



SCUBAPRO®

**AIR2 - 5th Generation
Octopus / BC inflator**

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SCUBAPRO AIR2 - 5TH GENERATION MANUAL (OCTOPUS / BC INFLATOR)

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1. IMPORTANT WARNINGS

WARNING

THIS MANUAL MUST BE READ AND UNDERSTOOD ENTIRELY BEFORE USING THE PRODUCT. IT IS ADVISED THAT YOU KEEP THIS MANUAL IN YOUR POSSESSION DURING THE ENTIRE LIFE OF YOUR AIR2 - 5TH GENERATION.

WARNING

When diving you must follow the rules and apply the skills taught by a recognized scuba diving certification agency. Before taking part in any diving activity, it is mandatory to have successfully completed a scuba diving course covering both theoretical and technical aspects of diving.

WARNING

This instruction manual does not replace a diving instruction course!

2. CE CERTIFICATION

SCUBAPRO AIR2 - 5th Generation (hereafter called AIR2) described in this manual has obtained the CE certification issued by RINA according to European directive 89/686/EEC. Certification tests have been conducted according to the specifications set by the said directive, regulating the conditions for the release on the market and the fundamental safety requirement for third category Personal Protective Equipment (PPE). The CE mark denotes compliance with the fundamental requirements for health and safety. The 0474 number next to the CE marking is the identification code for RINA, the notified body controlling production compliance with regulations, as per Art. 11 B ED 89/686/EEC.

The Manufacturer of SCUBAPRO AIR2 is SCUBAPRO EUROPE s.r.l. Via Tangoni 16 16030 Casarza Ligure (GE) Italy. SCUBAPRO EUROPE s.r.l. has a quality management system certified by RINA in accordance with the ISO9001:2015 standard.

2.1 *EN 250: 2014 norm regulations and what they mean*

The requirements and tests defined by the EN 250: 2014 aim to ensure a minimum safety level for the operation of underwater breathing equipment.

In Europe, the EN 250 norm defines since years the minimum technical standards of acceptance for recreational diving regulators and the EN250:2014 is the latest revision of the EN250 norm. SCUBAPRO AIR2 has been tested with the following SCUBAPRO first stages, and has successfully passed the certification tests required by EN250:2014 to an auxiliary emergency breathing device integrated with a buoyancy inflator system.

MK2 EVO, MK11, MK17 EVO, MK21, MK25 EVO.

WARNING

The use of AIR2 as auxiliary emergency breathing device is certified only with SCUBAPRO first stages.

Please refer to SCUBAPRO regulators manual for any additional information

WARNING

The use of AIR2 as buoyancy control system of the BC, is certified only with SCUBAPRO BCs.

Please refer to the SCUBAPRO BCs manual for any additional information

WARNING

In accordance with European standards, AIR2 can only be considered certified where all components are present, as per the original SCUBAPRO configuration, including the low pressure hose supplied. Any variation of the original configuration invalidates conformity to European certification standards.

2.2 Definition of 'SCUBA' according to EN 250: 2014

This regulation defines a SCUBA unit as a self-contained open-circuit underwater breathing apparatus.

A SCUBA unit can be composed of component groups. During use, the minimum required component groups are elements a) to e) of the following list:

- a. cylinder(s) with valve(s);
- b. demand regulator(s);
- c. pressure indicator
- d. facepiece: complete mouthpiece or half-mask for diving or complete mask;
- e. carrying system.

The apparatus may also include the following sub-assemblies:

- f. auxiliary breathing system
- g. lifting harness
- h. depth/time measuring device
- i. additional safety device(s)
- j. voice communication system

2.3 Limitations provided by EN 250: 2014

The SCUBA unit can be comprised of separate components such as: cylinder(s), regulator(s), pressure gauge.

The SCUBAPRO regulators described in this manual can be used with SCUBA components units certified according to directive 89/686/EEC and EN 250: 2014 norm. The air contained in the cylinder must comply with the requirements for breathable air defined by EN 12021 norm. The certification depth is 50 meters (164 ft.), however divers must conform to the limits set by local regulations in force at the diving location

WARNING

If a SCUBA is configured for and used by more than one diver at the same time, then it shall not be used at depths greater than 30 meters and in water temperature less than 4°C (39.2°F) if marked "EN250A", and less than 10°C (50°F) if marked with "EN250A>10°C".

WARNING

The use of AIR2 as regulator is certified exclusively for diving in water temperature higher than 10°C (50°F), as shown in marking.

Do not use AIR2 as regulator during diving in water temperature below that limit. Failure to follow this indication could lead to serious injuries or even death.

WARNING

Only SCUBA complying with EN250:2014 and marked "EN250A" or "EN250A>10°C" may be used as an escape device by more than one diver at the same time.

2.4 Octopus (auxiliary emergency breathing system)

The octopus is usually considered as an auxiliary emergency second stage to be used by the diver in case of need (such as malfunction of its primary second stage).

A SCUBA in octopus configuration is defined as an octopus second stage connected with the same first stage of the primary regulator.

The EN250:2014 defines minimum safety requirements, testing and maximum depth (30 meters) in case the SCUBA is used by two divers at the same time with the octopus second stage used as an auxiliary emergency breathing escape device by another diver.

The EN250:2014 also defines minimum safety requirements for auxiliary emergency breathing devices integral to a BC inflation system used as a breathing escape device (AIR2).

3. IMPORTANT WARNING REMINDERS

For your protection while using SCUBAPRO life support equipment, we call your attention to the following:

1. Use the equipment according to the instructions contained in this manual and only after having completely read and understood all instructions and warnings.
2. Use of the equipment is limited to the uses described in this manual or for applications approved in writing by SCUBAPRO.
3. Cylinders must only be filled with atmospheric compressed air, according to the EN 12021 norm. Should moisture be present in the cylinder, beside causing corrosion of the cylinder, it may cause freezing and subsequent malfunction of the regulator during dives carried out in low temperature conditions (lower than 10°C (50°F)). Cylinders must be transported according to local rules provided for the transport of dangerous goods. Cylinder use is subjected to the laws regulating the use of gases and compressed air.
4. Equipment must be serviced by qualified personnel at the prescribed intervals. Repairs and maintenance must be carried out by an Authorized SCUBAPRO Dealer service facility and with the exclusive use of original SCUBAPRO spare parts.
5. Should the equipment be serviced or repaired without complying with procedures approved by SCUBAPRO or by untrained personnel or not certified by SCUBAPRO, or should it be used in ways and for purposes other than specifically designated, liability for the correct and safe function of the equipment transfers to the owner/user.
6. If the equipment will be used in cold water (temperature lower than 10°C (50°F)) it will be necessary to use a regulator suited for such temperatures.



WARNING

Diving in cold water requires special equipment and techniques. Before diving in cold water we strongly recommend you obtain adequate training from a recognized training agency.

7. The content of this manual is based upon the latest information available at the time of going to print. SCUBAPRO reserves the right to make changes at any time. SCUBAPRO refuses all responsibility for damages caused by non-compliance with the instructions contained in this manual. These instructions do not extend the warranty or the responsibilities stated by SCUBAPRO terms of sales and delivery.

4. REGULATOR SYSTEM

A regulator system is required to reduce the pressure of the compressed air contained in the cylinder to an ambient pressure in order to supply breathable air when needed. It is also possible to connect pressure gauges (analog or digital), IP inflators to supply buoyancy compensators, dry suits and other devices to this system. The regulator system is composed of a pressure reduction device and one or more breathing devices. In this manual, the pressure-reducing device and the breathing device will be indicated, respectively, by the terms “first stage” and “second stage.”

4.1 *First stage*

A pressure-reducing mechanism that reduces the pressure of the compressed air contained in the cylinder to an intermediate relative pressure of about 9.5 bars (138 psi). The first stage uses a standard piston, balanced piston or diaphragm mechanism.

4.2 *Second stage*

This unit is supplied by the intermediate pressure air coming from the first stage through the low pressure hose. It further reduces air pressure to balance with the ambient pressure. The second stage may be balanced or unbalanced and equipped with a Venturi effect control (V.I.V.A.) and/or with an inhalation resistance control.

4.3 *Auxiliary emergency second stage (octopus) with integrated BC inflator: AIR2*

Also this unit is fed by the intermediate pressure air coming from the first stage via a low pressure hose. The air pressure is further reduced to reach the breathing pressure.

The auxiliary emergency second stage is used by the diver when the main second stage has problems or when the buddy diver is experiencing problems during the dive .

This auxiliary emergency second stage can be replaced by AIR2. This unit includes features of both a traditional BC inflator and an auxiliary emergency breathing device. Therefore it can be used for inflating/deflating the BC or to operate as an auxiliary emergency breathing device for themselves so to give the main second stage to the buddy experiencing problems. The AIR2 is simple to use and safe, even in unusual situations. The diver will not waste time to find the emergency second stage since the AIR2 will always be there, where the left hand is used to look for the BC inflator.

The AIR2 it is also a BC inflation and deflation device, therefore it has a specific quick connection to the low pressure hose which allows fast connection and disconnection even when the system is already pressurized. The system automatically stops the air flow from the hose once it's disconnected from the AIR2 using the quick coupling (fig 3-C).

5. PREPARING FOR USE

Before assembling the SCUBA unit verify that all components comply with local or European standards.

- Before connecting the first stage to the cylinder verify that the connection is free from dirt (sand, debris) and that the O-ring is undamaged.
- INT connection: place the first stage connector on the cylinder valve after checking that it is also free from dirt or debris. Check that the contact surfaces are in the correct position and then tighten the yoke screw. In order to obtain the maximum comfort, the low pressure hose connecting the first stage to the second stage should be horizontal and directed toward the diver's right shoulder (Img. 1).
- DIN connection: screw the first stage connector on the cylinder valve after checking that this is also free from dirt or debris. Before tightening the hand-wheel and while screwing it in, confirm that the threads on the DIN connection and on the valve correspond correctly and are not crossed. In order to obtain the maximum comfort, the low pressure hose connecting the first stage to the second stage should be horizontal and directed toward the diver's right shoulder (Img. 2).



Img. 1



Img. 2

- Fit the carrying system/jacket (refer to the appropriate user instruction guide). After fitting the carrying system, the cylinder should sit securely. Check to be sure that the cylinder cannot come loose on its own accord.
- Conduct a vacuum leak test. With the cylinder valve closed slowly inhale from the second stage. It should be possible to achieve and maintain a minimal negative pressure without air entering the system. This test must be repeated for all regulator second stages connected to the SCUBA unit in use.
- Now conduct a high-pressure leak test. Slowly open the cylinder valve, check for any leaks and read the pressure registered on the pressure gauge.

5.1 Set-up/in-use warning

⚠ WARNING

While opening the cylinder valve, the pressure gauge face must not be directed towards the user or others, in the event and risk of a pressure gauge malfunction.

⚠ WARNING

When opening the cylinder valve the second stage purge button should be slightly depressed, so that the second stage valve is open.

WARNING

Do not push down on the purge button in low temperatures, as this may cause a second stage freeze-up.

- Close the cylinder valve and check the pressure gauge once again. During the first minute the displayed pressure should not decrease. Then open the valve again.
- If the cylinder valve is equipped with a reserve rod, verify that it is free to move downwards for its entire length. If you plan on using the reserve, ensure that the mechanical reserve valve is in the correct position (Up).
- Check that the entire SCUBA unit is functioning correctly by performing several complete breathing cycles (deep inhalation / exhalation) with the cylinder valve open and the second stage mouthpiece in the mouth.
- Check that all devices connected to the SCUBA unit are operating correctly. For example, check that the buoyancy compensator inflator (or the dry suit inlet valve) is functioning etc.

WARNING

Never connect a low pressure hose to a high pressure port. These connection threads are different sizes and are not compatible. Do not use adapters of any kind to connect low-pressure devices to high-pressure ports. Doing so could cause serious damage to both the user and equipment.

WARNING

Do not attach a L.P. hose to a Scuba regulator high pressure (HP) port or to an air supply with pressure in excess of 200 psi (13.8 bar). This may result in damage or explosive failure of the Inflation Valve or Low pressure Hose, which could result in injury or death.

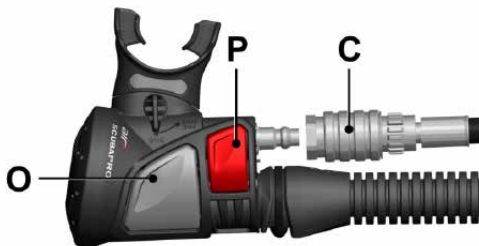
6. EQUIPMENT USE

Check that the SCUBA unit is complete in all respects and complies with all requirements. Refer to the IMPORTANT WARNING REMINDERS and PREPARING FOR USE sections and the regulators and BC manual. Open the cylinder valve, don the equipment and put the second stage in your mouth, breathe deeply a few times to ensure that the system is operating correctly. When the mouthpiece is out of the mouth, simply pressing the purge button may trigger the Venturi effect and cause a regulator free-flow. The free-flow can be stopped by covering the mouthpiece opening with a finger.

6.1 Inflator use of the AIR2 (normal operating mode)

When properly installed on the left shoulder of the BC, the AIR2 can be fully operated with the left hand by pushing the buttons for inflation (P) or deflation (O) (see img 3). These two buttons are offset and show different sizes for easy identification. The smaller button (P) is depressed for automatic inflation. The larger button (O) is depressed for deflation. For oral inflation, only the large deflation button is used. To inflate, the diver seals his lips on the mouthpiece, fully depresses the deflation button, then exhales into the mouthpiece and releases the button to capture the exhaled air.

The AIR2 has a specific quick connection (C) to the low pressure hose which allows fast connection and disconnection even when the system is already pressurized. The system automatically stops the air flow from the hose once it's disconnected from the AIR2 using the quick coupling. (img 3)



Img. 3

⚠ WARNING

In buoyancy devices equipped with CO₂ (carbon dioxide) detonators, the possibility exists under a certain set of circumstances that CO₂ could be inhaled from the device. If CO₂ has been detonated, do not depress the deflation button with the unit in the mouth or attempt to further inflate the device orally. Doing so would release CO₂ into the mouth, and it could possibly be inhaled. Flush the buoyancy device thoroughly with air or fresh water before reuse; the presence of CO₂ from a detonated cartridge should be readily noticeable because it is distastefully flavored and odored.

6.2 Emergency breathing with AIR2

The AIR2 can be used as an emergency second stage, purposely designed to quickly and completely meet the needs of a diver in an emergency situation.

Using the AIR2 as an emergency regulator requires minimum breathing effort and causes no variation to the buoyancy capability of the vest.

To use it as a breathing device, simply breath from the mouthpiece without press any button.

⚠ WARNING

Never push the deflation button during use of the AIR2 as a breathing device: this leads breathing the gas that is inside your BC. Your BC may contain gas residue, liquid, or contamination that may result in injury or death if inhaled.

The AIR2 is equipped with a Venturi effect adjustment system, this device must be turned to the "PRE-DIVE" setting while at the surface (Img. 4).

When the AIR2 is used in breathing use, adjustment knob must be turned to the "DIVE" position.

An accidental free-flow can be stopped by covering the mouthpiece opening with a finger or by submerging the second stage regulator with the mouthpiece turned down, or by placing the mouthpiece in the mouth.

⚠ WARNING

Breathing must be continuous, without holding one's breath.

When the AIR2 is not used as a breathing device the knob should be set to the "PRE-DIVE" position for the entire duration of the dive.

Should the use of this AIR2 be needed, the adjustment knob must be turned to "DIVE".

⚠ WARNING

All dives must be planned and carried out so that at the end of the dive the diver will still have a reasonable reserve of air for emergency use. The suggested amount is usually 50 bars (725 psi).



Img. 4

6.3 Post dive

Close the cylinder valve and drain the system by pushing on the purge button of each second stage. Once the system has been depressurized disconnect the first stage regulator from the valve. All inlets of the first stage must be closed with the provided protective caps to avoid the entry of debris, dirt or moisture.

If the cylinder valve is equipped with a reserve system the rod should be put in the “open” position (fully lowered) to indicate that the cylinder needs to be filled.

7. CARE AND MAINTENANCE

7.1 Care

- After use, especially in chlorinated water, the AIR2 should be set up on a scuba tank, pressurized, and thoroughly rinsed with fresh water.
- Should water accidentally enter the low pressure hose, connect the regulator to the cylinder, open the valve and press the second stage purge button down until all water has been expelled.
- Dry your regulator completely in a dry ventilated place, away from heat and direct sunlight.

⚠ WARNING

Open the cylinder valve only with a regulator connected to the cylinder or slowly turning the cylinder valve knob as to control the air flow.

- Let water run into the mouthpiece and flow out the exhaust port.
- Prior to every dive carefully check the AIR2 for air leakage and proper functioning.

7.2 Maintenance

Maintenance procedures beyond the simple operations described in the preceding paragraph should not be carried out by the user.

A SCUBAPRO regulator must be overhauled by an authorized SCUBAPRO technician every 2 years. The servicing overhaul is compulsory to preserve the limited lifetime warranty. Please refer to the Johnson Outdoors warranty conditions.

SCUBAPRO also recommends that highly used regulators (100 dives/year +) undergo an inspection every 6 months and an overhaul every year.

Servicing is available through SCUBAPRO Authorized dealers identified by the SELECTED DEALER SCUBAPRO sign or by visiting www.scubapro.com



WARNING

DO NOT USE silicone grease on the diaphragm and/or the exhaust valve, it may cause damage to the silicone rubber.

Max Intermediate Pressure is 1.103 kPa (160 psig).

Using the AIR2 with first stages exceeding this intermediate pressure may cause air leakage from the mouthpiece and inflation of the buoyancy vest.

AIR2 SPECIFICATIONS

Materials:

- | | |
|-----------------|-----------------------------|
| - Case | Fiberglass Reinforced Nylon |
| - Diaphragm | Silicone Rubber |
| - Exhaust Valve | Silicone Rubber |
| - Spring | Stainless Steel |
| - Demand Valve | Brass, Chrome Plated |

Performance:

- | | |
|--|---------------------|
| Weight
(less quick-disconnect and hose) | 207 grams (6.7 oz.) |
|--|---------------------|

Average Flow Rates:

- | | |
|---------------------|--|
| • Demand Regulator | 1400 liters/minute (at 200 bar) |
| • Inflator | 150 liters/minute
(with intermediate pressure at 6 bar) |
| Demand Valve Design | Downstream, Venturi Assisted |

Hose

- | | |
|---------------|-----------------|
| • Hose Length | 70 cm. standard |
| • Thread | 3/8" standard |

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