

The Diver's  
Reserve  
Parachute



# CONGRATULATIONS

You've just joined the ranks of over 350,000 discriminating divers who enjoy the peace of mind of diving with SPARE AIR® SPARE AIR is the absolute best strategy for successfully dealing with out-of-air emergencies, because it is a completely independent air supply. It is produced and tested by people with more than four decades of diving and manufacturing experience. SPARE AIR is made in the U.S.A. by craftsmen dedicated to producing a quality product.

Your SPARE AIR has been packaged fully assembled and is ready to be filled with air. Before using, however, it is very important to carefully read and understand the procedures outlined in this manual for filling the unit and performing a pre-dive inspection.

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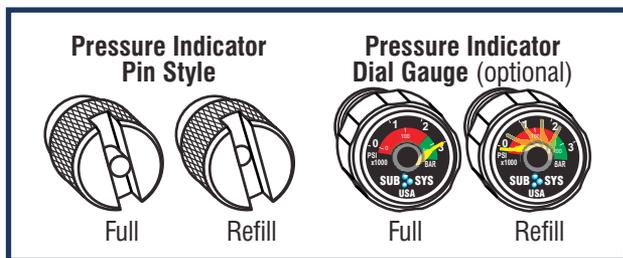
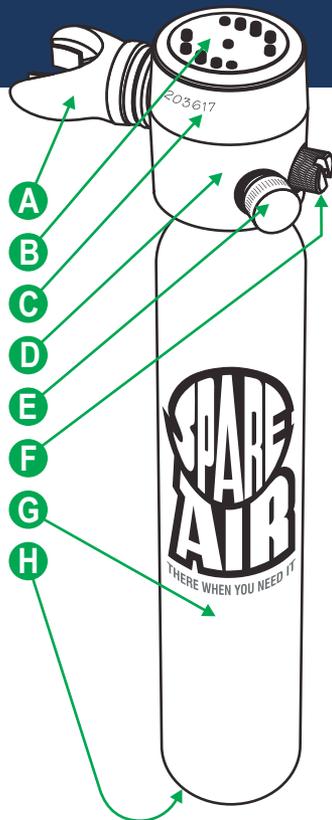
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# GENERAL PRECAUTIONS & WARNINGS

- Do not use product until you have read and understand instructions and precautions.
- Submersible Systems, Inc. promotes responsible diving practices and the recommendations that have been promoted by all International Training agencies.
- SPARE AIR is shipped empty. Fill prior to use.
- You must have received training and certification in the technique of SCUBA diving from a recognized certification agency. Use of underwater breathing devices by uncertified or untrained persons is dangerous and can result in serious injury or death.
- No special training or SCUBA certification necessary for using SPARE AIR Industrial above ground.
- SPARE AIR is an EMERGENCY alternate air source. It is NOT designed or intended for any other use. Due to its limited volume, it must not be relied upon as a PRIMARY source of air.
- SPARE AIR should not be used as part of your planned air reserve.
- Monitor diving disorders if ascent rates are exceeded or decompression stops are missed.
- Practice using SPARE AIR at normal rate ascents in shallow water.
- NEVER dive with a SPARE AIR that shows signs of damage, leakage or substandard performance.
- NEVER OVERFILL the SPARE AIR above 3000 psi, the air pressure stamped on the cylinder. ONLY use purified, dry compressed breathing air when refilling SPARE AIR.
- DO NOT fill or use the SPARE AIR if it has been exposed to extreme heat exceeding 250°F, or open flame. Instead, discharge the cylinder completely and return it to an Authorized SPARE AIR Dealer for inspection and possible hydrostatic testing.
- Breathing resistance of SPARE AIR is intentionally high to help minimize the possibility of free flow and thus losing air.
- This manual is supplied to the original SPARE AIR purchaser. Duplicate copies can be obtained free of charge from Submersible Systems, Inc. or [www.spareair.com](http://www.spareair.com).
- SPARE AIR is protected under US Patent #4996982. The Refill Adapter is protected by US Patent #7,182,108 B2.

# HOW SPARE AIR WORKS

- A. Mouthpiece** - High quality silicone mouthpiece.
- B. Purge Button** - Clears the regulator and empties the cylinder.
- C. Serial Number**
- D. 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.
- E. Refill Port and Cap** - SPARE AIR is refillable from your own SCUBA cylinder or 3 other ways through the refill port.
- F. Pressure Indicator** - Standard pin style indicator is easy to read – pin will be flush with surface when unit is full at 3000 psi. Optional Dial Gauge has an easy to read, color coated display for at-a-glance pressure check in psi and bar.
- G. 3000 PSI Aluminum Cylinder** - Manufactured just like standard SCUBA cylinders with the same safety features, the cylinder should be inspected annually and hydrostatically tested once every 5 years.
- H. VIP Sticker** - Month and year of last cylinder visual inspection.



## SPECIFICATIONS

	Model 600/600-N	Model 300/300-N	Model 170
<b>Cylinder Capacity:</b>	6 cu ft / 170 liters	3 cu ft / 85 liters	1.7 cu ft / 48 liters
<b>Water Capacity:</b>	53 cu in / 1 liter	30 cu in / .5 liters	16 cu in / .23 liters
<b>Service Pressure:</b>	3000 psi / 207 bar	3000 psi / 207 bar	3000 psi / 207 bar
<b>Length:</b>	13.5" / 34 cm	13.4" / 34 cm	8.8" / 22 cm
<b>Diameter:</b>	3.2" / 8.2 cm	2.25" / 5.7 cm	2.25" / 5.7 cm
<b>Weight:</b>	3.7 lb. / 1.7 kg	2.2 lb. / 1 kg	1.5 lb. / .7 kg
<b>Surface Breaths*:</b>	114	57	32

\*based on 1.5 liter breath size

# HOW TO FILL SPARE AIR

 **WARNING:** If the SPARE AIR 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 SPARE AIR regulator while filling.

 **CAUTION:** Ensure the regulator is firmly attached to the cylinder (hand tight, no tools required).

*NOTE: Due to the volume of the 6 cu.ft. cylinder, we recommend that this model be filled from a dive shop to ensure a complete fill and maintain full air supply in your main cylinder.*

1. Unscrew black cap from the SPARE AIR 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 ring on Adapter back & forth (open/close) several times to ensure proper function. Turn bleed ring firmly to closed (clockwise) position.

*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: Support the cylinder during filling.*

*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. You must turn the bleed ring on Adapter to open (counter-clockwise) position 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 SPARE AIR.

11. Replace black cap on Refill Port.



# HOW TO MOUNT SPARE AIR

**WARNING:** DO NOT attach or mount the SPARE AIR Holster to your weight belt OR block integrated weight pouches.

**WARNING:** DO NOT attach or mount the SPARE AIR Holster to your BC in a way that will interfere with the inflation of the BC.

1. Holster attaches to 2 points on BC. Straps can be moved along back of Holster. Choose the 2 that would allow for the tightest fit.
2. Snap quick disconnect straps and cinch up tightly.
3. Attach Leash - slide loop up from bottom of cylinder and tighten. Clip other end onto Holster or BC D-ring.
4. Insert SPARE AIR into Holster and close flap ensuring velcro is fully engaged. Attach Mouthpiece Cover.

*NOTE: Mouthpiece can face left or right simply by switching mouthpiece cover and lanyard attachment to either side of the holster.*



**SPARE AIR  
3 cu ft  
Holster**



## Suggested Mounting Positions

**Shoulder Mount:**  
Clip holster to Shoulder  
Strap and D-ring



**D-Ring Mount:**  
Clip holster to tank  
strap and D-ring



**Tank Mount:**  
Thread tank strap  
through holster  
mounting strap



**SPARE AIR  
6 cu ft  
Holster**

# ACCESSORIES



**SPARE AIR  
HOLSTER #973**  
for the SPARE AIR 300/300-N



**SPARE AIR  
HOLSTER #976**  
for the SPARE AIR 600/600-N

**SAFETY  
LEASH  
#961**



**REFILL ADAPTER #910S**  
Adapter fits onto standard  
SCUBA tank for easy refilling.



# PRE-DIVE

1. Check Pressure Indicator. Do not dive with SPARE AIR unless it is completely full.
2. Check for obvious physical damage, such as broken or loose parts.
3. Push Purge Button down and release. Purge Button should move up and down freely. To maintain full pressure in SPARE AIR do not purge unnecessarily.
4. Check that SPARE AIR Holster is attached securely to BC. Ensure that velcro is fully engaged and that leash is attached to the SPARE AIR AND your BC.
5. Practice using out of water first, then in shallow water to become familiar with the product. The amount of air you will receive will vary based on your lung capacity, depth, water temperature, exertion level, etc.

*NOTE: Never deplete SPARE AIR entirely in a SIMULATED ascent. Water will enter inner stages of the regulator and may result in internal corrosion.*



# USING SPARE AIR

1. Upon ascent, pull D-ring on flap of Holster to open.

 **CAUTION:** Begin ascending immediately to avoid using valuable time and air.

2. Grab SPARE AIR regulator head and pull out of the Holster. This action will release the Mouthpiece Cover.

3. Place SPARE AIR into user's mouth.

4. Press Purge Button lightly or exhale sharply to clear regulator before inhaling.

 **CAUTION:** Failure to purge the SPARE AIR regulator before inhaling will result in swallowing water.

5. Inhale and exhale to a safe and normal rate of ascent. Take small, slow, steady breaths to maximize the duration of air supply.

*NOTE: SPARE AIR is only for use to recreational depths.*

 **CAUTION:** Never hold your breath.

## POST-DIVE & STORAGE

*NOTE: Rinsing should occur as soon as possible after diving.*

1. Before rinsing, check Pressure Indicator and make sure SPARE AIR is not empty (has some pressure) to prevent the entrance of moisture into the system. Refill if necessary.

 **CAUTION:** If empty, water may have entered the regulator and cylinder and could lead to corrosion and/or failure of the system. Refer to Maintenance section.

2. SPARE AIR should be removed from its Holster and soaked for at least 30 minutes in warm, fresh water.

3. Rinse vigorously by flushing the cavity of the mouthpiece with a steady stream of water.

4. Rinse Refill Adapter in fresh water.

5. Gently shake to dislodge any water and wipe dry with a clean towel.

6. Store SPARE AIR full or with some positive pressure to prevent contaminants from entering the cylinder. Store in a clean, dry environment with optimum temperatures of 50-75°F for best product performance. Avoid direct sunlight, automobile trunks or other areas subject to temperature extremes.

*NOTE: Industry guidelines recommend replacing air in cylinders annually.*

# ROUTINE CARE & MAINTENANCE

- For general cleaning, use a mild dish soap or Simple Green / biodegradable solution.
- For sanitizing, use a commercially available regulator sanitizer available through a dive shop.
- 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.



**CAUTION: NEVER** use a hydrocarbon based oil (i.e. household oil or motor oil).

- If you notice damage, wear or suspect any leaking or missing parts, have SPARE AIR examined immediately.



**WARNING: DO NOT** attempt to repair SPARE AIR yourself. Unauthorized repairs or tampering is hazardous.

- SPARE AIR should be serviced annually by an Authorized SPARE AIR Dealer or by Submersible Systems to assure proper performance. It cannot be assumed that a regulator is in good working order on the basis that it has received little or no use. Prolonged or improper storage can result in premature deterioration of o-ring seals.

*NOTE: Recommendations are only related to recreational diving use and do not apply to military, commercial, or other professional diving uses.*

- SPARE AIR used frequently will require service every three to six months.
- The cylinder has a DOT 3AL3000 rating and will require hydrostatic testing every five years. A visual inspection is recommended annually. The cylinder should be inspected internally and externally for pitting, corrosion, dents, cracks or other damage.

*NOTE: Different national or international standards may apply depending on where you are located.*

- Visit Repair Information page at [www.spareair.com](http://www.spareair.com) for instructions on how to obtain service.

Compatibility and Use

## NITROX MODELS

- SPARE AIR Nitrox shall not be used with Pure Oxygen, or Nitrox with greater than 40% Oxygen.
- Only gas from storage and supply equipment cleaned and maintained for Oxygen Service is acceptable for use with SPARE AIR Nitrox.
- If SPARE AIR Nitrox is filled with regular breathing air, it is considered contaminated and will require cleaning prior to use again with Nitrox.
- Equipment users must be trained and certified in the specific use of Nitrox by dive industry training agencies.
- Only a halocarbon based lubricant such as Christo-Lube MCG 111 should be used on SPARE AIR Nitrox.

# TRAVELING

When traveling on commercial aircraft, cylinders must be **VISIBLY** empty and removed from regulators.

Practice removing and assembling prior to packing for a trip.

1. Purge SPARE AIR until empty of air.
2. Hold SPARE AIR 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.

**WARNING:** 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. If regulator still does not remove, take to a SPARE AIR Dealer for help.

3. Place the SPARE AIR in a protective container (plastic bag or box) to keep unit clean and to secure loose parts. We recommend our optional accessory Travel Pack #963/966, which includes a carry bag, dust caps, replacement cylinder o-rings and silicone grease (available online at [spareair.com](http://spareair.com)).

4. Pack SPARE AIR in your check or carry-on luggage.
5. When you reach your dive destination, reassemble SPARE AIR. First, lightly lubricate the cylinder o-ring with a small amount of silicone grease – never use a hydrocarbon based oil. Next, reattach the Regulator hand tight. **DO NOT** force regulator onto cylinder – if you feel resistance, stop, unscrew, and start again.



When reassembling, be sure O-Ring, Washer, and Exhaust Discs go on in order as shown

*Note: Replace cylinder o-ring after product has been disassembled and reassembled 3 times, or o-ring shows signs of wear or air leakage. Cylinder o-ring size is 2-016 available for purchase at [spareair.com](http://spareair.com).*



Purge air, then rotate cylinder counter-clockwise to remove



Protect interior of aluminum cylinder



Protect regulator threads

Travel Pack #963  
for 3 cu ft model



Travel Pack #966  
for 6 cu ft model



# WARRANTY INFORMATION

Register your SPARE AIR online at [www.spareair.com](http://www.spareair.com)

## Submersible Systems, Inc. Limited One-Year Warranty

### Statement of Warranty

Submersible Systems, Inc (SSI) guarantees, to the original purchaser only, that the product purchased will be free of defects in materials and/or craftsmanship under normal SCUBA use for one year from date of purchase provided proper care has been performed as prescribed by the owner's manual supplied along with the product. Should this product prove to be defective for any reason (other than those listed in the limitations section below) the product will be repaired or replaced (at SSI's discretion) free of charge (excluding shipping and handling charges). This warranty is non-transferable and applies to the original purchaser only.

### How to obtain warranty service

You must return your product to SSI to obtain warranty service. You must provide a copy of the original sales receipt. Freight must be prepaid. Please enclose a letter with your daytime telephone number describing the exact nature of the difficulty you are experiencing.

### Statement of Limitations

General Warranty does not cover damage from accident, abuse, tampering, lack of proper care and maintenance and/or improper annual servicing. Modifications or repair by anyone other than an SSI Authorized Repair Facility voids warranty. SSI will not be responsible for recovery or replacement of the product in the event of loss or theft. SSI, its distributors, and retailers make no warranties, either expressed or implied orally or in writing, with respect to this product or its accompanying owner's manual except those stated in the preceding paragraphs. By purchasing this product it is agreed and understood that in no event will SSI, its distributors or retailers be held liable for any personal injuries resulting from its operation, or for any other damages whether direct, indirect, incidental, or consequential even if SSI has been advised of such damages. This Warranty is in lieu of all other warranties, express or implied, including, but not limited to, implied warranties of merchantability or fitness for a particular purpose (some states do not allow the exclusion or limitation of incidental or consequential damages or allow limitations on the duration of an implied warranty, so the above exclusions may not apply to you).



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Dealer/Distributor Stamp: