SPARE AIR
USER'S INSTRUCTIONS

EMERGENCY BREATHING DEVICE
FOR INDUSTRIAL SAFETY APPLICATIONS

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THE LEADER IN SELF-RESCUE BREATHING SYSTEMS

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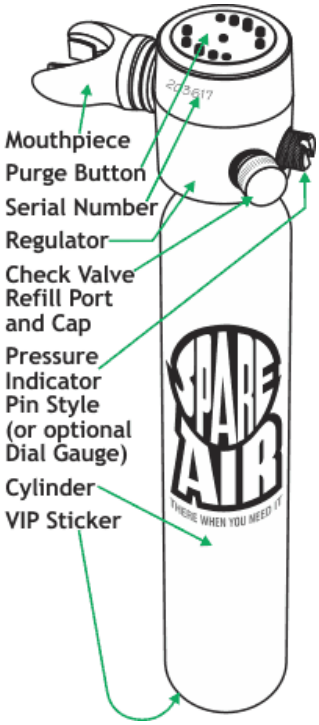
GENERAL PRECAUTIONS & WARNINGS:

- SPARE AIR is packaged fully assembled and is ready to use after it has been filled with air. User needs to purchase a Refill Adapter – see options below. Other refill options are available such as a Hand Pump, and small portable compressors. They are available on the shopping cart at www.ssishoppingcart.com
- No special training or SCUBA certification required for using SPARE AIR Industrial above ground or at shallow depths.

PRODUCT BRIEFING:

SPARE AIR is a high quality emergency breathing system produced and tested by people with more than four decades of manufacturing experience. SPARE AIR is made in the U.S.A. by craftsmen dedicated to producing a quality product. Enjoy the peace of mind that having SPARE AIR brings.



Regulator - Our simple rugged design utilizes the same time proven technology found in typical regulators used by SCUBA Divers around the world. Our always-on, breathe on demand, balanced single stage regulator is easy to maintain and service. Spare Air can be used in any orientation, even upside down.
Serial Number – Located on the Regulator
Pressure Indicator – Dial Gauge has an easy to read, color coated display for at-a-glance pressure check in psi and bar.
Purge Button - Clears the regulator and empties the cylinder.
Mouthpiece – High quality silicone mouthpiece.
Check Valve Refill Port and Cap – Refillable from an Air Compressor, Hand Pump or full SCUBA cylinder.
3000 PSI Aluminum Cylinder – Original manufacture date is stamped on the neck. The cylinder should be hydrostatically tested every 5 years based on this date.
VIP Sticker - Month and year of last cylinder visual inspection, required every year when filling at a dive shop.

OPTIONAL ACCESSORIES SOLD SEPARATELY – GO TO spareair.com TO ORDER:

P/N 920C – Air Compressor Refill Adapter

P/N 910C – Scuba Tank Refill Adapter

REFILLING HEED FROM FILL STATION USING #920C ADAPTER:

(Use a high-pressure, breathing air quality air compressor designed to fill air systems.)

WARNING: If the HEED Check Valve Refill Port or Refill Adapter threads are damaged or worn these parts will require replacement. Continued use may cause injury.
CAUTION: DO NOT stand directly over HEED regulator while filling.
CAUTION: Ensure the regulator is firmly attached to the cylinder (hand tight, no tools required).

1. Unscrew black cap from Check Valve Refill Port.
2. Apply small amount of food grade silicone grease to Refill Port threads with your finger.
3. Screw Refill Adapter onto Refill Port until finger tight.
   NOTE: DO NOT apply a wrench or otherwise overtighten.
4. Attach the yoke from the compressor to the Adapter.
   NOTE: If line is pressurized over 3200 PSI, adjust the line pressure to 3200 PSI.
5. Turn the On/Off Knob on HEED counter-clockwise until it is completely open/on.
6. Turn the valve on your compressor ON.
7. Refill the cylinder to 3200 psi initially, after cooling down the pressure will be approximately 3000 psi. Regulate the flow so that it takes approximately 45-60 seconds to fill the cylinder.
   NOTE: Filling too fast can generate heat and will result in an incomplete fill after the cylinder cools. NOTE: Fill cylinder slowly and DO NOT OVERFILL to protect the safety burst disc inside the regulator from rupturing. If it ruptures, a new 3300 psi burst disc must be installed before unit can be filled.
8. When the cylinder is full, turn the compressor or fill station valve OFF.
9. Turn the On/Off Knob on HEED clockwise until it is completely closed/off.
10. Depress the 2nd Stage Purge Button until air flow can no longer be heard and the hose is depressurized.
11. Open bleed knob to release pressure in compressor line. Remove Adapter from compressor yoke.
12. Remove Adapter from HEED and replace black cap on Refill Port.
13. Check the Pressure Indicator. If the tank is full, the Dial Gauge will read 3000 psi.

REFILLING HEED FROM FULL SCUBA CYLINDER USING #910C ADAPTER:

WARNING: If the HEED Check Valve Refill Port or Refill Adapter threads are damaged or worn these parts will require replacement. Continued use may cause injury.
CAUTION: DO NOT stand directly over HEED regulator while filling.
CAUTION: Ensure the regulator is firmly attached to the cylinder (hand tight, no tools required).
NOTE: Twice a year lightly lubricate the Bleed Screw o-ring using silicone grease.

1. Unscrew black cap from Check Valve Refill Port.
2. Apply small amount of food grade silicone grease to Refill Port threads with your finger.
3. Screw Refill Adapter onto Refill Port until finger tight.
   NOTE: DO NOT apply a wrench or otherwise overtighten.
4. Turn silver bleed screw clockwise to close (do NOT overtighten). ***NOTE: Stop if bleed ring does not move and troubleshoot.***
5. Attach Refill Adapter to SCUBA cylinder valve.

6. Open SCUBA cylinder valve very slowly just until you can hear air passing from one cylinder to the other.
   NOTE: Filling too fast can generate heat and will result in an incomplete fill after the cylinder cools.
   NOTE: If air is escaping from the Adapter during filling, close cylinder valve, wait for air to stop and re-tighten knurled ring by turning to closed (clockwise position).
7. When at least 2 minutes have elapsed, and air can no longer be heard flowing from the cylinder, turn the cylinder valve completely open to ensure maximum fill.
   NOTE: SCUBA cylinder must be filled to 3000 psi at beginning of refill procedure in order to fill to recommended full capacity.
8. Close SCUBA cylinder valve.
9. Turn Bleed Screw ½ turn counterclockwise to relieve pressure in the adapter. ***NOTE: You will not be able to remove the Adapter from Refill Port until this is done.***
10. Remove Adapter from SCUBA cylinder and HEED.
11. Replace black cap on Refill Port.

MOUNTING INSTRUCTIONS FOR HOLSTER WITH WAIST STRAP:

1. Place SPARE AIR in Holster and attach flap securely over the regulator ensuring velcro is fully engaged.
   NOTE: Mouthpiece can face left or right simply by switching mouthpiece cover and lanyard attachment to either side of the holster.
2. For models with Nose Clip option, place nose clip loosely inside of black mouthpiece protective cover. Secure mouthpiece cover over mouthpiece.
3. Attach the holster around waist using the black strap. Tighten as necessary for a snug fit.

MOUNTING INSTRUCTIONS FOR HOLSTER WITH VELCRO BACKING:

CAUTION: SPARE AIR units should be mounted on a flat surface. It is not recommended to mount them on the ceiling or anywhere above waist level to protect passengers against impact if they come unattached.
NOTE: Should the velcro adhesive glue not provide enough adhesion to the vehicle surface, or if the adhesion deteriorates over time due to extreme temperatures or environment, additional adhesive substance might be needed. The velcro glue is good for a one-time use only.
NOTE: Velcro will lose its ability to engage in extremely sandy or dirty environments.
NOTE: It is important that the user be able to grip the regulator having sufficient clearance for a pull of at least 6 inches.

1. Scrub metal area where Holster will be mounted with a scrubbing pad for approximately 30 seconds to clean and smooth surface. Clean same area with an alcohol wipe for best adhesion of the Velcro.
2. Take SPARE AIR out of Holster. Peel backing off Velcro and press Holster onto cleaned area.
3. Put SPARE AIR back into Holster and attach flap securely over the regulator.
   NOTE: Mouthpiece can face left or right simply by switching mouthpiece and lanyard attachment to either side of the holster.
4. For models with Nose Clip option, place nose clip loosely inside of black mouthpiece protective cover. Secure mouthpiece cover over mouthpiece.

PRE-USE CHECK:

1. Check for obvious physical damage, broken or loose parts. Do not use if damaged.
2. Visually check Dial Gauge for needle to be within green zone. Refill if necessary.
3. Push Purge Button down and release 1 time QUICKLY. Purge Button should move up and down freely. To maintain full pressure do not purge unnecessarily.

USING SPARE AIR – ABOVE WATER USE:

1. Pull D-ring on flap of Holster to open.
2. Pull off black mouthpiece cover.
   NOTE: Some models have a Nose Clip that will automatically drop out of the mouthpiece.
3. Grab regulator and pull unit out of Holster.
4. Place mouthpiece in your mouth and breathe slowly and normally. Biting down on mouthpiece will secure the unit in the mouth. For additional support you may place either hand around the cylinder to hold unit in place.
5. OPTIONS: a. Place Nose Clip on nose, or B. Place Scuba mask over eyes & nose and adjust as needed.
6. Continue to inhale and exhale at a normal rate. Take small, slow, steady breaths to maximize the duration of air supply.
   NOTE: The SPARE AIR utilizes a balanced regulator which means it will provide air in any orientation including the regulator being upside down or sideways.

USING SPARE AIR – WATER USE:

1. Pull D-ring on flap of Holster to open.
2. Pull off black mouthpiece cover.
   NOTE: Some models have a Nose Clip that will automatically drop out of the mouthpiece.
3. Grab regulator and pull unit out of Holster.
4. Place mouthpiece in your mouth. Biting down on mouthpiece will secure the unit in the mouth. For additional support you may place either hand around the cylinder to hold unit in place.
5. Press purge button lightly or exhale sharply to expel water from the regulator prior to inhalation then breathe slowly and normally.
   CAUTION: Failure to purge the SPARE AIR regulator before inhaling will result in swallowing water.
6. OPTIONS: a. Place Nose Clip on nose, or B. Place Scuba mask over eyes & nose and adjust as needed.
7. Continue to inhale and exhale at a normal rate. Take small, slow, steady breaths to maximize the duration of air supply. Do NOT hold your breath.
   NOTE: The SPARE AIR utilizes a balanced regulator which means it will provide air in any orientation including the regulator being upside down or sideways.

TRAVELING:

NOTE: When transporting product (not using) on commercial aircraft, cylinders must be VISIBLY empty and removed from regulators.

1. Purge until empty of air.
2. Hold upside down and remove regulator from cylinder (regulator is attached hand tight) by turning counter-clockwise. Leave o-ring, washer and exhaust discs on the regulator.
   CAUTION: Do not force regulator on or off cylinder. Excessive force may damage threads. If regulator does not remove easily, soak in a 1 to 1 vinegar & water solution for 3 hours to loosen any corrosion.
3. Place SPARE AIR in a protective container (plastic bag or box) to keep unit clean and to secure loose parts.
4. Pack in your check or carry-on luggage.
5. When you reach your destination, reassemble (hand tight) and fill the cylinder. Lightly lubricate the tank o-ring with a small amount of silicone grease – never use a hydrocarbon based oil. DO NOT force regulator onto cylinder.
   NOTE: Replace o-ring after product has been disassembled and reassembled 3 times, or o-ring shows signs of wear or air leakage.

SERVICE INFORMATION:

- *Ensure Spare Air is always pressurized whenever it is submerged to prevent water from entering system. If Spare Air has been emptied of air underwater it should be referred for Overhaul Service.*
- *If a leak or damage is found at any point the unit should be referred for Overhaul Service.*
- *No matter how often the unit has been used, or even if the unit has not been used at all, the Spare Air requires tank inspection and regulator overhaul every 5 years.*
- *Service intervals are from the Date of Manufacture (found on the cylinder neck – look for XX A XX representing the month and year of manufacture).*
- *Service record for each serial number should be maintained by user and record the date of the Annual Check and Overhauls as they are performed.*

ANNUAL CHECK (performed by user):

1. Visually check Dial Gauge for needle to be within green zone. If it is not, perform a leak test to determine if the Spare Air is actually leaking or if it just needs to be filled.
2. Look for obvious physical damage, such as broken or loose parts. Check openings of diaphragm cover for presence of foreign objects or punctures of blue diaphragm. Check that all parts are clean and securely attached.
3. Perform a leak test. Spare Air must be pressurized and needle within the green zone.
   a. Completely submerge filled unit into a tub of water.
   b. Shake the unit back and forth several times so that all trapped air is released.
   c. Hold the unit still and watch for any leaks for 60 seconds (spend 20 seconds at each of the following: mouthpiece opening, side ports, and tank o-ring areas).
   NOTE: A leak is defined as a continuous bubble at a constant rate.
   d. If leak is detected, refer unit for Overhaul Service.
4. If unit is filled at a Dive Shop they will require that the cylinder is visually inspected annually by them and receives a fresh VIP sticker.

OVERHAUL & CYLINDER SERVICE (to be performed by repair facility / manufacturer):

1. Regulator Overhaul Service: Recommended for the Spare Air every 5 years when not used underwater or in a training environment. Service includes: Overhaul of regulator, replacement of all worn parts, visual inspection of cylinder and labor. Cylinder will receive a new VIP (visual inspection) sticker with date marked.
2. DOT 3AL cylinder: Hydrostatic testing is required every five years. Any cylinder exposed to fire or heat in excess of 250°F, or shows signs of corrosion, pitting or damage should be evaluated further. CE marked cylinder - Refer to local country regulations for how often hydrostatic testing should occur.

SPARE AIR SERVICE OPTIONS:

OPTION 1

Return to Manufacturer for Service – visit *www.spareair.com* to download Service Form. Submersible Systems, Inc. provides both Overhaul and Hydrostatic Testing at our facility in Huntington Beach, California, USA.

OPTION 2

Inhouse Maintenance by Corporate Customer

- Inhouse maintenance may be conducted by personnel that have a background on servicing SCUBA equipment or EBS.
- Manufacturer will provide appropriate parts, tools and manuals as needed.

OPTION 3

In-country 3rd party repair center or dive maintenance company

- Please contact Submersible Systems, Inc. for a list of centers.

ROUTINE CARE & STORAGE:

1. For general cleaning, use a mild dish soap or Simple Green / biodegradable solution.
2. To clean mouthpiece, use a product such as Sterisol germicide or other food-grade disinfectant.
3. Keep the threads on both the Refill Port and Refill Adapter clean and lubricated. Use high-quality, non-toxic, food grade silicone grease for best results.
   NOTE: NEVER use a hydrocarbon based oil (i.e. household oil or motor oil), petroleum based substances to clean or lubricate. Do not expose the regulator to aerosol spray, as some aerosol propellants attack or degrade rubber and plastic.
4. Store HEED full or with some positive pressure to prevent contaminants from entering the cylinder. Store in a clean, dry environment with optimum temperatures of 50-75ºF for best product performance. Avoid direct sunlight, automobile trunks or other areas subject to temperature extremes. Avoid storing where it may be exposed to an electric motor which produces ozone. Prolonged exposure to extreme heat, ozone, chlorine and ultraviolet rays can cause premature degradation of rubber parts and components.
   NOTE: Industry guidelines recommend replacing air in cylinders annually.

SERIALIZATION:

All SPARE AIR systems are identified with individual serial numbers. Serial numbers are located on the regulator to the right of the mouthpiece.

SPARE AIR SPECIFICATIONS	
MODEL #	**300 Series**
Cylinder Capacity	3 cu ft / 85 liters
Service Pressure	3000 psi / 207 bar
Length	13.4” / 34 cm
Diameter	2.25" / 5.7 cm
Weight	2.2 lb. / 1 kg
Cylinder Material	Aluminum – black anodized
Regulator Type	Integrated Balanced Single Stage Demand
Pressure Relief	Integrated in Regulator
Operational Temperature	-22°F (-30°C) to +158°F (+70°C)
Cylinder Rating	DOT 3AL 3000 or ISO Marked
Duration of Air *	57 breaths at surface
Duration of Breathing	Approx. 4-7 minutes. Varies upon user’s lung capacity, physical exertion, depth of usage in water and several other factors.

*Based on 1.5 liters per breath