Assembly Instructions PAPR HOOD

What

Estimated toal cost

Emergency solution

Trunk

How

Why To help protect hard-DIY safety hood working medical staff Estimated time Estimated cost per hood per hood 30 min **Project Overview**

With some plastic rolls and a few minutes Number of hoods from materials Production hood with airflow unit

• A PAPR is a type of Personal Protective Equipment (PPE) used by people working in hazardous environments • Doctors and nurses on the front lines of the COVID-19 crisis are currently reusing face masks as inadequate protection We've designed a model of PAPR hood that: • Uses commonly available materials Volunteer making several at once would spend about \$5 and 30 minutes per hood • Each hood is capable of connecting to

including the 3M™ VersaFlow™ and similar

• These hoods are cleanable, disposable, and can be sanitized by steam cleaning

common belt mounted PAPR units, units or oven heat for reuse

* BEFORE YOU BEGIN

• Recruit local volunteers and have them download the free plans

Medical Professionals

• Each hood must be **sterilized before use** either by baking it in the oven at 70° C for 20 minutes or by steam sanitization **Volunteers** • Coordinate with the requesting agency so you don't make hoods that no one will use • Follow the instructions closely and don't substitute. Materials were chosen specifically and variations may make them unusable

Hood Anatomy

Hood body Face panel <

Hood skirt

You will need **Materials Tools** sewing machine printer • scissors sewing pins tape for paper dry-erase marker

From a hardware or home improvement store 6mil white plastic sheeting A minimum of 5ff x 3ff needed per hood Typically made of polyethylene 4mil white plastic sheeting A minimum of 2ft x 5ft needed per hood Clear Gorilla brand tape • weights or other A minimum of 1.5 inches wide and 10 feet long needed handheld heavy per hood objects Do not use white or colored duct tape or classic Gorilla measuring tape tape, as these will warp under heat when sanitized • large ziplock or vacuum sealer bag

From a fabric or upholstery store 20+ gauge clear vinyl A minimum of 20 x 8 inches needed per hood All purpose white polyester thread **Cutting the Pieces** Step 1 Step 2

Step 3 Carefully line up and tape together the pages of each pattern using these maps: **Hood Body Pattern B1** A1 C1 D1 A2 C2 B2 PLACE ON FOLD Cut 1 on fold limit plastic sheeting

B3

Download PAPR Hood Patterns PDF from novadynamics.com/papr-hood Make sure your printer's sizing setting is set to "actual size," then print the first page of the PAPR Hood Pattern. Check with a ruler that the 1 inch square is actually one inch. If it's not, check your printer settings to make sure the size isn't being altered. Once the 1 inch square is actually one inch, print the rest of the pages.

> L PLACE ON FOLD HOOD SKIRT D2 A2 B2 **C3** D3 Face Panel Pattern Face Panel Cut 1 Clear 20mil Vinyl 1"

wiped off later). Make sure to transfer all dots with their correspoinding letters, all fold lines, and all sew lines. This will make it much easier later in the process. Use dotted lines for the

Use window cleaner and a dry rag to remove all traces of markings from the face panel.

Measure and cut a 1/2 inch x 31 inch strip of **6mil plastic sheeting** for the forehead band.

Step 1

outside of the hood.

Step 3

in place.

Step 4

Dot 2

Dot 2

Dot 1

Dot 3

Sew along line

Dot 2

hood skirt

clear vinyl

Tape

(Making sure the tape overlays the clear vinyl face panel, hood body and hood skirt) Place the tape along the bottom of the face panel to secure the hood skirt

Tape along the rest of the top of the

Turn the hood over, unfold the hood skirt, and center it vertically 1/2 inch below the face

You should have

6mil plastic sheeting

4mil plastic sheeting

• clear vinyl face panel

• 6mil plastic sheeting

hood body piece

hood skirt piece

forehead band

Unfold the hood body and center the clear vinyl over the face panel opening of the hood body. Remove all dry erase marks from the are before

taping down all edges of the vinyl with clear Gorilla

brand tape. Minimize the amount of tape on the clear vinyl as much as possible to provide as much visibility as possible. This is now outside of the hood.

Tip: Use dry erase marker to note that this is the

1"

A1

Hood Skirt Pattern

C1

C2

Ď1

D2

C1

BI

Step 4 Wear a hair covering (such as a bandana) and wash hands for 20 seconds before handling plastic materials. Step 5 The Hood Body Pattern represent one half of the cut out piece. Fold the 6mil white, plastic sheeting over and place the fold vertically along the left side of the pattern. Make sure there is enough sheeting on both sides to cover the entire Hood Body Pattern. Use a corner of the entire roll of plastic sheeting so that more hoods can be made from the same roll. Step 6 On a hard, flat surface, place weights on the **Hood Body Pattern** to hold it in place. Trace the outlines and marks on the pattern with a dry-erase marker (so all markings can be

aside. Step 8 Step 9 Step 10 Step 11 Step 12 Trace the outline of the face pacel with a dry erase marker and cut it out. Step 13

Step 7 Cut out the outter most solid line of the **Hood Body Pattern** and the face panel window. Set The **Hood Skirt Pattern** represent one half of the cut out piece. Fold the **4mil white**, **plastic**

fold and sew lines so they are not accidentally cut.

sheeting over and place the fold vertically along the left side of the pattern. Make sure there is enough sheeting on both sides to cover the entire Hood Skirt Pattern. Use a corner of the entire roll of plastic sheeting so that more hoods can be made from the same roll. Place weights on the Hood Skirt Pattern to hold it in place. Trace the outline and dot on the pattern with a dry-erase marker. Make sure to transfer the dot and the corresponding letter. This will make it much easier later in the process. Cut out outline of the Hood Skirt Pattern. Set aside. Lay the clear vinyl over the Face Panel Pattern and use weights to hold pattern in place.

Step 15 Set sewing machine stitch length to 5mm

Step 14

ssembly

panel opening of the white plastic — as indicated on the dotted line from the pattern that says "Place hood skirt here." Place top of skirt along this line

Step 2

hood body hood skirt

Step 5 Tape top and sides of face panel again on this side of the hood (which is the inside) Step 6 Fold hood body in half along center fold line** with the outside of the hood on the inside of the fold. The inside of the hood should be facing out once hood is folded. The center fold line is the one which was unfolded in step one. **Do not push on the vinyl to crease it! The crease will not go away and it will impair visibility Note When starting a seam, place the needle where you want to begin, sew forward about four stitched (roughly 1/2 inch), then press the reverse button to sew backwards to the point where you started. Then continue forward with the seam. Repeat at the end of the seam to secure in place. Do with with every seam to make sure the thread doesn't unravel at the beginning or end. Step 7 Pin both sides together along the top. Make sure the pins are close to the edge (5/8 inch seam allowance). The seam should be

sewn next to the pins on the opposite side of the edge. This way the holes that the pins make

will not be on the body of the

Stitch along the top of hood from Dot 1 to Dot 2. Make sure to start on the very edge of the trunk near Dot 1 and make sure to remember

hood.

Step 7

to stop at Dot 2.

Tip: Cut extra thread on the ends of the seam right away to keep it clean Step 8 Match Dot 2 and Dot 3 together and spread plastic on either side to form a T shape with the top edges. Pin along one side with 5/8 inch seam allowance.

Step 9 Sew from **Dot 2** to **Dot 3** along the top opening to edge of fold. Make sure to sew all the way to the very edges. Step 10

Step 11

pastic doesn't wear down in that area. Also make sure to include the edges of the forehead strap in the seam. Step 15 Cut 3 slits into the curved area to allow for movement. Make sure to cut only plastic and do not cut the seam.

Step 14 Sew along center back and trunk seam, following

Step 16 Turn hood right side out by laying it face panel down on an ironing board. Put one hand in hood to hold face panel in place. Lift the hood material up and over the ironing board. Don't forgot to turn the trunk fully inside out, leaving the forehead strap on the inside.

Using ironing board or edge of sofa, follow the next step closely to avoid creases and folds in face panel **Once the face panel is creased it limits visibility for person

Sanitation Prep *Please follow folding instructions carefully, as clear vinyl cannot touch itself. It gets tacky when heated and could be ruined during the sanitizing process if folded Step 1

Turn top seam to other side and sew the other side from the other side's Dot 2 to the same Dot 3 to complete the T-seam.

using the hood**

Stitch down the length the forehead strap to reinforce.

the dotted line on the pattern. Make sure the line is curved and avoid making a tight turn so the

Step 17

incorrectly*

On inside of hood reinsforce Y seam with a

square of Clear Gorilla Tape.

Pin

Dot 3

Sew along line

Step 12

Step 13

left

Pin stap edges here

Fold forehead strap in half and in

Pin along edge of center back as indicated in picture above and

place with two strap edges at end of trunk, as indicated on

Hood Body Pattern.

Sew along line Cut 3 slits

Lay hood flat, face panel down. Fold trunk and back side of hood to one side so it lays flat. Step 2 Fold hood horizontally across the middle, matching top and bottom edges of hood. Fold in bottom edges of hood (now located on the left

Step 3

Step 5

Step 6

Step 7

Drop off

and right sides) towards the middle of the hood to create a trapazoid. Step 4 Fold hood in half vertically and smooth everything down so it lays flat. The face panel should be on the outside **not touching itself**. Place hood in gallon ziplock bag 11 x 15.75 inch vacuum sealer bag and vacuum seal if possible

Call hospital ahead of time to arrange a safe drop off. Make sure you included the label so medical staff knows how to properly sanitize the hood. Thank you for helping

Print out label so the medical staff has instructions for how to properly sanitize the

medical staff stay safe!

hood. Add your name so they know who's looking out for them.

Place label in bag with text facing out.