

# 3M Hoods BE-10 Series

*User Instructions for 3M™ Hoods BE-10, BE-10L and BE-10BR*

*(Keep these User Instructions for reference)*



## ⚠ WARNING

This product helps protect against certain airborne contaminants. **Misuse may result in sickness or death.** For proper use, see supervisor, *User Instructions*, or call 3M in U.S.A., 1-800-243-4630. In Canada, call Technical Service at 1-800-267-4414.

## GENERAL SAFETY INFORMATION

### Intended Use

3M™ BE-10 Series Hoods are loose fitting, positive pressure respiratory inlet coverings (hoods). These hoods, when combined with an appropriate powered air purifying respirator (PAPR) or supplied air system, are designed to provide respiratory protection against certain particulates, organic vapors, acid gases and other inorganic gases. The BE-10BR hood is NIOSH CBRN PAPR approved with certain components. Refer to the NIOSH Approval Label for a list of approved components.

The hoods feature a wide-view faceshield and shoulder length inner and outer shrouds. The hood is held in place on the head by a sewn-in, elastic headband. Breathing air is supplied from a breathing tube connected to a snap-in hose connector, which is sewn into the back of the hood. Breathing air travels through the open space at the top of the hood, down over the user's face and out through the inner shroud (Fig. 1).

The BE-10 Series hoods are available in polycoated Tychem® QC material or in butyl rubber. Tychem® QC offers splash protection against many inorganic acids, bases and other liquid chemicals such as pesticides. This fabric is made from Tychem® that has been coated with 1.25 mil polyethylene. The butyl rubber hood offers resistance to certain chemical warfare agents and a range of other chemicals and meets Military Specification MIL-C-51251A (for butyl).

These hoods will accommodate limited facial hair without compromising the level of protection, provided the facial hair does not protrude past the neck area or contact the inner shroud.

**Note:** Inspect emergency use respirators on a monthly basis.



**Fig. 1:** 3M™ Hood BE-10 Series

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### CAUTION:

This product contains natural rubber latex, which may cause allergic reactions in some individuals.

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## List of Warnings and Cautions within these User Instructions

### WARNING

This product helps protect against certain airborne contaminants. **Misuse may result in sickness or death.** For proper use, see supervisor or *User Instructions*, or call 3M in U.S.A., 1-800-243-4630. In Canada, call Technical Service at 1-800-267-4414.

Each person using this respirator must read and understand the information in these *User Instructions* before use. Use of these respirators by untrained or unqualified persons, or use that is not in accordance with these *User Instructions*, **may adversely affect respirator performance and result in sickness or death**

The U.S. Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.134 and the Canadian CSA Standard Z94.4 require a written respirator program and appropriate training before occupational use of this respirator. **Failure to comply with this requirement may result in sickness or death.**

These hoods do not provide eye and face protection. When exposed to eye and face hazards, the respirator wearer must wear eye and/or face protectors appropriate to the hazard. **Failure to do so may result in serious bodily injury or death.**

Do not use with parts or accessories other than those manufactured by 3M as described in these *User Instructions* or on the NIOSH approval label for this respirator. **Failure to do so may adversely affect respirator performance and result in sickness or death.**

Use of this respirator in atmospheres for which it was not NIOSH certified or designed **may result in sickness or death.** Do not wear this respirator to enter areas where:

- Atmospheres are oxygen deficient
- Contaminant concentrations are unknown
- Contaminant concentrations are Immediately Dangerous to Life or Health (IDLH)
- Contaminant concentrations exceed 1000 times the applicable exposure limit (the assigned protection factor for this respirator system) or the APF mandated by specific government standards, whichever is lower

Contaminants that are dangerous to your health include those that you may not be able to see or smell. Leave the contaminated area immediately if any of the following conditions occur. **Failure to do so may result in sickness or death.**

- Any part of the system becomes damaged
- Airflow into the respirator decreases or stops
- Breathing becomes difficult
- You feel dizzy or your vision is impaired
- You taste or smell contaminants
- Your face, eyes, nose or mouth become(s) irritated
- You suspect that the concentration of contaminants may have reached levels at which this respirator may no longer provide adequate protection

If this respirator fails any of the requirements of the user inspection and performance check, do not use the respirator until all necessary repairs have been made and the respirator passes the performance check.

**Failure to do so may adversely affect respirator performance and result in sickness or death.**

The BE-10 Series hood in butyl rubber offers resistance to certain chemical warfare agents and a range of other chemicals and meets Military Standard MIL-C-51251A (for butyl).

The exterior surface of the BE-10 Series hood is polyethylene-coated Tychem® QC and is liquid repellent. However, the material is not flame resistant and must not be used around heat, flames or sparks, or in explosive atmospheres. Consult a qualified industrial hygienist and the Permeation Guide for DuPont Fabrics to ensure that contaminant and/or liquid permeation through the uncoated seams does not occur, and for advice on the use of Tychem® QC in your work environment. **Failure to do so may lead to serious bodily injury or death.**

The user must read and follow all *User Instructions* supplied with the PAPR motor blower or supplied air equipment. Incorrect operation of the PAPR motor blower or supplied air system could result in reduced airflow, interruption of airflow to the headpiece or contamination of breathing air and **may result in sickness or death.**

Your employer must provide compressed breathing air that meets at least the requirements of the specification for Grade D breathing air, as described in the Compressed Gas Association Commodity Specification G-7.1-1997 in the United States. In Canada, refer to CSA standard Z180.1, table for quality of compressed breathing air. **Failure to do so may result in sickness or death.**

You must comply with OSHA standard 29 CFR 1910.134, which states that, “Airline couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of airline respirators with nonrespirable gases or oxygen.” In Canada, refer to the requirements of CSA standard CSA Z180.1. **Failure to do so may result in sickness or death.**

Always don the respirator in an area where the air is clean. Failure to properly don this respirator before entering a hazardous atmosphere **may result in sickness or death.**

Always tuck the inner shroud into your work clothes. **Failure to do so may reduce respirator effectiveness and may result in sickness or death.**

Before you enter a hazardous atmosphere wearing this respirator system, you must inspect the respirator, complete a user performance check, and don the respirator according to the instructions in these *User Instructions* and the *User Instructions* provided with the components of the system you are using. **Failure to do so may affect respirator performance and result in sickness or death.**

Do not remove the respirator while you are in a hazardous atmosphere. Do not reach your hand into the facepiece in areas where the air is contaminated. Leave the contaminated area and clean contaminants from your hands before reaching inside the hood. **Failure to do so may result in sickness or death.**

If excessive wear and/or damage to the respirator or its components is observed at any time, do not use the respirator until all necessary repairs have been made and the wearer has successfully completed the User Performance Check described in the “Operating Instructions” section of these *User Instructions*. **Failure to do so may result in sickness or death.**

Handling, transportation and disposal of spent canisters or hoods must comply with all applicable federal, state, and local laws and regulations. If contaminated with liquid chemical warfare agents, dispose of the

respirator after decontamination in accordance with all applicable regulations. **Failure to properly dispose of spent canisters or hoods contaminated by hazardous materials may result in environmental harm, sickness or death.**

Do not clean hoods with detergents that contain lanolin or other oils since they may soften or distort the faceshield.

Do not wipe the faceshield with strong solvents such as MEK, acetone, or toluene as those may damage or distort the faceshield.

Do not soak hoods or components in cleaning solutions or solvents.

**Misuse may adversely affect respirator performance and result in sickness or death.**

If you discover any of the wear and damage described below, discard the component and replace it with a new one. **Failure to do so may adversely affect respirator performance and result in sickness or death.**

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**CAUTION:**

This product contains natural rubber latex, which may cause allergic reactions in some individuals.

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## USE INSTRUCTIONS AND LIMITATIONS

### Important

Before use, the wearer must read and understand these *User Instructions*. Keep these *User Instructions* for reference.

### Use For

Respiratory protection against certain airborne contaminants including particulates (dusts, fumes, mists, radionuclides and asbestos); organic vapors; acid gases; and other inorganic gases

### Do Not Use For

Atmospheres where oxygen concentration is below 19.5%. Concentrations of contaminants that are unknown; immediately dangerous to life or health (IDLH); exceeds applicable maximum use limitations under local standards or OSHA standards, whichever is lower. Refer to the *User Instruction* provided with the approved air control devices for the listing of the appropriate Cautions and Limitations.

### Respirator Selection and Training

Use of these respirators must be in accordance with applicable health and safety standards, respirator selection tables contained in such publications as American National Standards Institute (ANSI) Z88.2-1992, Canadian Standards Association (CSA) Standard Z94.4 or pursuant to the recommendations of an industrial hygienist.

Before occupational use of these respirators, a written respiratory protection program must be implemented meeting all the requirements of OSHA 29 CFR 1910.134 such as training, fit testing, medical evaluation, and applicable OSHA substance specific standards. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate.

Before use, the employer must assure that each respirator user has been trained by a qualified person in the proper use and maintenance of the respirator according to the instructions contained in these *User Instructions* and other applicable *User Instructions*.



Each person using this respirator must read and understand the information in these *User Instructions* before use. Use of these respirators by untrained or unqualified persons, or use that is not in accordance with these *User Instructions*, **may adversely affect respirator performance and result in sickness or death.**

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### NIOSH Approval

For a listing of the components of NIOSH approved 3M™ Respirator System using 3M™ BE-Series Hoods, refer to the NIOSH approval label, which accompanies the 3M™ PAPR Blower Unit or Air Control Device.

### NIOSH Cautions and Limitations

This hood is one component of a NIOSH approved system. Refer to the *User Instruction* provided with the approved air control devices for the listing of the appropriate Cautions and Limitations.

### Eye and Face Protection

## WARNING

These hoods do not provide eye and face protection. When exposed to eye and face hazards, the respirator wearer must wear eye and/or face protectors appropriate to the hazard. **Failure to do so may result in serious bodily injury or death.**

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### Assigned Protection Factors

3M supports an assigned protection factor (APF) of 1,000 for this hood, which is consistent with the OSHA APFs defined in 29 CFR 1910.134. According to OSHA, “The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. 3M Technical Data Bulletin #175 describes the test procedures and data supporting an APF of 1,000 for 3M hoods and helmets. Technical Data Bulletins are available on the 3M web site, [www.3M.com/occsafety](http://www.3M.com/occsafety). In Canada, follow CSA Z94.4 or the requirements of the authority having jurisdiction in your region.

### SPECIFICATIONS

Weight –	Tychem® QC hood: Approx. 0.4 lb (181 g) Butyl rubber hood: Approx. 1.6 lb (726 g) Breathing tube assembly: Approx. 0.5 lb (227 g)
Airflow range –	6 to 15 cfm (170 to 425 lpm)
Temperature Range –	0 to 120 degrees F (-18 to 48 degrees C)
Breathing tubes –	Length: 26 in or 36 in (66 cm or 91 cm)
Faceshield dimensions –	Area 80 in <sup>2</sup> (516 cm <sup>2</sup> )
Faceshield material –	Tychem® QC Hoods: clear acetate Butyl Rubber Hood: PVC
Head protection –	None
Noise level –	Less than 80 dBA (Excluding external noise)
Hood fabric –	Tychem® QC: Tychem® fabric with 1.25 mil polyethylene coating Butyl rubber: Meets Military Standard MIL-C-51251A
Heat and flame resistance –	Both the Tychem® QC and butyl rubber hoods are not flame resistant and must not be used around heat, flames, sparks or in potentially explosive atmospheres.

## COMPONENTS AND REPLACEMENT PARTS



Do not use with parts or accessories other than those manufactured by 3M as described in these *User Instructions* or on the NIOSH approval label for this respirator. Do not attempt to repair or modify any component of the system except as described in these *User Instructions*. **Failure to do so may adversely affect respirator performance and result in sickness or death.**

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### 3M™ Hoods BE-10 Series

<b>Product Name/Description</b>	<b>Product Number</b>
Hood, White, Regular, Tychem® QC (3/pack)	BE-10-3
Hood, White, Regular, Tychem® QC (20/pack)	BE-10-20
Hood, White, Large, Tychem® QC (3/pack)	BE-10L-3
Hood, Butyl Rubber	BE-10BR
Protective Overlay (for faceshield)	529-02-37R10

## OPERATING INSTRUCTIONS

### WARNING

Use of this respirator in atmospheres for which it was not NIOSH certified or designed **may result in sickness or death**. Do not wear this respirator to enter areas where:

- Atmospheres are oxygen deficient
- Contaminant concentrations are unknown
- Contaminant concentrations are Immediately Dangerous to Life or Health (IDLH)
- Contaminant concentrations exceed 1000 times the applicable exposure limit (the assigned protection factor for this respirator system) or the APF mandated by specific government standards, whichever is lower

Contaminants that are dangerous to your health include those that you may not be able to see or smell. Leave the contaminated area immediately if any of the following conditions occur. **Failure to do so may result in sickness or death.**

- Any part of the system becomes damaged
- Airflow into the respirator decreases or stops
- Breathing becomes difficult
- You feel dizzy or your vision is impaired
- You taste or smell contaminants
- Your face, eyes, nose or mouth become(s) irritated
- You suspect that the concentration of contaminants may have reached levels at which this respirator may no longer provide adequate protection

If this respirator system fails any of the requirements of the user inspection and performance check, do not use the respirator until all necessary repairs have been made and the respirator passes the performance check. **Failure to do so may adversely affect respirator performance and result in sickness or death.**

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If you have any doubts about the applicability of the equipment to your job situation, consult an industrial hygienist or call the technical service department of 3M OH&ESD at 1-800-243-4630. In Canada, call Technical Service at 1-800-267-4414.

### WARNING

The BE-10 Series hood in butyl rubber offers resistance to certain chemical warfare agents and a range of other chemicals and meets Military Standard MIL-C-51251A (for butyl).

The exterior surface of the BE-10 Series hood is polyethylene-coated Tychem<sup>®</sup> QC and is liquid repellent. However, the material is not flame resistant and must not be used around heat, flames or sparks, or in explosive atmospheres. Consult a qualified industrial hygienist and the Permeation Guide for DuPont Fabrics to ensure that contaminant and/or liquid permeation through the uncoated seams does not occur, and for advice on the use of Tychem<sup>®</sup> QC in your work environment. **Failure to do so may lead to serious bodily injury or death.**

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## Connecting the Breathing Tube to the Hood

Push the end of the breathing tube with the slotted hose connector into the rear of the hood until it snaps into place.

### **Inspect the Respirator Condition Thoroughly**

Each time the respirator is used, you must complete the inspection procedures recommended in the “Inspection, Cleaning and Storage” section. Inspect PAPR and supplied air components according to the *User Instructions* provided with the applicable components.

### **Donning the Respirator**

#### **⚠ WARNING**

Always don the respirator in an area where the air is clean. Failure to properly don this respirator before entering a hazardous atmosphere **may result in sickness or death.**

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The Tychem<sup>®</sup> QC hoods are supplied ready for use and are available in regular (for head sizes 6 1/2 to 7 3/8) and large (for head sizes 7 to 8). Since the sizing guidelines are general, the best fitting size of hood for you may depend on your facial size and shape. Select the size that fits most comfortably and matches your head size. The butyl rubber hood is supplied in one size and fits most users.

Remove the protective covering from the faceshield. To achieve the best fit, the hood should be worn with the headband around your forehead and the straps in the top of the hood in contact with the top of your head. The elasticized edge of the faceseal should pull the hood material up in contact with your face under the chin and along the cheeks.

This hood is to be used with other protective clothing to allow the inner shroud to be tucked inside the protective clothing. Tuck the inner shroud under your protective clothing and allow the outer shroud to hang outside your clothing. It is important to ensure the breathing tube is not twisted after the complete system has been donned (Fig. 2).

#### **⚠ WARNING**

Always tuck the inner shroud into your work clothes. **Failure to do so may reduce respirator effectiveness and may result in sickness or death.**

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**Fig. 2** Breathing Tube Connection

## Installation and Operation of RBE-CMH

### Battery Installation

The RBE-CMH is powered by two AA alkaline batteries. To install the RBE-CMH batteries, open the battery door by manually unscrewing the thumbscrew at the base of the amplifier. Noting the battery polarity shown on the top of the battery door, install the two batteries. Close the battery cover and tighten the thumbscrew (Fig. 3).

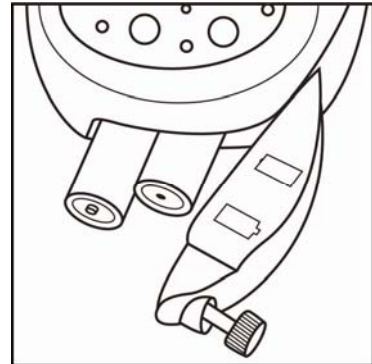


Fig. 3: Installation of batteries.

### ! WARNING

To prevent ignition of a flammable or combustible atmosphere, batteries for the RBE-CMH must be changed in an area known to be non-hazardous. **Failure to do so may lead to serious bodily injury or death.**

### Amplifier Operation

The RBE-CMH has a three position rotary switch; off, low volume and high volume. Turn the rotary switch clockwise to activate the unit (Fig. 4). Once the unit is on, the red LED will be illuminated. To turn off the amplifier, turn the rotary switch counter clockwise until it stops. The red LED will be off.

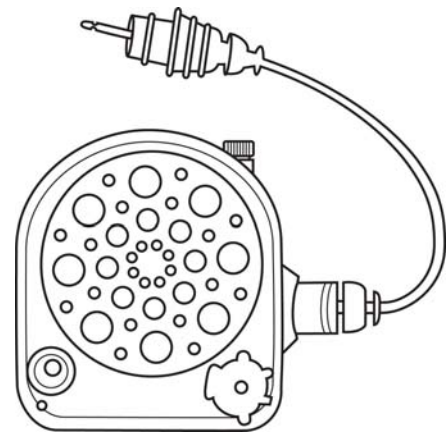


Fig. 4: Amplifier

## ⚠ WARNING

There are no user serviceable parts in the RBE-CMH. Substitution of components may impair intrinsic safety, and **may result in serious bodily injury or death.**

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### Operating Instructions

1. Securely fasten the throat mic around your neck (Fig. 5). Proper placement of the microphone on your neck increases its effectiveness. Adjust the microphone slightly until the best performance is achieved. Amp output is directly affected by both mic location on the throat and the speaking volume of the user.



Fig. 5: Placement of microphone on user's neck.

2. Route the cable underneath the inner shroud of the hood (Fig. 6). Route the wire up over the inner shroud and around the neck, and continue routing the wire behind you following the hose.



Fig. 6: Routing cable beneath inner shroud.

3. Attach the amplifier to the lower portion of your body using the belt clip (Fig. 7). Attach the throat mic cable to the amplifier connector (Fig. 8). Turn amplifier on and speak normally (Fig. 9).



Fig. 7: Attachment of amplifier to the user's body.

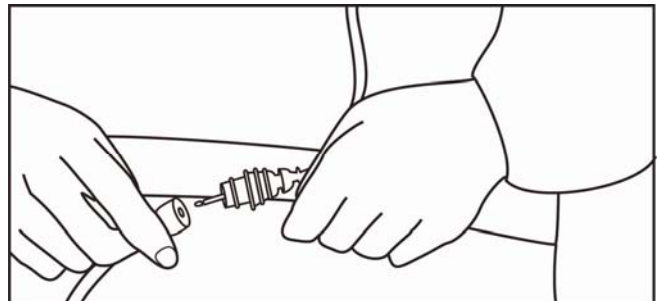


Fig. 8: Attaching mic cable to amplifier connector.



Fig. 9: Turning amplifier on.

## User Performance Check

1. Prior to connecting the breathing tube to the hood, complete the performance check and verify that the airflow is adequate according to the *User Instructions* provided with the 3M belt-mounted powered air purifying respirator or supplied air valve.
2. Observe the condition of the breathing tube in the air inlet at the back of the hood. Verify that the air inlet is not twisted or obstructed in any way.
3. Place your hand inside the hood, in the area above the faceshield. You should feel the air entering the hood.

## Enter the Contaminated Area

### WARNING

Before you enter a hazardous atmosphere wearing this respirator, you must inspect the respirator, complete a user performance check, and don the respirator according to the instructions in these *User Instructions* and the *User Instructions* provided with the components of the system you are using. **Failure to do so may affect respirator performance and result in sickness or death.**

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With the respirator in operation, enter the contaminated area, breathing normally. Keep the air supply hose or PAPR assembly away from equipment, vehicles and other physical and chemical hazards.

### WARNING

Do not remove the respirator while you are in a hazardous atmosphere. Do not reach your hand into the facepiece in areas where the air is contaminated. Leave the contaminated area and clean contaminants from your hands before reaching inside the hood. **Failure to do so may result in sickness or death.**

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## Remove the Respirator in a Clean Area

Before removing the respirator, you must leave the contaminated area and be completely decontaminated by following applicable decontamination protocols. Clean your hands of any contaminants before reaching inside the hood for any reason. Refer to the “Inspection, Cleaning and Storage” section of these *User Instructions* for cleaning, inspection and storage information.

## INSPECTION, CLEANING AND STORAGE

After each use, inspect the hood assembly to identify signs of damage or wear that may affect performance of the respirator and reduce the degree of protection provided. For a list of replacement parts, refer to the “Components and Replacement Parts” section. The “Troubleshooting” section contains a troubleshooting guide to help you identify the proper action to take for specific problems that may be detected.

### WARNING

If excessive wear and/or damage to the respirator or its components is observed at any time, do not use the respirator until all necessary repairs have been made and the wearer has successfully completed the User Performance Check described in the “Operating Instructions” section of these *User Instructions*. **Failure to do so may result in sickness or death.**

Handling, transportation and disposal of spent canisters or hoods must comply with all applicable federal, state, and local laws and regulations. If contaminated with liquid chemical warfare agents, dispose of the respirator after decontamination in accordance with all applicable regulations. **Failure to properly dispose of spent canisters or hoods contaminated by hazardous materials may result in environmental harm, sickness or death.**

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## Cleaning

Follow the hygiene practices established by your employer for the specific contaminants to which you have been exposed. To remove paint or other coatings from the faceshield, you may wipe the faceshield with mineral spirits.

### WARNING

Do not clean hoods with detergents that contain lanolin or other oils since they may soften or distort the faceshield.

Do not wipe the faceshield with strong solvents such as MEK, acetone, or toluene as those may damage or distort the faceshield.

Do not soak hoods or components in cleaning solutions or solvents.

**Misuse may adversely affect respirator performance and result in sickness or death.**

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## Inspection

Visually examine the condition of the hood shell, head suspension, faceshield and breathing tube after each use.

## WARNING

If you discover any of the wear and damage described below, discard the component and replace it with a new one. **Failure to do so may adversely affect respirator performance and result in sickness or death.**

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### Hood

Check that there are no dents or cracks in the hood assembly. Look closely at the stitching. There should be no tears that could permit contaminated air to enter the hood.

### Faceshield

Look for scratches or other visual distortions that make it difficult to see through the faceshield.

### Breathing Tube

Carefully examine the entire breathing tube. Look for tears, holes or cracks. Bend the tube to verify that it is flexible.

### Valve

On the butyl rubber hood, inspect the valve assembly to insure all parts are present. There should be a valve cover and valve flap present in the valve holder. Verify the valve holder is tight in the visor by turning the retaining ring on the back of the valve assembly. There are no user replaceable parts in this assembly.

## Storage

Before storing the respirator, be sure that the respirator has been decontaminated per applicable decontamination protocols. If necessary, dispose of the equipment per applicable waste regulations. Store your hood at room temperature in a dry area that is protected from exposure to hazardous contaminants. Store canister unopened in original foil pouch. Do not remove the canister cap and plug prior to use as this may decrease service life of the canister.

## TROUBLESHOOTING

Use the table below to help identify possible causes and corrective action for problems you may experience.

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Poor visibility through face shield	<p>Faceshield cover is scratched or coated with debris</p> <p>Face shield is scratched or coated with debris</p>	<p>Remove cover and replace</p> <p>Wipe off debris</p> <p>Dispose of hood and replace it with a new hood</p> <p>Consider using faceshield covers</p> <p>Wipe off debris</p>
Breathing tube pulls hood out of comfortable position	<p>Breathing tube too long</p> <p>Breathing tube too short</p>	Select Appropriate length breathing tube (26 inch and 33 inch lengths are available)
Hood noisy	Twisted breathing tube inlet	Assure that the breathing tube is securely fastened to the hood and is not twisting the inlet opening.
Low airflow	<p>Breathing tube disconnected at hood or at control device</p> <p>See <i>User Instructions</i> for 3M belt-mounted PAPR or SA valves for further guidance.</p>	Reattach tube

## FOR MORE INFORMATION

**In United States**, contact:

Internet: [www.3M.com/occsafety](http://www.3M.com/occsafety)

Technical Assistance: 1-800-243-4630

**For other 3M products:**

1-800-3M-HELPS or 1-651-737-6501

**3M Occupational Health and Environmental Safety Division**

3M Center, Building 0235-02-W-70

St. Paul, MN 55144-1000

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