

User Instructions

PremAire Cadet Escape

Open-Circuit, Pressure-Demand, Escape, Self-Contained Breathing Apparatus or Combination, Open-Circuit, Pressure-Demand, Escape, Self-Contained Breathing Apparatus and Type C, Supplied-Air Respirator



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⚠ WARNING!

These instructions must be provided to users before use of the product and retained for ready reference by the user. Read this manual carefully before using or maintaining the device. The device will perform as designed only if it is used and maintained in accordance with the manufacturer's instructions. Otherwise, it could fail to perform as designed, and persons who rely on this device could sustain serious injury or death.

The warranties made by MSA with respect to the product are voided if the product is not installed and used in accordance with the instructions in this manual. Please protect yourself and your employees by following the instructions.

Please read and observe the WARNINGS and CAUTIONS inside. For additional information relative to use or repair, call 1-800-MSA-2222 during regular working hours.

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1 Introduction

1.1 Important Notice for Respiratory Users and Respirator Protection Program Administrators

WARNING!

- Before occupational use of this respirator, a written respirator protection program must be implemented meeting all the local government requirements. In the United States, employers must comply with OSHA 29 CFR 1910.134 which includes medical evaluation, training, and fit testing. Be sure that no other equipment interferes with the respirator facial seal, the user's ability to operate the respirator, or other necessary means of mobility.
- An adequate respirator protection program must include knowledge of hazards, hazard assessment, selection of proper respiratory protective equipment, instruction and training in the use of equipment, inspection and maintenance of equipment, and medical surveillance. [See OSHA regulations, Title 29 CFR 1910.134].
- The program administrator and respirator users must read and understand these instructions before trying to use or service this product.
- This respirator may be used only after proper instruction and training in its use as specified in OSHA regulations Title 29 CFR 1910.134

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

1.2 Cautions and Limitations

D - Air-line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher quality.

E - Use only the pressure ranges and hose lengths specified in the User's Instructions.

I - Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

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

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 as specified by the manufacturer.

O - Refer to Users Instructions, and/or maintenance manuals for information on use and maintenance of these respirators.

S - Special or critical Users Instructions and/or specific use limitations apply. Refer to user instructions before donning.

1.3 S - Special or Critical User Instructions

Approved for use at ambient temperatures at or above -25°F.

Approved only when the respirator is supplied with respirable air through an air supply hose with a minimum length of 8 feet and a maximum length of 300 feet within a pressure range of 70-90 psig. A maximum of 12 sections of straight or uncoiled air supply hose may be used in making up the working length of hose. When using coiled hose, a maximum of six sections may be used and each section is considered to be 50 feet long. Hose sections vary from 8 feet to 100 feet lengths. The air-line connection to the apparatus is to be made through approved quick-disconnects only. The purity of the air supply is the responsibility of the user. The respirator is approved only when the air supplied meets the requirements of the Compressed Gas Association Specification G-7.1 for quality verification level (Grade) D air or equivalent specifications.

Approved only when the compressed-air container is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for quality verification level (Grade) D air or equivalent specifications. The cylinder shall meet applicable DOT specifications.

Use with adequate skin protection when worn in gases and vapors that poison by skin absorption (for example: hydrocyanic-acid gas).

2 Description

In making renewals or repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

NIOSH Approval Information is included as a supplement to these instructions (P/N 10074329) for PremAire Cadet Escape and (P/N 10107219) for PremAire Cadet Escape Responder.

2 Description

2.1 Operating Principles

The PremAire Cadet Escape Respirator is a combination supplied-air respirator with self-contained breathing apparatus (SCBA) for escape.

The PremAire Cadet Escape Respirator utilizes a pressure-demand regulator mounted at the facepiece. This mask mounted regulator (MMR) maintains a slight positive pressure within the facepiece while regulating and reducing the air supply to a breathable pressure. This is accomplished by using a diaphragm that senses the breathing demands of the user in a controlled feedback state. The positive pressure of air inside the facepiece, whether the wearer is inhaling or exhaling, is to prevent contaminants from entering the facepiece, should there be slight face-to-facepiece seal leakage.

The respirator is suitable for use with a large, compressed air cylinder of breathable air or a bank of cylinders set up in cascade fashion. Alternatively, the PremAire Cadet Escape Respirator can be used with a compressor system designed and configured to supply respirable breathing air to the respirator, within the NIOSH approved pressure range.

In normal use, the PremAire Cadet Escape Respirator is connected to an air supply of a type and duration selected by the user and will provide respiratory protection as long as the user remains connected to the air supply. The respirator allows the wearer to work within the limits of the approved air-supply hose. The escape cylinder is not to be used for entry. The escape cylinder should not be used to switch from one airline to another. However, should the primary air supply fail or be interrupted, the emergency escape cylinder enables the wearer to egress from the potentially IDLH atmosphere.

2.2 Cylinder and Valve Assembly

The cylinder and valve assembly consists of a cylinder and a combination cylinder valve and first stage regulator valve. The cylinders are available in 5, 10, and 15 minute rated service time durations. The cylinders are available in aluminum or carbon fiber material options.

The valve assembly includes a handwheel to open and close the cylinder air supply, a recessed/protected pressure gauge to measure cylinder contents, a cylinder fill port with check valve to pressurize the cylinder, a high pressure relief device to protect the cylinder from overpressurization, an intermediate pressure relief valve to protect the second stage regulator from over-pressurization, and a first stage regulator valve to reduce cylinder pressure to a suitable intermediate pressure. The first stage regulator valve incorporates a downstream design and dual springs to provide maximum reliability.

2.3 Attachment Hose

The attachment hose is used to connect the air supply hoses to the cylinder and valve assembly. The attachment hose includes a large sintered filter to remove particulate from the supplied air source. The attachment hose includes a check valve to prevent loss of air through the hose when the cylinder valve is open (SCBA mode). MSA approved quick-disconnects are fitted to the end of the attachment hose.

2.4 Second Stage Regulator

The second stage regulator is a pressure-demand regulator. The release button on top of the regulator stops airflow. To stop airflow, push the button in. To restart the regulator, inhale sharply. The regulator attaches to the facepiece with either push-to-connect or slide-to-connect connectors.

2.5 Facepiece

The facepiece is available in three types; the Ultra Elite® and Ultra Elite Responder® Facepieces and the Advantage® 4000 Facepiece.

The Ultra Elite and Advantage 4000 Facepieces are available in three sizes and with a rubber head harness or net head harness. The Ultra Elite Responder Facepiece is available in three sizes and with a net head harness.

The Ultra Elite Facepiece is available with either push-to-connect or slide-to-connect regulator inlet connection. The Ultra Elite Responder and Advantage 4000 Facepieces are available with a push-to-connect regulator inlet connections.

The Ultra Elite and Ultra Elite Responder Facepieces have a speaking diaphragm for clear, short-range communication.

The Ultra Elite and Advantage 4000 Facepieces include a low-resistance, pressure-demand exhalation valve designed for easy cleaning. An inhalation check valve in the inlet housing keeps moisture and contaminants out of the mask mounted regulator.

The Ultra Elite Responder Facepiece includes a dual-mode exhalation valve. When the facepiece is not connected to the FireHawk® M7 Responder regulator, the exhalation valve operates as a demand exhalation valve. When the facepiece is connected to a pressurized FireHawk M7 Responder regulator, the exhalation valve operates as a pressure-demand exhalation valve.

The facepiece lens is super-hardcoated to meet the requirements of NFPA 1981.

The facepiece has a low-resistance, pressure-demand exhalation valve. An inhalation check valve in the inlet housing keeps moisture and contaminants out of the Firehawk Responder Regulator.

2.6 Carrier and Harness Assembly

The carrier and harness assembly consists of a cylinder carrier, a waist belt, a shoulder strap, and attachment hose strain relief strap.

The carrier and harness assembly is available in nylon or Kevlar materials.

The cylinder carrier is available in standard and bag versions. The standard version includes metal clamps and fabric straps. The bag version includes a single bag with draw string. Cylinder carriers are removable from the harness using quick release hardware.

The waist belt is available in two sizes, standard and large. The waist belt includes a side-release buckle with single adjustment. The shoulder strap includes a large adjustment buckle.

A shoulder pad accessory is available.

The harness assembly includes a stand-by mount to stow the second stage regulator when the respirator is not in use.

3 Operation

Thoroughly inspect this respirator on receipt and before use. This respirator is to be used only by trained and qualified personnel. Read and understand these instructions before attempting to use this equipment.

3.1 Air Source

The purity of the air supply is the responsibility of the user. The respirator is approved only when the air supplied meets the requirements of the Compressed Gas Association Specification G-7.1 for quality verification level (Grade) D air or equivalent specifications.

3.2 Air Supply Hose

The PremAire Cadet Escape Respirator can be used with a wide range of MSA air supply hoses with a minimum length of 8 feet and a maximum length of 300 feet. The minimum air supply pressure is 70 psig and the maximum air supply pressure is 90 psig. A maximum of 12 sections of straight or uncoiled air supply hose may be used in making up the working length of hose.

When using coiled hose, a maximum of six sections may be used and each section is considered to be 50 feet long. Hose sections vary from 8 feet to 100 feet lengths. The air-line connection to the apparatus is to be made through approved quick-disconnects only.

⚠ WARNING!

MSA air supply hoses have temperature limitations. DO NOT use the PremAire Cadet Escape Respirator whenever ambient or inlet-air temperatures are outside of the limits specified below for each hose material.

Failure to follow this warning can result in serious personal injury or death.

HOSE MATERIAL	RECOMMENDED LIMITS
Polyvinyl Chloride	32°F to 120°F
Neoprene	-25°F to 212°F
Nylon (Coiled)	-20°F to 180°F

3.3 Inlet Pressure Gauge

To ensure accurate pressure readings, the inlet pressure gauge must be located at the air source.

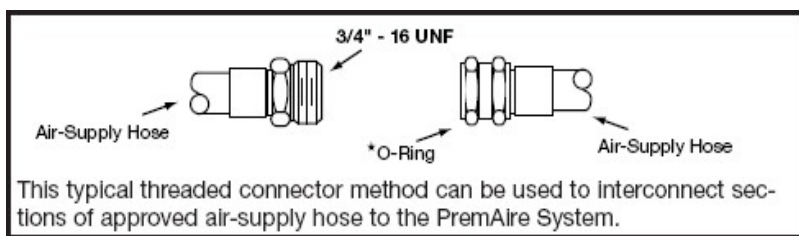
3.4 Supply Hose-to-Supply Hose Connections

Use MSA-approved couplings only for supply hose connections.

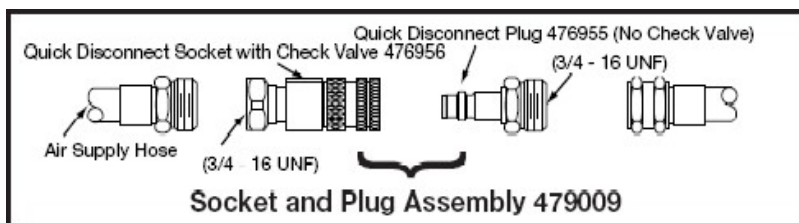
⚠ CAUTION!

Hoses must only be interconnected with either the threaded connector (3/4-16 UNF) or locking quick-disconnect couplings listed below. DO NOT use non-locking quick disconnects to interconnect air supply hoses.

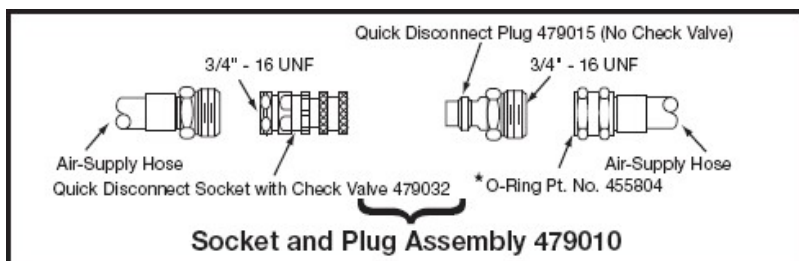
Failure to follow these cautions can result in minor or moderate injury.



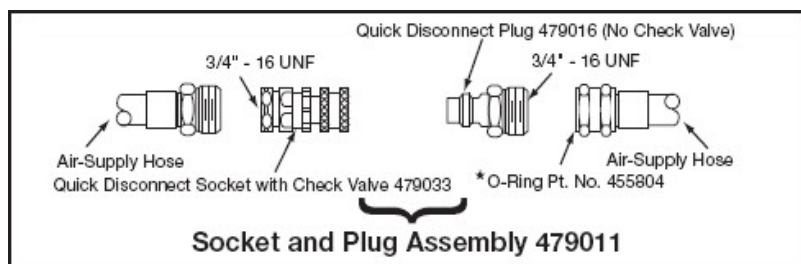
CEJN — Chrome



SNAP-TITE — Aluminum



SNAP-TITE — Stainless Steel

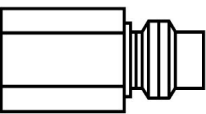
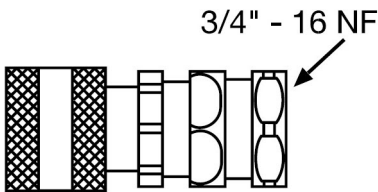
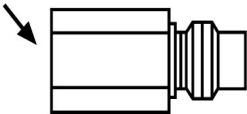
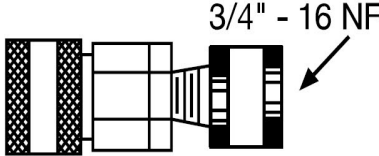
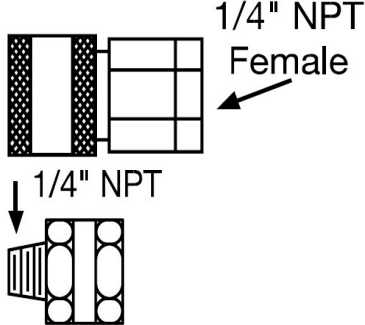


Locking quick-disconnects connect by pushing the plug and socket together. To separate, push the plug and socket together, then pull the socket sleeve away from the plug.

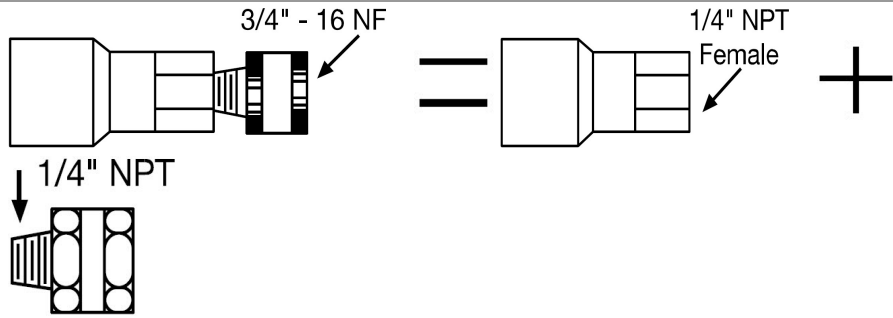
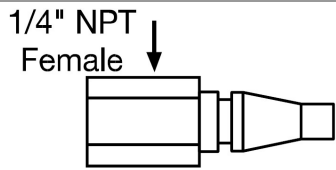
3.5 Supply Hose-to-Attachment Hose Connections

Attachment hose connections are to be made through approved MSA couplings only.

3.6 Quick Disconnects Table Chart

LOCKING TYPES			
SNAP-TITE — Aluminum (AL), Brass (BR), Stainless Steel (SST)			
<p>1/4" NPT Female</p>  <p>479027 Plug for (AL) Quick Disconnect Assembly 479029 Plug for (Brass) Quick Disconnect Assembly 479028 Plug for (SST) Quick Disconnect Assembly</p>	 <p>479032 (AL) Socket 479034 (Brass) Socket 479033 (SST) Socket</p>		
<p>CEJN 479026 Plug for (Chrome) Quick Disconnect Assembly</p>		<p>476956 (Nickel) Socket</p>	
NON-LOCKING TYPES			
SNAP-TITE — Aluminum (AL), Brass (BR), Stainless Steel (SST)			
<p>1/4" NPT - Female</p>  <p>66274 Plug for (AL) Quick Disconnect Assembly 630307 Plug for (Brass) Quick Disconnect Assembly 629672 Plug for (SST) Quick Disconnect Assembly</p>	 <p>455019 (AL) Socket Assembly 471777 (Brass) Socket Assembly 471778 (SST) Socket Assembly</p>	 <p>66272 (AL) Socket 630305 (Brass) Socket 629673 (SST) Socket</p>	<p>69541 Air Supply Hose Connector</p> <p style="font-size: 2em;">+</p>
FOSTER — Steel (S) Stainless Steel (SST)			

3 Operation



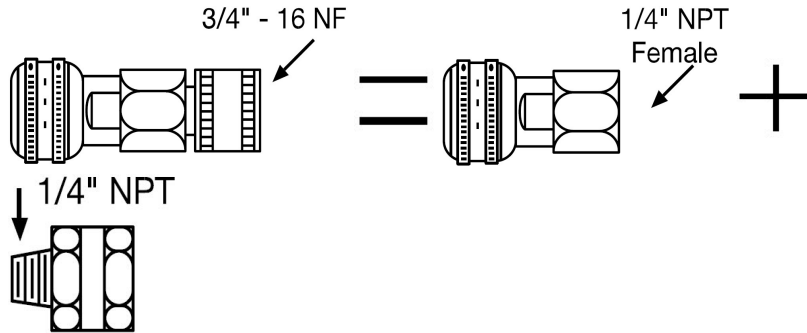
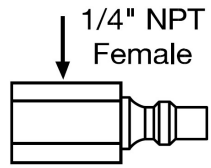
55716 Plug for (S) Quick Disconnect Assembly
636460 Plug for (SST) Quick Disconnect Assembly

467044 (S) Socket Assembly
801016 (SST) Socket Assembly

628770 (S) Socket
636459 (SST) Socket

808360 - SS Air Supply Hose Connector

HANSEN — Brass (BR)



630313 Plug for (BR) Quick Disconnect Assembly

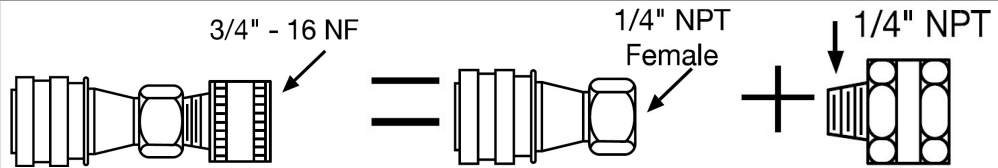
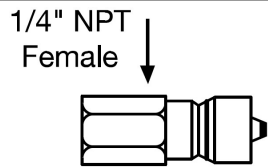
471501 (BR) Socket Assembly

630331 (BR) Socket

69541 Air Supply Hose Connector

NON-LOCKING TYPES — WITH CHECK VALVE IN PLUG

FOSTER — Brass (BR)



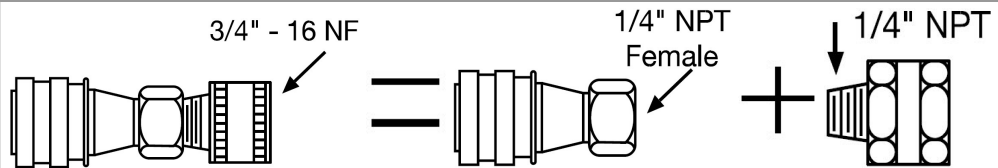
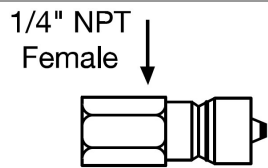
629981 Plug for (BR) Quick Disconnect Assembly

470194 (BR) Socket Assembly

629980 (BR) Socket

69541 Air Supply Hose Connector

HANSEN — Stainless Steel (SST)



628208 Plug for (SST) Quick Disconnect Assembly

471779 (SST) Socket Assembly

628768 (SST) Socket

808360 - SS Air Supply Hose Connector

4 Donning the Respirator

1. Remove the respirator from its storage location/case.
2. Check that the cylinder is fully pressurized.

⚠ WARNING!

- DO NOT enter any area that requires an escape time greater than the service life of the cylinder. Cylinder life varies with the work rate of the individual and may be shorter with heavy work loads.
- DO NOT use a partially full cylinder. If the cylinder is not full, escape service time is decreased.

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

3. Connect the air supply hoses to each other.
4. Connect the air supply hoses to the air source.

4.1 Donning the Carrier and Harness, Right Hip Version

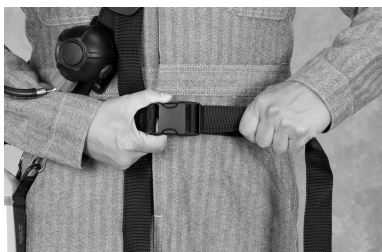
1. Hold the shoulder strap with the left hand. Slide shoulder strap over head so that the shoulder strap is positioned over the left shoulder and the cylinder is positioned on the right hip.



2. Adjust the shoulder strap by pulling the strap down.

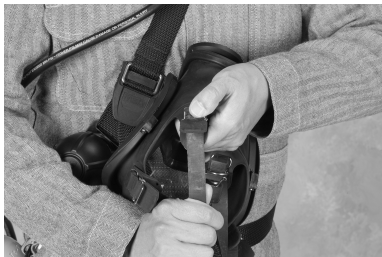
NOTE: The cylinder should be positioned at or just below waist level.

3. Connect the waist belt buckle
4. As necessary, slide the waist belt buckle toward the cylinder to properly position the belt.



5. Adjust the waist strap by pulling the strap to the left.
6. Tuck in loose ends of shoulder strap and waist belt.

4.2 Donning the Facepiece with Rubber Head Harness: Advantage 4000 or Ultra Elite



1. Loosen all harness straps fully.



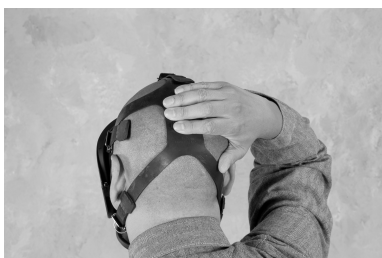
2. Insert chin into the lower part of the facepiece, then pull the harness back over the head.



3. Tighten the lower straps first by pulling them straight back, not out.



4. Tighten the temple straps in the same manner. Ensure that the facepiece tabs are not tucked under the facepiece seal.



5. Pull the harness toward the neck and adjust straps as necessary.



6. If present, tighten the top strap for best visibility and fit.

4.3 Donning the Facepiece with Net Head Harness: Advantage 4000 / Ultra Elite / Ultra Elite Responder



1. Loosen all harness straps fully. Grip the bottom straps.



2. Insert chin into the lower part of the facepiece, then pull the harness back over the head.



3. Pull the back of harness downward until centered at the back of the head.



4. Tighten the lower straps first by pulling them straight back, not out. Tighten the facepiece until the mask is snug against the face.

5. Tighten the temple straps in the same manner. Ensure that the facepiece tabs are not tucked under the facepiece seal.
6. Make sure the back of the harness is centered on the back of the head and faces seal is providing uniform pressure on the face at all points. Adjust straps as necessary.

4.4 Ultra Elite and Advantage 4000 Facepiece Fit Check

⚠ WARNING!

A facepiece fit check must be performed prior to each use. Check the inhalation valve by inhaling. If sufficient flow of air is not received, do not use facepiece. The facepiece must be repaired or replaced.

Failure to follow this warning can result in serious personal injury or death.



1. Check for facepiece fit by holding the palm of one hand over the inlet connection and inhaling. Hold breath at least 10 seconds. The facepiece should collapse and stay collapsed against the face.

NOTE: If it does not, adjust the facepiece and test again. If adjustment does not provide a proper seal, do not use the facepiece.



2. Test the exhalation valve, take a deep breath and hold it. Block the inlet connection with the palm of one hand and exhale. If the exhalation valve is stuck, a heavy rush of air may be felt around the facepiece.

NOTE: It may be necessary to exhale sharply to open the valve. If this does not release the valve, do not use the facepiece.

WARNING!

This device may not seal properly with your face if you have a beard, gross sideburns or similar physical characteristics (see NFPA-1500 and ANSI Z88.2). An improper face-to-facepiece seal may allow contaminants to leak into the facepiece, reducing or eliminating respiratory protection. Do not use this device if a proper face-to-facepiece seal can not be achieved. The face-to-facepiece seal must be tested before each use. Never remove the facepiece except in a safe, non-hazardous nontoxic atmosphere.

Failure to follow this warning can result in serious personal injury or death.

4.5 Ultra Elite Responder Facepiece Fit Check

WARNING!

A facepiece fit check must be performed prior to each use. Check the inhalation valve by inhaling. If sufficient flow of air is not received, do not use facepiece. The facepiece must be repaired or replaced.

Failure to follow this warning can result in serious personal injury or death.

1. Check facepiece fit.
 - a. Detach the FireHawk Responder regulator from the intermediate pressure line.
 - b. Connect the regulator to facepiece (See [4.8 Installing the Firehawk Push-to-Connect Regulator](#) for instruction on installing FireHawk Responder regulator).
 - c. Take a deep breath and hold it for at least 10 seconds. The facepiece should collapse and stay collapsed against the face. Remove the regulator after the test is performed. If it does not, readjust the facepiece and test again. **If this does not correct the leak, do not use the facepiece.**
2. Test the exhalation valve.
 - a. Take a deep breath and hold it.
 - b. Connect the regulator to the facepiece.
 - c. Exhale. If the exhalation valve is stuck, a heavy rush of air around the facepiece may be noticed. A sharp exhalation of air may be needed to open the valve. Remove the regulator after the test is performed. If this does not release the valve, do not use the facepiece.

WARNING!

This device may not seal properly to the face if a beard, gross sideburns or similar physical characteristics (see NFPA-1500 and ANSI Z88.2) exist. An improper facial seal may allow contaminants to leak into the facepiece, reducing or

eliminating respiratory protection. Do not use this device if such conditions exist. The face-to-facepiece seal must be tested before each use. Never remove the facepiece except in a safe, non hazardous non-toxic atmosphere.

Failure to follow this warning can result in serious personal injury or death.

3. Open the cylinder valve fully. Push in on the side buttons of the FireHawk Responder regulator to stop air flow.

4.6 Connecting the Air Supply Hose to the Attachment Hose

1. Verify that the cylinder valve knob is completely closed (clockwise).

⚠ WARNING!

- DO NOT open the cylinder valve knob unless in an emergency escape application. Doing so while connected to an air source could result in depleted cylinder pressure and decreased escape time.
- DO NOT enter any area which requires an escape greater than the service life of the cylinder. Cylinder life varies with the work rate of the individual and may be shorter with heavy work loads.

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



2. Push the Firehawk Regulator release button to shut off the regulator.

3. While pressing the release buttons, pull the regulator out of the stand-by mount.



4. Connect the air supply hose to the attachment hose.

5. Pull on the quick-disconnect plug and socket to verify that the hoses are securely attached.



6. Listen and inspect for air leakage from the Firehawk Regulator, cylinder and valve assembly, and hose connections.

⚠ WARNING!

DO NOT use the respirator if it exhibits leakage. Return the respirator to an MSA trained or certified repairperson to correct the condition.

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



7. Check for bypass operation. Grasp the red knob and turn it counter-clockwise. Listen for airflow. Turn the knob clockwise to close the bypass.

4.7 Installing the FireHawk Responder Regulator

1. Before installing the FireHawk Responder regulator, be sure the regulator is attached to the intermediate pressure line and the cylinder is turned on.
2. Grasp the FireHawk Responder regulator. Orient bypass knob with pneumatic plug to the right. Insert the regulator with pneumatic plug into the facepiece by pushing inward.
3. Ensure proper engagement by pulling on the regulator to verify that the regulator is securely attached to facepiece.

⚠ WARNING!

DO NOT use the air mask unless the regulator is connected properly. A regulator that is not installed correctly can separate from the facepiece unexpectedly. Return the air mask to an MSA trained or certified repairperson to correct the condition.

Failure to follow this warning can result in serious personal injury or death.

4. Inhale sharply to start the airflow.
5. Check the bypass again by turning the red knob counter-clockwise until increased airflow is felt. Close the bypass.

⚠ WARNING!

- There must be a continuous flow of air when the bypass knob is opened. If not, do not use the air mask. The air mask must be checked by an MSA trained or certified repairperson before it can be used.
- If the air mask passes all tests, it is ready for use. These tests must be performed every time before entering a hazardous atmosphere. If the air mask fails to meet any of the tests, the condition(s) must be corrected before using the air mask.

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

4.8 Installing the Firehawk Push-to-Connect Regulator



1. Grasp the regulator and orient the regulator so that the bypass knob is pointing to the right.



2. Insert the regulator into facepiece adapter by pushing inward.

3. Ensure the regulator locks into the facepiece.
4. Check proper engagement by pulling on the regulator to ensure regulator is securely attached to facepiece.

⚠ WARNING!

DO NOT use the respirator unless the regulator is connected properly. A regulator that is not installed correctly can separate from the facepiece unexpectedly. If this situation persists, return the respirator to an MSA trained or certified repair-person to correct the condition.

Failure to follow this warning can result in serious personal injury or death.

5. Inhale sharply to start the airflow.
 - a. Check the bypass again by turning the red knob counter-clockwise until increased airflow is felt. Close the bypass.

⚠ WARNING!

- The respirator must deliver air flow on demand. If it does not, do not use the respirator. The respirator must be checked and the condition correct by an MSA trained or certified repairperson before using it.
- If the respirator passes all tests, the unit is ready to use. These tests must be performed before entering the hazardous atmosphere every time. If the unit fails to meet any of the tests, the condition(s) must be corrected before using the apparatus.

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

4.9 Installing the Firehawk Slide-to-Connect Regulator



1. Grasp regulator and orient regulator so that the bypass knob is pointing to the right.



2. Slide the regulator onto the rail (fast track) of facepiece cover. Slide the regulator down the rail until regulator stops.



3. Insert regulator into facepiece adapter by pushing inward.

4. Ensure the regulator locks into the facepiece.
5. Check proper engagement by pulling on the regulator to ensure regulator is securely attached to facepiece.

⚠ WARNING!

DO NOT use the respirator unless the regulator is connected properly. A regulator that is not installed correctly can separate from the facepiece unexpectedly. If this situation persists, return the respirator to an MSA trained or certified repair-person to correct the condition.

Failure to follow this warning can result in serious personal injury or death.

6. Inhale sharply to start the airflow.
 - a. Check the bypass again by turning the red knob counter-clockwise until increased airflow is felt. Close the bypass.

⚠ WARNING!

- The respirator must deliver air flow on demand. If it does not, do not use the respirator. The respirator must be checked and the condition corrected by an MSA trained or certified repairperson before using it.
- If the respirator passes all tests, the unit is ready to use. Perform these tests before entering the hazardous atmosphere every time. If the unit fails to meet any of the tests, the condition(s) must be corrected before using the apparatus.

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

5 Standard Operation

1. Don the apparatus and check for proper operation as described in the [4 Donning the Respirator](#) section of this manual.
2. Breathe normally.

⚠ WARNING!

- DO NOT open the cylinder valve knob unless in an emergency escape application; doing so while connected to an air source could result in depleted cylinder pressure and a decreased escape time.
- DO NOT enter any area which requires an escape greater than the service life of the cylinder. Cylinder life varies with the work rate of the individual and may be shorter with heavy work loads.

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

⚠ CAUTION!

The emergency-escape air cylinder must not be used to provide respiratory protection while entering the working area. Entry must be made only when connected to the primary air source through the air supply hose.

Failure to follow this caution can result in minor or moderate injury.

6 Emergency Operation

If the air supply is interrupted:

1. Completely open the cylinder valve by turning it counter-clockwise.
2. Disconnect the attachment hose from the air supply.
3. Immediately return to fresh air.

⚠ WARNING!

If the bypass valve is used when breathing from the emergency-escape air cylinder, the respirator service time will be reduced.

Failure to follow this warning can result in serious personal injury or death.

7 Removing the Respirator

7.1 Disconnecting the FireHawk Push-to-Connect Regulator

1. Grasp top of regulator.



2. Push the release buttons and pull regulator down and out of facepiece adapter.



3. Disconnect the attachment hose from the air supply hose.

4. Open the bypass to vent system pressure. Close the bypass.

5. Stow the regulator in the stand-by belt mount.

7.2 Disconnecting the FireHawk Slide-to-Connect Regulator



1. Grasp top of regulator.



2. Push the release buttons and pull regulator down and out of facepiece adapter.

NOTE: Regulator can hang on cover rail in a standby mode.



3. Slide regulator up facepiece cover rail until regulator slide button is free of rail.



4. Disconnect the attachment hose from the air supply hose.

5. Open the bypass to vent system air pressure. Close the bypass.
6. Stow the regulator in the stand-by belt mount.

7.3 Removing the Facepiece



1. Fully loosen the facepiece head harness straps.



2. Pull the facepiece up and away from the face.

7 Removing the Respirator

7.4 Removing the Carrier and Harness



1. Disconnect the waist belt buckle by pressing in on both tabs.



2. Loosen the shoulder adjustment buckle by lifting the buckle tab up.

3. Slide the carrier and harness up and over the head.

NOTE: Complete the cleaning, disinfecting, and inspection procedures outlined in this manual. Ensure complete apparatus is clean and dry. Ensure that facepiece head harness straps and harness adjustment straps are fully extended. Place the complete apparatus in the storage case or suitable storage location so it can be reached easily for emergency use (see [7.7 Storage](#)).

7.5 Charging the Cylinders

WARNING!

1. Remove from service if cylinder shows evidence of exposure to high heat or flame: e.g., paint turned to a brown or black color, decals charred or missing, gauge lens melted, or elastomeric materials distorted.
2. Use this device only after receiving proper training in its use. Use in accordance with MSA apparatus instructions.
3. To maintain approval, container must be fully charged with respirable air meeting the requirements of the Compressed Gas Association specification G-7.1 for Quality Verification Level (Grade) D air or equivalent specification.
4. DO NOT use unless the cylinder is filled to the full pressure approved.
5. DO NOT alter, modify, or substitute any components without approval of the manufacturer.
6. Inspect frequently. Maintain according to manufacturer's instructions. Repair only by properly trained personnel.

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

7.6 Safety Precautions for MSA Self-Contained Breathing Apparatus Cylinders

WARNING!

Read and follow all safety precautions below.

Failure to follow this warning can result in serious personal injury or death.

Breathing apparatus cylinders should be fully recharged as soon as possible after use.

Cylinders should not be stored partially charged for two reasons:

1. If used partially charged, the duration of the apparatus is reduced.
2. The pressure relief device is only designed to protect a fully charged cylinder from the effects of a fire.

For maximum safety, the cylinders should be stored full or at a pressure above ambient but less than 100 psig.

Prior to recharging, cylinders must be examined externally for evidence of high heat exposure, corrosion, or other evidence of significant damage.

Additional information of value when performing external and internal inspections of cylinders may be found in the latest editions of CGA Publication C-6.1: "Standards for Visual Inspection of High Pressure Aluminum Compressed Gas Cylinder", and/or CGA Publication C-6.2: "Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders" available from the Compressed Gas Association, Inc., 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102.

If there is any doubt about the suitability of the cylinder for recharge, it should be returned to a certified hydrostatic test facility for expert examination and testing.

Always check to be sure the retest date is within the prescribed period and that the cylinder is properly labeled to indicate its gaseous service. New labels are restricted items which are not available except through certified hydrostatic test facilities.

When replacing cylinder valves or after the retesting of cylinders, make sure the proper cylinder valve, burst disc, and o-ring are installed prior to cylinder recharging. Establish the service pressure of the cylinder. All cylinders that are not 3AA type shall be filled to the designated service pressure only (as found on the DOT approval label or stamping). For cylinders manufactured under a U.S. DOT exemption (i.e., DOT-E-####), the exemption should be consulted and is available from the Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 400 7th Street, SW, Washington, D.C. 20590-0001.

NOTE: When refilling PremAire Cadet Escape Respirator cylinder and valve assembly, do not open the cylinder valve knob. The high pressure fill port is directly exposed to cylinder pressure. The fill port is independent of the cylinder valve knob position. The fill port includes a check valve that prevents cylinder air from escaping through the fill port when the filling attachment is removed.

Remove the dust cap from the cylinder and valve assembly fill port. Appropriately connect the filling system to the fill port and refill. Terminate the filling when the pressure reaches the service pressure and allow the cylinder to cool to room temperature. If necessary, top-off the cylinder such that the service pressure is attained with the cylinder at a temperature of 70°F. Appropriately disconnect the filling system from the fill port. Apply a leak detecting solution to the fill port check valve to determine if there is leakage. Replace the fill port dust cap. If there is no leakage, the cylinder and valve assembly is ready for service.

7.7 Storage

WARNING!

DO NOT store the respirator or spare cylinder and valve assemblies within or near an area where the respirator can or might be exposed to any substances that will attack any part of the respirator, causing the respirator NOT to perform as designed and approved.

Failure to follow this warning can result in serious personal injury or death.

8 Cold Weather Operation

8.1 Suggested Procedures for Cold Weather Operation

Moisture can cause problems in respirators if it freezes. However, moisture can cause freezing problems even if the surrounding air is above freezing. This is due to air flowing from the cylinder through the regulator drops from cylinder pressure to close to atmospheric pressure very quickly. As it does so it expands, causing the air and the regulator to become colder. Although the surrounding temperature may be warmer than 32°F, the temperature inside the regulator may be lower. Any water inside could turn to ice and restrict airflow.

1. To keep moisture from entering the Firehawk Regulator. Stow the regulator in the stand-by mount.
2. When the respirator is away from heat, water spray can freeze on the regulator surface. Ice can build up and freeze the buttons and bypass valve. Before entering or re-entering a hazardous atmosphere, make sure the buttons and bypass valve are ice-free and operating properly. Periodically, check the bypass to be sure it is ice-free.

9 Cleaning and Disinfecting

3. NIOSH certification requires a noseclip at temperatures below 32°F. The noseclip reduces lens fogging and must be used whenever freezing conditions are encountered.
4. During cleaning, be careful to keep water from entering the regulator.
5. Thoroughly dry the facepiece and mask mounted regulator after cleaning and disinfecting. Follow Confidence Plus® 2 Cleaning Solution Instructions.

9 Cleaning and Disinfecting

Depending on the cleaning policy adopted, either a designated person or the user should clean each device after each use. ANSI standards suggest that users should be trained in the cleaning procedure. Confidence Plus 2 Cleaning Solution (P/N 10009971) from MSA is recommended. It cleans and disinfects in one operation. It retains its germicidal efficiency in hard water to inhibit the growth of bacteria. It will not deteriorate rubber, plastic, glass, or metal parts. Refer to label for user instructions.

CAUTION!

- DO NOT use any cleaning substances that can or might attack any part of the apparatus.
- Alcohol should not be used as a germicide because it may deteriorate rubber parts.
- If not rinsed thoroughly, cleaning agent residue may irritate the wearer's skin.

Failure to follow these cautions can result in minor or moderate injury.

1. Preparing Solution
 - a. Follow the instructions with the Confidence Plus 2 Cleaning Solution.
 - b. If the Confidence Plus 2 Cleaning Solution is not used, wash in a mild cleaning solution, rinse thoroughly, and submerge in a germicide solution for the manufacturer's recommended time.
2. Clean and Disinfect the Facepiece
 - a. Remove the mask mounted regulator from the facepiece.
 - b. Thoroughly wash the facepiece (and noseclip) in the cleaning solution. A soft brush or sponge can be used to clean the soiled facepiece.
 - c. Rinse the facepiece and components in clean, warm (110°F), water (preferably running and drained).
 - d. Clean the pressure demand exhalation valve by pressing in on the stem with a blunt object and flushing with clean water.
 - e. Allow the facepiece to air dry. Do not dry the parts by placing them near a heater or in direct sunlight. The rubber will deteriorate.
 - f. Operate the exhalation valve by hand to be sure it works properly.

NOTE: Do not force-dry the parts by placing them in a heater or in direct sunlight. The rubber will deteriorate. When the facepiece is thoroughly dry, store the facepiece in the plastic bag that it was shipped in.
3. In general, only the facepiece requires cleaning and disinfecting after each use. If the apparatus is soiled use a sponge damp with mild soap solution or use a soft/medium bristle brush to remove deposits that may interfere with normal operation of:
 - a. Carrier and harness assembly
 - b. Cylinder and valve assembly
 - c. Firehawk Second Stage Regulator (Cover outlet of the regulator to prevent water, dirt or debris from entering)
4. Inspect the entire apparatus during assembly. Follow the inspection instructions.
5. Thoroughly dry the facepiece and regulator after cleaning and disinfecting. The facepiece can trap water that could enter the regulator.

10 Visual Inspection and Functional Checks

10.1 Inspection

Inspect the entire respirator after it is cleaned and disinfected. ANSI Standards Z88.2 and Z88.5, describe three levels of inspection procedures which are to be performed. Refer to these documents, or to an inspection program prepared by a health professional in establishing an inspection program. Detailed repair procedures are located in MSA User's Maintenance Instructions.

WARNING!

- If the respirator does not meet any of the following inspections or functional checks, it must be removed from service.
- DO NOT inspect the air mask before cleaning if there is danger of contacting hazardous contaminants. Clean and disinfect first, then inspect.
- DO NOT use any cleaning substances that can or might attack any part of the apparatus.

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

10.2 Component Inspection (After Each Use and Monthly)

1. Facepiece

- a. Inspect the facepiece for rubber deterioration, dirt, cracks, tears, holes, or tackiness.
- b. Check the head harness straps for breaks, loss of elasticity, missing buckles or straps. Check the straps for signs of wear.
- c. Inspect the lens for cracks, scratches, and a tight seal with the facepiece rubber.
- d. The exhalation valve must be clean and operate easily. The valve must move off the seat and return when released.
- e. Inspect the facepiece adapter for damage. Also check to be sure the inhalation check valve is present.

2. Cylinder and Valve Assembly

Breathing apparatus cylinders should be recharged as soon as possible after use. Cylinders should not be stored partially charged for two reasons:

- If used without recharge, the service life of the respirator is reduced.
 - The cylinder burst disc vents excess pressure if a full cylinder is over exposed to fire or heat. If the cylinder is not full, it may be damaged before the burst disc vents.
- a. If the cylinder is less than FULL, recharge it before storing it. Cylinder air must be at least CGA Quality Verification Level (Grade) D respirable air.
 - b. Inspect the cylinder valve for signs of damage.
 - c. Inspect the cylinder body for cracks, dents, weakened areas, corrosive agent, causing the fibers to break or peel, or signs of heat-related damage. If the cylinder is damaged return it to an MSA Service Center. Call 1-800-MSA-2222 for instructions.
 - d. Check the hydrostatic test date on the cylinder approval sticker located on the cylinder neck. Aluminum and carbon fiber cylinder must be tested every five years.
 - e. Be sure that the gauge needle and face are clearly visible through the lens.
 - f. Inspect the high pressure relief device. Verify that the relief holes are clear and free of debris or other contamination.
 - g. Inspect the intermediate pressure relief valve. Verify that the relief holes are clear and free of debris or other contamination.
 - h. Inspect the valve assembly seal ring to verify that it is present and properly seated. Inspect the seal ring for rubber deterioration, dirt, cracks, tears, holes, or tackiness.
 - i. Inspect the hose connections. Verify that the hoses are properly secured.
 - j. Inspect the fill port. Verify that the fill port dust cap is present and properly secured.

10 Visual Inspection and Functional Checks

It is also essential that the required inspections and tests be performed on all SCBA cylinders in accordance with Department of Transportation (DOT) regulations. DOT regulations require that composite cylinders be retired from service after the fifteenth year. Please note this does not include cylinder valve assembly which may be reused. Aluminum cylinder service life is indefinite if proper inspection and hydrotest procedures are followed and they indicate that the cylinder may remain in service. Contact an MSA distributor or sales associate for additional information regarding this policy.

NOTE: ANSI Z88.5 recommends checking cylinder pressure weekly. For maximum safety the cylinders should be stored full or empty (pressure above ambient but less than 100 psig).

3. Carrier and Harness

- a. Inspect all harness components for cuts, tears, abrasion or signs of heat or chemically-related damage.
- b. Inspect the cylinder carrier components for cuts, tears, abrasion or signs of heat or chemically-related damage. Verify that the carrier securely retains the cylinder.

4. Intermediate and Supply Hoses

- a. Inspect the airline hose for signs of cuts, tears, voids, abrasion, tackiness, brittleness, or signs of heat or chemically-related damage.
- b. Inspect the end fittings and ferrules for signs of cuts, voids, abrasion, cracks, splitting, oxidation, signs of heat, or chemically-related damage.

5. Record Keeping

Following inspection, the date and initials of the designated person should be recorded on an inspection tag. A more detailed record of the operations performed can be noted on an inspection and maintenance log. Inspection tags and inspection and maintenance logs are available from MSA. When the inspection data has been recorded, the breathing apparatus is stored in a ready position.

10.3 Functional Checks (After Each Use and Monthly)

1. Check that the regulator and facepiece can hold a negative pressure.

- a. Verify that the cylinder valve is closed.
- b. Hold the facepiece against the face to create an effective seal.
- c. Attach the regulator to the facepiece and inhale until the facepiece begins to collapse against the face. Hold breath for about 10 seconds. The negative pressure should be maintained and the facepiece should remain collapsed against the face for the entire 10 seconds.
- d. Do not use the apparatus if negative pressure cannot be maintained in the facepiece. Return the regulator and facepiece to a certified repairperson.

2. Check second stage regulator operation.

- a. Push the regulator release buttons.
- b. Verify that the regulator bypass knob is fully closed (clockwise).
- c. Slowly open the cylinder valve to pressurize the respirator. Verify that the cylinder valve is completely opened.
- d. Check the pressure gauge to verify that the cylinder is full. Regulator functional checks must be conducted with a full cylinder.
- e. Open the regulator bypass knob (counter-clockwise). Verify that air flows from the regulator. Close the bypass knob (clockwise).
- f. Attach the regulator to the facepiece. Verify proper regulator attachment by pulling on the regulator.
- g. Hold the facepiece against the face to create an effective seal.
- h. Inhale sharply to start air flow. Breathe normally. Verify proper regulator response. The regulator should not make any unusual sounds including: whistling, chattering, or popping.
- i. Remove the facepiece from the face. Verify that air flows freely. Push the regulator release buttons. Verify that air flow stops.
- j. If the regulator fails to meet any of the above checks, remove the apparatus from service. Return the regulator to a certified repairperson.

3. Check the attachment hose quick-disconnect plug.
 - a. Verify that no air flows through the plug when the cylinder valve knob is open.
4. After completing the functional checks, recharge the cylinder and valve assembly before storing it.

WARNING!

- If the air mask exhibits any of the conditions listed in [10.2 Component Inspection \(After Each Use and Monthly\)](#) or if the air mask does not function properly as described in [10.3 Functional Checks \(After Each Use and Monthly\)](#), the air mask must be removed from service.
- DO NOT inspect the air mask before cleaning if there is danger of contacting hazardous contaminants. Clean and disinfect first, then inspect. Misuse can cause inhalation or skin absorption.
- Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.
- All repair and replacement of subassemblies must be carried out by an MSA certified repair technician. Failure to follow this warning will void NFPA and NIOSH certification.

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

10.4 Inspection: Responder Facepiece and Regulator

Conduct the Following: Before Use, After Each Use, and Monthly

Thoroughly inspect this air mask upon receipt and before use. This air mask is to be used only by trained and qualified personnel. Read and understand these instructions before attempting to use this equipment.

Inspect the entire air mask after it is cleaned and disinfected. NFPA-1500, as well as ANSI Standards Z88.2 and Z88.5, describe three levels of inspection procedures which are to be performed. Refer to these documents, or to an inspection program prepared by a health professional in establishing an inspection program.

10.5 Component Inspection

1. Facepiece
 - a. Inspect the facepiece, drink tube (if applicable), and nose cup for rubber deterioration, dirt, cracks, tears, holes, or tackiness.
 - b. Inspect the head harness straps for tears, loss of elasticity, or missing buckles or straps.
 - c. Inspect the lens for cracks, scratches, and a tight seal with the facepiece rubber.
 - d. Ensure the exhalation valve is clean and operates easily. The valve must move off the seat and return when released.
 - e. Inspect the facepiece inlet for damage. Ensure the spider gasket and valve disc are present.
 - f. Inspect the lens receptacle and lens plug.
 - g. Ensure that the o-ring is in place and free of cracks, tears, dirt, and distortion.
 - Check the threads to ensure they are not rounded or nicked.
 - Inspect the lens plug for cracks or other signs of damage which could allow contaminants to enter the housing.
 - h. Inspect the pneumatic receptacle o-ring to be free of cracks, tears, dirt, and distortion.
 - i. Inspect the facepiece rubber behind the FireHawk M7 Responder HUD and/or ClearCommand[®] Communication System bracket (optional) for holes or tears.
2. FireHawk M7 Responder HUD
 - a. Inspect the FireHawk M7 Responder HUD for cracks or other signs of damage which could allow contaminants to enter the housing.
 - b. Ensure that moisture or debris is not present in the battery compartment.
 - c. Ensure the battery compartment o-ring on the battery cap is free of debris and not damaged or missing.
 - d. Reassemble the FireHawk M7 Responder HUD to the bracket on the Ultra Elite Responder Facepiece.

3. ClearCommand Communication System

- a. Remove the amplifier housing from the facepiece and inspect the housing for cracks or other signs of damage.
- b. Ensure that the battery compartment is free of moisture or debris.
- c. Reassemble the amplifier housing on the facepiece.
- d. Depress the on/off button on the unit and then release it.
- e. Look through the facepiece lens. The red LED should be illuminated at the top of the amplifier unit.
- f. Scrape a fingernail lightly across the voicemitter microphone grille of the voicemitter microphone assembly.
- g. Listen for this sound reproduced in the amplifier speaker.
- h. Depress and release the on/off button again to turn the unit OFF. The LED on the amplifier unit should be OFF.

4. FireHawk Responder Second Stage Regulator

- a. The FireHawk M7 Responder Air Mask is equipped with a quick-connect second stage intermediate pressure hose, inspect the rubber washer for deterioration, dirt, cracks, tears, or tackiness.
- b. Ensure that the FireHawk Responder regulator sealing ring is seated properly in its groove on the outlet of the regulator and that it is not torn, gouged, or nicked.
- c. Ensure that the FireHawk Responder regulator pneumatic plug is free of dirt and not damaged.

5. Intermediate and Supply Hoses

- a. Inspect the airline hose for signs of cuts, tears, voids, abrasion, tackiness, brittleness, or signs of heat or chemically-related damage.
- b. Inspect the end fittings and ferrules for signs of cuts, voids, abrasion, cracks, splitting, oxidation, signs of heat, or chemically-related damage.

6. Record Keeping

- a. Following inspection, the date and initials of the designated inspector should be recorded on an inspection tag. A more detailed record of the operations performed can be noted on an inspection and maintenance log, available from MSA. When the inspection data has been recorded, the air mask is ready for use.

10.6 Functional Tests

Conduct the following Before Use, After Each Use, and Monthly

1. Check that the FireHawk Responder regulator and facepiece can hold a negative pressure.
 - a. Close the cylinder valve and purge any air from the system using the bypass knob on the FireHawk Responder regulator.
 - b. Hold the facepiece against the face to create an effective seal.
 - c. Attach the FireHawk Responder regulator to the facepiece and inhale until the facepiece begins to collapse against the face. (See [4.7 Installing the FireHawk Responder Regulator](#) for instruction on installing FireHawk Responder regulator). Hold breath for approximately 10 seconds. Negative pressure should be maintained and the facepiece should remain collapsed against the face for the entire 10 seconds.
 - d. Do not use the air mask if negative pressure cannot be maintained in the facepiece. Return the FireHawk Responder regulator and facepiece to a certified repairperson.
2. Check FireHawk Responder regulator operation.

NOTE: FireHawk Responder regulator functional checks must be conducted with a full cylinder. Check the pressure gauge on the cylinder valve to verify that the cylinder is full.

- a. Push the release buttons on the side of the regulator.
- b. Ensure that the regulator bypass knob is fully closed (clockwise).
- c. Slowly open the cylinder valve to pressurize the air mask. Ensure that the cylinder valve is completely opened.
- d. Open the FireHawk Responder regulator bypass knob (counter-clockwise). Ensure that air flows from the regulator. Close the bypass knob (clockwise).
- e. Attach the regulator to the facepiece. Ensure proper regulator attachment by pulling on the regulator.

- f. Don the facepiece or hold the facepiece against the face to create an effective seal.
- g. Inhale sharply to start air flow. Breathe normally. Ensure proper regulator response. The regulator should not make any unusual sounds including whistling, chattering, or popping.
- h. Remove the facepiece from the face. Ensure that air flows freely. Push the regulator release buttons. Ensure that air flow stops.
- i. If the regulator fails to meet any of the above checks, remove the air mask from service. Return the regulator to a certified repairperson.

WARNING!

- If the air mask exhibits any of the conditions listed in [10.5 Component Inspection](#) or if the air mask does not function properly as described in [10.6 Functional Tests](#), the air mask must be removed from service.
- DO NOT inspect the air mask before cleaning if there is danger of contacting hazardous contaminants. Clean and disinfect first, then inspect. Misuse can cause inhalation or skin absorption.
- Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.
- All repair and replacement of subassemblies must be carried out by an MSA certified repair technician. Failure to follow this warning will void NFPA and NIOSH certifications.

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

11 Flow Test and Overhaul Requirements

The PremAire Cadet Escape Respirator must be flow tested and overhauled at the intervals determined by use.

These Maintenance Procedures must be performed by a trained repairperson or at a certified service center. Contact your MSA sales representative or call the MSA Customer Service Center at 1-877-MSA-3473. They will supply the information needed to meet these requirements.

Annual flow tests are stated as a requirement in NFPA 1852, Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA), which further emphasizes their importance. Although this standard relates to SCBA and PASS used in the fire service, MSA requires that a flow test be performed at least annually on all fire service and non-fire service SCBA and combination respirators that use a pressure demand regulator.

The replacement/overhaul schedule for MSA respirators is based on apparatus usage on an individual basis. The frequency required for air mask overhaul depends upon how often the apparatus is used. MSA respirators must be overhauled based on the actual level of usage of the respirator, rather than on time alone.

MSA respirators must be flow tested every year using an MSA approved flow test device. The table in [11.1 Required Overhaul and Flow Test Frequency](#) summarizes MSA's required frequency for overhaul and flow testing.

MSA recommends the routine inspection of all elastomeric materials including, but not limited to, those in [10 Visual Inspection and Functional Checks](#) sections of this manual.

11.1 Required Overhaul and Flow Test Frequency

Average Combination Supplied Air Respirator Use*	Second Stage Regulator and Cylinder and Valve Assembly Overhaul Frequency	Flow Test Frequency
Thirty (30) minutes or more of airline use or one (1) or more cylinder(s) per day.	every 3 years	every year
Thirty (30) minutes of every year airline use or one (1) cylinder every other day.	every 8 years	
Up to thirty (30) minutes of airline or one (1) cylinder per week.	every 15 years	

*The unit of combination supplied air respirator use is defined as thirty (30) minutes of airline use or the consumption (or partial consumption) of one escape cylinder. If combination supplied air respirator use cannot be determined, overhaul every three (3) years.

11.2 Retiring a Combination Supplied-Air Respirator

Base the decision to retire a combination supplied-air respirator on performance data. A decision to retire a combination supplied-air respirator should be based on respirator's performance data and whether that data meets the specified level of performance as defined in maintenance requirements from MSA.

12 Appendix

12.1 Converting the Carrier and Harness From Right Hip Mount to Left Hip Mount (Standard Carrier)

NOTE: The PremAire Cadet Escape Respirator is designed for use with the cylinder located on the right hip. The respirator will be most comfortable for most users in this configuration.

1. As necessary, disconnect the attachment hose from the air supply hose.
2. Disconnect the strain relief strap from the shoulder strap snap hook (strap with buckle).
3. Disconnect the cylinder carrier from the shoulder strap and pull strap (strap without buckle).



4. Loosen the hose clamps.



5. Rotate the straps 180°. The straps should be equally spaced on either side of the pressure gauge.

6. Tighten the hose clamps.



7. Unweave the waist belt strap from the male waist belt buckle.



8. Unweave the waist belt from the shoulder strap and pull strap.



9. Connect the pull strap to the cylinder carrier D-ring to the right of the pressure gauge (when looking at the gauge).



10. Connect the shoulder strap to the remaining cylinder carrier D-ring.

11. Weave the waist belt through the pull strap.



12. Weave the waist belt through the shoulder strap.

13. Weave the waist belt strap through the waist belt buckle.

14. Connect the strain relief strap to the shoulder strap snap hook.

12.2 Converting the Carrier and Harness From Right Hip Mount to Left Hip Mount (Bag Carrier)

NOTE: The PremAire Cadet Escape Respirator is designed for use with the cylinder located on the right hip. The respirator will be most comfortable for most users in this configuration.

1. As necessary, disconnect the attachment hose from the air supply hose.
2. Disconnect the strain relief strap from the shoulder strap snap hook (strap with buckle).
3. Disconnect the cylinder carrier from the shoulder strap and pull strap (strap without buckle).



4. Rotate the bag 180° so that the gauge face is opposite the bag logo.



5. Unweave the waist belt strap from the male waist belt buckle.



6. Unweave the waist belt from the shoulder strap and pull strap.



7. Connect the pull strap to the cylinder carrier D-ring to the right of the pressure gauge (when looking at the gauge).

8. Connect the shoulder strap to the remaining cylinder carrier D-ring.
9. Weave the waist belt through the pull strap.
10. Weave the waist belt through the shoulder strap.
11. Weave the waist belt strap through the waist belt buckle.

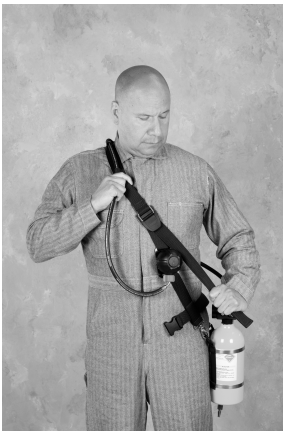


12. Connect the strain relief strap to the shoulder strap snap hook.

12.3 Donning the Carrier and Harness, Left Hip Version

NOTE: The PremAire Cadet Escape Respirator is designed for use with the cylinder located on the right hip. The respirator will be most comfortable for most users in this configuration. If a left hip mounted cylinder is desired, refer to [12.1 Converting the Carrier and Harness From Right Hip Mount to Left Hip Mount \(Standard Carrier\)](#) in this manual.

1. Hold the shoulder strap with the right hand. Slide shoulder strap over head so that the shoulder strap is positioned over the right shoulder and the cylinder is positioned on the left hip.



2. Adjust the shoulder strap by pulling the strap down. The cylinder should be positioned at or just below waist level.

3. Connect the waist belt buckle.
4. As necessary, slide the waist belt buckle toward the front cylinder to properly position the belt.



5. Adjust the waist strap by pulling the strap to the right.

6. Tuck in loose ends of shoulder strap and waist belt.