealing surface of the one-way-valve (the smooth surface of the round insert with four arms at the bottom of the mask), and around the connector ment for the insufflation mask.

Greasing is essential to archiving an airtight connection with the loose tolerances of 3D printing.

2.c - Replacing/refilling the canister

You will need to change canisters with use, please check the recommendation of the manufacturer and use your own judgement.

If you have a DIY 3D printed canister, you can unscrew them and refill with activated charcoal after replacing the pieces of COVID mask used to hold the activated charcoal. You can checkout more precise instruction at <https://git.deuxfleurs.fr/distorsion/3D-printed-parametric-40mm-gas-mask-canister>.