



University of Idaho

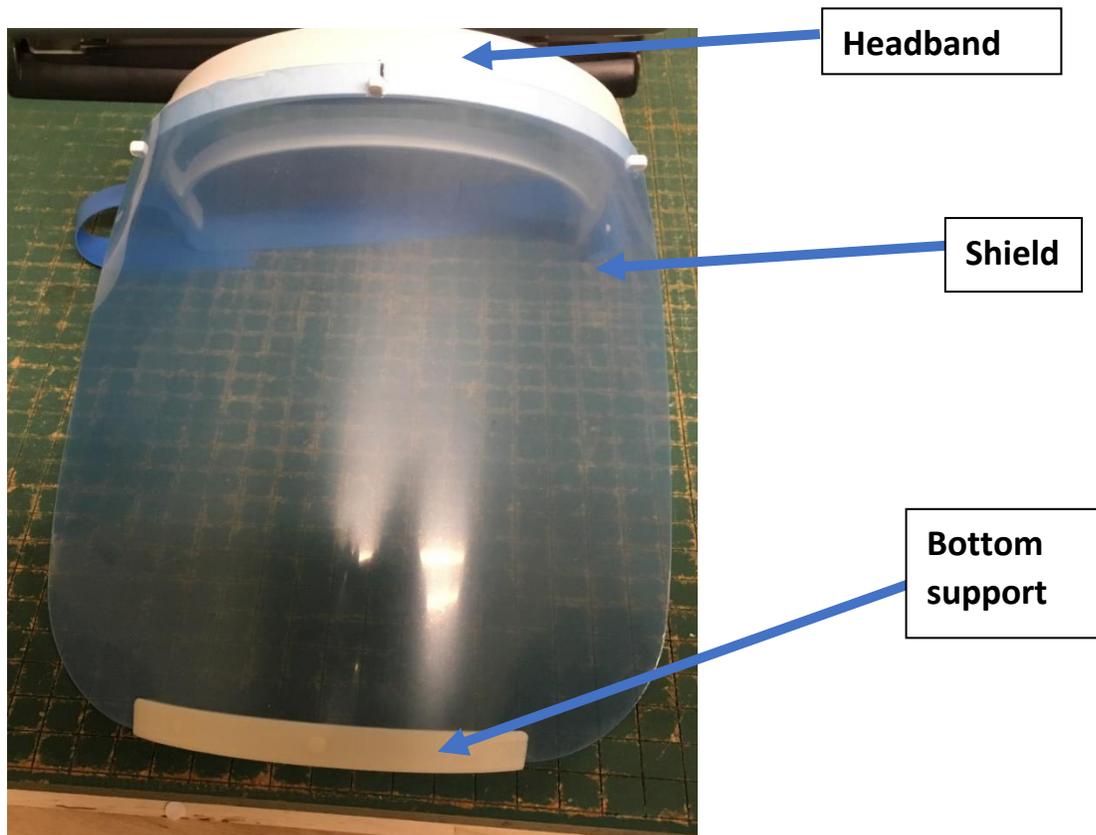
College of Engineering

FACE SHIELD INFORMATION SHEET

“The University of Idaho, in accordance with Governor Brad Little’s March 13, 2020 emergency declaration related to the COVID-19 pandemic and his March 25, 2020 declaration of Extreme Emergency, is doing what it can to help the State of Idaho respond to the COVID-19 pandemic. As such, the University of Idaho is happy to utilize its expertise and resources to provide this emergency equipment. While we are building this equipment from designs intended to comply with relevant standards related to the equipment, this equipment has not been tested or approved by the American National Standards Institute (ANSI) or International Safety Equipment Association (ISEA).”

(This shield replicates original designs from references [1] and [2])

Components



Materials:

Shield: 0.02-inch or .03- inch thick CLEAR PETG sheet (the blue in the picture is a protective film)

Headband: PETG or PLA

Bottom support: PETG or PLA (preferred); ABS also works

Strap: Tourniquet material or rubber band.

Installation instructions:

The installation of the shield is easy and fast. The print is designed to make use of a standard 3-hole paper punch. It is best to use an adjustable 3-hole punch that allows for moving the outer two holes slightly farther from the center one. The optimal space is 2.3 inches between hole centers for a very

tight fit and 2.325 for a looser fit that is easier to snap on and off. The 3-hole punch just makes it easier to properly locate the holes. This could be done with careful measuring and a single hole punch or making a template to punch through.

Procedure:

- Wear gloves.
- Leave the protective coating on the shield material.
- Don't twist and pry on the overhead shield to prevent damaging it.
- Mark the center line of the shield.
- Punch the three holes into top of the shield with one of the above methods.
- Peel back the protective coatings about an inch.
- Start on one end aligning the pins into the holes.
- Snap the shield into place over the third pin.
- Slide the bottom support onto the bottom of the shield.
- Make sure the shield is bottomed out in the slot.
- Align the support with the center of the sheet.
- Mark the three holes.
- Remove the bottom support.
- Punch the three holes with a single hole punch.
- Slide the bottom support in place until the locking nubs engage the holes.
- Bag the shield in a new press to close bag to keep it clean.

Fitting the band

The rubber tourniquet material comes punched with a series of holes to allow for adjustment. The tail is intentionally left long in case additional holes are need. Trim the tail after fitting to the user.

Remove protective film

Peel the protective film from the shield material before first use.

Cleaning instructions: *By Spectrum News Staff Texas. PUBLISHED 12:48 PM CT Mar. 17, 2020 PUBLISHED 12:48 PM CDT Mar. 17, 2020*

The killing of the germs usually happens during the disinfecting process. According to the CDC, disinfecting is the use of chemicals to kill germs on a surface. They say though it's important to disinfect after cleaning because this is the most effective way to lower the risk of infection.

According to [Rutgers University](https://www.rutgers.edu), there are several items that you many already have at home that can help disinfect:

- **Bleach** – When diluted it can be used to disinfect against many viruses including the coronavirus. Follow any directions on bottle packaging but typically you can mix ¼ cup of bleach per gallon of cold water. Non-porous items (like small plastic toys) can be submerged in the diluted bleach solution for 30 seconds. If you're using to clean surfaces, let bleach sit for 10 minutes or more before wiping away.
- **Rubbing Alcohol** – First check the concentration of alcohol solution you're using. It needs to be around 70 percent to kill germs from the coronavirus, 60 percent if it's being used as a hand sanitizer. The alcohol should be left on a surface for 30 seconds.
- **Hydrogen Peroxide** – This can be used as is and does not need to be diluted. Leave on surfaces for at least a minute before wiping away.

Contact information

Any further questions can be addressed by email to Charles Cornwall at cornwall@uidaho.edu. If any of the 3D printed parts break, replacements can be supplied so please retain the shield.

Reference

[1] Prusa face shield design: <https://www.prusaprinters.org/prints/27748-dtm-v30-face-shield-ppe-for-covid-19-remix-of-prus>

[2] <https://3dprint.nih.gov/discover/3dpx-013359>