

I. INTRODUCTION

- A. Purpose: To provide Los Angeles County Fire Department (Department) personnel with the instructions, regulations, and guidelines pertaining to the Honeywell Titan 2013 self-contained breathing apparatus (SCBA).
- B. Scope: This instruction applies to all Department personnel engaged in any incidents containing atmospheres that are immediately dangerous to life and health, where personal injury may result without the use of a SCBA, or where SCBAs will be employed as part of a work-related task.
- C. Administrator: The deputy fire chief of the Leadership and Professional Standards Bureau, through the Training Services Division, shall be responsible for the content, revision, and review of this instruction.
- D. Authority: The State of California requires that employees shall be provided with and shall use protective respiratory equipment in accordance with section 5144 and article 10.1 of the general Industrial Safety Orders when exposed to harmful respiratory conditions in the course of fire fighting, emergency activity, or routine work assignments.
 - 1. These regulations require that all SCBAs used by the firefighters must be National Institute for Occupational Safety and Health (NIOSH) approved and in accordance with the regulations reference standards established by the American Nation Standards Institute (ANSI).
 - a. ANSI Z.88.2 – 2015 relative to SCBAs and the quality of air that shall be used.
- E. References: See Appendix I

II. RESPONSIBILITY

- A. Incident commanders shall ensure that all personnel are properly using SCBA during firefighting, overhaul and salvage operations, and when required for safety and protection as outlined in this instruction.
- B. Station captains shall ensure that all SCBA are maintained in serviceable condition at all times.
- C. Firefighter specialists shall inspect the unassigned SCBA on their apparatus in addition to their assigned SCBA daily.

- D. All personnel shall:
1. Inspect their assigned SCBA daily and after each use.
 - a. This responsibility shall not be delegated.
 2. Be responsible for the proper donning, use, routine maintenance, and record keeping of SCBA on a daily basis.

III. POLICY

- A. It is impossible to predetermine hazardous conditions, concentrations of toxic materials, or percentages of oxygen in the air during emergency operations. SCBAs are required to be worn and used at all times by all personnel when:
1. At the scene of emergency incidents where the atmosphere could be immediately dangerous to life or health or may become oxygen deficient.
 2. At the scene of emergency incidents where the atmosphere could be contaminated by toxic vapors, gases, fumes, mist or dust caused by fire, explosions, leaks, spills, or other means.
 3. At the scene of mass casualty incidents with no apparent origin or cause.
 4. At the scene of an actual or suspected chemical, biological, radiological, or nuclear event.
 5. Involved in firefighting, ventilation, salvage and overhaul operations, or under conditions involving spills or releases of hazardous materials.
 6. Entering confined spaces where the atmosphere is or has the potential of becoming:
 - a. Oxygen deficient.
 - b. Contaminated with smoke, chemicals, or toxic agents.
 - c. Contaminated with toxic fumes of unknown type gases or vapors.
- B. Corrective lenses:

1. Eyeglasses:
 - a. Approved: NIOSH approved spectacle kit designed for use with the Honeywell face piece (see "Spectacle Kits").
 - b. Prohibited: Eyeglasses are prohibited if the temple bars pass through or interfere with the face piece seal.
 2. Contact Lenses:
 - a. Approved: Permeable contact lenses are allowed while utilizing a SCBA.
 - b. Prohibited: Hard non-permeable contact lenses are prohibited while utilizing a SCBA. There is medical evidence that indicates eye damage can occur.
- C. NIOSH approval:
1. All SCBAs shall have NIOSH approval.
 - a. To maintain NIOSH approval, NIOSH regulations require that all components of the SCBA be kept together and operated as a unit at all times.
- D. Inspection:
1. Daily: All personnel shall inspect their assigned SCBA and initial the appropriate Form 20. This responsibility shall not be delegated. The firefighter specialist shall inspect all unassigned SCBAs and initial the appropriate Form 20.
 - a. Air cylinders with less than 4000 psi shall be exchanged for a full air cylinder.
 2. Weekly: All personnel shall administer a weekly test to their assigned SCBA and initial the appropriate Form 20. This responsibility shall not be delegated. The Firefighter Specialist shall test all unassigned SCBAs and initial the appropriate Form 20.
 3. After each use: All SCBAs shall be cleaned, disinfected, and inspected.
 4. Storage: Bleed off all pressure from the first and second stage regulators prior to storage of SCBA. This prevents damage to the materials when stored under high pressure for extended periods.

- E. Air cylinders shall be stored, filled, and maintained according to Department policy.
1. Safety issue: Air cylinders shall not be filled without the proper hydrostatic test identification markings. The hydrostatic test date shall be checked prior to filling each air cylinder. Any air cylinder found to be out of hydrostatic date (every five years) shall be immediately removed from service, tagged, and tested. Refer to Department policy regarding air cylinders.
 2. Contaminated cylinders shall be tagged and sent to the vendor via the Breathing Apparatus Repair Shop in Pacoima.
 - a. Air cylinders are contaminated when:
 - 1) They have been allowed to become completely empty with the stop valve left open.
 - 2) Detectable odors are present in the air.
 - 3) Valves or cylinders have come into contact with any hydrocarbons (i.e., gasoline, diesel residual or engine oil).

- F. Periodic evaluation: All personnel who may be required to use SCBAs as a condition of employment are required to demonstrate competency in the following:
1. Don a SCBA within the accepted time limit (annually).
 - a. The Department recognizes the following time limits to don a SCBA.
 - 1) Recruit Training: Recruits shall don a SCBA within a 60-second time limit (not including donning gloves).
 - 2) Context Training: Personnel shall don a SCBA within a 75-second time limit (includes donning gloves).
 2. Don a SCBA and conduct a search while in a simulated smoke-filled atmosphere (annually).
 3. Have a quantitative face piece fit test.
 - a. Annually provided by the Department.

4. Answer basic questions regarding SCBA use and functions if questioned by a CAL-OSHA inspector.
 5. The information required to answer the basic questions a CAL-OSHA inspector may ask is contained in this instruction.
- G. Safety issues:
1. The use of SCBA for water rescue incidents is PROHIBITED:
 - a. The SCBA was not designed or intended to be used in water rescue operations.
 - b. As soon as the second stage regulator is submerged, the SCBA will free flow, similar to having the bypass valve open. A full cylinder will be expended in less than five minutes.
 - c. The exhalation valve will not operate; exhaled and bypassed air will exit at the sides of the face piece.
 - d. The curved face piece lens creates significant visual distortion underwater.
 - e. Submerging a SCBA can cause significant damage to the components. Any SCBA that has been submerged shall be sent to the repair facility for evaluation immediately.
 2. Should a firefighter find themselves trapped underwater, the firefighter shall maneuver to a horizontal face-up position. This orientation can trigger the SCBA to operate in a pressure demand mode extending the user's available air supply.
 3. Pressure-demand SCBA limitations: Pressure-demand SCBA increases the safety factor for most firefighters when utilized properly. Firefighters must recognize the limitations of this type of equipment and take the necessary precautions to provide for their safety.
 - a. Small, continuous air leaks around the face seal can cause eddy currents, drawing contaminated air into the face mask.
 - b. Large air leaks around the face seal will rapidly deplete the user's breathing air supply from the cylinder.
 - c. If the face mask is removed or jarred loose from the wearer's face, the breathing air supply will be rapidly depleted.

4. The use of SCBA does not offer complete protection in atmospheres containing gases or vapors that are absorbed through the skin, i.e., Hydrocyanic Acid (Hydrogen Cyanide) or Methyl Bromide. Do not enter these atmospheres until thoroughly ventilated and approved by hazardous materials personnel.

IV. SPECIFICATIONS

The Honeywell Titan 2013 SCBA meets all requirements of the NIOSH and the National Fire Protection Administration (NFPA) Standard 1981 for Open Circuit Self-Contained Breathing Apparatus, 2013 Edition.

A. Backpack harness and frame:

1. The backpack consists of a grade aluminum frame equipped with a built-in carrying handle. It was designed for a secure, stable fit, with weight concentrated at the hips.
2. The harness is made of coated Kevlar/Nomex straps.
 - a. The waist straps adjust from both sides keeping the SCBA centered during donning.
 - b. Two regulator storage clips are provided on the Titan 2013 SCBA, one on the left shoulder strap and one on the left waist belt for storage of the second stage regulator. The regulator storage clip is designed to keep the second stage regulator clean and secure until it is attached to the face piece.
3. The air cylinder is attached by a stainless-steel band with an integrated adjustment mechanism and has a release latch on the right side (when looking at the cylinder with the valve pointing down).
4. The intermediate pressure hose is routed over the left shoulder and connects to a quick connect fitting.
 - a. The quick connect fitting employs a push/pull release to prevent accidental disconnection.
 - 1) The “male” connection has to be pushed into the “female” fitting and the sleeve on the “female” fitting pulled back to allow separation.

5. The gauge hose is routed over the right shoulder strap and attaches to the gauge/low air warning light assembly.
- B. Air cylinder:
1. The Honeywell Titan 2013 SCBA will accept 30-minute, 45-minute, and 60-minute air cylinders by adjusting the air cylinder strap.
 2. All air cylinders intended for use with the Honeywell Titan 2013 SCBAs have a maximum fill capacity of 4500 psi.
 - a. Air cylinders with less than 4000 psi shall be exchanged for a full air cylinder.
- C. First-stage regulator, hose, and whistle alarm:
1. The first-stage regulator attaches directly to the air cylinder valve using a large stainless-steel hand wheel.
 - a. The first stage regulator lowers air cylinder pressure to approximately 115 psi, which is supplied to the second stage regulator via the intermediate pressure hose.
 - b. In the event of a regulator failure, the regulator will remain open. A relief valve will activate to regulate excess pressure to the second stage regulator.
 2. A high-pressure hose supplies the gauge/low air warning light on the right shoulder.
 3. Alarms:
 - a. Warbling whistle: The integrated low air warning alarm, located on the first stage regulator, emits an audible warbling whistle when the air cylinder pressure reaches 1485 psig to 1665 psig (approximately 33 percent (1/3) of the rated air cylinder pressure).
 - b. Warning whistle: The low air warning whistle will operate until air cylinder pressure reaches 200 psi.
- D. Gauge/low air warning light:
1. The Honeywell Titan 2013 SCBA has a Gauge/Low Air Warning Light assembly attached to the right shoulder strap. The assembly is protected by a rubber cover.

- a. The gauge is luminescent for low light viewing and indicates the quantity of air remaining in the air cylinder once the air cylinder valve is opened.
- b. Air pressure is illustrated from full “F” to empty “E” (1/3-1/2-3/4).
- c. The red low air warning light activates when the remaining air pressure drops to approximately 1485 psig to 1665 pig, approximately 33 percent (1/3) of the rated air cylinder pressure.
- d. To replace the batteries, use a slotted screwdriver to remove the threaded cap at the bottom of the battery housing.
 - 1) Use care not to damage the O-ring seal when removing the cap.
 - 2) Insert the “positive” end first into the opening.
 - 3) Replace the cap and perform a SCBA Leak and Audible Alarm Test as performed during a weekly inspection in order to ensure proper operation.

E. Second stage regulator:

1. The second stage regulator supplies breathing air via a 24-inch intermediate pressure hose with a male quick connect fitting.
2. The second stage regulator is capable of supplying the user in excess of 350 liters per minute of breathing air.
 - a. The large red knob on the regulator controls the adjustable bypass valve.
 - b. Turning the bypass valve knob counterclockwise provides a constant flow of breathing air.
 - 1) The bypass valve is intended for emergency use only to supply breathing air should regulator failure occur.
 - 2) The bypass valve is capable for supplying a maximum of 130 liters per minute of breathing air.
3. When not in use the regulator should be stored in the regulator belt clip located on the left waist strap or the left shoulder strap.

4. The second stage regulator is attached to the face piece employing the “Air Klic” system.
 - a. This system allows the regulator to lock in place, in almost any orientation, when pushed into the Air Klic port on the face piece.
 - b. When engaging the regulator onto the face piece, press firmly until you hear both release buttons snap into place. Pull firmly outward on the regulator to ensure the regulator is properly secured.
 - c. The second stage regulator is activated by the “First Breath On” mechanism or by the manual override button on the front of the regulator.
 - d. Two steps to disengage the regulator from the face piece:
 - 1) Press the black rectangular shut-off button on the regulator to stop the air supply.
 - 2) Depress both opposing gray release buttons, twist the regulator slightly, and pull the regulator from the face piece.

F. Face piece:

1. The Honeywell Titan 2013 SCBA face piece is made of soft butyl rubber and has a wide lip sealing surface and Kevlar headnet harness to accommodate a large variety of facial configurations.
2. The lens is treated with an abrasion resistant coating on the outside, and an anti-fog solution on the inside.
3. The integrated nose cup:
 - a. Allows fresh air to enter the nose and mouth while capturing exhaled air and routing it through the exhalation valve.
 - b. Minimizes CO₂ retention in the face piece and reduces lens fogging.
 - c. Houses the speaking diaphragm and microphone for the Voice Projection Unit.

4. The Air Klic port is threaded into the exhalation valve housing by a ratchet mechanism to prevent leakage and provide a secure mount for the second stage regulator.

G. Voice amplification system (VAS):

1. The Honeywell VAS is designed to facilitate radio and verbal communication while wearing a face piece.
 - a. The amplifier's compact size minimizes obstruction of the wearer's vision, and its ergonomic controls allow operation with gloved hands.
2. The unit provides the wearer a choice of constant voice amplification or push to talk.
 - a. Constant voice: Push onto the button twice to turn on and off.
 - b. Push to talk: Push onto the button and hold when you wish to activate the VAS.
3. A red LED light is visible inside the mask to indicate when the unit is on.
4. The red light will blink to warn the user of a low battery.
 - a. The VAS is powered by three AAA batteries and can be changed in the field by opening the battery compartment door at the bottom of the housing.
5. The VAS attaches to the face piece by attaching to the right side of the exhalation valve housing.
 - a. Electrical contacts connect the amplification system to the microphone in the face piece.

H. Integrated personal alert safety system (PASS) device:

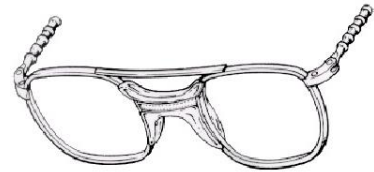
1. The integrated PASS device attaches to the intermediate pressure hose on the right shoulder strap.
2. An ascending tone and green flashing LED lights indicate activation.
3. Activating the PASS:
 - a. Opening the air cylinder valve activates the PASS device as air pressurizes the intermediate pressure hose.

- b. Lack of movement will activate the PASS.
 - 1) If the wearer does not move for approximately 20 seconds, the staged alarm will begin.
 - a) The LED lights will alternate flashing green and red.
 - b) The alarm will increase in volume approximately every five seconds until full alert at 30 to 40 seconds.
 - c) In full alert, the LED lights will flash red and the full audible alert will sound.
 - c. In emergency situations the PASS device can be manually triggered to full alert by the following procedures:
 - 1) Depressing and holding the red button for 2 to 3 seconds.
4. Once activated, the PASS can only be turned off by two slow and deliberate clicks of the yellow on/off switch.
- a. Shutoff is indicated by a descending tone.
 - b. If the SCBA is still pressurized with air, the PASS will automatically re-activate.
5. The PASS device is powered by four C cell batteries.
- a. When battery voltage is low, the PASS will emit a single tone every 20 seconds and the amber low battery light will blink.
 - b. To replace the batteries, remove the slotted battery cap located on the lower right-hand side of the backpack, using a coin, a large flathead 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.
 - c. Care should be taken to properly seat the battery compartment seal after battery replacement.
 - d. Inspect and test the PASS after changing the battery.

I. Spectacle kits (optional):

1. Spectacle kits are available for personnel who require corrective lenses when donning an SCBA face piece.

2. The spectacle kits are NIOSH approved for use with the Honeywell face piece.



3. Any employee requiring a spectacle kit may order one by submitting a memo to the Breathing Apparatus Repair Shop in Pacoima.

a. The memo must include the employee's current work location and be signed by the employee's supervisor and/or battalion chief.

b. A copy of a lens prescription shall be attached to the memo as verification of necessity.

c. This copy of the prescription will not be returned.

d. Upon receipt of the spectacle kit, employees will seek their own vendor to provide and install their prescription lenses in the frames.

1) Reimbursement for lenses may be obtained by submitting a County of Los Angeles Expense Claim, Form 76E928, along with the original receipt for the prescription lenses to the Financial Management Division.

2) This form is available on the Department's intranet.

V. PROCEDURES

A. Daily Inspection: Honeywell Titan 2013 SCBAs shall be visually inspected at the beginning of each duty day and after each use. After completing the inspection, initial and note the air cylinder pressure on the appropriate Form 20.

1. Backpack harness and frame:

a. Assure that the air cylinder is properly secured and that its strap and buckle are working properly.

- b. Inspect the backpack frame for bends, breaks and cracks. Check the harness assembly for discoloration, excessive wear, fraying, cuts, or damaged stitching. Check all buckles for damage or corrosion.
 - c. All straps should be stored fully extended to allow rapid donning.
2. Air cylinders:
- a. Check air cylinder pressure; change the air cylinder if the pressure is below 4000 PSI. Inspect the exterior of the cylinder for dents, gouges, or cuts which have penetrated and caused separation of the composite over-wrap.
 - b. Check for evidence of exposure to high temperature, such as darkened or blistered paint, or charred fiberglass over-wrap.
 - c. Examine the cylinder valve for obvious external damage.
3. First stage regulator:
- a. Inspect the regulator for obvious external damage.
 - b. Check the hand wheel for a snug connection to the air cylinder.
 - c. The gauge hose should swivel freely, and the intermediate pressure hose should be firmly attached with no signs of separation.
 - d. Check for debris at the whistle alarm outlet and clean as necessary.
4. Pressure hoses:
- a. Inspect all rubber hoses for cracking, obvious physical damage, and separation at the connections.
 - b. Check both hoses for secure attachment to the frame at the hose attachment block.
5. Second stage regulator:
- a. Check that the second stage regulator hose is connected to the quick connect fitting.

- 1) Both sides of the quick connect fitting should be exercised daily to assure proper operation.
 - b. Fully depress the shutoff button on the second stage regulator.
 - c. Ensure the red bypass knob is in the closed position.
 - d. Inspect for cracks or damage to the regulator housing.
 - e. Check for dirt or debris in the air outlet port and cracks in the screen and grill.
 - 1) Dirt and debris can be cleared by opening the air cylinder valve and the bypass valve with the outlet port facing down.
 - f. Check both gray release buttons for proper operation and good spring tension.
6. Gauge/low air warning light:
- a. Inspect the gauge lens for cracks.
 - b. The gauge pressure indicator should point to the red empty area with the air cylinder valve off.
7. Face piece:
- a. Inspect the lens for scratches and abrasions that significantly impair visibility.
 - b. Check for evidence of heat deformity.
 - 1) Any evidence of heat deformity to the lens is cause for immediate removal from service and inspection by the SCBA Repair Shops.
 - c. Check the face piece body, sealing skirt, and Kevlar headnet for nicks, tears, pliability, and damage from age, heat, or contamination.
 - 1) The Kevlar headnet should be stored fully extended to allow rapid donning.

- 2) The headnet should be stored folded forward, over the front of the face piece. This will help protect the lens from damage during storage.
- 3) Inspect the O ring at the air inlet port for placement and damage.

8. VAS:

- a. Inspect the VAS for cracks or damage.
- b. Ensure that the unit is securely attached to the face piece.
- c. Turn on the VAS and visually check the red LED light for operation; a flashing light indicates low battery power.
 - 1) Replace all three AAA alkaline batteries if indicated.
 - 2) The voice projection unit shall be turned off for storage.
- d. Place the face piece to your face and speak to check the amplification function.

9. PASS device:

- a. Inspect the PASS device for cracks or damage.
- b. Manually activate the PASS, note the ascending tone and green flashing LED lights.
 - 1) Allow the PASS to cycle to full alert; the LED lights flash green and red as the alert tone increases in volume. At full alert the LED lights flash red.
- c. Manually click the yellow on/off button twice to turn the PASS device off.

B. Weekly test: The weekly test shall include the following in addition to all components of the daily inspection:

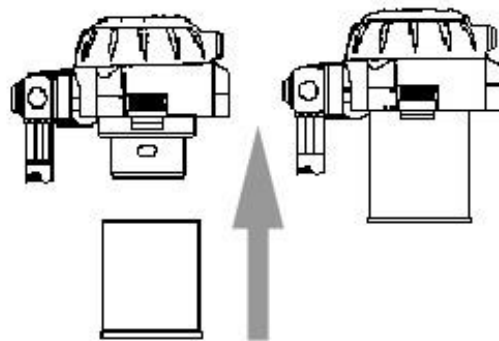
1. Face piece leak test
 - a. Don and adjust the face piece.
 - b. Block the Air Klic opening with the palm of your bare hand.

- c. Inhale gently and hold your breath for three seconds. The face piece should collapse slightly without leaking.
 - d. Keeping the Air Klic opening covered, exhale gently. The exhalation valve should open freely without sticking or fluttering.
 - 1) If the exhalation valve is sticky or fluttering, the face piece shall be cleaned, allowed to dry, and re-checked for proper operation.
2. SCBA leak and audible alarm test
- a. Ensure the shut-off button and bypass valve on the second stage regulator are in the off position.
 - b. Open the air cylinder valve to fully pressurize the hoses and regulators. The PASS device should automatically activate. Note the ascending tone and green flashing LED lights. The low air whistle should sound, and the low air warning light should blink briefly as the system pressurizes.
 - c. Close the air cylinder valve.
 - d. Observe the gauge/alarm for 15 seconds.
 - 1) Significant needle movement from air pressure loss indicates a system leak.
 - a) The SCBA shall be sent to Breathing Apparatus Repair Shop in Pacoima.
 - e. Slightly open the bypass valve and allow the system pressure to bleed down slowly. This should take a few seconds.
 - 1) At approximately the 1/3 mark on the pressure gauge, the audible low air whistle should sound, and the low air warning light should blink.
 - 2) The audible whistle alarm should continue until the air is almost depleted. Bleed all residual air in the system and close the bypass valve.
 - 3) Allow the PASS to cycle to full alert; the LED lights should flash green and red as the alert tone increases in volume. At full alert the LED lights should flash red and the full audible alert will sound.

- f. Manually click the yellow on/off button twice to turn the PASS device off.
 3. SCBA function test:
 - a. Ensure the shut-off button and bypass valve on the second stage regulator are in the off position.
 - b. Open the cylinder valve and check that the cylinder valve gauge and gauge/alarm both indicate a pressure of 4000 psi or greater.
 - c. Don the face piece and check for a proper seal.
 - d. Attach the second stage regulator to the face piece and inhale. The regulator should activate automatically delivering an acceptable airflow without excessive breathing effort, free flow, or fluttering.
 - e. Slowly open the bypass valve. A steady flow of air should enter the face piece.
 - f. Close the bypass valve and depress the shut-off button. Airflow should stop.
 - g. Push the manual override button. A small burst of air should enter the face piece and the regulator should activate.
 - h. Depress the shut-off button, close the cylinder valve and bleed all residual air from the system.
 - i. Manually click the yellow on/off button twice to turn the PASS device off.
- C. Cleaning and sanitizing: All SCBAs shall be cleaned and sanitized after each use and following weekly inspection.
 1. Face piece cleaning:
 - a. Always remove the voice amplification unit and Second Stage Regulator prior to rinsing or immersing the face piece in water, cleaning solution, or disinfecting solution.
 - b. Use a cleaning solution of warm water (110°F maximum) and mild soap or Zep Z-Green.

- 1) Industrial cleaners like Zep Spirit II, Hilite Suds, or any cleaner containing ammonia can damage the anti-fog coating and shall not be used.
- c. Immerse the face piece top first in the solution until the exhalation valve is covered. Agitate the face piece and gently clean with a soft brush if necessary.
- d. Thoroughly rinse the face piece in fresh water, paying particular attention to removal of all soap residues from the exhalation valve. If possible, direct running water onto the exhalation valve.
- e. Make a hypochlorite disinfecting solution of two tablespoons of chlorine bleach per gallon of warm water (110°F maximum).
- f. Immerse the face piece top first in the solution until the exhalation valve is covered. Soak the face piece for two to three minutes.
- g. Thoroughly rinse the face piece in fresh water, paying particular attention to removal of all hypochlorite solution from the exhalation valve. If possible, direct running water onto the exhalation valve.
- h. Allow the face piece to drip dry. A clean lint free cloth may be used to dry exterior surfaces.
 - 1) Do not use compressed air at any time.
- i. Once the face piece is completely dry, hold the face piece firmly against your face. Cover the Air Klic opening with the palm of your hand and exhale several times to ensure that the exhalation valve functions smoothly.
- j. Re-coat with anti-fog solution as needed.
 - 1) On a dry face piece, wipe the presoaked towelettes of anti-fog solution to both sides of the lens.
 - 2) Anti-fog solution is available from the Pacoima Warehouse.

2. Second stage regulator cleaning:
 - a. Always hold the regulator with the outlet tube facing downward and the protective cleaning cap installed during washing and rinsing.
 - 1) Dirt or soap residue could degrade regulator performance.
 - 2) Do not submerge regulator in water or cleaning solution.
 - 3) Do not allow water to enter the intermediate pressure hose at the male quick connect fitting.
 - b. Make a cleaning solution of warm water (110°F maximum) and mild soap.
 - c. Install the red second stage regulator cleaning cap.



- 1) Replacement caps are available from the Breathing Apparatus Repair Shop in Pacoima.
- d. With the regulator facing downward, scrub the exterior surfaces with the cleaning solution and a soft brush.
- e. Immediately rinse the exterior surfaces with fresh water.
 - 1) Hold the regulator facing downward. Thoroughly rinse all excess soap and dirt from the regulator.
- f. Remove the second stage regulator cleaning cap.
 - 1) If water entered the second stage regulator while cleaning, flow the regulator and bypass to expel all moisture.

- g. Using a damp, lint-free cloth, clean the interior of the outlet tube.
 - 1) Do not use compressed air at any time.
- h. Dry the exterior with a clean cloth or let air dry.

3. Backpack harness assembly cleaning:

- a. The backpack harness assembly is comprised of the hoses, frame, strapping, gauge/low air warning light assembly, quick connect fittings, air cylinder, and first stage regulator.
- b. When possible all components should be cleaned using only a damp cloth.
- c. If more extensive cleaning is required, make a cleaning solution of warm water (110°F maximum) and mild soap or Zep Z-Green.
 - 1) Industrial cleaners like Zep Spirit II, Hilite Suds, or any cleaner containing chlorine bleach will damage the Nomex/Kevlar harness and shall not be used.
- d. Clean all components using a soft brush and cleaning solution.
 - 1) Always have the air cylinder attached to the first stage regulator during cleaning to keep water or cleaning solution from entering the regulator.
- e. Rinse thoroughly and air dry or wipe with a clean cloth.

D. Repair

- 1. If any component of the SCBA fails inspection (daily, weekly or after each use) or has a performance issue, the SCBA shall be taken out of service and sent to the Breathing Apparatus Repair Shop in Pacoima.
 - a. If the problem involves only the basic components of the SCBA harness, such as a torn strap:
 - 1) Send only the harness to the Breathing Apparatus Repair Shop in Pacoima.
 - b. If the problem involves only the components of the SCBA facepiece, such as a scratched lens:

- 1) Send only the facepiece to the Breathing Apparatus Repair Shop in Pacoima.
 - c. If the problem is a performance issue, or involves system components such as regulators or gauges:
 - 1) Send both the harness and facepiece to the Breathing Apparatus Repair Shop in Pacoima.
 - d. If there is any doubt contact the Breathing Apparatus Repair Shop in Pacoima for further guidance.
2. If the SCBA is in need of repair:
- a. Remove the air cylinder from the SCBA.
 - b. Bundle and secure the harness and/or facepiece.
 - 1) Cover or otherwise protect the facepiece lens from damage during transport.
 - c. Complete a Form 47.
 - d. Attach a tag to the harness and/or facepiece.
 - e. Include the following information on the tag and Form 47.
 - 1) Fire Station, Apparatus Designation, Battalion, Division, and a description of the problem.

IV. DONNING

Donning: The donning method each individual uses is a matter of personal choice. It is necessary that all personnel review and maintain proficiency in all donning methods. The main point in donning a SCBA is speed consistent with safety. The Department recognizes four methods of donning SCBA:

- A. Jumpseat method:
1. Remove the padded seat panel from the jumpseat if required. Open the air cylinder valve fully. -Check the air cylinder pressure gauge, a full air cylinder will read in the green zone.
 2. If the second stage regulator is flowing air, close the red by-pass valve and depress the manual shut-off button.

3. Sit in the jumpseat. Insert your left arm through the left shoulder strap. Insert your right arm through the right shoulder strap.
4. Pull the shoulder harness adjustment straps only enough to take up excess slack.
5. Fasten the waist belt buckle. Pull forward on both backpack waist straps only enough to take up excess slack. Fasten seatbelt.
6. Unfasten seatbelt. Exit the jumpseat. Place both feet firmly on the ground.
7. Readjust the shoulder harness and waist straps so that the weight of the SCBA is distributed properly on the hips.
8. If the harness adjustment straps are properly tightened, the weight of the SCBA will be carried on the hips instead of the shoulders.
9. Visualize and state the pressure on the gauge.

B. Overhead method:

1. Remove breathing apparatus from mounting. Open the air cylinder valve fully. Check the air cylinder pressure gauge, a full air cylinder will read in the green zone.
2. If the second stage regulator is flowing air, close the red by-pass valve and depress the manual shut-off button.
3. Position the SCBA with the harness facing the wearer, air cylinder valve away from the body, and the harness straps spread to each side.
4. Grasp the cylinder and backpack near the center with both hands in a manner that will place the in-shoulder straps on the outside of hands.
5. Lift the SCBA over your head and allow shoulder straps to drop below elbows.
6. Then release the cylinder and backpack, extend arms above head and allow it to slide onto your back.
7. Lean forward and pull the harness adjustment straps until the back-support rests in the small of your back.

8. Fasten the waist belt buckle. Pull forward on both backpack waist straps and tighten until snug.
9. Readjust the shoulder harness straps so that the weight of the SCBA is distributed properly on the hips.
 - a. If the harness adjustment straps are properly tightened, the weight of the SCBA will be carried on the hips instead of the shoulders.
10. Visualize and state the pressure on the gauge.

C. Crosshand method:

1. Remove breathing apparatus from mounting. Open the air cylinder valve fully. Check the air cylinder pressure gauge, a full air cylinder will read in the green zone.
2. If the second stage regulator is flowing air, close the red by-pass valve and depress the manual shut-off button.
3. Position the SCBA with the harness facing the wearer, air cylinder valve toward the body, and the harness straps spread to each side.
4. Cross arms with palms up. Grasp both shoulder straps.
5. Pick up the SCBA and swing it around the body.
 - a. If your left hand is on top, swing right.
 - b. If your right hand is on top, swing left.
6. Uncross arms as the SCBA rotates to the back.
7. Lower SCBA onto shoulders, release grasp on shoulder straps.
8. Lean forward and pull the harness adjustment straps until the back-support rests in the small of your back.
9. Fasten the waist belt buckle. Pull forward on both backpack waist straps and tighten until snug.
10. Readjust the shoulder harness straps so that the weight of the SCBA is distributed properly on the hips.

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

11. Visualize and state the pressure on the gauge.

D. Sling method:

1. Remove breathing apparatus from mounting. Open the air cylinder valve fully. Check the air cylinder pressure gauge, a full air cylinder will read in the green zone.
2. If the second stage regulator is flowing air, close the red by-pass valve and depress the manual shut-off button.
3. Position the SCBA with the harness facing the wearer, air cylinder valve toward the body, and the harness straps spread to each side.
4. Grasp the left shoulder strap with the right hand and pick up the SCBA.
5. Insert your left arm through the left shoulder strap first and swing the SCBA onto your back.
6. Remove right hand from left shoulder strap and insert it through the right shoulder strap.
7. Lean forward and pull the harness adjustment straps until the back-support rests in the small of your back.
8. Fasten the waist belt buckle. Pull forward on both backpack waist straps and tighten until snug.
9. Readjust the shoulder harness straps so that the weight of the SCBA is distributed properly on the hips.
 - a. If the harness adjustment straps are properly tightened, the weight of the SCBA will be carried on the hips instead of the shoulders.
10. Visualize and state the pressure on the gauge.

E. Face piece donning method:

1. Prior to donning, the face piece shall be properly prepared.
 - a. Fully loosen the head straps.

- b. Fold them forward, over the front of the face piece.
 - c. Store the face piece in the pouch provided on the front of your turnout coat.
2. Loosen the helmet chinstrap and slide the helmet off the back of your head, allowing it to rest on your shoulders, held in place by the helmet chinstrap.
3. Remove the face piece from the turnout coat pouch.
4. Hold the face piece by the Air Klic port.
5. Place your chin in the chin cup. Slide your free hand between the straps and face piece, palm towards the face piece.
6. Holding the face piece in place by the Air Klic port, slide your other hand up, bringing the hub of the harness into proper position on the back of your head.
7. While stabilizing the face piece with one hand, alternately tighten each of the two chinstraps first, then the temple straps. Finally, tighten the top strap until all head straps lay flat on your head.
 - a. Always pull in a backward direction when tightening any face piece strap. Pulling outward on straps increases the possibility of strap failure.
 - b. Do not over-tighten.
8. The strap hub should be centered at the back of your head.
9. Perform a leak check.
 - a. Place the palm of your hand (bare skin) over the Air Klic port.
 - b. Inhale and hold your breath for three seconds. The face piece should collapse on your face without leaking.
 - c. If the face piece leaks, reposition, check straps and repeat the leak check.
10. Pull your hood up over your head and secure its opening around your face piece.

11. Ensure that all skin is covered.
12. Don your helmet and adjust the chinstrap.
13. Remove the second stage regulator from the waist strap regulator holder and insert into the Air Klic port on the face piece.
 - a. Use your right hand to grasp the regulator.
 - 1) Index finger over the shut-off button.
 - 2) Thumb and middle finger over the gray release buttons.
 - b. The on/off button shall be oriented at the top of the regulator when inserted into the Air Klic Port.
 - c. Safety issue:
 - 1) Press firmly until you hear both release buttons snap into place.
 - 2) Pull firmly outward on the regulator to ensure the regulator is properly secured.
14. Take a sharp, deep breath to activate the regulator.
15. Quickly open and close the bypass valve to ensure that it is operating properly.
16. Put on your gloves.

APPENDIX

References:

1. Section 5144 and article 10.1, of the general Industrial Safety Orders
2. ANSI Z.88.2 – 2015
3. NFPA 1500
4. NIOSH
5. NFPA Standard 1981 for Open Circuit Self Contained Breathing Apparatus, 2015 Edition.