

Powered Air-Purifying Respirator (PAPR) Use For Broad Institute BL-3 Laboratory



Here are all of the components that you will need →

Cartridge (use three of them)



Battery

Motor with belt

Supply air hose (connects to
Tyvek hood)



Tyvek Hood

Before you use the PAPR, here are a few helpful tips:

- * Try to drain the battery completely before recharging it
- * When the battery is fully charged, it will run for at least 8 hours
- * When the battery is getting low on charge, the red light on top of the battery will turn on. However, if the battery is very low on charge, the red light will not have enough power to stay on.
- * When storing the cartridges, make sure the caps remain on the openings
- * You may find that the noise produced by the PAPR motor and airflow is diminished if you put your ears in front of the elastic seal around the face of the hood
- * Based on the conditions of the research/laboratory and the frequency of use described to MIT's Respiratory Protection Program, cartridges should be changed every six months.
- * If you notice that the motor works harder to push air into the hood of the PAPR or if you smell odors while wearing the PAPR, you need to change the cartridges.

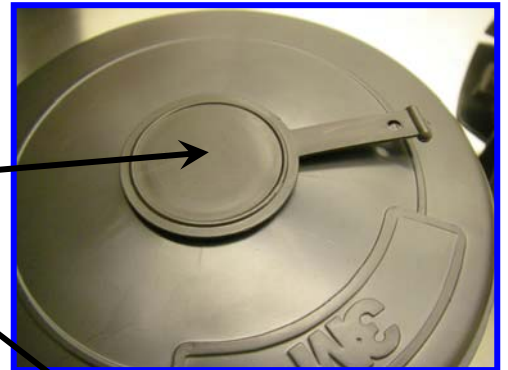
Step #1 – Screw in Cartridges

Three 3M formaldehyde with HEPA cartridges (product number 453-01-01) are used with the PAPR.



covers

Remove the covers on the openings to the cartridges.



Screw the cartridges into place.

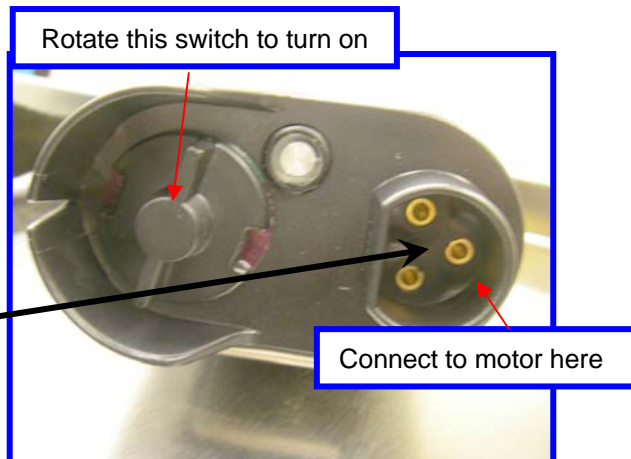


Step #2 – Conduct a Flow Test

To ensure the PAPR is working properly and is therefore adequately protective, you must ensure enough air is being supplied to the hood. This is achieved by performing a flow test on the motor.

First, plug the motor in to the battery.

Then, turn the battery to the “on” position to start the air flow.



Secondly, place the flow meter on the output side of the motor (where the supply air tube connects).



The clear ball inside the flow meter should float above the “6 cfm” mark. If it is below that mark, then not enough air is flowing to supply adequate protection. If this happens, trying using a different battery or changing the cartridges. If these solutions don’t solve the problem, there may be an issue with the motor.

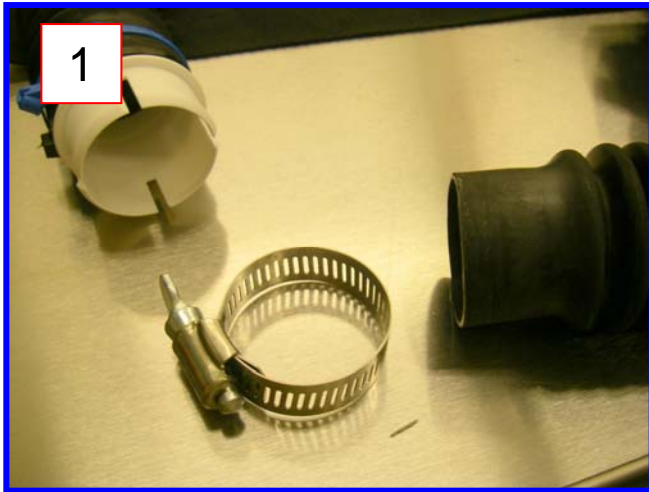
DO NOT USE THE PAPR IF SUFFICIENT FLOW CANNOT BE ACHIEVED.



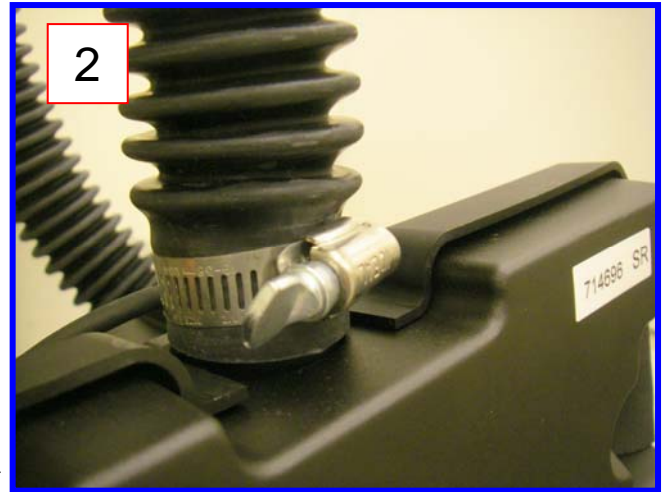
Clear ball at the 6 cfm mark

Step #3 – Put on the PAPR

The following pictures describe how to put on the PAPR:



Fit the supply air tube to the motor



Tighten the ring clamp around the fitting



Fasten belt around your waist with motor/battery assembly at your lower back. It helps to put supply air tube over your shoulder.



Close clasp and tighten belt



Loop slack back through belt so you don't trip



Clip the battery onto the side of the belt.



7

Plug the motor into the battery.



8

Connect supply air hose to fitting at the back of the Tyvek hood. Make sure it is tight and cannot be easily tugged out.



9

Swing the supply air tube around to your back and fit the hood over your head. Adjust the hood until it fits around your face comfortably.



10

Turn the switch on the battery to the "ON" position (green)



11

The final motor/battery/belt assembly should look something like this



12

Viola! You are ready to do your work.

Helpful Disassembly Tip

The supply air hose is a little tricky to disconnect from the hood. Pinch the connection (with a lot of force) to release it.

This picture shows where you need to pinch. In this picture, the connection is shown from the inside of the hood.



When You Remove the PAPR

Perform another flow test. If you find that the PAPR is not flowing at or above 6 cfm and you were working with potentially infectious agents while wearing the PAPR, report to MIT Medical to be evaluated by a healthcare professional.

Questions?

If you have questions or need further assistance, please contact MIT's Respiratory Protection Program at 2-3477 or respirators@mit.edu