

Scott® 4.5 Fifty Self-Contained Breathing Apparatus (SCBA)

Model AIR-PAK 4.5 Fifty
March 2010

NOTE: Guides are to be used by trained personnel only and DO NOT replace the manufacturer's operations or technical manuals. These guides were developed by field personnel for utilization by EPA and their contractors and are helpful in quick start-up and operations. Various limitations have been identified through the experience of the development group. Different makes, models, and updates to this equipment may change the limitations. It is recommended that calibration, maintenance, and use be recorded in a log book. If you have any changes or revisions please email one of the following: stevenson.peter@epa.gov, boykin.michael@epa.gov, chong.margaret@epa.gov, kroone.janice@epa.gov, zintak.leonard@epa.gov.



Uses:

Provides supplied air for use in oxygen deficient or contaminated breathing environments above IDLH concentrations, atmospheres, with unknown vapors above 5 ppm, and atmospheres containing vapors with poor warning properties. Use of this equipment shall be consistent with EPA's Emergency Responder Health and Safety Manual.

Limitations:

1. The weight of equipment can limit speed and mobility of the user.
2. The larger profile can make access to certain spaces difficult or impossible.
3. The full face mask restricts view.
4. The period of time that supplied air within tanks lasts depends on user and breathing rate.
5. During use, attempt to keep the unit away from contaminated surfaces/materials, which may result in the necessity for extensive decontamination before reuse.

Quick Start Up:

- Open case, confirm the presence of backpack, tank, face mask regulator. Confirm tank pressure to be at least 4000 psig. Inspect backpack belt and straps for wear, confirm that all hoses are connected and in good condition.
- Open the tank valve, 1 ½ turns counter clockwise and confirm the operation of the Vibralert® and Heads Up display on the regulator. The Heads Up display should show two green lights.
- Don your AV-3000 face mask, connect the regulator to the mask and take a breath. Confirm proper operation of the regulator and mask combination.
- Depress the “air saver” switch on the top of the regulator, remove the mask, don the backpack, and properly tighten waist belt and shoulder straps.
- Don the mask and check for proper face seal.

- Press the “air saver” button and begin breathing and use of the SCBA.

Calibration:

In addition to regular cleaning and maintenance, at a minimum, the carbon fiber wrapped air cylinders must be hydrostatically tested every 5 years.

WARNING: USE SCOTT EQUIPMENT ONLY WITH ADEQUATE TRAINING AND INSPECTION.

NOTE: The following applies to use of Scott equipment in an SCBA application. See specific sections at the end of this guide for use of Scott equipment in a Powered Air purifying Respirator configuration, and for the use of the Scott Envoy Radio Communication System.

Donning the Backframe:

- Spread the shoulder straps and fold open the winged waist support with the tank resting on a flat surface and the top of the backframe pointing toward you. Grab the support members at the sides of the back-pack.
- Swing the unit up and over your head, making sure that your elbows extend through the loop formed by the shoulder straps. Alternately, the back-pack can be put on like a jacket.
- While leaning slightly forward, slide unit down back and pull on shoulder adjusting straps to snug unit on back.
- Grasp buckles, extend waist belt and connect. Adjust belt for firm fit on hips by pulling on belt ends. Loosen shoulder straps to carry weight on hips.

WARNING: MASKS SHALL NOT BE WORN WHEN CONDITIONS PREVENT A GOOD FACE TO FACEPIECE SEAL.

Donning the Facepiece:

- Adjust head straps to the full outward position.
- Hold the head harness out of the way with one hand while placing the facepiece on the face with the other hand. Ensure the chin is properly located in the chin pocket.
- Pull the head harness over the head and ensure that straps are lying flat against the head and neck with no twists.
- Tighten the neck straps by pulling the two lower strap ends toward the rear of the head.
- Adjust the head harness net down the back of the head using one or both hands. Retighten the neck straps.
- Adjust the temple strap by pulling the two upper strap ends toward the rear of the head. Overtightening may cause discomfort.

Using the SCBA:

- Open the cylinder valve knob 1 ½ turns counterclockwise. The Vibralert[®] alarm on the regulator should activate momentarily as the regulator pressurizes, then shut off. All of

the lights on the Visualert Heads-up Display mounted on the regulator will light up for a few seconds, and then two green lights will show.

- Install the regulator on the facepiece with 1/4 turn clockwise, locking it in place.
- Inhale sharply to actuate the respirator and air will be supplied.
- The Visualert Heads-up Display mounted on the regulator will show cylinder pressure as follows:
 - two green lights - greater than 3000 psi
 - one green light - 2000 to 3000 psi
 - blinking orange light - 1000 to 2000 psi
 - flashing red light - less than 1000 psi. The Vibralert[®] alarm will also activate at that level.

WARNING: IMMEDIATELY LEAVE THE AREA REQUIRING RESPIRATORY PROTECTION WHEN THE VIBRALERT[®] ALARM ACTUATES.

Terminating Use:

- Depress the air saver/donning switch on top of the regulator to stop the flow of air and remove the facepiece by pulling it up and over the head.
- Close the cylinder valve, open the red purge valve to vent residual air, and then close the red purge valve.
- Extend all straps.

Regular Operational Inspection:

- Visually inspect the complete respirator.
- Check cylinder hydrostatic test date - to be within 5 years.
- Check cylinder and valve assembly for physical damage - no dents or exposed black fiber.
- Check cylinder pressure gauge for “FULL” indication (min: 4000 psi).
- Check to ensure high pressure reducer hose coupling is hand tightened on cylinder. DO NOT OVER TIGHTEN.
- Check that the breathing regulator red purge valve (red knob on regulator) is closed (full clockwise and pointer on knob upward).
- Check that the hose to the breathing regulator is engaged properly by tugging on the quick disconnect coupling.
- Fully depress the center of the air saver/donning switch on the top of the regulator and release.
- Slowly open the cylinder valve all the way. The VIBRALERT[®] alarm will activate momentarily. All the lights on the Visualert Heads-up Display mounted on the regulator will light up for a few seconds, and then two green lights will show.
- Place the regulator into facepiece with the red purge knob in the 12 o'clock position, and rotate the regulator counterclockwise (as viewed from inside the facepiece) until it locks into place.
- Don the facepiece or hold the facepiece to the face to effect a good seal. Inhale sharply to automatically start the flow of air. Breathe normally.
- Remove facepiece from face. Air will freely flow from the facepiece.

- Fully depress the center of the air saver/donning switch on the top of regulator and release. The flow of air from the facepiece will stop.
- Examine the complete respirator for leaks.
- Rotate red purge valve ½ turn counterclockwise (pointer on knob downward). Air will freely flow from regulator.
- Rotate red purge valve ½ turn clockwise to full closed position (pointer on knob upward). Air flow will stop.
- Push in and rotate cylinder valve knob clockwise to close.
- Open red purge valve slightly to vent residual air pressure.
- As the residual air pressure vents, the remote pressure gauge will swing from “FULL” and move towards “EMPTY.”
 - The VIBRALERT® will actuate.
 - The Visualert Heads-up Display red light will flash.
 - When air flow stops completely, close red purge valve (pointer on knob upward).

Changing a Cylinder:

- Unthread the pressure reducer hose coupling from the cylinder valve by rotating counterclockwise. If the hose does not unthread easily, check to see that the residual pressure has been bled from the regulator using the red purge valve.
- Disengage the cylinder latch by pressing on the thumb release while lifting on the end of the latch.
- Grasp the cylinder below the retention strap, push the locking tab below the valve, then lift the cylinder free from the bottom hook and remove.

WARNING: USE ONLY AIR CYLINDERS APPROVED FOR USE WITH THE SCOTT 4.5 FIFTY SCBA.

- Replace with a fully charged cylinder (at least 4000 psi). Slide the top (rounded end) of the cylinder upward under the strap.
- Engage the cylinder hanger in the hook at the bottom of the backframe.
- Secure the cylinder in place by pushing the latch toward the backframe to lock the cylinder latch and fully engage the cylinder latch assembly.
- Inspect the high pressure coupling of the respirator to be certain the nipple seal o-ring is present and undamaged.

WARNING: MASKS MUST BE CLEANED AND INSPECTED BEFORE STORAGE FOR REUSE.

Respirator Mask Cleaning:

- Carefully wash the facepiece assembly using one of the following methods:
 - Wash with warm (110° F/44° C maximum) mild soap or detergent solution. Thoroughly rinse in clean water. To disinfect, sponge facepiece with a 70% solution of Isopropyl Alcohol.

OR

- Clean and disinfect using SCOTT Multi-Wash Mini. Follow instructions supplied with SCOTT Multi-Wash Mini. Use of the Scott Multi-Wash solution is recommended by Scott.
- Thoroughly rinse the facepiece with drinking water using a spray bottle or softly running water. Shake excess water off and then dry with a clean, lint free cloth or gently blow dry with clean, dry breathing air of 30 psig or less pressure. Do not use shop air or any other air containing lubricants or moisture.
- The mask mounted regulator may be cleaned by damp-sponging the exterior of the regulator. Do not submerge the regulator in liquid.

Regulator Cleaning:

- Remove the breathing regulator from the facepiece.
- Remove any obvious dirt from the external surfaces of the regulator using Scott Multi-Wash Mini with a sponge or soft cloth.
- Inspect the inside of the regulator assembly through the regulator opening. If dirt or soil is present, remove from service, and forward the regulator assembly to Scott trained authorized personnel for thorough cleaning.
- If the inside of the regulator is clean, depress the donning/air saver switch, close the red purge knob by turning fully clockwise and spray a minimum of 6 full pumps of Scott Multi-Wash Mini into the regulator opening. Make sure to also wet the immediate area around the opening. Swirl to completely cover internal components. Turn regulator opening face down and shake excess liquid out. **ALLOW FOR 10 MINUTES OF CONTACT TIME TO DISINFECT PRIOR TO RINSING.**
- Rinse regulator with drinking water using a spray bottle or softly running water. **DO NOT SUBMERGE REGULATOR.**
- Shake excess water out of regulator and then completely air dry before use. **NOTE: To speed drying of the regulator, gently blow dry with clean, dry breathing air of 30 psig or less pressure. BE CERTAIN THE PRESSURE IS NOT MORE THAN 30 PSIG. DO NOT USE SHOP AIR OR ANY OTHER AIR CONTAINING LUBRICANTS OR MOISTURE.**
- If regulator was disconnected from air supply for cleaning, reconnect and open red purge valve to remove any moisture from regulator spray bar. Close red purge valve.

Regulator Check After Cleaning:

- Check to make sure the donning/air saver switch is fully depressed.
- Check to make sure the red purge knob is closed.
- Reattach the regulator to the respirator if removed for cleaning and check to make sure the respirator cylinder is at least 1/4 full.
- Slowly open the cylinder valve at least one full turn. If air flow from the regulator is heard, close the cylinder valve, repeat steps 1, 2 and 3. If air flow is still heard, close the cylinder valve fully, tag unit for repair and remove from service. If the Vibralert[®] alarm or [®] Heads-up Display do not actuate when the cylinder valve is turned on, tag unit for repair and remove from service.
- Open the red purge valve and observe the air flow from the regulator spray bar. Droplets of water indicate the regulator is not dry. See step 6 in Regulator cleaning.

Voice Amplifier Use:

- The intrinsically safe amplifier electronically amplifies sound coming from the voicemitter.
- Depress the amplifier switch and the green LED will illuminate. If the light does not appear, the internal 9 volt battery should be replaced by removing the battery compartment cover.
- Align the mount on the rear of the amplifier with the hole in the center of the mounting bracket on the facepiece's right voicemitter housing. Rotate the amplifier 1/4 turn to lock it into place.
- If feedback occurs, press on/off button once and then turn on again. This may remedy the condition.
- Remove the 9 volt battery when storing the amplifier for an extended period of time.

SCBA Servicing:

The complete SCBA must be serviced by a Scott authorized service technician every two years or immediately after repairs. This service includes regulator/facepiece flow and pressure testing, Visualert system battery replacement (preventative), and detailed inspection, testing and repair of the entire system.

Batteries:

Whereas the function of the unit itself does not depend on a battery, the Visualert function does use either a 9 volt battery or 2 AA batteries to power the LEDs. There is a low battery alarm that should be checked monthly as part of the monthly inspection and the batteries should be replaced if need be.

NOTE: It is recommended that due to the many types of rechargeable battery configurations, that Equipment Managers verify proper battery charging and operation through monthly equipment operation until battery is discharged prior to recharging.

Shipping Requirements:

If the pressure in the SCBA is less than 40.6 psia, the tank is considered empty and may be shipped in any appropriate manner. If the tank has more than 40.6 psia, it must be shipped as dangerous goods (UN No. 1002 "Air Compressed" Class 2.2). The person shipping the SCBA must hold a valid certificate for hazardous goods shipping.

SCOTT POWERED AIR PURIFYING RESPIRATOR (PAPR)

Model C 420
EPA National Equipment List 1-3 Version 2
February 2010

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Uses:

The Scott C420 is a blower assisted, air-purifying respirator, also referred to as a Powered Air-Purifying Respirator (PAPR). The respirator allows the user to breathe filtered ambient air, and protect the wearer from airborne contaminants in contaminated breathing environments for extended periods of time, especially where the contaminant(s) type and approximately concentration are known. This respirator configuration provides a non-Level A alternative for breathing protection allowing greater mobility and longer working time.

Limitations:

At the time of the publication of this EOG, the Scott C420 PAPR was not CBRN certified. Verify that you have the upgraded or replacement PAPR before using it in a CBRN incident.

- Respirator DOES NOT supply oxygen and CANNOT be used in an oxygen deficient environment.
- Training is required before use. Users must meet employer and regulatory training requirements.
- The identity and concentration of the contaminant must be known prior to use.
- It must be determined prior to use that the correct filtration elements are being used for protection against the contaminant of concern.
- Users must leave the area once the contaminant levels reach IDLH levels.
- A fit test is required before using the respirator.
- Facial hair is not permitted. Otherwise, a tight seal cannot be made.
- Eyeglasses that interfere with the seal are not permitted.

- The respirator uses a battery for operation. Therefore, it cannot be utilized in an explosive environment. The disposable green battery contains pressurized toxic sulfuric dioxide gas. Do not mishandle or use if damaged.
- The disposable green battery is rated to operate for approximately 10 hours. Rechargeable nickel metal hydroxide battery is rated to last only 3.75 hours. Recharge time is approximately 4 hours. During use, the battery needs to be checked after 4 hours and every 2 hours subsequently.
- The respirator only offers face and respiratory protection. Proper PPE is required for the rest of the body.

Quick Start Up:

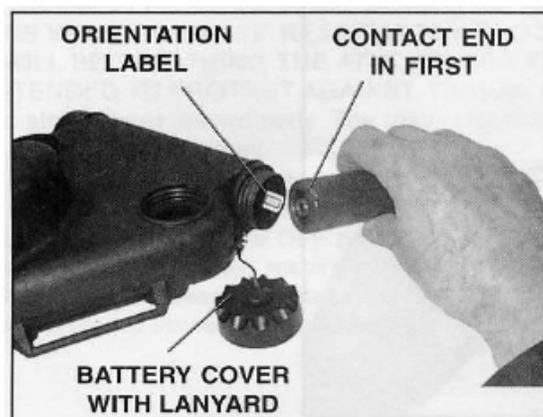
NOTE: Improper use of this PAPR in an oxygen deficient or hazardous atmosphere may result in injury or death. Personnel should receive adequate training prior to use.

- Before entry into an area, the maximum safe duration of use must be determined.
- Look the facepiece over to be certain it is complete and in serviceable condition.
- Ensure that the 40-mm adaptor is installed properly, and that the inhalation and exhalation valves are in good condition and operational.
- Ensure that the breathing tube is properly connected to the mask and blower assembly.
- Install a fully charged battery.
- Turn power switch of the PAPR to ON position to confirm the blower is working. Turn power switch to OFF.
- Don the waist belt with blower assembly so the breathing tube outlet is located at the top of the unit.
- Fasten the buckle and adjust the waist belt. Position the blower so power switch is accessible.
- Don the respirator facepiece and perform a negative pressure leak test.
- With the blower turned off, close off the inlet side of both filtration elements by placing palms of hands or other airtight objects over filter element inlets and press firmly to seal the inlets.
- Inhale slowly and hold breath momentarily. If the fit is good, leakage will not be present and the facepiece will be drawn slightly to the face.
- If leakage is detected during the above procedure, remove facepiece and re-don the facepiece and perform the leak test again. If leakage persists, do not use the respirator.
- After four hours of use, the wearer must leave the contaminated area, decontaminate as necessary, and check the airflow with the Airflow Indicator. Afterwards, the air flow must be checked at least every two hours to monitor battery life and filter efficiency.

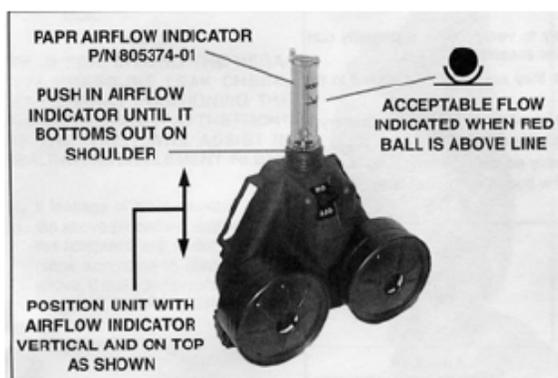
Detailed Assembly and Use Instructions:

- Align the two flat edges of the bayonet mount on the 40-mm adapter with the matching flats on the clear mounting adapter on the front of the facepiece.
- Rotate the 40-mm adapter ¼ turn clockwise until the locking mechanism is aligned between the notches in the facepiece lens.
- Remove the red plastic plugs from both ends of the breathing tube assembly. Retain plugs for future use.
- Inspect the gasket inside of the 40-mm adapter.

- Thread the male end of the breathing tube into the female end on the adapter until hand tight.
- Inspect the gaskets in each of the filter element ports. Do not use if damaged as leakage can occur.
- Open sealed packaging containing filter elements. Remove both filter components from packages. Filter elements are considered to have been put in service when they are removed from their sealed packaging.
- Attach both filter elements to blower assembly by threading into the inlet ports, and hand tighten.
- Insure that the blower power switch is turned to the OFF position.
- Remove battery cover on blower assembly by turning counterclockwise. Battery cover is connected to a lanyard to prevent loss.
- Remove the disposable lithium sulfur dioxide battery from protective covering. Inspect for signs of damage or remove rechargeable nickel metal hydroxide battery from the charging stand.
- Install battery into the chamber in blower unit with contact end first. An orientation label is located inside the battery compartment. Replace battery cover. The green cover is used for a rechargeable battery and the black cap is for a disposable battery.
- Turn the blower ON and test operation of the unit with Airflow Indicator.



- Inspect the air flow indicator O-ring to ensure it is in good condition. Red ball should move freely within the column.
- Insert the air flow indicator into the blower unit air outlet until it bottoms out on shoulder.
- Position the unit in upright position so that the indicator is vertical on top of the blower.
- Turn the power ON.
- Support the blower on a horizontal surface so that the Air Flow Indicator is approximately vertical. Observe reading. Acceptable performance will be indicated by the position of the red ball being above the line marked on the outside of the column. If red ball is not completely above the line on the indicator when power is on, **DO NOT USE THE RESPIRATOR.**
- After successful completion of the test, turn the power OFF. Remove the air flow indicator and re-attach the breathing tube to the blower assembly.



Maintenance:

- Respirators are to be cleaned, disinfected, and inspected after each use.
- After which, the respirator must be stored in a clean, dry area and reinspected again prior to use.
- Used filter components and batteries have to be removed and disposed of properly.
- The unit must be inspected, vacuum tested, and recertified every three years to verify that the unit operation and air flow is correct.

Cleaning the Respirator:

- Inspect the equipment for worn or aging rubber parts, worn or frayed harness webbing or damaged components.
- Remove the 40-mm adapter assembly from the facepiece.
- To remove the adapter, pull the locking mechanism away from the facepiece and rotate the adapter 1/4 of a turn clockwise and remove.
- Disconnect the breathing tube from the 40-mm adapter and from the blower assembly.
- Carefully wash the blower assembly in a warm water solution containing a mild detergent. Make sure the cartridge inlets and breathing tube outlet are protected with the red covers prior to washing. **DO NOT IMMERSER THE BLOWER ASSEMBLY.** Clean the breathing tube connection and filter elements' mounts. Remove any dirt that would prevent a tight seal. Thoroughly rinse with clean water.
- Wash the inside and outside of the breathing tube with a warm water solution containing a mild detergent. Rinse well with clean water.
- Wash and disinfect the facepiece by using one of the following methods:
- Wash with a warm water solution containing a mild detergent or soap. Rinse thoroughly with clean water. To disinfect, sponge the facepiece with a 70% solution of Isopropyl Alcohol. **OR**
- Clean and disinfect using Scott Multi-wash Mini. Follow instructions P/N 89346-01 supplied with the wash.
- Completely rinse with tap water using a spray bottle or softly running water. Shake excess water off and dry with some clean, lint free cloths or carefully blow dry with clean, dry breathing air of 30 psig or less pressure. Do not use shop compressed air or any other air containing lubricants or moisture.
- Carefully clean and disinfect the 40-mm adapter using Scott Multi-Wash Mini. Follow supplied instructions. **Do Not use isopropyl alcohol on any part of the adapter.** Shake

excess water off and dry with a clean, soft cloth. Be careful not to dislodge any check valves when drying.

Inspection:

- Examine head straps and harness for breaks, cuts, frays, tears, loss of elasticity and missing or damaged hardware.
- Examine all hardware to verify proper condition of threads, couplings, and adapters. Verify that all gaskets and seals are in good condition.
- Ensure that inhalation and exhalation valves are in good condition. Check that there are no cracks present, and that the valves close properly.
- Examine the lens for cracks, scratches, and other marks that may compromise the integrity of the unit.
- Check the breathing tube for cracks, tears or leaks. Seal one end of the tube and apply air pressure to the other end to detect leaks.
- Examine blower assembly for damage or cracks. Check that there are no loose objects rattling inside the blower assembly.
- Test the operation of the unit by temporarily installing the battery and checking the air flow.
- Remove the battery after check is complete.
- Correct any issues immediately or tag the unit as in need of repair and remove from service.

Storage:

- After cleaning and drying, place facepiece and 40-mm adapters in a heat sealed or a resealable plastic bag until reused. Store in a manner that will not distort the face seals.
- On blower assembly, replace red caps in the two canister ports and in the air outlet on the top of the unit.
- Breathing tubes may be sealed either by replacing the red caps or by threading the female end onto the male end for storage.
- Keep the instruction booklet with the complete respirator.

Disposal of Filter Elements and Batteries:

- Remove filter elements with care since they should be assumed to be contaminated.
- Disposal of filters must be in compliance with state and local regulations.
- Remove battery and discharge completely according to battery instruction. Remove the 'Warning' label from the side of the battery next to the contact end. Attached to this label is a pull tab. The pull tab must be removed with the 'Warning' label, resulting in complete battery discharge.
- Store battery with labels removed for five days to completely discharge.
- Dispose of depleted or damaged batteries in accordance with state and local environmental regulations and in accordance with the material safety data sheet (MSDS) for the Li-SO₂ battery.

Troubleshooting:

- Should the blower assembly noticeably decrease or stop completely, or if inhalation becomes difficult, immediately leave the contaminated area. Decontaminate if necessary, check the respirator.
- If a contaminant is tasted, detected by odor, or irritation, leave the area immediately. Check the respirator.
- If the battery compartment should become hot to the touch, immediately turn the blower off. Leave the facepiece off, and leave the area. Decontaminate if necessary, check the respirator.

Main Inventory of Items/ Accessories:

Part Description Part Number

- C420 PAPR w/ AV-3000 Facepiece w/ Kevlar Headnet (Comfort Seal), 805633-08
- C420 PAPR w/ AV-3000 Facepiece w/ Kevlar Headnet (Comfort Seal) and AV-NBC Shroud, 805636-08
- Battery Pack, 805358-01
- 40-mm Mask Adapter, 805059-01
- AV-3000 Face mask w/ Kevlar Headnet (Comfort Seal), 804191-08

Negative Pressure Respirator Parts

- NBC Canister, Non-Reflective Flat Black, 805176-02
- NBC Canister, Anodized Aluminum, 805716-03
- MBS Cartridge, 805557-01

Batteries:

The C420 utilizes a nonrechargeable lithium-sulfur dioxide (LiSO₂) battery. The battery provides 10 hours of operation. A compartment for a battery pack is located in the lower section of the blower assembly. When stored properly, the battery is capable of an extended shelf life of several years.

NOTE: It is recommended that due to the many types of rechargeable battery configurations, that Equipment Managers verify proper battery charging and operation through monthly equipment operation until battery is discharged prior to recharging.

Contact Information (Technical Support):

<http://www.scotthealthandsafety.com>

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 Monroe, NC 28111
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SCOTT ENVOY RADIOCOM

Model Envoy
EPA National Equipment List Version 2
February 2010

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Uses:

The Scott® Envoy Radiocom accessory provides a respirator mounted interface to a portable two-way radio. It also provides a remote voice amplifier and a separate radio interface for use when a respirator is not required.

- Provides for easy radio communication in SCBA, APR and PAPR use modes.
- Functions with or without using the AV-3000 face mask and provides a lapel microphone/loudspeaker function when used with the portable two-way radio alone.
- Provides for voice amplification.

Limitations:

- When the accessory is used in conjunction with a portable two way radio and if it is being used in a flammable atmosphere, it is limited to the most restrictive listing applicable for the two devices.
- If connected to a non-intrinsically safe radio, it cannot be used in an explosive or flammable atmosphere.
- Cannot use optional finger ring accessory in applications where fire or extremely high levels of heat are present.
- For use with only Scott® AV-3000 facepiece respirators.

Quick Start Up:

Verify that the respirator facepiece Radiocom mounting bracket is installed correctly on the right voicemitter. It may be installed on the left side; however, check for interference with hoses. See installation instructions at the end of this EOG.

- Perform visual inspection of unit components.

- Replace batteries if necessary.
- Connect cords to appropriate connectors.
- Install in respirator facepiece (see picture below).
- Don the respirator with the Radiocom communicator mounted to the facepiece, proceed with the regular checks for the respirator. Include a visual inspection of the Radiocom accessory during inspection.
- Securely position the main unit in an accessible area over the chest and the radio on your hip allowing for easy manipulation of both if needed.
- After donning the facepiece and checking the seal in accordance with the respirator protection procedures, position the speaker over the right ear by bending the flexible arm until the speaker assembly is located over the left ear.
- Attach the connector at the end of the cord from the main assembly to the appropriate portable two way radio.
- Inspect the two-way radio according to manufacturer guidelines.
- If applicable, attach the cable to the optional finger ring push-to-talk accessory to the socket on the bottom of the main assembly.
- Make sure that all unused electrical connections are properly sealed with the connector plugs provided. Do not use in a flammable or explosive environment if the plugs have not been attached.
- Test the portable two-way radio to confirm proper operation.

Use With a AV-3000 Facemask:

- Turn on the Radiocom amplifier by pressing the ON/OFF switch located on the main unit. The red LED on the facepiece will light showing the user that the unit is on.
- Adjust the ear piece so it is sitting close to the ear. Adjust the speaker volume control on the two way.
- To send a message over the radio, press the push-to-talk on the main unit. The LED on the facepiece will change from red to green while the transmission is in progress. If the optional finger ring is being used, press the button to activate the push-to-talk function of the radio.
- When not transmitting over the radio, the wearer's voice will be amplified by the main unit when batteries are installed.

Use Without a AV-3000 Facemask:

- Disconnect the facepiece cord connector from the top of the main unit by unscrewing the connector. Cover the main unit connector with the cap.
- Turn the Radiocom amplifier off by pressing the ON/OFF switch located on the bottom of the main unit. The LED will turn off.
- Position the main unit in a location, such as a jacket lapel. Adjust the speaker volume.
- To transmit a message, press the push-to-talk button and speak into the microphone located on the front of the unit. (The optional finger ring can be used to transmit a message as well).

Principles of Operation:

The Radiocom accessory is composed of a mask-mounting bracket and microphone assembly for attachment to a Scott® AV-3000 (and may be used with either the Scott® C420 PAPR or Scott® SCBA). Also included with this system is a separate belt-mounted battery powered amplifier assembly with a large push-to-talk button, and a radio connection cable specific to the particular type of portable radio (Motorola HT 1250).

When connected to a portable two way radio, pushing the push-to-talk button activates the transmit function of the radio using either the facepiece microphone or the microphone on the radio unit. LED's on the main unit and facepiece component indicate operation and transmission status. When not transmitting with the portable two-way radio, the voice of the user will be amplified over the main unit when the amplifier is turned on.

Additional Information:

- The Scott® Envoy Radiocom Accessory is listed by ETL as intrinsically safe per Class I, II, III, Division I, Groups A, B, C, D, E, F, G when used in accordance with, and equipped with specified batteries.
- The Radiocom accessory is available in a variety of cord/connector configurations to fit popular models of portable two-way radios.

Cleaning and Maintenance:

- After use the Radiocom accessory can be cleaned with a damp sponge. A solution of water and a mild dish detergent can be used if needed. Be careful not to let too much water enter the holes of the speaker. DO NOT immerse any parts of the unit in liquid.
- Inspect all cords/wires for cuts or tears. Remove from service if damaged.
- Inspect the contacts of the connector on the flexible cord attached to the facepiece assembly for dirt, foreign matter, or corrosion. Remove any dirt/foreign matter. If corrosion is present and cannot be removed the facepiece assembly should be removed and replaced.
- Replace batteries if LED is flashing the low battery warning.
- Plug all connectors when not in use.

Installation Precautions:

- The wearer must attach the radio to his person so that the radio is protected and securely attached. There must be enough slack in the cord from the facepiece assembly to the main unit so that user can turn their head through a full range of motion without pulling out the cord and in such a manner as to prevent excessive slack or hanging of the cord away from the user.
- Since the communication accessory is physically mounted on the respirator facepiece and connected by a cable to a two-way radio, care must be taken to prevent pulls on the cord connecting it to the main unit that may cause it to dislodge the respirator facepiece and expose the user to the atmosphere.
- Prevent the cable from interfering with the mobility and safety of the person using the respirator.
- Prevent the cable from interfering with an emergency escape from the area requiring respiratory protection.

Installation of Mounting Bracket on Facepiece Assembly:

- Using a No. 1 Phillips head screwdriver, remove the screw that secures the clip to the mounting bracket and holds the tabs together.
- Lubricate the outside of the right-side rubber voicemitter duct and the inside of the mounting bracket with water. Spread the tab end of the mounting bracket so that it slides easily over the rubber voicemitter duct. Align the mounting bracket tab and the facepiece's regulator locking channel.
- Push the mounting bracket completely onto the voicemitter duct, bottoming out in the facepiece channel.
- Orient the clip on the facepiece's locking channel. Attach the clip to the lower side of the tab with the Phillips head screw and tighten until there is no space between the split in the tab. Proper orientation of the tab will ensure that the Radiocom accessory can be properly oriented when mounted.
- The body of the Radiocom assembly is keyed so it only fits in the mounting bracket one way. To attach the facepiece assembly to the mounting bracket, hold it with the flexible cord strain relief facing the wearer's top right head harness attachment point. There are three white dots on the assembly that are to be aligned with the three white bars on the mounting bracket. Align the mount, that projects from the rear of the facepiece, with the hold in the center of the bracket and press the facepiece assembly into the bracket.
- While pressing the facepiece assembly body into the mounting bracket, turn the facepiece assembly body a quarter of a turn clockwise as viewed from the exterior right side of the mask. The body will lock into place with an audible click.

Note: Radiocom facepiece unit (ear speaker) locking spring lever must bottom in the locking channel on the mounting bracket. After installing check to be certain the head harness mounting tab (connecting the mask to the tightening strap) is not pinched between the Radiocom mounting bracket and the facepiece lens moulding. The tab must be free to rotate about the head harness mounting button on the facepiece.

Installation of Envoy Voicecom Unit on AV-3000 Facemask:

The following instructions are for installation of the Envoy Voicecom unit on a Scott® AV-3000 facemask, which can then be used in SCBA mode.

- Disconnect the cord that attaches the facepiece assembly to the main assembly by turning the barrel of the plug and removing the plug.
- Feed the cord from the facepiece assembly up through the sheath of the right shoulder pad, across the top of the respirator frame, and back down through the sheath of the left shoulder pad.
- Reconnect the cord from the facepiece assembly to the main assembly. The connector is threaded and is keyed to fit only one way.
- Clip the main assembly to the left shoulder pad sheath.

Battery Installation:

- The area must be nonflammable in order to open the battery cover.
- Release the battery cover by turning the battery cover finger screw counterclockwise. The cover will hinge and lift out.
- Remove the battery and inspect the contacts for corrosion or damage. If any corrosion is found, do not use. Return for repair.
- Slide the batteries into the battery compartment. Ensure the orientation of the batteries is correct. Check that the cover seal around the battery cover is clean and undamaged. Close the battery cover and finger tighten the screw.
- **LOW BATTERY ALERT:** The red LED on the facepiece assembly will blink to indicate the batteries are low.

Termination of Use :

- Exit the area requiring respiratory support.
- Loosen the head harness straps by simultaneously lifting the buckle release levers outward and pulling away from the face.
- The Envoy assembly may be removed by pressing the locking spring lever outward. With locking lever disengaged rotate the facepiece assembly one quarter turn clockwise and lift the assembly away from the mask.
- Turn the Radiocom amplifier off by pressing the ON/OFF button located on the bottom of the main unit.
- Turn off the portable two-way unit in accordance with manufacturer's instructions.

Troubleshooting:

- Should the cord from the Radiocom accessory become entangled during use, the wearer should be prepared to do the following:
- Remove the Envoy assembly from the respirator, taking care to prevent pulling the respirator and breaking it's seal to your face.
- If applicable, disconnect the cable from the finger ring push-to-talk button.
- If necessary, abandon the radio and the Envoy as a unit rather than disconnect the cord from the radio, just in case the atmosphere is or is suspected of being flammable or explosive. These two units can be recovered and decontaminated at a later time.

Batteries:

The Envoy Radiocom accessory requires the installation of two AAA batteries in the belt-mounted unit. It is recommended that only alkaline batteries be used in this unit. Use of rechargeable batteries is prohibited. If the batteries are low, the red LED on the facepiece component will blink.

NOTE: It is recommended that due to the many types of rechargeable battery configurations, that Equipment managers verify proper battery charging and operation through monthly equipment operation until battery is discharged prior to recharging.

Main Inventory of Items/Accessories:

Part Descriptions and Part Numbers

See the figure below showing all components of the Envoy Voicecom system.

- Envoy Radiocom Accessory, 805262-XX.
- Mounting Bracket Assembly, 804636-02.
- Instruction Sheet, 89406-01.
- Optional Finger Ring, 89414-01.

Contact Information (Technical Support):

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