

HALCYON™ CHAMBIOS



Photo: Michael Westreicher

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1 Introduction

Congratulations on purchasing your SYMBIOS TANK POD. The SYMBIOS TANK POD is an advanced, digital SPG for accurately measuring scuba tank gas pressure. The SYMBIOS TANK POD also includes a patented feature, allowing divers to measure their horizontal position in the water. This industry-leading feature allows divers to receive real-time feedback on their position, allowing them to identify how flat they are in the water. A flat, horizontal position develops less drag while swimming, reducing effort and gas consumption. This position also reduces the risk of damaging fragile corals. This data is transmitted, along with tank pressure to a Halcyon Symbios HUD or HANDSET. Information about the diver's position is available on the CUSTOM FIELDS of the dive computer and displays as a negative or positive percentage from horizontal..

The SYMBIOS TANK POD, together with a compatible Halcyon dive computer, is classified as Personal Protective Equipment under the EU Regulation 2016/425 and protects against risks listed under PPE Risk Category III (a): substances and mixtures which are hazardous to health.

Based on EU PPE Regulation 2016/425 Annex I, the SYMBIOS TANK POD is designed to protect the user from drowning (Category III (i)). The SYMBIOS TANK POD performs this function by transmitting tank pressure information to the user's compatible dive computer, which allows the user to take the appropriate, life-saving action..

Backup instruments such as a depth gauge, submersible pressure gauge, timer, or watch, must be used in conjunction with the SYMBIOS TANK POD.

Features:

- High-resolution digital tank pressure sensor
- 3-axis accelerometer to measure the position of the diver (tilt)
- Sophisticated transmission protocol based on a 125 kHz magnetic carrier, which allows high data rates and short transmission packages, in order to avoid data collisions when multiple wireless devices are used simultaneously
- User replaceable CR123 battery

1.1 Safety

Considerations

Before using the SYMBIOS TANK POD, you must read and understand the information provided in this manual in its entirety, and must be aware that diving has many inherent risks. Understand that a dive computer considerably increases your diving safety, but it does not eliminate the remaining risk of serious injury or death caused by decompression sickness, Oxygen toxicity, or other inherent risks of scuba diving.

Do not use this SYMBIOS TANK POD if you are not aware of those risks, or you do not accept these remaining risks.

This manual uses the following symbols to indicate important precautions. Those precautions provide information about potential hazards and proper procedures. Three different safety signs are used to rank their importance: orange for vital

information, which shall not be ignored under any circumstances; yellow advises caution, and blue indicates technical or other recommendations for safe and reliable operation of the device.

1.2 Warnings

⚠ WARNING

Although the SYMBIOS TANK POD is extremely reliable, it could still fail. In such a case, there may be no or incorrect pressure information transmitted to the dive computer. In such cases, the dive computer might report a tank pressure that reads too high or too low. Always use a backup analog SPG.

⚠ WARNING

Before using the SYMBIOS TANK POD, read the manual in its entirety and make yourself familiar with all the functions of the device.

⚠ WARNING

If you do not fully understand how to use the SYMBIOS TANK POD, or if you have any questions, contact your instructor or your authorized dealer before diving with it.

⚠ WARNING

Divers must have successfully completed a course in scuba diving. They must have knowledge of the potential risks and hazards associated with scuba diving.

⚠ WARNING

Do not use the SYMBIOS TANK POD if it shows any signs of damage or malfunction. Contact the HALCYON DIVE SYSTEMS or an authorized repair center.

2 Installation

The SYMBIOS TANK POD features a 7/16"-UNF port and can be connected to a high-pressure port of a first-stage scuba

pressure regulator. A 19 mm wrench can be used.



⚠ WARNING

Make sure that the flow restrictor is inserted. In the case of a mechanical pressure sensor failure, the flow restrictor can limit the maximum gas flow through the SYMBIOS TANK POD.



⚠ WARNING

Use a first stage with two high-pressure ports, so that next to the SYMBIOS TANK POD, a backup SPG can also be connected.

NOTICE

Installation torque should be hand-tightened; excessive force is not needed.

NOTICE

To optimize the reliability of the data transmission, install the tank transmitter on the same side where your dive computer is worn.

3 Operation

As soon as the SYMBIOS TANK POD reads more than 2 bar/29 psi, it will start transmitting tank pressure as well as position data.

- Tank pressure is transmitted approximately every 4 seconds.
- Position data are transmitted in 1-second intervals.

3.1 Pairing

Pairing of the SYMBIOS TANK POD is performed in two steps.

1. Pressurize the SYMBIOS TANK POD. Pair the SYMBIOS TANK POD to a Gas setting in menu/SETTINGS/PAIRING/TANK POD/TO GAS or alternatively to an independent tank pressure transmitter setting in menu/SETTINGS/PAIRING/TANK POD/TO NUMBER on the dive computer.
2. Pair the SYMBIOS TANK POD tilt sensor in menu/SETTINGS/PAIRING/TRIM SENSOR. For further information, please refer to the dive computer manual.

3.2 Replacement of the battery

The CR123 battery can be replaced by the user.

1. Ensure the SYMBIOS TANK POD is fully depressurized, then disconnect it from the first-stage high-pressure port.
2. Remove the three screws with a Torx T10 screwdriver.



3. Replace the battery.
4. Ensure the connecting clamps around the battery remain in contact with the battery's ends.
5. Inspect the O-ring and replace it if necessary.
6. Lightly lubricate a new O-ring with silicon grease.
7. Replace the O-ring (26x2 NBR 70).



6. Install the cap and secure it with the three screws.



3.3 Enabling or disabling position data transmissions

Position data transmission can be enabled or disabled. There are several situations where the diver might prefer to have no transmission of position data:

- _ If one uses the SYMBIOS TANK POD with stage tanks, where position information may not make much sense.
- _ If the diver uses several wireless devices simultaneously, and wants to reduce data traffic.
- _ If the diver wants to conserve battery power.

Position data transmission is enabled/disabled by installing the battery in 2 orientations:

If the positive terminal of the battery is oriented toward the high-pressure port, the position data transmission is disabled.



If the negative terminal of the battery is oriented toward the high-pressure port, the position data transmission is enabled.



NOTICE

When the SYMBIOS TANK POD is not pressurized, it will neither transmit pressure nor position data to reduce power consumption.

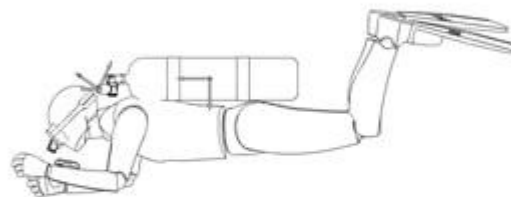
NOTICE

Depressurize the SYMBIOS TANK POD on the surface in order to reduce the power consumption.

4 Diver Position

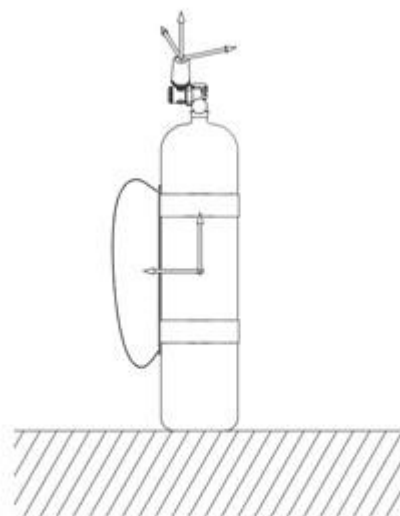
A flat, horizontal position develops less drag while swimming, reducing effort and gas consumption. This position also reduces the risk of damaging fragile corals. The SYMBIOS TANK POD, in combination with a Symbios dive computer, can measure the diver's tilt or horizontal position in the water. The SYMBIOS TANK POD includes a patented feature that allows divers to receive real-time feedback on their position, allowing them to precisely measure their horizontal position. Information about the diver's position is available on the CUSTOM FIELDS of the dive computer and displays as a negative or positive percentage from horizontal. To accomplish this, the HALCYON POD includes a 3-axial accelerometer, which allows measurement of the vector of the Earth's gravity, and from this, calculates the diver's tilt.

1. The SYMBIOS TANK POD measures tri-axial acceleration with respect to the spatial orientation of the electronic board of the SYMBIOS TANK POD.
2. The information is transmitted to the dive computer.
3. The dive computer utilizes a sophisticated mathematical model to calculate the diver's tilt.

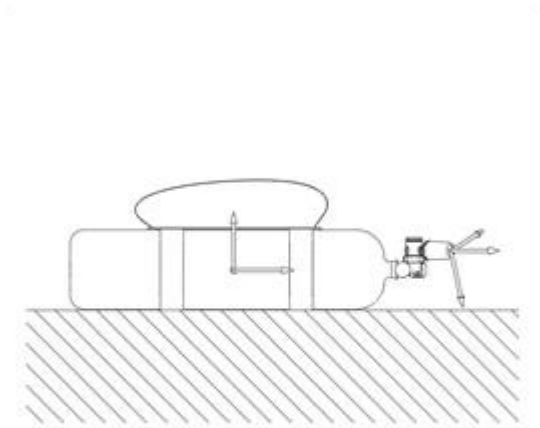


To calculate tilt accurately, the system needs to be calibrated in a 2-step procedure:

1. Pressurize the SYMBIOS TANK POD and position the tanks vertically. Navigate on the dive computer menu/SETTINGS/TRIM SENSORS/VERTICAL to perform the vertical calibration.



2. Lay the tanks down in a horizontal position. Navigate on the dive computer menu/SETTINGS/TRIM SENSORS/HORIZONTAL to perform the horizontal calibration.



NOTICE

A calibration is only possible when the trim function is paired and the SYMBIOS TANK POD is pressurized.

5 Care and Maintenance

The SYMBIOS TANK POD is built from high-quality seawater-resistant materials. The SYMBIOS TANK POD is designed to withstand diving in harsh conditions. However, you should still protect your SYMBIOS TANK POD from shock, excessive temperatures, chemicals, and mechanical tampering.

NOTICE

After diving, rinse the SYMBIOS TANK POD in fresh water to avoid corrosion.

CAUTION

Protect your SYMBIOS TANK POD during transportation and from mechanical shocks and excessive temperatures.

CAUTION

Never try to repair the SYMBIOS TANK POD yourself.

CAUTION

The SYMBIOS TANK POD should be inspected for mechanical damage and cracks before and after each dive to ensure it is working properly.

NOTICE

Failure to observe the above precautions leads to loss of warranty and any product-related liability of HALCYON DIVE SYSTEMS.

6 Specifications

This device is recommended for use with compressed air. The compressed air supply must comply with the quality of compressed air specified in the EU standard EN 12021:2014 (requirements for compressed gases for breathing apparatus).

- Maximum operational depth: 100 m
- Rated working pressure: 300 bar/4351 psi
- The air supply shall meet the requirements for breathable air in accordance with EN 12021.
- 3 axial accelerometers, with 1° tilt resolution
- CR123 Li Ion battery
- Housing made from Glass fiber reinforced Polyamide
- Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)
- Storage temperature: -20 °C to 50 °C (-4 °F to 122 °F)

- The SYMBIOS TANK POD has a 7/16" - 20 UNF thread connection to a first-stage scuba pressure regulator (hex base 19mm).

- When installing the SYMBIOS TANK POD, the recommended maximum torque is 7 Nm.

- The depth of equipment certification, according to EN 250:2014, is 50 m.

- The air supply for equipment compliant with EN 250:2014 shall meet the requirements for breathable air in accordance with EN 12021.

7 Warranty

HALCYON DIVE SYSTEMS LIMITED WARRANTY

HALCYON DIVE SYSTEMS warrants that during the warranty period, HALCYON DIVE SYSTEMS or a HALCYON DIVE SYSTEMS authorized service center will, at its sole discretion, remedy defects in materials or workmanship free of charge either by repairing, replacing, or refunding, subject to the terms and conditions of this limited warranty.

Warranty period

- The limited warranty period begins on the date of original purchase.
- The warranty period is 2 years for products, unless otherwise specified.
- The warranty period for accessories is 1 year.

The limited warranty does not cover:

- normal wear and tear, such as scratches, abrasions, and alteration of the color.
- defects caused by rough handling
- defects or damage resulting from use contrary to intended or recommended use,

- improper care, negligence, and accidents such as dropping, crushing, and flooding
- printed materials and packaging

The limited period is not enforceable if the product or accessory:

- has been opened
- has been repaired using unauthorized spare parts
- has been repaired by an unauthorized service center
- has been exposed to chemicals including but not limited to sunscreen and mosquito repellents

7.1 Limitations of Liability

With The Purchase Of The Symbios Tank Pod, You Hereby Agree To The Following Exclusions And Limitations Of Halcyon Dive Systems' Liability To You.

You Agree And Understand That Scuba Diving Is A High Risk, Possibly Life-Threatening Activity And The Use Of The Symbios Tank Pod Is In No Way A Substitute For Proper Scuba Training And Certification.

You Understand And Agree That Because Of The Number Of Variables And The Varying Degrees To Which They May Affect Individuals Engaged In Scuba Diving, Halcyon Dive Systems Does Not Warrant Or Guarantee That Your Use Of This Product Will Prevent Decompression Sickness, Or Any Other Condition Or Injury You Incur.

You Understand And Agree That These Influencing Variables May Include, But Are Not Limited To, Dehydration, Obesity, Age, Old Injuries, Or Other Physical Conditions Of The Diver, Or Environmental Extremes Of Heat Or Cold, Or Poor Training, Or Diving

Practices, Which May Promote The Onset Of Decompression Sickness Or Other Harmful Effects.

The Symbios Tank Pod Was Tested According To EN13319 And Was Evaluated In Numerous Test Dives. However, There May Still Be Errors In The Software That Were Not Identified Yet And That May Lead To Malfunctions Of The Symbios Tank Pod. Therefore, Halcyon Dive Systems Suggests To Always Carry And Use A Backup Dive Computer Or A Dive Table In Combination With A Depth Gauge And A Watch.

You Agree That You Understand And Accept All Risks Associated With Diving, And That Halcyon Dive Systems, Its Elected And Appointed Officials, Employees, Volunteers Or Others Working On Behalf Of Halcyon Dive Systems Are Not Liable To You Or Any Other Person, Including Your Heirs, Executors Or Personal Representatives, For Any Loss, Damage, Cost, Expense, Or Claim Arising Out Of, Caused By, Or Relating To Your Personal Injury Or Death While Diving, Even If Your Personal Injury Or Death Is Caused, In Whole Or In Part, And Directly Or Indirectly, By The Purchase Of The Symbios Tank Pod Or Your Use Thereof, Or Arising From Breach Of The Warranty, Breach Of Contract, Negligence, Strict Tort, Or Any Other Legal Or Equitable Theory, Even If Halcyon Dive Systems Knew, Or Should Have Known Of The Likelihood Of Such Damages, And Regardless Of Whether Or Not The Head Up Diving Computer Functioned Properly Or Was Defective In Any Way. Halcyon Dive Systems Shall Not Be Liable For Delay In Rendering Service Under The Limited Warranty, Or Loss Of Use During The Time The Product Is Being Repaired.

You Hereby Irrevocably Waive And Release Halcyon Dive Systems, Its Elected And

Appointed Officials, Employees, Volunteers Or Others Working On Behalf Of Halcyon Dive Systems From Any Liability Or Obligation To You Or Your Heirs, Executors Or Personal Representatives For Any Loss, Damage, Cost, Expense, Or Claim Arising Out Of, Caused By, Or Relating To Your Personal Injury Or Death While Diving, Even If Your Personal Injury Or Death Is Caused, In Whole Or In Part And Directly Or Indirectly, By The Symbios Tank Pod Or Your Use Of The Symbios Tank Pod, Or Arising From Breach Of The Warranty, Breach Of Contract, Negligence, Strict Tort, Or Any Other Legal Or Equitable Theory, Even If Halcyon Dive Systems Knew, Or Should Have Known Of The Likelihood Of Such Damages, And Regardless Of Whether Or Not The Symbios Tank Pod Functioned Properly Or Was Defective In Any Way.

You Have Read And You Accept The Agreement With All Limitations And Exclusions Of Halcyon Dive Systems' Liability To You.

8 Notices

8.1 CE

The SYMBIOS TANK POD is in conformity with:

– EN 250:2014: The combination of a Halcyon Handset or HUD and the Halcyon Symbios Tank Pod is considered personal protective equipment under Regulation (EU) 2016/425. SGS Fimko Oy, Takomotie 8, 00380 Helsinki, Notified Body No: 0598, performed EU type-examination (Module B) of the Regulation (EU) 2016/425 Personal Protective Equipment and issued EU type-examination certificate No 0598/PPE/24/5116. The EC Type examination of the SYMBIOS TANK POD,

together with the Halcyon Symbios Tank Pod, was conducted by SGS Fimko Oy, Notified Body No. 0598. In this case, the SYMBIOS TANK POD is in conformity with EN250:2014 – respiratory equipment – open-circuit self-contained compressed air diving apparatus – requirements, testing and marking – clause 6.11.1 Pressure Indicator for use with equipment that is compliant with EN12021. The air supply for equipment compliant with EN250:2014 shall meet the requirements for breathable air in accordance with EN 12021. The depth of the equipment certification is 50 m. The Halcyon Symbios Handset or Symbios HUD, in combination with the Halcyon Symbios Tank Pod, are subject to the conformity assessment procedure, conformity to type based on the quality assurance of the production process, plus supervised product checks at random intervals (Module C2) under surveillance of the Notified Body SGS Fimko Oy, Helsinki; Notified Body 0598.

– Regulation (EU) 2014/53, Radio Equipment Directive

– EN 300 330:2017 V2.1.1 (Radio spectrum), Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

– EN 55032:2015 + A1:2020 + A11:2020 (EMC), Electromagnetic compatibility of multimedia equipment – Emission requirements

The full text of the EU declaration of conformity is available at <https://halcyon.net/support> under *Instructions/Manuals > EU Declaration of Conformity Documents*.

8.2 Trademark

Halcyon® and the H logo® are registered trademarks of Halcyon Manufacturing, Inc. The Halcyon Cinch is protected by U.S. Patents Nos. 8,398,337 and 10,407,142 and a corresponding European Patent. Halcyon common law trademarks include, without limitation, Symbios™, Multifunction Compensator™, Cinch™, H-Lok™, X-Connector™, Eclipse™, Explorer™, and Evolve™ wings, BC Storage Pak™, Active Control Ballast™, Diver's Life Raft™, Surf Shuttle™, No-Lock Connector™, Helios™, Proteus™, and Apollo™ lighting systems, Scout Light™, Pathfinder™ reels, Defender™ spools, and the RB80™ rebreather.

8.3 Copyright

This manual is copyrighted, all rights reserved. It may not, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form without prior consent in writing from Halcyon Manufacturing, Inc.

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8.4 Disclaimer

Halcyon Manufacturing, Inc. reserves the right to make changes or improvements to its products, manuals, and specifications at any time without prior notice.

While every effort has been made to ensure accuracy, Halcyon Dive Systems assumes no liability for errors or omissions in this document.

Users are responsible for familiarizing themselves with the latest version of this manual and for following all applicable safety and maintenance instructions.

8.4.1 Translation Note

This manual may be available in multiple languages to comply with regional requirements. In the event of discrepancies between translations, the English version shall prevail.

9 Identification

The SYMBIOS TANK POD is laser marked with a label containing information about the manufacturer, the model, CE and FCC symbols, and the serial number indicating the manufacturing year and month. The first two digits of the serial number represent the last two digits of the production year.



9.1 FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- _ Reorient or relocate the receiving antenna.
- _ Increase the separation between the equipment and the receiver.
- _ Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- _ Consult the dealer or an experienced radio/ TV technician for help.

10 Information

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