**EVA1 - Powered Air Purifying Respirator**

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

**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.

D. 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.

E. Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.

F. Failure to properly use and maintain this product could result in injury or death.

G. Follow the manufacturer’s user instructions for changing cartridges and/or filters.

H. All approved respirators shall be selected, fitted, used and maintained in accordance with MSHA, OSHA and other applicable regulations.

I. Never substitute, modify, add or omit parts. Use only exact Bullard replacement parts in the configuration as specified by the manufacturer.

J. Refer to User’s Instructions and/or maintenance manuals for information on use and maintenance of these respirators.

K. 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.

**WARNING – EVA PAPRs**

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

1. The EVA 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 EVA 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.

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

Warnings, Cautions and Limitations (EVA) ..................................................... 1
Table of Contents ......................................................................................... 2
NIOSH Label .............................................................................................. 4-5
Component Diagram .................................................................................. 6
Assembly and Operation ............................................................................. 7
Principle of Operation and Battery Pack ..................................................... 7
Mounting the Breathing Tube ................................................................. 8
Mounting the Filter Cartridge on the Blower Belt ..................................... 8
Checking Airflow ....................................................................................... 8
Installing and Removing the Belt ............................................................ 8
Threading the EVABELTH ................................................................. 8
Respirator Assembly ............................................................................... 9
Installing the Headband ................................................................. 9
Adjusting the Suspension ................................................................. 9
Adjusting Crown Straps for Vertical Fit .................................................. 9
Using Optional Chin Strap ....................................................................... 9
Installing the HMX Shroud Retainer and Shroud .................................. 10
Installing the Outer Door and Lens Use ............................................. 10-11
Donning the EVA and HMX Respirator ............................................... 12
Doffing the Respirator ......................................................................... 12
HMX Respirator Use ........................................................................... 13
PAPR Cleaning ...................................................................................... 13
Breathing Tube Assembly ................................................................... 13
HMX Series Part Numbers ................................................................... 14
Warranty ......................................................................................... 15
### 1 PROTECTION

HE = High Efficiency Particulate Air Filter for Powered, Air Purifying Respirators

### 2 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.
D - Do not use powered air-purifying respirators if airflow is less than four cfm (115 lpm) for tight fitting face pieces or six cfm (170 lpm) for hoods and/or helmets.
E - Follow the manufacturer’s User Instructions for changing cartridges, canisters, and/or filters.
F - Failure to properly use and maintain this product could result in injury or death.
I - Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
L - Follow the manufacturer's User Instructions for changing cartridges, canisters, 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 replacement parts in the configuration specified by the manufacturer.
O - Refer to User 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.

### ACCESSORIES

<table>
<thead>
<tr>
<th>TC:</th>
<th>RESPIRATOR COMPONENTS</th>
<th>ALTERNATE HELMETS</th>
<th>ALTERNATE SHROUDS</th>
<th>ALTERNATE BREATHING TUBES</th>
<th>ALTERNATE FILTER UNIT ASSEMBLIES</th>
<th>ALTERNATE BATTERY CONFIGURATION</th>
<th>ALTERNATE BREATHER ASSEMBLIES</th>
<th>ALTERNATE CHAMBER ASSEMBLIES</th>
<th>ALTERNATE OUTER DOORS</th>
<th>CAUTIONS AND LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>21C-1071</td>
<td>HE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>21C-1072</td>
<td>HE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>21C-1073</td>
<td>HE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### THIS RESPIRATOR IS APPROVED ONLY IN THE FOLLOWING CONFIGURATIONS:

- HMX SERIES HELMET WITH EVA POWERED AIR-PURIFYING RESPIRATOR

Bullard
1898 Safety Way
Cynthiana, KY 41031-9303
877-BULLARD (285-5273)

THIS RESPIRATOR IS APPROVED ONLY IN THE FOLLOWING CONFIGURATIONS:

<table>
<thead>
<tr>
<th>TC:</th>
<th>RESPIRATOR COMPONENTS</th>
<th>ALTERNATE HELMETS</th>
<th>ALTERNATE SHROUDS</th>
<th>ALTERNATE BREATHING TUBES</th>
<th>ALTERNATE FILTER UNIT ASSEMBLIES</th>
<th>ALTERNATE BATTERY CONFIGURATION</th>
<th>ALTERNATE BREATHER ASSEMBLIES</th>
<th>ALTERNATE CHAMBER ASSEMBLIES</th>
<th>ALTERNATE OUTER DOORS</th>
<th>CAUTIONS AND LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>21C-1071</td>
<td>HE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>21C-1072</td>
<td>HE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>21C-1073</td>
<td>HE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

1 PROTECTION

HE = High Efficiency Particulate Air Filter for Powered, Air Purifying Respirators

2 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.
D - Do not use powered air-purifying respirators if airflow is less than four cfm (115 lpm) for tight fitting face pieces or six cfm (170 lpm) for hoods and/or helmets.
E - Follow the manufacturer’s User Instructions for changing cartridges, canisters, and/or filters.
F - Failure to properly use and maintain this product could result in injury or death.
I - Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
L - Follow the manufacturer's User Instructions for changing cartridges, canisters, 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 replacement parts in the configuration specified by the manufacturer.
O - Refer to User 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.
General Component Concept (HMX Shown with Full Double Bib Shroud)

**EVA Series – Principle of Operation**

The EVA 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.
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. The purified air is blown into the wearer’s helmet through the breathing tube. A flow indicator is provided to check that the airflow is adequate. The system is designed to operate at a minimum air flow of approximately 7 cubic feet of air per minute (212 liters per minute) in the helmet under normal use on the standard speed setting, and 18.5 cubic feet of air per minute (536 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.

**WARNING**

Do not charge batteries in hazardous areas.

**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**

EVA 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:

1. Place battery upside down into the charging port of the battery charger (Figure 2).
2. Connect the battery charger to a 110-volt AC electrical outlet.
3. Charge the battery pack for approximately four hours. Remove from the charger when charged.
4. 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 (EVAGC) with 6 ports are also available.

To charge the battery pack:

1. Connect the battery to the charger base (Figure 3).
2. Plug the charger into a 110-volt AC electrical outlet.
3. The charger light will illuminate green when charging is complete. The charger automatically shuts off when the battery pack is fully charged.

**NOTE**

Do not charge batteries in hazardous areas.

**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.

**WARNING**

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 cut-off 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 EVA 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 hazardous area.
- Detach the respirator.
- Charge the battery.
- 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 back of the blower (Figure 7).
- The battery tab should click when completely engaged.

Table-top gang chargers (EVAGC) with 5 ports are also available.

**EVA - Powered Air-Purifying Respirator – Blower Assembly User Manual**

---

**Table of Contents**

1. General Component Concept (HMX Shown with Full Double Bib Shroud)
2. EVA Blower Unit with Filter, Battery, and Belt
3. Configuration Examples:
   - Outer Door and Inner Lens
   - Outer Door - No Inner Lens
   - Inner Lens, No Outer Door
   - Inner Lens, No Outer Door
4. Assembly and Operation
5. Battery Pack
6. Battery Fuel Gauge
7. Battery Storage
8. Low Battery Alarm
9. Install Battery Pack
Attach the Breathing Tube to the Blower

- Ensure 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 coupling 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 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 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 service life. If it does not do so.
- Check that the filter connecting thread and gasket are in good condition.
- With the filter cartridge body into the blower, with the locking threads aligned and turn clockwise (Figure 4) until the locking tab is secured (Figure 5).

The following filter cartridge protection classification applies when used with any of the filter cartridge into the blower receptacle, with the filter cartridge approximately at the 11 o’clock position, place the filter cartridge into the filter cartridge receptacle.

- Check that the filter connecting thread and gasket are in good condition.
- Remove the filter cartridge from its packaging and ensure the filter cartridge has not exceeded its service life.

Mounting Instructions

- Turn the unit back off by holding the power button for 3-5 seconds confirmed by a 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 off by holding the power button for 3-5 seconds confirmed by a beep.

NOTE

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

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

Respirator Helmet Assembly;

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

Read and remove 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 unstrap the shroud relater at the back and carefully pull the right side of the shainter from the helmet shell, snap down the hook rings. Carefully unstrap the tab and repeat for left side.

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

Adjusting the Suspension

To adjust the size of the EVA belt options. This buckle is designed, to eliminate the ability of the belt to become loose over time through work movement.

In order to thread properly (Figure 10)

- Place belt around user’s waist and insert the tag end (non-connected end) of the belt under through slot at the opened end of the cam buckle.
- Thread the tag end underneath the cam buckle, towards the end of the cam 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.
- When the desired tension is achieved, thread the tag end through the plate in the top of the cam buckle, then back down through the first slot.
- Fully close the cam buckle in position.

![Figure 11](image)

Using the Optional Chin Strap

1. 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.
2. With helmet on, adjust chin strap length with the plastic slide.

![Figure 12](image)

![Figure 13](image)

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.

![Figure 14](image)

The HMX-0 (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 environment and must be kept on until you leave the contaminated environment. If there is ANY DOUBT as to whether or 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.

NOTE

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

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

Respirator Helmet Assembly

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

Read and remove 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 unstrap the shroud relater at the back and carefully pull the right side of the shainter from the helmet shell, snap down the hook rings. Carefully unstrap the tab and repeat for left side.

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

Adjusting the Suspension

To adjust the size of the EVA belt options. This buckle is designed, to eliminate the ability of the belt to become loose over time through work movement.

In order to thread properly (Figure 10)

- Place belt around user’s waist and insert the tag end (non-connected end) of the belt under through slot at the opened end of the cam buckle.
- Thread the tag end underneath the cam buckle, towards the end of the cam 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.
- When the desired tension is achieved, thread the tag end through the plate in the top of the cam buckle, then back down through the first slot.
- Fully close the cam buckle in position.

![Figure 11](image)

Using the Optional Chin Strap

1. 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.
2. With helmet on, adjust chin strap length with the plastic slide.

![Figure 12](image)

![Figure 13](image)

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.

![Figure 14](image)

The HMX-0 (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 environment and must be kept on until you leave the contaminated environment. If there is ANY DOUBT as to whether or 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.

NOTE

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

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

Respirator Helmet Assembly

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

Read and remove 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 unstrap the shroud relater at the back and carefully pull the right side of the shainter from the helmet shell, snap down the hook rings. Carefully unstrap the tab and repeat for left side.

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

Adjusting the Suspension

To adjust the size of the EVA belt options. This buckle is designed, to eliminate the ability of the belt to become loose over time through work movement.

In order to thread properly (Figure 10)

- Place belt around user’s waist and insert the tag end (non-connected end) of the belt under through slot at the opened end of the cam buckle.
- Thread the tag end underneath the cam buckle, towards the end of the cam 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.
- When the desired tension is achieved, thread the tag end through the plate in the top of the cam buckle, then back down through the first slot.
- Fully close the cam buckle in position.

![Figure 11](image)

Using the Optional Chin Strap

1. 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.
2. With helmet on, adjust chin strap length with the plastic slide.

![Figure 12](image)

![Figure 13](image)
**EVA - Powered Air-Purifying Respirator – Blower Assembly User Manual**

**Installing the HMX Shroud**

**Shroud Retainer**
- Begin with top of helmet facing your body and front of helmet facing up (Figure 12).
- Line up notch 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 13).
- Gaze shroud retainer completely into the grooves along the bottom of the helmet edge, starting on the left side of the helmet, working your way to the back.
- 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 tub connection (Figure 14).
- Return to the front of the helmet and repeat the above 3 steps for the right side.
- 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 15).
- Line up stop 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 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 secured all the way around the shroud retainer.

**Inner Lens and Outer Door Inspection**

Be sure the plastic inner lens (HMX, HMX-O) and outer door (HMX, HMX-O) fit 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. Grasp threaded nut on inside of helmet, turn threaded nut against the hinge hole on the inside of the helmet with the embossed upward curved portion of the lens (top) is facing the top of the helmet (Figure 17).
2. Insert cam mechanism into the door hinge indentation on the helmet shell. The cam is installed with the embossed arrow facing outward and toward the top of the helmet (Figure 17).

**NOTE**

If this is not installed correctly, the outer door will not stay in the raised position when fully opened.
3. Insert the cam caps onto the door, pressing inward until they click into place. Note that any orientation of this part is acceptable (Figure 19).
4. Install the rubber gasket on the raised section of the threaded nut, pressing fully against the base of the nut (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 21).

**NOTE**

If not positioned correctly, the nut will not fit flush against the helmet shell.
6. Insert the threaded nut 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.

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

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 arrow facing outward and toward the top of the helmet (Figure 17).

**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 16).
3. Insert the cam caps onto the door, pressing inward until they click into place. Note that any orientation of this part is acceptable (Figure 19).
4. Install the rubber gasket on the raised section of the threaded nut, pressing fully against the base of the nut (Figure 20).
5. Place outer door onto the helmet shell and fully secure the door closed (Figure 16).

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

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 bottom edge of lens.
2. Gently pull hinge connection part of outer door (HMX, HMX-O) fits securely in the helmet frame. To aid assembly for installing the outer door.
3. From the outside of the 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 20).
4. Ensure that the lens is securely installed into the helmet frame. A properly installed inner lens will not have any play, once inserted.

**Optional Welding Shade Outer Doors**

Feed 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 bottom edge of 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 22).
3. From the outside of the 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 20).
4. Ensure that the lens is securely installed into the helmet frame. A properly installed inner lens will not have any play, once inserted.

**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.
Operating the HMX Respirator Helmet

When the unit is initially turned on, the blower will operate at approximately 8.5 cfm = 240 for operation.

• Adjust the ratchet assembly and harness for comfort before donning helmet.

For the HMX full shrouds:
• Insert your chin into the shroud and pull the helmet upward toward the face.

For the HMXSLF face piece shroud:
• Choose speed setting (see below).

1 second, indicated by a short beep.

• Turn the blower on by depressing and holding the on/off switch for approximately

• Thread the straight end of the breathing tube to the blower unit until hand tight.

• Connect the breathing tube to the threaded port at the rear of the helmet until hand tight.

Connecting the Breathing Tube to the Helmet

• Perform air flow check with indicator tube.

Thread the breathing tube to the respirator helmet a maximum open position for inspecting

User should feel a tactile set when the door reaches its full open position.

The respirator door is intended to be raised to a maximum open position for inspecting

WARNING
Never open the outer door in a hazardous area if an inner lens is not

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.

Donning the EVA PAPR and HMX Respirator

Initial Donning
Prepare to doff 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 EVA blower unit.

• Place the battery fully in the battery compartment on the back of the blower.

• Adjust the belt to comfort level.

• Fit the blower and belt around the user’s waist and adjust the belt for a comfortable fit.

• Remove the blower 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

• Thread the straight end of the breathing tube to the threaded port at the rear of the helmet until hand tight.

• Turn the blower on by depressing and holding the on/off switch for approximately

• Adjust the EVA blower speed as desired.

Cleaning
Cleaning the respirator from service.

Cleaning and disinfecting agents, and many solvents, can damage the plastic parts.

Inspect the outer door making sure that the band has retained sufficient elasticity.

Inspect the inner neck cuff making sure that the band has retained sufficient elasticity.

Inspect the inner neck cuff making sure that the band has retained sufficient elasticity.

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

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

A. Process NPD (1.256) from Steris
B. Spor-Vinol (undiluted) from Steris
C. Diversey’s bleach at 10% concentration
D. Sani-Cloth HB wipes
E. 3001 Meinhard
F. 70% IPA

Once filters/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 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 32ºF to 90ºF (0ºC to 32ºC) with humidity less than 90% RH.

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.

WARNING
Before and after each use, to ensure proper functioning.

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.
Bullard HMX Series Part Numbers

Helmet
HMX – Helmet with Outer Door and Inner Lens
HMX + Helmet with Inner Lens, No Outer Door
HMX or Helmet with Outer Door, No Inner Lens*  
* Upgrade to HMX by installation of Inner Lens.

Belts & Backpack
EVABKPK1 – Backpack
EVABELTHH – High Heat Belt
EVABELT2 – Decon Belt
EVABELT1 – Comfort Belt

Bouffeur
HMXS4 – Loos Fit Facepiece, HEPA material
HMXS4000 – Full Bouffeur, DuPont™Tychem® 4000 material
HMXSFR – Full Bouffeur, Fire Resistant Material, High Heat Environments
HMXSFR – Full Bouffeur, Fire Resistant Material
HMXSR – Replacement Shroud Retainer

Shrouds
HMXS4 – Full Bouffeur, DuPont™Tychem® 4000 material
HMXS4000 – Full Bouffeur, DuPont™Tychem® 4000 material
HMXSFR – Full Bouffeur, Fire Resistant Material, High Heat Environments
HMXSFR – Full Bouffeur, Fire Resistant Material
HMXSFR – Full Bouffeur, Fire Resistant Material

Blower Unit, Battery & Chargers
EVA1 – EVA Blower
EVA1B – EVA Blower Battery
EVA1MC – Single Port Battery Charger
EVAC2MC – Single Port Analyzing Charger
PAPRSC2 – EVA Shower Cap
20SLBTC – Tychem® 4000 Breathing Tube Cover
20QCBTC – Tychem® 2000 Breathing Tube Cover
POLYBTC – Poly Breathing Tube Cover
20NC – Chin Strap
PA1AFI – Air Flow Indicator
HMXTDMK – HMX Door Maintenance Kit, Includes Outer Door, Inner Lens, and Threaded Hinge Kit

Filter
PAPRF3 – HE (HEPA) Particulate Filter
PAHBTBK – Powered Air Breathing Tube Assembly for Back Pack
PAHBTXXL – Powered Air Breathing Tube Assembly (38”)
PAHBTXL – Powered Air Breathing Tube Assembly (32”)
PAHBTXS – Powered Air Breathing Tube Assembly (22”)

Blower Assembly User Manual

One Year Limited Warranty
Bullard warrants to the original purchaser that the EVA 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 repair 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) EVA Powered Air-Purifying Respirator and HMX Series Respirator Helmet must be returned to the Bullard facility with shipping charges prepaid.
b) EVA Powered Air-Purifying Respirator and HMX Series Respirator Helmet must not be altered from its original factory configuration.

c) EVA 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 any loss of use or any indirect, incidental, consequential costs, expenses, or damage 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 exclusions 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 disposal 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. Return 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.

6. 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.

Bullard will invoice you for actual work performed. Bullard will invoice you for actual work performed. Bullard will invoice you for actual work performed.