



General Operating Guideline # 101

Subject: Maintenance, Inspection and Testing of SCBA

Approval: March 16, 2023

Section 1: Purpose

The purpose of this guideline is to establish best practices concerning the maintenance, inspection and testing of SCBA to ensure that SCBA are maintained in safe operating conditions and ready for use at any time as may be required. (NFPA 1852)

Section 2: Scope

The guideline of SCBA maintenance inspection and testing is applicable to Lunenburg Regional Fire and Emergency Service personnel.

Section 3: General responsibilities

SCBA Officer

The Fire Department shall have an Officer assigned to oversee the SCBA program. This person shall have the training and experience to administer or oversee the best practices for use, maintenance and testing of SCBA. Overall, this Officer is responsible for selection and training of SCBA personnel, fit testing of personnel, breathing air quality, maintenance and repairs of SCBA, and all associated record keeping. The Officer may delegate tasks to appropriately trained Department personnel.

Fire Department Members:

Individual firefighters are expected to use SCBA when and where required and in the way they were trained. Members must inspect the SCBA unit before use to ensure it is operating in a safe manner. In addition, they have the responsibility to care for, maintain and clean their SCBA following the manufacturer's procedures and store them in accordance with manufacturer's instructions. Firefighters using SCBA are expected to bring any issues related to functionality or safety of the SCBA to the attention of the SCBA Officer.

Section 4: Inspection and Testing

All personnel who may be required to wear an SCBA shall be familiar with the inspection and maintenance of such equipment.

NFPA 1852 recommends a weekly inspection of SCBA units. Depending on usage the Department should evaluate frequency of inspection however in any case the inspection should be completed monthly.

The SCBA inspection should include the inspection of the following components in accordance with the manufacturer's recommendations and procedures.

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Facepiece inspection shall include the following:

- (1) Material checked for deterioration, dirt, cracks, tears, holes, pliability, and tackiness
- (2) Head-harness buckles, strap, and webbing checked for breaks, loss of elasticity, or wear
- (3) Lens checked for holes, cracks, scratches, heat damage, and a proper seal with the facepiece material
- (4) Exhalation valve, where present, checked for valve seat
- (5) Springs and covers checked for proper operation and cleanliness
- (6) Regulator connection(s) checked for proper operation and damage
- (7) Speaking diaphragm, where present, checked for damage

Backframe and Harness Assembly inspection shall include the following:

- (1) Harness straps and backframe checked for cuts, tears, abrasion, heat or chemical related damage
- (2) All buckles, fasteners, and adjustments checked for proper operation
- (3) Cylinder retention system checked for damage and proper operation
- (4) Cylinder checked for secure attachment to the backframe
- (5) Harness straps checked for full extension

Breathing air cylinder assembly inspection shall include the following:

- (1) Hydrostatic test date on the cylinder checked to be current
- (2) Gauge checked for damage
- (3) Cylinder body checked for cracks, dents, weakened areas, heat or chemical related damage
- (4) Composite portions checked for cuts, gouges, loose composite materials, absence of resin
- (5) Cylinder valve outlet sealing surface and threads checked for damage
- (6) Valve hand wheel checked for damage, proper alignment, serviceability, and secure attachment
- (7) Burst disc outlet area checked for debris
- (8) Cylinder checked for full charge (at least 90 % of rated charge)

Hose inspection shall include the following:

- (1) Hose checked for cuts, abrasions, bubbling, cracks, heat damage and chemical damage
- (2) External fittings checked for visual signs of damage
- (3) Hose checked for tight connections

Regulator Inspection shall include the following:

- (1) Regulator controls, where present, checked for damage and proper function
- (2) Pressure relief devices checked visually for damage
- (3) Housing and components checked for damage
- (4) Regulator checked for any unusual sounds e.g. whistling, chattering, clicking, or rattling during operation
- (5) Regulator and bypass checked for proper function when each is operated

Pressure indicator Inspection shall include the following:

- (1) Pressure indicator checked for damage
- (2) Cylinder pressure gauge and the remote gauge checked to read within 10 % of each other

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Alarms Where SCBA have integrated alarms e.g. low pressure, PASS etc. all operating modes shall be checked for proper function according to manufacturer's specifications. If detachable alarms are used e.g. PASS they shall be checked for proper operation.

Other Components Where SCBA has other optional components, such components shall be inspected in accordance with the manufacturer's instructions.

Final Inspection As the final inspection item, the entire SCBA shall be checked for pressure retention by closing all regulator valves, opening the cylinder valve thereby pressurizing the SCBA system, and then closing the cylinder valve. The SCBA shall hold system pressure in accordance with the manufacturer's specifications after the cylinder valve is closed. Following the pressure check, the system pressure shall be released.

Annual Inspection and Testing:

SCBA shall be performance tested to manufacturer's specifications at least annually by a certified manufacturer's representative. SCBA shall be tested for the performance specified in NPPA 1852 or the manufacturer's specifications whichever is stricter.

SCBA that fail to meet any of the acceptance criteria shall be tagged out-of-service until that SCBA has been adjusted or repaired, retested, and shown to meet all the performance criteria.

Documentation:

All inspection and repairs shall be recorded in a SCBA log.

Section 5: Cleaning and Disinfecting of SCBA

Cleaning: General

Fire department personnel shall ensure that SCBA are cleaned and disinfected using the procedures recommended by the manufacturer. The Fire Department will ensure an adequate supply of appropriate cleaning and disinfection materials at each station.

Cleaning is recommended after each usage where contaminants may come in contact with any part of the unit. Gross contamination should be washed off as soon as practical at the scene or station. It is preferable to have a dedicated decontamination area to prevent further contamination of personnel and equipment.

Prepare cleaning solution as described per manufacturer's instructions. The cleaning solution should be effective against gram positive and negative bacteria, fungi and viruses.



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Masks

- (1) SCBA masks issued for the exclusive use of a firefighter shall be cleaned and disinfected per the manufacturer's instructions as often as necessary to be maintained in a sanitary condition.
- (2) SCBA issued to more than one firefighter shall be cleaned and disinfected per the manufacturer's instructions after each use.
- (3) SCBA masks used in fit testing and training shall be cleaned and disinfected after each fit test use.
- (4) The face mask shall be placed in a clean, dry container in a manner that prevents deformation of the face seal, other damage or contamination in accordance with the manufacturer's recommendations.

Harness Assembly

- (1) Wipe off dirt and grime with a lathered mild soap solution or as recommended by the manufacturer. Rinse thoroughly. Take care not to get water into the regulator. Let harnesses air dry.

Air Cylinders

- (1) Wipe off dirt and grime from air cylinders with a lathered mild soap solution or as recommended by the manufacturer. Rinse thoroughly. Where applicable make sure each cylinder has a protective thread cap over the threads.

SCBA Storage Cases (if applicable)

- (1) Remove any loose dirt or debris. Sponge out with sanitizer/cleaner solution. Rinse with water

NOTE: Following the cleaning, leak test the SCBA and return to operation. If anything questionable arises, or obvious repairs are needed, tag the unit *out of service*. Refer all repairs to the manufacturer or certified representative as soon as possible.

Section 6: Maintenance, Repair and Removal from Service.

Users of SCBA units must pay close attention to the instructions for proper care and maintenance and repair instructions issued by the SCBA manufacturer. Maintenance procedures are unique to each manufacturer and model. Additionally, manufacturers are required to update the maintenance manual if an equipment modification impacts the use or maintenance of the SCBA.

- (1) No components will be replaced or repairs made beyond those recommended by the manufacturer.
- (2) Where a condition exists where the SCBA or SCBA components need repair, where user repair can be accomplished in accordance with manufacturer's instructions, promptly and replacement items or remedial action are immediately available, the SCBA shall be tagged out of service and then restored to proper condition and returned to in-service status.

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- (3) Where a condition exists where the SCBA or SCBA components are suspected to be in an unsafe condition, the SCBA or component shall be tagged out-of-service and removed from the response vehicle or storage location and referred to personnel responsible for maintenance and repair in accordance with manufacturer's instructions.
- (4) The out of service tag must include, Date, SCBA unit identification, name of person(s) reporting the problem and a brief description of the problem.
- (5) After repair the SCBA or SCBA component shall be inspected and tested in accordance with manufacturer's instructions. Any SCBA or SCBA component, or air cylinder that is damaged and cannot be repaired shall be removed from service and retired.
- (6) Any elastomeric component, including but not limited to facepieces, O-rings, and hose, shall be removed from service and retired when they reach the end of the SCBA manufacturer's specified service life.
- (7) An SCBA breathing air cylinder identified as having been filled with air that is found to not comply with the breathing air requirements shall be removed from service.

Section 7: Breathing Air and Cylinder Requalification

- (1) Breathing air in the SCBA cylinders shall meet the requirements of the Compressed Gas Association G-7.1-1989, with a minimum quality of Grade D (NFPA 1852). Air cylinders for SCBA shall be filled only by trained personnel. The purity of the air from the Fire Department's compressor shall be checked by a competent laboratory quarterly.
- (2) SCBA breathing air cylinders shall be periodically requalified for service as required by the Department of Transportation (DOT).
- (3) Where an SCBA breathing air cylinder is found to not be currently qualified for service, it shall be removed from service, tagged, and submitted for requalification testing.
- (4) Composite breathing air cylinders shall be removed from service and retired when they reach the end of the SCBA manufacturer's specified service life. Note: composite cylinders have a maximum use life of 15 years.

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