USER'S MANUAL FOR MARES REGULATORS

1. INTRODUCTION

Congratulations on your purchase of a MARES regulator. All MARES products are the result of over 70 years of experience and relentless research in new materials and technologies. We hope you will enjoy many great dives with your new equipment.

⚠ WARNING

The complete documentation consists of this manual and a separate sheet dedicated to the specific regulator you have purchased. You must read and understand both this manual and the separate sheet in their entirety before using this product. Keep the manual and the sheet for future reference.

⚠ WARNING

As with all SCUBA equipment, MARES products 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 or any other piece of SCUBA equipment unless you are a trained, certified SCUBA diver. You must be a certified diver with a valid certification from an internationally recognized training agency in order to use this product. Always follow all rules and guidelines as taught by your training agency on all dives.

⚠ WARNING

Carefully follow these and all other instructions concerning MARES products. Failure to do so may result in serious injury or death. If the instructions provided in the manual are unclear or difficult to understand, please contact your authorized MARES dealer before using the product.

2. CE CERTIFICATION – EN250:2014

All regulators described in this manual have undergone an EC type examination, which is the procedure whereby the approved inspection body establishes and certifies that the PPE (Personal Protective Equipment) model in question satisfies the relevant provisions of European Regulation 2016/425.

Said regulation lays down the conditions governing the placing on the market and free movement within the Community and the basic safety requirements which PPE must satisfy in order to ensure the health protection and safety of users. SCUBA regulators are PPE of category III and are tested according to European Norm EN250:2014. This European Standard defines SCUBA as self-contained open-circuit compressed air underwater breathing apparatus and specifies minimum requirements for the SCUBA unit and their sub-assemblies to ensure a minimum level of safe operation of the apparatus down to a maximum depth of 50 m, while using compressed air conforming to EN12021. At a minimum, the EN250:2014 defines a SCUBA unit as composed of cylinder with valve, demand regulator, pressure indicator, facepiece and carrying system.

The EN250:2014 mainly focuses on equipment meant for one diver only. In case of an emergency, and if an auxiliary breathing system (octopus) is connected to the system, the EN250:2014 specifies a further set of conditions. In particular, when an auxiliary emergency breathing system (octopus) is attached to the regulator, the EN250:2014 specifies minimum requirements to ensure a minimum level of safe operation for such an apparatus to a maximum depth of 30 m and a water temperature of 10 °C or less, depending on the type of octopus.

⚠ WARNING

The use of an auxiliary emergency breathing system in temperature less than 10 °C is not a preferred configuration and alternative fully independent systems are advised.
The use of an auxiliary emergency breathing system (octopus) in water temperature less than 10 °C carries a significant risk of accidents.
The use of an auxiliary emergency breathing system (octopus) at depths over 30m carries a significant risk of accidents.
If a SCUBA unit is configured for and used by more than one diver at the same time, then it shall not be used at depths greater than 30m and in water temperatures less than 4°C.

All Mares regulators described in this manual have passed the EC type examination described above and obtained the corresponding CE certification. The examinations are carried out by RINA, notified body 0474, located in Via Corsica 12, 16128 Genova, Italy. CE conformity is denoted by the "CE" marking on first and second stages, including octopus, followed by the number 0474, which identifies RINA as the notified body controlling production in compliance with Module D of European Regulation 2016/425. Regulators are also marked with "EN250 A" in which the "A" indicates compliance with the requirements set out in Annex B of EN250:2014 regarding auxiliary emergency breathing systems (octopus) at a temperature of 4°C. Only regulators marked with "EN250 A" may be used as an escape device by more than one user at the same time.
The regulators described in this manual are manufactured by Mares SpA located in Salita Bonsen 4, 16035 Rapallo (GE), Italy.

3. APPLICATION

The regulators described in this manual are intended for use in recreational SCUBA diving activities, to a maximum depth of 50m and temperature of 4°C or higher. They are to be used only with compressed air complying with EN12021. For information about use with other breathing mixes, see section 9.

4. ASSEMBLY

The regulators described in this manual consist of a preassembly of a first stage and a second stage (Fig. 1) connected by a low pressure hose. The first stage can be of the threaded connection type (Fig. 2) or of the yoke type (Fig. 3). Both types are according to ISO EN 12209:2013.
The first stage features high and low pressure ports for the connection of various components and subassemblies. The high pressure ports are intended for high pressure hoses or high pressure transmitters. They feature a 7/16" UNF thread. Use a 4mm allen wrench to remove the port plugs that you intend to use and an appropriate wrench to install the desired component.

⚠ WARNING

Only assemble components onto the high pressure ports with the proper pressure rating: 232bar/3350psi (yoke type) or 300bar/4350psi (threaded connection type). Failure to do so may result in serious injury or death.

⚠ WARNING

Only assemble components that meet the EN250:2014 requirement on maximum allowable gas flow (100l/min at standard temperature and pressure with an upstream pressure of 100bar).
The low pressure ports are intended for auxiliary emergency breathing systems (octopus) and inflation systems (buoyancy compensator hoses and dry suit hoses). They feature a 3/8" UNF thread. Use a 4mm allen wrench to remove the port plugs that you intend to use and an appropriate wrench to install the desired component.

⚠ WARNING

Only assemble components onto the low pressure ports with a minimum pressure rating of 35bar/500psi.

⚠ WARNING

Only assemble auxiliary emergency breathing systems authorized for this regulator (see table on separate sheet).

5. ASSESSMENT OF RISK

SCUBA regulators protect from the risk of drowning. Cold water, low visibility and strenuous workload are all elements which can increase the risk of an accident during a dive. If you plan to dive in cold water, low visibility or while performing strenuous work, make sure that you have been trained specifically for these conditions by an internationally recognized training agency. Failure to do so may result in serious injury or death.

5.1 COLD WATER DIVING

In addition to the guidelines from your cold water diving specialty class, for dives in temperatures below 10°C/50°F we recommend the following:

- Keep the regulator in a warm place until the last possible moment and carry out all the predive checks in a warm dry place.
- Once at the dive site, ensure that no water can enter the first or second stage while on the surface.
- Do not attempt to inhale and exhale through the second stage while on the surface and avoid using the purge button while on the surface.
- Whenever possible, do not remove the regulator from your mouth during the dive and at the surface and do not use the purge button during and after the dive.

6. CHECKS PRIOR TO USE AND PREPARING FOR THE DIVE

⚠ WARNING

- Check all hoses visually for signs of wear or damage. Do not dive if a hose is damaged or worn. If a hose is loose you must tighten it with a wrench prior to diving.
- Check the first stage and the second stage and all other components for damage. Do not dive if any component shows signs of damage.
- Check the mouthpiece on the second stage for any tear or damage. Do not dive with a torn or damaged mouthpiece.
- Prior to mounting your SCUBA regulator on a tank, ensure that the tank valve and the regulator components mating with the tank valve are free of debris (dirt, sand, salt residue etc.).
- DIN type: remove the dust cap then screw the male connector on the first stage into the female connector on the valve (Fig. 4). Tighten it by hand ensuring that the male connector is inserted all the way.
- Yoke type: remove the dust cap then place the yoke of the first stage over the tank valve and slowly tighten the yoke screw while ensuring that the sealing surfaces are interfacing correctly (Fig. 5). Tighten the yoke screw by hand without using excessive force.
- The proper positioning is such that the hose of the second stage exits the first stages parallel to your right shoulder (when worn, Fig. 6).
- Perform a vacuum test by inhaling from the second stage while the tank valve is still closed. You should feel resistance and no air should enter the system from the outside. This needs to be repeated for the auxiliary emergency breathing system if one is connected. Do not dive unless you can establish a minimum of vacuum in each second stage in your set-up.
- Slowly open the tank valve while pointing the face of the pressure gauge (if present) away from you and ensure that there are no leaks from the first or the second stage. Do not dive if there are leaks in any component of your system.
- Take a reading from the pressure gauge or hoseless transmitter to ensure that the tank has enough pressure for the intended dive. Do not dive unless if you have a sufficient supply of breathing gas.
- Take a breath from the second stage to ensure that it is working properly.

7. DONNING

Don the complete SCUBA unit and place the second stage regulator in your mouth, take a breath to ensure it is working, then enter the water and prepare to dive. Do not dive unless the second stage delivers a smooth, comfortable flow of breathing gas.

8. USE AND REMOVAL

Breathe normally throughout the dive. Never hold your breath. After the dive, close the tank valve, purge the second stage to depressurize the system and disassemble it. It is very important that you put the dust cap onto the first stage in order to prevent water, moisture or debris from entering into it. Rinse the regulator thoroughly in fresh water.

9. BREATHING GASES

⚠ WARNING

The regulator described in this manual is intended for use with compressed air corresponding to EN12021 only.

⚠ WARNING

This regulator is not meant to be used with any breathing gas containing 22% or more of oxygen.

NOTE:
USE OF NITROX MIXES OUTSIDE OF THE EUROPEAN UNION
Mares regulators, auxiliary emergency breathing systems and all components of the gas delivery system are compatible with and exclusively designed for use with open-circuit SCUBA equipment that uses compressed air or oxygen-rich mixtures (Nitrox) with oxygen content not greater than 40%. They do not require additional cleaning or servicing. If however the regulator should become contaminated with grease, oil or dirt, it needs to be serviced by a Qualified Technician at a Mares Lab Service Center (www.mares.com) prior to renewed use.

10. CARE, STORAGE AND TRANSPORT

The flexible hose of your regulator must be checked prior to each use for integrity and presence of bubbles. Any leakage or sign of damage, cracking, deformation, heavy abrasion or cut is an indication of wear and of obsolescence of the hose assembly and indicates the need for its replacement. Rinse your regulator thoroughly in fresh water after every dive. Ensure that the dust cap is installed on the first stage prior to doing so. In order to limit and remove water or contaminants from the flexible hose and the regulator you should, after each dive, rinse your regulator in fresh water, dry it thoroughly, attach it to a pressurized cylinder and repeatedly purge the second stage. Never expose your regulator to any heat source, never allow the flexible hose to be crushed. Store the regulator in a dry place away from direct sunlight. When travelling with your equipment, it is best to use a padded bag such as is commonly used to transport diving equipment.

11. MAINTENANCE

Mares recommends an inspection every year or 100 dives and a complete overhaul every two years or 200 dives.

Regulator Service Guidelines
Every year or 100 dives:
Take your Mares regulator to an Authorized Mares Dealer for an Annual Regulator Inspection and/or Service. The results of the inspection may require certain parts be replaced or a complete overhaul. Check with your Mares Dealer for Service Guideline details.

Every two years or 200 dives:
Take your Mares regulator to an Authorized Mares Dealer for a complete regulator overhaul. This includes replacing all parts included in the Service Kit.

⚠ WARNING
In case of a strong hit to the regulator first or second stage, you must have the regulator itself inspected and if necessary overhauled.

NOTE:
At the latest after five years of operation the flexible hose of your regulator should be taken out of service.

12. WARRANTY

The warranty of this regulator does not cover effects of or damage caused by normal wear or obsolescence of the flexible hose assembly and of any other part of this regulator.
Terms and conditions of the warranty are described on the warranty certificate included with the regulator.