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**ERGO LINE MRS PLUS**

# BUOYANCY COMPENSATOR

## ERGO LINE MRS PLUS

### WARNING

CAREFULLY READ THIS INSTRUCTION MANUAL BEFORE USE, AND KEEP IT FOR FUTURE REFERENCE.

### INTRODUCTION

Congratulations. You have purchased one of the finest, most dependable B/Cs available in the world today. The end result of years of "evolutioneering", your MARES B/C uses processes and materials that are the result of thousands of hours of research. This means reliability, a feature that's in high demand and found in EVERY MARES product.

This manual is intended as a guide for skilled technicians and not as an instruction book for beginners. It does not include every aspect of diving equipment repair. Technical training courses are offered periodically by MARES and provide up-to-date information and description of repair techniques. Before attempting any repair, you are advised to receive specific practical training in repairing MARES diving equipment.

Read all sections of this manual carefully before attempting any repairs.

#### Important:

Any critical information or warnings that might affect the performance or result in the injury or death of the technician, B/C owner, or other persons are highlighted with the following symbols:

### DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

### CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

MARES reserves the right to modify any products, processes and manufacturing techniques at any time. It is the technicians' responsibility to acquire the latest information and parts from MARES for service and repairs to be performed.

#### IMPORTANT:

Should any warnings or information contained in this manual be unclear or not fully understood, please contact MARES before using a MARES B/C or performing any repairs.

### WARNING

Carefully follow these and all the other instructions concerning your MARES B/C and all other SCUBA equipment. Failure to do so could lead to serious injury or death.

### WARNING

As with all SCUBA equipment, MARES B/Cs are designed to be used by trained, certified divers only. Failure to fully understand the risks of using such equipment may result in serious injury or death. DO NOT use this B/C or any SCUBA equipment unless you are a trained, qualified SCUBA diver.

### EN 250: 2000 CERTIFIED B/C

The PPE described in this instruction manual has been subjected to type approval testing and certified in accordance with the EN 250: 2000 standards (D.e. 89/686/EEC category III, as harness for SCUBA) and EN 1809 (D.e. 89/686/CEE category II, as buoyancy compensator) by Registered Test Center n° 0474 RINA, Via Corsica 12, 16128 GENOVA.

Model	EN250: 2000	EN 1809	Marking
DRAGON MRS PLUS	0474	0474	CE0426
KAILA MRS PLUS	0474	0474	CE0426
VECTOR 1000 MRS PLUS	0474	0474	CE0426
ICON	0474	0474	CE0426
ALIHKAI	0474	0474	CE0426
PEGASUS MRS PLUS	0474	0474	CE0426
VECTOR EPIC MRS PLUS	0474	0474	CE0426
ORIGIN SPORT MRS PLUS	0474	0474	CE0426
ORIGIN SPORT	0474	0474	CE0426
VECTOR ORIGIN 1000	0474	0474	CE0426

The number 0426 next to the CE mark refers to Registered Test Center n° 0426 ITALCERT, V.le Sarca, 336 - 20126 MILAN, authorized to run production checks according to art. 11.1 B.D.e. 89/686/EEC only as regards products classified in category III (harness for SCUBA)".

## REFERENCES TO EN 250: 2000 - OBJECT - DEFINITIONS - LIMITS

- **Object:** The requirements and tests provided for in EN 250 are aimed at providing a minimum safety level for the operating of diving breathing apparatuses at a maximum depth of 50 m / 162 feet.
- **Scuba - Definition (EN 132):** Self-contained, open-circuit compressed air underwater breathing apparatus in an apparatus which has a portable supply of compressed air carried by the diver, allowing him to breathe underwater.
- **Scuba - Minimum equipment (EN 250: 2000):**
  - a) Air cylinder / cylinders.
  - b) Demand regulator.
  - c) Safety device, e.g. pressure gauge / computer or reserve or alarm.
  - d) Carrying frame or holding device for air cylinder(s) to mount the harness, or carrying system, e.g. backpack and/or straps, B/C harness.
  - e) Facepiece: mouthpiece assembly or full face mask or diving helmet.
  - f) Operating instructions.
- **Limits (EN 250: 2000) -** Maximum depth: 50 m / 162 feet.
- **SCUBA - Component units (EN 250: 2000):** The SCUBA equipment may consist of separate component units such as cylinders, regulator and pressure gauge. The MARES B/Cs described in this manual may be used with any SCUBA components certified in compliance with EC directive 89/686. The air contained in the cylinders must comply with the requirements for breathable air set forth in EN 12021.

## REFERENCES TO EN 1809 - OBJECTS - DEFINITIONS - LIMITS

- **Object:** The EN 1809 directive examines the minimum safety requirements and the performance of inflatable buoyancy compensator vests.
- **Buoyancy Compensator Vest - Definition (EN 1809):** A device allowing the diver to control his/her buoyancy during the dive.
- **Limits:** The object of the EN 1809 Standard does not cover the requirements for floating devices or safety jackets. A buoyancy compensator vest is not intended to guarantee, on the surface, a head-up position to an unconscious or a temporarily disabled diver.

### WARNING

Read this manual carefully. The improper use of any diving equipment can result in serious injury or death. SCUBA diving equipment should be used by certified divers only. Professional training should be obtained exclusively from a certified instructor. For your protection, your equipment should be certified by MARES or a MARES AUTHORIZED SERVICE CENTER.

The BCs described in this manual have been tested and certified for temperatures between -20°C and + 60°C.  
The following warning label is stitched on the BC.

### IMPORTANT

Read the instructions carefully. The BC is not a life vest: it does not guarantee a head-up position of the diver on the surface. If the instruction manual is lost, it can be re-ordered from your MARES dealer.

Before use, check for any air leaks and make sure all the components of the BC are working correctly. Connect the LP hoses to a Low Pressure port of the 1st stage BEFORE connecting the regulator to the tank.

After use, rinse the inside and outside of the BC thoroughly with fresh water. This operation is particularly important after use in a swimming pool. Inadequate maintenance may result in damage to the BC or impair its operation. Inflate the BC slightly before storing.

Technical characteristics	DRAGON MRS PLUS	KAILA MRS PLUS	VECTOR 1000 MRS PLUS	ICON	ALIKAÏ	PEGASUS MRS PLUS	VECTOR EPIC MRS PLUS	ORIGIN SPORT MRS PLUS	ORIGIN SPORT	VECTOR ORIGIN 1000
Type	Dragon Aircell	Dragon Aircell	Classic Aircell	Double bag Aircell	Double bag Aircell	Classic Aircell	Classic Aircell	Classic Aircell	Classic Aircell	Classic Aircell
Inflator	Ergo	Ergo	Ergo	Ergo	Ergo	Ergo	Ergo	Ergo	Ergo	Ergo
Sealing	High frequency	High frequency	High frequency	High frequency	High frequency	High frequency	High frequency	High frequency	High frequency	High frequency
Buoyancy bag material	Nylon 420/ Nylon 420	Nylon 420/ Nylon 420	Duroskin/ Nylon 420	Double bag: Nylon 420 outside Polyurethane inside	Double bag: Nylon 420 outside Polyurethane inside	Duroskin/ Duroskin	Nylon 420/ Nylon 420	Nylon 420/ Nylon 420	Nylon 420/ Nylon 420	Cordura 1000/ Nylon 420
Backpack	Vector	Vector	Vector	LVC	LVC	Vector	Vector	Vector	Vector	Vector
Cummerbund	Quick Adjust System	Quick Adjust System	Quick Adjust System	-	-	Quick Adjust System	Cummerbund	Cummerbund	Cummerbund	Quick Adjust System
Maximum tank size	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.	Single-tank set: Min/Max diameter 14.1/21.5 cm Max. Vol. 20 lt.
Weight (size L)	3.6	3.5	3.6	3.4	3.3	2.9	3.5	3.4	3.2	2.9
MRS	-	-	X (optional)	-	-	X	-	-	-	-
MRS Plus	X	X	-	X	X	X	-	-	-	-
S.A.H.S.	-	-	X	X	X	-	-	-	-	-
Soft Grip	X	X	X	X	X	-	-	-	-	-
BPS (back protection system)	-	-	-	X	X	-	X	-	-	-
BPS Plus	X	X	X	X	X	-	-	-	-	-
Metal rings	5	5	7	7	7	-	-	-	-	4
Acetalic rings	-	-	-	-	-	3	6	5	5	-
Pockets	2 with zip, self-draining	2 with zip, self-draining	2 with zip, expandable and self-draining	1 expandable with zip	1 expandable with zip	1 roll-up with Velcro closure	2 with zip, self-draining	2 with zip	2 with zip	2 with zip, self-draining
Hand-operated valves	2	2	2	2	2	2	2	2	2	2

## SIZES TABLE

MODEL	SIZE	WEIGHT	HEIGHT	WAIST CIRCUMFERENCE	CHEST CIRCUMFERENCE
Dragon Mrs Plus Vector 1000 Mrs Plus Icon	XXS-XS	<55	<165	70-90	<95
Pegasus Mrs Plus Vector Epic Mrs Plus Origin Sport Mrs Plus Origin Sport Vector Origin 1000	S	50-70	165-175	75-95	85-105
	M	60-80	165-180	90-115	95-115
	L	70-90	170-185	100-120	105-120
	XL	>80	>180	110-140	>120

MODEL	SIZE	WEIGHT	HEIGHT	WAIST CIRCUMFERENCE	CHEST CIRCUMFERENCE
Kaila Mrs Plus Aliikai	XXS	<50	<160	65-85	<85
	XS	<50	<160	65-85	<85
	S	45-65	150-170	70-90	80-90
	M	50-70	165-175	80-105	85-95
	L	>60	>170	85-115	>90

## LIFT TABLE IN NEWTONS (KG/LB)

MODEL	XXS	XS	S	M	L	XL
Dragon Mrs Plus		140 Nt (14,2 Kg/30,8 Lb)	140 Nt (14,2 Kg/30,8 Lb)	170 Nt (17,3 Kg/38,1 Lb)	190 Nt (19,3 Kg/42,5 Lb)	220 Nt (22,5 Kg/49,6 Lb)
Kaila Mrs Plus	140 Nt (14,2 Kg/30,8 Lb)	140 Nt (14,2 Kg/30,8 Lb)	140 Nt (14,2 Kg/30,8 Lb)	140 Nt (14,2 Kg/30,8 Lb)	160 Nt (16,3 Kg/35,9 Lb)	
Vector 1000 Mrs Plus	140 Nt (14,2 Kg/30,8 Lb)	140 Nt (14,2 Kg/30,8 Lb)	150 Nt (15,3 Kg/33,7 Lb)	160 Nt (16,3 Kg/35,9 Lb)	180 Nt (18,3 Kg/40,3 Lb)	230 Nt (23,5 Kg/51,8 Lb)
Icon		200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)
Aliikai	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	
Pegasus Mrs Plus		200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)	200 Nt (20,5 Kg/45,1 Lb)
Vector Epic Mrs Plus		140 Nt (14,2 Kg/30,8 Lb)	150 Nt (15,3 Kg/33,7 Lb)	160 Nt (16,3 Kg/35,9 Lb)	180 Nt (18,3 Kg/40,3 Lb)	230 Nt (23,5 Kg/51,8 Lb)
Origin Sport Mrs Plus	95 Nt (9,7 kg/21,3 Lb)	95 Nt (9,7 kg/21,3 Lb)	125 Nt (12,7 kg/27,9 Lb)	135 Nt (13,7 kg/30,2 Lb)	155 Nt (15,8 Kg/34,8 Lb)	185 Nt (18,8 Kg/41,4 Nt)
Origin Sport	95 Nt (9,7 kg/21,3 Lb)	95 Nt (9,7 kg/21,3 Lb)	125 Nt (12,7 kg/27,9 Lb)	135 Nt (13,7 kg/30,2 Lb)	155 Nt (15,8 Kg/34,8 Lb)	185 Nt (18,8 Kg/41,4 Nt)
Vector Origin 1000	90 Nt (9,1 Kg/20,0 Lb)	90 Nt (9,1 Kg/20,0 Lb)	105 Nt (10,7 Kg/23,5 Lb)	110 Nt (11,2 Kg/24,6 Lb)	115 Nt (11,7 Kg/25,7 Lb)	150 Nt (15,3 Kg/33,7 Lb)

## ERGO INFLATOR

The Ergo inflator (Fig. 1) is designed to guarantee immediate and precise buoyancy adjustment.

The "ERGO" inflator was designed to operate with a minimum supply pressure of 8 bar / 117 psi and maximum supply pressure of 12 bar / 176 psi. Check the technical specifications of your regulator before use.

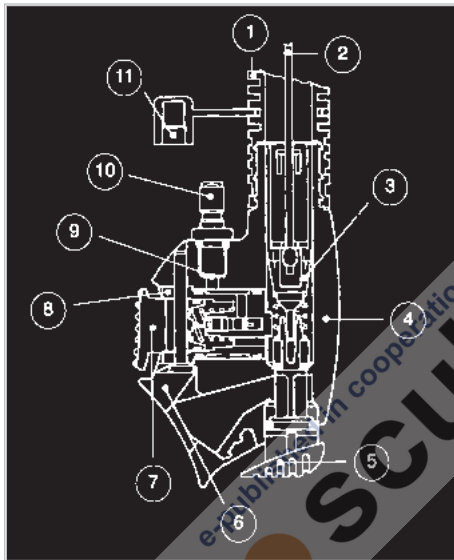


Fig. 1

- 1) Corrugated hose
- 2) Valve trigger line
- 3) Line bushing
- 4) Body
- 5) Purge button
- 6) Mouthpiece
- 7) Air intake button
- 8) Valve bushing
- 9) Filter
- 10) Quick connector
- 11) Protection cap

## CONNECTION TO THE FIRST STAGE

- Connect the LP hose to a LOW PRESSURE port of your first stage.

### WARNING

The hose can only be connected to a LOW PRESSURE port of the first stage. Connection to a high pressure port may result in serious injury or death for the diver and damage the equipment.

- Connect the LP hose quick connect end to the inflator.
- For easier connection, this operation must always be performed while the first stage is not pressurized.
- Fasten the hose to the corrugated hose using the quick-connect LP-hose retainer (Fig. 2).



Fig. 2

## INFLATING THE B/C

To inflate your B/C, simply depress the concave power inflator button (Fig. 3).

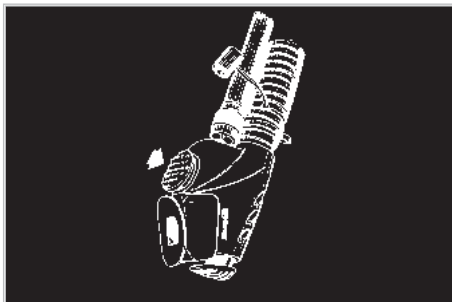


Fig. 3

When the button is released, air delivery must immediately stop; if it does not, refer to a MARES AUTHORIZED SERVICE CENTER.

### DEFLATING THE B/C

There are two ways to deflate the B/C:

- 1) depress the convex oral inflator button and lift the corrugated hose upward (Fig. 4) or



Fig. 4

- 2) pull the inflator downward (Fig. 5).



Fig. 5

### ORAL INFLATION

The B/C can be inflated orally using the soft mouthpiece (Fig. 6).

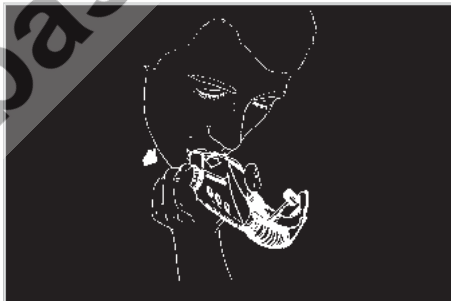


Fig. 6

Follow the steps below:

- Put your lips on the mouthpiece.

#### **WARNING**

**Do not use your B/C as a source of breathable air. Do not inhale air through the inflator mouthpiece. The gas inside the B/C may be incapable of supporting life.**

- Press the purge button while exhaling into the mouthpiece.
- Then release the purge button.

Repeat the above sequence for as long as is necessary.

## VECTOR BACKPACK

The evolution of the syncro backpack, distributes the weight of the scuba set more evenly over the diver's body, assuring perfect stability of the BC during the dive.

## Q.A.S. (QUICK ADJUST SYSTEM) SYSTEM

Before the B/C is used underwater, it must be adapted to the shape of the diver's body by making some adjustments.

If the cummerbund needs to be tightened or enlarged, remove it from both the left and right inner loops and then, using the adjusting strap with buckle, obtain the desired length by moving the Velcro-covered part backward or forward (Fig. 7).



FIG. 7

After completing the adjustment, replace the cummerbund inside its loops and check the resulting fit, taking into account the thickness of the wetsuit and ensuring that the two sides are exactly symmetrical.

The cummerbund is correctly adjusted when the Velcro flaps overlap each other at the center of the diver's waist.

After obtaining the desired girth, use the quick-adjusting shoulder straps on the left and right side to finish customizing the fit.

### ⚠ CAUTION

If you have followed the above instructions correctly, the waistband will be properly stretched and will not wrinkle. If any wrinkles are present, that means that the straps are too tense with respect to the adjusted waistband length.

## ACCESSORIES

The accessories for Mares B/Cs are of the highest quality and clearly demonstrate what care for the smallest details means. All the buckles are in technopolymer. The D-rings are provided for attaching cameras and other accessories. The efficient swivel-snap hose retainers guarantee optimum and safe positioning of the Console or of the Octopus. All B/Cs also come with an unbreakable two-tone whistle. The inflator features an efficient protection cap for hose connection.

## INTEGRATED WEIGHTS SYSTEM

### MRS PLUS

MRS Plus represents the evolution of the first mechanical-release weight system introduced on the market. It introduces a newly-designed buckle system: simply click the buckle in place for optimum security, and a single outward pull releases your weights. Max load of 6 kg/13 lbs with most sizes. The interior is divided into multiple sections in the event you do not use the full capacity.

### ASSEMBLING THE INTEGRATED WEIGHT

Open the zipper and insert the desired quantity of weights, up to a maximum of 6 kg/13 lb in each container (Fig. 8).



FIG. 8

When using a limited quantity of weights, close the Velcro (A) inside the pocket to prevent the weights from shifting during the dive (Fig. 9).



Close the zipper.

### RELEASING THE MRS PLUS FROM THE BC

Insert the MRS Plus in the special housing inside the pocket of the deflated BC. Insert the male part of the buckle (A) of the Mrs Plus container into the female buckle (B) located inside the BC pocket, pressing until it clicks (Fig. 10).



FIG. 10

Make sure that the mechanism of the male buckle (A) is perfectly fastened to the female buckle (B) (Fig. 11).



FIG. 11

To release the MRS Plus container from the BC, grasp the handle (C) of the MRS Plus container (Fig. 12).



FIG. 12

Pull the handle (C) forward firmly to detach the male buckle (A) from the female buckle (B), and then pull out the whole container (Fig. 13).



Fig. 13

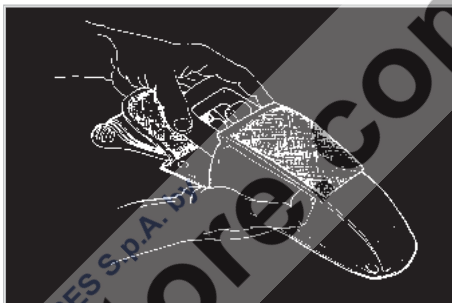


Fig. 15

## MRS - MECHANICAL RELEASE SYSTEM

### ASSEMBLING THE MRS ON THE BC

- 1) Engage the locking pin in the base sewn on the BC (Fig. 14). This can be done by inserting a tool (for example an Allen wrench or a small screwdriver) into the hole and turning through 90° until it is engaged.



Fig. 14

- 2) Place the desired weights (max 6 kg, 13 lb for each compartment) (Fig. 15) inside the MRS compartment. If only a small number of weights are being used, close the inner Velcro of the pocket, to prevent the weights from shifting during the dive. Close the outer Velcro flap.

- 3) Place the MRS compartment inside the special pocket in the BC, making sure that the fastener of slider A engages the seat B (Fig. 16).

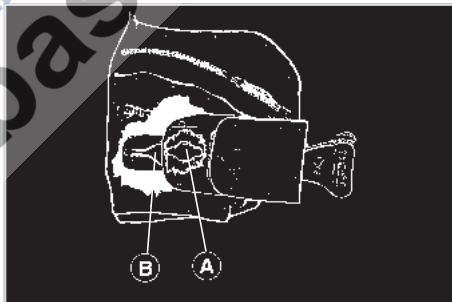


Fig. 16

- Press the release button C and (Fig. 17) attach the handle to the locking pin. Release the button.

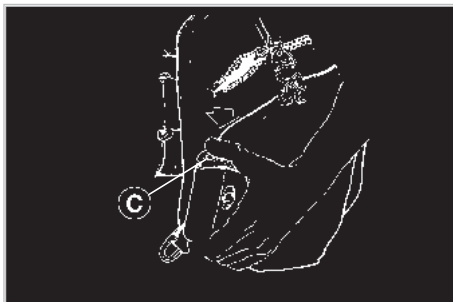


FIG. 17

4) The system is ready for use.

### RELEASING THE MRS

Press the release button C (Fig. 17). Rotate the handle outward to release (Fig. 18). Remove the MRS (Fig. 19).



FIG. 18



FIG. 19



### WARNING

MAKE SURE THAT THE SYSTEM IS CORRECTLY ASSEMBLED BEFORE STARTING THE DIVE.

### S.A.H.S. (Self Adjusting Harness System)

The self-positioning harness system developed by Mares for improved contouring of the BC to a woman's figure. This system consists of a pair of rings placed on the shoulder straps and inside the BC. They are angled in such a way that the shoulder straps take on the most natural position on the diver's chest, preventing discomfort and ensuring an excellent fit.

### SOFT GRIP

Neutrally buoyant padding, specifically designed to provide unparalleled comfort and ensure maximum adherence between the wetsuit and the BC.

### B.P.S. (BACK PROTECTION SYSTEM)

A neutrally buoyant padding system that is both rugged and secure, thanks to a combination of materials with different mechanical properties. The capacity to absorb shocks is greatly superior to that of ordinary protection materials. What's more, the contoured cut and the special design of the seams ensure exceptional adherence between the wetsuit and BC.

### OVERPRESSURE / RAPID EXHAUST VALVE

Your Buoyancy Compensator is equipped with over-expansion relief, quick air dump valves (Fig. 20). The valve automatically releases air from the B/Cs when the internal pressure exceeds the external pressure by a preset amount.

The purpose of this valve is to prevent the B/C from becoming overpressurized, thus being damaged. This valve is also used for rapid exhaust when pulling the knob connected to the line. The valve is positioned in the rear bottom area to allow effective exhaust from most positions.

The two exhaust valves are located at the upper right and lower right to favor the release of excess air regardless of the position of the diver.

The rear valves have a positive-buoyancy knob on the pull string for easy air release in the head-down position.

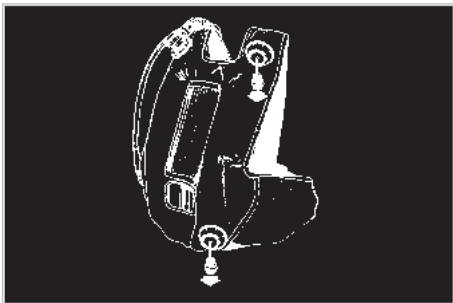


FIG. 20

### ⚠ WARNING

Any leakage of micro-bubbles does not indicate that the BC is losing pressure, but instead could be air that was trapped in spaces between the fabric fibers.

## POCKETS

The pockets are high-capacity and can be easily accessed with the opposite-side arm. Always remember to close the zip or the Velcro flap to avoid losing any objects contained in the pockets.

### ⚠ WARNING

**USE OF BC POCKETS AS WEIGHT HOLDERS (TEARING POCKETS):** the pockets are not designed to hold excessive weight. They are intended exclusively to contain small objects. Inserting weights, stones, or sharp or pointed objects is considered improper use and will consequently invalidate the warranty that we offer.

## HOSE RETAINER

The B/C features a convenient quick-connect hose retainer for dive instruments (Fig. 21).



FIG. 21

The Velcro loop above the right-hand pocket can be used to retain the OCTOPUS.

## OPERATING INSTRUCTIONS

### ⚠ WARNING

Read the following instructions carefully. The improper use of any diving equipment may damage your equipment or result in serious injury or death.

The purpose of a B/C is to make diving easier by enabling the diver to maintain neutral buoyancy.

Prior to diving in open water conditions, practice using your B/C in a swimming pool. Use all gear that you would normally use in an open water dive.

First of all, adjust the cummerbund and backpack to fit your body shape. A correct adjustment helps ensure optimal comfort and stability.

## FASTENING THE B/C TO AN AIR TANK

### ⚠ WARNING

Your B/C was designed to be used with air tanks having the following minimum and maximum characteristics:

Diameter: min. 14.1 cm (5.5 in) - max. 21.5 cm (8.5 in)

Volume: single tank: max. 20 l; double tank: max. 2 x 10 l.

## PRE-DIVE INSPECTION

- 1) Check that all fittings and valves are securely fastened and that the locking nuts are tightened.
- 2) Make sure that tank and backpack are properly connected (Fig. 22-23).

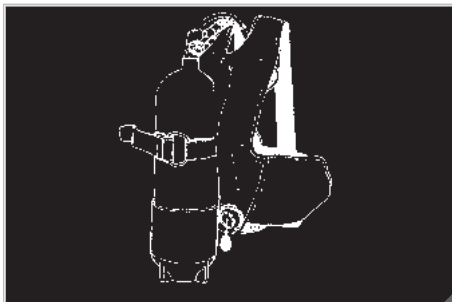


Fig. 22

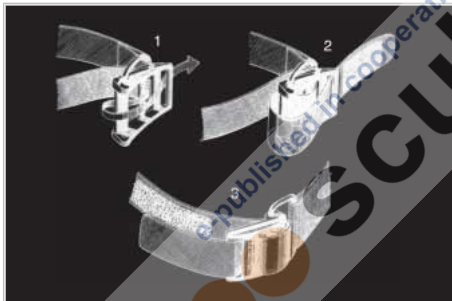


Fig. 23

- 3) Inflate the B/C and wait for approximately 15 minutes. If the B/C deflates at all, do not use it and bring it to a Mares Authorized Service Center for inspection.
- 4) Test the inflate and deflate functions of the ERGO inflator several times. Carefully check the oral inflation system through the mouthpiece to be sure it operates properly.
- 5) Operate the overpressure / rapid exhaust valve (Fig. 20) to be sure it is functioning properly.



Fig. 20

- 6) Do not leave the B/C in the sun and do not place or drag it on rough surfaces that might chafe or puncture it.

### **WARNING**

WHEN USING A BC WITH INTEGRATED WEIGHTS, ALWAYS SECURE THE UNIT TO A LINE IF YOU ARE PLANNING TO PUT ON THE BC IN THE WATER. THIS IS BECAUSE, IN CERTAIN CASES, THE SCUBA UNIT CAN BE NEGATIVELY BUOYANT EVEN WITH THE BC FULLY INFLATED.

## DONNING

- Loosen the shoulder straps all the way and put your left arm through the left arm hole of the B/C.  
Be sure the corrugated hose and LP hose are not tangled. Then proceed with the right arm.
- Close the waistband securely (Fig. 24, part 1).
- Tighten the shoulder straps (Fig. 24, part 3).
- Buckle the swivel waist straps and adjust by pulling both strap ends simultaneously (Fig. 24, part 2).
- Buckle the additional chest buckles, if any (Fig. 24, part 4).

### **WARNING**

A B/C is not a safety jacket or personal floatation device and is not designed to keep the diver on the surface with head up should he/she become unconscious.



Fig. 24

## OPERATION

### - ON THE SURFACE

If you intend to remain on the surface, inflate your B/C to increase your positive buoyancy.

### - DURING THE DIVE

Deflate the B/C either by pressing the inflator purge button while keeping the corrugated hose in upward position (Fig. 4) or, using the rapid exhaust valve, by pulling the inflator downward (Fig. 5).

### - NEUTRAL BUOYANCY

Once the desired depth has been reached, neutral buoyancy can be obtained by blowing in and/or exhausting the appropriate air volume from the B/C.

### - ASCENT

#### **⚠ WARNING**

When ascending, your buoyancy must be controlled to avoid too rapid an ascent when approaching the surface. For information concerning a safe rate of ascent, refer to a certified diving instructor or your diving manual. Follow your decompression table or diving computer during the whole ascent. Failure to make a slow, controlled ascent could lead to serious injury or death.

When ascending, the air in the B/C expands thus increasing positive buoyancy, hence your ascent rate.

Therefore, it is important to control inflation to obtain a correct and consistent rate of ascent.

#### **⚠ WARNING**

Do not use your B/C to lift objects in the water. Should you drop the object, you could become too buoyant and your rate of ascent could become too rapid and potentially dangerous and serious injury or death could result.

## MAINTENANCE

Proper maintenance will ensure long and trouble-free life to your B/C. For that reason, it is essential for you to follow the instructions listed below:

- 1) Avoid prolonged exposure to direct sunlight.
- 2) Do not leave any pointed or hard objects in or around the B/C.
- 3) Store the B/C only when completely dry. Store partially inflated in a cool, dry and dark place.
- 4) At the end of every dive, always insert the protection cap on the quick connector after disconnecting the LP hose (Fig. 4).
- 5) At the end of every open water or swimming pool dive, always rinse your B/C inside and out with fresh water.

To rinse it inside, do the following:

- Fill the B/C approximately 1/4 full with fresh water (to get water inside the B/C, depress the oral inflator button and allow the water to enter through the inflator mouthpiece). Use only a gentle water stream while filling.
  - Inflate the B/C orally and shake it from side to side and up and down.
  - Keeping the bladder up and the corrugated hose down, purge water through the mouthpiece while keeping the oral inflator button down.
- 6) Rinse thoroughly all hardware and accessories on the B/C.

#### **⚠ WARNING**

Do not use any solvents or detergents for cleaning your B/C. Such chemicals may damage your B/C to the extent that it could malfunction underwater, leading to serious injury or death.

## USE OF THE BCS WITH OXYGEN RICH MIXTURES

### WARNING

MARES buoyancy compensators are considered to conform to Directive 89/686/EEC when used with breathable air conforming to EN 12021/rev.1998. The instructions for use are provided in the enclosed manual and refer to use of the BC with breathable air conforming to EN 12021/rev.1998 (oxygen content of 21±2%). Because to date there are no regulations for verifying by means of adequate and meaningful tests, that the essential safety requirements prescribed by Directive 89/686/EEC have been met, this MARES BC is not to be considered EC Certified for use with oxygen rich mixtures (O<sub>2</sub> >21±2%) under Directive 89/686/EEC.

### WARNING

#### FOR NORTH AMERICA ONLY

Mares regulators, alternative second stages, and gas delivery components are designed for and compatible with open circuit SCUBA using compressed air or enriched air (Nitrox) mixtures not exceeding 40% Oxygen ONLY.

These limits conform to the DAN Nitrox Industry Workshop Proceedings of November, 2000.

Failure to follow this warning may result in **SERIOUS INJURY** or **DEATH** to the user due to fire, explosion, or the deterioration or failure of the equipment.

### WARNING

MARES BCs are designed and constructed exclusively for use with compressed atmospheric air. Do not use this MARES BC with other gases or with oxygen-rich mixtures. Failure to observe this warning may result in premature wear of the equipment, defective operation or risk of explosion, resulting in potentially serious damage. The conversion of a MARES BC for use with oxygen-rich mixtures must be carried out exclusively by trained and qualified technicians who are perfectly familiar with all the cleaning and assembly procedures for high pressure oxygen systems (with oxygen content exceeding 21±2%).

### DANGER

Do not use any MARES BC with oxygen rich mixtures (Nitrox - Maximum oxygen content: 40%) without having first received adequate training on their use: Failure to observe this warning may result in a serious accident.

**WHEN REPAIR OR SERVICING IS REQUIRED, THIS SHOULD BE PERFORMED ONLY BY MARES OR BY A MARES AUTHORIZED SERVICE CENTER.**

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