



# EVAHL - Series Hazardous Location Powered Air-Purifying Respirator User Manual

## EVAHL1 - Powered Air Purifying Respirator

Powered Air-Purifying Respirator with High Efficiency (HE) Filters

Powered Air-Purifying Respirator with OV-AG-HE Filter Cartridges for organic vapors, chlorine, hydrogen chloride, sulfur dioxide, chlorine dioxide, hydrogen fluoride and particulates

Powered Air-Purifying Respirator with AM-FM-MA-AG-HE Filter Cartridges for ammonia, formaldehyde, methylamine, chlorine, hydrogen chloride, sulfur dioxide, chlorine dioxide, hydrogen fluoride and particulates

### Cautions and Limitations

- A. Not for use in atmospheres containing less than 19.5% oxygen.
  - B. Not for use in atmospheres immediately dangerous to life or health.
  - C. Do not exceed maximum use concentrations established by regulatory standards.
  - F. Do not use respirator if airflow is less than four cfm (115 lpm) for tight fitting face pieces or six cfm (170 lpm) for helmets and/or hoods.
  - H. Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough.
  - I. Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
  - J. Failure to properly use and maintain this product could result in injury or death.
  - L. Follow the manufacturer's user instructions for changing cartridges and/ or filters.
  - M. All approved respirators shall be selected, fitted, used and maintained in accordance with MSHA, OSHA and other applicable regulations.
  - N. Never substitute, modify, add or omit parts. Use only exact Bullard replacement parts in the configuration as specified by the manufacturer.
  - O. Refer to User's Instructions and/or maintenance manuals for information on use and maintenance of these respirators.
  - P. NIOSH does not evaluate respirators for use as surgical masks.
- \* At very high work rates, the pressure in the device may become negative at peak inhalation flow.

(For Use with HMX Series Respirator Helmet)



HMX

EVAHL1

### ▲ WARNING – EVAHL PAPRs

Use strictly in accordance with instructions, labels and limitations pertaining to the EVAHL Series respirator.

1. The EVAHL Series respirator does not supply oxygen. Use only in adequately ventilated areas containing at least 19.5% oxygen.
2. Do not use when concentrations of contaminants are immediately dangerous to life or health (IDLH). This term is defined in 29CFR 1910.134 (b).
3. Do not use these respirators for respiratory protection during abrasive blasting or clean up.
4. Do not use in circumstances where the airborne concentration level of contaminant exceeds maximum use concentration for this type of respirator as established by regulatory standards.
5. Leave area immediately if:
  - Breathing becomes difficult
  - Dizziness or other distress occurs
  - You taste or smell the contaminant
  - Unit becomes damaged
  - Battery alarm activates
  - Low Flow alarm activates
6. This apparatus must not be worn with the blower unit switched off. If the blower is switched off, a rapid build-up of carbon dioxide and depletion of oxygen may occur, which could result in death or serious injury.
7. Never alter or modify this respirator. Use only Bullard EVAHL Series components and replacement parts for this respirator.
8. This device is not immune to highly powered RFI/EM emissions.
9. The units are designed for use at temperatures from 23°F to 129°F (-5°C to 55°C). A high temperature alarm will sound at 122°F (50°C)

Failure to follow these warnings could result in death or serious injury.

### ▲ WARNING – HMX Series Respirator Helmets

- Check your helmet for physical damage before every use. If your helmet is damaged DO NOT USE – replace or repair immediately.
- NEVER open the outer door in a contaminated area when an inner lens is not present. Dusts, aerosols and vapors can remain in the air for hours before settling or ventilating.
- ALWAYS leave the contaminated area before reaching into the helmet or doffing the respirator.
- ONLY use genuine HMX replacement lenses and parts for health and safety, regulatory compliance and warranty coverage.
- DO NOT USE for abrasive (Type – CE) blasting.
- HEAD: HMX Series respirators meet ANSI Standard Z89.1-2014 Type 1 for protective head wear for industrial workers. The helmet is designed to provide limited head protection by reducing the force of falling objects striking the top of the head.
- FACE: The use of the respirator's inner or outer lenses (windows) meet ANSI Z87.1-2015 (High impact Z87 + Face Protection) requirements for face protection. The use of both lenses provides limited face protection from flying particles, spray or hazardous liquids, but the lenses are not shatterproof.
- EARS: HMX Series respirators DO NOT provide hearing protection. Use properly fitted earmuffs, earplugs and/or other hearing protection when exposed to high noise levels.

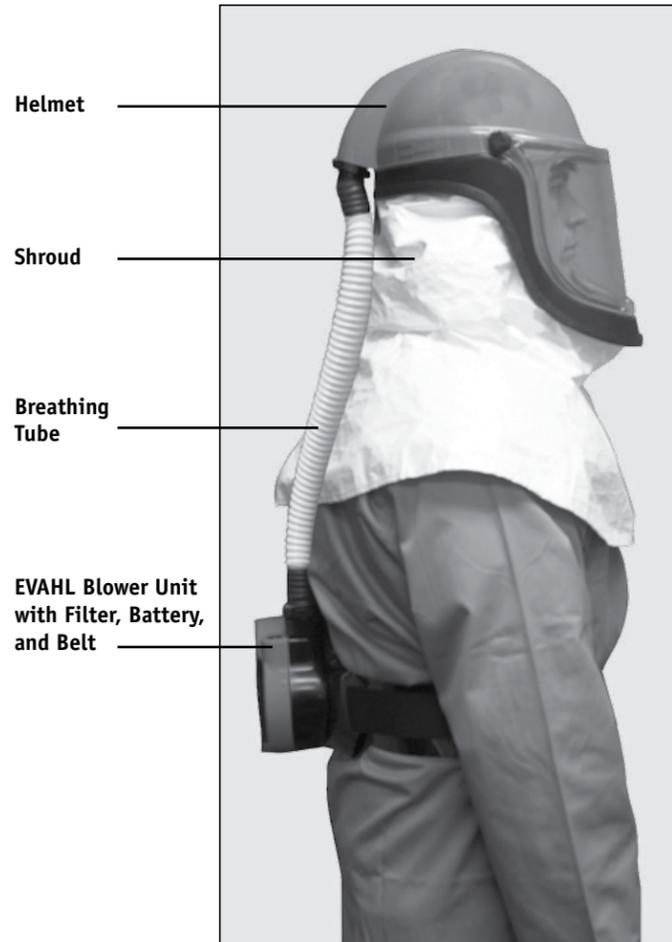
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## General Component Concept (HMX Shown with Full Double Bib Shroud)



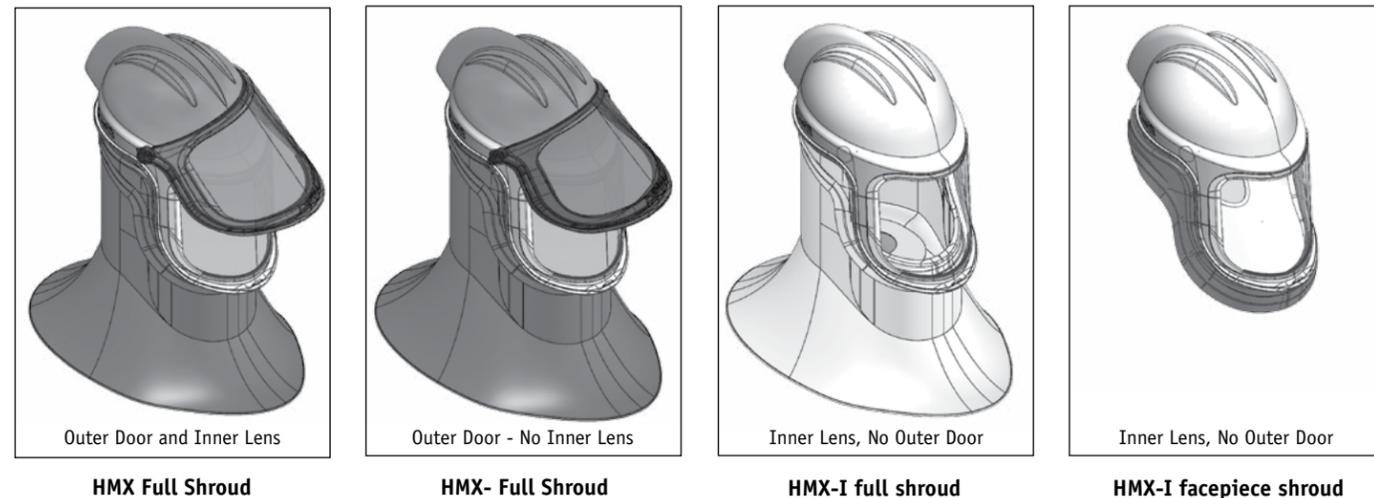
### EVAHL Series - Principle of Operation

The EVAHL Series Powered Air-Purifying Respirator (PAPR) System is configured in six parts:

1. The blower and belt assembly.
2. The battery.
3. The breathing tube.
4. The High Efficiency Particulate Arrestance (HEPA) filter or combination chemical cartridge
5. HMX respirator helmet with full or face piece shroud.
6. The Battery Charger (not pictured).

The blower unit draws in ambient air through the filter cartridge. The purified air is blown into the wearer's helmet through the breathing tube. A flow indicator is provided to check that there is an adequate volume of air available to the wearer prior to use. The system is designed to operate at a minimum air flow of approximately 7 cubic feet of air per minute (198 liters per minute) in the helmet under normal use on the standard speed setting, and 8.5 cubic feet of air per minute (240 liters per minute) in the helmet under normal use on the high speed setting. A feedback loop from the Mass Flow Sensor to the impellor continually monitors and adjusts the air flow to keep it constant at the design set point.

### Configuration Examples:



### NOTE

#### Type C Airline Respirators HMX Series (TC-19C-XXXX)

The HMX series respirator helmets may be approved for use as Supplied Air Respirators. For approved configurations, parts, assembly instructions, maintenance, warnings and limitations, breathing air pressure tables and other important information refer to the separate Supplied Air User Manual.

### WARNING: EXPLOSION HAZARD

- Only use Bullard battery part number: EVAHLBAT1. Substitution of any other battery pack may impair suitability for Class I, usage Division 2.
- Do not charge battery packs in hazardous locations.
- Only charge using Bullard Desktop battery pack chargers.
- Do not insert or remove the battery pack unless the area is known to be free of ignitable concentrations.

## Assembly and Operation

### NOTE

Prior to assembling or operating the respirator, check all parts for deterioration or physical damage. Do Not use any component damaged or excessively worn. Check the 'use-by' date on the filter cartridge label and ensure the gasket is in good condition.

### Battery Pack

The battery pack mounts in a compartment on the back of the blower. A fully charged battery pack will power the blower for approximately four to ten hours depending upon factors such as speed selected, cartridge selected, and filter/cartridge loading.

### NOTE

The battery has built-in short circuit protection. In the event of a short circuit, an internal polyfuse will trip. The fuse will reset itself within 5-10 seconds allowing the battery to resume normal operation.

### Battery Fuel Gauge

EVAHL Battery Packs are equipped with an on-board fuel gauge (Figure 1) to indicate the amount of remaining capacity left in the battery pack. To check the remaining capacity, simply depress the button labeled "Push" and LEDs will illuminate indicating the level of battery capacity remaining. When fully charged all four LEDs will illuminate green, and when 25% or less charge is available a single LED will illuminate red.

To charge the battery pack, do the following:

- Use a flat head tool to release the battery from the blower. (See Figure 1.)
- Place battery into the charging port of the battery charger. (See Figure 2.)
- Connect the battery charger to a 110-volt AC electrical outlet.
- Charge the battery pack for approximately 4 hours. While the battery is charging, the light on the charger will remain red. The charger light will illuminate green when charging is complete.

Table-top gang chargers with 6 ports are also available.



Figure 1

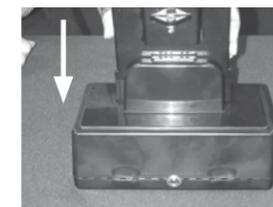


Figure 2

### Battery Storage

Store at room temperature in a dry area. If long-term storage is required, it is best to store the battery with greater than 50% charge remaining.

### NOTE

Discharging and re-charging the battery fully at least once every 3 months is suggested to ensure the longest possible life of the battery. Do not leave on the charger for extended periods after fully charged.

### To maximize battery life, these guidelines should be followed:

- Remove the battery from the blower unit when not in use.
- Charge the battery before it is completely discharged. The low battery alarm indicates that the battery needs to be charged. The battery is designed with a circuit to protect the battery. It will not allow the battery to be discharged below a safe voltage for the cells, regardless of airflow, without the alarm sounding. When the battery reaches the voltage cutoff it will automatically cease operation.
- Always charge the batteries at room temperature or cooler. At higher temperatures, the battery pack may not accept a full charge. If the battery pack feels hot, let it cool for 30 minutes before charging.
- Do not charge the battery in an enclosed cabinet, allow ventilation.

### NOTE

#### Low Battery Alarm

The Bullard EVAHL Blower unit is equipped with a Low Battery Alarm .

The Low Battery Alarm will sound an intermittent 77 dba electronic beep indicating that there are approximately 15 minutes of remaining battery capacity. The delays between beeps will get shorter and shorter as time runs out.

If this alarm sounds, the user should immediately do the following:

- Leave the hazard area • Doff the respirator. • Check the battery charge.
- Charge or change the battery. • Check air flow with the airflow indicator and reassemble.

### Install Battery Pack

- Check that the battery is not damaged.
- Check the Fuel Gauge to determine sufficient charge is available.
- Place the battery pack in the battery compartment on the blower.
- Use flat head tool to secure the battery.

### WARNING

Lock the battery release before placing the blower in service. The blower shall not be used in a hazardous location with the release unlocked.

## Attach the Breathing Tube to the Blower

- Inspect the breathing tube prior to use for tears, cracks or excessive wear, do not use if damaged.
- With the blower in the OFF position, ensure that a rubber gasket is in place in the breathing tube coupler on the blower unit.
- Screw the straight end of the breathing tube into the blower unit - hand tight is sufficient.
- Turn the blower ON by pressing the power button for 1-2 seconds confirmed by a short beep.
- If the Low Battery Alarm sounds or the unit fails to power on, ensure the battery is charged and seated correctly.
- Turn the unit back off by holding the power button for 3-5 seconds confirmed by a beep.

## Mount the Filter Cartridge on the Blower Unit

- Check that the air-purifying filter cartridge is appropriate for the hazard.
- Check that the filter cartridge has not exceeded its "use-by" date.
- Remove the filter cartridge from its packaging and inspect for damage. If in doubt do not use.
- Check that the filter connecting thread and gasket are in good condition.
- Starting with the top of the filter cartridge at approximately at the 11 o'clock position, place the filter cartridge body into the blower receptacle, with the locking threads aligned and turn clockwise (Figure. 3) until the locking tab is secured (Figure. 4).



Figure 3



Figure 4

### ⚠ WARNING

If the blower malfunctions during use in a hazardous area: Remain calm and **LEAVE** the hazardous area immediately. **DO NOT** use a blower that fails the flow test (with indicator tube). Use **ONLY** Bullard filter/cartridges which comply with and have the NIOSH approval label and which are appropriate for the contaminant. Failure to observe these warnings could result in death or serious injury.

## EVAHL Series PAPR Air-Purifying Elements

### Principle of Operation

The following filter/cartridge protection classification applies when used with any of the hoods or loose fitting facepieces.

Protection	Filter/Cartridge Type	NIOSH / ANSI Color Code for Cartridge Label
HE	PAPRFC3	Magenta
OV/CL/HC/SD/CD/HF/HE	PAPRFC4	Olive and Magenta
AM/FM/MA/CL/HC/SD/CD/HF/HE	PAPRFC5	Olive and Magenta

HE particulate filters are 99.97% effective against all particulate aerosols. The following abbreviations are approved by NIOSH to indicate the particulates, gases, or vapors which are removed by the gas/vapor cartridges: HE High Efficiency Particulate; OV Organic Vapor; AM Ammonia; CD Chlorine Dioxide; CL Chlorine; FM Formaldehyde; HC Hydrogen Chloride; HF Hydrogen fluoride; MA Methylamine; SD Sulfur Dioxide

## Checking Airflow with the Airflow Indicator (PA1AFI)

With the blower switched ON and the filter cartridge mounted, take the free end of the breathing tube in one hand, hold it upright, and place the Airflow Indicator into the end of the tube (Figure 5).

Apply a light downward pressure to the Airflow Indicator to get a reasonable seal at the breathing tube end. Ensure that the air outlet holes in the Airflow Indicator tube are not blocked. Two hands may be used if preferred, one to hold the breathing tube and one to hold the Airflow Indicator.

The position of the ball in the Airflow Indicator should be observed. If any part of the ball is below the PASS LINE on the Airflow Indicator, check for blower malfunction, clogged or damaged filter cartridge, low battery or battery malfunction.

If the ball is completely above the PASS LINE on the air flow indicator, then the system is ready for use.

## Installing and Removing the Belt on the Blower Unit

### To Install the Belt

- With the blower filter side down, orient the lever locks as shown in Figure 6.
- Lay belt over blower as shown in Figure 7.
- Rotate level locks until they are oriented as shown in Figure 8.

### To Remove the Belt

- With the blower filter side down, orient the lever locks as shown in Figure 7.
- Remove belt from blower.



Figure 6



Figure 7



Figure 8

## Threading EVABELTHH

EVABELTHH uses a cam-style buckle that differs from the other EVA belt options. This buckle is designed, when threaded properly, to eliminate the ability of the belt to become loose over time through work movement.

In order to thread properly (Figure 9)

- Place belt around user's waist and insert the tag end (non-connected end) of the belt up through slot at the open-end of the cam buckle.
- Thread the tag end underneath the cam buckle, towards the end of the buckle connected to the cam.
- Pull the tag end and cam in opposite directions to tighten the belt to the user's preference. The EVA blower should be positioned in the small of the user's back at their waist. At the desired tension, close the cam buckle approximately 30 degrees to secure the desired tension. Repeat as necessary.
- When the desired tension is achieved, thread the lag end of the belt up through the second slot in the top of the cam buckle, then back down through the first slot.
- Fully close the cam buckle in position.

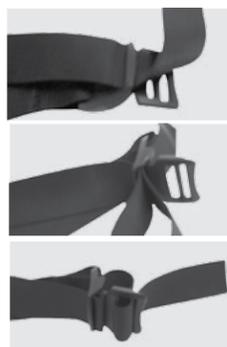


Figure 9



Figure 5

## Assemble the HMX Series Respirator Helmet

### ⚠ NOTE

For your own protection, safety and to ensure the maximum service life of your new helmet please read this manual carefully before use.

Misuse or abuse may result in injury or reduced protection and may also void your warranty.

## Respirator Helmet Assembly

Before assembling this respirator, read the warning labels on the inside of the respirator shroud and the helmet shell and this manual in full.

Remove and read the warning card packaged with the helmet.

## Installing Headband into Helmet

Installing and sizing the headband suspension is made easier without the shroud in place on the helmet, or unsnap the shroud retainer at the back and carefully pull the right side of the retainer from the helmet shell stopping near the door hinge. Carefully unsnap the tab and repeat for left side.

- Turn helmet and headband suspension upside down.
- Place headband inside helmet with brow pad facing front of shell.
- Insert keys into respective key slots. Push firmly until keys snap into place.



## Adjusting the Suspension

To adjust the size of the Flex-Gear® Ratchet-style suspension:

Turn ratchet knob counter clockwise until headband opens to largest size. Place helmet on head and turn ratchet knob clockwise until it fits comfortably. **DO NOT OVERTIGHTEN**

## Adjust Crown Straps for Vertical Fit

To improve suspension comfort, adjust crown straps vertically by repositioning the crown strap posts in the crown straps. Vertical adjustment makes the headband ride higher or lower on the wearer's head. To adjust, push crown strap post from slot, move to new slot, and snap in to secure. Repeat for the other crown strap points (see Figure 10).

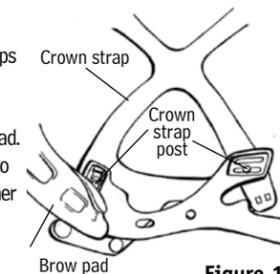


Figure 10

## Using the Optional Chin Strap

- If desired, attach chin strap to headband by sliding chin strap keyway slot over plastic head inside the helmet shell. Refer to chin strap installation instructions for more details.
- With helmet on, adjust chin strap length with the plastic slide.

**⚠ WARNING:**  
**FAILURE TO FOLLOW THE INSTRUCTIONS BELOW AS WELL AS ALL OTHER INSTRUCTIONS CONTAINED HEREIN MIGHT RESULT IN DEATH OR SEVERE, DISABLING AND PERMANENT INJURIES.**

The HMX-O (no inner lens) version of this helmet is designed with an outer door that can be raised to communicate with your supervisor or other employees **BEFORE ENTERING** and **AFTER LEAVING** the contaminated atmosphere.

The outer door **MUST BE LOWERED** completely and snapped shut before entering the contaminated area and **MUST** be **KEPT** in the **LOWERED** position until you are sure that you are no longer in an atmosphere that contains any contaminants. If there is **ANY DOUBT** as to whether or not you are in a contaminant free atmosphere **KEEP** the outer door **LOWERED**.

The Blower must be turned On before entering the contaminated atmosphere and must be kept On until you leave the contaminated environment. If there is **ANY DOUBT** as to whether not you are in a contaminant free environment, leave the Blower On.

Failure to heed these instructions will allow the contaminants the respirator is designed to keep out, to enter your breathing zone where they can be inhaled, which may result in **DEATH** or **SEVERE, DISABLING** and **PERMANENT INJURIES**.

## Installing the HMX Shroud



Figure 11

### Shroud Retainer

- Begin with top of helmet facing your body, and front of helmet facing up (Figure 11).
- Line up notched center in shroud retainer with the center of the retainer groove at the bottom of the helmet. Installation must begin with notch in the center of the helmet (Figure 12).
- Ease shroud retainer completely into the groove along the bottom of the helmet edge, starting on the left side of the helmet, working your way to the back.



Figure 12

- Insert retainer tab into tab hole, located near the temple of the helmet. Check that retainer is completely in place at every point along helmet's bottom edge.
- At the back of the helmet, make sure that shroud retainer end with the hole is placed behind the helmet flange, located underneath the breathing tube connection (Figure 13).
- Return to the front of the helmet and repeat the above 3 steps for the right side.



Figure 13

- At the rear of the helmet, place right side of shroud retainer behind helmet flange, on top of the left side of the retainer (Figure 13).
- Line up snap tab on retainer end with hole on opposite end, and press together. There will be an audible and tactile snap to ensure retainer is secured (Figure 14).



Figure 14

### Shroud Installation on Retainer

- Orient shroud so that the neck cuff is situated facing the inside of the helmet, and black attachment strip is facing the open edge of the shroud retainer.
- Begin attaching shroud to shroud retainer by pressing attachment strip onto retainer, starting at the raised section of the retainer, approximately 2 inches from the center of the helmet (Figure 15).

- Press attachment strip onto shroud retainer, working around the entire helmet, until reaching the back of the helmet on the opposite side of where you started.
- Check that attachment strip is securely attached all the way around the shroud retainer.

### NOTE

Ensure that retainer end tabs are on the inside of the shroud.



Figure 15

## Inner Lens and Outer Door

### Inspection

Be sure the plastic inner lens (HMX, HMX-I) and outer door (HMX, HMX-O) fits securely in the helmet frame. Remove any grit or dust from the mating edges. Inspect the inner lens and outer door for cracks, wear or damage that could prevent a tight fit against the helmet frame.

### Removing Outer Door (For HMX, HMX-O)

To remove the outer door, first remove the shroud retainer from the helmet shell.

1. Grasping threaded nut on inside of helmet, turn threaded knob on the outside of the helmet counter clockwise to loosen. Remove both parts from helmet. Repeat on opposite side.
2. Gently pull hinge connection part of outer door on both sides simultaneously away from helmet, laterally, detaching door from helmet shell.
3. Using the threaded nut already removed, remove the rubber gasket from the raised portion of the nut. Insert the tip of the threaded nut in the inside of the door hinge, and with even pressure with your thumbs, press the cam cap out of the door hinge. Repeat on opposite side.



## Installing Outer Door (HMX, HMX-O)



Figure 16

To aid assembly for installing the outer door on the HMX helmet, remove the shroud retainer and suspension from the helmet shell.

1. Insert cam mechanism into the door hinge indentation on the helmet shell. The cam is installed with the embossed up arrow facing outwards and toward the top of the helmet (Figure 16).

### NOTE

If this is not installed correctly, the outer door will not stay in the raised position when fully opened.

2. Place outer door onto the helmet shell and **fully secure the door closed** (Figure 17).



Figure 17

3. Insert the cam caps onto the door, pressing inwards until they click into place. Note that any orientation of this part is acceptable (Figure 18).



Figure 18

4. Install the rubber gasket on the raised section of the threaded nut, pressing fully against the base of the nut (Figure 19).



Figure 19



Figure 20

5. Turn the helmet over, so that you are looking inside of the helmet. Position the threaded nut against the hinge hole on the inside of the helmet with the embossed arrow facing forward, toward the outer door (Figure 20).

### NOTE

If not positioned correctly, the nut will not sit flush against the helmet shell.

6. Insert the threaded knob through the hinge hole on the outside of the helmet and tighten to the nut, maintaining the orientation of the inner nut. Only hand tightening is required.

## Optional Welding Shade Outer Doors

Fixed shade outer doors for welding are available to offer eye protection from flash. To convert, follow the directions for removing and installing the outer door.

## Removal and Installation of Inner Lens

1. To remove hold the helmet upside-down with shroud removed (and for HMX model, outer door open or removed). From the inside of the helmet, push down and outward on the bottom edge of the lens.
2. To install, align the lens channel in the edge of the helmet opening so that the upward curved portion of the lens (top) is facing the top of the helmet (Figure 21).
3. From the outside of helmet, press down and inward on bottom edge of lens with thumbs until the edge of the lens snaps into the frame of the helmet shell (Figure 22).
4. Ensure that the lens is securely installed into the helmet frame. A properly installed inner lens will not have any play, once inserted.



Figure 21



Figure 22

### NOTE

HMX-O ships without an inner lens, but can be upgraded by installing one.

## Optional Lens Covers

1. If desired, apply optional lens covers designed to protect the respirator's outer door or inner lens. Apply up to 5 lens covers at a time.
2. When lens becomes soiled, remove by pulling tab at edge of lens cover to clear your vision.

## Cleaning

To clean the lenses, hand-sponge with warm water and mild detergent, rinse and air-dry.

## Donning the EVAHL PAPR and HMX Respirator

### Initial Donning

Prepare to don the blower and helmet in a safe, hazard-free area by doing the following:

- Ensure that the filter is suitable for the contaminant in the work environment.
- Properly install the filter on the blower unit per instructions provided with EVAHL blower unit.
- Place the battery fully in the battery compartment on the back of the blower.
- Attach the belt to blower unit.
- Fit the blower and belt around the user's waist and adjust the belt for a comfortable fit.
- Remove the belt and blower in order to install the helmet and corresponding breathing tube.
- Perform air flow check with indicator tube.

### Connecting the Breathing Tube to the Helmet

- With the shroud already installed onto the helmet, thread the angled end of the breathing tube to the threaded port at the rear of the helmet until hand tight.
- Thread the straight end of the breathing tube to the blower unit until hand tight.
- Turn the blower on by depressing and holding the on/off switch for approximately 1 second, indicated by a short beep.
- Buckle the belt onto the waist (blower unit should be on the lower back of the wearer).
- Don the helmet and adjust shroud.
- Choose speed setting (see below).

### For the HMXSLF face piece shroud:

- Adjust the ratchet assembly and harness for comfort before donning helmet.
- Insert your chin into the shroud and pull the helmet upward toward the face.

### For the HMX full shrouds:

- Adjust the ratchet assembly and harness for comfort before donning helmet.
- Widen the neck cuff with your hands and insert your head, chin first, then pull back over your head.
- Tuck inner bib into shirt or coverall, front and back.
- Adjust the EVAHL blower speed if desired.

## Speed Selection

The Bullard EVAHL Blower is equipped with the ability for the user to select one of two speeds for operation.

When the unit is initially turned on, the blower will operate at approximately 8.5 cfm = 240 lpm (high speed). To change to the lower speed press the power button until a short beep is heard.

## Operating the HMX Respirator Helmet

### ⚠ WARNING

It is the respirator wearer's responsibility to verify all components of the respirator helmet are installed and completely secured before entering any environment requiring respiratory protection. Failure to do so could subject user to possible injury or death.

## Outer Door (HMX, HMX-O models)

The outer door should be kept in a fully closed and locked position for maximum protection. When fully closed and secured, user will hear and feel an audible and tactile click. Before entering a contaminated environment, user must check the condition of the outer door by gently lifting on the front door tab to ensure door is secured.



The respirator door is intended to be raised to a maximum open position for inspecting work, or other visual requirements.

To open door, lift upwards on door tab, located in the bottom center of the outer door. It may be necessary to simultaneously use the opposite hand to gently pull helmet shell towards user's chest, to facilitate the door releasing from its locked position.

User will feel a tactile set when the outer door reaches its full up-position.

### ⚠ WARNING

Never open the outer door in a hazardous area if an inner lens is not secured in place and in good condition. Hazards can remain airborne for hours until settled or ventilated. Failure to follow this requirement could subject user to serious injury or death.

## Doffing the Respirator

Prepare to doff the blower and helmet in a safe, hazard-free area and do the following:

- Remove the helmet.
- Turn the blower off by holding the on/off switch down for 5 seconds. This is confirmed by a long beep and a shutdown of the motor.
- Remove the waist belt.
- Disconnect the helmet from the breathing tube.
- Disconnect the breathing tube from the blower.
- Clean and inspect components as necessary.
- Place battery on charger (as required).
- Place components in storage.

## HMX Respirator Use

### ⚠ NOTE

OSHA respirator regulations do not require fit testing of supplied air hoods and helmets.

### Inspection, Cleaning and Storage

Bullard's HMX Series respirators have a limited service life. Therefore, a regular inspection and replacement program must be conducted. Certain parts such as shrouds and lenses must be replaced regularly.

The HMX Series respirator and all component parts and assemblies should be inspected for damage or excessive wear, before and after each use, to ensure proper functioning.

Immediately remove the respirator from service and replace parts or assemblies that show any sign of failure or excessive wear that might reduce the degree of protection originally provided.

Use only complete Bullard HMX Series components and replacement parts approved for use on this respirator. Refer to parts list for correct part numbers.

Since respirator use and the level of maintenance performed vary with each job site, it is impossible to provide a specific time frame for respirator replacement. As a general guideline, the HMX Series respirator should be replaced after approximately two years of service or less.

This respirator should be cleaned and sanitized at least weekly, or more often if subjected to heavy use. Respirators used by more than one person must be cleaned, inspected and sanitized after each use. If not cleaned, contamination may cause illness or disease.

REMEMBER, THE AIR YOU BREATHE WILL NOT BE CLEAN UNLESS THE RESPIRATOR YOU WEAR IS CLEAN.

### Shroud Inspection

Remove the shroud from the respirator helmet and inspect it for rips, tears or damage from excessive wear that might reduce the degree of protection originally provided. If you detect any of these signs, replace your shroud immediately or remove the respirator from service. Inspect the inner neck cuff making sure that the band has retained sufficient elasticity.

### Cleaning

HMX shrouds are intended to be replaced. If needed, hand wash the shroud in cold or warm water using mild detergent. Rinse, then air-dry only. After cleaning, carefully inspect the shroud once again for signs of damage.

Do not use volatile solvents to clean this respirator or any parts and assemblies. Strong cleaning and disinfecting agents, and many solvents, can damage the plastic parts.

### Helmet Inspection

Inspect the helmet for nicks, gouges, cracks, holes and any damage due to impact, rough treatment or wear.

If damage is detected, replace parts immediately with Bullard replacement parts or remove the respirator from service.

### Cleaning

The helmet should be hand-sponged with warm water and mild detergent, rinsed and air-dried.

After cleaning and before reassembling, once again carefully inspect the helmet and parts for signs of damage.

## PAPR Cleaning

The following chemicals have been tested and approved as cleaning agents for the blower housing, belt and battery:

- Process NPD (L256) from Steris
- Spor Klenz (undiluted) from Steris
- Clorox liquid bleach at 10% concentration
- Sani-Cloth HB wipes
- 100% Methanol
- 70% IPA

Once filter/cartridges have reached the end of their useful life, discard in accordance with federal, state, and local guidelines, and in conformance with plant safety regulations.

## PAPR Maintenance

DO NOT open the PAPR Housing Assembly. Internal repairs should only be performed by authorized personnel at the manufacturer's facility. The user should inspect the PAPR before each use. Contact Bullard at 877-BULLARD or info@bullard.com for any questions.

## PAPR Storage

When the blower is completely dry, store in a clean, dry area, away from direct sunlight and sources of direct heat.

The storage temperature should be between 32°F to 90°F (0°C to 32°C) with humidity less than 90% RH.

## Breathing Tube Assembly

### Inspection

Inspect the breathing tube for tears, cracks, holes, or excessive wear that might reduce the degree of protection originally provided. If any signs of excessive wear are present, replace the breathing tube immediately or remove the respirator from service.

### Cleaning

To clean the breathing tube, hand-sponge with warm water and mild detergent, being careful not to get water inside. Rinse and air-dry. After cleaning, once again carefully inspect breathing tube for signs of damage.

## Bullard HMX Series Part Numbers

### Helmets

HMX –Helmet with Outer Door and Inner Lens

HMX-I–Helmet with Inner Lens, No Outer Door

HMX-O–Helmet with Outer Door, No Inner Lens\*

\* Upgrade to HMX by installation of Inner Lens.

### Shrouds

HMXSLF –Loose Fitting Face piece, HEPA material

HMXS2000 –Full Shroud, DuPont™Tychem® 2000 material

HMXS4000 –Full Shroud, DuPont™ Tychem® 4000 material

HMXSFRHH – Full Shroud, Fire Resistant Material, High Heat Environments

HMXSFR – Full Shroud, Fire Resistant Material

HMXSR – HMX Replacement Shroud Retainer

### Breathing Tubes

PAHBT - Powered Air Breathing Tube Assembly (26")

PAHBTXS - Powered Air Breathing Tube Assembly (22")

PAHBTXL - Powered Air Breathing Tube Assembly (32")

PAHBTXXL - Powered Air Breathing Tube Assembly (38")

PAHBTBK - Powered Air Breathing Tube Assembly for Back Pack

### Blower Unit, Battery & Chargers

EVAHL1 – EVAHL Blower

EVAHLBAT1 – EVAHL Blower Battery

EVAHLSMC – Single Port Battery Charger

EVAHLGC – 6 Port Gang Charger

### Filter

PAPRFC3 – HE (HEPA) Particulate Filter

PAPRFC4 – OV/AG/HE

PAPRFC5 – AM/FM/MA/AG/HE

### Belts & Backpack

EVABELT1 – Comfort Belt

EVABELT2 – Decon Belt

EVABELTHH – High Heat Belt

EVABKPK1 – Backpack

EVAEXT1 – Belt Extender

### Outer Doors & Inner Lens

HMXOD – HMX, HMX-O Outer Door Replacement

HMXWOD5 – HXM, HMX-O Outer Door, Welding Shade 5

HMXWOD10 - HXM, HMX-O Outer Door, Welding Shade 10

HMXIL – HMX, HMX-I Inner Lens Replacement

HMXTHK – HMX Replacement Hinge Kit, Threaded Knob Connection

HMXTDMK – HMX Door Maintenance Kit, Includes Outer Door, Inner Lens, and Threaded Hinge Kit

### Accessories

HMXLC - HMX Outer Lens Covers

PA1AFI – Air Flow Indicator

20NC – Chin Stap

POLYBTC – Poly Breathing Tube Cover

20QCBTC – Tychem® 2000 Breathing Tube Cover

20SLBTC – Tychem® 4000 Breathing Tube Cover

PAPRSC2 – EVA Shower Cap

EVADCQC1 – EVA Dust Cover, Tychem® 2000

EVADCFR1 – EVA Dust Cover, FR Nomex®

PAPRSUSP1 - Suspenders

GVXRT – Replacement Suspension

## One Year Limited Warranty

Bullard warrants to the original purchaser that the EVAHL Powered Air-Purifying Respirator and HMX Series Respirator Helmet will be free of defects in material and workmanship under normal use and service for a period of one (1) year from the date of purchase. Bullard's obligation under this warranty is limited to repairing or replacing, at its option, articles that are returned within the warranty period and that are, after examination, shown to Bullard's satisfaction to be defective, subject to the following limitations;

a) EVAHL Powered Air-Purifying Respirator and HMX Series Respirator Helmet must be returned to the Bullard factory with shipping charges prepaid.

b) EVAHL Powered Air-Purifying Respirator and HMX Series Respirator Helmet must not be altered from its original factory configuration.

c) EVAHL Powered Air-Purifying Respirator and HMX Series Respirator Helmet must not have been misused, subjected to negligent use, or damaged in transport.

d) The date of purchase is within the one year warranty period. (A copy of the purchaser's original invoice showing the date of purchase is required to validate warranty coverage.)

In no event shall Bullard be responsible for damages for loss of use or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that Bullard has been advised of the possibility of such damages.

ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF PURCHASE OF THIS PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

### Return Authorization

The following steps must be completed before Bullard will accept any returned goods. Please read carefully. Follow the steps outlined below to return goods to Bullard for repair or replacement under warranty or for paid repairs:

1. Contact Bullard Sales Support by telephone or in writing at:

Bullard

1898 Safety Way Cynthiana, KY 41031-9303 Toll-free:

877-BULLARD (285-5273)

Phone: 859-234-6616

In your correspondence or conversation with Sales Support, describe the problem as completely as possible. For your convenience, your sales support specialist will try to help you correct the problem over the phone.

2. Verify with your sales support specialist that the product should be returned to Bullard. Sales Support will provide you with written permission and a return authorization number as well as the labels you will need to return the product.

3. Before returning the product, decontaminate and clean it to remove any hazardous materials which may have settled on the product during use. Laws and/or regulations prohibit the shipment of hazardous or contaminated materials. Products suspected to be contaminated will be professionally discarded at the customer's expense.

4. Ship products to be returned, including those under warranty, with all transportation charges pre-paid. Bullard cannot accept returned goods on a freight collect basis.

5. Returned products will be inspected upon return to the Bullard facility. Bullard Sales Support will telephone you with a quote for required repair work which is not covered by warranty. If the cost of repairs exceeds stated quote by more than 20%, your sales support specialist will call you for authorization to complete repairs. After repairs are completed and the goods have been returned to you, Bullard will invoice you for actual work performed.







# EVAHL - Powered Air-Purifying Respirator – Blower Assembly User Manual

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