

# Honeywell

## TITAN™

NFPA 1981, 2013 EDITION COMPLIANT  
SELF-CONTAINED BREATHING APPARATUS (SCBA)

### Operation Manual



**! WARNING**

***DO NOT USE this respirator until you completely read and understand this instruction manual. You are required to inspect your respirator prior to putting it into field service. Please refer to the inspection procedures in this manual. Failure to comply with this warning may lead to illness, personal injury, or death.***



## NOTE

This section must be read in conjunction with the NIOSH approval label in this user's manual. Failure to observe these cautions and limitations voids NIOSH approval.

### CAUTIONS AND LIMITATIONS

- D - Air line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher.
  - E - Use only the pressure ranges and hose lengths specified in the user's instructions.
  - I - Contains electrical parts that may be an ignition source in flammable or explosive atmospheres.
  - J - Failure to properly use and maintain this product could result in injury or death.
  - M - All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.
  - N - Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by the manufacturer.
  - O - Refer to user's instructions, and/or maintenance manuals for information on use and maintenance of these respirators.
  - S - Special or critical user's instructions and/or specific use limitations apply. Refer to user's instructions before donning.
  - Q - Use in conjunction with personal protective ensembles that provide appropriate levels of protection against dermal hazards.
  - 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 SCBA after each use and between multiple entries during the same use. Decontamination and disposal procedures must be followed.
  - U - The respirator should not be used beyond 6 hours after initial exposure to chemical warfare agents to avoid the possibility of agent permeation.
- EBSS - EBSS Activation, or engagement of EBSS in either the donor or receiver mode, changes the SCBA use to escape-only. Approved service time for either the donor, or receiver is no longer applicable. Additional critical cautions and limitations apply. Refer to EBSS in the user's instructions.

### S - SPECIAL OR CRITICAL USER'S INSTRUCTIONS

1. This respirator is approved for use above -25°F (-31.7°C) when using the 2820XX series facepiece.
2. Use with adequate skin protection when worn in gases or vapors that poison by skin absorption (for example, hydrocyanic acid gas).
3. Approved only when the compressed air container is fully charged with air meeting the requirements of the Compressed Gas Association, G-7.1 for Type 1, Grade D air or equivalent specifications, and having a moisture content, expressed as dewpoint, of -65°F or lower. The container shall be marked "Fill With Compressed Air Only" and shall meet applicable DOT specifications.
4. The economy harness backpack, P/N 930195, is not approved to be equipped with the EBSS accessory when a 2216 psig, 30-minute, aluminum cylinder with either a non-locking or locking cylinder valve collar, P/Ns 915140 or 917435, is used with the SCBA. An EBSS may only be installed on the economy harness backpack when a hoop-wrapped fiberglass cylinder or a fully wrapped carbon cylinder is used with the SCBA.
5. Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by Honeywell.
6. DEATH OR SERIOUS INJURY may result if instructions are not carefully followed.
7. READ AND UNDERSTAND all instructions, limitations, and other warnings found on the apparatus and in the operation manual.

### EBSS - SPECIAL OR CRITICAL USER'S INSTRUCTIONS

1. EBSS may not be engaged or activated in donor mode after the donor End-of-Service-Time-Indicator (EOSTI) has activated
2. Users must be fully trained in the operation of EBSS in accordance with a training program conforming to the requirements of NFPA 1404, Standard for Fire Service Respiratory Protection Training; and NFPA 1500, Fire Department Occupational Safety And Health Program. Simultaneous connection of more than two users—one donor and one receiver—is not permitted.
3. Simultaneous connection of more than two users—one donor and one receiver—is not permitted.

## WARRANTY AND LIMITATION OF LIABILITY

### LIMITED WARRANTY:

Honeywell warrants this product to be free from defects in materials and workmanship for 12 years from the date of purchase, with the exception of the compressed air cylinder—the standard cylinder is warranted for 15 years; the extended life cylinder is warranted for 30 years—and the first stage pressure reducer, which is warranted for the life of the product. The electronics for the Heads-Up Display (HUD), battery pack, PASS, and pressure transducer are warranted for 5 years. During these periods, Honeywell will repair or replace defective parts, at Honeywell's option. Freight charges to and from the Honeywell factory shall be paid by the purchaser.

### EXCLUSIONS:

**NOT WITHSTANDING ANY CONTRARY TERM IN THE PURCHASER'S PURCHASE ORDER OR OTHERWISE, THE ONLY WARRANTY EXTENDED BY HONEYWELL IS THE EXPRESSED LIMITED WARRANTY DEFINED ABOVE. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.**

### CONDITIONS:

To maintain this warranty, a completed warranty card must be returned and the product must be used, maintained, and inspected as prescribed in the owner's instruction manual, including prompt replacement or repair of defective parts, mandatory flow tests and overhauls, and such other necessary maintenance and repair as may be required. Normal wear and tear; parts damaged by abuse, misuse, negligence, or accidents; batteries; and installed accessories which have separate warranties are specifically excluded from this warranty. Exposure to materials that damage or render this product unusable will void this warranty.

### LIMITATION OF LIABILITY:

No other oral warranties, representations, or guarantees of any kind have been made by Honeywell, its distributors, or the agents of either of them, that in any way alter the terms of this warranty. EXCEPT AS HEREIN PROVIDED, HONEYWELL SHALL HAVE NO LIABILITY FOR ANY LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL, TO ANY PURCHASER OR USER OF THIS PRODUCT ARISING FROM THE SALE, USE, OR OPERATION OF THIS PRODUCT.

### **WARNING**

*The failure to use and maintain this equipment in strict conformance with the applicable instruction manual may result in personal injury, illness, or death. The equipment's use in any manner that is not expressly authorized pursuant to the applicable instruction manual may result in severe adverse impacts to human health.*

**TABLE OF CONTENTS**

CAUTIONS AND LIMITATIONS.....	i
WARRANTY AND LIMITATION OF LIABILITY.....	ii
I. INTRODUCTION.....	1
II. SAFETY PRECAUTIONS.....	1
III. PARTS LIST.....	3
IV. DESCRIPTION.....	6
A. Backpack and Cylinder.....	6
B. First Stage Pressure Reducer.....	6
C. Heads-up Display (HUD).....	7
D. Chest-mounted Gauge.....	7
E. Second Stage Regulator.....	7
F. Facepiece.....	8
G. Rapid Intervention Crew/Company Universal Air Connection (RIC UAC).....	8
V. UNPACKAGING.....	8
A. Warranty Card.....	8
B. Removing the SCBA from the Packaging.....	8
VI. OPERATION.....	9
A. Fit Test Instructions for Facepieces.....	9
B. Donning Backpack.....	12
C. Donning Facepiece.....	13
D. Exhalation Valve Test.....	14
E. Leak Check.....	14
F. Pressurization.....	14
G. Rapid Intervention Crew/Company Universal Air Connection (RIC UAC) Operation.....	15
H. Emergency Operation.....	16
I. Doffing.....	17
J. Cylinder Removal and Replacement.....	17
K. Transportation.....	18
L. Interface Considerations.....	18
VII. CYLINDER FILLING & SAFETY.....	18
A. Inspection.....	19
B. Filling Procedures.....	20
VIII. MAINTENANCE.....	20
A. Facepiece Cleaning.....	20
B. Second Stage Regulator Cleaning.....	21
C. Exterior Surfaces Cleaning.....	21
D. Inspection (see Inspection Table, page 27).....	21
E. Repair (see Repair Table, page 28).....	21
F. Functional Testing (see page 29).....	22
G. Cylinder Recharging.....	22
H. Cold Weather Operation and Maintenance.....	22
1. Air Supply.....	22
2. Facepiece and Exhalation Valve.....	22
3. Second Stage Regulator.....	23
4. Backpack.....	24
5. Regulator Holder.....	24
6. Cylinder Valve.....	24
7. Gauge and Alarms.....	24
8. First Stage Pressure Reducer.....	24
9. Rapid Intervention Crew/Company Universal Air Connection (RIC UAC).....	24
10. EBSS (Buddy Breather).....	24
11. Training and Use.....	24
12. Accessories.....	25
I. Storage.....	25
J. Flow Test.....	25
K. Cylinder Valve Overhaul Schedule.....	25
L. Cylinder Hydrostatic Test Schedule.....	25
M. Maintenance Record.....	25
N. Additional Information.....	26
IX. WARRANTY AND LIMITATION OF LIABILITY.....	26
X. INSPECTION TABLE.....	27
XI. REPAIR TABLE.....	28
XII. FUNCTIONAL TESTING TABLE.....	29
CAUTIONS AND LIMITATIONS.....	30

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## I. INTRODUCTION

1. This manual provides operating instructions as well as cleaning, maintenance and storage procedures for the Honeywell Titan™ SCBA, compliant with NFPA 1981, 2013 Edition. **You must read and understand all the instructions and be properly trained before using the Titan SCBA in a hazardous atmosphere.**

## II. SAFETY PRECAUTIONS

The Warnings, Cautions, and Notes contained in this manual have the following significance:

### **⚠ WARNING**

**Maintenance or operating procedures and techniques that may result in personal injury, illness, or death if not carefully followed.**

### **CAUTION**

**Maintenance or operating procedures and techniques that may result in damage to equipment if not carefully followed.**

### **NOTE**

Maintenance or operating procedures and techniques or information considered important enough to emphasize.

### **⚠ WARNING**

- **The user is responsible for establishing that this equipment is suitable for the user's application.**
- **For respiratory protection, this SCBA must be worn and used as specified in Honeywell's instructions. No protective equipment can provide complete protection from all conditions. Use extreme care in all emergency operations. Do not use the SCBA alone for any firefighting, hazardous materials, or CBRN response operations; additional protective clothing and equipment are required for protection. Always use in conjunction with personal protective ensembles that provide appropriate levels of protection against dermal hazards. This SCBA may cease to provide protection if used during excessive heat or flashover conditions harsher than those in which it has been tested. Users must clean and maintain this SCBA only in accordance with Honeywell's instructions. Accessories or replacement components not certified for use with this SCBA may degrade performance or make this SCBA unsafe, or void NIOSH certification, and must not be used without Honeywell's written consent. The user must read, understand, and follow these operation instructions before using this SCBA in a hazardous environment. Only Honeywell components shall be used with this SCBA. Failure to comply will void the warranty and NIOSH approval.**
- **Your Honeywell respirator has been**

### **⚠ WARNING—Continued**

**constructed of materials selected after careful consideration for their performance, safety, and durability. However, all materials have exposure limitations to flame, extremes of heat and cold, or to the many chemicals in use today. No materials exist that can be used safely in all of these environments.**

- **This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**

- **Exposure to atmospheres containing CBRN agents may cause the SCBA to be exposed to excessive CBRN agent levels. Although the Titan SCBA will prevent penetration and permeation of specific concentrations of CBRN agents, there could be environments that are contaminated with CBRN agent levels that exceed the NIOSH CBRN test protocol concentrations. This is a particular concern in confined space environments. Proper quantification of the CBRN agent-contaminated environment is recommended prior to entry.**

- **Our engineers cannot predict what will happen to this equipment in every potential environment. Materials can be chemically attacked if exposed to the wrong environment and may exhibit excessive corrosion or other forms of damage. Permeation of gases and liquids through the materials could be excessive. Flame or extremes of temperature might cause thermal degradation. Each of these things, or a combination of them, could create conditions in which this Honeywell equipment would be dangerous to use.**

- **This respirator will reduce, but will not eliminate, the inhalation of contaminants. Before allowing anyone to enter a hazardous environment while wearing Honeywell equipment, you must conduct safe, scientific tests to determine if the environment could render the equipment unsafe. Results of this testing should be well documented. Seek the help of a certified safety professional or industrial hygienist. DO NOT USE this equipment if the user would be endangered in any way through environmentally induced degradation of the materials in the apparatus.**

- **All persons using this Honeywell breathing apparatus must be made aware of its limitations. We cannot be responsible for any damage to property, personal injury, or death in which environmental exposure is a contributing factor.**

- **This respirator does not protect exposed areas of the body. Some contaminants can**

## **⚠ WARNING—Continued**

be absorbed directly through the skin, while others may irritate exposed areas. Always use in conjunction with personal protective ensembles that provide appropriate levels of protection against dermal hazards.

- Visual indications of material degradation may be identified by charring, blistering, cracking, crazing, pitting, chalking, rust, and significant color changes, all of which can result in a weakened structure, prohibiting extended useful service life.

- Do not wear this respirator if a satisfactory fit, as determined by the fit testing described in Section VI., cannot be obtained. Also see ANSI Z88.2 latest edition and OSHA Respirator Standard (29 CFR 1910.134).

- Beards and sideburns will prevent a good facepiece seal. Do not use this respirator unless you are clean shaven.

- This respirator must be used in conjunction with a written respirator program meeting the requirements of the OSHA Standard for Respiratory Protection, 29 CFR 1910.134, available from the U.S. Department of Labor, Occupational Safety and Health Administration. The program must include, but not be limited to, procedures for evaluating air contaminants and selecting appropriate respirators; procedures for testing the facepiece-to-face fit of respirators; procedures for cleaning, disinfecting, inspecting, maintaining, and storing respirators; procedures for determining if workers are physically and medically capable of wearing respirators; and procedures for training employees in the use of respirators and in recognizing the hazards associated with contaminants in the workplace.

- Do not use this respirator underwater or for abrasive blasting.

- This SCBA is designed for storage in temperatures from -25° F to +160° F. If stored below 0° F, the SCBA must be warmed to above 0° F before use. Failure to do so may result in damage to the equipment.

- Honeywell respirators, accessories and associated equipment should not be used in atmospheres which may contain contaminant concentrations above the lower explosive limit (LEL). Intrinsic safety certification of electronic components does not eliminate potential danger of ignition of these atmospheres.

- The pressure within the Honeywell facepiece remains positive under most working conditions, but as with all SCBAs, negative pressure excursions are possible. Conditions when an SCBA can experience

## **⚠ WARNING—Continued**

negative facepiece pressures include, but are not limited to: 1) the SCBA is improperly worn, 2) the SCBA is not used in accordance with the instructions, 3) the SCBA is improperly maintained, or 4) the SCBA is subjected to over-breathing during heavy work rates. The SCBA will provide reduced protection when operated in a negative pressure mode.

- Some sensitive individuals may experience health problems when exposed to even minute amounts of contaminants. This SCBA will not prevent health problems for those individuals.

- Sensitized persons can have severe reactions to chemicals at levels well below accepted health levels such as the OSHA Permissible Exposure Limit (PEL), ACGIH® Threshold Limit Value (TLV®), or NIOSH Recommended Exposure Limits (REL). Do not use this SCBA if you have been sensitized from previous exposure or believe that you may be sensitive or allergic to any chemicals (e.g., isocyanates, latex, etc.).

- Do not alter or modify this SCBA in any manner. Modifying this SCBA will void NIOSH certification and may create a condition in which the SCBA would not provide the intended protection. Do not remove, obscure, or alter any labels on the SCBA.

- Some individuals are sensitive to chemicals (e.g., isocyanates, latex, oil mists, etc.) or may have some type of respiratory disorder (e.g., asthma, chronic obstructive pulmonary disease, etc.). If you are sensitive to any chemical or have a respiratory disorder, you may have a severe reaction at contaminant levels well below accepted health levels, such as the OSHA Permissible Exposure Limit (PEL), ACGIH® Threshold Limit Value®, or the NIOSH Recommended Exposure Limit (REL). Many chemicals (e.g., isocyanates, mercury, etc.) have no physical warning properties and cannot be tasted or smelled, even though they may be present in the facepiece. This SCBA will reduce, but will not eliminate, the possibility of contaminants entering the facepiece and causing a severe reaction. Do not use this respirator under these conditions.

- Discontinue use if you experience skin irritation or discoloration.

- An impact to the second stage regulator when the cylinder valve is open may inadvertently activate the First-Breath-On mechanism, causing air to flow from the regulator and diminishing the air in the cylinder.



**⚠ WARNING—CONTINUED**

- **ONLY grasp the cylinder valve handwheel to open or close the valve. DO NOT pick up or carry a cylinder by the handwheel, drop a cylinder on the handwheel, or bump the handwheel, as this may cause the cylinder valve to inadvertently open, which may lead to the cylinder becoming airborne under the thrust of air released from the open valve, causing injury or death. ALWAYS pick up and carry an air cylinder by the cylinder body.**
- **Do not over-torque air cylinder valves. ALWAYS verify that the hydrostatic test facility performing your cylinder testing DOES NOT over-torque the cylinder valves when they reinstall them.**
- **Some CBRN agents may not present immediate effects from exposure, but can result in delayed impairment, illness, or death.**
- **Direct contact with CBRN agents requires proper handling of the SCBA 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 SCBA after decontamination.**
- **The respirator should not be used beyond six (6) hours after initial exposure to chemical warfare agents to avoid the possibility of agent permeation.**
- **Prior to using the Titan SCBA for the first time, you must perform fit testing as described in section VI. Do not wear this respirator if a satisfactory fit, as determined by the fit testing described in section VI, cannot be obtained.**
- **You must read, understand, and follow all warnings, instructions, labels, and Safety Data Sheets (SDS), etc., for the materials you are using (e.g., paints, hardeners, insecticides, varnishes, etc.).**
- **You must also read, understand, and follow all warnings, instructions, etc., listed in the SDS for any contaminants that may be or are present in the work area.**
- **FAILURE TO COMPLY WITH THESE WARNINGS MAY RESULT IN PERSONAL INJURY, ILLNESS, OR DEATH.**

**⚠ WARNING**

**Detectable amounts of chemicals known to the State of California to cause cancer, birth defects, or reproductive harm may be found in this product. (This warning required by California Health and Safety Code Section 25249.6)**

**III. PARTS LIST**

Part No.	Description
<b>FACEPIECES</b>	
282053	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, SMALL BLACK NOSE CUP, SILICONE HEADSTRAP
282012	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, MEDIUM BLACK NOSE CUP, SILICONE HEADSTRAP
282013	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, LARGE BLACK NOSE CUP, SILICONE HEADSTRAP
282041	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, SMALL BLACK NOSE CUP, SILICONE HEADSTRAP
282022	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, MEDIUM BLACK NOSE CUP, SILICONE HEADSTRAP
282023	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, LARGE BLACK NOSE CUP, SILICONE HEADSTRAP
282043	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, SMALL BLACK NOSE CUP, SILICONE HEADSTRAP
282032	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, MEDIUM BLACK NOSE CUP, SILICONE HEADSTRAP
282033	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, LARGE BLACK NOSE CUP, SILICONE HEADSTRAP
282048	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, SMALL BLACK NOSE CUP, HEADNET
282016	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, MEDIUM BLACK NOSE CUP, HEADNET
282017	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, LARGE BLACK NOSE CUP, HEADNET
282050	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, SMALL BLACK NOSE CUP, HEADNET
282026	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, MEDIUM BLACK NOSE CUP, HEADNET
282027	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, LARGE BLACK NOSE CUP, HEADNET
282052	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, SMALL BLACK NOSE CUP, HEADNET
282036	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, MEDIUM BLACK NOSE CUP, HEADNET
282037	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, LARGE BLACK NOSE CUP, HEADNET
282053T	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, SMALL BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282012T	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, MEDIUM BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282013T	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, LRG BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282041T	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, SMALL BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282022T	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, MEDIUM BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282023T	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, LARGE BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP

# Honeywell Titan SCBA, 2013

Part No.	Description
282043T	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, SMALL BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282032T	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, MEDIUM BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282033T	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, LARGE BLACK NOSE CUP, W/TEMPLE INSERTS, SILICONE HEADSTRAP
282048T	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, SMALL BLACK NOSE CUP, HEADNET W/ TEMPLE INSERTS
282016T	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, MEDIUM BLACK NOSE CUP, HEADNET, W/TEMPLE INSERTS
282017T	FACEPIECE—TWENTY/20+, CBRN, SMALL, BLACK, LARGE BLACK NOSE CUP, HEADNET, W/ TEMPLE INSERTS
282050T	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, SMALL BLACK NOSE CUP, HEADNET, W/ TEMPLE INSERTS
282026T	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, MEDIUM BLACK NOSE CUP, HEADNET, W/TEMPLE INSERTS
282027T	FACEPIECE—TWENTY/20+, CBRN, MEDIUM, BLACK, LARGE BLACK NOSE CUP, HEADNET, W/ TEMPLE INSERTS
282052T	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, SMALL BLACK NOSE CUP, HEADNET, W/ TEMPLE INSERTS
282036T	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, MEDIUM BLACK NOSE CUP, HEADNET, W/TEMPLE INSERTS
282037T	FACEPIECE—TWENTY/20+, CBRN, LARGE, BLACK, LARGE BLACK NOSE CUP, HEADNET, W/ TEMPLE INSERTS
951015	ANTI-FOG SOLUTION, 1 OZ.
951016	ANTI-FOG SOLUTION, 16 OZ.
981808	ANTI-FOG WIPE, DRY
<b>MISCELLANEOUS</b>	
921388	1ST STAGE REGULATOR, WARBLING WHISTLE ALARM, 2216 PSIG
921389	1ST STAGE REGULATOR, WARBLING WHISTLE ALARM, 4500 PSIG
921390	1ST STAGE REGULATOR, BELL ALARM, 2216 PSIG
921391	1ST STAGE REGULATOR, BELL ALARM, 4500 PSIG
969180	2ND STAGE REGULATOR
930190	BACKPACK, TITAN
930192	BACKPACK, TITAN, ESCAPE
930191	BACKPACK, TITAN, ALLIGATOR CLIPS
930193	BACKPACK, TITAN, ALLIGATOR CLIPS, ESCAPE
930195	BACKPACK, TITAN, ECONO
921145	LOWER COVER, BATTERY COMPARTMENT, TITAN
930187	PRESSURE TRANSDUCER WITH CABLE
923114	OVER-THE-SHOULDER GAUGE, 2216 PSIG, 33%
921315	OVER-THE-SHOULDER GAUGE, 4500 PSIG, 33%
921226	OVER-THE-SHOULDER GAUGE HOSE

Part No.	Description
930189	INTEGRATED BATTERY PACK, TITAN
930186	BATTERY PACK HUD CONNECTOR, 2216 PSIG, 33%
930188	BATTERY PACK HUD CONNECTOR, 4500 PSIG, 33%
921342	INTERMEDIATE PRESSURE HOSE & CABLE WITH ELECTRICAL PNEUMATIC COUPLING, SAR
981013	INTERMEDIATE PRESSURE HOSE & CABLE, TITAN
966846	LIFE GRIP ESCAPE BELT, SIZE 38 (FITS WAIST SIZES 29–40)
966847	LIFE GRIP ESCAPE BELT, SIZE 46 (FITS WAIST SIZES 37–48)
966848	LIFE GRIP ESCAPE BELT, SIZE 52 (FITS WAIST SIZES 43–54)
966849	LIFE GRIP ESCAPE BELT, SIZE 60 (FITS WAIST SIZES 51–62)
<b>CYLINDERS</b>	
915140	CYL/VALVE, 2216 PSIG, ALUMINUM, 30 MIN
916103	CYL/VALVE, 2216 PSIG, HOOP-WRAPPED FIBERGLASS, 30 MIN
917130	CYL/VALVE, 2216 PSIG, FULLY WRAPPED CARBON, 30 MIN
915165	CYL/VALVE, 4500 PSIG, HOOP-WRAPPED FIBERGLASS, 30 MIN
917131	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 30 MIN
917145	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 45 MIN
917252	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 45 MIN, SHORT
917160	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 60 MIN
917421	CYL/VALVE, 2216 PSIG, ALUMINUM, 30 MIN, LOCKING HANDWHEEL
917403	CYL/VALVE, 2216 PSIG, HOOP-WRAPPED FIBERGLASS, 30 MIN, LOCKING HANDWHEEL
917423	CYL/VALVE, 2216 PSIG, FULLY WRAPPED CARBON, 30 MIN, LOCKING HANDWHEEL
917407	CYL/VALVE, 4500 PSIG, HOOP-WRAPPED FIBERGLASS, 30 MIN, LOCKING HANDWHEEL
917425	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 30 MIN, LOCKING HANDWHEEL
917427	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 45 MIN, LOCKING HANDWHEEL
917437	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 45 MIN, SHORT, LOCKING HANDWHEEL
917429	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON, 60 MIN, LOCKING HANDWHEEL
917530	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-SL, 30 MIN
917545	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-SL, 45 MIN
917560	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-SL, 60 MIN
917654	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-EL, 30 MIN

## Honeywell Titan SCBA, 2013

Part No.	Description
917673	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-EL, 45 MIN
917693	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-EL, 60 MIN
917532	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-SL, 30 MIN, LOCKING HANDWHEEL
917547	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-SL, 45 MIN, LOCKING HANDWHEEL
917562	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-SL, 60 MIN, LOCKING HANDWHEEL
917655	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-EL, 30 MIN, LOCKING HANDWHEEL
917674	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-EL, 45 MIN, LOCKING HANDWHEEL
917694	CYL/VALVE, 4500 PSIG, FULLY WRAPPED CARBON-EL, 60 MIN, LOCKING HANDWHEEL
<b>ACCESSORIES</b>	
921208	BUDDY BREATHER (EBSS) KIT, TITAN
966857	BUDDY BREATHER (EBSS) HOSE POUCH KIT, TITAN
975595	AIR LINE ADAPTER KIT
962260	SPECTACLES KIT
964044	SPECTACLES KIT, NEXSPEX
962378	CYLINDER CAP KIT, 4500 PSIG, 30 MIN, CARBON
962869	NECKSTRAP KIT, TWENTY/20+ FACEPIECE
975460	CHEST STRAP KIT
975465	D-RING KIT
969019	HEADNET W/SILICONE STRAP KIT
962150	FACEPIECE WITH TEMPLE INSERTS KIT, SMALL, BUTYL
962153	FACEPIECE WITH TEMPLE INSERTS KIT, MEDIUM, BUTYL
962154	FACEPIECE WITH TEMPLE INSERTS KIT, LARGE, BUTYL
975535	WAIST BELT EXTENDER
930176	INTEGRATED PASS, 2216 PSIG GAUGE, 33%, WITHOUT PATHFINDER, TITAN
930177	INTEGRATED PASS, 4500 PSIG GAUGE, 33%, WITHOUT PATHFINDER, TITAN
930174	INTEGRATED PASS, 2216 PSIG GAUGE, 33%, WITH PATHFINDER, TITAN
930175	INTEGRATED PASS, 4500 PSIG GAUGE, 33%, WITH PATHFINDER, TITAN
930179	PATHFINDER ULTRASONIC BEACON, TITAN
252136	VOICE AMPLIFICATION KIT, 2013
252135	RADIO COMMUNICATION SYSTEM KIT, 2013
252137	VOICE AMPLIFICATION/RADIO COMMUNICATION SYSTEM KIT, 2013
966835	BUDDY BREATHER (EBSS) STRAP KIT
966851	LADDER BELT, TETHER/CARABINER, ASSEMBLY
975470	CHEST STRAP KIT, FIXED SIDE
975575	D-RING KIT, 3"
930194	TRANSFILL HOSE WITH POUCH
966858	D-RING SHOULDER STRAP MOUNT KIT
966832	TOP PAD, SHORT
966825	TOP PAD, LONG

## IV. DESCRIPTION

The Titan SCBA provides the wearer with respiratory protection in hazardous environments, and may be used for entrance into and escape from atmospheres that are immediately dangerous to life or health (IDLH). The Titan SCBA is an NFPA- and NIOSH CBRN-compliant SCBA, and may be used for firefighting and/or CBRN incident response. It may be used as a supplied air respirator (in non-CBRN applications only) or self-contained breathing apparatus.

### **⚠ WARNING**

**Not all components and accessories approved for use on the Panther and Warrior SCBAs are approved for use on the Titan SCBA. You must check the NIOSH approval label in this manual for components and accessories approved for use on the Titan SCBA. See the Table of Contents. Failure to comply with this warning may lead to personal injury, illness, or death.**

The Titan SCBA meets all requirements of the NFPA 1981 Standard, 2013 Edition, *Open-Circuit Self-Contained Breathing Apparatus for Emergency Services*.

See NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, for proper use of SCBAs in the work environment.

The Titan SCBA meets the requirements of the NIOSH CBRN standard and has been granted NIOSH CBRN approval. The NIOSH CBRN approval label is located on the right side of the pressure transducer cover on the back-pack frame.

### A. Backpack and Cylinder

1. The backpack consists of a lightweight aluminum backplate with an aluminum hip plate that both swivels and hinges on the backplate. The backpack has an integrated carrying handle and an attached webbing strap handle. The cylinder is attached by a stainless steel band with integrated adjustment mechanism, and has a release latch on the right side (when looking at the cylinder with the valve pointing down). The Titan harness is made of Kevlar straps. The pressure gauge, mounted on the right shoulder strap, is integrated with the PASS device on units equipped with a PASS, and is a standard chest-mounted gauge on units not equipped with a PASS. The gauge indicates the cylinder pressure once the cylinder valve has been opened. The intermediate pressure hose is routed over the left shoulder, and includes an optional electrical/pneumatic quick connector in line, which allows for easy removal of the second stage regulator. Connection of the quick-connect automatically connects the electronics required for the Heads-Up Display (HUD).

2. The air cylinder is of composite construction with an aluminum inner liner overwrapped by carbon fiber, and has a maximum working pressure of 4500 psig (high pressure) in 30-, 45-, and 60-minute durations;

or 2216 psig (low pressure) in 30-minute duration. An all-aluminum cylinder and fiberglass composite hoop-wrapped cylinder with a maximum working pressure of 2216 psig (low pressure) in 30-minute duration are also available.

### **⚠ WARNING**

**DO NOT pick up or carry a cylinder by the handwheel. Use the cylinder valve handwheel ONLY to open or close the valve. Do not drop a cylinder on the handwheel, or bump the handwheel. This may cause the cylinder valve to open inadvertently and the cylinder to become airborne under the thrust of air released from the open valve, causing injury or death. ALWAYS pick up and carry an air cylinder by the cylinder body. Failure to comply with this warning may lead to personal injury, illness, or death.**

### B. First Stage Pressure Reducer

1. The first stage pressure reducer contains:
  - Pressure reduction components.
  - Primary low air alarm activation and adjustment mechanisms.
  - Intermediate pressure connections to the second stage regulator, audible alarm, and buddy breather (EBSS), if so equipped.
  - High pressure connections to the HUD transducer, remote pressure gauge, the universal air connection, and the audible alarm.
2. The first stage pressure reducer lowers cylinder air pressure to a nominal 115 psig. The relief valve activates to protect the system when the intermediate pressure exceeds 200 to 225 psig.
3. The first stage pressure reducer is connected to a warbling whistle or a bell alarm. The alarm is located on the first stage pressure reducer body, protected by a metal cover. The low pressure SCBA audible alarm activates at 731 to 820 psig (2216 psig system); the high pressure SCBA audible alarm activates at 1485 to 1665 psig (4500 psig systems). The audible alarm will continue to sound until the air pressure drops below 200 psig.

### **⚠ WARNING**

**• You must use a CBRN facepiece when using this SCBA in a potential or known CBRN contaminated atmosphere. Use of a facepiece other than a CBRN facepiece will void NIOSH CBRN certification and NFPA compliance certification.**

**• If the low battery alert activates (amber LEDs on the front and back PASS flashing every ten seconds) during storage, the batteries must be replaced before using the SCBA.**

**• Activation of the visual low air alarm (flashing red LED) in the HUD may or may not coincide with the audible alarm (whistle, warbling whistle, or bell) on the SCBA. As soon as the first alarm activates, PROCEED IMMEDIATELY TO A SAFE AREA.**

## **⚠ WARNING—Continued**

- *You must have binocular vision (vision from both eyes) to see and interpret the display correctly. Your visual acuity while wearing the facepiece must meet the requirements set forth by the authority having jurisdiction over your operation and/or workplace.*
- *Failure to comply with this warning may lead to personal injury, illness, or death.*

### C. Heads-up Display (HUD)

#### NOTE

The Titan SCBA comes equipped with a Heads-Up Display (HUD).

1. The HUD is mounted on the second stage regulator. When the second stage regulator is installed in the Twenty/20+ facepiece, the display can be seen through openings in the facepiece nozzle cover. When the cylinder valve is opened, the HUD activates automatically, and indicates the air pressure remaining in the cylinder. The display consists of four green LEDs, representing Full, 3/4, 1/2, and 1/3. At full cylinder pressure, all four LEDs are illuminated. As the air pressure in the cylinder decreases, the LEDs turn off one at a time, thereby indicating the air pressure status. When the pressure drops below 50% of cylinder capacity, the LED representing 1/2 cylinder capacity starts to flash, and continues to flash for a short time (approximately 20 seconds) before returning to being continuously lit. When the pressure drops to 1/3 (33%) of cylinder capacity, the last green LED turns red and begins to flash, giving the user a visual low pressure alarm in addition to the audible alarm located at the upper left of the backpack. On a 2216 psig SCBA, the 1/3 LED will turn red and begin to flash between 731 and 820 psig; on a 4500 psig SCBA, the 1/3 LED will turn red and begin to flash between 1485 and 1665 psig. When the pressure drops to 10% of cylinder capacity, the red LED begins flashing noticeably faster and continues until air pressure drops below approximately 200 psig, at which time the display will turn off. There are no LEDs representing zero air pressure.

2. An external red LED, mounted on the front of the HUD module, warns others of the user's low air status by flashing at the same time the 1/3 LED is flashing inside the HUD module. The external red LED flashes noticeably faster when the pressure drops to 10% of the cylinder capacity. A red LED at the lower right of the backpack performs the same functions.

3. The back PASS has an amber LED battery status indicator. In storage or when the SCBA is activated manually or by pressure from the cylinder, the amber LED flashes every ten seconds to indicate a low battery condition, and will cease flashing altogether to indicate a dead battery. An audible beep will also sound every ten seconds to indicate a low battery condition.

## **⚠ WARNING**

*The following alkaline battery types must be used in the battery compartment in order to maintain the intrinsic safety certification of this product:*

- *Duracell MN1400*
- *Duracell PC1400*
- *Energizer E93*
- *Energizer EN93*

4. To replace the batteries, remove the slotted battery cap located on the lower right hand side (when looking at the cylinder with the valve pointing down) of the backpack, using a coin, a large, flat blade screwdriver, or the male end of the waist strap buckle. Remove the old batteries and install new batteries in the orientation shown on the molded battery cover. Replace the battery cap hand tight.

#### NOTE

Refer to applicable local ordinances for appropriate disposal of used batteries.

## **⚠ WARNING**

- *Prior to re-installing the battery cap, ensure that the cap O-ring is not damaged. Replace damaged O-rings as required. After installation, ensure that the cap O-ring is not exposed or pinched in the seal area. Failure to comply with this warning may lead to personal injury, illness, or death.*
- *If the low battery alert activates (amber LED on the back PASS flashes every 10 seconds, along with an audible beep) during storage, the batteries must be replaced before using the SCBA.*
- *If the battery alert in the HUD activates during actual use (amber LED at the lower right of the display flashes once every second), the SCBA may continue to be used. The batteries must be replaced before the next usage.*
- *Failure to comply with this warning may lead to personal injury, illness, or death.*

### D. Chest-mounted Gauge

If the SCBA is not equipped with a PASS device, the chest-mounted pressure gauge is mounted on the right shoulder strap and may be swivelled 360° for easy viewing. When the cylinder valve is opened, the gauge indicates the air pressure remaining in the cylinder.

### E. Second Stage Regulator

## **⚠ WARNING**

- *An impact to the second stage regulator when the cylinder valve is open may inadvertently activate the First-Breath-On mechanism, causing air to flow from the regulator and diminishing the air in the cylinder.*

**⚠ WARNING—Continued**

- Turn off the free flowing regulator by pressing the shutoff button on the second stage regulator cover.
- Check the SCBA pressure gauge to determine if it is necessary to replenish the SCBA air supply prior to continuing use.
- Failure to comply with this warning may lead to personal injury, illness, or death.

The pressure demand second stage regulator is mounted on the facepiece by the Honeywell AIR KLIC™ system. The mechanism automatically locks in place when the regulator is pushed into the AIR KLIC, and is detached when both of the release buttons are pressed. To prevent inadvertent air flow, the regulator will not operate until the First-Breath-On mechanism is activated or the manual override button on the front of the regulator is pressed. The flow of air can be stopped by pressing the First-Breath-On shutoff button. The large red knob on the right side of the regulator controls an adjustable bypass valve. Turning this knob counter-clockwise provides a constant flow of air.

## F. Facepiece

**⚠ WARNING**

**You MUST use a CBRN facepiece (2820XX series) when using this SCBA in potential or known CBRN contaminated atmospheres. Use of a facepiece other than a CBRN facepiece will void NIOSH CBRN certification and NFPA compliance certification, and may lead to personal injury, illness, or death.**

The Titan SCBA/SAR must be used with a Twenty/20+ facepiece (2820XX series), which features a special wide-lip sealing surface and five-point silicone head-strap harness or optional Headnet harness. The lens is treated with an abrasion-resistant coating on the outside surface of the lens, and a permanent anti-fog coating on the inside of the lens. The nozzle houses a removable nose cup, speaking diaphragm, and exhalation valve. The AIR KLIC is threaded into the nozzle and secured by a ratchet mechanism to prevent leakage and provide a secure mount for the second stage regulator.

## G. Rapid Intervention Crew/Company Universal Air Connection (RIC UAC)

### NOTE

The Titan SCBA comes equipped with the Rapid Intervention Crew/Company Universal Air Connection (RIC UAC).

1. The RIC UAC and fill hose (purchased separately in the P/N 968970 or 978906 RIT Kit) provide a means for equalizing pressure in SCBA cylinders during a rescue. An attendant/rescue crew member must assist with the cylinder pressure equalization.

2. The RIC UAC is located adjacent to the CGA hand-wheel of the Titan SCBA, on the lower left side of the backpack (when looking at the cylinder with the valve pointing down). The RIC UAC is accompanied by a relief valve located on the first stage pressure reducer. The relief valve is designed to vent air to atmosphere when the fill pressure exceeds the cylinder service pressure, in order to prevent cylinder over-pressurization. The RIC UAC has a dust plug which must be installed over the coupling at all times before and after filling operations. The RIC UAC fill hose has the mating fill coupling. A directional flow control piston is located in the quick-disconnect coupling to prevent air loss and hose whipping if the hose is installed incorrectly. The quick-disconnect coupling is supplied with dust plugs which must be installed when the fill hose is not in use.

**⚠ WARNING**

- The RIC UAC has a dust plug which must be installed over the coupling at all times before and after filling operations.
- DO NOT allow oil, grease, or other contaminants to come in contact with the quick-disconnect couplings.
- DO NOT use air other than breathing air, Grade D or better, conforming to CGA G-7.1 Commodity Specification for Air. The moisture content, expressed as dewpoint, shall be maintained at -65°F (-53.9°C) or lower, or less than 24.0 ppm by volume moisture content.
- The Honeywell RIC UAC and RIC UAC fill hose must ONLY be used to fill compressed air cylinders. The Honeywell RIC UAC and RIC UAC fill hose must NEVER be used:
  1. As a buddy breathing device.
  2. For SCBA-to-SCBA filling.
  3. To provide a continuous air supply.
- Failure to comply with this warning may lead to personal injury, illness, or death.

## V. UNPACKAGING

### IMPORTANT—READ CAREFULLY

#### A. Warranty Card

1. Fill in the warranty registration card with the required information.
2. Mail back the completed warranty registration card immediately.
3. To comply with NIOSH, Honeywell is required to retain the completed warranty registration card.
4. Always refer to the equipment serial number if a claim is made.

#### B. Removing the SCBA from the Packaging

1. Carrying case (if supplied)
  - a. Remove the carrying case from the box.
  - b. Lift both locking tabs on the case and open it.

- c. Remove the facepiece from the case (if supplied).
  - d. Unfasten the Velcro transportation fasteners.
  - e. Lift the SCBA from the case.
2. Carton packaging
- a. Remove the facepiece from the box (if supplied).
  - b. Remove the plastic transportation cradle from the box with the SCBA connected to it.
  - c. Cut both locking straps securing the SCBA to the transportation cradle.
  - d. Lift the SCBA from the cradle.

### CAUTION

**Exercise extreme care when engraving identification markings on SCBA components. Engraving may induce stresses in materials that, over time, could propagate cracks. Plastic labels, dyno-labels, and stickers may burn.**

## VI. OPERATION

### WARNING

- *To avoid the possibility of agent contamination, the respirator should not be used beyond six (6) hours after initial exposure to chemical warfare agents.*
- *Prior to using the Titan SCBA for the first time, you must perform fit testing as described below.*
- *Do not wear this respirator if a satisfactory fit, as determined by the fit testing described below, cannot be obtained.*
- *Failure to comply with this warning may lead to personal injury, illness, or death.*

### A. Fit Test Instructions for Facepieces

#### NOTE

To ensure an adequate fit, each person who will wear a CBRN-certified SCBA must pass a quantitative fit test with a minimum measured fit factor of 500 while wearing a facepiece of a size and configuration exactly like the facepiece that will be worn with the SCBA. To simulate the weight of the second stage regulator as used with an SCBA, use the Honeywell APR Adapter, P/N 962900, equipped with two Honeywell P/N 105005 P100 filters.

#### 1. Introduction

- a. To perform quantitative fit testing using a TSI Porta-Count, use the Honeywell APR Adapter, P/N 962900, and the Honeywell Quantitative Fit Test Adapter, P/N 962920, to provide a means for drawing a sample from the interior of the facepiece.
- b. To perform quantitative fit testing using an OHD Quantifit®, use the Honeywell Canister Adapter, P/N 960150, modified per OHD instructions and the OHD 9513-0113 adapter (available from OHD).

#### 2. Applicable Facepieces

The Honeywell facepieces approved for use with CBRN-certified SCBA, and accessories approved for use with those facepieces, are listed in section III, page 3. A fit test must be performed with either:

- a. A facepiece equipped exactly like the facepiece to be worn with the SCBA, or
- b. A facepiece equipped with all of the listed accessories, to simulate worst case.

#### 3. Facepiece Selection

Select a small, medium, or large facepiece. Most people will achieve a good fit with a medium size facepiece and should try that size first, but if your face is small or large, you may want to start with a small or large size. You will have the opportunity to check the seal of the facepiece and to wear it for several minutes to determine its comfort before the Quantitative Fit Test (QNFT) is started.

To determine if you have selected a size that fits:

- a. For facepieces with a headnet, fully loosen the lower headstraps. For facepieces with headstraps, fully loosen all five (5) headstraps. See Figure 1.



Figure 1. Headstraps/Headnet

- b. Pull the headnet or headstraps over the top of the facepiece so that they are in front of the lens.

- c. While holding the facepiece by the nozzle, put your chin in the chin cup. See Figure 2. Make sure no clothing or hair comes between your face and the sealing area of the facepiece. Gently push the facepiece against your face.



Figure 2. Chin in Chin Cup

- d. Flatten your palm so that you close off the inlet as shown in Figure 3, and inhale lightly to check the seal. The vacuum created by inhaling will slightly collapse the facepiece. If a good fit is achieved, the face-

piece should remain lightly collapsed until you exhale or until you take your palm from the opening.



Figure 3. Leak Check  
NOTE

Do not hold your breath longer than two or three seconds, and do not pull a very strong vacuum. The purpose is to see if the facepiece will seal against a small amount of air pressure.

e. If a good fit was achieved, proceed to step 4. If you felt a leak, select a different size facepiece and repeat steps a. through d. above.

f. If you cannot get a fit with any size, then install a Temple Insert Kit, P/N 962150 (small), P/N 962153 (medium), or P/N 962154 (large) into the facepiece that fit the best, and repeat steps a. through e. above. If you still felt a leak when the facepiece was collapsed toward your face, install a different size Temple Insert Kit, and repeat steps a. through e. above. If you still cannot get a fit with any of the temple inserts installed, you cannot proceed.

#### 4. Assembling Adapter, Facepiece, and/or Filters for Fit Tests

Assemble the appropriate Quantitative Fit Test Adapter and/or filters to the APR Adapter or Canister Adapter and facepiece according to the instructions provided with the Quantitative Fit Test Adapter Kit.

#### 5. Donning the Facepiece/Fit Test Adapter Assembly Facepiece with Fabric Headnet:

- a. Fully loosen the lower head straps.
- b. If the facepiece has a neck strap, place the neck strap over your head.
- c. Place your chin in the chin cup, pull the headnet over your head and tighten it by pulling evenly on the upper and lower straps. See Figure 4. Make sure that your chin is properly recessed in the chin cup.



Figure 4. Tighten Headstraps

d. Center the facepiece and flatten the headnet with a wiping motion toward the back of your head. See Figure 5.



Figure 5. Flatten the Headnet

e. Retighten the straps. The headnet should be centered on the back of your head and the lower straps should be below your ears.

f. If the facepiece feels like it is not tight enough, tighten all the straps a little more. If it feels too tight, loosen the straps and readjust them.

#### Facepiece with Silicone Headstrap:

- g. Fully loosen all five (5) headstraps.
- h. If the facepiece has a neck strap, place the neck strap over your head.
- i. Grasp the lower headstraps and place your chin in the chin cup as shown in Figure 6.



Figure 6. Grasp Lower Headstraps;  
Chin in Chin Cup

j. Pull the headstrap over your head, and tighten it by pulling evenly on the upper and lower straps. Make sure that your chin is properly recessed in the chin cup.

k. Center the facepiece and flatten the headstrap hub on the back of your head.

l. Tighten the two lower straps, the temple straps, and the top strap until all the headstraps lie flat on your head. Do not overtighten. See Figure 7.





Figure 7. Tighten Lower Straps, Temple Straps, and Top Strap

m. If the facepiece feels like it is not tight enough, tighten all the straps a little more. If it feels too tight, loosen the straps and readjust them.

n. When properly adjusted, the headstrap hub should be centered on the back of your head, and the lower straps should be below your ears.

## 6. Negative Pressure Fit Check

a. For PortaCount® testing: close off the barbed fitting on the fit test adapter and cover the inlet of the two P100 filters with the palms of your hands, a thin sheet of rubber or plastic, or a rubber glove.

b. For OHD Quantifit® testing: cover the two inlets on the OHD adapter.

c. Inhale just enough to slightly collapse the facepiece toward your face and hold your breath for a few seconds.

d. A good fit is indicated if the facepiece stays slightly collapsed until you exhale or uncover the filters; a poor fit is indicated if the facepiece does not stay collapsed or you hear air leaking.

e. If a good fit was achieved, proceed to step 7, Quantitative Fit Test. If a good fit was not achieved, readjust the facepiece and straps, and repeat steps a through c.

## 7. Quantitative Fit Test (QNFT)

Honeywell suggests that QNFT be performed with either a TSI PortaCount or OHD Quantifit according to the protocol for quantitative fit testing in Appendix A, Paragraph A and paragraph C.3 of OSHA 29 CFR 1910.134.

### NOTE

See NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, for proper use of SCBAs in the work environment.

## **⚠ WARNING**

- Prior to using an SCBA for a potential or actual CBRN incident response, you **MUST** verify that the SCBA is NIOSH CBRN-approved. Verify that the backpack has a NIOSH CBRN approval label, and that the facepiece is a CBRN facepiece as described below.

- The NIOSH CBRN approval label is located on the upper back section of the backpack frame, on the pressure transducer cover. If you cannot read the NIOSH CBRN approval label with the cylinder installed on the SCBA, remove the cylinder from the backpack to verify the NIOSH CBRN approval label.

- You **MUST** use a CBRN facepiece (2820XX) when using this SCBA in a potential or known CBRN contaminated environment. Using a facepiece other than a CBRN facepiece will void NIOSH CBRN certification. The facepiece part number is located on the inside surface of the lens below the chin area of the nose cup. You must verify that you are using a 2720XX or 2820XX series facepiece prior to using the facepiece in a potential or known CBRN contaminated environment.

- For verification of components that are part of the NIOSH CBRN-certified Titan SCBA configuration, the Titan SCBA approval paper insert label is included with the operation manual. If the Titan SCBA approval paper insert label is not present, contact your local Honeywell representative or safety officer for a replacement paper insert label.

- Honeywell does not make recommendations regarding the use of Titan SCBAs during or after a potential or actual CBRN incident response, aside from the NIOSH Cautions and Limitations listed on pages i and 30 of this manual, and the warnings listed in various locations in this manual. Refer to your local incident command SOPs for site guidance and CBRN incident response procedures.

- Direct contact with CBRN agents requires proper handling of the SCBA 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 SCBA after decontamination.

- Failure to comply with this warning may lead to personal injury, illness, or death.

## B. Donning the Backpack

### **⚠ WARNING**

***Wear gloves when handling SCBAs that have been stored in extreme temperatures. Failure to comply with this warning may lead to personal injury, illness, or death.***

1. Remove the SCBA from its carrying case or stored location.
2. Hand tighten the CGA handwheel to the cylinder valve outlet.
3. Ensure that the cylinder valve gauge reads in the green (FULL) zone.

### **⚠ WARNING**

***Check the cylinder latch each time the cylinder is installed. Adjust the cylinder band to match the cylinder size and ensure that the cam-over buckle is securely locked in place. Failure to comply with this warning may lead to personal injury, illness, or death.***

4. Check the latch on the cylinder band and ensure that the cylinder is secure in the backpack.
5. Lay the harness out and straighten each strap. All adjustable straps should be extended to maximum length.
6. There are two methods of donning the SCBA: coat-style, one arm at a time; and over the head. Choice of the method of donning is a matter of individual choice or organizational policy. Both methods are described below.

#### a. Over the Head

- i. Lean the SCBA cylinder against your legs, cylinder valve resting on the ground and the harness spread to each side.
- ii. Grasp the backpack by the sides of the frame as shown in Figure 8.



Figure 8. Grasp the Sides of the Backpack Frame

- iii. Lift the SCBA over your head, keeping your elbows close to the centerline of your body to allow proper placement of the shoulder straps. Allow the SCBA to slide onto your back. See Figure 9.



Figure 9. Lift the SCBA Over Your Head

#### b. Coat Style

- i. Insert your arm through one of the shoulder straps and swing the SCBA onto your back.
- ii. Insert your other arm through the other shoulder strap. See Figure 10.



Figure 10. Coat Style Donning

#### Both Methods

7. Lean forward and tighten the harness adjustment straps until the back support rests in the small of your back. See Figure 11.



Figure 11. Pull the Harness Adjustment Straps

#### NOTE

If the harness adjustment straps are properly tightened, the weight of the SCBA will be carried on the hips instead of the shoulders. If the harness adjustment straps restrict movement, readjust.

8. Fasten the waist belt buckle. Pull forward on the waist straps and tighten until very snug. See Figure 12.



Figure 12. Tighten Waist Straps

9. If necessary, readjust the harness adjustment straps so that the weight of the SCBA is distributed properly on the hips. Do not overtighten.

## C. Donning the Facepiece

10. Tighten the AIR KLIC (the adapter into which the second stage regulator is inserted) in the facepiece by turning it clockwise.

11. Verify that the AIR KLIC is secured by trying to turn it counterclockwise.

**⚠ WARNING**

**Ensure that the AIR KLIC is held securely in the nozzle by the ratchet mechanism. Failure to comply with this warning may lead to personal injury, illness, or death.**

12. Don the facepiece as follows:

There are two methods, depending upon which head harness is used, to secure the Twenty/20+ facepiece to the user. Both methods are described below.

a. Standard silicone headstrap:

- i. Fully loosen the headstraps. See Figure 13.
- ii. If your SCBA is equipped with a neck strap, place the neck strap over your head.
- iii. Place your chin in the chin cup and pull the straps over your head.



Figure 13. Loosen Headstraps/Chin in Chin Cup

- iv. Center the facepiece and flatten the headstrap hub on the back of your head.
- vi. Tighten the two lower straps, the temple straps, and the top strap, until all the headstraps lie flat on your head. See Figure 14.



Figure 14. Tighten Lower Straps/Temple Straps/Top Strap

vii. Perform a leak check as described in section VI, E, page 14.

**NOTE**

When properly adjusted, the headstrap hub should be centered on the back of your head, and the lower straps should be below your ears. Make sure that your chin is properly recessed in the chin cup.

b. Optional Headnet

**⚠ WARNING**

**Ensure that the three locking fabric straps located across the forehead are fully inserted into their slots in the rims and that the locking flaps prevent the straps from pulling out of the slots. Failure to verify proper installation could allow contaminants to leak into the facepiece, causing illness or death.**

- i. Fully loosen the lower headstraps.
- ii. If your SCBA is equipped with a neck strap, place the neck strap over your head.
- iii. Grasp the lower headstrap and place your chin in the chin cup. See Figure 15.



Figure 15. Chin in Chin Cup

iv. Pull the headnet over your head and tighten by pulling evenly on the upper and lower straps. See Figure 16.



Figure 16. Tighten Headstraps

v. Center the facepiece and flatten the headnet with a wiping motion toward the back of your head. See Figure 17. Retighten the adjustment straps as required. Do not overtighten.



Figure 17. Flatten the Headnet

- vi. Perform a leak check as described in section VI, E, page 14.

#### NOTE

When properly adjusted, the headnet should be centered on the back of your head, and the lower straps should be below your ears.

#### D. Exhalation Valve Test

##### **⚠ WARNING**

**Do not use this SCBA in a contaminated atmosphere if the exhalation valve is not working properly. Failure to verify that the exhalation valve is functioning properly could result in difficulty in exhaling from the facepiece. Failure to comply with this warning could lead to personal injury or death.**

1. To test the exhalation valve, take a deep breath and hold it. Cover the AIR KLIC as shown in Figure 18 and exhale.



Figure 18. Exhalation Valve Test

2. If the exhalation valve is stuck, it will be difficult to exhale. If the exhalation valve is stuck, exhale sharply to open the valve. If the valve still does not open, clean the valve per the instructions in the repair table in this manual.

#### E. Leak Check

##### **⚠ WARNING**

**Do not use this SCBA in a contaminated atmosphere if you do not obtain a satisfactory seal during the leak check. If a seal was not obtained, reposition the facepiece, check the straps, and perform the leak check again. Failure to obtain a satisfactory seal could allow contaminants to leak into the facepiece, causing illness or death.**

1. Place the palm of your hand over the AIR KLIC as shown in Figure 19.



Figure 19. Leak Check

2. Inhale and hold your breath for a few seconds. The facepiece should collapse on your face without leaking.
3. If the facepiece leaks, reposition it, check the straps, and repeat the leak check.

#### F. Pressurization

1. Remove the second stage regulator from the waist strap-mounted regulator holder by pressing the two release buttons simultaneously.
2. Fully depress the shutoff button on the second stage regulator.
3. Verify that the red bypass knob is in the closed position.
4. Fully open the cylinder valve. See Figure 20.



Figure 20. Open Cylinder Valve

##### **⚠ WARNING**

**In order to fully open the cylinder valve, the handle must be rotated until it cannot rotate further. Failure to comply with this warning may lead to personal injury, illness, or death.**

##### **⚠ WARNING**

**Avoid impacts to the second stage regulator when the cylinder valve is open. This may inadvertently activate the First-Breath-On mechanism, causing air to flow from the regulator and depleting the air in the cylinder. Failure to comply with this warning may lead to personal injury, illness, or death.**

- a. Ensure that the needle on the chest-mounted pressure gauge reads in the green (FULL) zone.
- b. Check the Heads-Up Display (HUD) to ensure that the display reads full cylinder pressure (all four green LEDs lit).

## **⚠ WARNING**

**The audible alarm must sound and the HUD LEDs must flash in sequence as the system is pressurized. If either alarm fails to activate, DO NOT USE the SCBA. Failure of either alarm could result in a failure to realize that the SCBA is near the end of its service life, resulting in death or injury.**

5. If the cylinder valve handle is equipped with a locking sleeve, ensure it is engaged when fully opening the cylinder valve, to prevent accidental valve closure.

## **⚠ WARNING**

- **In the next step, when inserting the regulator into the AIR KLIC, both release buttons must be properly engaged. Rotate and tug the regulator to ensure that both release buttons are properly engaged in the AIR KLIC. Do not push the release buttons while verifying the engagement of the regulator. Do not press the release buttons unless you intend to remove the regulator from the facepiece. Pressing either release button during or after installation onto the facepiece could result in inadvertent regulator disengagement, causing death or serious injury.**
- **When using the SCBA in temperatures below 0°F, press the manual activation button on the front of the regulator to activate flow immediately after inserting the regulator.**
- **Failure to comply with this warning may lead to personal injury, illness, or death.**

## NOTE

A click will be heard when each AIR KLIC button is properly engaged. Two clicks should be heard when the second stage regulator is properly inserted in the AIR KLIC.



Figure 21. Insert the Regulator into the AIR KLIC

6. Insert the regulator into the AIR KLIC (Figure 21) with the HUD display positioned on top, and press firmly until you hear both release buttons snap into place. If the regulator does not snap into place, wiggle the regulator while pressing firmly until the HUD guides itself into the proper position and the regulator snaps into place. Firmly bump the front of the regulator with the palm of your hand to ensure that the AIR KLIC buttons are both fully engaged.

7. Take a sharp, deep breath to activate the regulator, or press the manual override button on the front of the regulator.

8. Take several breaths to check the flow of air.

9. Quickly open and close the bypass valve to ensure that it is operating properly.

## **⚠ WARNING**

**The SCBA has a rated service duration of 30, 45, or 60 minutes based on the requirements of the Code of Federal Regulations, Title 42, Part 84, Subpart H. Actual service duration may be less than the rated time, depending on the physical condition and exertion level of the user, initial cylinder pressure, and ambient temperature. When either low air alarm begins sounding or flashing, PROCEED IMMEDIATELY TO A SAFE AREA. Failure to comply with this warning may lead to personal injury, illness, or death.**

## G. Rapid Intervention Crew/Company Universal Air Connection (RIC UAC) Operation

## **⚠ WARNING**

**The RIC UAC is NOT NIOSH CBRN-approved for active engaged use in a potential or known CBRN contaminated environment. The SCBA has an RIC UAC installed, but the RIC UAC MUST NOT be used if it is suspected that the environment may or does contain actual CBRN agents. Use of the RIC UAC in a CBRN environment voids the NIOSH CBRN approval, which is based on non-engagement of the RIC UAC under contaminated conditions and not active engagement of the RIC UAC to mated non-CBRN approved air line components. Failure to comply with this warning may lead to personal injury, illness, or death.**

The Honeywell RIC UAC is intended to be used with the RIT Kit, P/N 968970, purchased separately.

The UAC RIT Kit is equipped with a high pressure fill hose that is compatible with the RIC UAC coupling on the CGA handwheel, and is capable of accommodating a 60-minute high pressure cylinder. Although it is possible to add air to a Honeywell SCBA via the RIC UAC system while the SCBA is being worn, Honeywell recommends that the cylinder be placed in a container or in a location which is designed to restrain fragments in the event of a component failure during filling. Filling an SCBA cylinder while the SCBA is being worn should only be done when the circumstances justify exposing the SCBA user to the added risk associated with the fill procedure.

First stage pressure reducers equipped with the RIC UAC have a pressure relief valve (PRV) incorporated into the first stage pressure reducer housing. The

PRV is designed to vent air to atmosphere when the fill pressure exceeds the service pressure of the cylinder. The PRV will reset (close) at a pressure below the service pressure of the SCBA. If a high pressure (4500 psig) fill (supply) cylinder is used on a 2216 psig SCBA, the PRV may open and vent air to atmosphere.

## **⚠ WARNING**

- **NEVER use the RIC UAC for routine filling of SCBA cylinders. The RIC UAC is intended to be used for cylinder filling during rescue operations only.**
- **Never use the Honeywell RIC UAC to fill an SCBA cylinder while the SCBA is being worn unless there is a compelling reason to assume the risk of injury if there is a component failure during the fill process.**
- **Never use the Honeywell RIC UAC to fill an SCBA air cylinder while the SCBA is being worn if the SCBA or the cylinder is suspected of having been dropped, exposed to direct flame impingement, or damaged in any way.**
- **The purity of the RIC UAC air source must meet the requirements set forth in the Compressed Gas Association Commodity Specification for Air, G-7.1, Type 1, Grade D, with a dewpoint not greater than -65°F (-53.9°C), or less than 24 ppm by volume.**
- **The relief valve on the first stage pressure reducer is factory set. Tampering with the relief valve may cause the SCBA to malfunction or may result in a decrease in service life.**
- **If at any time during filling, an air leak is detected or suspected in the SCBA or the fill system, disconnect the fill hose from the SCBA. Close the cylinder valve on the fill cylinder and vent the air from the fill hose. Remove the SCBA from service for inspection and repair by a Honeywell-certified technician before use.**
- **The dust covers on the RIC UAC coupling and the RIC UAC fill hose must be installed at all times unless the SCBA cylinder is being filled via the RIC UAC.**
- **Failure to comply with this warning may lead to personal injury, illness, or death.**

## NOTE

Air venting from the PRV is extremely loud.

1. Open the cylinder valve on the RIC UAC fill system (supply cylinder). The fill hose is now pressurized.
2. Remove the dust cover from the RIC UAC fill hose.
3. Remove the dust cover from the RIC UAC coupling on the SCBA.
4. Connect the fill hose to the RIC UAC coupling on the SCBA. Push the female coupling on the fill hose until a click is heard. The cylinder will start filling as

soon as the fill hose coupling engages into the RIC UAC coupling on the SCBA.

5. Filling is complete when the pressure in the SCBA cylinder and in the fill cylinder are equalized. This will take place in approximately one minute.

## NOTE

In most cases, the cylinder will not be filled to full service pressure. The resulting service life of the SCBA will be reduced.

6. Disconnect the fill hose coupling by pulling back on the outer locking sleeve. An audible hissing or popping will be heard when the fill hose is disconnected. When this occurs, coupling separation has been achieved.
7. Replace the dust cover on the SCBA RIC UAC coupling.
8. Close the cylinder valve on the fill system and vent the air from the fill hose. Replace the dust cover on the fill hose.
9. Replace or refill the cylinder in the RIT Kit for future use.

## H. Emergency Operation

1. PROBLEM: Restricted or interrupted air flow
  - a. Open the bypass valve by turning the red knob on the second stage regulator counterclockwise until desired constant air flow is achieved.

## **⚠ WARNING**

**Activating the bypass valve will rapidly deplete your air supply. Immediately exit to a safe area. Failure to comply with this warning may lead to personal injury, illness, or death.**

- b. IMMEDIATELY exit to a safe area.
  - c. Have the SCBA inspected and/or repaired by a Honeywell-certified repair technician before reuse.
2. PROBLEM: First-Breath-On failure
  - a. Press the manual override button on the front of the regulator to start air flow.
  - b. IMMEDIATELY exit to a safe area.
  - c. Have the SCBA inspected and/or repaired by a Honeywell-certified repair technician before reuse.
3. PROBLEM: Free flow
  - a. If the regulator will not shut off (free flow) during extremely heavy breathing, exhale forcefully. The regulator should return to normal flow.
  - b. If the free flow continues, open and close the bypass once.
  - c. If the problem persists, IMMEDIATELY exit to a safe area.
  - d. Have the SCBA inspected and/or repaired by a Honeywell-certified repair technician before reuse.
4. PROBLEM: First stage overpressurization relief valve operates

- a. If the cylinder valve incorporates a locking sleeve, disengage it by pushing in and turning it counterclockwise as far as it will go.
- b. Regulate the amount of air flow by manually throttling the cylinder valve.
- c. IMMEDIATELY exit to a safe area.
- d. Have the SCBA inspected and/or repaired by a Honeywell-certified repair technician before reuse.

## 5. PROBLEM: Second stage regulator accidentally disengages from facepiece

- a. Hold your breath. Locate the regulator using the regulator supply hose (the regulator will be free-flowing), and immediately insert the regulator into the facepiece. Resume breathing.
- b. Push the regulator firmly into the facepiece. Ensure that both AIR KLIC buttons are engaged.
- c. IMMEDIATELY exit to a safe area.
- d. Have the SCBA inspected and/or repaired by a Honeywell-certified repair technician before reuse.

## I. Doffing

### **WARNING**

**Doff the SCBA only in a safe area. Failure to comply with this warning may lead to personal injury, illness, or death.**

1. Press the second stage regulator shutoff button.
2. Press the two release buttons and remove the regulator from the facepiece.
3. Disengage the cylinder valve locking sleeve (if so equipped) by pushing it in and turning it counterclockwise.
4. Close the cylinder valve and re-engage the cylinder valve locking sleeve (if so equipped).
5. Press the override button or open the bypass valve on the second stage regulator to vent air from the SCBA.
6. Close the bypass valve.
7. Push the second stage regulator into the waist-strap-mounted or shoulder-mounted regulator holder until it clicks.
8. Place your thumbs under the headstrap buckles, loosen the straps, and remove the facepiece.
9. Clip the D-ring from the facepiece buckle onto the shoulder strap snap hook.
10. Unsnap the waist strap and optional chest strap, loosen the shoulder straps, and remove the SCBA.
11. Prepare the SCBA for storage.

## J. Cylinder Removal and Replacement

1. Cylinder Removal
  - a. Close the cylinder valve and re-engage the

cylinder valve locking sleeve (if so equipped).

- b. Press the override button or open the bypass valve on the second stage regulator to vent air from the SCBA.

### **WARNING**

- **Use extreme care when changing cylinders. DO NOT allow moisture or ice to enter the regulator system. Moisture or ice entering the regulator system may cause the SCBA to freeze up, restricting or stopping air flow to the user, resulting in death or injury.**
- **ONLY grasp the cylinder valve handwheel to open or close the valve; DO NOT pick up or carry a cylinder by the handwheel, drop a cylinder on the handwheel, or bump the handwheel, as this may cause the cylinder valve to inadvertently open, which may lead to the cylinder becoming airborne under the thrust of air released from the open valve, causing injury or death. ALWAYS pick up and carry an air cylinder by the cylinder body.**
- **Failure to comply with this warning may lead to personal injury, illness, or death.**

- c. Remove the CGA handwheel from the cylinder valve by rotating the black handwheel counterclockwise.

- d. Remove the cylinder as follows:

- i. Loosen the tank band by pressing down on the release lever on the right hand side of the SCBA with your thumb (press toward the SCBA backplate) and flipping the cam-over buckle up and away from the backplate with your index and middle fingers.
- ii. Remove the cylinder by sliding it upward beyond the tank band.

## 2. Cylinder Replacement

### **WARNING**

- **To prevent back injury, use proper lifting techniques to lift the fully charged cylinder.**
- **ONLY grasp the cylinder valve handwheel to open or close the valve; DO NOT pick up or carry a cylinder by the handwheel, drop a cylinder on the handwheel, or bump the handwheel, as this may cause the cylinder valve to inadvertently open, which may lead to the cylinder becoming airborne under the thrust of air released from the open valve, causing injury or death. ALWAYS pick up and carry an air cylinder by the cylinder body.**
- **Failure to comply with this warning may lead to personal injury, illness, or death.**

### **CAUTION**

**Do not damage the cylinder valve threads.**

a. When replacing a cylinder of the same diameter or smaller diameter:

- i. Flip the cam-over buckle on the right side up and slide the cylinder in until the dome of the cylinder rests on the two protrusions of the battery cover.
- ii. With the cam-over buckle on the right side fully flipped up, adjust the tank band snug against the cylinder by squeezing the tank band so the teeth of the engagement clip release from their slots in the tank band. Then push the tank band down toward the backplate.
- iii. With the tank band adjusted snug (but not tight) against the cylinder, re-engage the two teeth into the nearest slots on the tank band.
- iv. Flip the cam-over buckle down toward the backplate until the release latch snaps into place. The cylinder should be tightly held in place.

b. If changing to a larger size cylinder:

- i. With the cam-over buckle on the right side fully flipped up, squeeze the tank band so the teeth of the engagement clip release from their slots in the tank band.
- ii. Grasp the tank band toward the right side and pull it away from the backplate and through the tank band cam-over buckle until it is open enough to slide in the larger cylinder.
- iii. With the cam-over buckle on the right side still flipped up, slide the cylinder into the tank band with the cylinder valve pointing downward until the dome of the cylinder rests on the two protrusions of the battery cover.
- iv. Push the tank band down toward the backplate until it is snug (but not tight) against the cylinder. Re-engage the two teeth into the nearest slots on the tank band.
- v. Flip the cam-over buckle down toward the backplate until the release latch snaps into place. The cylinder should be tightly held in place.

**⚠ WARNING**

**Check the cylinder latch each time the cylinder is replaced. Adjust the cylinder band to match the cylinder size and ensure that the cam-over buckle is securely locked in place. Failure to comply with this warning may lead to personal injury, illness, or death.**

## K. Transportation

Recommended methods of transportation include the following:

1. Mounting brackets inside a fire apparatus storage compartment or integrated into a seat should attach to the cylinder only. Securely mount the SCBA and verify that the bracket does not straddle or interfere with the

tank band, tank band latches, cylinder valve, or back-pack.

2. The SCBA mounting position should prevent any part of the SCBA from being slammed in a door or door hinge.
3. Use an SCBA hard case or soft bag for transportation in a car, truck, or truck bed.
4. If the SCBA is not kept in a case or bag, secure it to prevent rolling, sliding, or bouncing, which could cause damage.

## L. Interface Considerations

1. Protective hoods, if used, must be donned over the head harness after a satisfactory facepiece fit check has been achieved.
2. Ensure that the audible and visual low air alarms and PASS alarm (if used) remain functional by not allowing turnout gear, ice, firefighting equipment, or tools to cover these devices.
3. Do not mount other firefighting tools in such a way that they interfere with the function of the SCBA.

## VII. CYLINDER FILLING AND SAFETY

**⚠ WARNING**

- **You must read and understand all warnings and instructions provided on the cylinder DOT warning label and in instruction manuals before using the cylinder/valve assembly.**
- **Only trained personnel may store, fill, service, maintain, handle, use, or dispose of cylinders used with this SCBA. Follow the guidelines of the Compressed Gas Association (CGA) pamphlets P-1, C-1, C-2, C-6, C-6.1, C-6.2, G-7, and G-7.1, as appropriate. Always follow established safety precautions when recharging cylinders.**
- **Do not alter cylinders used with this SCBA.**
- **Fill only to the specified service pressure. Do not overfill.**
- **Do not fill a leaking cylinder. Depressurize immediately.**
- **Do not tamper with the safety pressure relief device on the cylinder valve. Rapid depressurization when the safety pressure relief device activates will cause excessive noise. During rapid depressurization, cylinders may become ballistic and cause injury. Stay clear of cylinders when the safety relief valve is activated.**
- **Do not fill the cylinder if unraveling or charring of composite fibers occurs.**
- **Do not fill or use the cylinder if you have any doubt about its suitability for recharge. Return it to a certified hydrostatic test facility.**
- **Do not expose cylinders used with this SCBA**



**⚠ WARNING—Continued**

to open flame or heat sources which may heat the cylinder to 180°F. Cylinders damaged by fire or heated to 180°F must be destroyed.

- Repainted or refinished cylinders must be hydrostatically tested before reuse.
- DO NOT overtighten air cylinder valves.
- ALWAYS verify that the hydrostatic test facility performing your cylinder testing DOES NOT overtighten the cylinder valves when they reinstall them.
- Do not fill a carbon composite cylinder if it is not marked as being hydrostatically tested within five (5) years.
- Do not fill or use standard or Super Light composite cylinders older than 15 years. Depressurize and destroy these cylinders.
- Do not fill or use Extended Life composite cylinders older than 30 years. Depressurize and destroy these cylinders.
- Inspect cylinders before each filling. Remove cylinders from service which have cuts, gouges, dings, bulges, corrosion, etc. A special internal and external visual inspection of cylinders must be completed at least every hydrostatic test. Follow the guidelines of CGA 6.2.
- Do not fill with oxygen.
- Do not use caustic paint strippers or corrosive cleaners.
- Do not remove, obscure, or alter any labels on SCBA cylinders.
- Failure to comply with these warnings may lead to personal injury, illness, or death.

## A. Inspection

After each use and prior to recharging, each air cylinder shall be subjected to a thorough visual inspection:

**⚠ WARNING**

- Do not fill any cylinders that are damaged, you suspect may be damaged or unsafe, or are out of conformance with applicable hydrostatic test dates. Damaged cylinders must be inspected by an approved hydrostatic test facility and repaired as required before being filled.
- DO NOT overtighten air cylinder valves. ALWAYS verify that the hydrostatic test facility performing your cylinder testing DOES NOT overtighten the cylinder valves when they reinstall them.
- Failure to comply with this warning may lead to personal injury, illness, or death.

### 1. Aluminum Cylinders

Ensure that no more than five years have elapsed since the last hydrostatic test has been performed, as indicated by the most recent date stamped into the cylinder shoulder. Inspect the exterior of the cylinder

for dents, gouges, bulges, and evidence of exposure to high temperature such as darkened or blistered paint, charred decals, melted or distorted gauge lens, etc.

### 2. Composite Cylinders

Ensure that no more than five years have elapsed since the last hydrostatic test has been performed on carbon cylinders; and that the cylinder is less than 15 years old (30 years old for Extended Life cylinders.) Inspect the exterior of the cylinder for dents, gouges, or cuts which have penetrated and caused separation or unraveling of the composite overwrap. Watch for evidence of exposure to high temperature, such as darkened or blistered paint, charred overwrap or decals, melted or distorted gauge lens, etc.

### 3. Fiberglass Composite Hoop-Wrapped Cylinders

Ensure that no more than three years have elapsed since the last hydrostatic test has been performed on fiberglass hoop-wrapped cylinders, and that the cylinder is less than 15 years old. Inspect the exterior of the cylinder for dents, gouges, or cuts which have penetrated and caused separation or unraveling of the composite overwrap. Watch for evidence of exposure to high temperature, such as darkened or blistered paint, charred overwrap or decals, melted or distorted gauge lens, etc.

### 4. Cylinder Valve

The cylinder valve should also be examined for obvious damage, such as a deformed handwheel, inaccurate or inoperative pressure indicator, damaged threads on the outlet connection, or other evidence of impact or exposure to extreme heat. If internal contamination is suspected, remove the cylinder valve and inspect the interior of the cylinder. The valves on aluminum and carbon composite cylinders must be overhauled at every hydrostatic retest (5-year cycle). The valves on fiberglass hoop-wrapped composite cylinders must be overhauled at every other hydrostatic retest (6-year recycle).

### 5. Additional Information

a. Additional information on cylinder inspection and maintenance can be found in CGA pamphlet C-6, "Standards for Visual Inspection of Compressed Gas Cylinders," CGA pamphlet C-6.1, "Visual inspection of High Pressure Aluminum Cylinders," or CGA pamphlet C-6.2, "Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders," available from the Compressed Gas Association, Inc. If there is any doubt about the suitability of a cylinder to recharge, it should be returned to a certified hydrostatic retest facility for expert examination and retesting.

b. A comprehensive listing of all licensed hydrostatic test stations is available from the Department of Transportation.

## B. Filling Procedures

### 1. Air Purity

Unless safety and health codes in your area specify otherwise, air cylinders should be refilled with compressed air meeting the purity requirements for Type 1, Grade D Gaseous Air as specified by the Compressed Gas Association Commodity Specification for Air, publication G-7.1. The moisture content, expressed as dewpoint, shall be maintained at -65°F (-53.9°C) or lower, or less than 24.0 ppm by volume moisture content.

**UNDER NO CIRCUMSTANCES SHALL AN AIR CYLINDER BE FILLED OR PARTIALLY FILLED WITH OXYGEN.**

#### NOTE

When the SCBA is being used for firefighting, it is recommended that the cylinder be filled with air meeting the requirements of NFPA 1989.

### 2. Maximum Fill Pressure

Composite and aluminum cylinders may be filled only to the service pressure indicated on the cylinder label. Composite and aluminum cylinders must never be filled to a pressure greater than the marked service pressure.

### 3. Filling Procedure

- a. The fill station must be constructed and equipped in accordance with applicable state safety codes.
- b. The cylinder may be partially immersed (DO NOT submerge the cylinder valve) in a water bath to minimize the temperature rise that occurs as the cylinder is filled. The fill hose should be equipped with a restraining cable to prevent uncontrolled "whipping" in case of hose failure.
- c. After connecting the fill hose, open the cylinder valve fully. A separate metering valve must be used to control the fill rate. Fill the cylinder slowly, at a rate not exceeding 500 psig per minute. (Use caution if faster recharging rates are used.) After the initial filling, allow the cylinder to cool to room temperature, then "top off" the cylinder to achieve full service pressure.
- d. Use particular care to ensure that an air cylinder is never connected to a source capable of supplying air at a pressure greater than the maximum service pressure of that cylinder.
- e. Close the cylinder valve when the cylinder is full.
- f. Slowly bleed pressure from the filling lines.
- g. Disconnect the filling lines.

### 4. Storage

Air cylinders should be recharged as soon as is practical after use. Cylinders should not be stored partially charged, for two reasons:

- a. If used without recharge, the service duration of the apparatus is reduced.

- b. The safety relief device is designed specifically to protect a fully charged cylinder from the effects of a fire or from mechanical shock. For maximum safety, the cylinders should be stored fully charged. If the cylinder is stored empty and the valve is inadvertently left open, humid atmospheric air may enter the cylinder and result in interior corrosion. If a self-contained breathing apparatus is to be maintained in "standby" mode, i.e., available for immediate emergency usage, the cylinder pressure gauge should be checked at least once a month to assure that the cylinder is charged to full service pressure. Place the cylinder in a suitable safety sleeve or filling area.

## VIII. MAINTENANCE

#### NOTE

Inspect the SCBA for defects before and after each use, and at least once monthly if not used. Repair as necessary, clean and disinfect after each use, and store properly to ensure that the SCBA is maintained in satisfactory working condition. Keep records of inspection and repair dates and results. Refer to the inspection table in the back of this manual.

### A. Facepiece Cleaning

#### **WARNING**

- *It is the user's responsibility to ensure that the cleaning process chosen provides adequate disinfection or decontamination.*
- *Specialized processes are required to disinfect and decontaminate a respirator. You MUST follow the instructions of the manufacturer who supplies the disinfecting or decontamination equipment or chemicals.*
- *In the absence of a commercial sanitizing product, the hypochlorite solution described in the steps below will eliminate many, but not all, biohazards.*
- *Failure to comply with this warning may lead to personal injury, illness, or death.*

#### CAUTION

- **DO NOT** clean the facepiece with the regulator, RCS, or VAS attached.
- You must ensure that this respirator is not damaged by disinfecting or decontamination equipment or chemicals.
- The facepiece lens can be scratched through careless or abusive handling. **DO NOT** use abrasive cleaners or pads. **DO NOT** towel dry.
- Cleaning or bleaching solutions containing chlorine will damage the headnet and the backpack harness fabric.

#### NOTE

- Silicone and rubber parts of the facepiece may be cleaned between washing with Honeywell Mask Wipes, P/N B140096.

• ANSI Z88.2 latest edition also provides information and guidelines on the cleaning and sanitizing of respirators.

1. Make a cleaning solution of warm (120°F or 48°C maximum) water and a mild detergent.
2. Immerse the facepiece top first in the solution until the exhalation valve is covered.
3. Agitate the facepiece and gently clean with a soft brush.
4. Thoroughly rinse the facepiece in fresh water, paying particular attention to removal of all soap residue from the exhalation valve. If possible, direct running water onto the exhalation valve.
5. Disinfect the facepiece in a warm (120°F or 48°C maximum) suitable sanitizing solution, such as a “hypochlorite solution” (two [2] tablespoons of chlorine bleach per gallon of water), for two (2) to three (3) minutes. Rinse thoroughly with fresh warm (120°F or 48°C maximum) water. If other sanitizing solutions are used (such as quaternary ammonium or glutaraldehyde), follow the manufacturer’s instructions supplied with the sanitizing compound.
6. Allow the facepiece to drip dry. Warm air may be used to speed up drying.
7. Hold the facepiece firmly against your face and exhale several times to ensure that the exhalation valve functions smoothly.

#### NOTE

If fogging occurs on the facepiece lens when exhaled upon, recoat with Honeywell Anti-fog Solution, P/N 951015 (1 oz.), or P/N 961016 (16 oz.), or Anti-fog Wipe, P/N 981805.

### B. Second Stage Regulator Cleaning

#### **WARNING**

***Do not allow water or cleaning solutions to enter the breathing system or the regulator. Dirt, dust, or soap residue could degrade regulator performance, causing it to fail, possibly resulting in injury or death. Do not submerge the regulator in water or cleaning solutions. It may be partially submerged only as instructed in steps 4 and 5 below. Failure to comply with this warning may lead to personal injury, illness, or death.***

#### NOTE

- Always hold the regulator with the outlet facing downward during washing and rinsing.
  - The Protective Cleaning Cap, P/N 961170, must be used to seal the second stage regulator to prevent water or contaminants from entering the regulator outlet.
1. Make a cleaning solution of warm water and a mild detergent.
  2. Have a bucket of fresh water available for rinsing.

3. Install the second stage cleaning cap, P/N 961170.
4. With the regulator facing downward, clean the exterior surfaces with a soft brush.
5. With the regulator facing downward, immediately rinse the exterior with fresh water. Scrub excess soap away with the brush. Remove the second stage cleaning cap. If water enters the second stage regulator while cleaning, flow the regulator and bypass to expel all moisture.
6. Using a damp, lint-free cloth, clean the interior of the outlet tube.
7. Dry with a clean cloth or with low pressure Grade D (15 psig maximum) clean air.
8. If dirt or debris interferes with the First-Breath-On mechanism, clean it as follows:
  - a. Remove the two Phillips screws that secure the rubber manual override button cover to the second stage regulator.
  - b. Remove the two plastic retainers from which you removed the screws.
  - c. Lift off the rubber manual override button cover.
  - d. Place the protective cleaning cap over the outlet tube.
  - e. Hold the regulator with the cover facing downward and rinse in a shallow bucket of fresh water.
  - f. Allow the water to drain, and dry with low pressure Grade D air (15 psig maximum) directed into the venting groove under the shutoff button.
  - g. Reinstall the rubber manual override button cover.
  - h. Reinstall the two plastic retainers.
  - i. Reinstall the two Phillips screws.

### C. Exterior Surfaces Cleaning

#### **WARNING**

***Do not use cleaning solutions containing chlorine to clean the harness, or degradation of the harness material may result. Failure to comply with this warning may lead to personal injury, illness, or death.***

#### **CAUTION**

**Do not allow cleaning solutions to enter the breathing system.**

The hoses, backpack harness, frame, and cylinder/valve assembly may be cleaned with a damp cloth or a mild soap and warm water solution. Rinse thoroughly and air dry or wipe with a clean cloth.

### D. Inspection (see Inspection Table, page 27)

Honeywell recommends that the Titan SCBA be fully inspected upon initial receipt and on a regular schedule thereafter. See page 28 for recommended inspection procedures.

Honeywell also recommends a full flow test be performed per NFPA 1852, *Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA)*, 2013 Edition (or latest edition) for additional inspection requirements for SCBAs used for firefighting.

## E. Repair (see Repair Table, page 28)

### **⚠ WARNING**

***Before disassembly, make sure that all air is bled from the lines. Shut off or deplete the air supply to prevent equipment damage or personal injury. Failure to comply with this warning may lead to personal injury, illness, or death.***

### **CAUTION**

**User repair of the Honeywell SCBA is limited to replacement of components listed on the NIOSH CBRN approval label and repair described in the repair table in this manual. Disassembly should be performed only to the extent necessary to replace the components. To protect your warranty and the NIOSH certification on the equipment, all other repairs must be done only by Honeywell-certified technicians. If there are none at your facility, consult your Honeywell distributor for the repair facility nearest you.**

### **NOTE**

All Honeywell-certified Technicians are required to remain current on new procedures and parts through Honeywell's published Technical Bulletins, technical manual revisions, and certification seminars.

## F. Functional Testing (see page 29)

Perform functional tests after cleaning or repair.

## G. Cylinder Recharging

Refer to section VII., Cylinder Filling and Safety, for details on the recharging procedures for cylinders approved for use with Honeywell SCBAs.

## H. Cold Weather Operation and Maintenance

Operation of the Honeywell SCBA in cold weather, 32°F (0°C) or colder, requires the user to be aware of the potential problems caused by the combination of moisture and low temperatures.

### **⚠ WARNING**

***Moisture entering the regulator system, either from moisture in the cylinder air or by external means, e.g., inclement weather conditions, may cause regulator system freezeup, restricting or stopping air flow to the user. This could result in injury or death to the user.***

***Recharge the cylinders with Grade D or better air conforming to Compressed Gas Association Specification G-7.1. Moisture content, expressed as dewpoint, shall be***

**⚠ WARNING—Continued**  
***maintained at -65°F (-53.9°C) or lower, or less than 24.0 ppm by volume. Air exceeding this moisture content may cause regulator system freezeup, restricting or stopping air flow to the user. This could result in injury or death to the user.***

### **NOTE**

- Moisture can cause regulator system freezing problems even if the ambient air temperature is above freezing. The air flowing from the SCBA cylinder through the regulator system decreases from cylinder pressure to near atmospheric pressure very rapidly. As this pressure decreases, the air rapidly expands, causing the air and therefore the regulator to cool.
- Although the ambient temperature may be above 32°F (0°C), the temperature inside the regulator system may be considerably lower (below freezing).
- Honeywell recommends that SCBAs used on a routine basis or SCBAs kept for emergency use be stored at temperatures above 32°F (0°C). SCBAs stored at temperatures below 32°F (0°C) may need to be warmed to at least 32°F (0°C) prior to use if ice has formed on the low pressure alarm, facepiece exhalation valve, AIR KLIC, and/or quick-disconnects.
- Honeywell recommends a "change of season" inspection and increased attention to your preventive maintenance during cold weather conditions. The following recommended inspections and procedures will help prevent cold weather problems; however, cold weather conditions may also cause other problems not listed below.

### 1. Air Supply

#### **NOTE**

Cold weather conditions require very dry air. Moisture entering the SCBA may cause icing and equipment malfunction.

- a. Test compressor(s) for air quality and dewpoint prior to the cold season.
- b. Recharge the cylinders with Grade D or better air conforming to Compressed Gas Association Specification G7.1. Moisture content, expressed as dewpoint, shall be maintained at -65°F (-53.9°C) or lower, or less than 24.0 ppm by volume.
- c. Prevent any moisture from entering the SCBA.
- d. Remove ice and water from cylinder valve threads prior to filling in cold weather conditions.

### 2. Facepiece and Exhalation Valve

- a. The facepiece must be protected from moisture during cold weather conditions to reduce ice formation on the facepiece lens, in the AIR KLIC, and in the exhalation valve.

- b. Prior to donning the facepiece in cold weather, visually inspect the lens, AIR KLIC, and exhalation valve for ice.
- c. If ice is present, warm the facepiece to melt the ice. Ice may be melted by placing the facepiece inside outerwear near the body to warm.

**NOTE**

- If the facepiece has been stored at a temperature below freezing (32°F or 0°C) and it is not possible to warm the facepiece prior to usage, do not exhale into the facepiece until it is properly donned and the regulator is installed and activated.
- d. Check the function of the exhalation valve by performing a positive pressure exhalation test and negative pressure leak check as follows:
  - e. Don the facepiece as specified in the Donning section of this manual.
  - f. Perform a negative pressure leak check:
    - i. Place your hand over the AIR KLIC.
    - ii. Inhale and hold your breath for a few seconds. The facepiece should collapse on your face and remain collapsed for several seconds without leaking.
    - iii. If the facepiece leaks, exhale onto the exhalation valve at least six to eight more times. Reposition the facepiece, check the straps, and repeat the leak check.
    - iv. If the facepiece continues to leak, remove it from service.
    - v. Have the facepiece inspected and/or repaired by a Honeywell-certified repair technician before reuse.
  - g. Perform a positive pressure exhalation test:
    - i. Take a deep breath, and place your hand over the AIR KLIC.
    - ii. Exhale normally. The exhalation valve must function normally.
    - iii. If the exhalation valve does not function or if it is difficult to exhale, remove the facepiece.
    - iv. Reposition the facepiece, check the straps, and repeat the test.
    - v. If the exhalation valve continues to malfunction, remove the facepiece from service.
    - vi. Have the facepiece inspected and/or repaired by a Honeywell-certified repair technician before reuse.
  - h. Again, visually check to verify that the facepiece, lens, AIR KLIC, and exhalation valve are ice-free.

**⚠ WARNING**

***If it becomes necessary to remove the facepiece when using the SCBA, move to a non-hazardous area first. Failure to comply with this warning may lead to personal injury, illness, or death.***

**NOTE**

If the ambient temperature is near or below freezing, place the facepiece and regulator under outerwear to keep it warm in case reuse is necessary.

**3. Second Stage Regulator**

**⚠ WARNING**

- ***Ice on the second stage regulator AIR KLIC buttons or the facepiece AIR KLIC adapter may prevent proper engagement and/or disengagement of the regulator.***
- ***The user must ensure that the regulator is properly engaged by tugging the regulator to verify that both release buttons are properly engaged in the AIR KLIC.***
- ***When using the SCBA in temperatures below 0°F (-17.78°C), press the manual activation button on the front of the regulator to activate flow immediately after inserting the regulator.***
- ***Failure to comply with this warning may lead to personal injury, illness, or death.***

- a. The second stage regulator must be protected from moisture during cold weather conditions to avoid ice buildup on its exterior surfaces. Ice can interfere with emergency bypass operation or AIR KLIC button function, which can hinder regulator removal from the facepiece or from the regulator receiver.
- b. Visually inspect the external surfaces of the regulator for ice prior to use.
- c. If ice is present, it may be melted by placing the regulator inside outerwear near the body to warm.
- d. Again, visually inspect the regulator for ice, then check the red bypass knob and the AIR KLIC buttons for proper function.
- e. Should ice form on the regulator while the regulator is in the facepiece, it will continue to function properly. When it becomes necessary to remove the regulator, tug the regulator to break off the ice, then remove the regulator from the facepiece.
- f. If the AIR KLIC buttons are frozen and the regulator cannot be removed, do not force the buttons. Move to a non-hazardous area, depress the regulator shutoff button, and remove the facepiece and regulator as a unit.
- g. If the shutoff button is nonfunctional, turn off the air supply at the cylinder valve.
- h. Remove the facepiece and regulator as a unit.
  - i. Warm the facepiece and regulator until the normal function of the AIR KLIC button and/or the shutoff button returns.
  - j. Should ice form on the regulator while the regulator is in the waist strap-mounted regulator holder, rotate the regulator to break off the ice, then remove the regulator from the regulator holder.

k. If the AIR KLIC buttons are frozen and the regulator cannot be removed from the regulator holder, do not force the buttons. Unbuckle the waist belt, and place the belt, regulator holder, and regulator under outerwear next to your body to warm it until the AIR KLIC buttons function properly.

#### 4. Backpack

a. Inspect the tank band cam-over mechanism, shoulder pad adjustment buckles, and waist strap adjustment buckles for ice.

b. Remove ice by flexing and moving the straps through the adjustment buckles.

#### 5. Regulator Holder

a. Visually inspect the regulator holder for ice prior to use.

b. Remove ice by warming the regulator holder, placing it under outerwear near the body to warm.

#### 6. Cylinder Valve

a. During cold weather conditions, ice can form on the cylinder valve. Ice may interfere with the cylinder ratchet lock mechanism, if so equipped.

### **⚠ WARNING**

**Do not use heat above 160°F (71°C) or direct flame to melt ice. Failure to comply with this warning may lead to personal injury, illness, or death.**

b. Warm the cylinder valve to melt the ice and return the ratchet lock mechanism to proper working order.

#### NOTE

Remove ice and water from cylinder valve threads prior to filling in cold conditions.

#### 7. Gauge and Alarms

### **⚠ WARNING**

**DO NOT use the SCBA if there is ice on the gauge face or alarm. Gauge or alarm freezeup could result in a failure to realize that the SCBA is near the end of its service life, causing personal injury or death.**

##### a. Gauge

- i. Verify that the gauge face is free from ice.
- ii. If there is any ice on the gauge, remove the ice prior to returning the SCBA to service.
- iii. If the SCBA is not equipped with a PASS device, during use, turn the gauge to face the body. Check the gauge frequently for ice buildup.

##### b. Audible Alarm

- i. During cold weather conditions, ice can form on the audible alarm, rendering the alarm inaudible. Remove the ice or melt it with a gloved hand.
- ii. Ice may obstruct the alarm cover vent holes and the end of the bell piston (if so equipped), interfering with the operation of the SCBA. Melt the ice

with a gloved hand, or pass warm air over it.

##### c. Heads-Up Display

### **⚠ WARNING**

**DO NOT use the SCBA if there is ice on the HUD or audible alarm. Malfunction of either alarm could result in a failure to recognize that the SCBA is near the end of its service life, causing personal injury or death.**

- i. During cold weather conditions, ice can form on the HUD display.
- ii. Verify that the HUD display is free from ice.
- iii. If there is any ice on the HUD display, remove the ice prior to returning the SCBA to service.

#### 8. First Stage Pressure Reducer

During cold weather conditions, ice may form on the exterior surfaces of the first stage pressure reducer.

### **⚠ WARNING**

**Use extreme care when changing cylinders. DO NOT allow moisture or ice to enter the regulator system. Moisture or ice entering the regulator system may cause the SCBA to freeze up, restricting or stopping air flow to the user, resulting in death or injury. Failure to comply with this warning may lead to personal injury, illness, or death.**

#### 9. Rapid Intervention Crew/Company Universal Air Connection (RIC UAC)

- a. During cold weather conditions, ice may form on the RIC UAC protective cover.
- b. Prior to use, visually inspect the RIC UAC components for ice.
- c. Remove or melt the ice, then dry the RIC UAC coupler and protective cover to avoid water entering the RIC UAC coupler.
- d. Always keep the protective cover installed on the RIC UAC coupler during cold weather conditions when the RIC UAC is not in use.

#### 10. EBSS (Buddy Breather)

- a. During cold weather conditions, ice may form on the EBSS assembly.
- b. Prior to use, visually inspect the EBSS components for ice.
- c. Remove or melt the ice, then dry the EBSS components to avoid water entering the regulator.
- d. Always keep the rubber cap installed during cold weather conditions when the EBSS is not in use.

#### 11. Training and Use

- a. Conduct training sessions for cold weather operations using all equipment and accessories which may be used during actual operations.
- b. During cold weather operations, do not place cylinders or SCBA components into wet or snowy areas.

c. Inspect the cylinder, remove ice, clean the threads, and take care to prevent water from entering the cylinder or accumulating on connecting surfaces.

d. Icing will be accelerated by high air flow conditions. Examples may include, but are not limited to:

- Bypass usage
- Facepiece leakage due to improper sealing
- Allowing the regulator to free-flow when the facepiece is off
- Improperly maintained equipment

e. After cleaning, allow the SCBA to dry completely before returning it to storage. Be sure the facepiece exhalation valve is dry before placing the facepiece into storage.

## 12. Accessories

Cold weather conditions may have adverse effects on the performance of the SCBA accessories.

- a. Air line hoses can become stiff.
- b. Ice on quick-disconnect couplers can make them difficult or impossible to connect.
- c. Plastic components can become brittle.
- d. Electrical equipment (e.g., radios, PASS devices, and lights) tends to become more difficult to use in cold temperatures, especially if there is ice.
- e. Use SCBA accessories with extreme care in cold weather conditions. Visually inspect them periodically for ice.

## I. Storage

### **WARNING**

***The SCBA must be stored in a cool, dry location with the cylinder valve closed and the air pressure vented from the system. Storing an SCBA with the cylinder valve open and the system under pressure can result in damage to elastomeric materials in the regulator, particularly if the SCBA is stored at temperatures above 160°F (71°C). Damage resulting from improper storage could result in reduced flow or even stopped flow conditions, resulting in injury, illness, or death.***

1. Inspect, clean, and repair as required before storing.
  - a. Connect a fully charged air cylinder to the CGA handwheel and secure it in the backpack.
  - b. Check that the cylinder valve locking sleeve (if so equipped) is in the LOCKED position.
  - c. Check that the bypass is closed.
  - d. Fully loosen the harness adjustment straps and waist strap.
  - e. Fully loosen the facepiece headstraps.
  - f. Place the facepiece in a mask bag.
2. After inspection, cleaning, and necessary repair, the

SCBA should be stored away from dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

## J. Flow Test

### **WARNING**

***Direct contact with CBRN agents requires proper handling of the SCBA 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 SCBA after decontamination. Failure to comply with this warning may lead to personal injury, illness, or death.***

The SCBA must pass an annual performance flow test, utilizing a properly calibrated Honeywell Analytics PosiChek3 with Honeywell-specific software. Maintenance and repair, unless otherwise specified in this manual, must be performed by a Honeywell-certified technician. SCBAs subjected to daily or severe service, such as heavy use, extreme temperatures, flame, or exposure to chemicals, require more frequent servicing.

### **WARNING**

***CBRN agent contaminated SCBAs are required to be decontaminated to remove gross contamination. The concentration must be quantified, and the SCBA must be containerized and properly disposed of in accordance with local, state, and Federal hazardous waste regulations as the incident response allows.***

## K. Cylinder Valve Overhaul Schedule

Cylinder valves must be overhauled according to the following schedule:

1. Cylinder valves on aluminum or fully wrapped carbon fiber cylinders must be overhauled every 5 years or at each hydrostatic test.
2. Cylinder valves on hoop-wrapped fiberglass cylinders must be overhauled every 6 years or at every other hydrostatic test.

## L. Cylinder Hydrostatic Test Schedule

Cylinders require hydrostatic testing to verify that the cylinder can hold its rated pressure. Hydrostatic testing is required by the Department of Transportation (DOT) at the following intervals.

1. Aluminum—every 5 years.
2. Hoop-wrapped—every 3 years (15-year life)
3. Fully wrapped carbon fiber—every 5 years (15-year or 30-year life).

## M. Maintenance Record

A maintenance record must be kept for each SCBA, noting at least:

1. Date of repair
2. Name of repair technician
3. Description of malfunction
4. Course of action taken to correct malfunction
5. Any other pertinent data

All records and test results must be permanently filed for future reference. Refer to the SCBA service manual for instructions for troubleshooting, repair, and overhaul. The overhaul process involves replacement of certain O-rings, lubricants, or other components.

## N. Additional Information

If you need assistance or additional information on any Honeywell product, contact a Honeywell Safety Products representative.

Honeywell International Inc.  
900 Douglas Pike  
Smithfield, RI 02917  
1-800-873-5242  
HSPtechsupport@Honeywell.com  
www.Honeywellsafety.com

**ALL RETURNED PRODUCTS MUST BE DECONTAMINATED PRIOR TO SHIPMENT. PRODUCTS CONTAMINATED WITH DANGEROUS SUBSTANCES WILL BE REFUSED AND RETURNED FREIGHT COLLECT.**

Use the contact information below to contact the certification organizations to report any serious Titan SCBA malperformance or failures. Do not contact the certification organizations to report issues relating to normal wear and tear; parts damaged by abuse, misuse, negligence, or accidents; or damage due to battery leakage.

Safety Equipment Institute (SEI):  
(703) 442-5732

National Institute for Occupational Safety and Health (NIOSH):  
(412) 386-6686

## IX. WARRANTY AND LIMITATION OF LIABILITY

**LIMITED WARRANTY:** Honeywell warrants this product to be free from defects in materials and workmanship for 12 years from the date of purchase, with the exception of the Heads-Up Display (HUD), which is warranted for 5 years; the compressed air cylinder, which is warranted for 15 years; and the first stage pressure reducer, which is warranted for the life of the product. During these periods, Honeywell will repair or replace defective parts at Honeywell's option.

Freight charges to and from the Honeywell factory shall be paid by the purchaser.

**EXCLUSIONS:** NOTWITHSTANDING ANY CONTRARY TERM IN THE PURCHASER'S PURCHASE ORDER OR OTHERWISE, THE ONLY WARRANTY EXTENDED BY Honeywell IS THE EXPRESSED LIMITED WARRANTY DEFINED ABOVE. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.

**CONDITIONS:** To maintain this warranty, this product must be used, maintained, and inspected as prescribed in the owner's instruction manual, including prompt replacement or repair of defective parts, mandatory flow tests and overhauls, and such other necessary maintenance and repair as may be required. Normal wear and tear; parts damaged by abuse, misuse, negligence, or accidents; and installed accessories which have separate warranties are specifically excluded from this warranty

**LIMITATION OF LIABILITY:** No other oral warranties, representations, or guarantees of any kind have been made by Honeywell, its distributors, or the agents of either of them, that in any way alter the terms of this warranty. EXCEPT AS HEREIN PROVIDED, Honeywell SHALL HAVE NO LIABILITY FOR ANY LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL TO ANY PURCHASER OR USER OF THIS PRODUCT ARISING FROM THE SALE, USE, OR OPERATION OF THIS PRODUCT.

### **WARNING**

***The failure to use and maintain this equipment in strict conformance with the applicable instruction manual may result in personal injury, illness, or death. The equipment's use in any manner that is not expressly authorized pursuant to the applicable instruction manual may result in severe adverse impacts to human health.***



## X. INSPECTION TABLE

If any of the listed defects are found, have the SCBA repaired before use.

COMPONENT	LOOK FOR
FACEPIECE LENS	<ol style="list-style-type: none"> <li>1. Nicks, scratches, or abrasions which could impair visibility.</li> <li>2. Deep gouges or cracks which could reduce impact resistance.</li> <li>3. Anti-fog coating in need of replacement. (Facepiece fogs when exhaled upon.)</li> </ol>
FACEPIECE RIMS	<ol style="list-style-type: none"> <li>1. Deformed, cracked, or broken rims.</li> <li>2. Loose rim screws. (Do not overtighten.)</li> </ol>
FACEPIECE SKIRT	<ol style="list-style-type: none"> <li>1. Cuts, gouges, or punctures.</li> <li>2. Tears or nicks in the sealing area.</li> <li>3. Deterioration from age, heat, or contamination.</li> </ol>
FACEPIECE HEADSTRAP, BUCKLE STRAPS	<ol style="list-style-type: none"> <li>1. Abrasions or nicks.</li> <li>2. Deterioration from age, heat, or contamination.</li> </ol>
FACEPIECE INLET NOZZLE	<ol style="list-style-type: none"> <li>1. Heat damage to the nozzle body and cover.</li> <li>2. AIR KLIC not seated and ratchet ring not engaged.</li> <li>3. AIR KLIC chipped, cracked, dirty, or sticky; threads or O-ring damaged or missing.</li> <li>4. Dirt and debris in the exhalation valve.</li> <li>5. Exhalation valve sticking closed. (Exhale a few times to test.)</li> <li>6. Exhalation valve sticking open under positive pressure. (Test with regulator.)</li> <li>7. Damaged exhalation valve or valve seat.</li> </ol>
SECOND STAGE REGULATOR & HOSE	<ol style="list-style-type: none"> <li>1. Cracks or heat damage to housing or cover.</li> <li>2. Faulty operation of bypass valve, First-Breath-On, AIR KLIC, or override buttons.</li> <li>3. Dirt and debris in the outlet port; screen and grill cracked.</li> <li>4. Hose or fittings corroded, cracked, or leaking.</li> <li>5. Sticking release and shutoff buttons.</li> <li>6. Loose regulator outlet.</li> </ol>
GAUGE	<ol style="list-style-type: none"> <li>1. Gauge lens scratched; pointer deformed or stuck.</li> <li>2. Hose or fittings corroded, cracked, or leaking.</li> <li>3. Torn rubber boot.</li> </ol>
HEADS-UP DISPLAY (HUD)	<ol style="list-style-type: none"> <li>1. Display cover scratched or damaged.</li> <li>2. Cable cracked or split.</li> <li>3. Dirty or damaged display, including LEDs.</li> <li>4. Display housing cracked or damaged.</li> </ol>
FIRST STAGE PRESSURE REDUCER & AUDIBLE ALARM	<ol style="list-style-type: none"> <li>1. Hose and fittings corroded, cracked, or leaking.</li> <li>2. Loose retaining rings on hose connectors. Loose inlet nipple.</li> <li>3. Abrasion of hose.</li> <li>4. Damaged female threads on CGA handwheel.</li> <li>5. Damaged O-ring or groove on CGA nipple.</li> <li>6. Loose inlet nipple.</li> <li>7. Missing O-ring.</li> <li>8. Dents or heat damage to housing.</li> </ol>
HARNESS FRAME	<ol style="list-style-type: none"> <li>1. Cylinder band and latch not working properly.</li> <li>2. Cylinder not secured in band.</li> <li>3. Bent, broken, or cracked frame or covers.</li> <li>4. Webbing color change; excessive wear or fraying; cuts, nicks, or broken stitching.</li> <li>5. Inspect stitching for thread unraveling, abrasion, cuts, tears, and chemical or corrosion attack at the top of the shoulder strap, and shoulder strap adjustment buckle.</li> <li>6. Buckles damaged or corroded.</li> <li>7. Loose hardware.</li> <li>8. Plastic crazing, charring, cracking, pitting, blistering, and significant color changes.</li> <li>9. Bent or broken cam-over lock spring.</li> <li>10. Unreadable or missing NIOSH approval label.</li> </ol>
AIR CYLINDER & VALVE	<ol style="list-style-type: none"> <li>1. Dents, gouges, blisters, or cuts.</li> <li>2. External damage to cylinder valve.</li> <li>3. Smooth operation of valve handwheel and ratchet collar (if so equipped).</li> <li>4. Loose screws securing rubber guard on cylinder valve.</li> <li>5. Condition of threads on valve outlet.</li> <li>6. Cylinder pressure gauge lens scratched; pointer deformed or stuck.</li> <li>7. Gauge reading correctly.</li> <li>8. Hydrostatic test date within five years (aluminum or carbon) or three years (hoop-wrapped).</li> </ol>

### NOTE

- Inspection guidelines for cylinders are prescribed in pamphlets C-6, C-6.1, and C-6.2 of the Compressed Gas Association. These pamphlets may be obtained from the Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Arlington, VA 22202.
- If there are any items not listed above that appear to be defective, have the SCBA repaired before use.

## XI. REPAIR TABLE

COMPONENT	INSTRUCTIONS
HEADSTRAP, BUCKLE STRAP REPLACEMENT	<ol style="list-style-type: none"> <li>1. Remove the old straps.</li> <li>2. Install new straps.</li> </ol>
EXHALATION VALVE	<ol style="list-style-type: none"> <li>1. Remove the nozzle cover by pressing the ratchet ring with a finger and unscrewing the AIR KLIC counterclockwise.</li> <li>2. Remove the valve assembly by squeezing the legs of the spring retainer.</li> <li>3. Clean or replace the valve assembly.</li> <li>4. Replace the valve assembly by guiding the valve stem into the opening in the nozzle, ensuring that the spring is rotated only 45° clockwise.</li> <li>5. Insert the spring retainer legs into the openings on the nozzle.</li> <li>6. Reassemble the nozzle cover and AIR KLIC.</li> <li>7. Fit the facepiece over your face and cycle the exhalation valve by blocking the AIR KLIC opening with your palm and exhaling several times.</li> <li>8. Perform a leak check as described in OPERATION INSTRUCTIONS, or conduct a facepiece leak test on the Honeywell Analytics PosiChek3 with Honeywell-specific software installed.</li> </ol>
NOSE CUP	Replace the nose cup on the nozzle, aligning the slot on the nose cup with the tab on top of the nozzle.
FACEPIECE LENS REPLACEMENT	<ol style="list-style-type: none"> <li>1. Use a 9/64 inch Allen wrench to remove the rim screws.</li> <li>2. Gently separate the rims from the facepiece.</li> <li>3. Pull the butyl rubber skirt away from the lens.</li> <li>4. Remove the nozzle cover by pressing the ratchet ring with a finger and unscrewing the AIR KLIC counterclockwise.</li> <li>5. Remove the nozzle by pushing it from the front of the facepiece. Use thumbs to press the locking tabs at the sides of the nozzle. (DO NOT push on the spring retainer.)</li> <li>6. Place the nozzle into the new lens.</li> <li>7. Reassemble the nozzle cover and AIR KLIC.</li> <li>8. Install the nose cup.</li> <li>9. Place the lens edge inside the lens channel of the skirt, centering the lens so that the facepiece-to-face seal is not distorted. Apply a small amount of liquid soap (for lubrication) to the inside of the upper and lower rims prior to assembly.</li> <li>10. Install the skirt rims; start the screw on one side; then start the screw on the other side. CAUTION—Do not pinch the skirt between the rims.</li> <li>11. Alternate tightening each screw until firmly tightened.</li> </ol> <p>NOTE — The corners of the skirt should be centered between each rim when installation is complete.</p> <ol style="list-style-type: none"> <li>12. Perform a leak check as described in the OPERATION INSTRUCTIONS.</li> </ol>
FIRST STAGE EXTERNAL CGA-TO-VALVE O-ring	<ol style="list-style-type: none"> <li>1. Remove the old O-ring.</li> <li>2. Ensure that the O-ring seat is undamaged and free of debris.</li> <li>3. Lightly lubricate a new O-ring with Christolube and install.</li> </ol>
ACCESSORIES	<p>Each modification kit and accessory purchased from Honeywell has installation instructions.</p> <p>Use these instructions for removing and replacing any accessory.</p>

### NOTE

Make appropriate entries on equipment record cards.

## XII. FUNCTIONAL TESTING TABLE

COMPONENT	INSTRUCTIONS
FACEPIECE	<ol style="list-style-type: none"> <li>1. Don and adjust the facepiece.</li> <li>2. Block the AIR KLIC opening with the palm of your hand.</li> <li>3. Inhale gently. The facepiece should collapse slightly and hold for a few seconds without leaking.</li> <li>4. Exhale with the AIR KLIC opening covered. The exhalation valve must not stick.</li> </ol>
LEAK TEST	<ol style="list-style-type: none"> <li>1. Push the shutoff button on the second stage regulator to stop the flow of air.</li> <li>2. Open the cylinder valve to fully pressurize the regulators.</li> <li>3. Close the cylinder valve.</li> <li>4. Observe the gauge/alarm for 15 seconds. Significant needle movement indicates a leak, and the SCBA should not be used.</li> </ol>
AUDIBLE ALARM TEST	<ol style="list-style-type: none"> <li>1. Open the cylinder valve to fully pressurize the SCBA.</li> <li>2. Close the cylinder valve.</li> <li>3. Press the shutoff button on the second stage regulator to stop the flow.</li> <li>4. Slightly open and close the bypass valve to stop the gauge pointer at the 3/4 and 1/2 marks for 2 seconds.</li> <li>5. Continue to open and close until the pointer moves slowly to the 1/3 full mark.</li> <li>6. The audible alarm should begin when the gauge reaches approximately 1/3 full.</li> <li>7. When the audible alarm begins, close the bypass valve.</li> <li>8. The alarm should continue until the air is almost depleted.</li> <li>9. Bleed all residual air.</li> <li>10. Close the bypass valve.</li> </ol>
HEADS-UP DISPLAY	<ol style="list-style-type: none"> <li>1. Open the cylinder valve to fully pressurize the SCBA.</li> <li>2. Close the cylinder valve.</li> <li>3. Press the shutoff button on the second stage regulator to stop the flow.</li> <li>4. Slightly open and close the bypass valve to stop the LED display at the 3/4 mark for 5 seconds.</li> <li>5. Continue to open and close the bypass valve slowly until the HUD display reads 1/2 full.</li> <li>6. Verify that the 50% warning is working correctly (the green LED representing 1/2 cylinder pressure should blink on and off for approximately 20 seconds, then stay lighted continuously).</li> <li>7. Continue to open and close the bypass valve slowly until the HUD display reads 1/3 full. The audible and visual alarm should begin when the display reaches approximately 1/3 full. Activation of the visual alarm (flashing red LED) portion of the display may or may not coincide perfectly with the audible alarm (i.e., bell, whistle, etc.) on the SCBA.</li> <li>8. When the audible alarm begins, close the bypass valve.</li> <li>9. Both alarms should continue until the air is almost depleted.</li> <li>10. Bleed all residual air.</li> <li>11. Close the bypass valve.</li> </ol>
SCBA FUNCTION TEST	<ol style="list-style-type: none"> <li>1. Attach the CGA handwheel to a fully charged cylinder.</li> <li>2. Close the second stage regulator bypass valve and depress the shutoff button.</li> <li>3. Slowly open the cylinder valve.</li> <li>4. Check that the cylinder valve gauge and chest-mounted gauge both read in the green zone.</li> <li>5. Attach the second stage regulator to the facepiece and inhale. The regulator should deliver an acceptable flow of air without excessive effort, free flow, or fluttering.</li> <li>6. Slowly open the bypass valve. A steady flow of air should enter the facepiece.</li> <li>7. Depress the shutoff button. Air flow should stop.</li> <li>8. Push the override button. A small burst of air should enter the facepiece and the regulator should activate.</li> <li>9. Close the cylinder valve and bleed all residual air.</li> </ol>

### NOTE

A program for use, training, inspection, record keeping, and maintenance is given in the United States National Fire Protection Association Standard 1404, Fire Department Self-Contained Breathing Apparatus Program.

## NOTE

This section must be read in conjunction with the NIOSH approval label in this user's manual. Failure to observe these cautions and limitations voids NIOSH approval.

### CAUTIONS AND LIMITATIONS

- D - Air line respirators can be used only when the respirators are supplied with respirable air meeting the requirements of CGA G-7.1 Grade D or higher.
- E - Use only the pressure ranges and hose lengths specified in the user's instructions.
- I - Contains electrical parts that may be an ignition source in flammable or explosive atmospheres.
- J - Failure to properly use and maintain this product could result in injury or death.
- M - All approved respirators shall be selected, fitted, used, and maintained in accordance with MSHA, OSHA, and other applicable regulations.
- N - Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by the manufacturer.
- O - Refer to user's instructions, and/or maintenance manuals for information on use and maintenance of these respirators.
- S - Special or critical user's instructions and/or specific use limitations apply. Refer to user's instructions before donning.
- Q - Use in conjunction with personal protective ensembles that provide appropriate levels of protection against dermal hazards.
- 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 SCBA after each use and between multiple entries during the same use. Decontamination and disposal procedures must be followed.
- U - The respirator should not be used beyond 6 hours after initial exposure to chemical warfare agents to avoid the possibility of agent permeation.
- EBSS - EBSS Activation, or engagement of EBSS in either the donor or receiver mode, changes the SCBA use to escape-only. Approved service time for either the donor, or receiver is no longer applicable. Additional critical cautions and limitations apply. Refer to EBSS in the user's instructions.

### S - SPECIAL OR CRITICAL USER'S INSTRUCTIONS

1. This respirator is approved for use above -25°F (-31.7°C) when using the 2820XX series facepiece.
2. Use with adequate skin protection when worn in gases or vapors that poison by skin absorption (for example, hydrocyanic acid gas).
3. Approved only when the compressed air container is fully charged with air meeting the requirements of the Compressed Gas Association, G-7.1 for Type 1, Grade D air or equivalent specifications, and having a moisture content, expressed as dewpoint, of -65°F or lower. The container shall be marked "Fill With Compressed Air Only" and shall meet applicable DOT specifications.
4. The economy harness backpack, P/N 930195, is not approved to be equipped with the EBSS accessory when a 2216 psig, 30-minute, aluminum cylinder with either a non-locking or locking cylinder valve collar, P/Ns 915140 or 917435, is used with the SCBA. An EBSS may only be installed on the economy harness backpack when a hoop-wrapped fiberglass cylinder or a fully wrapped carbon cylinder is used with the SCBA.
5. Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by Honeywell.
6. DEATH OR SERIOUS INJURY may result if instructions are not carefully followed.
7. READ AND UNDERSTAND all instructions, limitations, and other warnings found on the apparatus and in the operation manual.

### EBSS - SPECIAL OR CRITICAL USER'S INSTRUCTIONS

1. EBSS may not be engaged or activated in donor mode after the donor End-of-Service-Time-Indicator (EOSTI) has activated
2. Users must be fully trained in the operation of EBSS in accordance with a training program conforming to the requirements of NFPA 1404, Standard for Fire Service Respiratory Protection Training; and NFPA 1500, Fire Department Occupational Safety And Health Program. Simultaneous connection of more than two users—one donor and one receiver—is not permitted
3. Simultaneous connection of more than two users—one donor and one receiver—is not permitted.







