

# SECTION 1 – SAFETY PRECAUTIONS – READ BEFORE USING

AIR FILTER 2018-06

**⚠** Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.

## 1-1. Symbol Usage



**DANGER!** – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

**NOTICE** – Indicates statements not related to personal injury.

## 1-2. Breathing Air Hazards



The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Principal Safety Standards listed in Section 1-4. Read and follow all Safety Standards.



Only qualified persons should install, operate, maintain, and repair this equipment. A qualified person is defined as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project and has received safety training to recognize and avoid the hazards involved.



During operation, keep everybody, especially children, away.



### BREATHING UNFILTERED AIR can be hazardous.

Welding produces fumes and gases. Misuse of the air filtration system may expose you to fumes and gases hazardous to your health.

- Read and follow these instructions and the safety labels carefully. The air filtration system helps protect the user from specific airborne contaminants but must be used correctly to be fully effective. Have an industrial hygienist test the air in your facility to ensure the air filtration system provides adequate protection from contaminants in your environment. If you have questions about the air filtration system, see equipment NIOSH label and consult your Safety Director and a certified Industrial Hygienist. For occupational use applications, employers must implement a written respiratory protection program meeting the requirements of OSHA 29 CFR 1910.134 (USA) or CSA Z94.4 (Canada), and other substance specific requirements as applicable.
- Do not use the air filtration system until you have been trained in its proper operation by a qualified person.
- Follow all applicable ANSI, OSHA, CSA, CGA, and other regulatory guidelines pertaining to the use of air filtration systems.
- Do not use the air filtration system where there is danger of fire or explosion.
- Do not use the air filtration system in applications immediately dangerous to life or health (IDLH).
- Do not enter a hazardous area until you are sure the air filtration system is assembled correctly, and working properly.

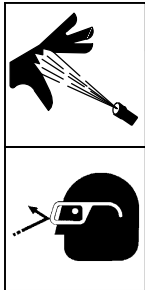
 Indicates special instructions.



This group of symbols means Warning! Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid these hazards.

- Dangerous contaminants may not smell or be visible. Leave the area immediately if you notice any of the following:
  - ... Breathing becomes difficult.
  - ... You experience dizziness, impaired vision, or eye, nose, or mouth irritation.
  - ... The air supply smells or tastes unusual.
  - ... The air supply equipment alarm sounds.
  - ... The equipment is damaged.
  - ... Air flow decreases or stops.
  - ... If you think the equipment is not supplying adequate protection. Do not remove the equipment until you are in a safe area.
- Before each use, inspect air filtration system for damage and verify it operates properly. Before using the air filtration system, test the air flow to verify the system is receiving an adequate volume of air. Clean and maintain the air filtration system according to the manufacturer's instructions.
- Do not use the air filtration system without all components or with the air supply turned off because hazardous levels of oxygen and carbon dioxide can accumulate in the helmet.
- Do not repair, modify, or disassemble the air filtration system or use with parts or accessories not supplied by the manufacturer. Use only those components that are part of the NIOSH-approved assembly.
- Breathable air must meet the requirements of Grade D breathing air as described in Compressed Gas Association Commodity Specification G.7.1 (United States) or CSA Standard Z180.1 (Canada). Use appropriate filters and carbon monoxide alarms to ensure breathable air is supplied.
- Have a qualified person test the breathing air to ensure it meets Grade D requirements. Breathing air testing shall be done in accordance with a written respirator protection program (prepared by a qualified person) specific to the workplace.
- Locate the compressed air source in a clean environment that is free from toxic fumes and gases and away from other sources of contamination, such as building exhaust vents and engine-powered vehicles and equipment (including generators). Be sure inlet on compressed air source is properly filtered to remove contaminants.
- Use only air line couplings designed for the supplied air system; air couplings must be incompatible with outlets for other gas systems.
- Operate air filtration system within specified air pressures and air hose lengths. The air supply system (air supply lines, fittings, filters, couplings, air pump/tanks) must be able to deliver sufficient air volume within safe limits, 125 psig (862 kPa) maximum. If correct pressure is not maintained, negative air pressure can develop in the helmet and create a risk of contaminants being inhaled. Also, unless removed by filters, oil, water, and other contaminants could flow downstream from the compressed air supply and adversely affect the supplied air respirator's performance. While air is flowing, use a reliable pressure gauge to continually monitor air pressure at the air source connection point.
- To ensure adequate cooling of supply air, follow air compressor manufacturer's recommendations when selecting air hose length. Do not use an air compressor that supplies air warmer than 160°F (71°C); supply air exceeding this temperature will degrade the air hose, which could adversely affect the supplied air respirator's performance.

- Operate air filtration system only with filters in vertical/upright position. Filters must be kept vertical/upright during operation or the following events may occur:
  - ... Auto drains will not function properly, which may result in contamination of the CO monitor and cause water to pass through the air supply hose and into the supplied air respirator.
  - ... Auto drains may become clogged, requiring that they be cleaned or replaced. See instructions for cleaning or replacing auto drains.
  - ... Moisture and/or contaminants may accumulate in filters. See instructions for filter replacement.
- The air filtration system does not remove toxic fumes and gases, including Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>), and Nitrogen. The air filtration system does not increase the oxygen content of the air supply, and the system should not be used if the air entering the system is oxygen deficient.

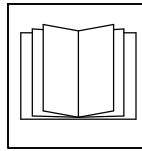


### COMPRESSED AIR can injure or kill.

- Before working on compressed air system, turn off unit, release pressure, and be sure air pressure cannot be accidentally applied.
- Check compressed air system components and all connections and hoses for damage, leaks, and wear before operating unit.
- Do not direct air stream toward self or others.
- Wear protective equipment such as safety glasses, hearing protection, leather gloves,

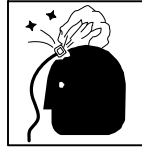
heavy shirt and trousers, high shoes, and a cap when working on compressed air system.

- Use soapy water or an ultrasonic detector to search for leaks—never use bare hands. Do not use equipment if leaks are found.
- Reinstall doors, panels, covers, or guards when servicing is finished and before starting unit.
- If ANY air is injected into the skin or body seek medical help immediately.



### READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform installation, maintenance, and service according to the Owner's Manuals, industry standards, and national, state, and local codes.



### TRAPPED AIR PRESSURE AND WHIPPING HOSES can injure.

- Release air pressure from air filtration system before servicing



### ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The input power circuit and machine internal circuits are live when power is on.

- Do not touch live electrical parts.
- Do not use equipment in damp, wet, or confined spaces, or if there is a danger of falling.
- Disconnect input power before installing or servicing this equipment.
- Properly install, ground, and operate this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- Keep cords dry, free of oil and grease, and protected from hot metal and sparks.
- Frequently inspect input power cord and ground conductor for damage or bare wiring – replace immediately if damaged – bare wiring can kill.
- Turn off all equipment when not in use. Do not leave equipment until it has completely stopped.

## 1-3. Proposition 65 Warnings

**⚠ WARNING: Cancer and Reproductive Harm – [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

## 1-4. Principal Safety Standards

*Safety in Welding, Cutting, and Allied Processes*, ANSI Standard Z49.1, is available as a free download from the American Welding Society at <http://www.aws.org> or purchased from Global Engineering Documents (phone: 1-877-413-5184, website: [www.global.ihc.com](http://www.global.ihc.com)).

*Safe Practice For Occupational And Educational Eye And Face Protection*, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: [www.ansi.org](http://www.ansi.org)).

*NIOSH Approval of Respiratory Devices*, CFR Title 42 – Public Health, Part 84, is available from the Centers for Disease Control, 1600 Clifton Rd. Atlanta, GA 30329-4027 (phone: 800-232-4636) or as a free download at [www.cdc.gov/niosh](http://www.cdc.gov/niosh).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 (phone: 1-866-512-1800) (there are 10 OSHA Regional Offices—phone for Region 5, Chicago, is 312-353-2220, website: [www.osha.gov](http://www.osha.gov)).

*American National Standard for Respiratory Protection*, ANSI /ASSE Standard Z88.2-2015, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: [www.ansi.org](http://www.ansi.org)).

*Selection, Use, and Care of Respirators*, CAN/CSA Standard Z94.4, from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N5 (phone: 800-463-6727, website: [www.csagroup.org](http://www.csagroup.org)).

*Commodity Specification for Air*, CGA Pamphlet G-7.1, from Compressed Gas Association, 14501 George Carter Way, Suite 103, Chantilly, VA 20151 (phone: 703-788-2700, website: [www.cganet.com](http://www.cganet.com)).

*Compressed Breathing Air and Systems*, CSA Standard Z180.1, from Canadian Standards Association, Standards Sales, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N5 (phone: 800-463-6727, website: [www.csagroup.org](http://www.csagroup.org)).