

**RUBINETTERIA  
VALVE  
ROBINETTERIE  
VENTILE  
GRIFERIA  
"2010"**

**CRESSI**



**BOMBOLE  
TANKS  
BOUTEILLES  
FLASCHEN  
BOTELLAS**

## UNDERWATER BREATHING APPARATUS 2010 (C)

### INSTRUCTIONS

Cressi-sub compressed air open-circuit breathing apparatus is certified for use down to a depth of 50 m in compliance with UNI EN 250:2000 standard.

The tank/valve assembly meets the basic safety requirements set forth in PED 97/23/CE Directive.

### MAIN COMPONENTS

The equipment consists of one or more tanks, valves and a protective bottom.

The regulator is connected to the valve with the task to reduce the tank air pressure (high pressure) to the level of the ambient, that a diver can breathe.

The regulator must feature a pressure control system consisting of a pressure gauge or a pressure measuring underwater computer.

The equipment can be fastened to the diver's body both by a back-pack complete with straps and by a buoyancy compensator (jacket) designed to offer the diver the outmost comfort by using the equipment.

### TANKS

Tanks are made of chrome-molybdenum alloy steel. They are designed to be used with a working pressure of max. 230 bars, and are hydraulically tested at a pressure of 372 bars.

The tank top features an internal M 25 x 2 EN144-1 thread to be connected with the valves.

Cressi-sub tanks are subjected to an anti-rust treatment by inner sandblasting and phosphation; the outside surface is sandblasted, galvanized and oven-painted with special high resistance epoxy paints.

The tank bottom is protected by a plastic foot that allows it to remain upright during the operation of connecting the regulator with the jacket or the back-pack straps. We recommend though to lay the equipment horizontally as soon as the assem-

blly is complete, in order to prevent it from falling. This is always dangerous when tanks are under pressure.

The following necessary information about the tank identification and certification is stamped on the top surface, in compliance with UNI EN 1964-1:1999 standard and 97/23/CE (PED) Directive.

It reads as follows:

- tank thread code (M 25 x 2);
- reference standard (UNI EN 1964-1);
- tank manufacturer identification data, serial number and manufacture year
- identification number of notified board;
- minimum design thickness;
- tank weight without accessories
- nominal tank capacity in litres
- working pressure in bars;
- hydraulic test pressure in bars;
- inspector stamp;
- test year and month.

### VALVES

Cressi-sub valves are sturdy and reliable. They both work as tank valve and as connection of the same with the regulator, with the task to reduce the tank high pressure to the ambient level.

They are equipped with a comfortable handle to carry them easily.

The threaded connection between valve and tank is of the M 25 x 2 EN144-1 type.

A safe connection between the tank valve(s) and the regulator is ensured on demand using the connections described in UNI EN ISO 12209-1-2-3 standards.

To assemble the regulator, in fact, the valve is equipped with an inner connector, convertible to a DIN connector, by simply removing the adapter off the 230 bars valves (see tables 1 and 2 – item 7).

Cressi-sub valves have been designed to guarantee the diver the outmost safety and ease of use: the opening/closing wheels are quite large and so featured to make it easy to operate them even by wearing thick neoprene gloves. They are equipped with

openings on their bottom through which the state of the valves can easily be checked.

**NOTE:** through the above mentioned openings, an underlying insert can be seen, **red by open valve, yellow by closed valve.**

If the valve is not completely open, a mixed red/yellow colour can be seen. In compliance with UNI EN 250:2000 standard, it takes more than two complete turns of the hand-wheel to shift from a closed to a completely open position.

In order to prevent any impurity, condensation liquids or water from entering valves, a 3 mm. diameter metal pipe is placed at the base of the valve, so shaped that also when swimming downwards or with your head lower than your legs the air will still flow from tank to regulator.

### EQUIPMENT ASSEMBLY

Before assembling your equipment, make sure that your tank (or tanks) are pressurized only with compressed air at the nominal working pressure, in compliance with the breathable air requirements set forth in the UNI EN 12021 standard.

Please note that only the tanks provided with a cumulative test certificate (in compliance with PED 97/23/CE Directive) can be pressurized within the time period specified in the above certificate.

In Europe, the cumulative test certificate (in compliance with PED 97/23/CE Directive) has a 4-year validity for new tanks, and a 2-year validity after each following successful test.

### ASSEMBLY OF BUOYANCY COMPENSATOR AND BACK-PACK

First connect your tank (or tanks) with your jacket or back-pack; the latter is equipped with fit straps to hold the equipment.

In both case the back must be connected with the tank by means of the special connecting device, so that the sling is

placed on the same side as the tank valve air outlet. The back height as to the tank is free, though we recommend to keep the back top about 2 – 4 cm below the valve air outlet, so that your head does not bump against the regulator, while the tank bottom does not bump against your legs while swimming.

**WARNING:** The tank must be safely secured to the sling, to prevent it from slipping away while diving. Make sure the straps have been inserted into the locking buckle in the proper sequence. Raise the tank several times, holding it by the back-pack, and shake it well, to make sure both parts hold together.

### REGULATOR ASSEMBLY

After securing the jacket or the back-pack with the straps, the regulator assembly can begin.

**NOTE:** Check the valve o-ring is in perfect state. It must not show cuts, abrasion or deterioration traces and must be replaced at regular intervals anyway, even though in perfect state, since it is subjected to the tanks high pressure and weather conditions. We recommend to use only original Cressi-sub spare parts.

After unscrewing the yoke screw, remove its dust cap and place the I stage on the valve air outlet, making sure the II Stage is placed correctly.

Now, turn the yoke screw to attach the I Stage to the valve. You do not need to tighten it too much.

Turn the valve hand-wheel anticlockwise while pressing the II Stage air outlet button for a second. We highly recommend as a good habit to open the valve hand-wheel gently, so that the equipment is pressurized gradually. In case it is pressurized too quickly, in fact, adiabatic compression of the breathable air inside the I stage will occur, that might cause its malfunction.

As soon as the air starts flowing out of the II Stage, release the outlet button and open the hand-wheel completely. It is a good

habit to turn back the hand-wheel clockwise for a quarter, in order not to damage the stem thread.

In DIN connected I stages, the assembly operations do not differ from the above described. You just have to screw it directly onto the valve, with no need to tighten too much.

In case of using a second independent regulator, connect it to the additional valve outlet, following the above instructions.

**WARNING** Do not turn the I stage connected with the valve when pressurized, do not use the I stage connected with the valve as a handle to carry the equipment: that might damage regulators, O-ring or valves.

**WARNING** In case the hoses are not placed correctly, do not try and rearrange them when the regulator is pressurized. Turn the tank off, discharge pressure and only now rearrange the hoses correctly.

**WARNING** After assembling and checking the equipment, lay it horizontally, in order to prevent it from falling down and damaging its parts or hurting people.

### CHECK BEFORE USE

Check the tanks pressure by means of a fit underwater gauge or computer. The pressure must be about 230 bars.

**WARNING** Tanks are not equipped with any reserve indicator. It is therefore necessary to use an underwater pressure gauge connected with the I Stage to keep track of air consumption when diving. The pressure gauge must signal the minimum pressure of 50 bar with a contrasting colour. This air reserve has not to be used while diving, but only in an emergency. Diving without a pressure gauge is very dangerous. Not being aware of air consumption, you might suddenly run out of air and jeopardize your life.

Before using your regulator, we recommend to carry out the following easy, though highly efficacious and unavoidable operations, in order to avoid any problem by using it.

Check all hoses to be safely connected with the I stage: in case it is possible to remove them from the I stage by hand, they must be screwed onto the latter by means of a spanner, before pressurizing the equipment. Check also the hoses for any trace of deterioration, cuts or abrasion.

Check I and II stages for any trace of damage: check the II stage mouthpiece for any trace of cuts or abrasion and make sure it is firmly connected with the I stage by means of a locking band.

Before turning on the valve tap, check the underwater pressure gauge reads zero pressure.

Tanks pressure must be checked by means of a fit underwater gauge or computer: after turning on the tank valve, it must read its correct working pressure.

In case of using a single I staged octopus, the spare II stage must be checked as well.

Check for air leaks from connections, hoses or II stage by listening carefully.

In case of any abnormal or anomalous working, have the regulator serviced and repaired only at authorized Cressi centres.

**WARNING** After assembling the regulator, lay it horizontally, in order to prevent it from falling down and damaging its parts or hurting people.

### HOW TO WEAR THE EQUIPMENT

You can wear the equipment both on land and in water, choosing every time the correct procedures as to the circumstances. The unavoidable proper instructions as to how to wear your breathing equipment are taught at diving courses.

In case of using a buoyancy compensator jacket, its shoulder belts work as well as straps to hold the equipment, while the abdominal belt and possible further buckles hold it by your waist.

In case of using a back-pack, two fit adjustable straps hold the

equipment on your shoulders, while an abdominal strap holds it by your waist and a further inguinal strap prevents it from sliding upwards and hampering your head movement.

## **USE OF THE BREATHING APPARATUS AND RISK ASSESSMENT**

The diving equipment can only be used by divers who have attended and ended successfully a specific training course by getting a diving licence. Nevertheless, before any use, every environmental and psycho-physical conditions must be carefully assessed. In case just one risky condition should occur, diving should not be attempted. Among risky environmental conditions are rough sea, strong currents, too low water temperature, low visibility; among risky psycho-physical conditions are poor health, emotional or physical stress, lack of training, fatigue or bad digestion.

Note that after a long time of inactivity a diver tends to forget the automatism and techniques learnt at the course, and diving becomes more risky.

Cressi-sub equipments are made with top quality corrosion-resistant materials and can therefore be used with the outmost safety.

We state the open circuit air breathing apparatus are designed and certified for use down to a depth of 50 m, according to UNI EN 250:2000 standard; the limit for sport diving, without any kind of underwater work, is though set at 40 m.

## **MAINTENANCE AND STORAGE**

Rinse Cressi-sub equipment with fresh water after each dive. Then remove all water from the connections, operating the valves hand-wheels and letting some compressed air out.

**All valves must be checked yearly at an authorized Cress-sub centre**, to remove any trace of corrosion, replace O-rings and lubricate tap stems with appropriate grease. If the valve seat is visibly worn, replace it. Do not overtighten the valve

hand-wheels in order not to damage retaining seats and stems.

**WARNING In case valves need to be replaced, carefully check the stem/tank coupling M 25 x 2 EN144-1 threads are perfectly matching. Do not ever force valves when screwing.**

**Cressi-sub declines any responsibility for any work carried out by unauthorized personnel.**

**We recommend a yearly servicing of the tanks inside walls, to be carried out exclusively by an authorized Cressi-sub centre.**

All traces of corrosion caused by salt water, which may accidentally have flown into the tank, must be removed. If necessary, the tank must be tested again even if the validity of the certificate has not expired yet.

Please note that only the tanks provided with a cumulative test certificate (in compliance with PED 97/23/CE Directive) can be pressurized within the time period specified in the above certificate.

In Europe, the cumulative test certificate (in compliance with PED 97/23/CE Directive) has a 4-year validity for new tanks, and a 2-year validity after each following successful test.

In winter season or during a long time of inactivity, tanks must always contain a certain amount of air, about 30 bars. Tighten the taps and lubricate their chromium-plated parts with silicone grease to protect them from salt.

Before using the tank again, it must be discharged, by opening the valve slightly to let the air flow out very slowly, so that no condensation occurs inside the tank.

After checking valves and tanks, they can be pressurized, making sure the compressor supplies pure air in compliance with UNI EN 12021 standard. Thanks to the above mentioned peculiarities, Cressi-sub scuba equipment complies with UNI EN 250:2000 standard and therefore bears the CE mark along with the certifying board identification number (0474).

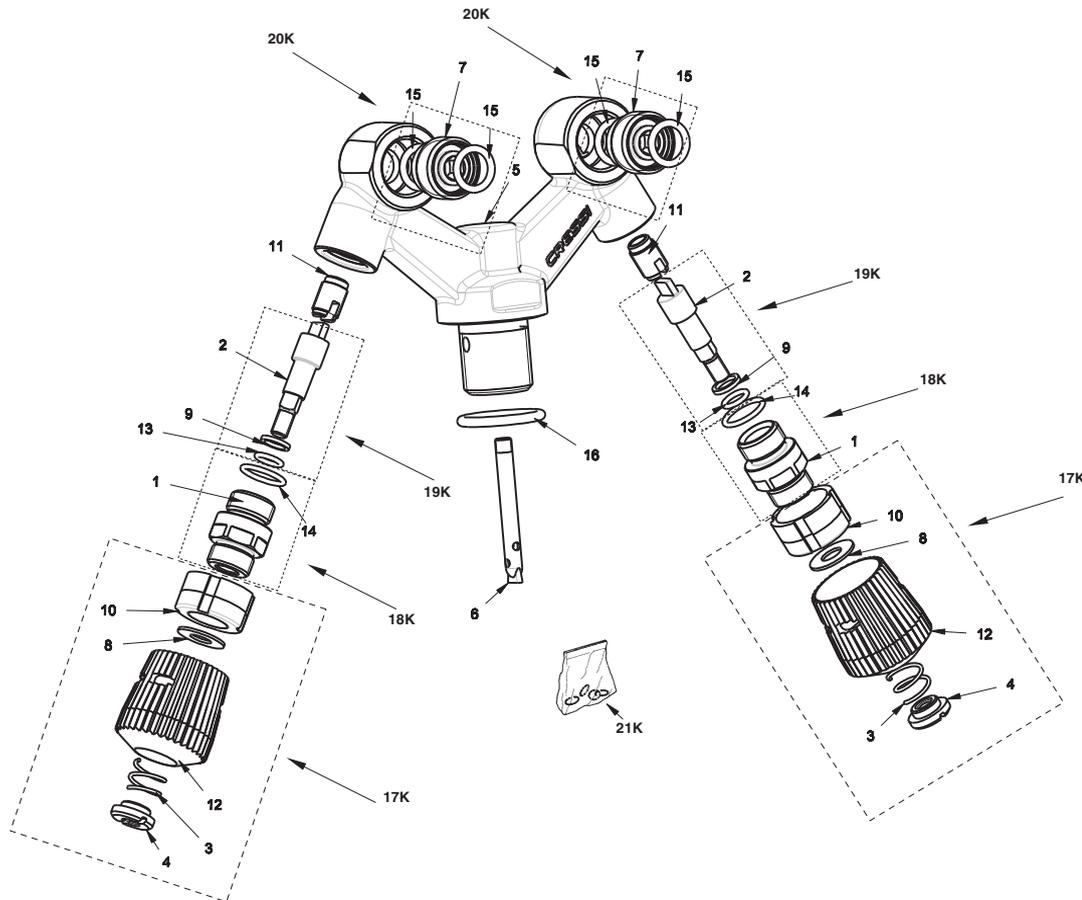
The air supplied by this equipment complies with breathable air requisites set forth by UNI EN 12021 standard.



N° TAV./REV.  
RBB232/1

ED./ISSUE  
A/2010

RUBINETTERIA 2010 / VALVES 2010  
— 230 bar —

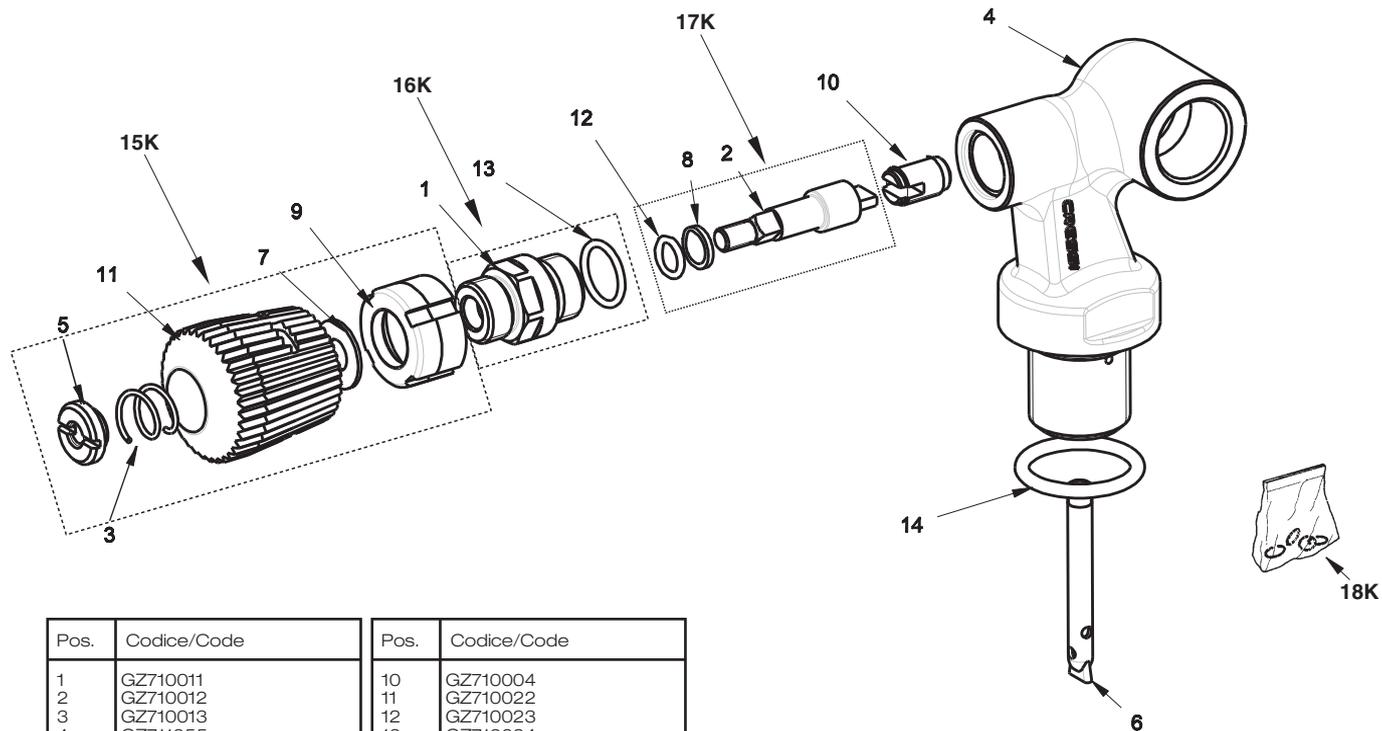


Pos.	Codice/Code
1	GZ710011
2	GZ710012
3	GZ710013
4	GZ710015
5	GZ711056
6	GZ711051
7	GZ711052
8	GZ710018
9	GZ710019
10	GZ710020
11	GZ710004
12	GZ710022
13	GZ710023
14	GZ710024
15	GZ710003
16	GZ711054
17K	GZ710097
18K	GZ710098
19K	GZ710099
20K	GZ710092
21K	GZ710515 SET OR

N° TAV./REV.  
RBM300/1

ED./ISSUE  
A/2010

RUBINETTERIA 2010 / VALVES 2010 **CE**  
— 300 bar —

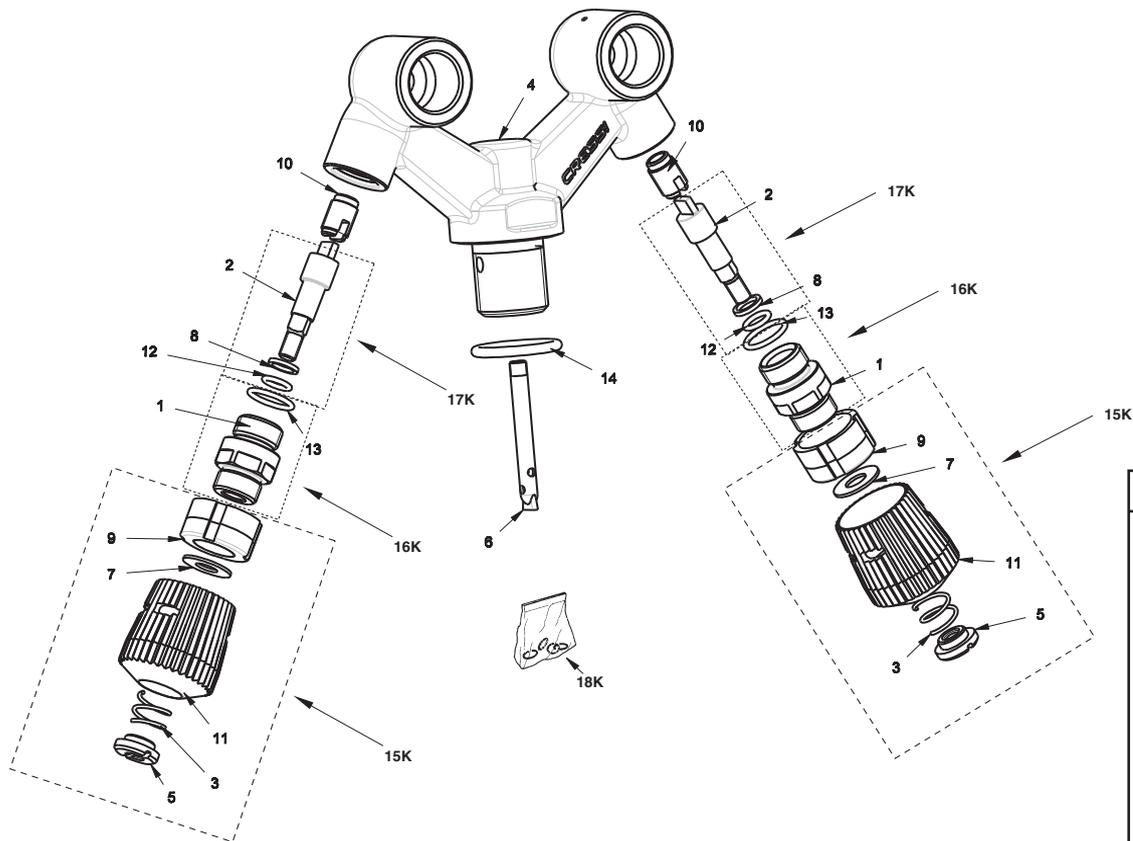


Pos.	Codice/Code	Pos.	Codice/Code
1	GZ710011	10	GZ710004
2	GZ710012	11	GZ710022
3	GZ710013	12	GZ710023
4	GZ711055	13	GZ710024
5	GZ710015	14	GZ711054
6	GZ711051	15K	GZ710097
7	GZ710018	16K	GZ710098
8	GZ710019	17K	GZ710099
9	GZ710020	18K	GZ710515 SET OR

N° TAV./REV.  
RBB300/1

ED./ISSUE  
A/2010

RUBINETTERIA 2010 / VALVES 2010  
— 300 bar —



Pos.	Codice/Code
1	GZ710011
2	GZ710012
3	GZ710013
4	GZ711057
5	GZ710015
6	GZ711051
7	GZ710018
8	GZ710019
9	GZ710020
10	GZ710004
11	GZ710022
12	GZ710023
13	GZ710024
14	GZ711054
15K	GZ710097
16K	GZ710098
17K	GZ710099
18K	GZ710515 SET OR

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