



# How to Successfully Don the BioPak 240 Revolution

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- ◆ **The following information should not be considered a replacement of the User and Benchman Manuals. This handout is a training aid.**
- ◆ **The following information IS NOT a replacement for hands on training by a certified instructor.**
- ◆ **It is imperative that prior to using the BioPak 240R all bench tests must have been performed and documented on the Turn-Around Maintenance tag which is attached to the BioPak 240R. Also, before using the BioPak 240R a fully charged oxygen cylinder, two fully frozen ice canisters and a recharge of carbon dioxide absorbent must be installed.**

# ESSENTIAL DONNING STEPS

This checklist is intended to help the user properly DON his BioPak 240 Revolution.

Always check for a valid turn-around maintenance tag. If a BioPak 240R does not have a completed and valid turn-around maintenance tag, the apparatus must not be placed in service until a trained Benchman has serviced the BioPak 240R and deemed it ready for use.

CO<sub>2</sub> Cartridges Replaced Section is filled in by the USER just prior to Donning. The card is given to the Captain or On-Scene-Commander. It verifies that CO<sub>2</sub> Scrubber has been properly installed prior to use.


2008

BIOPAK 240 REVOLUTION  
TURNAROUND MAINTENANCE TAG

UNIT NO: 1875

WASHED/DISINFECTED	11 SEP	TDB
O2 CYLINDER REPLACED/FILLED	11 SEP	TDB
FLOW TEST <u>2.2</u> lpm	11 SEP	TDB
CO2 CARTRIDGES REPLACED		
ANTI-FOGGING AGENT APPLIED	11 SEP	TDB
ICE BAG PLACED IN FREEZER	11 SEP	TDB
LOW PRESSURE LEAK TEST	11 SEP	TDB

CAUTION: REW. A (10/04)

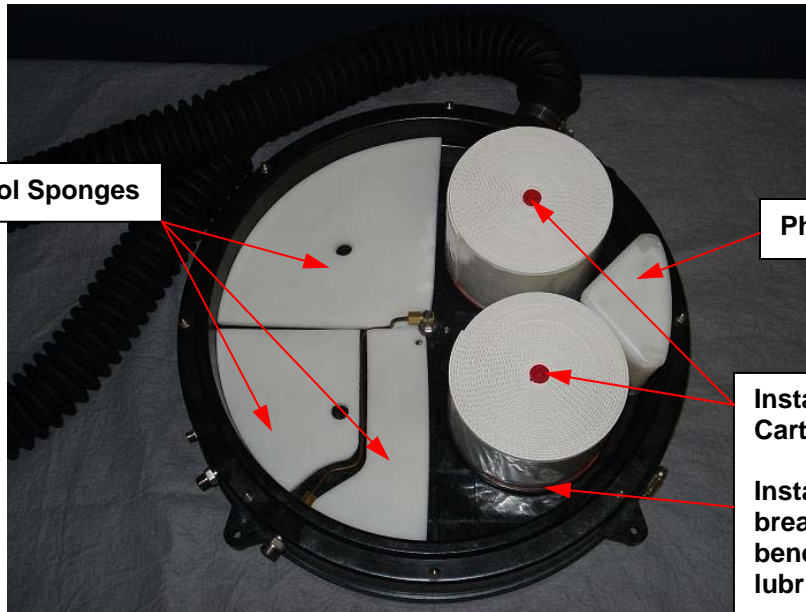
 **WARNING**

- \* INSTALL FROZEN ICE BAGS PRIOR TO USE.
- \* REFER TO USER MANUAL AND/OR MAINTENANCE MANUAL FOR INFORMATION ON USE AND MAINTENANCE OF THIS RESPIRATOR.
- \* RESPIRATOR IS SUITABLE FOR USE ONLY BY PROPERLY TRAINED PERSONNEL.
- \* FAILURE TO PROPERLY USE AND MAINTAIN THIS RESPIRATOR COULD RESULT IN INJURY AND DEATH.

1. Is your AV3000 face mask ready for use?
  - a. Inspect the mask for excessive wear or damage. Is the lens clean and free of any damage or scratches that will obscure the user's vision? Will the head harness function as designed? Is the nose cup installed in the mask? Speaking diaphragms? Are the sealing edges free of defects and/or tears?
  - b. Apply anti-fog spray B6-02-5002-17-0. Use at least two coats. Ensure the inside lens surface is **BOTH CLEAN AND DRY PRIOR TO APPLICATION. A WET, DIRTY & SCRATCHED lens will not allow the anti-fog material to work as designed. After spraying a coating of anti-fog material on the inside of the lens, DO NOT WIPE OFF.** You should have a slight haze on the inside of the mask lens. Most of the haze will disappear after 5 – 10 minutes of wearing the mask with the BioPak.



2. Have you properly installed TWO (2) NEW CO<sub>2</sub> cartridges with gaskets? Install with the RED CAPS UP. Install THREE moisture control sponges? (Wet the three sponges and squeeze out excess water prior to installation.) NIOSH USERS will install the PCM canister.



Wet Moisture Control Sponges

Phase Change Module (PCM)

Install two NEW CO<sub>2</sub> Scrubber Cartridges (Red Cap Up).

Install a gasket on the breathing chamber ledge beneath each cartridge. No lubricant.

3. Do you have a cylinder capable of lasting 4-hours? 3000 psi/207 Bar is the minimum necessary for 4-hours.



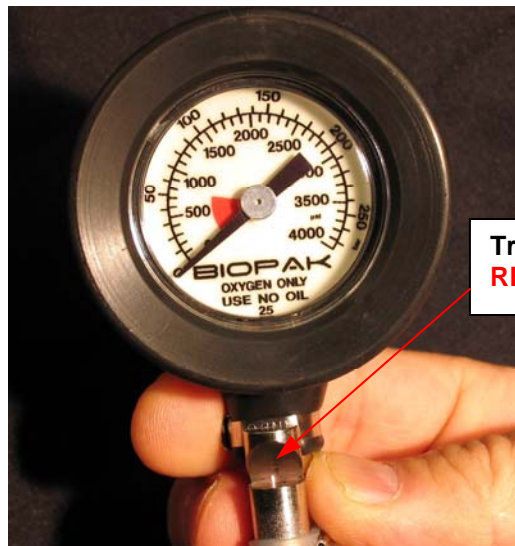
3000 psi minimum for a 4-hour capable CCBA.

Do you have a clean oxygen cylinder washer seal on the regulator stub? Never use lubricants on the seal. Failure to install a seal will cause the BioPak 240R to leak oxygen reducing duration to a few minutes.



Oxygen cylinder washer seal

4. **Prior to donning**, OPEN the oxygen cylinder. Does the alarm and TRIM light function properly? Did you hear the alarm for approximately 10 seconds and see the **RED, GREEN, BLUE LIGHT SEQUENCE** at start-up? After start-up did the alarm stop and the TRIM give you a flashing **GREEN** light? Close the cylinder.



Tri-colored Indicator Module (TRIM)  
**RED, GREEN, BLUE** Flashing Light

5. Have you inserted two frozen ICE CANISTERS?  
Always use the palm of two hands and press down while turning to engage the ice lids!



6. Don the Closed Circuit Breathing Apparatus (CCBA).  
Adjust straps and waist belt to your preference.  
Attach the face piece to the hose adapter. Ensure the slide is engaged to prevent the adapter from turning.



Once the adapter is installed on the face piece, engage the slide lock into the mask slide lock channel.

7. Don the face piece. Ensure the Kevlar head net is pulled back and away from all sealing edges. IMMEDIATELY OPEN the oxygen supply (Open all the way until the valve stops.) You have approximately 1-2 minutes of ambient air inside the BioPak 240R- - there is no need to panic or hold your breath. BUT, **DO NOT GET DISTRACTED AND FORGET TO TURN ON THE SUPPLY OF OXYGEN. ASPHYXIATION WILL OCCUR IF YOU FAIL TO TURN ON THE SUPPLY OF OXYGEN.** Listen for the alarm again. Look at the TRIM and see your light sequence (**RED** < **GREEN** < **BLUE** then flashing **GREEN**).
8. Does the EMERGENCY BY-PASS function? Depress the Emergency By-pass for no more than 2-seconds and release. The sound of oxygen MUST be heard when the button is depressed and it MUST stop when the button is released.

Oxygen supply on/off.

ON: Counterclockwise or to the back

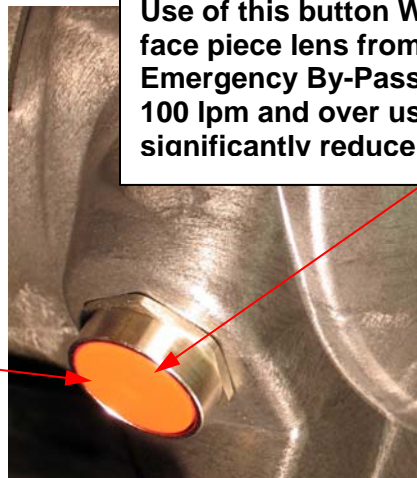
OFF: Clockwise or to the front



Fully don the CCBA and face piece. Immediately turn on the oxygen cylinder! Fully depress for no more than 2-seconds then release the Emergency By-pass.

Use of this button WILL NOT clear your face piece lens from fog! The Emergency By-Pass flow rate is up to 100 lpm and over use of the bypass will significantly reduce duration!

Emergency By-Pass button





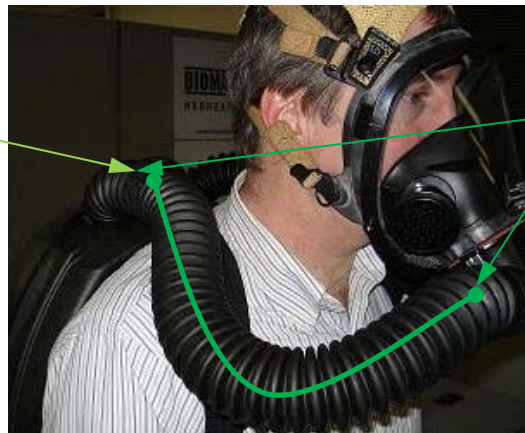
9. Secure the Velcro hose-tie-downs to the hoses as near to the CCBA as possible. Pictures below show one correct and one incorrect method. Notice that the incorrect method reduces hose length and will cause face piece seal to be lost when moving your head side to side.

**INCORRECT**



**Minimal hose length from adapter to tie down**

**CORRECT**



**Maximum hose length from adapter to tie down**

## 10. POSITIVE AND NEGATIVE PRESSURE TEST

**BEFORE** leaving the fresh-air base conduct a proper **POSITIVE** and **NEGATIVE** Pressure Test. This test **MUST** be performed **WITH** the Oxygen cylinder turned on. Verify that a good face seal and proper check valve operation has been achieved. Face mask seal and check valve operation is verified as follows:

- a. With two hands collapse the inhalation hose (left hose) and inhale. Proper sealing of the exhalation (right hose) valve should result in the face mask being pulled in toward the face.



Tests integrity of exhalation check valve!

Collapse inhalation hose on the USERS LEFT side

Flow direction Arrows UP!

- b. With two hands collapse the exhalation hose (right hose) and exhale. Proper sealing of the inhalation (left hose) valve shall result in face mask being pushed away from the face.



Collapse exhalation hose on the USERS RIGHT side

Tests integrity of inhalation check valve!

Flow direction Arrows UP!

**Check your gauge pressure every 15-20 minutes!  
You will discover face seal or other leaks before  
you get too far from fresh air base.**

***WARNING! This checklist is  
NOT a substitute for proper  
USER Training. USERS who do  
not receive proper training from  
a certified Biomarine trainer are  
at risk of serious personal  
INJURY and possible DEATH.***