BUOYANCY COMPENSATOR OWNER'S MANUAL

DIRZONE

Diving at extreme limits

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Thank you for buying a ***DIR ZONE*** buoyancy compensator (BC). Our BC's are manufactured from high quality materials. These materials are selected for their extreme durability and useful properties. Exceptional attention is paid to the technology and technical arrangement of all components during the manufacturing process. The advantages of ***DIR ZONE*** compensators are excellent craftsmanship, timeless design and variability; all thanks to production in the Czech Republic.

TABLE OF CONTENTS

CE CERTIFICATION INFORMATION

All ***DIR ZONE*** buoyancy compensators have been CE certified according to European standards. The CE mark governs the conditions for bringing Personal Protective Equipment to market and the health and safety requirements for this equipment. This mark thus indicates the lawfulness, safety, and quality of the products that must comply with these regulations. All ***DIR ZONE*** buoyancy compensators are Personal Protective Equipment that comply with (EU) Regulation 2016/425 and national standards that transpose the EN250:2014 e EN 1809:2014+A1:2016 (and all previous
editions) harmonized standards.

The certification was conducted by VTÚ, s.p., notified body no. 2452 and is availed on request.

IMPORTANT WARNINGS AND PRECAUTIONS

	The buoyancy compensator is **NOT** a life jacket or other rescue device! It does not guarantee a head-up position of the user at the surface. It is **NOT** designed to keep the face above the water in case of unconsciousness or lack of control. For this reason, it is important to follow the rules of safe diving, **especially the buddy system!**
	Read this manual carefully before use. If you do not have enough experience in diving with this type of buoyancy compensator, take appropriate training and test the compensator and other accessories in a protected swimming pool environment and in the presence of an scuba-diving instructor. **In no case can these instructions replace a certified SCUBA diving course from a recognized training agency.**
	Before every dive, perform a pre-dive check of your gear. Make sure all components are fully functional, undamaged and ready for use. Tips for this pre-dive check can be found in this Manual. Do not use the equipment if any part is damaged or incomplete.
	**Never inhale from the oral inflator!** The inner bladder may contain harmful contaminants or gasses, which could cause suffocation, serious injury, or infection of the lungs.
	Do not over inflate your compensator. The ascent must be controlled. In case of a fast, uncontrolled ascent, begin to immediately release the gas from your compensator to slow the ascent. A rapid, uncontrolled ascent may cause pulmonary embolism or decompression sickness and can result in serious injury or death.

	This product can only be used for buoyancy management of certified scuba divers, all other uses are excluded. Your buoyancy compensator is primarily designed to help you maintain neutral buoyancy while in a comfortably balanced, face-down swimming position underwater. It is also designed to provide you with flotation so that you can rest on the surface, but it is not designed to function as a life preserver or personal flotation device. Always use a compensator of the appropriate size. Oversized compensator can cause problems while deflating whereas small compensator may not be a sufficient source of buoyancy. The maximum recommended bottle size that can be used with the compensator is stated on the wing label and also in this Manual.
	Avoid prolonged or repeated contact with chlorinated water, e.g. in swimming pools. Rinse the compensator immediately after each use in chlorinated water. Chlorinated water can oxidize fibres and materials and shorten their life. It also causes colours to fade. Damage and discoloration due to prolonged exposure to chlorinated water is not covered by the warranty.
	Improper use, maintenance, or changes to the compensator may, in addition to voiding the warranty, result in a hazardous situation, personal injury or death.
	Only a person trained by the manufacturer may service or repair the compensator. Unprofessional repair will void the warranty and may endanger the user's life and health.
	The manufacturer is not responsible for any damage or injury to a user of the buoyancy compensator that is caused by incorrect usage or inappropriate adjustment that affects its functioning.

DEFINITIONS

Buoyancy compensator – a device for adjusting buoyancy that consists of a wing and a backplate.
It can be amended by a weighting system or other suitable accessories.
In accordance with European standards, our BCs can only be considered certified where all components are present, as per the original ***DIR ZONE*** configuration. Any variation of the original configuration invalidates conformity to European certification standards.

Wing – a part of the buoyancy compensator comprised of an inner bladder, outer shell, inflation mechanism, and safety valve. The inner bladder and outer shell are made material Cordura with PU coating. Inflation mechanism consists of simple joint without a deflating valve, corrugated hose with inner line preventing loosening and stretching of the hose, and inflator end-piece which allows regulated inflation by pressing an inflator button (placed on the side) with varying force, fast deflating by pressing the button at the end of the inflator, and inflating of the wing by mouth. Safety overpressure valve prevents damage or destruction of the wing by over-filling and is placed at the lower left side of the wing. Wings are delivered with inflator hose (except for CCR-type wings).

Backplate – usually a stainless steel or aluminium plate equipped with harness, D-rings, and other parts designed to carry the main cylinders. The hole pitch for attaching a double cylinder or adaptor for one cylinder corresponds to the 11 inches standard (approximately 280 mm). The plate can be used with all types of ***DIR ZONE*** wings.

Bottle straps – a pair of straps, fitted with plastic or stainless steel buckle, used to attach a single bottle to the buoyancy compensator. Pay attention to the correct threading of the strap, detailed description can be found later in this Manual.

Weighting system – this is an optional additional equipment for BC. We offer several types that can be used both individually and in combination with each other. You will find more information later in this Manual.

OVERVIEW OF MODELS

Buoyancy compensators ***DIR ZONE*** are manufactured in various sizes, materials and colour combinations. Here we offer you an overview of basic models with their trade name, model code, certified buoyancy and recommendations for use. All our models can be combined with each other.

1. WINGS

The basic division of the wings depends on the method of use. In this way, we distinguish wings for use with one (single) bottle and wings for use with two connected bottles (doubles). Furthermore, we distinguish the different lift of the individual wings, according to which we determine the maximum volume of the used bottle(s). Another optional feature is the shape of the wing – circular (donut) or horseshoe - the choice depends on the personal preference of the user.

*Wing model for diving with single bottle, horseshoe shape, trade name **CUB***

*Wing model for diving with single bottle, circular shape, trade name **RING***

*Wing model for diving with doubles, horseshoe shape, trade name **STREAM***

*Wing model for diving with doubles, circular shape, trade name **STREAM RING***

Wing models overview:

Trade name	Model code according to CE	Buoyancy (N)	Recommended use max.
RING 12	P74-104	120	single bottle 11 l
RING 14	P74-101	140	single bottle 12 l
RING 17	P74-102	170	single bottle 15 l
RING 20	P74-103	200	single bottle 18 l
CUB 15	CUB 15	150	single bottle 15 l
CUB 18	CUB 18	180	single bottle 18 l
STREAM 15	P74-202	150	doubles 2x 7 l
STREAM 20	STREAM 20	198	doubles 2x 12 l
STREAM 25	STREAM 25	250	doubles 2x 18 l
STREAM RING 17	P74-203	170	doubles 2x 8 l
STREAM RING 20	P74-204	200	doubles 2x 12 l
STREAM RING 23	P74-201	229	doubles 2x 15 l

2. BACKPLATES WITH COMPLETE HARNESS

We supply backplates made of stainless steel in thicknesses of 3mm or 6mm, and also made of anodized, salt water-resistant aluminium alloy. Backplate complete set is equipped with straps and all necessary fittings including a buoy pocket, which can be used to store small accessories. Basic adjustment of the backplate strap is described in detail later in this Manual.

Backplate with continuous harness

*Backplate with adjustable harness and **ADJ** buckles*

*Backplate with adjustable harness and **QUICK-FIX** buckles*

ADJUSTING THE BACKPLATE STRAPS

Backplate is part of a buoyancy compensator and is supplied with a high-quality harness that is threaded through in a way that ensures proper system functioning. Do not change the way the harness is fed through the backplate. If you do try to take the harness out, remember exactly how it is threaded through in order to prevent interference with the functioning of the whole system.

When fitting the main strap, ordinary clothes such as pants and a T-shirt are sufficient. If you intend to dive in a dry suit with undergarment, wear extra layer. Put the backplate (without the wing) on your back, and run the crotch strap between your legs. The belt buckle on the waist strap must pass through the crotch strap loop and rest on the right side of the crotch strap when fastened. The waist belt and crotch strap should be as snug as possible, but still comfortable.

1. Adjusting the shoulder straps and D-rings

Before first use, adjust the shoulder straps so that the buoyancy compensator fits snugly on your back and does not move. The length of the shoulder strap is adjusted by gradually sliding it through the belt stop located in the lower corners of the backplate. At the level of the collarbone, insert three fingers under the strap. If this is difficult, loosen the straps. If it is easy or the strap is completely loose, shorten it by sliding it through the belt stop. Repeat the whole procedure until you can insert three fingers under the straps without much resistance, but not completely loosely. At the same time, it should be possible to slip your arms out under the strap. Make sure both straps are the same length. After adjusting the straps, the backplate should be high enough to reach the upper edge with your fingers. The bottle is then placed on the back at such a height that it does

not prevent the head from tilting, and at the same time you are able to reach the bottle valve and operate it (test this in water). By placing the bottle correctly, you will also achieve the right anteroposterior balance - trim.

Once you fit the main straps, you must adjust the D-rings. The chest D-rings should be as low as possible, while still allowing you to cross your arms over your chest comfortably.

TIP: The D-rings should be high enough for you to reach the left ring with your left thumb, and the right ring with your right thumb.

2. Adjusting the crotch straps and D-rings

The backplate also includes a crotch strap with two D-rings. Its length is adjusted by moving the strap through the rear D-ring. The crotch strap should be adjusted so that the cylinder does not slide on your back, while still being comfortable. The correct position of the rear D-ring is such that it does not hurt your buttocks while swimming, and so that you can easily reach it using either single bottle (or doubles) attached. When adjusting this D-ring, also consider using larger and longer bottles than you normally use. We also recommend tightening the strap securely at the back D-ring, making sure to prevent it from coming untied (especially in the case of frequent scootering).

TIP: If the gear outweighs the lower parts of your body, slacken the crotch strap a bit and tighten the shoulder straps. This will push the cylinder closer to your head, and your centre of mass will be higher. If the gear outweighs the upper part of your body, do the opposite.

3. Adjusting the waist belt strap and D-ring

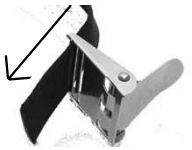
The waist belt should be snug, but still comfortable. It must not restrict breathing. The D-ring on the left side of the waist strap should be roughly on your hip (lateral axis of the body). If it is too far forward, it will be more difficult to find it when operating the pressure gauge. If it is too far back, it will be difficult to get to it, especially when the wing is inflated.

4. How to use the QUICK-FIX buckle

Handling the openable, adjustable QUICK-FIX buckle is very simple. The buckle consists of two parts, each of which is attached to a different part of the shoulder strap. One part is firmly sewn in the strap, the other part is threaded and secured against sliding out in the sliding part of the strap. The required length of the shoulder strap is achieved by passing the sliding part through the fixed eye of the buckle, pulling on the free end of the sliding strap and tightening as required.

Threading the waist belt strap through the buckle

Take the left side of the waist belt strap and thread through the individual holes in the buckle, starting at the end hole (pic. 1, 2, 3). After we recommend securing the strap by pulling it back through the first hole (pic. 4)



pic. 1

pic. 2

pic. 3

pic. 4

TIP: Do not shorten the straps after the first fitting. Wait until you test your gear in the water. You will be doing additional adjustments for 3 to 5 dives until the gear is fitted properly on your back – as snug as is comfortable. Only then you can shorten them to leave an extra 10 to 15 cm on each side. We recommend finishing off the right side of the waist strap in an arc. When shortening straps do not forget to finish them off properly so that they do not fray.

TUNING THE COMPENSATOR

1. Assembly of the compensator for using with single bottle

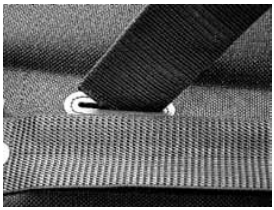
We recommend first bolting the wing and the backplate loosely together. Run the bolt through the wing and then the backplate in such a way that the nut faces your back and the bolt head shows up on the wing. Do not tighten the bolt yet; the wing should be loose enough on the backplate to facilitate the assembly. Attach the wing in such a way that the logo can be seen while looking at the backplate; that is, the corrugated hose knee-joint is on the opposite side from the backplate.

Attaching the inflator: detailed description in „2. Assembly of the compensator for use with doubles“.

How to thread the bottle straps

Pass the straps with the buckle designed to hold the cylinder through a strap slot in the wing (1). The Velcro on the strap must be turned to the outside, in the direction of the wing's perimeter. Continue by threading the strap through a corresponding horizontal slot in the backplate (2), and then through a slot on the other side of the backplate´s bending (3). Then thread the strap through a strap slot in the wing (4, 5). Move the strap so that the Velcro near the buckle runs through both strap slots of the wing. Leave about 10 cm of the strap close to the buckle without threading it through the wing. Follow the same procedure for the second strap.

pic. 1



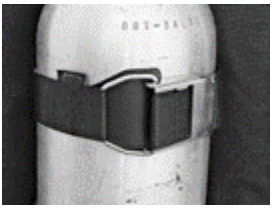
pic. 2

pic. 3

pic. 4

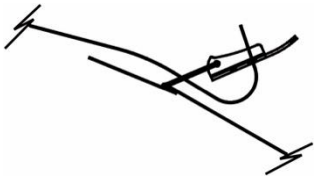
pic. 5

pic. 6

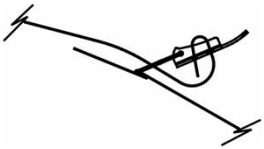


Threading the strap through the belt buckle

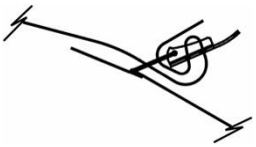
pic. 1



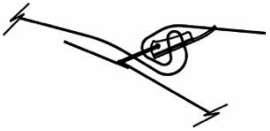
pic. 2



pic. 3



pic. 4



When finished, both parts of the Velcro should line up and ensure that the buckle does not unfasten.

2. Assembly of the compensator for use with doubles

When using a buoyancy compensator with doubles (two bottles connected by steel bands), you first thread the wing on the screws, which are incorporated in the middle of the steel bands (just like when using one bottle, the inflator elbow is on the side with bottles). Then proceed by placing the backplate on the same screws. Then fasten the whole system with wing nuts.

Correct attachment of the inflator hose:
pass the low-pressure inflator hose under rubber bands on the corrugated hose. Continue by passing it under the rubber band on the left strap of the backplate above the D-ring, and attach it to the inflator.
This way, the inflator will be in a place where there will be no collisions with other equipment and you will always find it where you need it.

OPTIONAL EQUIPMENT

Our company also manufactures plenty of additional items for buoyancy compensators, such as weighting systems, different types pockets, argon straps, harnesses, etc. Some of them are introduced on following pages, the rest can be seen on our website **www.dir.zone**.

1. WEIGHTING SYSTEMS

There are seven different weight systems in our product portfolio. Any of them can be used both individually or combined with each other for better weight distribution. Here is a brief description of all types, detailed information, including photos, can be found on our website.

Weighting system for backplate (pair), pockets are slipped on a waist strap and fastened to a backplate with special bolts and nuts (included). Pockets are placed horizontally (standing diver) on a waist belt strap.

Weighting system for single bottle (pair), pockets are slipped on bottle straps, they include inner throw-away pockets, vertical placement.

Trim pocket (piece) can carry one piece of weight block, can be attached to the strap exactly where you need it.

Trim pockets for backplate (pair), can be attached to the backplate. **ATTENTION** this weights cannot be loosened during the dive!

Weighting system DORP-DOWN large (pair), pockets are slipped on a waist strap and fastened to a backplate with special bolts and nuts (included). Pockets are placed vertically (standing diver) on a waist belt strap.

Weighting system DORP-DOWN small (pair), pockets are slipped on a waist strap and fastened to a backplate with special bolts and nuts (included). Pockets are placed vertically (standing diver) on a waist belt strap.

Weight belt with stainless steel buckle, polypropylene strap length 1,5 m with integrated stainless-steel buckle.

2. BUOY POCKET

Buoy pocket is supplied in a set with a backplate or it can be purchased separately in the offered colours. The pocket is attached to the backplate with the included eight screws and nuts. It is used to store, for example, a decompression buoy, it also increases the comfort of the diver.

PRE-DIVE INSPECTION OF THE COMPENSATOR

Before each use, the compensator must be given a thorough visual inspection and functional test. Never dive with a BC that shows signs of damage to its inner bladder, inflation mechanism or valves.

Periodically it is advised to check the buoyancy compensator OPV for damage or corrosion and the harness straps for signs of significant wear, especially at the shoulder or waist slots on the backplate.

Inspection checklist

1. Connect the wing inflation mechanism to the breathing gas source using a quick-release inflator hose. Press and release the inflator button intermittently to make sure that the airflow is not blocked and that the airflow has stopped completely when the button is released.
2. Pull on the OPV cord to test the valve spring and seal. Fully inflate the wing until the overpressure valve opens.
3. Check the operation of the overpressure valve by repeatedly inflating the wing to make sure that the valve opens to release the overpressure, but closes immediately so that the inner bladder remains fully inflated.
4. Check the tightness of the entire system again with your diving buddy immediately after immersion.

If during the pre-dive check according to the above points you will hear or see a gas leak, do not use the compensator! Always have such a fault checked by an authorized service centre.

5. Make a final check that the bottle straps are properly tightened (when diving with one bottle).
6. Tighten all nuts that connect the wing to the backplate, or to the doubles.
7. Before entering the water, check your weighting system to make sure everything is properly attached and the release buckles are fully functional.

Unexpected loss of weights can cause sudden, uncontrolled ascent, which can result in serious injury or death.

CARE, MAINTENANCE AND STORAGE RECOMMENDATIONS

With proper care and service, the compensator can serve you for a very long time.

The following care and maintenance procedures should be followed:

1. After each day of use, rinse the compensator thoroughly inside and out with clean fresh water (do not use any aggressive solutions and/or cleaning agents).
   - Fill the inner bladder up to approximately 1/4 with clean fresh water through the oral inflator.
   - Fully inflate the compensator and shake it well, so that the water covers the entire inner surface.
   - Turn the compensator upside down and drain it completely through the oral inflator.
   - Immerse the inflator in clean fresh water or rinse the outer shell with a hose.
   - Rinse all valves and remove any sand and dirt or crystallized salt.
2. Inflate the compensator and allow it to dry properly before storing. **DO NOT DRY IN THE SUN**. Store the compensator partially inflated, ideally spread horizontally, out of direct sunlight and in a cool, dry and clean place.

SERVICE CHECKS

We strongly recommend that an inspection should be performed at least once a year by an authorized. Annual inspection consists of a complete overhaul of the inflation mechanism, and a general air leak inspection of the bladder and valve connections. Any damage caused by insufficient maintenance of the compensator is excluded from the warranty.

Due to frequent use, buoyancy compensators **used in diving centres, diving equipment rentals, compensators used for professional purposes or otherwise intensively used, must be checked at least once every 6 months**. It is necessary to check the overall condition and main safety components of the compensator. If any of these parts show signs of wear or deterioration in performance, they must be replaced immediately or - if replacement is not possible - the compensator must be used.

GENERAL TECHNICAL INFORMATION

The operating pressure of the inflator is 5-12 bar.
The operating pressure of the safety valve with spring 1.4 is 0.25 bar.

OPERATING TEMPERATURE RANGE

	min	max	min	max
Air	-20°C	+50°C	-4°F	122°F
Water	-2°C	+40°C	28°F	104°F

Diving in extreme conditions with a water temperature below 10°C (50°F) is risky and requires a specific course for diving in cold water or under ice!

WARRANTY INFORMATION

The manufacturer provides a warranty for the buoyancy compensator for a period of 2 years from the date of purchase stated on the sales document. The warranty covers defects in material and components of the buoyancy compensator.

The following issues are excluded from the warranty:

- This warranty does not cover abrasions, mechanical punctures or tears of the inner tube or outer casing.
- This warranty does not cover seam separation caused by chemicals, including long-term exposure to chlorine.
- This warranty does not apply to equipment used for rental, commercial, governmental or military purposes.
- This warranty does not cover damage to the compensator used for purposes other than diving.
- This warranty does not cover damage to the compensator or its components during transport**!!!** Especially when transporting the wing on a boat to/from the dive, make sure that the wing is at least partially inflated and properly secured and that it does not collide with other compensators or parts of the boat!!!

MANUFACTURER INFORMATION

The manufacturer of buoyancy compensators ***DIR ZONE*** is company

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DIRZONE
Diving at extreme limits

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Annex 1

DETAILED DESCRIPTION OF THE WING LABEL