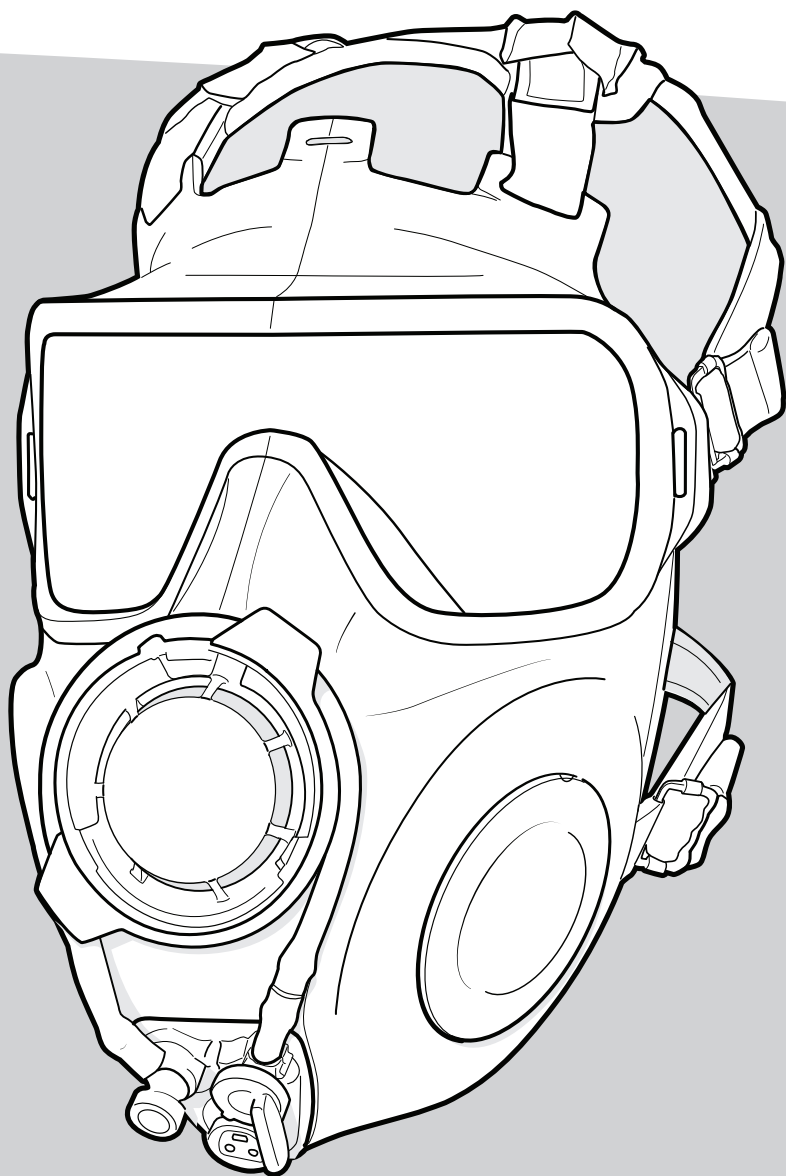




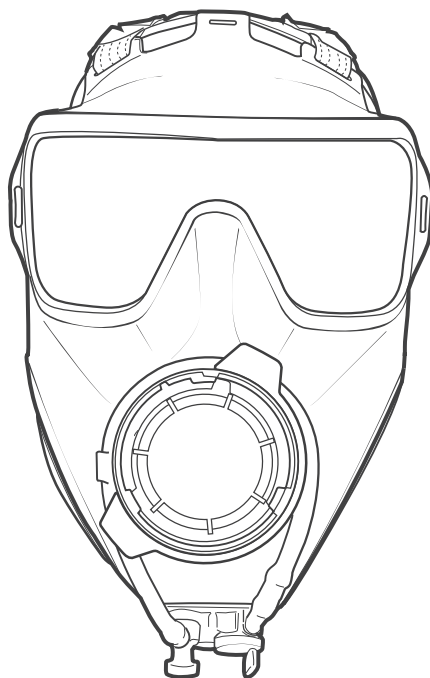
FM54[™]

USER INSTRUCTIONS

TABLE OF CONTENTS

1.0	Introduction	4
2.0	Level 1 Maintenance	5
3.0	Product Description	6
4.0	NIOSH Cautions and Limitations	7
5.0	General Warnings	9
6.0	Voice Projection Unit & Communications installation & Removal	10
7.0	Pre-Use Check Procedure	12
8.0	Donning Without Hood, Negative Pressure Test	13
9.0	Donning With Hood, Negative Pressure Test	15
10.0	Selecting the Correct Mode of Use	17
11.0	Doffing the Respirator (Removing)	18
12.0	Canister Installation and Removal	19
13.0	Storage and Transportation	20
14.0	Deployment Stowage	21
15.0	Using the Hydration System	23
16.0	Using Outserts	25
17.0	Cleaning Procedures	26
18.0	Operator Maintenance	27
19.0	Operator Troubleshooting Procedures	31
20.0	Spare Parts Overview	35

I.O INTRODUCTION



Congratulations on receiving the most advanced Air Purifying Respirator (APR) in the world. When it is used in accordance with these instructions, with the appropriate canister, the FM54 APR will provide the operator with the maximum level of protection, to the face, eyes and respiratory tract from Chemical, Biological, Radiological and Nuclear (CBRN), riot control agents and certain Toxic Industrial Chemicals (TICs).

See the NIOSH Approval Label for approved NIOSH configuration.

AVON
PROTECTION

2.0 LEVEL I MAINTENANCE

To maintain maximum performance and protection for the user, the FM54 APR must be properly maintained.

There are two levels of maintenance for the FM54 APR:

Level 1: No tools or speciality training required to perform maintenance operation as covered in the FM54 Air Purifying Respirator (APR) User Instructions.

The following Level 1 respirator maintenance should be performed by the operator:

- General inspection and cleaning
- Removal and replacement of the filter mount gasket
- Removal and replacement of the air deflector
- Removal and replacement of the inlet disk valve
- Removal and replacement of the outserts
- Removal and replacement of the canisters
- Removal and replacement of the internal drink tube
- Removal and replacement of the microphone assembly
- Removal and replacement of the voice projection unit, where used
- Removal and replacement of the hood assembly

The following service and maintenance requires speciality training and tools not described in this manual.

- Removal and installation of the noseclip
- Removal and replacement of the head harness
- Removal and replacement of the external drink tube and drink coupler assembly
- Removal and replacement of the vision correction system
- Removal and installation of the Secondary Speech Transmitter (SST) using the filter mount plug tool
- Removal, replacement and servicing of the Variable Resistance Exhalation Unit (VREU)

3.0 PRODUCT DESCRIPTION

The FM54 APR is available in four sizes with optional left or right filter mount, marked with letters as listed:

Extra Small	(XS)
Small	(S)
Medium	(M)
Large	(L)

The respirator incorporates interchangeable nose cups in 5 sizes to aid in proper sizing and comfort.

The major features of the respirator are:

- The butyl & silicone rubber blended face blank provides a high performance seal with increased comfort
- Optical quality eye lens
- Electronic Communications Port (ECP) for voice amplification and radio connection
- Interchangeable nose cups
- Variable Resistance Exhalation Unit (VREU)

The FM54 APR makes use of a Variable Resistance Exhalation Unit (VREU). This contains the Exhale Positive Pressure Module which allows the respirator the operational flexibility to be used in APR (Negative Pressure) or SCBA (Positive Pressure) modes .

**This manual refers to instruction for use of the FM54
in negative pressure APR mode only.**



WARNING

Special care must be taken to ensure that the Exhale Positive Pressure Module within the VREU is set to the correct position for the intended application. Incorrect setting will void the NIOSH approval.



WARNING

When using in extreme freezing conditions, don the respirator in a clean environment and switch between APR and SCBA modes to ensure the VREU is free of ice. Once complete, ensure APR mode is reselected.

4.0 NIOSH CAUTIONS AND LIMITATIONS

APR Cautions and Limitations for Use

- A- Not for use in atmospheres containing less than 19.5 percent oxygen.
- H- Follow established cartridge and canister change schedules or observe ESLI to ensure that cartridges and canisters are replaced before breakthrough occurs.
- I- Contains electrical parts that may cause an ignition in flammable or explosive atmospheres.
- J- Failure to properly use and maintain this product could result in injury or death.
- L- Follow the manufacturer's User Instructions for changing canisters.
- 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 User Instructions and/or maintenance manuals for information on use and maintenance of these respirators.
- P- NIOSH does not evaluate respirators for use as surgical masks.
- BB- Not for use for entry into atmospheres immediately dangerous to life and health.
- CC- For entry, do not exceed maximum use concentrations established by regulatory standards.
- FF- Respirators are to be fit tested prior to use with the heaviest cartridges, canisters, filters and/or accessories intended to be used. Fit testing should also be conducted while wearing all personal protective equipment intended to be used. See User's Instructions for fit test requirements.

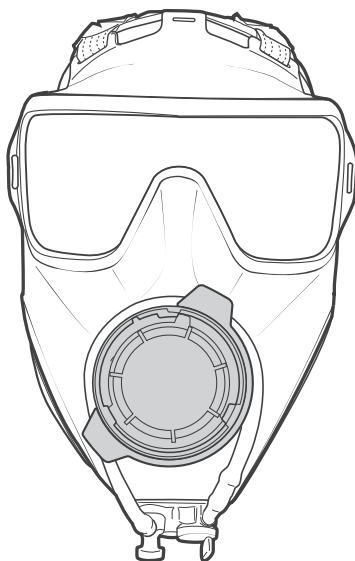
CBRN APR Cautions and Limitations for Use

- R_ Some CBRN agents may not present immediate effects from exposure, but can result in delayed impairment, illness, or death.
- T- Direct contact with CBRN agents requires proper handling of the respirator after each use and between multiple entries during the same use. Decontamination and disposal procedures must be followed. If contaminated with liquid chemical warfare agents, dispose of the respirator after decontamination.
- V- Not for use in atmospheres immediately dangerous to life and health or where hazards have not been fully characterized.
- W- Use replacement parts in the configuration as specified by the applicable regulations and guidance.
- X- Consult manufacturer's User Instructions for information on the use, storage, and maintenance of these respirators at various temperatures.
- Y- This respirator provides respiratory protection against inhalation of radiological and nuclear dust particles. Procedures for monitoring radiation exposure and full radiation protection must be followed.
- Z- If during use an unexpected hazard is encountered such as a secondary CBRN device, pockets of entrapped hazard or any unforeseen hazard, immediately leave the area for clean air.
- CC- For entry, do not exceed maximum use concentrations established by regulatory standards.
- HH- When used at defined occupational exposure limits, the rated service time cannot be exceeded. Follow established canister change out schedules.
- QQ- Use in conjunction with personal protective ensembles that provide appropriate levels of protection against dermal hazard. Failure to do so may result in personal injury even when the respirator is properly fitted, used, and maintained.
- UU- The respirator should not be used beyond eight (8) hours after initial exposure to chemical warfare agents to avoid possibility of agent permeation. If liquid exposure is encountered, the respirator should not be used for more than two (2) hours.

NIOSH CAUTIONS AND LIMITATIONS (CONTINUED)

S - Special or Critical User Instructions

When FM54 is used as an APR the mode selector dial must be fully rotated counter-clockwise to the 1 o'clock position as shown.



The FM54 must be stored in the approved storage bag and liner except when in operational use or being serviced/maintained. The Canister must remain sealed until fitted to the respirator prior to use.

Before occupational use of the respirator a written respiratory 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.

5.0 GENERAL WARNINGS



Failure to observe these warnings may result in injury or death!

With the exception of the normal operator checks (Level 1) specified in this manual, all specialist maintenance (Level 2) must be performed by an Avon certified service center or by an Avon certified technician

NOTE: Use only certified and NIOSH approved canisters with the FM54.
See the listing on the NIOSH approval matrix.

- The operator must read and fully understand these operator instructions prior to use
- The operator must have received training in the use of the respirator including, but not limited to, pre-use check, donning, seal check, use, doffing (removal), modes of operation and maintenance.
- Sizing and fitting procedures must be performed by a trained technician.
- Operator safety depends on a properly fitted respirator. The respirator must be sized and adjusted for the individual operator following the procedures given in these instructions. Injury or death can occur if the respirator does not properly fit.
- It is important to conduct proper care, maintenance and keep the respirator clean. An improperly maintained respirator may compromise its ability to provide maximum protection.
- The respirator used in APR mode is not intended for use in enclosed or confined space or oxygen deficient environment.
- Do not over-tighten the Canister. Canister should be hand tight.
- Always select the correct size of respirator for each individual operator. Operators are required to conduct a quantitative fit test to confirm the correct respirator size has been selected.
- Always don and doff the respirator in an area known to be free of contaminants.
- Always perform a satisfactory negative pressure check before entering a contaminated area
- Keep a cleanly shaven face to ensure a good seal. Operators shall remove all hairpins, combs, hair knots, buns, or braids that will interfere with the seal of the respirator.
- Do not use abrasive or solvent cleaners of any sort to clean the respirator.
- Do not wear contact lenses when wearing the respirator.

6.0 VOICE PROJECTION UNIT & COMMUNICATIONS INSTALLATION & REMOVAL

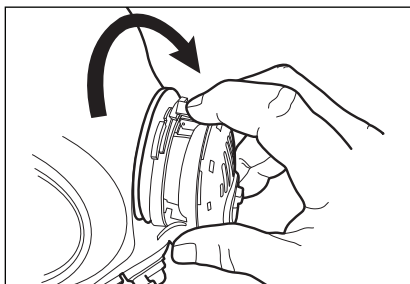


If the FM54 APR will be used with a voice projection unit, the fit test must be undertaken with the voice projection unit in place.

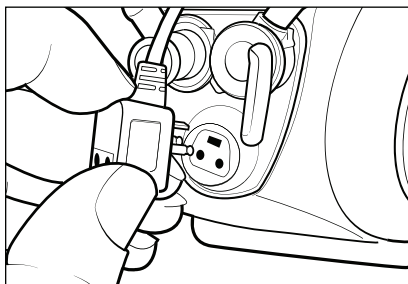
The FM54 respirator has an electronic communications pass-through (ECP) to attach the voice projection unit and other communications devices

To install the voice projection unit:

- Prior to installing the voice projection unit, ensure the VREU Lever is in the negative pressure (APR) mode
- Bring the voice projection unit to the respirator with one hand at approximately 45 degrees to the right



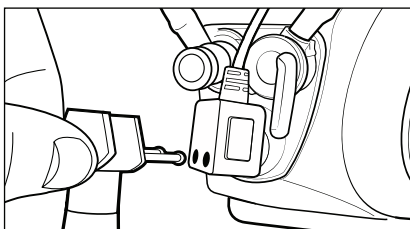
- Locate the mounting groove, insert the voice projection unit and rotate clockwise $\frac{1}{4}$ turn (an audible click should be heard and the voice projection unit will not rotate any further)



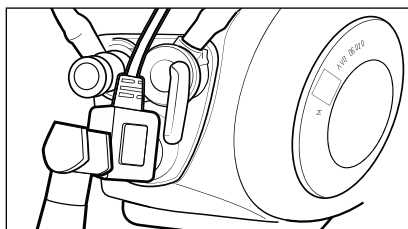
- Plug the 3-pin connector into the 3-pin ECP

To install the communications cable:

NOTE: Before purchasing the optional 15" or 26" communications cable contact Avon Protection customer service with appropriate radio information for radio compatibility.



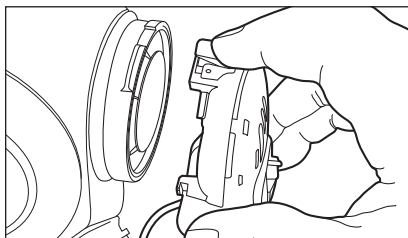
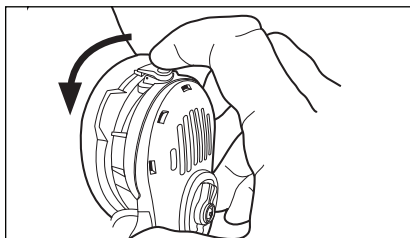
- Insert the male 2-pin connector of the communications cable into the female 2-pin receptacle on the amplifier connector
- Connect the radio connector to the radio in accordance with the appropriate radio user instructions



VOICE PROJECTION UNIT & COMMUNICATIONS INSTALLATION & REMOVAL

(CONTINUED)

To remove the voice projection unit:



- If installed, disconnect the communications lead by supporting the 2-pin female amplifier connector with one hand and with the other hand pull the 2-pin male communications cable separating the two connectors
- Disconnect the communications cable from the radio in accordance with appropriate radio user instructions
- Grasp the voice projection unit with one hand; with the index finger of the same hand, depress the locking lever and rotate the counterclockwise approximately $\frac{1}{4}$ turn
- Pull away separating the voice projection unit from the respirator

BATTERY LIFE INDICATOR-only applicable on Voice projection unit Gen II (PN: 602240)



If the battery life check is performed during an operation, the audible beep may compromise the mission.

The microphone assembly must be installed during operations, if not and the VPU is turned on the battery life indicator will beep.

Note: It is recommended that the operator check battery life before each mission to ensure sufficient battery life remaining.

NOTE: Battery life can be verified while the amplifier is either attached or detached from the respirator but if attached the 3-pin connector must be disconnected from the respirator; otherwise no beeps will be heard.

- Ensure the amplifier is turned off and there is a battery installed
- If attached to the respirator; disconnect the 3-pin connector from the respirator
- Rotate the on/off lever to the on position
- The amplifier will beep in sequence 1-3 times indicating remaining battery life
- Remaining battery life:

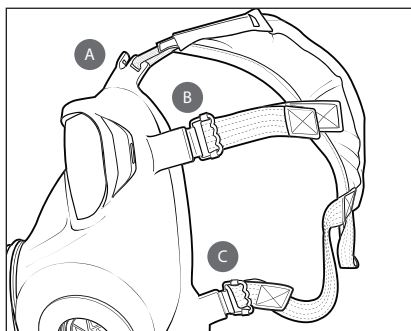
Beeps	Battery Life Remaining
1	10-50+ hours
2	5-10 hours
3	Replace Battery

- Turn the amplifier off
- Replace battery if required
- Connect the amplifier to the respirator and connected the 3-pin connector
- Continue with mission preparation

7.0 PRE-USE CHECK PROCEDURE

Always perform the following pre-use check procedure before using the FM54 APR:

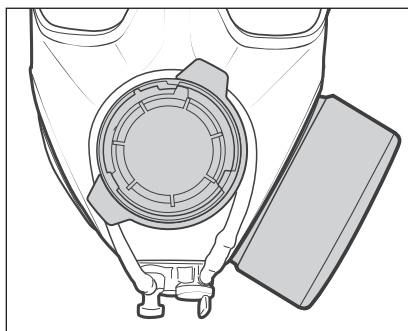
- Ensure the respirator is complete and is the correct size for the particular operator as determined during sizing and fitting
- Check that there are no cuts or tears in the rubber components, no chips or cracks in the plastic components and the eye lens is optically clear



- Check that the brow straps are stowed in the brow strap pockets

NOTE: Brow (A) and temple straps (B) should be equal length. If straps are irregular report to Level 2 maintenance personnel.

- Check that the lower two cheek straps (C) are fully slackened prior to donning



- Always check that the respirator is fitted with an approved canister and ensure that the canister has been correctly attached (hand tight only). Refer to Canister Installation and Removal Section for details
- Check that the VREU lugs are rotated fully counterclockwise as viewed from the front of the respirator

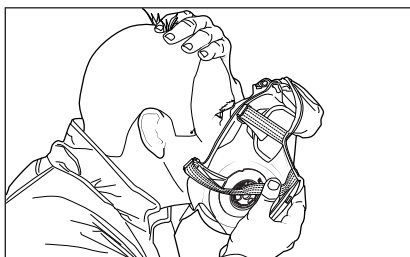
8.0 DONNING WITHOUT HOOD, NEGATIVE PRESSURE TEST



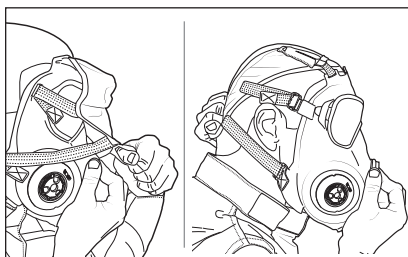
Important: Before donning the respirator for the first time the operator must be properly sized and fitted.

NOTE: Respirator must be properly stowed prior to donning. See 'Storage and Transportation'.

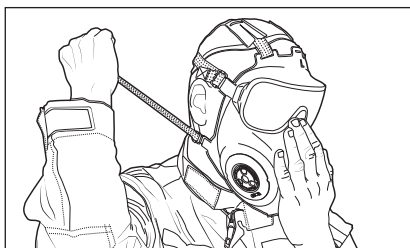
- The voice projection unit must be removed prior to donning the respirator
- Remove head gear and glasses if worn



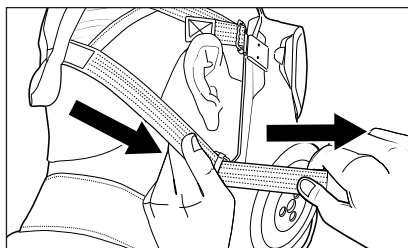
- Pull the head harness over the front of the eye lens
- Pull hair back and insert the chin into the respirator



- Grasp the head harness tab and pull the head harness over and to the back of your head pulling the harness tightly at the rear.



- Support the respirator by locating and placing your hand over the VREU
- Pull the cheek straps one at a time, ensuring straps lay flat against your head. Brow straps are adjusted during fitting.



- It may be necessary to pull the portion of the cheek strap that is between the buckle and the harness head pad, towards the buckle, whilst pulling the free end of the cheek strap to fully tighten
- Do not over-tighten

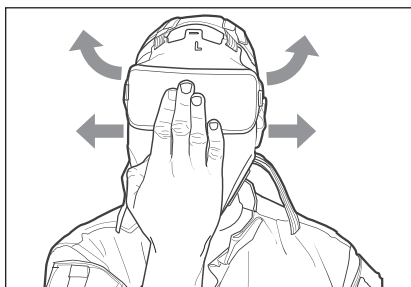
DONNING WITHOUT HOOD, NEGATIVE PRESSURE TEST (CONTINUED)

Negative Pressure Check without Hood



Do not enter a contaminated area until a successful negative pressure test has been performed!

Perform a Negative Pressure Test using the following steps:



- With a hand over the VREU, blow out hard to force out any contaminated air around the edges of the respirator



- With palm of hand, cover the canister inlet port and breathe in
- The respirator should collapse against your face and remain so while holding your breath. If it does, the respirator is airtight
- If the respirator does not collapse, check for leaks. If the respirator still does not collapse, notify maintenance personnel

9.0 DONNING WITH HOOD, NEGATIVE PRESSURE TEST

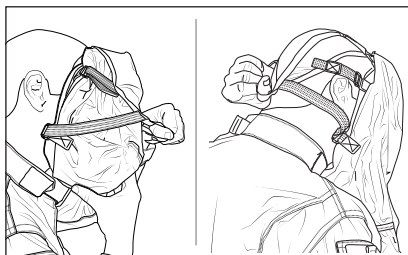


Important: Before donning the respirator for the first time the operator must be properly sized and fitted.

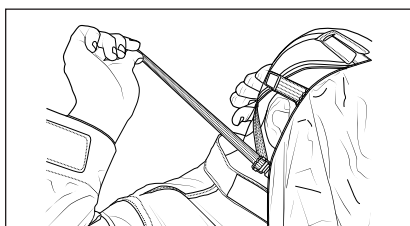
NOTE: Respirator must be properly stowed prior to donning. See 'Storage and Transportation.'



- Remove head gear and glasses if worn
- Pull hair back and insert the chin into the respirator



- Grasp the head harness tab and pull the head harness over and to the back of your head tightly at the rear.



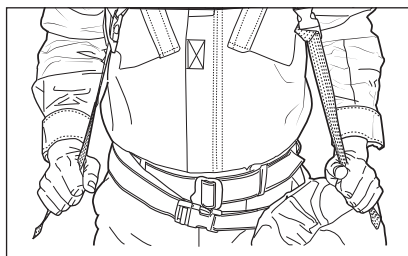
- Support the respirator by locating and placing your hand over the VREU
- Pull the cheek straps one at a time, ensuring straps lay flat against your head. Brow straps are adjusted during fitting.
- Do not over-tighten



- Insert both hands through the opening in the bottom of the hood spreading them apart as far as possible
- Trace the outline of the respirator with both hands pushing the protective hood over the head, covering the head, neck and shoulders



- Insert your arms, one at a time, through the holes formed by the underarm straps



- Adjust by pulling on the free running ends at the same time

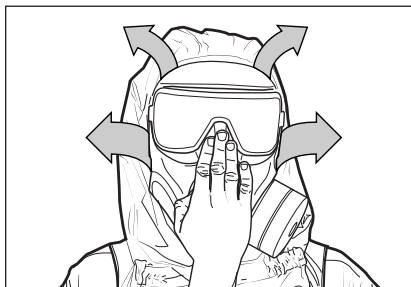
DONNING WITH HOOD, NEGATIVE PRESSURE TEST (CONTINUED)

Negative Pressure Check with Hood



Do not enter a contaminated area until a successful negative pressure test has been performed!

Perform a Negative Pressure Test using the following steps:

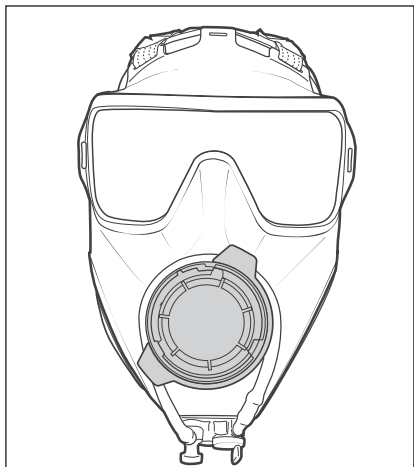


- With a hand over the VREU, blow out hard to force out any contaminated air around the edges of the respirator



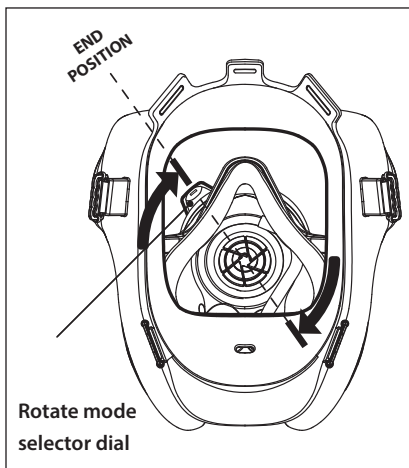
- With palm of hand, cover the canister inlet port and breathe in
- The respirator should collapse against your face and remain so while holding your breath. If it does, the respirator is airtight
- If the respirator does not collapse, check for leaks. If the respirator still does not collapse, notify maintenance personnel

10.0 SELECTING THE CORRECT MODE OF USE



Mode selector dial in the 1 o'clock position for APR mode.

If the respirator is not set to APR mode refer to the diagram to adjust.



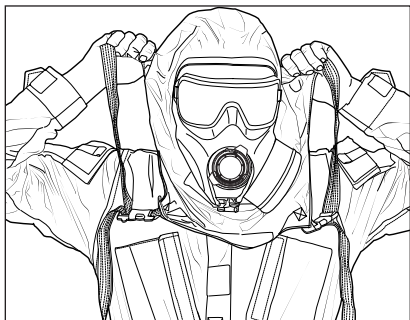
Tab marked with a "-" symbol indicates the respirator is in APR (negative pressure) mode.



Failure to properly position the mode selector dial in the correct position will result in excessive breathing resistance.

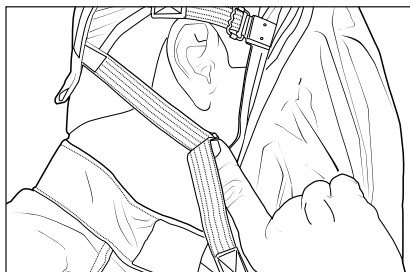
It is intended that this respirator may be used in SCBA mode, however, at this time it is only to be used in APR (negative pressure) mode. This is done by fully rotating the mode selector dial until it stops and the mode indicator tab marked with a "-" symbol is visible as shown above.

II.O DOFFING THE RESPIRATOR (REMOVING)

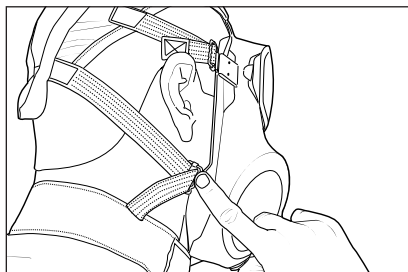


- When the protective hood is attached, release underarm strap fasteners, grasp the bottom of the protective hood and pull the hood up and over the head

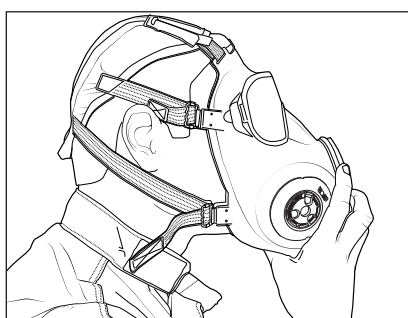
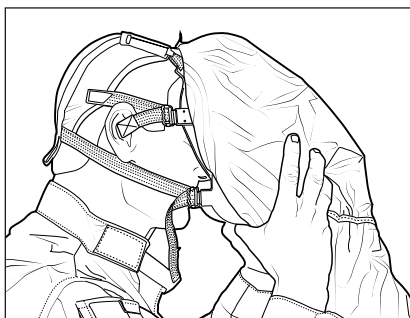
WITH Protective Hood in Place



WITHOUT Protective Hood in Place



- Slacken the cheek straps to their fullest extent



- Grasp the front of the mask and pull the mask well forward and lift upwards then backwards off the head.

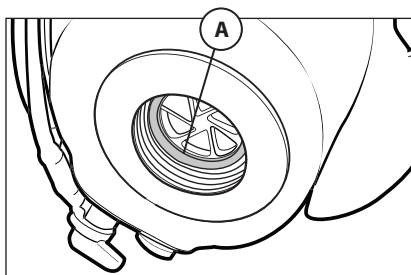
12.0 CANISTER INSTALLATION AND REMOVAL



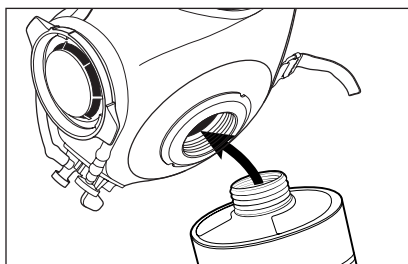
Failure to observe these warnings may result in injury or death!

- Use only NIOSH certified and approved canisters depending on your specific hazard environment. Refer to the NIOSH matrix or product catalog for details
- Do not over-tighten the Canister. Canister should be hand tight. Over tightening may damage and distort the gasket causing it to leak

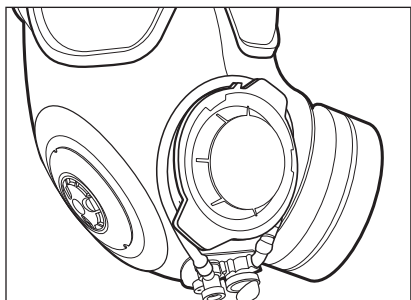
INSTALLATION



- Ensure the filter mount gasket (A) is attached to the filter mount before installing the Canister



- Insert the male threaded portion of the Canister into the filter mount



- Rotate the Canister clockwise until it is hand tight

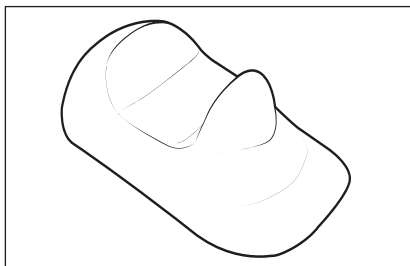
REMOVAL

Grasp the Canister and turn it counter clockwise until the Canister separates from the filter mount.

13.0 STORAGE AND TRANSPORTATION



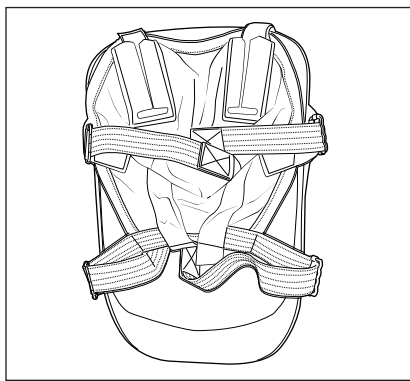
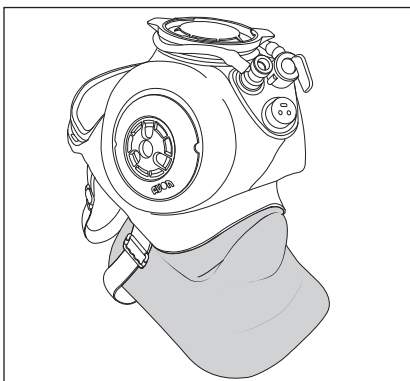
Failure to properly store your respirator could result in the respirator not providing adequate protection when used next!



Faceform

The faceform is used to prevent damage to the respirator in storage. It should be used when storing the respirator in excess of 30 days.

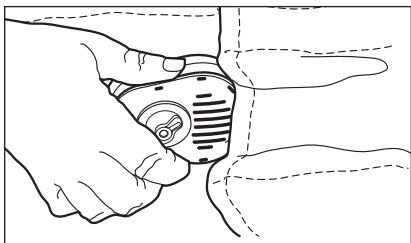
Safe storage and transportation of the respirator is vitally important in maintaining its effectiveness:



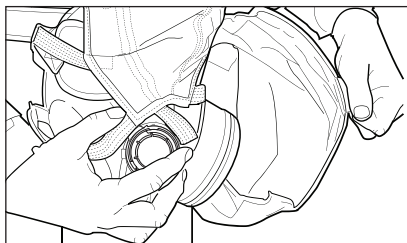
- Store the respirator with the faceform in the NIOSH approved Storage Liner and Bag
- Store and transport in a clean and dry environment within the guidelines of local established procedures
- Do not store or transport the respirator under heavy or sharp objects
- Do not store or transport the respirator where it could be exposed to extremes of temperatures or direct sunlight
- Always clean and thoroughly dry the respirator before storage

14.0 DEPLOYMENT STOWAGE

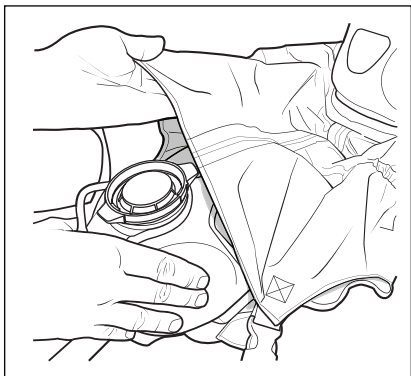
Avon provides a number of carriers for stowage during deployment. These are not for long term storage. The following are instructions for storage in carriers for use during operations only.



- Remove the voice projection unit and store as shown (if used)
- It is recommended that the FM54 be stored with outsert attached



- Loosen cheek straps to their fullest extent. Carefully grasp the cheek straps and pull the head harness over the front of the respirator



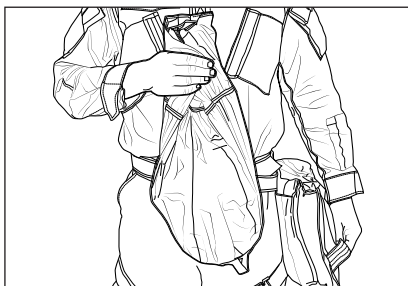
- Open the respirator carrier and insert the respirator into the liner, inside the carrier, with the eye lens towards the top as worn with the respirator facing out away from the body
- Close the carrier

DEPLOYMENT STORAGE (CONTINUED)

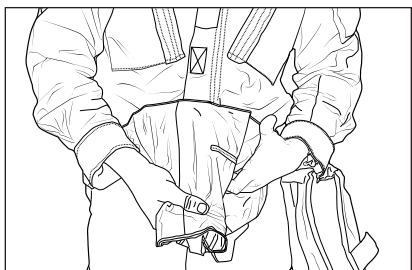
Stowage Configuration with Protective Hood



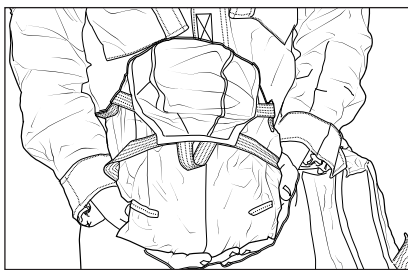
- Grasp the respirator by the front module and place other hand inside the hood, grasping onto the harness
- Pull the hood over the respirator



- Carefully pull all excess hood material over the front of the respirator



- Grasp the head harness and fold over the front of the respirator. Ensure the straps of the head harness do not interfere with the respirator seal
- Hold onto the bottom of the hood and hang the respirator upside down with the inside of the respirator facing away from the body



- Fasten and place the straps inside the hood
- Fold each of the hood flaps into the center
- Fold the flap towards the outside of the respirator and secure under the head harness
- Place in liner, inside carrier with the respirator facing away from the body

15.0 USING THE HYDRATION SYSTEM

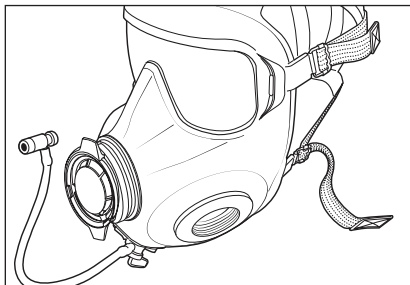


WARNING

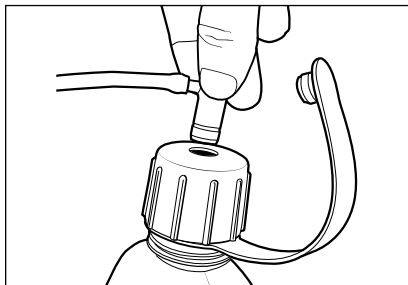
Use only approved hydration attachments or adapters with the FM54 hydration system. Failure to observe this warning may result in injury or death!

The use of the hydration system within a contaminated area is not permissible by NIOSH.

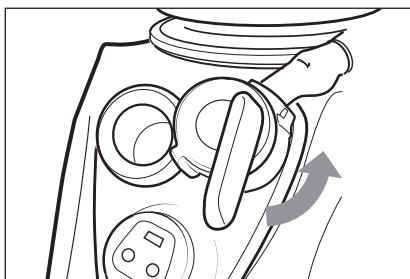
Connecting and Using the Hydration System



- While steadying the respirator assembly with one hand, pull the drink coupler from its storage location



- Flip open the protective cover on the approved hydration system
- Insert the drink coupler into the approved hydrations system by pushing quickly so the seal snaps into the receiving groove



- Turn the drinking tube lever upward and grasp the internal drink tube between your lips. Check for leaks by blowing into the internal drink tube. You should feel some resistance; if not, then your hydration system is leaking, DO NOT drink. Replace the hydration system. If resistance is still not felt, notify maintenance personnel to replace the respirator
- If the system does not leak, you may drink. DO NOT tilt head back while drinking

USING THE HYDRATION SYSTEM (CONTINUED)



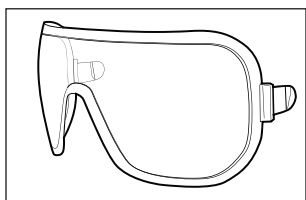
To prevent possible leakage around the respirator, DO NOT pull on external drink tube when removing drink coupler. When not in use, keep the drink coupler on the hydration system covered with the provided protective cover!

Disconnecting the Hydration System

- Ensure that the drink tube is in the open position. If using an approved drink system that has its own valve, ensure that it is open
- Clear water from the external drink tube by blowing into the internal drink tube
- Rotate the drink lever downward to the closed position. If using an approved drink system, close its on/off valve
- While holding the drink system with one hand, firmly grasp the drink coupler and pull to disconnect from the hydration system
- If the hydration system is equipped with a protective cover, replace it after disconnecting the drink coupler
- Replace the drink coupler into the drink coupler receptacle on the respirator

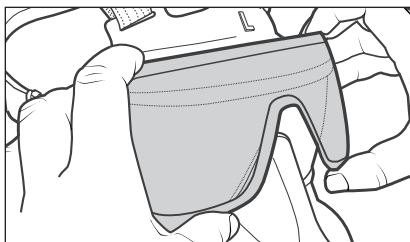
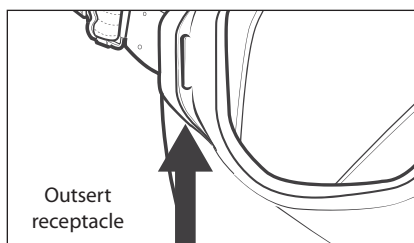
16.0 USING OUTSERTS

A variety of outserts are available to meet operational requirements. Refer to NIOSH approval label or product catalog for details.

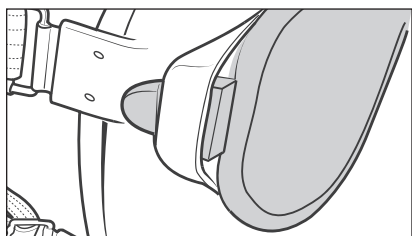


- Clear Outsert Assembly for general use
- Sunlight Outsert Assembly for high UV situations
- Blueblocker Outsert Assembly for shooting glare
- Breach Outsert Assembly for welding and gas cutting
- Laser Outsert Assembly for protection against laser light
- Mirrored Outsert Assembly for heat reflection

To Install



- Grasp the top and bottom of the outsert with both hands
- Tilt the outsert with the bottom up and align outsert over the eye lens



- Align the locking tabs on the ends of the outsert with outsert receptacles on the respirator and gently rotate the outsert down pushing the locking tabs into the receptacles
- Ensure the locking tabs are secured to the respirator assembly

To remove

Grasp the top and bottom of the outsert and gently rotate the bottom of the outsert up and away from the respirator



WARNING

Ensure that if removing outserts in a contaminated environment that you hold the respirator against your face with your free hand to ensure the seal of the respirator is not broken!

17.0 CLEANING PROCEDURES



Cleaning the respirator correctly is vital for maintaining its effectiveness in providing the best possible protection. The respirator should be cleaned regularly as part of the normal maintenance and inspected routinely after each use.

- Remove the Canister (If the Canister becomes water logged then it must be replaced immediately. A Canister becomes ineffective if immersed in, or heavily soaked with water)
- Remove the communications lead, microphone assembly and voice projection unit, if attached
- Remove the protective hood if attached
- Remove the drink coupler from its housing and from around the VREU main body
- Remove the air deflectors and inlet disk valves
- Immerse the respirator in warm water containing a dilute Hibitane solution (1/2000 dilution of a 5% solution is normal), a mild baby-type non-allergic soap solution or other Avon approved product



Do not use detergent, spirit or solvent cleaner!

- Agitate the respirator in this solution, wiping with a soft, lint-free cloth (face cloth) particularly under the main seal and inner respirator
- Remove the respirator and shake off the excess solution
- Immerse the respirator in clean warm water ensuring that all trace of solution is removed
- Lift out the respirator and shake off excess water, then dry with clean, lint-free dry cloth, or air dry
- To clean the hydration system, fill a canteen with a sterilizing solution and attach to the drink coupler. Open drink valve and allow solution to run through and out of the internal drink tube. Repeat with clean water
- Replace the inlet disk valve(s) and air deflectors, ensuring they are properly aligned
- Replace the respirator components and store ready for use



If the respirator is exposed to CBRN agents, special decontamination and disposal procedures dictated by local established guidelines must be followed. If the respirator is contaminated with liquid CBRN agents, dispose of the respirator after decontamination!

18.0 OPERATOR MAINTENANCE

Carry out the following care and maintenance checklist after each use and at least monthly. Replace any damaged components.

Inspect the following features: Remove respirator from service or replace faulty component prior to use.

Respirator Assembly

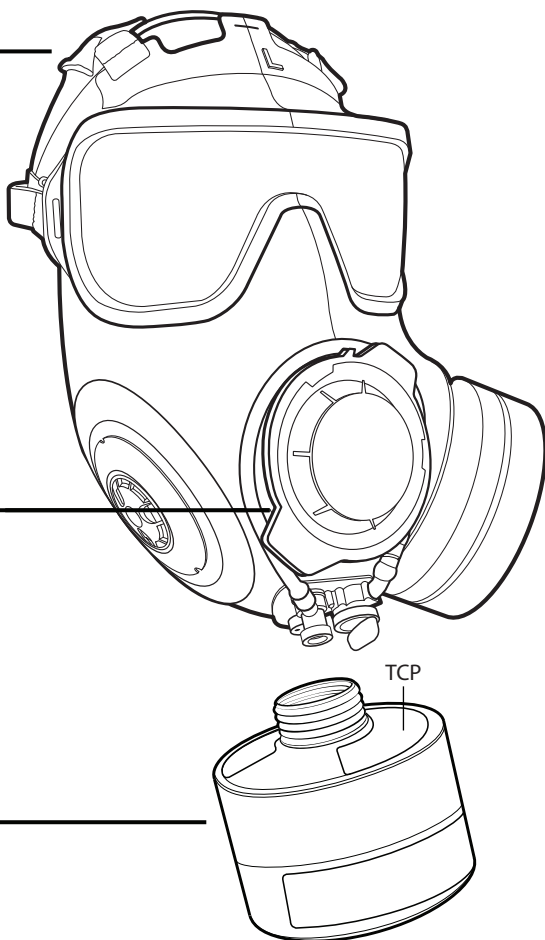
- Dirty enough to affect respirator seal or proper function
- Rubber is sticky or has holes, tears, or soft sticky spots which allow air to enter
- Buckles damaged or missing
- Bonding around eye lens not secure
- Filter mount gasket missing
- Filter mount and/or canister damaged

Variable Resistance Exhalation Unit (VREU)

- Missing
- Cracked or chipped
- Dirty
- Front cover will not turn

Canister

- Canister does not attach properly
- Cracked or damaged
- Air intake clogged with dirt
- Blue stain appears in passive humidity indicator window
- The Threaded Converter Piece (TCP) shows signs of tampering or damage (if attached)



OPERATOR MAINTENANCE (CONTINUED)

**Carry out the following care and maintenance checklist after each use and at least monthly:
Replace any damaged components.**

Head Harness

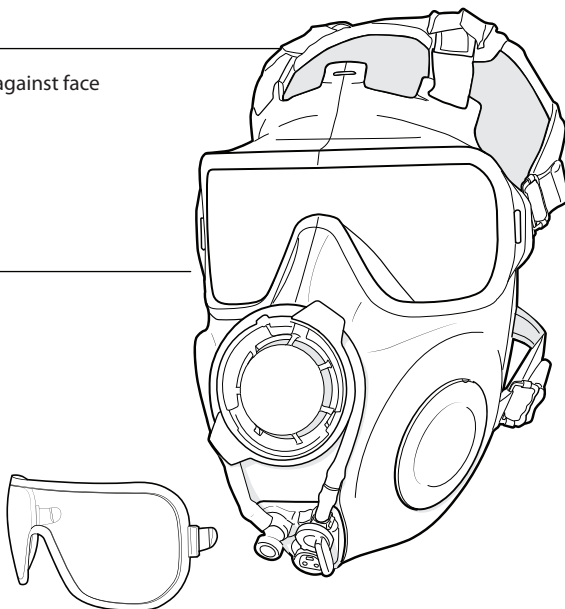
- Will not hold respirator firmly against face
- Cut, torn or frayed
- Missing tabs
- Deteriorated

Eye lens

- Unable to see well through the eye lens
- Eye lens is cracked or cut

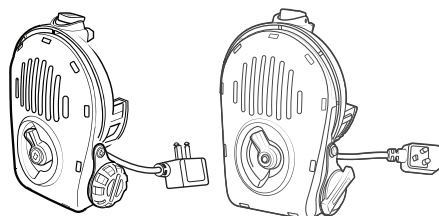
Outsert

- Unable to see well through the outsert
- Outsert is cracked or cut



Voice Projection Unit

- Will not fit correctly
- Latch broken
- Dirty or damaged
- 3-pin connector will not plug into ECP
- On/off lever will not rotate
- Battery expended

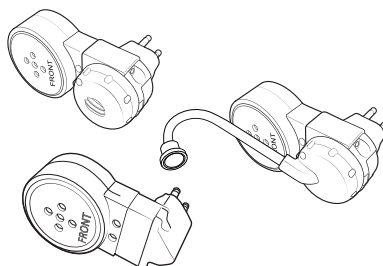


GEN I

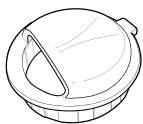
GEN II

Microphone Assembly

- Missing
- Damaged
- Dirty
- Missing or bent pins
- Will not seat properly

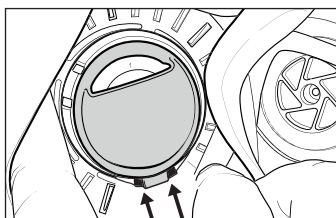


OPERATOR MAINTENANCE (CONTINUED)



Air Deflector

- Missing
- Improper orientation
- Dirty or Damaged



Proper alignment of Air Deflector

AIR DEFLECTOR REMOVAL:

- Fold the nosecup back to expose the air deflector
- Grasp the air deflector and pull outward until it separates from the filter mount

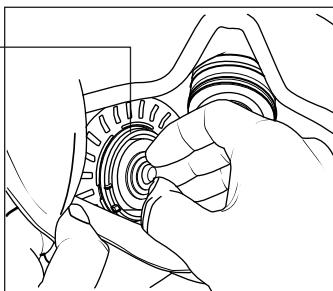
AIR DEFLECTOR INSTALLATION:

- Fold the nosecup back to expose the filter mount
- Orient the air deflector tab with the bottom filter mount notch and gently push until the air deflector fully seats into the filter mount



Inlet Disk Valve

- Missing
- Sticky
- Torn
- Dirty
- Will not seat properly



Air deflector and nosecup removed for clarity

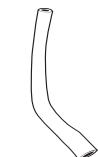
INLET DISK VALVE REMOVAL:

- Fold back the nosecup to expose the air deflector
- Remove the air deflector exposing the inlet disk valve
- Pinch the center of the inlet disk valve between the thumb and index finger and gently pull the disk valve away from its mounting post

INLET DISK VALVE INSTALLATION:

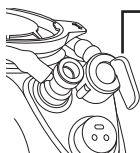
- Fold back the nosecup to expose the filter mount assembly
- Hold valve between finger and thumb and push over valve mounting post
- Replace the air deflector

OPERATOR MAINTENANCE (CONTINUED)



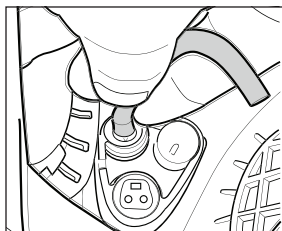
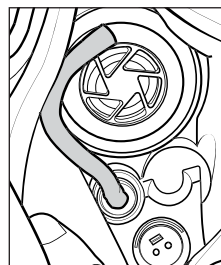
Internal Drink Tube

- Dirty or Damaged
- Leaks
- Unable to drink while wearing respirator



Drink Tube Lever

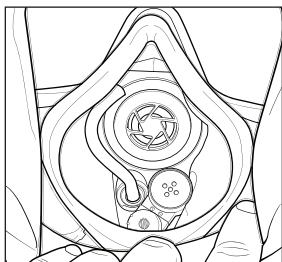
- Missing
- Sticking
- Will not turn



INTERNAL DRINK TUBE REMOVAL:

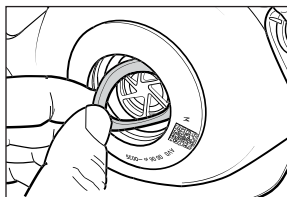
Note the internal drink tube position before removal. This will assist in installation.

Grasp internal drink tube at drink tube connector and gently pull internal drink tube from connector.



INTERNAL DRINK TUBE INSTALLATION:

- Rotate the drink tube lever counterclockwise to position the internal drink tube for drinking
- Install the internal drink tube on the inlet and press internal drink tube in place. Make sure the internal drink tube bottoms fully against the drink tube connector
- Turn the internal drink tube lever downward to place the drink tube in the stowed position
- Verify alignment of the internal drink tube and make adjustments as required



GASKET REMOVAL:

- Remove the canister
- With one finger, using your finger nail, pry the gasket from the filter mount
- Gently lift up and out.



GASKET INSTALLATION:

- Hold the gasket between the index finger and thumb and insert into the filter mount
- Ensure the gasket is fully seated in the bottom of the filter mount

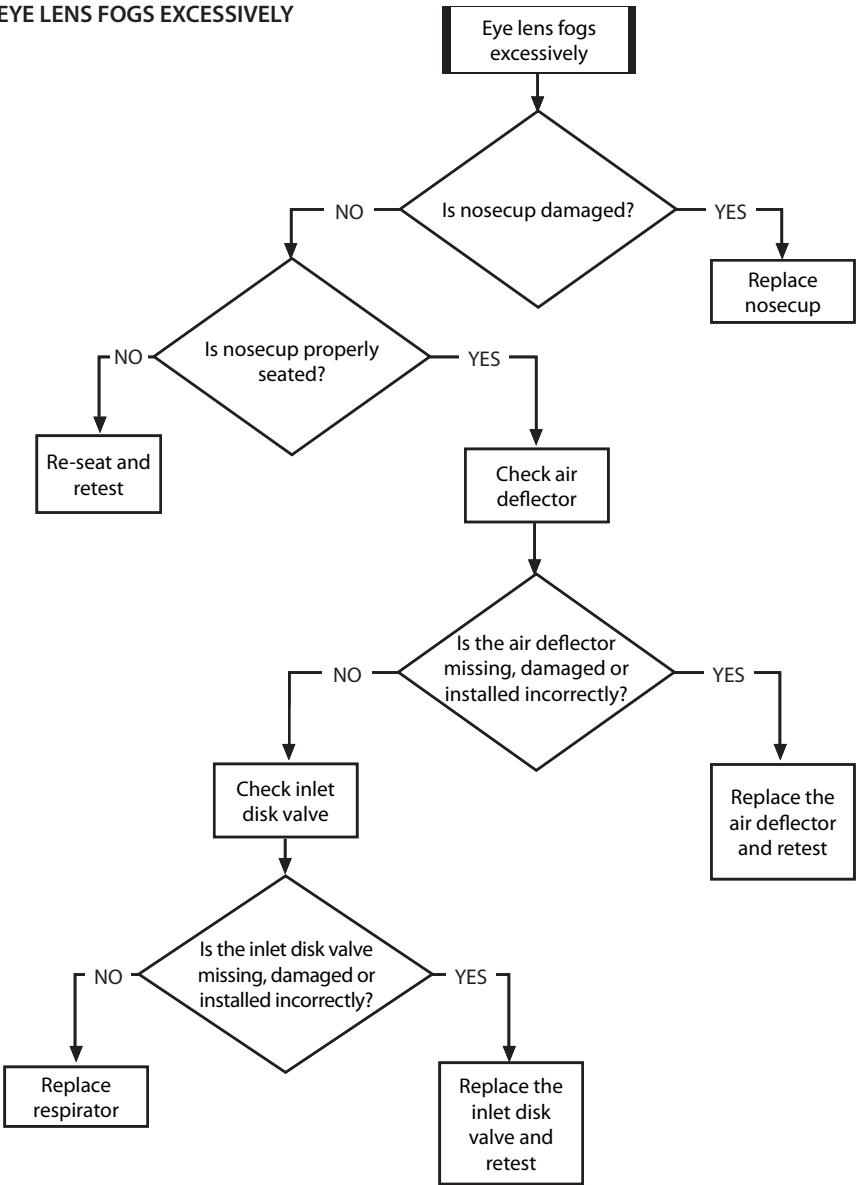
19.0 OPERATOR TROUBLESHOOTING PROCEDURES

Symptom/Fault	Probable Cause	Action
High inhalation breathing resistance	Inlet disk valve sticking.	Clean inlet disk valve.
	Blockage in airflow.	Check inlet air passages for obstructions and remove.
	Canister is saturated/clogged.	Replace canister.
High exhalation breathing resistance	Variable Resistance Exhalation Unit (VREU) in the incorrect operating mode.	Ensure the VREU is in the negative pressure mode.
	VREU sticking.	Use the respirator cleaning procedure.
	Blockage in airflow.	Check exhalation passage for obstruction and remove.
	Improper function of VREU.	Report to Level 2 maintenance personnel.
Low drinking rate	Water level low hydration system.	Refill the reservoir.
	Drink coupler not fully engaged.	Fully engage the drink coupler.
	Drink lever not fully open.	Turn drink lever on fully.
	Blockage in system.	Clean hydration system.

OPERATOR TROUBLESHOOTING PROCEDURES (CONTINUED)

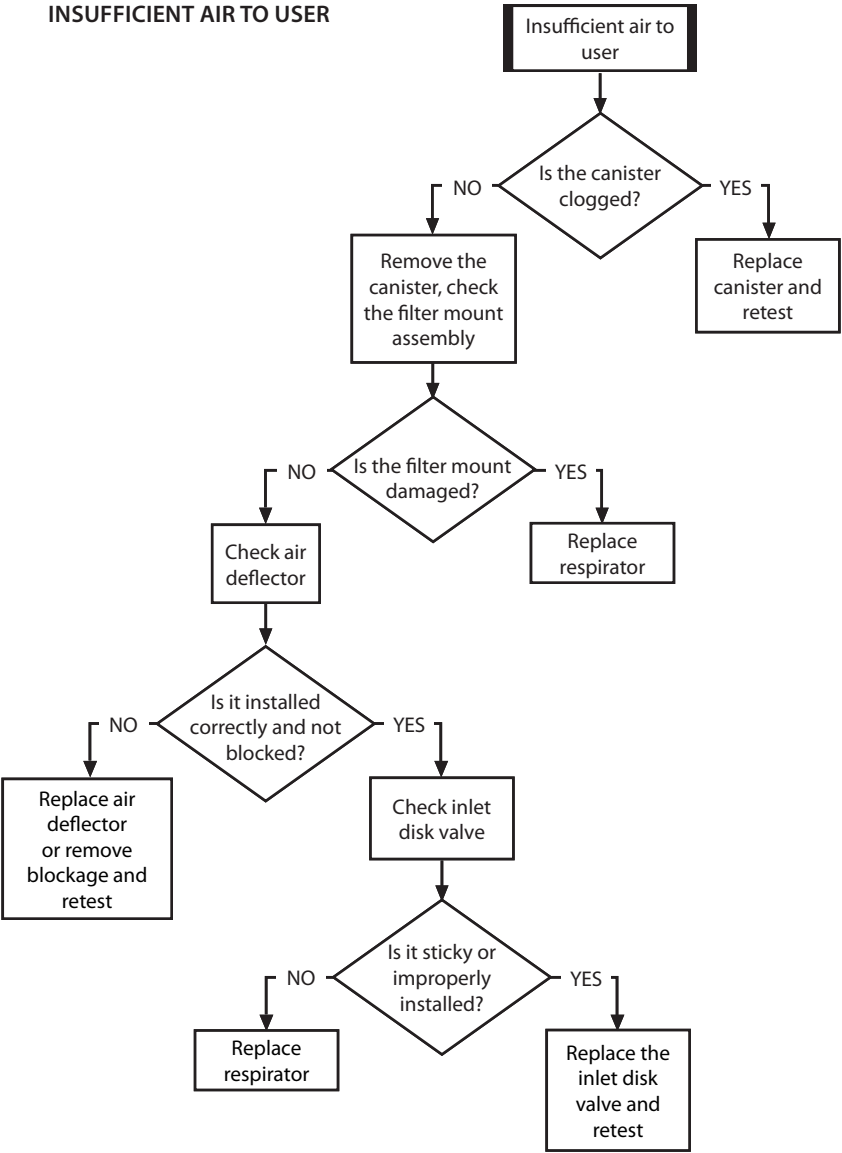
Symptom/Fault	Probable Cause	Action
Suspected leak (respirator fails to seal)	Damage to respirator assembly.	Examine respirator for damage; report to Level 2 maintenance personnel.
	Canister not completely installed.	Check and retighten canister.
	Respirator incorrectly sized or fitted.	Report to Level 2 maintenance personnel.
	Incorrect harness adjustment.	Check harness adjustment and readjust if necessary.
Poor light transmission through eye lens	Dirty eye lens and/or outsert.	Clean eye lens and/or outsert.
	Damaged eye lens and/or outsert.	Report to Level 2 maintenance personnel.
Voice Projection Unit (Gen I) inoperative (where fitted)	Amplifier adapter missing or damaged.	Report to Level 2 maintenance personnel.
	Voice Projection Unit is damaged.	Report to Level 2 maintenance personnel.
	Battery missing or damaged.	Report to Level 2 maintenance personnel.
	On/off switch in the off position.	Switch on/off switch to the on position.
Voice Projection Unit (Gen II) inoperative (where fitted)	Microphone assembly missing or damaged.	Install or replace microphone assembly.
	Voice Projection Unit is damaged.	Report to Level 2 maintenance personnel.
	Battery missing or damaged.	Report to Level 2 maintenance personnel.
	On/off switch in the off position.	Switch on/off switch to the on position.

EYE LENS FOGS EXCESSIVELY



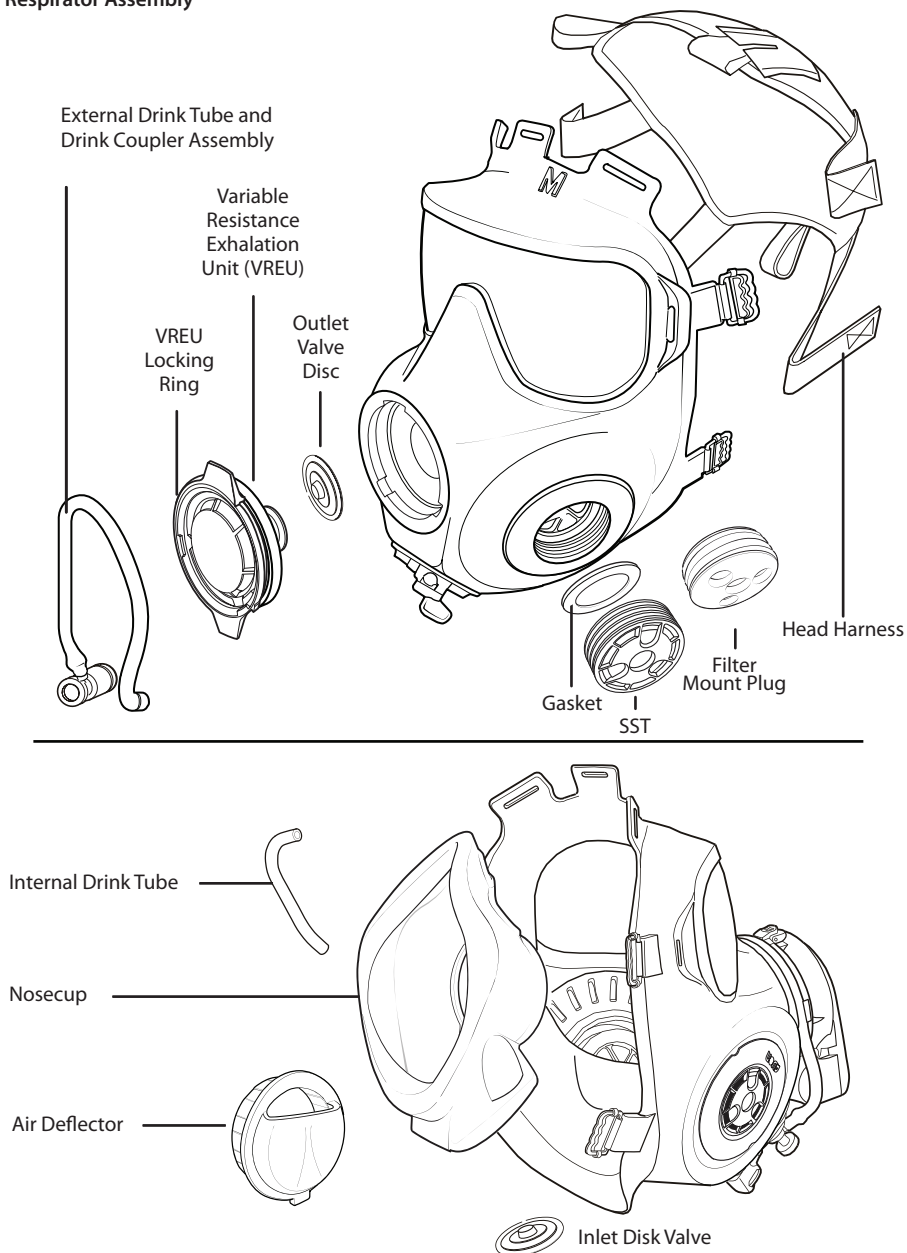
OPERATOR TROUBLESHOOTING PROCEDURES (CONTINUED)

INSUFFICIENT AIR TO USER



20.0 SPARE PARTS OVERVIEW

Respirator Assembly





ADVANCE WITH CONFIDENCE

The Americas

t: +1 888 286 6440

e: customerservice@avon-protection.com

Europe, Middle East, Asia, Africa & Australasia

t: +44 (0) 1225 896705

e: protection@avon-protection.com

avon-protection.com

GR12123-06

PN: 72821/2