



SBA / CU2 4500



USER MANUAL

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Revision History

REV	DESCRIPTION	DATE	APPROVED
A	TPP Release	01/01/2025	SH

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WARNINGS, CAUTIONS, AND NOTES

Pay attention to the following symbols when they appear throughout this document.

They denote important information and tips.



Indicates important information that if ignored, may lead to injury or death.



Indicates information that will help you to avoid product damage, faulty assembly, or unsafe conditions.



Indicates tips and advice.

- It is essential that the user read this guide to familiarize themselves with the proper setup, care, and use of this product. If the instructions given in this guide are not understood and followed, possible injury or death may result.
- Proper training is essential for safety. One must be trained in breathing compressed gases, in-water survival, and emergency egress.
- Before each dive, inspect this regulator for proper operation. If any part does not function properly, DO NOT USE!
- This device has a limited gas supply. It is ONLY intended for emergency exit from shallow water depths of 45 ft/13.5m. It is not intended for evacuations from greater depth, prolonged use, or standard SCUBA equipment.
- Air Supplies used with the regulators must meet requirements for breathable air Grade E in the U.S.A. or EN 12021 Annex A standards in Europe.
- As with all underwater life support equipment, improper use or misuse of this product can cause serious injury or death.
- Never overfill the SBA/CU2 Unit.
- The Unit should always be pressurized to prevent corrosion and contamination of internal components. If the unit has been exposed to water ingress or contamination it must be serviced and cleaned by a qualified technician prior to being put back in service.
- Discontinue use of any SBA/CU2 unit post exposure to extreme heat in excess of 250°F/121°C.
- Units shall be serviced and maintained on a regular basis by trained and authorized technicians. The cylinder must be inspected and serviced in accordance with all local governing agencies. The regulator components must be serviced annually. Equipment that is not routinely serviced in a correct manner creates an unsafe condition that could lead to serious injury or even death.
- Failure to obtain proper training in the specialized techniques and to properly equipped for diving in cold water environments such as under ice could result in the regulator freezing. This would place the user in risk of serious injury or death.

SBA / CU2 4500 USER MANUAL

INTRODUCTION: The SBA/CU2-4500 was designed for simplicity, reliability, and compact size. By combining the function of a valve and regulator first stage, the SBA/CU2-4500 reduces weight, bulk, and a failure point. The SBA/CU2-4500 utilizes a robust piston style first stage that greatly reduces moving parts while still providing good breathing characteristics. Fewer parts also make it easy to service and maintain. A unique low-profile design reduces second stage bulk and allows for improved configuration options to meet your needs.



Technical Specifications	SBA 4500
Cylinder Filling Capacity	2.58 cu. ft. 73.02L
Cylinder Minimum Water Volume	15 cu. in. .252L
Length (Cylinder To Regulator)	9.43 in. 24 cm
SBA System Overall Length	12.055 in. 30.62 cm
Cylinder Diameter	1.99 in. 5.055 cm
Service Pressure	4500 PSI 310 Bar
Cylinder Material	Carbon Wrapped Aluminum Liner
Flex Hose 90° Swivel Small Diameter	20", 27", 36" 51cm, 65.5cm, 91.5cm
First Stage Regulator	Compact Adonized Aluminum
Second Stage Regulator CU2 or LP2	Compact Universal; CU2 Low Profile LP2 Flat Design
Pressure Gauge	5000 PSI 345 Bar
On / Off	Red Indicator
Burst Disk Capacity	7250 PSI 500 Bar
System Weight	1.6 lbs. .72 kg
** Breathing Duration	31 Breaths

****** The SBA Series 4500 System Breathing Duration is based on an average breath volume of 1.5 liters, at a breathing rate of 10 breaths per minute at a starting pressure of 4500 PSI.



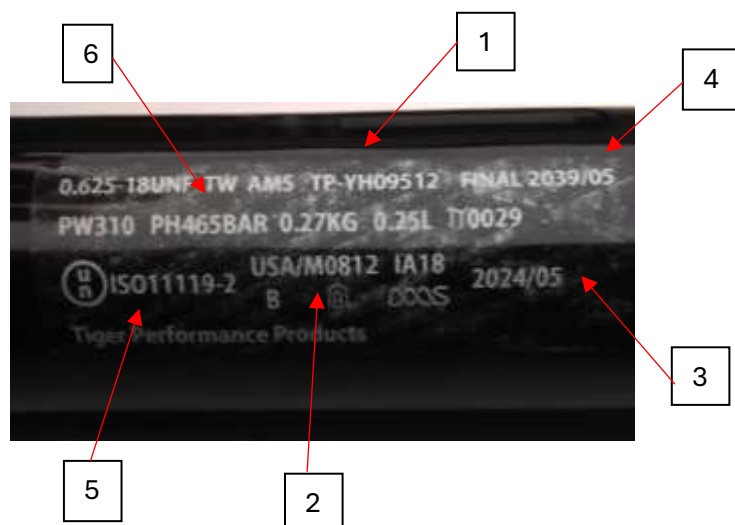
Use only manufacturer approved cylinders with the SBA/CU2. Use of any other cylinder can lead to cylinder failure and cause injury or death.

The Cylinder:

The SBA/CU2-4500 comes standard with a 2.58 cu. ft./ 73.62 L capacity cylinder. This cylinder is full at 4500 PSI 310 BAR. This provides on average 31 breathes at depths ≤ 20 ft. (6 m), dependent on the user's lung capacity and workload.



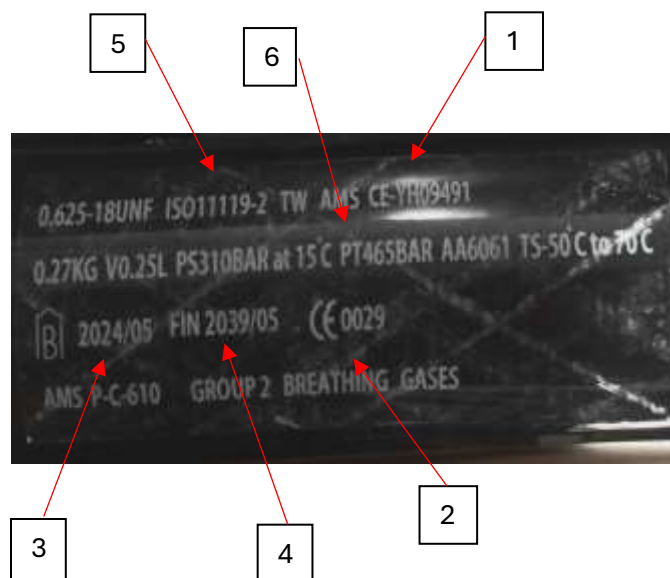
SBA/CU2 4500 Units that are shipped with a DOT (Department of Transportation) approved cylinder have a label on them with important information.



Item #	Description
1	Serial Number
2	DOT Certification
3	Built Date
4	End of Service Date
5	ISO Certification
6	Service Pressure



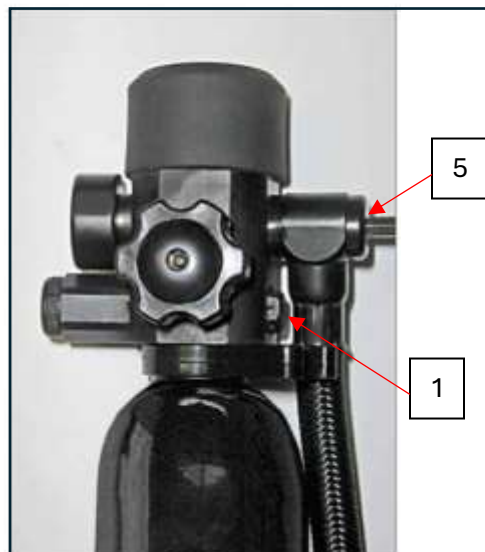
SBA/CU2 4500 Units that are shipped with a CE (European Union approved to EN Standards) approved cylinder have a label on them with important information.



Item #	Description
1	Serial Number
2	CE Certification
3	Built Date
4	End of Service Date
5	ISO Certification
6	Service Pressure

THE SBA FIRST STAGE

The first stage is threaded directly into the cylinder to create a more compact package. The first stage delivers workable gas pressure to the second stage for breathing. Additionally, the first stage utilizes a compact onboard pressure gauge, low pressure hose with swivel, on/off knob and fill port.



Item#	Description
1	Burst Plug
2	Fill Cap
3	On/Off Knob
4	Pressure Gauge
5	Hose with Swivel



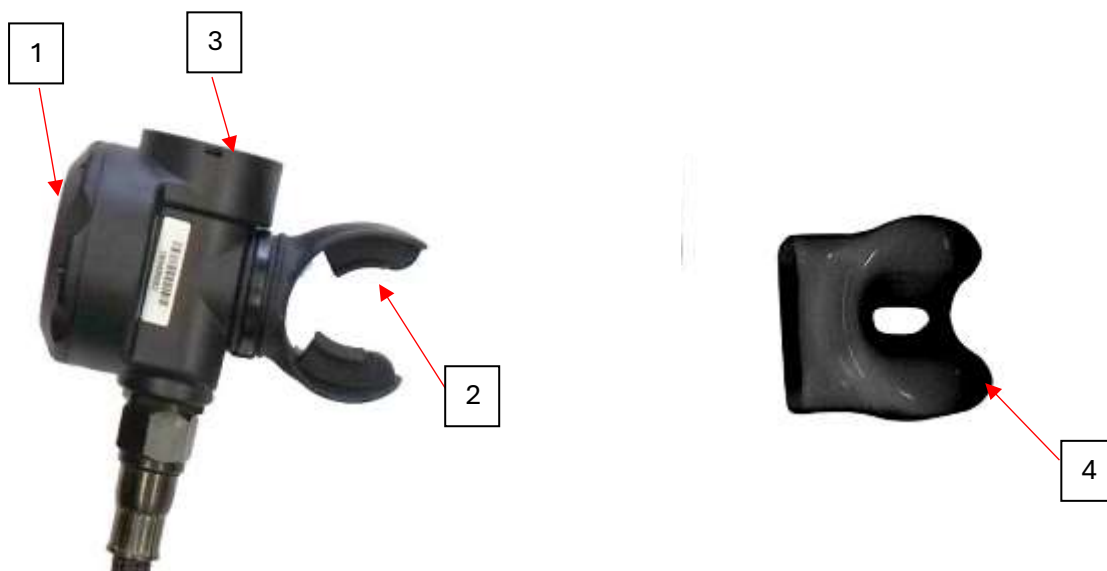
The BA/CU2 is intended for single person use only. Do not add additional second stages for multi person use.

The operation of the first stage is simple. The high-pressure ports are always active. This means it is not necessary to operate the on/off knob to fill the cylinder or check the internal pressure. Opening the valve is only used to control the supply of gas to the second stage. The on/off knob is open when turned fully counterclockwise and closed when turned fully clockwise. To prevent accidental activation of the second stage, gas loss, and unnecessary wear on the second stage valve seat, the on/off knob should be closed and the second stage purged when the unit is not in use.

THE SBA SECOND STAGE

When the on/off knob located on the SBA first stage is turned on the second stage of the regulator assembly receives breathing gas at an intermediate pressure of approximately 140 psi (9.7 bar) from the first stage and delivers it to you at ambient pressure during inhalation. To begin breathing from the CU2, first remove the mouthpiece cover from the mouthpiece, insert the mouthpiece in your mouth, purge if necessary and breathe normally. When you stop inhaling, it then shuts off the flow of breathing gas and provides a path for exhaled gas. Airflow may also be initiated at any time for testing by pressing the purge button on the face of the CU2 to activate gas flow. Gas flow will cease as soon as you stop depressing the purge button.

Water can be purged from the small internal air space by exhaling a small puff of breathing gas into the mouthpiece, or by blocking the mouthpiece with your tongue and pressing the front mounted purge button to initiate a flow of breathing gas.



Item #	Description
1	Purge Cover
2	Mouthpiece
3	Exhaust Valve
4	Mouthpiece Cover

FILLING THE CYLINDER

1. Turning counterclockwise, remove the port cap from the fill port.
2. Ensure that the fill port and fill adapter are free of moisture, corrosion, and debris. Clean as needed.



CAUTION: When filling the unit, use the fill station pressure gauge to ensure a complete fill. It is more accurate than the on-board gauge.

3. Turning clockwise, thread the fill adapter onto the fill port until it is hand tight.
4. Attach the fill whip or tank to the appropriate fill adapter.
5. **DO NOT** overfill the cylinder. The cylinder should be slowly filled, reaching 4550 psi (305 bar) with the cylinder at a temperature of 75 °F (24 °C).



NOTE: Rapid filling will result in incomplete cylinder fills. Use slow fills and cool-down rest periods during filling operations.



WARNING: DO NOT attempt to fill the cylinder in excess of 4500 psi / 310 bar. Doing so could damage the cylinder, burst disk, or other components.

Fill Adapters



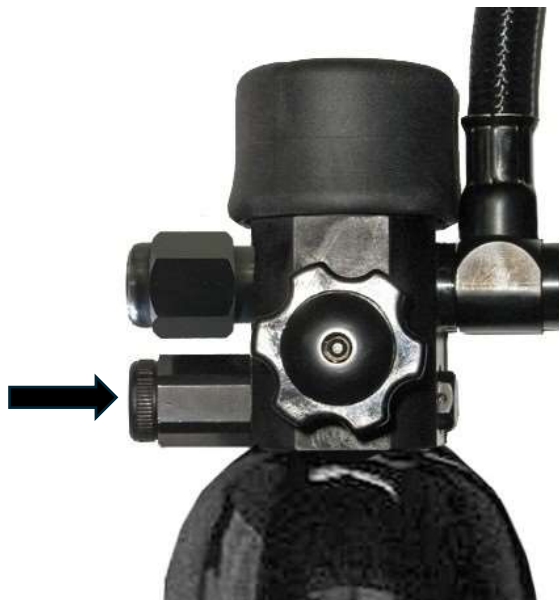
NOTE: It is not necessary to open the valve with the hand wheel to fill the unit with air or to check the pressure with the onboard gauge.



Din Compressor Fill Adapter



Din Transfer Fill Adapter



CARE AND MAINTENANCE

Transport and Storage:

If possible, transport the SBA/CU2 assembly (preferably dry) in a padded carrying case or equipment bag separated from sharp items that might damage or scratch the Components. You should also protect the second stage from damage from heavy objects.

As soon as possible following a deployment of the system:

- If possible, immerse the entire assembly in a warm freshwater bath and soak for one hour, preferably while pressurized.
- Remove from the bath and rinse all components of the assembly with slow running fresh water. **DO NOT** use full water pressure.
- Flush the ambient openings and the exterior of all components thoroughly to remove dissolved salt and other contaminants.
- Flush the second stage by running water into the mouthpiece and out the exhaust ports.
- **DO NOT** depress the purge button (if not pressurized) while rinsing, doing so will allow water to enter the first stage.
- If possible, lay the complete assembly flat in a cool, dry place (out of direct sun-light) and allow the components to dry naturally.
- **DO NOT** inject or spray lubricants into or onto the first and second stages. Doing so can attract contamination that may subsequently interfere with proper operation.



DO NOT remove the Purge Cover yourself. Improper replacement of the Cover could result in an unexpected undesirable shut off of air delivery while underwater.

Prior to storing the SBA/CU2-4500:

- Ensure that the complete assembly is clean and dry.
- If you were unable to clean the regulator prior to transport, or if it became exposed to other contaminated or wet equipment that was not thoroughly cleaned prior to transport, clean it thoroughly and allow it to dry naturally as previously described.

REPAIRS AND SERVICE



DO NOT attempt to disassemble the SBA/CU2 assembly, or to adjust the first stage without proper training and authorization from the distributor. Doing so could cause malfunction while underwater resulting in serious injury or death. It will also void any applicable warranty.

Once each year, your complete SBA/CU2 assembly should be inspected and serviced by an authorized technician. Additionally, the cylinder should be inspected in accordance with the local governing authorities. More frequent service is required when being heavily used or used in contaminated water. If there are any questions on service and technician qualification, contact the distributor.

PRE-USE INSPECTION

The pre-use inspection shall be performed on the SBA prior to each use. Pre-use procedures are as follows:

WARNING: Strict compliance of pre-use and post-use inspections shall be adhered to by all personnel utilizing the SBA. Any signs of discrepancies shall be reported immediately to maintenance personnel.

With the system off, visually inspect the SBA for signs of damage. Inspect the front cover, exhaust cover and fittings for tightness. Inspect the tamper dot (if command uses tamper dot) on front cover. Inspect hose for cuts and blistering. Inspect for contamination, dirt and signs of corrosion.

CAUTION: Do not press the purge button when the SBA is on. Purging of the SBA will deplete the pressure below the “GREEN ZONE” and it will have to be topped off by maintenance personnel.

Turn the SBA “ON” by rotating the on/off knob to the left (counterclockwise), the red indicator ring shall not be seen through the elongated holes on the knob. Ensure that the gauge reads in the “GREEN ZONE”. If the gauge does not read in the “GREEN ZONE” report discrepancy to maintenance personnel.

POST-USE INSPECTION

Upon completion of use, turn handwheel off (clockwise), so that the red indicator ring is visible through the elongated holes on the handwheel. Depress the purge button to relieve pressure in the hose and second stage. Check SBA for signs of damage and contamination. Report discrepancies to maintenance personnel.

NOTES:

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