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 hoods and/or helmets.
E. Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough.
F. Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
G. Failure to properly use and maintain this product could result in injury or death.
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.

NOTICE

As of November 1, 2013, the PA30IS PAPR Blower is no longer certified for use in Hazardous Classified Locations.

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**PA3IS - Principle of Operation**

The PA30IS Powered Air-Purifying Respirator (PAPR) System is supplied in six parts:

1. **The blower assembly** (Part No. PA3IS) which includes:
   - PA3ISBU Blower Unit
   - PAISB Belt or PAIDB Decon Belt
   - PAIAFI Air Flow Indicator

2. **The battery pack**, Part No. PA3ISBP, will last approximately seven hours.

3. **The breathing tube**, which is available in two different types:
   - PAHBITU Powered Air Hood Breathing Tube Assembly (standard length)
   - PAHBITXS Powered Air Hood Breathing Tube Assembly (short length)
   - PAHBITXL Powered Air Hood Breathing Tube Assembly (long length)
   - PKLB TXS Hood breathing tube assembly with clamp (standard length)
   - PKLB TXL Hood breathing tube assembly with clamp (long length)
   - PA20LFBTXL Loose fitting facepiece breathing tube assembly (standard length)
   - PA20LFBTXS Loose fitting facepiece breathing tube assembly (short length)

4. **The cartridges** are available in different types for most toxic contaminants. (See pages 4 and 7 for a listing of the cartridges.) The types include High Efficiency particulate only, chemical cartridges for gases and vapors, and combination cartridges for gases, vapors and particulates.

5. **The hood with headband suspension and/or hard hat, or loose fitting facepiece.** The following hood models may be used with the PA3ISBU blower unit:
   - RTTI/RTIT Hood with long inner and outer bib (NIOSH approved for use without a headband suspension)
   - RT2/RT2T Hood with long inner and outer bib (NIOSH approved for use without a headband suspension)
   - RT3/RT3T Hood with long inner and outer bib (NIOSH approved for use without a headband suspension)
   - RT4/RT4T Hood with long inner and outer bib (NIOSH approved for use without a headband suspension)
   - 20FJ/20FT Hood
   - 20FJC/20FICT Hood with inner bib
   - 20FIT/20FITC Hood for use with Bullard hard hat
   - 20FITCS/20FITCST Hood with taped and sealed seams
   - 20SI2/20SICHT Hood with taped and sealed seams
   - 20SI2CV/20SICVHT Hood with taped and sealed seams and PVC lens
   - 20SICH/20SICHT Hood with taped and sealed seams for use with Bullard hard hat
   - 20SICVH/20SICVHT Hood with taped and sealed seams and PVC lens for use with Bullard hard hat
   - 20LF Loose fitting facepiece, medium size
   - 20LF2 Loose fitting facepiece, large size
   - 20LFYL Loose fitting facepiece, extra large size
   - 20LF2M Loose fitting facepiece (narrow profile), medium size
   - 20LF2L Loose fitting facepiece (narrow profile), large size
   - 20LF2S Loose fitting facepiece (narrow profile), small size

6. **The Battery Charger**:
   - PA3ISC Quick Charger (single port)
   - PA3ISGC Gang Charger (six port)

The blower unit draws in ambient air through the cartridges. The purified air is blown into the wearer’s hood 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 units are designed for use at temperatures from 10°F to 120°F (-12°C to 49°C). The system is designed to operate at a minimum air flow of approximately seven cubic feet of air per minute (198 liters per minute) in the hood under normal use.

The battery pack(s) mount in compartment(s) on the back of the blower. One fully charged battery pack will power the blower for approximately seven hours.

The PA3ISBU is fitted with an alarm which will sound when voltage is low.

**CC20 and RT Series Airline Respirator**

NIOSH Approval No. TC-19C-154, Type C and TC-19C-412, Type C

Most of the same headpieces approved for use with the CC20 and RT Series of supplied air respirators (SARS) are also approved for use with the PA30 Series of powered air-purifying respirators. CC20 and RT Series respirators provide a high level of respiratory protection and user comfort over long work periods, in a wide variety of hazardous environments.

The CC20 and RT Series air flow control devices and other components are described in the CC20 and RT Series User Instructions.

**Battery Pack**

A fully charged battery pack will power a blower unit to provide adequate air volume for the respirator for approximately seven hours for the PA3ISBU.

To charge the battery pack, do the following:

- Open the battery latch and remove the battery from the back of the blower.

**WARNING**

- Make sure that the Blower Unit has been shut off completely before removing the battery. DO NOT remove the battery while the unit is running. DO NOT install a battery into a blower that has been left in the “on” position. Failure to follow these instructions may cause damage to the battery and may put the wearer at risk.

- Place each battery in the charging ports of the battery charger. Ensure that the battery contacts line up with the contacts in the charger port (see Figure 1).

- Connect the battery charger to a 115-volt AC electrical outlet.

- Charge the battery pack for approximately eight hours.

While the PA3ISBP battery is charging, the light on the cord will remain red. When the unit is charged, it will turn green.

- Table-top gang chargers (Part No. PA3ISGC, with 6 ports) and analyzers/conditioners are also available.

To maximize battery life, these guidelines should be followed:

- Charge the battery pack before it is completely discharged. The low voltage alarm indicates that the battery needs to be charged; operating the PAPR for more than 20 minutes after the alarm has been activated may damage the battery. Deeply discharged batteries may cause the charger to falsely indicate a complete charge.

- Always charge the batteries at room temperature or less. 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 battery packs in an enclosed cabinet without ventilation.

- Battery capacity may be checked with battery analyzer/conditioner.

- Table-top gang chargers (Part No. PA3ISGC, with 6 ports) are also available.

**WARNING**

PA3BP battery packs MUST be used with PA3 blower units and PA3ISBP intrinsically safe battery packs MUST be used with PA3IS blower units. Interchanging these batteries with blowers may cause damage to the blower and battery AND the blowers will not operate as intended and may put the wearer at risk. Failure to follow these instructions may result in death or serious injury.
Initial Charging Procedure with Quick Charger

To ensure a full charge on a new battery pack, follow these important guidelines. These guidelines also apply to battery packs that have been in storage for extended periods of time.

For new battery packs or packs that have been in storage for extended periods of time, follow the directions above under “Battery Pack”, and when the light turns green (PA3ISBP), do the following:

• Remove the battery pack. Wait 15 seconds. Replace the battery pack in the nest. The charger light will now turn red (PA3ISBP).
• When the light turns green (PA3ISBP), remove the battery pack. Wait 15 seconds. Replace the battery pack in the nest again. The charger light will now remain on or turn red.

The charger light will turn green (PA3ISBP), indicating that the battery is fully charged.

This procedure should also be followed after periods of prolonged storage. Without periodic charging, the nickel metal hydride batteries will lose up to 1%-2% of their charge per day. Allowing a battery to self-discharge during periods of prolonged storage will not damage the battery.

**WARNING**

DO NOT charge batteries in hazardous area.

Pre-Operational Inspection

Prior to each work shift, perform the following Pre-Operational Inspection to ensure proper operation and to insure that the unit is complete.

1. Belt Mounted Blower Unit, Part No. PA3ISBU

• Check that the unit is clean and undamaged.
• Inspect for deterioration, physical damage, and improper assembly.
• Ensure that the correct filters/cartridges for the appropriate contaminant are properly mounted on the blower unit. Screw the cartridges into the ports until hand-tight.

Consult the NIOSH approval label and your own in-plant safety professional if you have any questions as to the suitability and efficiency of the Air-Purifying Element.

2. Battery Pack

• Check that the battery is not damaged.
• Place the battery pack in the battery compartment on the blower by first engaging the tab on the pack under the lip on the edge of the compartment. Then close the latch.

3. Hood with Suspension or Hard Hat, or Loose Fitting Facepiece

• The hood is constructed of either DuPont™ Tychem® QC or Tychem SL. Depending on the model selected, it may be used with either a headband suspension or a hard hat. The loose fitting facepiece is constructed of Tychem QC and features an internal suspension.
• All hoods and loose fitting facepieces are approved for use with the PA3ISBU Blower Units.
• Inspect the hood or loose fitting facepiece for any physical damage.

Mounting the Breathing Tube on the PA3ISBU Blower

Ensure that a rubber gasket is in place in the breathing tube coupler on the blower unit.

Screw one end of the breathing tube into the blower unit (hand tight is sufficient) (see Figure 2).

Ensure that neither the breathing tube nor the filter is blocked.

Ensure that the ON/OFF Switch is in the OFF position.

Switch on the blower. If the Low Voltage Alarm sounds at this time, the battery needs to be recharged. See instructions on page 2 regarding properly charging the battery.

Checking Airflow with the Airflow Indicator (PA1AFI)

With the blower switched ON and the filters/cartridges 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 (see Figure 3).

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 Air-Purifying filter elements on the HE filters or the combination cartridges with HE filters. See “Mounting and Replacing Cartridges on the Blower Unit” on page 5.
• Low voltage or battery malfunction.

If the ball is completely above the PASS LINE on the Airflow Indicator, then the system is ready for use.

When the blower passes the flow test, it is ready to use.

**WARNING**

If the blower malfunctions during use in a hazardous area:

DO NOT remove the respirator hood, blower or waist-belt while in the hazardous area.

DO remain calm and LEAVE the hazardous area immediately.

After reaching a hazard-free area, immediately remove the respirator.

DO NOT use a blower that fails the flow test.

Use ONLY Bullard 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.
PA3ISBU Air-Purifying Elements

Principle of Operation

The following filter/cartridge protection classification applies when used with any of the hoods or loose fitting facepieces. In the following table "Quantity" refers to the number of filters/cartridges which must be attached to the blower unit to provide the required protection.

<table>
<thead>
<tr>
<th>Protection</th>
<th>Filter/Cartridge Type</th>
<th>Quantity</th>
<th>NIOSH / ANSI Color Code for Cartridge Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE</td>
<td>PAPRFC1</td>
<td>2</td>
<td>Purple</td>
</tr>
<tr>
<td>OV/CL/HC/SD/CD/HF/HE</td>
<td>PAPRFC2</td>
<td>3</td>
<td>Yellow and Purple</td>
</tr>
<tr>
<td>CL/HC/SD/CD/HF/FM/AM/MA/HE</td>
<td>PA3NBC*</td>
<td>3</td>
<td>Olive Green and Purple</td>
</tr>
</tbody>
</table>

*The PA3NBC cartridge provides protection for acid gases, formaldehyde, and ammonia and therefore is effective against a wide range of Toxic Industrial Chemicals. The High Efficiency (HE) Particulate Filter provides protection against airborne bacteria, viruses, and other particulates. Independent laboratories have tested and verified that the PA3NBC cartridge is effective against many chemical warfare agents and/or their recognized surrogates. These agents/surrogates are listed below.

### PA3NBC CARTRIDGE CHEMICAL WARFARE GAS PERFORMANCE TESTING

<table>
<thead>
<tr>
<th>Gas Challenge</th>
<th>Test Concentration</th>
<th>Flow Rate</th>
<th>Breakthrough Concentration</th>
<th>Time to Breakthrough</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMMP</td>
<td>3000 mg/m³</td>
<td>50 lpm</td>
<td>.04 mg/m³</td>
<td>&gt;120 minutes*</td>
</tr>
<tr>
<td>Sarin (GB)</td>
<td>4000 mg/m³</td>
<td>32 lpm</td>
<td>.04 mg/m³</td>
<td>&gt;120 minutes*</td>
</tr>
<tr>
<td>Cyanogen Chloride (OK)</td>
<td>4000 mg/m³</td>
<td>32 lpm</td>
<td>8.0 mg/m³</td>
<td>30 minutes*</td>
</tr>
<tr>
<td>Chloropicrin (PS)</td>
<td>15000 mg/m³</td>
<td>30 lpm</td>
<td>0.7 mg/m³</td>
<td>60 minutes</td>
</tr>
<tr>
<td>Hydrogen Cyanide (AC)</td>
<td>5500 mg/m³</td>
<td>30 lpm</td>
<td>5.0 mg/m³</td>
<td>&gt;30 minutes</td>
</tr>
<tr>
<td>Tear Gas (CS)</td>
<td>23 mg/m³</td>
<td>64 lpm</td>
<td>0.4 mg/m³</td>
<td>&gt;480 minutes</td>
</tr>
<tr>
<td>Tear Gas (CN)</td>
<td>101 mg/m³</td>
<td>64 lpm</td>
<td>0.3 mg/m³</td>
<td>&gt;480 minutes</td>
</tr>
</tbody>
</table>

*These tests are part of the performance specifications for the C2A1 military canister. The PA3NBC Cartridge meets or exceeds the performance requirements of the C2A1 canister for these gases.

HE particulate filters are 99.97% effective against all particulate aerosols.

Filters and cartridges are supplied in quantities of six per box.

The following abbreviations are approved by NIOSH to indicate the particulates, gases or vapors which are removed by the gas/vapor cartridges:

- **CL** Chlorine
- **CD** Chlorine Dioxide
- **HC** Hydrogen Chloride
- **SD** Sulfur Dioxide
- **FM** Formaldehyde
- **AM** Ammonia
- **MA** Methylamine
- **OV** Organic Vapors
- **HF** Hydrogen Fluoride
- **HE** High Efficiency Particulate Air Filter for Powered Air-Purifying Respirators

⚠️ WARNING ⚠️

Use only the cartridge described in the above table. Used/particulate-laden cartridges must be changed as a set and not individually. All cartridges must be of the same type. Do not change cartridges while in a hazardous atmosphere. Incorrect cartridge selection will invalidate all performance statements and approvals for this equipment.

Three (3) of the same type of cartridge must be used on the PA3ISBU blower unit, with the exception of the PAPRFC1 filter which are used two (2) at a time, in conjunction with the PA3PG plug. DO NOT use the PA3PG plug to close off a port with any other cartridge type.

For Hospital Preparedness applications, the PA3NBC cartridges and PA3BU blower should only be used with the 20SICVH and 20SICV hoods. These hoods are made of Tychem SL, which has been tested by DuPont and shown to be effective against chemical warfare agents. These hoods also feature a press polished vinyl lens adequate for hospital preparedness applications.

The respirator and cartridges should not be used beyond eight (8) hours after initial exposure to chemical warfare agents to avoid possibility of agent permeation. If liquid exposure is encountered, the respirator should not be used for more than two (2) hours. Follow established cartridge change schedules to ensure that cartridges are replaced before breakthrough occurs. Failure to follow these warnings could result in death or serious injury.
Mounting and Replacing Cartridges on the Blower Unit

The useful life of a chemical cartridge for vapors and gases will vary with the concentration and nature of the contaminant, the breathing rate of the respirator wearer, and ambient temperature and humidity.

The Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.134 require that the employer must implement a change schedule when using Air-Purifying respirators for protection against gases and vapors, if there is no end-of-service-life indicator on the cartridges. The change schedule must be based on objective data that will ensure that the cartridges are replaced before the end of their service life. Factors to consider include workplace conditions such as contaminant concentration, relative humidity, temperature, work activities, respirator use pattern (e.g., continuous or intermittent use), presence of other contaminants, potential for contaminant migration/desorption, health effects of the gas or vapor, and the presence of any warning properties. Contact Bullard for further information on change-out schedules.

High efficiency particulate filters must be replaced when retained particles clog the filters and reduce air flow below acceptable levels, as indicated by testing with the Air Flow Indicator.

To Replace Cartridges

1. Remove the air-purifying element from its packaging, and inspect for damage. If in doubt, do not use.
2. Check that the air-purifying element has not exceeded its “use-by” date and that the connecting thread is in good condition.
3. Check that the air-purifying element is appropriate to the hazard. If in doubt, consult your respirator program administrator or supervisor.
4. Check that the threads in the blower unit port are in good condition and clear of contaminant.
5. Check that the PA3ISBU blower ports have the rubber gasket seals present.
6. Screw the air-purifying elements into the receptacles (see Figure 5) until the cartridge is hand tight. DO NOT OVER-TIGHTEN.

Donning the Blower and Respirator

Prepare to don the blower, battery and hood in a safe, hazard-free area and do the following:
1. Check that the cartridges are properly mounted on the blower unit.
2. Prior to assembling the system, place the battery in the battery compartment on the back of the blower. Make sure that the correct battery is used in the appropriate blower unit. (See instructions and warning on page 2). Fit the blower and belt around the user’s waist. With the blower at the rear of the user, adjust the belt for a comfortable fit.
3. Remove the belt and blower.
4. Ensure that the cartridges used are suitable for the contaminant in question and are compatible with the PA3ISBU Blower Unit.

![Figure 4](image)

NOT OVER-TIGHTEN.

When using the two PAPRFCL1 filter cartridges, install the filter plug into one of the ports. DO NOT OVER-TIGHTEN (Figure 6).

![Figure 5](image)

Screw the air-purifying elements into the receptacles (see Figure 5) until the cartridge is hand tight. DO NOT OVER-TIGHTEN.

![Figure 6](image)

Check that the PA3ISBU blower ports have the rubber gasket seals present. Remove the air-purifying element seals (see Figure 4).

![Figure 7](image)

WARNING

The use of any cartridge not approved with the PA3ISBU blower units may put the user at risk and could result in death or serious injury.

Donning the PA3ISBU with the CC20 Series Hood

Adjusting and Installing Headband Suspension in Hood

![NOTE](image)

20LF and 20LF2 series loose-fitting facepiece hoods have a sewn-in headband.

![NOTE](image)

RT Series hoods do not use a suspension.

To change the headband size, unlock the four pins from the sizing holes. Place the headband on your head. Pull down, allowing headband to expand until it feels comfortable. The headband will automatically adjust to your size. Lock into place by pushing the four pins into the sizing holes (Figure 7).

![Figure 8](image)

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. Move key to desired vertical position. Repeat for other crown strap post (Figure 8).
Adjusting and Installing Hard Hat in Respirator Hood (20SICH & 20TICH)

1. Assemble and adjust the standard Bullard hard hat suspensions RS4PC or RS6PC or the optional ratchet suspensions RS4RC or RS6RC by following the directions on instruction sheet attached to headband on hard hat. Read all hard hat warning labels and instructions. The following Bullard hard hat models are approved for use with CC20 Series respirator hoods as part of a NIOSH approved respirator assembly: C30, C30R, SS1 and SS1R.

2. If desired, install and adjust optional ES42 hard hat chinstrap.

3. Before inserting hard hat into hood, remove the two adhesive-backed Velcro® strips attached to the Velcro piece that is sewn into the hood (see Figures 10 & 11).

4. Peel the backing off the longer Velcro tab and apply it to the inside center rear of the hard hat, about 1/4" up from the edge. Apply shorter Velcro tab to the underside of the brim of the hard hat (see Figure 10).

5. Insert hard hat into respirator hood with cap visor facing front of hood (see Figure 11).

6. Tuck cap brim on top of front elastic Velcro band sewn into hood (see Figure 19).

7. Loop the Velcro strip sewn inside the hood around the back of the cap and affix it to the corresponding Velcro tab previously installed inside the hard hat in step 4 (see Figure 11).

8. Remove protective plastic from plastic lens of respirator hood. If desired, apply optional 20LC or 20LCL adhesive-backed lens covers designed to protect the respirator’s plastic lens. Apply 2-3 lenses at a time. When lens becomes soiled, remove by pulling tab at edge of lens cover to clear your vision.

Installing Breathing Tube Assembly in CC20 Hoods

For hoods without a threaded port at the rear, Breathing Tubes PA1BT, PA1BTXS and PA1BTXL will attach to the hood with a clamp as follows:

1. Remove nylon clamp from plastic anchor plate on hood (see Figure 12).

2. Insert the open end of the breathing tube approximately five inches into hood’s air entry sleeve (see Figure 13). Do not insert breathing tube into hood air entry sleeve more than 6 inches as it may cause a flow restriction.

3. Install nylon clamp over air entry sleeve and breathing tube, inserting clamp locks through two holes in plastic anchor plate that is sewn into hood. Locks should face away from user’s neck (see Figure 14). The air entry sleeve seams should be on the top and bottom of the breathing tube when properly installed and worn.

4. Engage clamp locks and squeeze together until tight. Air entry sleeve should not be twisted or restricted (see Figure 15). If so, then remove the clamp and repeat steps 2-4.

For hoods with a threaded port at the rear (designated with a “T” suffix), Breathing Tubes PAHBT, PAHBTXS, PAHBTXL will attach to the hood by the threading into the port at the rear (See Figure 13A).

Donning the CC20 and PA30ISBU

1. With PAPR Blower Unit Running, put on CC20 Series respirator hood.

2. Position headband suspension or hard hat for a comfortable fit.

3. If using an optional chin strap, pull elastic strap under your chin. Adjust for a secure and comfortable fit.

4. Tuck inner bib of hood into shirt or protective clothing (see Figure 16).

5. Pull respirator outer bib over collar of shirt or protective clothing.

6. Ensure that the neck cuff is down below the chin and that the air outlets of the cuff (see Figure 17) are not restricted. If the neck cuff is not below the chin, then pull down before continuing (See Figure 18).

**WARNING**

Do not put on or remove these respirators in a hazardous atmosphere except for emergency escape purposes. Failure to heed these warnings could result in death or serious injury.
**RT Series Hood Use**

**Installing Breathing Tube Assembly in RT Series Respirator Hoods**

For hoods without a threaded port at the rear, Breathing Tubes PA1BT, PA1BTXS and PA1BTXL will attach to the hood with a clamp as follows:

1. Remove nylon clamp from the breathing tube (see Figure 12).
2. Insert the open end of the breathing tube approximately five inches into hood’s air entry sleeve (see Figure 19). Do not insert breathing tube into hood air entry sleeve more than 6 inches as it may cause a flow restriction.
3. Install nylon clamp over air entry sleeve and breathing tube. If desired, 2 or more clamps may be used (see Figure 20). The air entry sleeve seams should be on the sides of the breathing tube when properly installed and worn.
4. Engage clamp locks and squeeze together until tight. Air entry sleeve should not be twisted or restricted (see Figure 21). If so, then remove the clamp and repeat steps 2-4.
5. With PAPR blower unit running, put on RT Series respirator hood. Pull the hood over your head until the neck cuff is securely around your neck.
6. Ensure that the neck cuff is down below the chin and that the air outlets of the cuff are not restricted. If the neck cuff (see Figure 17) is not below the chin, then pull down before continuing (see Figure 18).

For hoods with a threaded port at the rear (designated with a "T" suffix), Breathing Tubes PAHBT, PAHBTXS, PAHBTXL will attach to the hood by threading into the port at the rear (see Figure 13A).

![Figure 19](image1)

**Figure 19**

![Figure 20](image2)

**Figure 20**

![Twisted – incorrect](image3)

**Twisted – incorrect**

![Correct](image4)

**Correct**

![Figure 21](image5)

**Figure 21**

**NOTE**

The RT3 and RT4 hoods have an adjustable velcro strap near the top of the lens that allows the user to customize the curvature of the lens to his/her personal preference. This strap may be removed if desired.

7. Make sure that the breathing tube is not twisted after donning.
8. Tuck inner bib of hood into shirt or protective clothing (see Figure 16).
9. Pull respirator outer bib over collar of shirt or protective clothing. Pull the long outer bib down on the outside of clothing and secure with tie down straps or tape (if employer operating procedures will allow.)

---

**WARNING**

The user should ensure that the neck cuff is unrestricted all around the neck to allow proper inflation and reduce restrictions. Battery run time will be reduced by a restricted or improperly donned hood.

**Loose-Fitting Facepiece Use**

**Installing Breathing Tube Assembly in Loose-Fitting Facepieces**

1. The 20LFM, 20LF2, 20LF2XL, 20LF2S, 20LF2M and 20LF2L loose-fitting facepieces have a sewn-in breathing tube connector on the back. The PA20LFBT breathing tube has a special connector on the hood end with bayonet type pins.

2. Insert the bayonet connector of the PA20LFBT breathing tube in the hood connector and turn clockwise until it locks in place (see Figure 22).

Available in extra large 20LFXL, large 20LF2L or 20LF2, medium 20LF2M or 20LFM, and small 20LF2S. Select the size that fits most comfortably and matches your head size. Remove the protective cover from the visor. Pull the hood over your head and adjust the headband around your head and the elasticized edge of the face seal under your chin. Make sure that the breathing tube is not twisted after donning.

**Final Donning:**

- Attach the other end of breathing tube to blower unit (if not already attached) by screwing adapters together.
- Remove any protective film covering the lens of the headpiece.
- Put on the belt and blower assembly and make any final adjustments to the belt as necessary, keeping the breathing tube and hood behind the head.
- Turn the blower on by depressing and holding the on/off switch for approximately 1 second.
- Buckle the belt onto the waist (blower unit should be in the lower back of the wearer).
- Don the headpiece.
- Place the hood on the head making any final adjustments to the fit as required at this time to ensure a comfortable and stable fit.

**WARNING**

Do not enter a hazardous area until you are sure that the blower and hood are fully operational and the blower is running. The user should periodically check the hazardous area to check the airflow through the system. If the low battery or low flow alarm should sound, or if the user experiences any difficulty in breathing, or senses any taste or any odors from the hazard, the user should leave the hazardous area immediately. Failure to observe these warnings could result in death or serious injury.
Final Donning

<table>
<thead>
<tr>
<th>Front</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC20 Single Bib</td>
<td></td>
</tr>
<tr>
<td>CC20 Double Bib</td>
<td></td>
</tr>
<tr>
<td>RT Series</td>
<td></td>
</tr>
<tr>
<td>20LF Series</td>
<td></td>
</tr>
<tr>
<td>20LF2 Series</td>
<td></td>
</tr>
</tbody>
</table>

PA3ISBU Low Voltage Alarm

The PA3ISBU Blower units are equipped with a Low Voltage Alarm. This device will activate if the battery voltage is below acceptable levels. The PA3ISBU Low Voltage Alarm is a mechanical pulsing of the blower. The alarm is internal to the blower and the sound will be carried up the breathing tube into the hood. Sounding of the alarm indicates that insufficient airflow may be imminent. The user should immediately do the following:

Leave the hazard area, remove the headpiece, disconnect the breathing tube from the hood and check the airflow with the airflow indicator (see page 5).

If the airflow indicator indicates insufficient airflow, the battery should be fully charged (see "Battery Pack" on page 2), and/or the filter/cartridge should be replaced.

The PA3ISBU Low Voltage Alarm must not be solely relied upon as an indication of a low air flow condition. Only the Air Flow Indicator should be utilized for checking for adequate air flow.

NOTE

When the Low Voltage Alarm sounds and the filter cartridges are not clogged, the battery should be recharged to protect the battery and thereby prolong the working life of the unit. If the ball in the Airflow Indicator is BELOW or PARTLY BELOW the PASS LINE with a fully charged battery, the filter cartridges may need to be changed.

Troubleshooting

The following guide will enable you to locate and correct malfunctions.

<table>
<thead>
<tr>
<th>Malfunction</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Voltage Alarm is sounding, but Airflow Indicator shows adequate air flow or breathing tube inserted incorrectly</td>
<td>Low Voltage</td>
<td>Re-charge battery</td>
</tr>
<tr>
<td></td>
<td>Air inlet to hood is twisted or constricted</td>
<td>Remove, inspect, and reinsert PA1BT Breathing Tube approximately 5” into hood inlet</td>
</tr>
<tr>
<td>No/low airflow into covering (Alarm sounding for low voltage)</td>
<td>Clogged/damaged air-purifying filter element</td>
<td>Replace filter cartridge</td>
</tr>
<tr>
<td></td>
<td>Battery low</td>
<td>Re-charge battery</td>
</tr>
<tr>
<td></td>
<td>Blower malfunction</td>
<td>Replace blower</td>
</tr>
<tr>
<td></td>
<td>Breathing tube or hood damaged</td>
<td>Replace breathing tube and/or hood</td>
</tr>
<tr>
<td>Smell or taste contaminant</td>
<td>Equipment damaged or filter needs to be replaced</td>
<td>Leave hazardous area immediately and check equipment Replace filter If the problem persists and no damage is found, return equipment for repair</td>
</tr>
<tr>
<td>Blower unit does not run for full service life PA3IS (Approximately 7 hours with 1 battery pack)</td>
<td>Low airflow</td>
<td>See above.</td>
</tr>
<tr>
<td></td>
<td>Improper initial charge</td>
<td>Review &quot;Initial Charging Procedure&quot; page 3</td>
</tr>
<tr>
<td></td>
<td>Prolonged storage of unit not on charger</td>
<td>Review guidelines for maximizing battery life, page 2 (under Battery Pack).</td>
</tr>
<tr>
<td></td>
<td>Deeply discharged battery</td>
<td></td>
</tr>
</tbody>
</table>
Cleaning and Storage

**WARNING**

Avoid contaminant entry into the breathing tube, as this will compromise respiratory protection and could result in death or serious injury. Consult your local safety professional if you suspect that contaminant has entered the breathing tube. When cleaning the equipment, do the following:

- Ensure water does not enter cartridges. Replace wet cartridges.
- DO NOT use gasoline, organic-based solvents, or chlorinated degreasing fluids (such as trichloroethylene) as they will cause damage.
- DO NOT immerse the equipment in water or other cleaning fluid as this may cause contamination in the breathing tube and blower interior that will be difficult to remove.
- Failure to observe the instructions and warnings in this manual invalidates all performance statements and approvals for this equipment and could result in death or serious injury.

**Cleaning**

Once 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.

- Use a lint-free cloth moistened in a mild solution of soap and warm water to clean the outer surface of the equipment.
- Consult the CC20/RT Series Tychem Hood User Manual for cleaning instructions for the hood components.

**Storage**

- Store the apparatus in a clean, dry area, away from direct sunlight and sources of direct heat.
- The storage temperature should be between 32º F to 90º F (0º C to 32º C) with humidity less than 90% RH.
- Consult the CC20 Series Hood User Manual or RT Series Hood User Manual for storage instructions on hood components.
# NIOSH Label

**PA30IS Approval Label**

This respirator is approved only in the following configurations:

**NIOSH Label**

**PA30IS Powered Air-Purifying Respirator**

**Bullard**

Cynthiana, KY 41031 USA

1-800-827-0423

---

## RESPIRATOR COMPONENTS

<table>
<thead>
<tr>
<th>TC#</th>
<th>PROTECTION</th>
<th>ALTERNATE HOOD ASSEMBLIES</th>
<th>ALTERNATE EXHAUST TUBES</th>
<th>ALTERNATE CARTRIDGES</th>
<th>BLADE ASSEMBLIES</th>
<th>BATTERY</th>
<th>ACCESSORIES</th>
<th>CAUTIONS AND LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>21C-0825</td>
<td>HE</td>
<td>X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>23C-2384</td>
<td>AM/CL/HC/MA/FM/HF/SD/HE</td>
<td>X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23C-2306</td>
<td>AM/CL/HC/MA/FM/HF/SD/HE</td>
<td>X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X X</td>
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</tbody>
</table>

1 **PROTECTION**

- HE - High Efficiency Particulate Air Filter for Powered Air Purifying Respirators
- AM - Ammonia
- CD - Chlorine dioxide
- CL - Chlorine
- FM - Formaldehyde
- HC - Hydrogen chloride
- HF - Hydrogen fluoride
- MA - Methylamine
- OV - Organic Vapors
- SD - Sulfur Dioxide

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 facepieces or six cfm (170 lpm) for hoods and / or helmets.
E. Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough occurs.
F. Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
G. Failure to properly use and maintain this product could result in injury or death.

L. Follow the manufacturer’s 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 replacement parts in the configuration 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.
PA30IS Series Powered Air-Purifying Respirator

PA3IS Blower Assembly User Manual

Ordering Information

<table>
<thead>
<tr>
<th>CATALOG</th>
<th>NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20LFL</td>
<td>Loose-Fitting Facepiece System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TTJ</td>
<td>Single Bib Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TIC</td>
<td>Double Bib Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICS</td>
<td>Double Bib Saranex Coated Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICSL</td>
<td>Double Bib Saranex Coated Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICS</td>
<td>Extra Long Double Bib Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICST</td>
<td>Headband Free Extra Large Lens Double Bib Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICSL</td>
<td>Headband Free Extra Large Lens Double Bib Saranex Coated Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICSL</td>
<td>Headband Free Extra Large Lens Double Bib Hood System with Standard Comfort Belt</td>
</tr>
<tr>
<td></td>
<td>20TICSL</td>
<td>Headband Free Extra Large Lens Double Bib Hood System with Standard Comfort Belt</td>
</tr>
</tbody>
</table>

Respirator Assemblies

Battery Chargers

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA3ISBU</td>
<td>Respirator Blower Unit (no battery, no belt)</td>
</tr>
<tr>
<td>PA3ISBC</td>
<td>Quick charger for PA3ISBP (1 port)</td>
</tr>
</tbody>
</table>

Replacement Cartridges

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA3IBCF</td>
<td>OV/CL/HC/SD/CD/HE/FM/MA/HE (5 per box)</td>
</tr>
<tr>
<td>PA3IBCF</td>
<td>CL/HC/SD/CD/HE/FM/AM/MA/HE (5 per box)</td>
</tr>
</tbody>
</table>

Respirator Hoods

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA3I</td>
<td>Tri-filter blower unit (blue color), with low voltage alarm, battery, and belt. Breathing tube, replacement battery and charger sold separately.</td>
</tr>
<tr>
<td>PA3IBU</td>
<td>Blower Housing Unit (no battery, no belt)</td>
</tr>
</tbody>
</table>

Headbands Suspensions and Hard Hats

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20TG</td>
<td>Standard headband suspension</td>
</tr>
<tr>
<td>20RT</td>
<td>Sure-Lock® ratchet headband suspension</td>
</tr>
<tr>
<td>3000P</td>
<td>Hard hat with standard suspension</td>
</tr>
<tr>
<td>3000R</td>
<td>Hard hat with ratchet suspension</td>
</tr>
<tr>
<td>5100P</td>
<td>Hard hat with standard suspension</td>
</tr>
<tr>
<td>5100R</td>
<td>Hard hat with ratchet suspension</td>
</tr>
</tbody>
</table>

Accessories for Headbands Suspension and Hard Hats

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESULTRA</td>
<td>Standard replacement suspension for C30 hard hat</td>
</tr>
<tr>
<td>ERTSL</td>
<td>Replacement ratchet suspension for C30R hard hat</td>
</tr>
<tr>
<td>RS4P</td>
<td>Standard replacement suspension for S51 hard hat</td>
</tr>
<tr>
<td>RS4RC</td>
<td>Replacement ratchet suspension for S51R hard hat</td>
</tr>
<tr>
<td>20NC</td>
<td>Chin strap for 20TG and 20RT headband suspension</td>
</tr>
<tr>
<td>54S2</td>
<td>Chin strap for 3000 and 5100 hard hats</td>
</tr>
</tbody>
</table>

Replacement Parts and Accessories

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA1S</td>
<td>Standard belt</td>
</tr>
<tr>
<td>PAIDB</td>
<td>Decon belt</td>
</tr>
<tr>
<td>PA1EB</td>
<td>Extension standard belt kit</td>
</tr>
<tr>
<td>PA1EB</td>
<td>Extension decon belt kit</td>
</tr>
<tr>
<td>PA1AF</td>
<td>Air flow indicator</td>
</tr>
<tr>
<td>PA3ISBU</td>
<td>Blower housing unit (I.S. version), motor and impeller</td>
</tr>
<tr>
<td>PA1BT</td>
<td>Hood breathing tube assembly; includes tube and clamp; standard length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Hood breathing tube assembly; includes tube and clamp; short length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Hood breathing tube assembly; includes tube and clamp; long length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Powered air hood breathing tube assembly; standard length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Powered air hood breathing tube assembly; long length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Loose fitting facepiece breathing tube assembly; extra long length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Loose fitting facepiece breathing tube assembly; standard length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Loose fitting facepiece breathing tube assembly; short length</td>
</tr>
<tr>
<td>PA1BTX</td>
<td>Breathing tube/cartridge seal</td>
</tr>
<tr>
<td>PA3ISBP</td>
<td>7 hour battery pack</td>
</tr>
<tr>
<td>S10051</td>
<td>Breathing tube clamp</td>
</tr>
<tr>
<td>PA3PG</td>
<td>Plug for blower port</td>
</tr>
</tbody>
</table>

NOTE

For Decon Belt change SB suffix to DB

www.bullard.com