



# GIOTTO

# USER MANUAL

cressi.com

**CRESSI**

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Congratulations on your purchase of Giotto underwater computer, a sophisticated and complete device which offers the utmost safety, efficiency and reliability. Always keep this manual with your Giotto.

**MAIN FEATURES.**

CRESSI RGBM algorithm. New algorithm created through a collaboration between Cressi and Bruce Wienke, based on the Haldane model, integrated with RGBM factors for safe decompression calculations in repetitive multi-day dives.

Tissues: 9 with saturation half-times between 2.5 and 480 minutes;

Dive program: Full processing of dive data, including decompression if applicable, for every dive performed with Air or Nitrox.

Possibility of using two Nitrox hyper-oxygenated mixtures selected at any time of the dive.

Full setting of FO2 (oxygen percentage) and PO2 (partial oxygen pressure) parameters with the option to set PO2 between 1.2 bar and 1.6 bar, FO2 from 21% to 50% for the first mixture, and from 21% to 99% for the second.

Option to take a Nitrox dive after one with air (even while desaturating).

Option to set Deco (decompressive computations) or Gage (depth gauge and timer).

Deep Stop can be turned on or off.

Large display with "PCD System" for perfect understanding and readability of values.

Replaceable protective display cover.

User-replaceable batteries.

Dive planning with manual safety curve scrolling.

User can switch unit of measurement from Metric (meters and °C) to Imperial (ft- °F) system.

Sound and visual alarms.

graphic CNS oxygen toxicity indicator.

Backlit display.

Built-in calendar and clock.

Log book (60 dives).

Dive history saved.

Option for full desaturation reset if needed, helpful when renting the device.

PC/Mac interface with general data and dive profile (optional).

**GENERAL INSTRUCTIONS AND SAFETY MEASURES.**

**IMPORTANT:** Read the instructions! Carefully read this user manual, including the safety measures paragraphs. Make sure you perfectly understand the use, functions and limits of the device before using it! DO NOT use the device without having read every part of this instructions booklet!

**IMPORTANT:** this device is designed to be a dive aid and does not replace the use of dive tables.

**⚠ DANGER: AN UNDERWATER DIVING COMPUTER CAN NEVER COMPLETELY ELIMINATE THE RISK OF DECOMPRESSION SICKNESS (EMBOLISM). IT MUST BE CLEAR THE AN UNDERWATER DIVING COMPUTER CAN NEVER COMPLETELY ELIMINATE THE RISK OF DECOMPRESSION SICKNESS. IN FACT, THE COMPUTER CANNOT TAKE INTO ACCOUNT THE PHYSICAL CONDITIONS OF THE DIVER WHICH MAY VARY DAILY. IT IS RECOMMENDED TO HAVE A COMPLETE MEDICAL EXAMINATION PRIOR TO STARTING ANY UNDERWATER DIVING ACTIVITY AND TO ASSESS ONE'S PHYSICAL CONDITION BEFORE EACH DIVE. IT IS IMPORTANT TO REMEMBER THAT CIRCUMSTANCES SUCH AS COLD TEMPERATURE (LESS THAN 10° C), NOT OPTIMAL PHYSICAL CONDITION, MULTIPLE OR SUBSEQUENT DIVES, DIVER'S FATIGUE, CONSUMPTION OF ALCOHOL, DRUGS, OR MEDICATION AND DEHYDRATION MAY INCREASE THE RISK OF DECOMPRESSION SICKNESS. PLEASE AVOID ALL THESE SITUATIONS AS WELL AS ANY OTHER THAT MIGHT ENDANGER YOUR LIFE: EVERYONE HAS TO BE RESPONSIBLE FOR ONE'S OWN SAFETY!**

**IMPORTANT:** this device should be used only by properly trained and certified divers: No computer will, in fact, replace proper underwater training. Please remember that a dive's safety is only guaranteed by a correct preparation. **IMPORTANT:** Giotto computer by Cressi is designed for sport diving only and not for commercial or professional use which require longer dive times and greater depths, consequently increasing the risk of decompression sickness.

**IMPORTANT:** before using the computer, please check the battery life status and the indications on the

display. DO NOT dive if these indications are not perfectly clear and, especially, if the battery is low.

**IMPORTANT:** while diving, be equipped with a depth gauge, a manometer, a diving timer or watch and decompression tables. Always make sure that your diving cylinders' pressure is the correct one for the planned dive and, while diving, often check the quantity of air in the cylinder, using the manometer.

**DANGER:** DO NOT DIVE AT HIGH ALTITUDES BEFORE SETTING THE CORRECT ALTITUDE LEVEL. ONCE SET, PLEASE CHECK THE ALTITUDE LEVEL ON THE DISPLAY. REMEMBER THAT DIVING AT ALTITUDES HIGHER THAN 3000 M ABOVE SEA LEVEL INVOLVES A REMARKABLE INCREASED RISK OF DECOMPRESSION SICKNESS.

**DANGER:** BEFORE AN AIR TRAVEL, PLEASE WAIT UNTIL THE "NO FLY TIME" ICON ON YOUR COMPUTER DISPLAY HAS DISAPPEARED.

**IMPORTANT:** The use of this device is strictly personal; the information it supplies refers, in fact, exclusively to the individual who has used it during a dive or a series of dives.

**DANGER:** CRESSI DOES NOT RECOMMEND THE USE OF THIS DEVICE FOR DECOMPRESSION DIVES. IF, FOR ANY REASON, THE NO-DECOMPRESSION LIMITS HAVE BEEN EXCEEDED, THE GIOTTO COMPUTER WILL DISPLAY ALL THE INFORMATION RELATED TO DECOMPRESSION, ASCENT AND SURFACE INTERVAL TIMES.

**IMPORTANT:** do not dive using Nitrox mixtures without having personally checked the contents and the correct percentage of O2 (FO2). After doing so, set your computer with this value related to the mixture so that it may process the decompression computations. Remember that the computer does not accept FO2 decimal figures.

**IMPORTANT:** Before diving, check device parameter settings.

**DANGER:** Giotto always keeps the latest oxygen setting. It is very important for diver's safety to always check this parameter before each dive.

**DANGER:** CRESSI DISCOURAGES NITROX DIVES WITHOUT PROPER TRAINING. NITROX DIVES WILL EXPOSE THE DIVER TO RISKS DIFFERENT FROM THOSE OF AIR DIVES, INCLUDING SERIOUS PHYSICAL DAMAGES AND, IN EXTREME CASES, EVEN DEATH.

**DANGER:** FOR SAFETY REASONS, THE GIOTTO COMPUTER USES THE FACTORY SET LIMIT OF PO2 SET AT 1.4 BAR EVEN FOR AIR DIVES. IF YOU NEED TO INCREASE THE SAFETY MARGIN, YOU CAN SET PO2 TO LOWER VALUES, UP TO 1.2 BAR, WITH REDUCTIONS OF 0.1 BAR.

**IMPORTANT:** after a dive with Giotto in Gage mode (depth gauge-timer), the device will not make saturation and desaturation calculations for the next 48 hours.

**IMPORTANT:** avoid all high-risk profile dives, such as the so-called "yo-yo" dive, reversed profile dives, or repetitive dives in the same day or in consecutive days. They are potentially risky activities and involve a high risk of decompression sickness!

**IMPORTANT:** Currently, no validated scientific literature allows diving more than twice a day for periods of one or more weeks without the risk of decompression sickness. For your own safety, it is important to avoid diving for more than two times a day. It is recommended to take a rest of at least 2 hours between two subsequent dives. The next/repetitive dive shall be shallower and its minimum duration shall be of 15 minutes.

**IMPORTANT:** please use the most conservative safety factor (SF1 and SF2) any time you are aware of factors that might increase the risk of decompression sickness. By doing so, you will dive in and safe way.

**REMARK:** in case of air travel, the device must be stored in the pressurised cabin.

**REMARK:** Cressi reminds that all sport dives must be conducted within the no decompression limits and at

a maximum depth of 40 m, limit of sport dives. Exceeding these limits dramatically increases the possibility of decompression sickness.

As a result of technological advancements, Cressi reserves the right to modify the device without prior notification.

**Introduction.**

The computer Giotto by Cressi is a recreational advanced tool. It will provide all the necessary information as regards depth, dive times, possible need of decompression, ascent rate and all the surface intervals between dives. Nitrogen absorption and release is continuously processed by its sophisticated software, taking into account the quantity of inert gas contained in the different mixtures that can be used. This information is shown on the device's large display thanks to the PCD (Priority Compartment Digit Display) system that allows an easy and direct "dialogue" between the diver and the computer, ensuring a clear understanding of all the data needed at any given time and a perfect readability in any situation. The computer is provided with clock and calendar and a versatile dive memory (logbook). The mathematical model of Giotto can make saturation and desaturation calculations of dives carried out both with air and with nitrox in any moment of the dive. In this last case you can set all the parameters related to the mixture of our dive: from the maximum allowed PO2 value (between 1.2 bar and 1.6 bar), to the mixture's oxygen percentage (FO2): between 21% and 99% of O2. Additionally, the device may be set by the user for either metric (m-°C) or feet system (ft- °F).

Giotto computer can be connected to a personal computer by means of the Cressi interface (accessory) and the related software (accessory). It is very important to carefully read this user manual and to perfectly understand the meaning, otherwise serious damage can be caused to your health. This manual is intended to guide the user to comprehend all the functions of the computer before using it in diving. The Giotto computer by Cressi is always off; you can turn it on by pressing any key, while diving it automatically activates at a depth higher than -1,2 m. Once switched on, the display shows the PRE DIVE mode and the different functions are always set by means of the push-buttons, as seen below.

In order to understand all the computer's functions and their meaning, the manual is divided into five main chapters, dealing with every possible use:

- 1 - General instructions and safety measures
- 2 - Computer control
- 3 - Before diving
- 4 - While diving
- 5 - On surface after diving
- 6 - Care and maintenance



# COMPUTER CONTROL

## OPERATION OF GIOTTO COMPUTER

Giotto computer is provided with a user friendly display, which “accompanies” the diver during any operation. By pressing the right (>) and left (<) buttons you can access the varied Giotto menu and clearly display them in the alphanumeric display.

By pressing any of the three buttons Giotto turns on and the PRE DIVE screen appears. This screen displays the following data:

- Oxygen partial pressure
- Type and percentage of respiratory mixture used (Air or Nitrox)
- Maximum depth which can be reached with the previously set parameters.
- Dive safety factor (SF/0/1/2)
- Altitude level (if set)
- GAGE function (if set)
- Battery charge level
- Current time

By keeping the left (<) button pressed during PRE DIVE function the screen will light up.

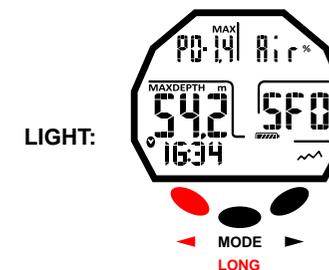
By pressing then the right button you can scroll down the main menu which displays, in turn, 10 sub-menus of the screen:

- 1) LOG-00: It is the logbook and the number next to “LOG” is the dive number.
- 2) MODE-S allows you to choose the most suitable mode according to the dive represented by the word “Air” for air dive, or “Nitrox” for dives with hyper-oxygenated mixture(s).
- 3) DIVE-S: The DIVE-SET allows you to set the dive parameters whether it is air dive, Nitrox dive or dive with two hyper-oxygenated mixtures, according to the previously set mode in the MODE-S menu.
- 4) TIME-S: The TIME-SET menu is used to set date and time.
- 5) PLAN: Used for planning dives with manual scrolling of depth.
- 6) GAGE: With the GAGE setting Giotto computer acts as a timer and depth gauge and does not calculate decompressions.
- 7) PCLINK: It allows the connection of GIOTTO interface to a personal computer.
- 8) HISTORY: This mode displays dive history.
- 9) SYSTEM: In this menu, you can set the unit of measurement of the computer and RESET it.
- 10) PRE DIVE: It is the main screen of the GIOTTO computer, as well as the initial, and it is different from the others since it displays the time represented by the clock icon on the bottom at the screen. It allows a quick representation of the previously set parameters.

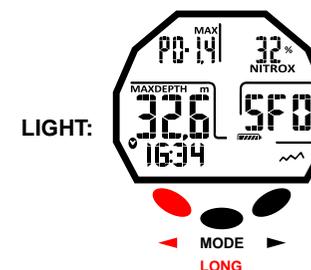
To access the sub-menu (except history and pc-link) press and hold the central Mode button. In this way, by pressing the right (>) key you move forward and by pressing the left (<) key you go back to the menu scrolling through the data contained in it. To exit, simply keep the central key (Mode) pressed or wait until the Giotto computer goes back to the first screen of the automatic menu. The setting of the device is automatic or by keeping the Mode key pressed for some seconds until hearing an acoustic signal of confirmation.

All the operations available for each mode of the display will be explained in this manual.

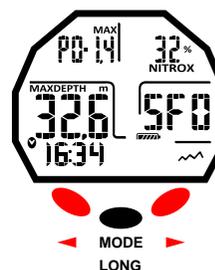
### PRE AIR DIVE SCREENS



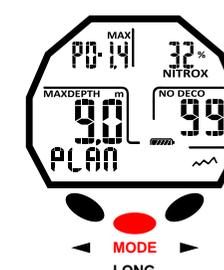
### PRE NITROX DIVE SCREENS



### COMPUTER MENU



- LOG-23
- MODE-S
- DIVE-S
- TIME-S
- PLAN
- GAGE
- PCLINK
- HIST.
- SYSTEM



INDEX **BEFORE DIVING**

**SET MODE: Setting of dive mode.**

Once switched on, the computer is in PRE DIVE screen mode. The settings for the next dive are displayed here. The parameters can be changed by repeatedly pressing the right (> to scroll the menu) or left (< to go back to the menu) key until the screen shows the MODE SET (MODE-S) and setting the AIR or NITROX mode according to the type of dive you want to perform. Giotto allows, in fact, all types of dives, Air dive, Nitrox dive, and dives with two different hyper-oxygenated mixtures selected, if previously set, in any moment of the dive.

**MODE-S AIR**

In this mode you can dive using only air with partial oxygen pressure set in a standard value of 1.4 bar. Once you choose this mode, by accessing the next menu DIVE SET (DIVE-S) you will be able to modify only the Deep Stop, Safety Factor (SF) and Altitude (Alt) settings.

**MODE-S NITROX**

In the NITROX mode you can dive using one or two hyper-oxygenated mixtures MIX1 and MIX2. Once this mode is selected, you can access the next menu DIVE SET (DIVE-S) to modify MIX1 for the first mixture or bottom mixture and then MIX2 for the secondary mixture or decompression respectively. Mix1 is the main mixture, the one we can use for all type of dives or simply for the descent, deep end and partial ascent phase and it can be set with values between 21% and 50% with O2 variations of 1%. Mix2 is the secondary mixture or decompression mixture, the one we can use in the ascent phase where the stop is carried out and it can be set with values between 21% and 99% with O2 variations of 1%. To dive with one Nitrox mixture it is enough to set only the parameters of Mix1 and use such mixture during the whole dive.

To dive with two mixtures, you have to set the parameters for both mixtures (Mix1 and Mix2) taking into account (as said before) that Mix1 is the bottom mixture and Mix2 is the decompression mixture. During dive when the depth allows it, you will be able to change the mixture in the mode described in the "dive with nitrox: gas switching" paragraph.

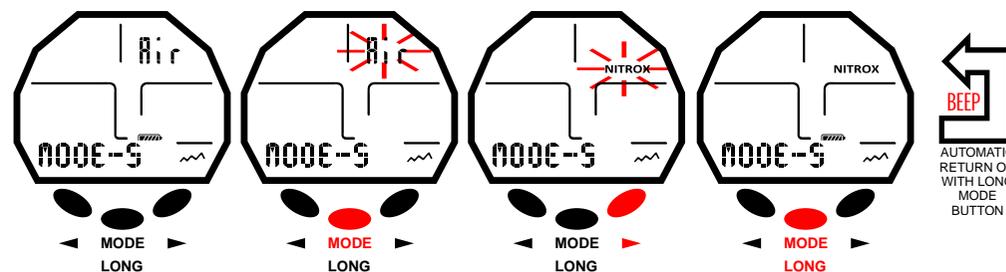
The other accessible settings in DIVE-S once entered in NITROX mode are:

- Mix1 and eventually Mix2 Partial Oxygen Pressure (PO2) setting;
- Mix1 and eventually Mix2 Percentage or Fraction of Oxygen (FO2) setting;
- Dive safety factor (SF);
- Altitude (Alt.);
- Deep Stop.

**DANGER:** Cressi discourages diving with gaseous mixtures other than air without proper training. The use of "technical" multi-gas mixtures may expose the diver to different risks than those of recreational diving, including serious physical damages and, in extreme cases, death.

**IMPORTANT:** If the screen displays the battery icon with a single segment on, the computer MUST NOT be used. The battery can be replaced by the user, as we shall see in the corresponding chapter. To set the MODE-S NITROX mode, press the central key MODE after having selected the MODE SET (MODE-S) menu. Therefore, by pressing either the right (> or <) key, the flashing word Air shown on the upper right corner of the display will be replaced with the word NITROX. Then, confirm the value set by keeping the central key pressed to return to the main menu (after an acoustic signal) and if it is still on, the computer will shut down. If you do not press the central key Mode as described, the computer will modify the setting in automatic mode by emitting an acoustic signal to return to the main screen, then, it will automatically shut down.

MODE-S MODE



**DIVE-SET MODE: Diving parameters setting.**

Once the MODE SET (MODE-S) menu is set in AIR or NITROX mode you can modify the parameters by accessing the next menu DIVE SET (DIVE-S).

**IMPORTANT:** If the screen displays the battery icon with a single segment on, the computer MUST NOT be used. The battery can be replaced by the user, as we shall see in the corresponding chapter.

**IMPORTANT:** Once changing from NITROX SET MODE to AIR SET MODE, the parameters of both Mix1 and Mix2 return to the values 21% (FO2) and 1.4 bar (PO2).

**PARTIAL OXYGEN PRESSURE (PO2)**

Giotto is factory set with a Partial Oxygen Pressure (PO2) value of 1.4 bar both for the air dives and Nitrox dives with one or two mixtures (Mix1 and Mix2) in order to ensure the maximum safety during any type of dive. However, the PO2 can only be modified if the computer is set in NITROX SET MODE in values between 1.2 bar (included) and 1.6 bar (included) with variations of 0.1 bar. In case you need to increase the safety margin of the dive, it will be possible to set PO2 to lower values, up to a minimum of 1.2 bar.

**Mix1 Partial Oxygen Pressure (PO2) setting.**

Press the right (>) button to move up to dive set mode (DIVE-S). Enter in this mode by pressing the central button (Mode) and the partial oxygen pressure (PO2) indication and the Mix1 indicator will flash. Now press the central Mode button. The display will show just the highlighted item, flashing together with the corresponding maximum operating depth. Set the desired values (between 1.2 and 1.6 bar, with variations of 0.1 bar) by pressing the right or left button (> or <). Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**Mix2 Partial Oxygen Pressure (PO2) setting.**

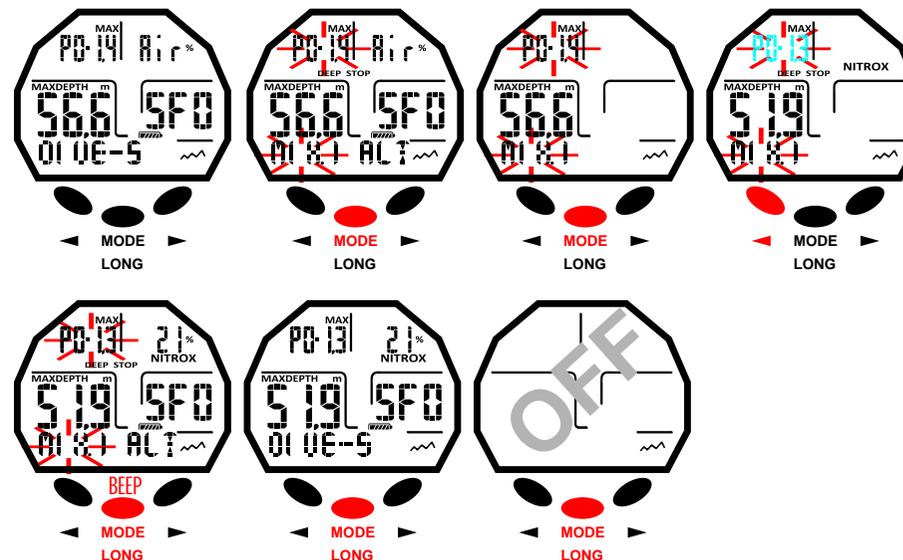
Press the right (>) button to move up to dive set mode (DIVE-S), enter in this mode by pressing the central button (Mode). The indication of the partial oxygen pressure (PO2) and the Mix1 indication will flash. Press the right (>) button twice. The word Mix2 will appear together with the PO2 value. Now press the central Mode button. The display will show just the highlighted item, flashing together with the corresponding maximum operating depth. Set the desired values (between 1.2 and 1.6 bar, with variations of 0.1 bar) by pressing the right or left button (> or <). Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**IMPORTANT:** the computer maintains the PO2 setting until it is manually reset by the diver on different values or until the MODE-S menu is set in AIR.

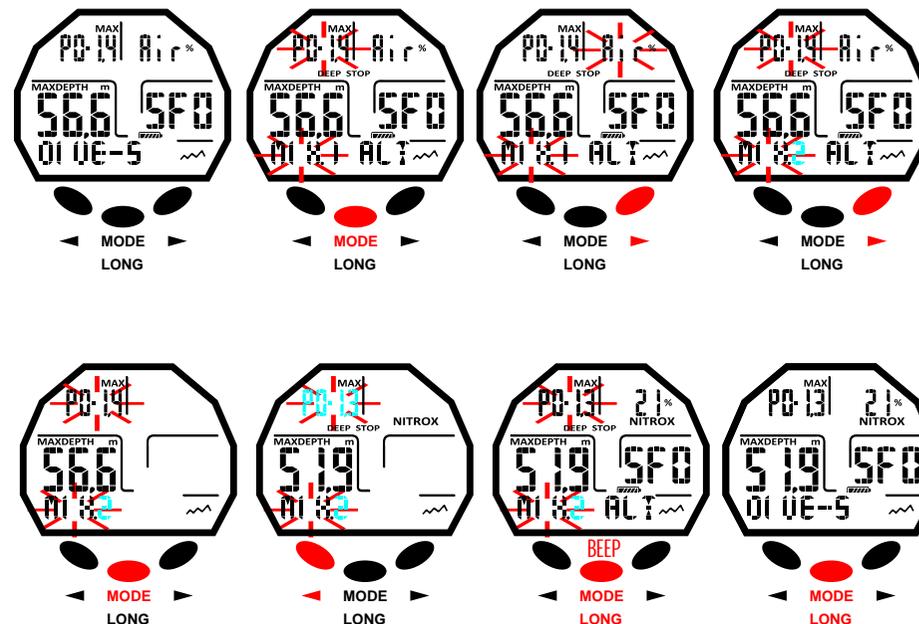
**REMARK:** By varying the maximum PO2 set and the percentage of oxygen in the FO2 mixture, the computer indicates the maximum depth which may be reached.

**IMPORTANT:** The PO2 is set by the manufacturer on the default value of 1.4 bar, for both air dives and Nitrox dives. This way, the safety of the diver is ensured by following the most conservative values recommended for sport dives. However, you can select another PO2 value, as indicated in the chapter on Nitrox dives. The value set will be saved in the computer until the diver resets it or until the MODE-S menu is set in AIR.

**MIXTURE 1- PO2 MIX1 PARTIAL OXYGEN PRESSURE SETTING**



**MIXTURE 2- PO2 MIX2 PARTIAL OXYGEN PRESSURE SETTING**



**INDEX** **NITROX – PERCENTAGE OF OXYGEN (FO2)**

The percentage of oxygen FO2 can be changed only when the computer is set in SET NITROX MODE. With this setting you can decide the type of dive: with air (Dive Air Program), with fraction of oxygen at 21%, or using one or two Nitrox hyper-oxygenated mixtures (Dive Nitrox Program).

**Mix1 percentage of oxygen (FO2) setting.**

To set the correct percentage of Oxygen contained in the Nitrox mixture, press the right (>) button to move up to the DIVE-S mode. Enter in this mode by pressing the central Mode button. The indication of the partial oxygen pressure (PO2) and the Mix1 indicator will flash. Press the right (>) button. The indicator of the percentage/fraction of oxygen (FO2) will flash. Press the right (>) button. The display will show just the highlighted item (FO2), flashing together with the corresponding maximum operating depth that can vary by pressing the right or left (> or <) button of the device. Once the desired setting is reached (values between 21% and 50% with variations of 1% of O2), confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**REMARK:** The percentage of oxygen FO2 set in the Mix1 is between 21% and 50%.

**Mix2 Percentage of Oxygen (FO2) setting.**

To set the correct percentage of Oxygen contained in the Nitrox mixture, press the right (>) button to move up to the DIVE-S mode. Enter in this mode by pressing the central Mode button. The indication of the partial oxygen pressure (PO2) and the Mix1 indication will flash. Press the right (>) button three times until you see the word Mix2 flashing and the indicator of the Mix2 percentage/fraction of oxygen. Press the central Mode button. The display will show just the highlighted item (FO2), flashing together with the corresponding maximum operating depth that can vary by pressing the left or right button of the device. Once the desired setting is reached (values between 21% and 99% with variations of 1% of O2), confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**REMARK:** The percentage of oxygen FO2 set in the Mix2 is between 21% and 99%.

**REMARK:** The Giotto computer is factory set on the MODE-S AIR dive program (air with PO2 1, 4). To be able to access the Nitrox parameters you need to set the MODE-S menu in position NITROX. Mix1 and Mix2 contain FO2 at 21% and the PO2 at 1.4 factory set by default.

**REMARK:** If the computer is set in NITROX MODE-S and the default values of MIX1 and MIX2 are modified, such values remain set and active until it is changed to MODE-S AIR. In this case these values will restart from the default values.

**REMARK:** By varying the FO2 the computer indicates the maximum depth which may be reached with that mixture, depending on the PO2 value set.

It is possible to change the setting of the Nitrox mixture also during the surface interval (with desaturation in progress), but only after 2 minutes from the start of the interval.

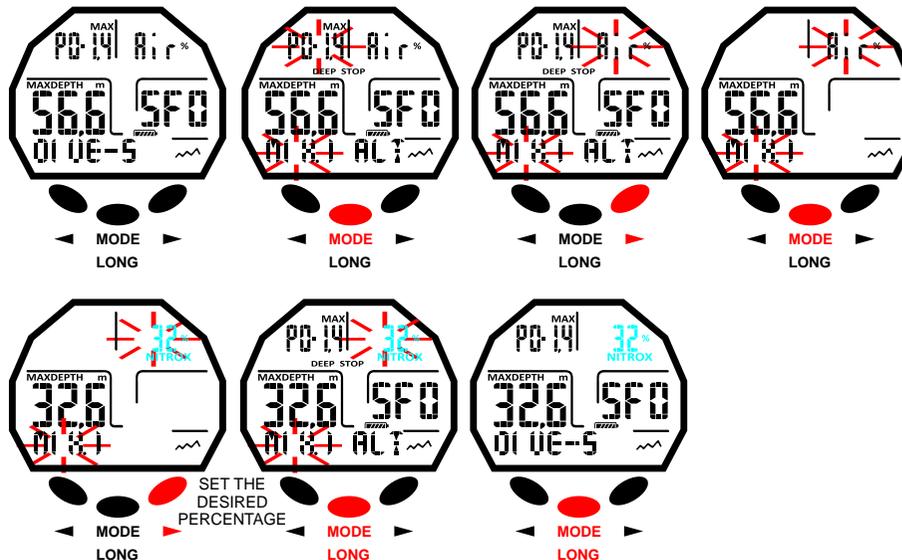
This is a very important feature, especially for divers who perform a series of subsequent dives, which allows them to change the mixture after having dived without having to wait for complete desaturation.

**IMPORTANT:** Once the percentage of oxygen FO2 is set, it remains active and memorised in the computer until it is modified again or until the MODE-S menu is set in AIR.

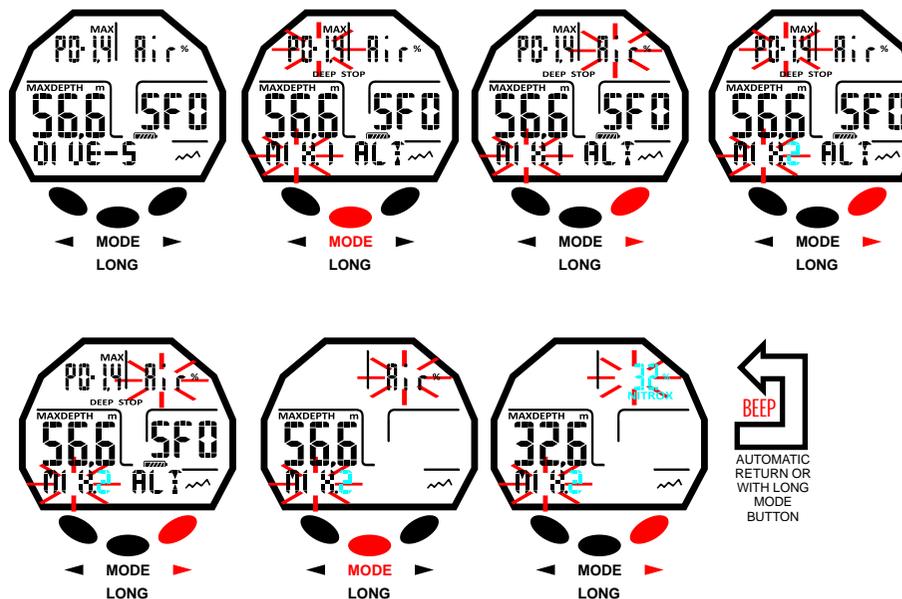
**DANGER:** With the NITROX MODE-S Giotto always keep the last percentage of oxygen set. It is very important for the diver's safety to always check this parameter before each dive.

**DANGER:** If you perform a repetitive dive after a Nitrox dive, it is fundamental for one's safety to check the

**OXYGEN FRACTION MIXTURE 1 SETTING- FO2 MIX1**



**OXYGEN FRACTION MIXTURE 2 SETTING- FO2 MIX2**



type of mixture contained in the cylinder and to set the FO2 of the computer according to that mixture.

**DANGER:** Do not dive with cylinders containing nitrox mixtures whose percentages of oxygen have not been personally checked.

**DIVE SAFETY FACTOR (SF)**

The safety factor is an additional parameter whose purpose is to make dives safer based on the existence of personal risk factors which increase the risk of decompression sickness. The diver can set it on three values: SF0/SF1/SF2. The factory setting is SF0, i.e. disabled.

To change the Safety Factor (SF) press the right (>) button up to the DIVE-S mode. Enter in the menu by pressing the central Mode button. Scroll with the right (>) or left (<) button until the SF0 indicator stops flashing. Press the central Mode button and change the element with the right (>) or left (<) buttons. Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**IMPORTANT:** Enable and set a higher factor (SF2/SF3) whenever you are aware of conditions which may increase the risk of decompression sickness. In this way, the non decompression times will be shorter as well as the dive which will also be more conservative, ensuring greater safety.

**DEEP STOP**

There are different diving teaching methods and decompression theories. Each of those has been developed according to important scientific concepts, lab tests and practical tests. Some of those, during specific dives, support and require DEEP STOP, while others do not contemplate this type of decompression profile. Giotto is factory set with DEEP STOP active. If you want to disable it, just press the right (>) button until you reach the DIVE SET menu; press the central Mode button to enter in the mode. Scroll with the right (>) or left (<) button until the DEEP STOP indicator stops flashing. Press the central Mode button. The word DEEPST ON will be displayed (this last indicator will flash). By pressing the right (>) or left (<) button the word DEEPST OFF will appear. Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**ALTITUDE**

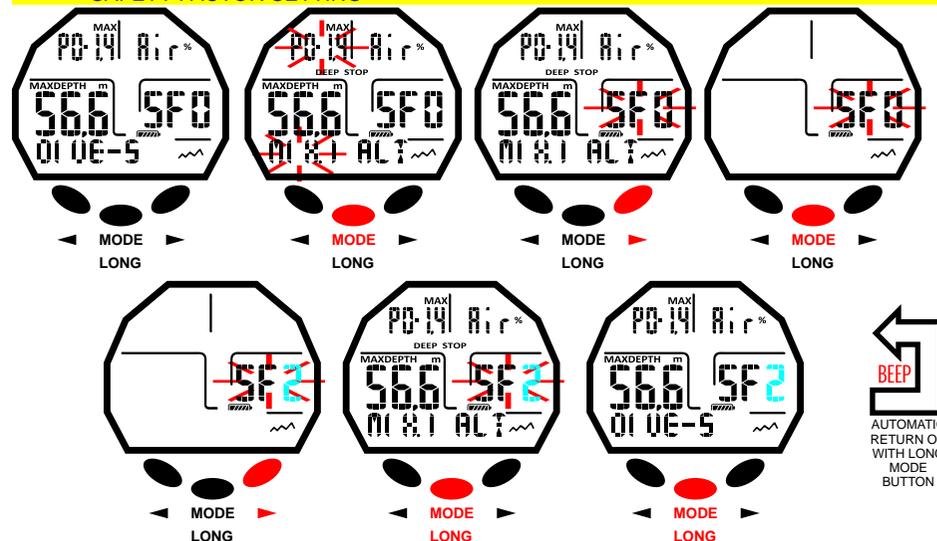
When diving at a location above sea level, it is important to check that the appropriate altitude level has been set. Press the right button to move up to dive set mode DIVE-S, enter in this mode by pressing the central Mode button. Scroll with the right or left button until the ALT indicator stops flashing. Therefore, press the central Mode button and change the data with the right/left button, in order to visualise the data in ascending or descending order one, two or three small mountains that symbolise the altitude level chosen. Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

The screen shows the corresponding altitude levels, indicated as follows:

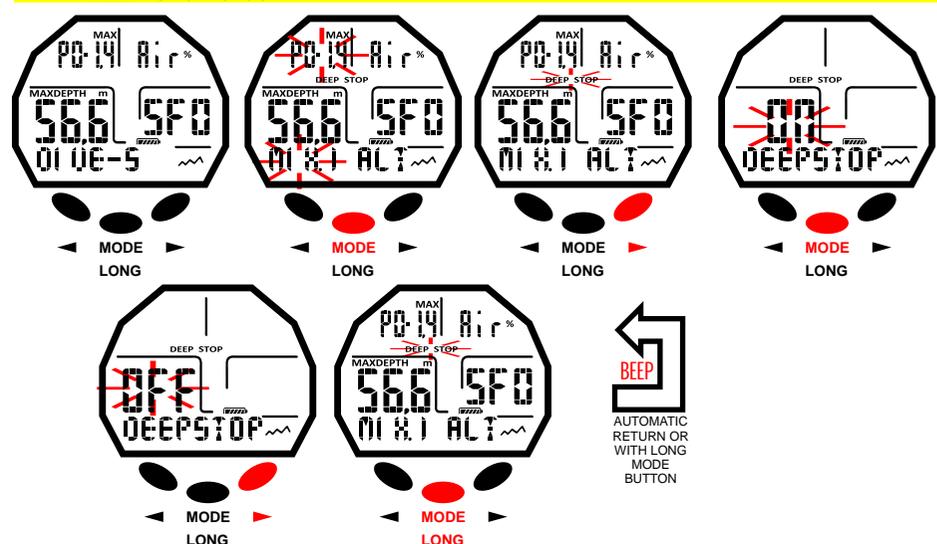
- No mountain - from 0 to 700 m
- One mountain - from 700 to 1,500 m
- Two mountains - from 1,500 to 2,400 m
- Three mountains - from 2,400 to 3,700 m

Each icon indicates that the computer has automatically changed its mathematical model depending on the altitude set. This must obviously correspond to the real altitude reached, and must be comprised in the altitude level intervals of the computer (none, one, two, or three mountains). It is important to remember that when diving at higher altitudes (higher than normal) the body experiences alterations due to nitrogen oversaturation which must rebalance with the external environment. In the same way, it is important to remember that, due to lower partial pressure of the oxygen in the atmosphere, our body needs an

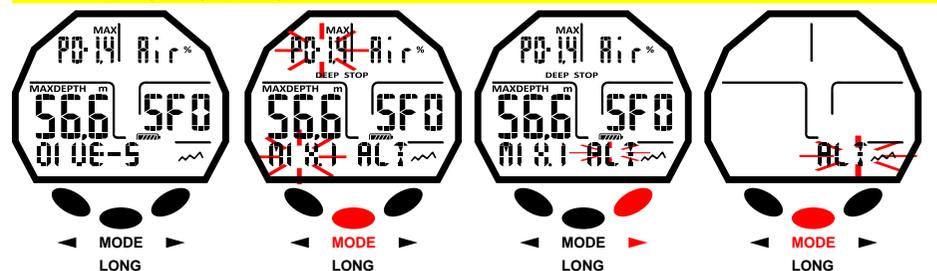
**SAFETY FACTOR SETTING**



**DEEP STOP ON/OFF**



**ALTITUDE SETTING**



INDEX

acclimatisation period. It is therefore recommended to wait at least 12/24 hours after arriving at a location above sea level before diving.

**DANGER:** Giotto does not automatically handle dives at a location above sea level. Thus, it is mandatory to correctly set the altitude level and to respect the acclimatisation period before diving.

**DANGER:** Diving at altitudes greater than 3,000 m above sea level, involves an increased risk of decompression sickness.

**PLAN MODE: Dive planning.**

While on surface, you can access the PLAN function in order to visualise, depending on the mixture used (Nitrox or Air), the remaining time available at different depths (no-decompression limits). The values are given both for the first of a (possible) series of dives and during the surface interval between two or more subsequent dives; in such case Giotto takes into account the residual nitrogen, therefore reducing the times within the no decompression limits. To access the PLAN MODE, once the computer is on, press the right (>) button until PLAN is displayed. Then, press the central Mode button. The screen displays the values of the no decompression limits (no decompression times) related to the different depths between 9 m and 48 m, with manual steps of 3 m achieved by pressing the right or left (> or <) button. Keep the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep the central button pressed and the computer will shut down.

**REMARK:** The PLAN function will be switched off if the computer shows Error or in the case it is set in the GAGE function.

**GAGE MODE: depth gauge and timer.**

Apart from the S-AIR MODE and S-NITROX MODE, the computer is provided with a third program called GAGE (depth gauge and timer) that may be used for both apnea divers and for the use in "technical" dives. In this case, the device just provides the dive basic parameters, i.e. depth and dive time. It does not make tissue saturation and desaturation computation, which must be programmed and calculated by means of proper software and/or tables. For such ends, Cressi reminds that all sport dives must be conducted within the no decompression limits and at a maximum depth of 40 m (limit of sport dives). Exceeding these limits dramatically increases the possibility of decompression sickness!

**IMPORTANT:** The Giotto computer is designed for sport diving only and not for commercial or professional use which require longer dive times and greater depths, consequently increasing the risk of decompression sickness.

**DANGER:** Cressi discourages diving with gaseous mixtures other than air without proper training. The use of "technical" multi-gas mixtures may expose the diver to different risks than those of recreational diving, including serious physical damages and, in extreme cases, death.

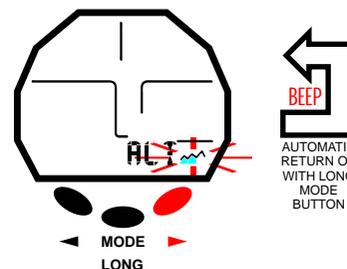
**IMPORTANT:** after a dive in GAGE mode, the device will not make saturation and desaturation calculations for the next 48 hours.

**DANGER:** Should you decide to reset the device by accessing the system mode, the nitrogen memory will be cancelled. Therefore, the device will not be able to calculate the following dive. Before using this function, wait for at least 48 hours after the last diving activity.

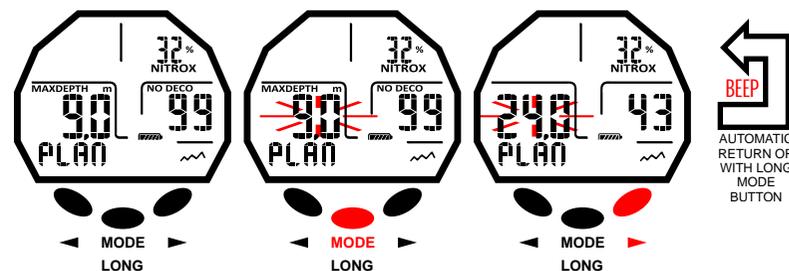
To access the GAGE program, press the right (>) or left (<) button until "GAGE" screen is displayed, then press the central Mode button. The word OFF/ON will flash. By pressing the right (>) or left (<) button the Gage program will be connected or disconnected (ON/OFF).

When the Gage function is active, the MODE-S, DIVE-S and PLAN mode are disabled and on the lower right section of the display it will appear the "G" icon.

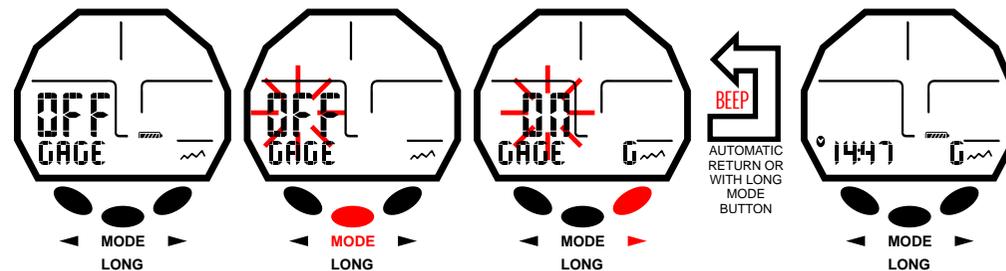
**REMARK:** the Giotto computer is factory set on the SET (MODE-S) AIR MODE function.



**PLAN MODE**



**GAGE MODE**



**REMARK:** the depth sensor provides indications between 0 and 120 m.

**TIME SET MODE:**

**Date and time adjustment.**

Press the right button until you see TIME SET mode on the display, then press the central Mode button. The digits of the year start flashing. Then, press the right (>) or left (<) button to set month, day and 12/24 hours settings. Scroll up to the desired setting and press the Mode button. The display shows just the highlighted item, flashing. Change it by pressing the right (>) or left (<) button. Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**REMARK:** To store exact information in the computer logbook, remember to check for correct time and data settings.

**SYSTEM MODE:**

**Units of measure setting.**

The Giotto computer can make the calculations by metric units (depth expressed in metres and temperature expressed in °C), or in imperial units (feet and °F). To change the unit of measurement, press the right (>) or left (<) button up to SYSTEM mode, then press the central Mode button until the word "S.UNIT" (set unit) is displayed with the indication °C/m or °F/ft. Then, press the central Mode button. The indications start flashing. To change them, press the right (>) or left (<) button. Confirm the value set by keeping the Mode button pressed for a few seconds until hearing an acoustic signal to confirm exit from the menu. Keep pressing and holding the central button to return to the main menu (after another acoustic signal) and if it is still on, the computer will shut down. Alternatively, the computer will modify the automatic setting by issuing an acoustic signal to return then to the main screen, and then it will automatically shut down.

**Device reset (Desaturation resetting).**

To carry out the desaturation resetting of the device, press the right (>) or left (<) button up to SYSTEM mode, then press the central Mode button until the word "S.UNITS" (set units) is displayed with the indication °C/m or °F/ft. By pressing the right (>) or left (<) button the word "S.RESET\_NO" (system reset) will be displayed. Press the central Mode button. The word WILL NOT flash. Then, by pressing the right (>) or left (<) button the word YES will appear. Now press the Mode button. The word "SURE?\_NO" will appear. By pressing the right (>) or left (<) button the word "YES" will appear. Press the central Mode button and wait for a sound signal; dots and the word "DONE!" are displayed to confirm that the resetting of the device has been made. Then, it will return to the main screen.

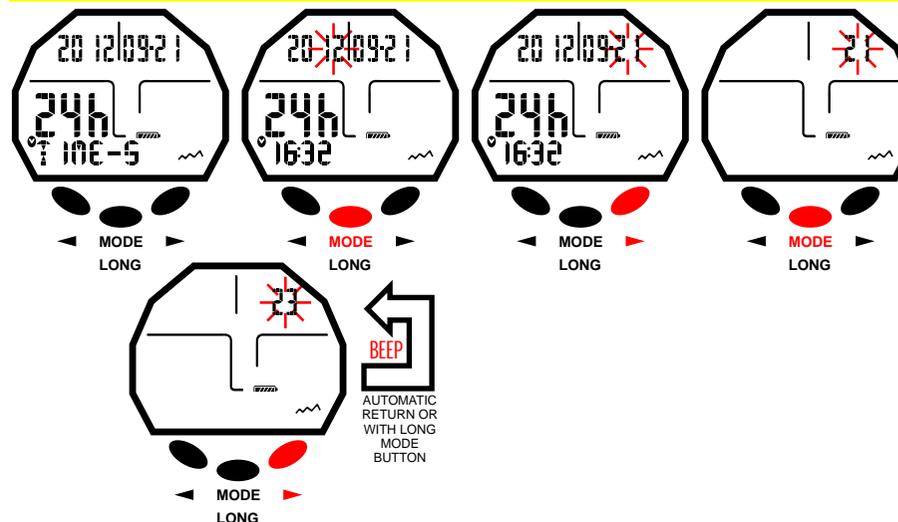
With the reset function, all the calculations related to desaturation eventually in course are set to zero.

**REMARK:** Dive logbook, profile and historic memory remain stored in the memory even after the device's reset.

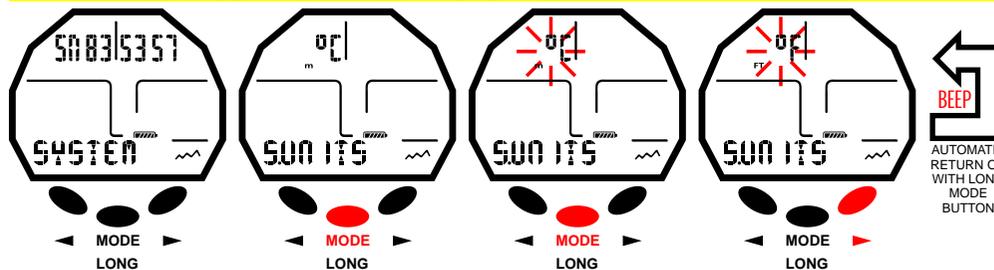
**REMARK:** This function may be especially useful in case of device's renting by Diving Centres.

**DANGER:** Do not reset your device if it has to be used to calculate subsequent dives!

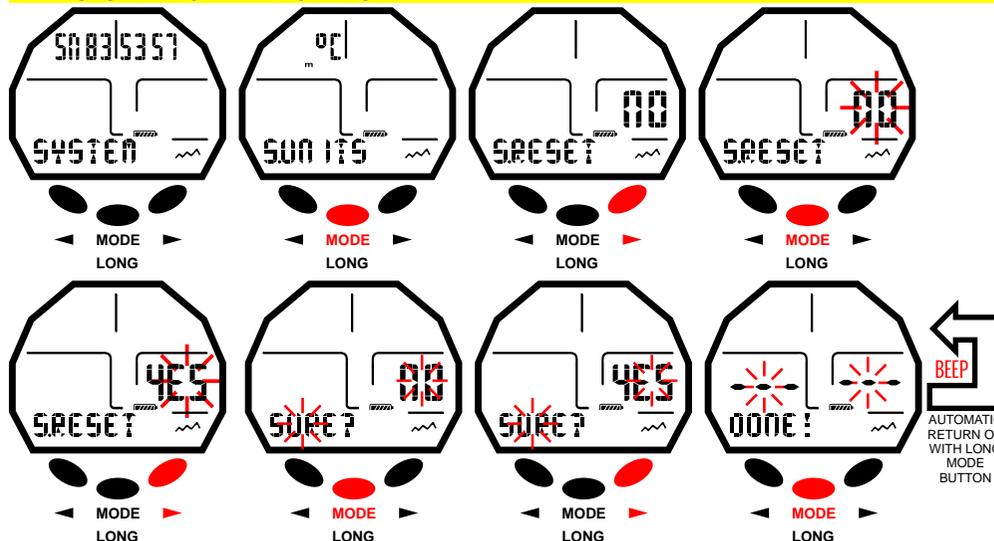
**TIME SET MODE**



**SYSTEM MODE: UNITS OF MEASUREMENT SETTING**



**SYSTEM MODE: DEVICE RESET**



# WHILE DIVING

## COMPUTER FUNCTIONS

The Giotto computer is turned on by pressing any button and can be set in three diverse modes:

- 1) **AIR DIVE MODE** if dives are performed with air and you want to use a decompression computation.
- 2) **NITROX DIVE MODE** if dives are performed with Nitrox and you want to use a decompression computation.
- 3) **GAGE** if you do not want to use a decompression calculation but you have the time and depth indications.

**REMARK:** The Giotto computer is factory set on the AIR DIVE MODE function for air dives with the PO2 pressure set on 1.4 and the FO2 fraction of the oxygen set on 21%. To set FO2 values different from Air 21% activate the NITROX DIVE MODE.

**REMARK:** In case the computer does not turn on, this will automatically activate at a depth superior to 1.2 m in a maximum time of 20 seconds.

## DIVING WITHIN NO DECOMPRESSION LIMITS

### AIR DIVE MODE FUNCTION: Dive with air.

When set in AIR DIVE MODE, during a dive within the no-decompression limits, the display will show the following information:

- 1) Current deep value (Depth m.).
- 2) Non decompression time (No Deco min.).
- 3) Max depth reached (Max m.).
- 4) Elapsed dive time (Dive.T min.).
- 5) Ascent rate indicator.
- 6) Indicator or altitude level (if set).
- 7) Current temperature, expressed in °C or °F.

Further important information may be obtained by pressing the right (>) button during the dive and represent:

- 1) Maximum PO2 set.
- 2) Oxygen percentage of the selected mixture (Air if FO2=21% and PO2=1.4).
- 3) Maximum depth which can be reached depending on the maximum PO2 set.
- 4) The Safety Factor SF.

### NITROX DIVE MODE FUNCTION: Dive with Nitrox.

The Giotto computer keeps the setting of the percentage of Oxygen FO2 until the diver manually resets it to different values or until the DIVE MODE menu is set in AIR. It is important to understand that:

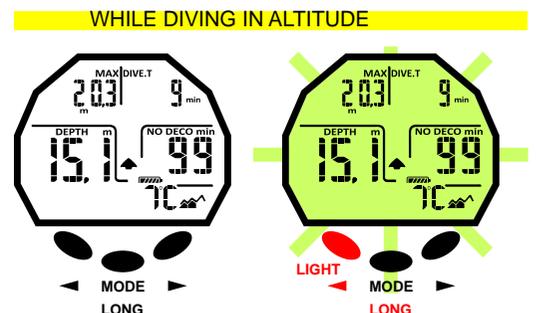
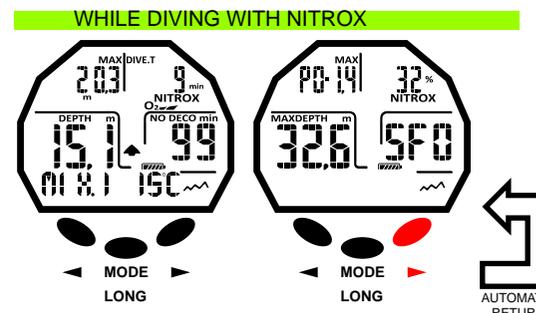
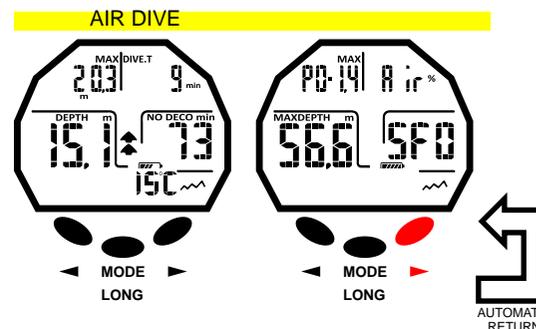
Artificial respiratory mixtures may expose the diver to significant risks, unless they are perfectly known, analysed and studied in all the aspects related to underwater diving activities. It is mandatory to understand that THE MIXTURE BEING BREATHED MUST BE EXACTLY EQUAL TO THE ONE SET ON THE COMPUTER. OTHERWISE, DECOMPRESSION AND TOXICITY INFORMATION provided by the computer WILL BE DANGEROUS FOR THE LIFE OF THE DIVER. Before, after, and during Nitrox dive, it is mandatory to verify the percentage of Oxygen so that it exactly corresponds to the one in the cylinder.

### BEFORE A NITROX DIVE.

The Giotto computer always keeps the AIR DIVE MODE program switched on, until the diver sets it for the use with Nitrox mixtures in NITROX DIVE MODE (chapter DIVE SET MODE: Dive parameters setting). In this case the display will show the Nitrox icon which will stay on during the dive and as long as Giotto remains set on NITROX MODE. Once the Nitrox program is on, you have to set the exact values of oxygen percentage (FO2) contained in the cylinder to be used during the dive, after having meticulously analysed its content, so the computer is able to adapt its computing algorithm to the new parameters.

**DANGER:** The use of the computer with hyper-oxygenated (nitrox) mixtures is exclusively intended for divers who have attended a full training course in the use of such mixtures.

**DANGER:** do not dive with cylinders containing nitrox mixtures whose percentages of oxygen has not been personally checked.



**IMPORTANT:** Check the FO2 value (percentage of oxygen) set on the computer prior to diving! This can be done on surface by means of the main screen PRE-DIVE and the DIVE SET screen which allow visualisation of the previously set parameters.

**IMPORTANT:** Under the same dive conditions, a Nitrox mixture requires longer no decompression times than air. It is recommended to comply with the maximum depth allowed by the selected Nitrox mixture.

**DIVING WITH NITROX**

During a Nitrox dive within the no decompression limits, all the information related to a standard dive with air will be provided, as well as:

- 1) Nitrox dive indicator
- 2) Graph representing CNS O2 toxicity level
- 3) Indicator of the mixture used, MIX1 or MIX2.

The second screen, after pressing the right button, displays the same settings as the DIVE AIR but, of course, concerning the nitrox mixture used in that moment (MIX1 or MIX2).

**CNS TOXICITY DISPLAY.**

The Giotto computer by Cressi is able to display a graph of the oxygen toxicity level for the Central Nervous System (CNS). This is related to the Partial Oxygen Pressure and to the time of the diver's exposure to high Partial Oxygen Pressure (PO2). The level of toxicity of the Oxygen is represented in the display column consisting of a 5-segment bar, which show the increasing amount of accumulated oxygen. When all the segments are lit up, it indicates that 100% of the maximum tolerance allowable to the CNS has been reached and serious danger of hyperoxia exists.

It is important to be able to constantly monitor this data that, being function of the Partial Oxygen Pressure and the time of exposition, should always be controlled. When the oxygen level reaches warning values, next to the maximum allowable toxicity (corresponding to 5 segments out of 5 lit up), the graph starts flashing along with the Nitrox writing and a temporary alarm starts sounding, showing the proximity of a CNS toxicity level. If the situation remains unchanged or if it worsens (100% of allowable toxicity), the bar and the writing continue to flash and the temporary sound alarm is repeated until, ascending, the Partial Oxygen Pressure decreases below 0.6 atmospheres. At this point, the graph stops flashing, yet the alarm is entered in the Logbook.

**REMARK:** The result of the oxygen pressure computation is approximated to the nearest whole number.

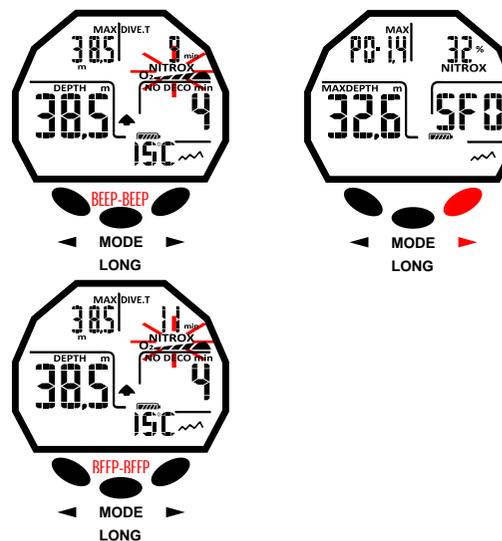
**DANGER:** do not use hyper-oxygenated mixtures in diving or decompression without having attended the related training course. The Nitrox Basic license enables to use just the standard hyper-oxygenated mixtures (Ean 32 and Ean 36, respectively called Nitrox 1 and Nitrox 2), within the non decompression limits.

**PO2 ALARM.**

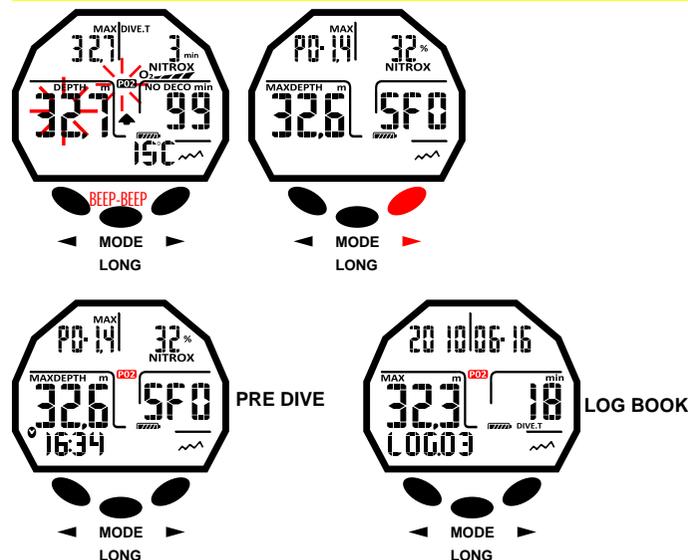
The computer is able to constantly monitor another basic parameter related to Oxygen: the O2 Partial Pressure value (PO2). Oxygen toxicity may be caused both by an excessive exposure (CNS toxicity, seen in the previous chapter) and by exceeding the maximum PO2, which is exceeding the maximum depth allowed by the mixture used. As already seen, the PO2 limit value is set by the diver in a range between 1.2 bar and 1.6 bar. Giotto considers the 1.6 bar value as the Partial Pressure maximum allowable limit and, according to the mixture used, automatically signals the maximum depth which may be reached. Remember that, even by using air, you may reach the oxygen toxicity level. This limit varies according to the PO2 set. Giotto is manufactured with a pre-set value of 1.4 bar, whose corresponding maximum depth is 56.6 m. Of course, you can set the computer on other PO2 values, up to a maximum of 1.6 bar as long as you are in the NITROX DIVE-S.

To warn the diver about the excess of PO2, the computer has an alarm. When reaching the limit depth related to the PO2 set (from 1.2 bar to 1.6 bar), a sound alarm will go off while the PO2 icon will be flashing indicating the current depth. As soon as you return to a depth shallower than the limit one, the sound alarm will stop; the current depth and the PO2 icon will stop flashing. The latter remains lit up during the residual part of the dive in the LOG BOOK and in the PRE DIVE screen.

**CNS TOXICITY DISPLAY**



**PO2 ALARM**



**INDEX** DIVING WITH TWO MIXTURES: GAS SWITCHING.

**BEFORE A GAS SWITCHING DIVE.**

The Giotto computer always keeps the AIR DIVE MODE program by default switched on, until the diver sets it for the use with two mixtures in NITROX DIVE MODE (chapter DIVE SET MODE: Dive parameters setting). In this case the display will show the Nitrox icon which will stay on during the dive and until Giotto does not change the setting again. You have to set the exact values of oxygen percentage (FO2) contained in the cylinders to be used during the dive, after having meticulously analysed its content, so the computer is able to adapt its computing algorithm to the new parameters.

**GAS SWITCHING DURING DIVE**

During the ascent, if the computer is set in the NITROX DIVE MODE, the MIX1 icon will flash as soon as it reaches the maximum operating depth (Mod) of the second mixture MIX2 to warn that from that position of lower height it will be possible to perform the gas switching. At this point to perform this operation you have to keep the central button pressed. In this way the word Mix1 will keep on flashing and in the position of the dive data appear the pressure (PO2) parameters set and the oxygen percentage (FO2) parameters of Mix1. By pressing the right button, the word Mix2 will appear with the parameters if the second mixture. By keeping the central button pressed the second mixture Mix2 setting is confirmed. In case the gas switching is not performed, to stop the flashing of the Mix1 icon, simply press the central button. During dive, the procedure to visualise the data of the mixture set Mix1 and Mix2 is similar to the one used for gas switching, i.e. keeping the central button pressed the word Mix1 will flash and the pressure (PO2) and percentage of oxygen (FO2) of Mix1 parameters set will be displayed. By pressing then the right button (>) or left button (<) the Mix1 data will be displayed.

**Remark:** The Mix1 main mixture icon will not flash in the cases in which during the descent the maximum operating depth of the second mixture Mix2 is not exceeded.

**DANGER:** In case the current depth is greater than the maximum allowable depth of Mix2 the Giotto computer will not allow the gas switching.

**ASCENT RATE.**

The ascent rate is shown on the display by an arrow indicator at the centre, operating according to the table in the figure alongside. If, during surfacing, the maximum allowed ascent rate is exceeded, the display will show at the same time the word SLOW and three arrows flashing and an alarm will sound. Under these conditions surfacing must be stopped until the SLOW icon disappears and the display returns to standard conditions.

**DANGER:** Surfacing too fast dramatically increases the risk of decompression sickness! Cressi recommends, at the end of each dive, a safety stop of 3 min at 5-6 metres, which will be assisted by the computer (see next chapter).

**SAFETY STOP**

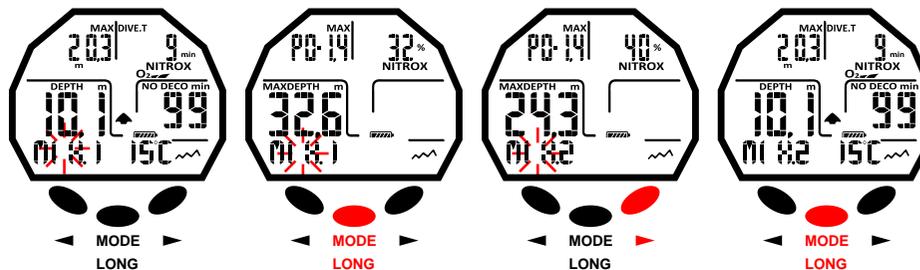
Giotto is programmed to automatically signal a safety stop after each dive at a depth greater than 10 m, as recommended by the training centres and the most recent studies on diving physiology. This stop should be carried out at a depth between 5 and 3 metres for 3 minutes.

The stop is indicated by the display with the STOP icon; the display, under this condition, clearly indicates the duration in minutes of the stop and the depth expressed in metres or feet. The safety stop is not mandatory, yet it is strongly recommended if, for instance, the maximum ascent rate is repeatedly exceeded. Cressi always recommends respecting it, in order to avoid safety issues.

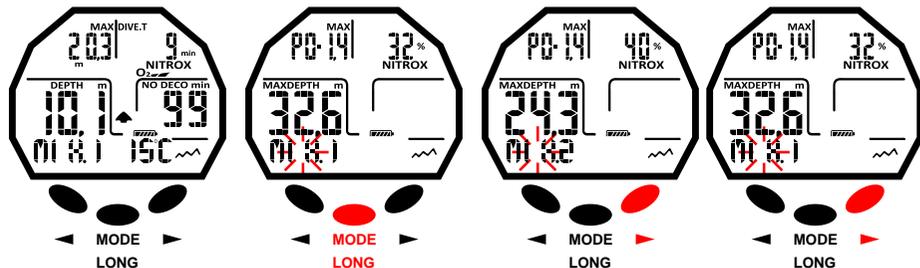
**REMARK:** During the safety stop, the maximum depth can be displayed by pressing the right (>) button.

**DANGER:** At the end of the safety stop, many divers are used to quickly reach the surface, sometimes even inflating the BCD. It is a serious mistake which may lead to decompression sickness. The last metres before surface are, in fact, the most critical and the percentage variations of the pressure are significant. The last section of the ascent to surface should be covered in no less than a minute.

**CHANGE MIXTURE WHILE DIVING**



**MIX1 AND MIX2 MIXTURES SETTINGS VISUALISATION WHILE DIVING**

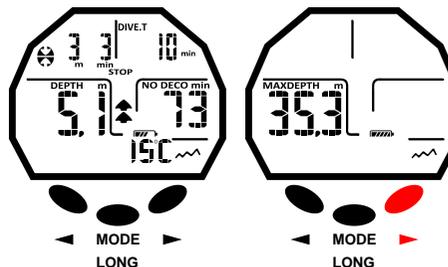


**ASCENT RATE**

0.0-3.9 m/min	4.0-7.9 m/min	8.0-11.9 m/min	12.0 m/min



**SAFETY STOP**



**DECOMPRESSION WARNING ALARM.**

Every time the time available within decompression, shown on the display by the NO DECO icon, decreases to 3 minutes, Giotto warns the diver by making the digits with the remaining minutes flash together with the word NO DECO and simultaneously emitting a sound alarm. In this situation, the no decompression limits are being reached and a decompression dive is required.

**DEEP STOP.**

In order to avoid the risks related to the micro bubbles formed during the ascent, Giotto is able to suggest a DEEP STOP of one or two minutes (in case of decompression dives) at variable depth depending on the dive profile. During the dive, if the profile requires it, DEEP STOP is displayed and an acoustic signal is issued. The stop icon with the depth and the time minutes is displayed. In case the dive omits the Deep Stop, the warnings will be deleted and the computer recalculates the ascent planning without that stop.

**REMARK:** Verify that the deep stop is enabled (see paragraph DIVE SET)

**REMARK:** In this case, the maximum depth can be displayed by pressing the right (>) button.

**DIVING OUTSIDE THE NO DECOMPRESSION LIMITS**

**DANGER:** do not use this device to dive beyond the no decompression limits! Cressi discourages the use of this device for decompression dives.

However, if during the dive, due to negligence or emergency, you have exceeded the no decompression limits, Giotto will provide specific information related to a correct ascent and to the decompression information.

Upon violating the limits, the computer will issue an audible alarm and the screen on the display will change to look as indicated in the following picture providing the diver with the following information:

- 1) Stop icon with the word DECO showing that the no decompression limits have been violated and that decompression must be performed. The arrow indicating UP will flash.
- 2) Depth of first decompression stage (the deepest), indicated in metres (m) or feet (ft). This can vary from a maximum of 24 m to a minimum of 3 m by steps of 3 m in 3 minutes.
- 3) Duration in minutes for the first decompression stage (the deepest).
- 4) TOTAL icon, indicating the total ascent time, that is the time required to ascend to the deepest stage, respecting the ascent rate, PLUS the stop time at that depth and any other subsequent stop (indicating the deep stop if necessary), PLUS the safety stop time, PLUS the time required to reach the surface after completing the decompression stages.
- 5) "DIVE.T" icon giving the total time spent while diving.

**REMARK:** In this case, the maximum depth can be displayed by pressing the right button.

**REMARK:** In case the deepest stage is a Deep Stop, by pressing the right key you will see, always on the right top corner, the depth and duration of the first stage, not Deep Stop.

**DANGER:** NEVER ascend above a decompression depth.

To avoid this situation, you should ascend at a depth slightly below the recommended decompression stop depth.

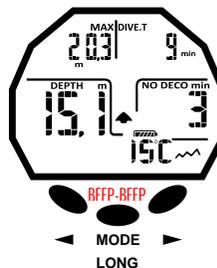
Please remember that under these conditions, the amount of air you need to complete your dive increases.

**Omitted decompression stage alarm.**

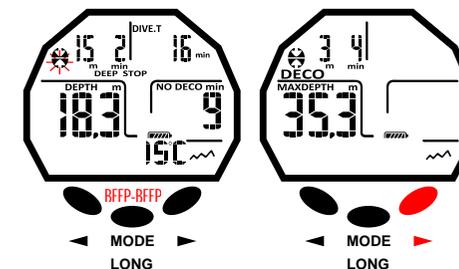
If, by any reason, the decompression stage is "forced" by surfacing above the depth given by the computer, an alarm will sound and the down arrow of the decompression icon will flash on the display until the diver descends back to the proper depth or below it. The computer allows a maximum time of 2 minutes to correct this dangerous situation, clearly marked by a continuous acoustic alarm. After 2 minutes without the diver descending to the proper depth, Giotto enters in the ERROR PROGRAM making the "STOP" icon flash. It will not be possible to use the device for the subsequent 48 hours. The only function working will be the clock and it will be possible to access the Logbook and History Later, in the PRE DIVE screen the "STOP" icon will start flashing, together with the word DECO and the stop icon with the arrow up flashing. This means that the decompression stage was omitted during the last dive. The LOG BOOK will store the same warning, indicating that on a specific date, the dive with a specific number was carried out without the decompression stage.

**DANGER:** under these conditions you won't be able to dive for the next 48 hours.

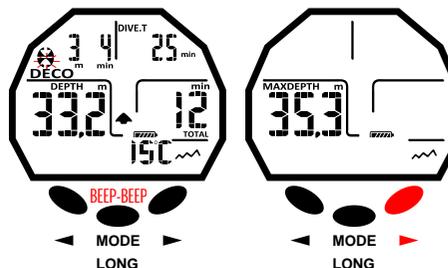
**DECOMPRESSION WARNING ALARM**



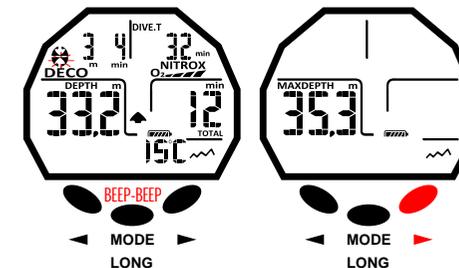
**DEEP STOP**



**DECOMPRESSION AIR WARNING**

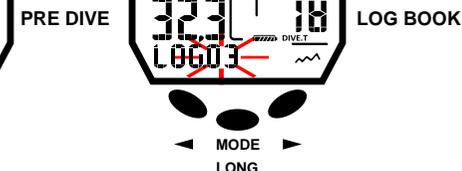
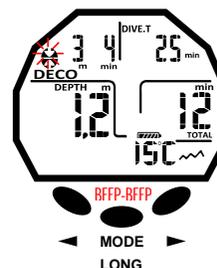


**DECOMPRESSION NITROX WARNING**



**VIOLATED DECOMPRESSION STOP ALARM**

Failure to observe deco depth: lower depth



Failure to observe deco depth: greater depth.



In the case that you feel any symptoms of decompression sickness, you should contact the DAN (Divers Alert Network) and your local hyperbaric chamber centre, providing as much data as possible about the dive.

In the opposite case i.e. when you descent other metre under the depth stage the arrow indicating back will flash.

**GAGE FUNCTION (depth gauge and timer)**

The Giotto computer is equipped with a third dive computing program GAGE that does not perform any saturation and desaturation calculation, but it operates as a basic device, indicating dive depth and time, as well as some accessory data. Under these conditions the dive must be programmed with specific decompression software and carried out according to proper dive tables. For such ends, Cressi reminds that all sport dives must be conducted within the no decompression limits and at a maximum depth of 40 m, limit of sport dives. Exceeding these limits dramatically increases the possibility of decompression sickness!

**IMPORTANT:** Giotto is designed for sport diving only and not for commercial or professional use which require longer dive times and greater depths, consequently increasing the risk of decompression sickness.

**DANGER:** Cressi discourages diving with gaseous mixtures other than air without proper training. The use of technical dives may expose the diver to different risks than those of sport diving, risks that if the diver does not perfectly know the mixture these risk can include serious physical damages and, in extreme cases, death.

With the GAGE function the computer, if it has not been switched on with the button, it automatically activates at depths below 1.2 m showing the following information on the display:

- 1) current depth value, in metres (m) or in feet (ft). The depth gauge operative range reaches a depth of 120 m.
- 2) dive time, shown by the "DIVE-T" icon, given by the timer in minutes and seconds.
- 3) maximum depth reached during the dive, given in metres (m) or in feet (ft), indicated by the "MAX" icon
- 4) ascent rate indicator (arrows).
- 5) GAGE computing program icon.
- 6) current temperature, expressed in °C or °F.

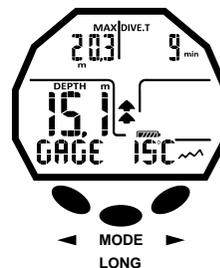
**IMPORTANT:** the device will not carry out any saturation and desaturation calculation during the remaining 48 hours elapsing from the end of the dive performed with the GAGE function.

**DANGER:** should you decide to reset the device, the nitrogen memory will be cancelled. Therefore, the device will not be able to calculate the following dive. Before using this function, wait for at least 48 hours after the last diving activity.

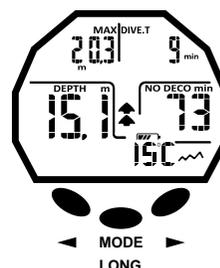
**USE OF THE COMPUTER WITH POOR VISIBILITY**

During your diving activity, light condition may not allow easy reading of the display. Therefore, you can switch on the backlight by pressing and holding the left key (<). The displays backlight lasts for a few seconds, and then it automatically switches off.

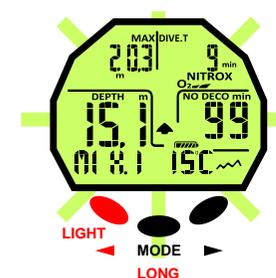
**GAGE FUNCTION**



**BACKLIGHT WHILE DIVING WITH AIR**



**BACKLIGHT WHILE DIVING WITH NITROX**



# ON SURFACE AFTER DIVING

## DATA DISPLAY AND MANAGEMENT.

This chapter deals with all the "on surface" functions, including data processing after a dive. By using the right (>) or left (<) button, it will be possible to activate in sequence the Following functions: LOG BOOK (dive log), HISTORY (dive history) and PC LINK (Data transfer to PC by means of interface).

### SURFACE INTERVAL.

After a dive with AIR DIVE MODE or NITROX DIVE MODE function, when you reach depths below 0.8 m, the display provides the following information:

- 1) Surface interval given in hours and minutes (SURF.T)
- 2) Desaturation time (DESAT) to be respected before embarking on a flight (in hours and minutes).
- 3) NO FLY icon. It means that flights or travel to higher altitudes than the current altitude must be avoided.
- 4) Max depth reached in the latest dive.
- 5) Duration of the latest dive.
- 6) Eventual alarms issued during dive (ascent rate, partial pressure of oxygen)
- 7) Indication of the altitude (if applicable).
- 8) DECO indication (if applicable).
- 9) Nitrox indication and O2 toxicity bar if the latest dive has used Nitrox

**IMPORTANT:** Following the indications of the major organisation which study diving and hyperbaric medicine, Giotto applies the no flight times as follows:

- 12 hours after a single dive with no decompression limits.
- 24 hours after a dive with decompression or after repetitive or multiday, of correctly performed.
- 48 hours after the use of the gage function or if severe mistakes in dive management occurred.

**REMARK:** Should a dive begin with less than 2 minutes of surface interval time, Giotto will consider it a continuation of the previous dive: the number of dives remain the same and the calculation of the duration restarts from where they had stopped. Dives carried out after at least 2 minutes of surface are considered as a new dive.

In the case the dive is performed with the GAGE function the device will not perform any saturation or desaturation calculation during the 48 hours elapsing from the end of the dive performed, represented by the surface interval SURF.T.

### PLAN FUNCTION – DIVE PLAN.

The PLAN function takes into account the residual nitrogen in the tissues after the dive/s performed, changing the decompression times and making them shorter than those indicated for a first dive.

**REMARK:** The PLAN function is disabled in the GAGE function (depth gauge/timer) and if the computer shows "error".

### LOG BOOK FUNCTION – DIVE LOG.

Giotto by Cressi stores data about the last 60 dives. Data is recorded every 20 seconds in the LOG BOOK.

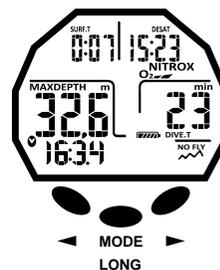
To display the previous dives, press and hold the right (>) button until the word LOG appears. The latest dive will be displayed in chronological order. To display the data related to the previous dives, press the central Mode button so that the dive number flashes. Then, press the right (<) or left (<) button to move forward or backward to the desired one. The LOG BOOK presents two screens for each dive with single mixtures and three screens for the dives performed with two mixtures. To display the second screen of dive, once reached the dive number desired, press the central Mode button. In case the dive is performed with two mixtures GAS SWITCHING, once the second screen is displayed, to see the third one, you will need to press the right (>) button. In both cases the data remains displayed for 20 seconds after that, the computer will automatically return to the main menu. Keep pressing the right (>) or left (<) button and you will see in the three screens with the dive data.

The LOG BOOK function, therefore, enables to display, by means of two or three screens, of a complete series of data related to the dives performed, starting from the most recent dive in chronological order.

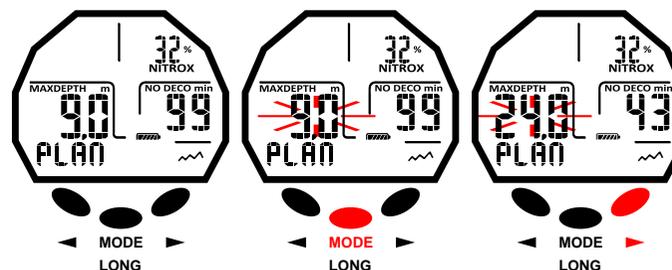
### AIR SURFACE INTERVAL



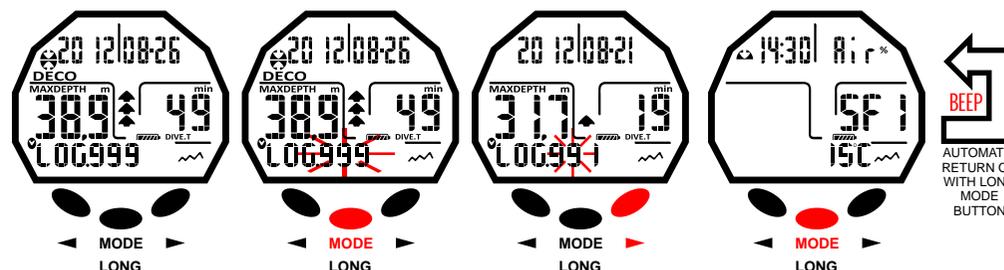
### NITROX SURFACE INTERVAL



### PLAN FUNCTION



### AIR LOG BOOK



INDEX

The main screen displays the following information:

- Dive's year, month, and day.
- Dive number: the most recent dive's information is given first. When more than 60 dives are carried out, the oldest dives are deleted.
- Maximum depth reached during the dive (MAX).
- Total time of the dive in minutes (DIVE.T).
- Decompression dive (DECO).
- Indication of the altitude level of the dive.
- The NITROX icon will appear when a dive with Nitrox or with two mixtures is carried out.
- Indicator of CNS O2 toxicity at the end of a dive.
- The screen will display all icons related to the alarms which have possibly engaged during the dive, such as: PO2 (PO2 alarm); SLOW (maximum ascent rate alarm) and so on.

In the second screen the following will be displayed:

- Dive's starting time.
- Type of mixture used: If in air the word AIR will appear, if Nitrox was used the display will show MIX1 with the FO2 and the word NITROX.
- Minimum water temperature.
- Safety Factor set (SF 0-1-2).

The third screen will be available only in the case of dives performed in NITROX SET MODE and it will indicate the following data:

- The second mixture MIX2 with the corresponding FO2 and the word NITROX.
- Dive's starting time.
- Water temperature.
- Safety Factor set (SF 0-1-2).

### HISTORY FUNCTION – DIVE HISTORY.

The computer is equipped with a dive history memory of the dives performed. To access this function, press the right (>) or left (<) button until the icon HISTORY appears. This program will display the following information related to:

- Total duration of the dives performed, expressed in hours (DIVE.T -h).
- Maximum depth reached during dives.
- Total number of dives performed (DIVE TOTAL).
- The function is able to store up to 999 dives, after which it will reset the counter and restart from zero.

### DIVE PROFILE FUNCTION – DIVE PROFILE

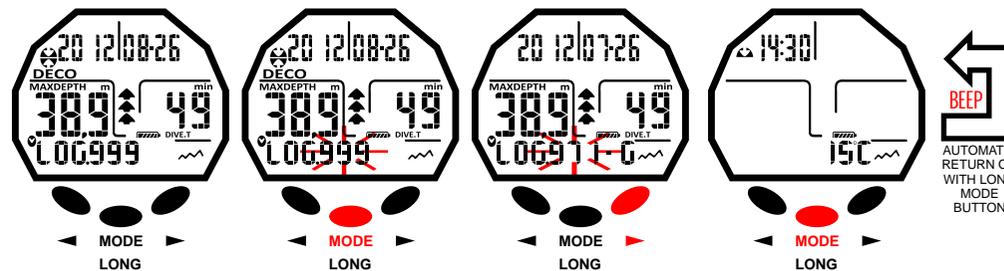
The detailed profile of the dives can be viewed by means of the software of the interface. A Notebook or Desktop is required. The screen will automatically show any information related to the depth, time and to the data related to the most recent dive stored in the Logbook, therefore allowing the scanning of the dive's profile in detail. The data interval is 20 sec. The screen will also display all icons related to the alarms which have possibly engaged during the dive, such as: PO2 (PO2 alarm); SLOW (maximum ascent rate alarm) and so on.

### PC LINK FUNCTION – PC COMPATIBLE INTERFACE.

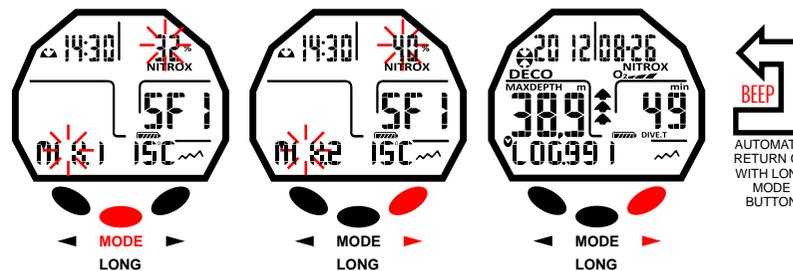
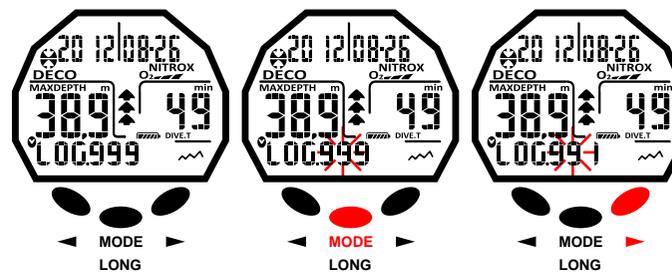
Giotto by Cressi can be connected to a Personal Computer with the following characteristics:

- Operating system: Windows/Mac
- Video resolution: 800x600 or higher (recommended).
- To connect both computers follow the following procedure:
- Install the Cressi Logbook software in your PC.
- Connect the interface's Cressi hardware to a USB port of the PC.
- Access the PC LINK Giotto function by pressing the right (>) or left (<) button.
- Then, following the instructions it is easy to download all the data contained inside Giotto as the profiles of the dives performed, to see them later reproduces, printed or modified by means of the software.

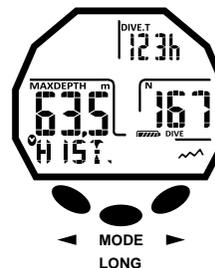
#### LOG BOOK GAGE



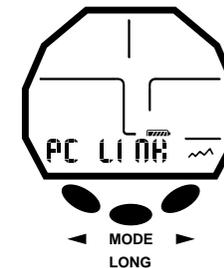
#### LOG BOOK NITROX



#### HISTORY



#### PC LINK



**INDEX SYSTEM RESET – DEVICE RESET.**

With the reset function, all the calculations related to desaturation eventually in course are set to zero. Dive logbook, profile and historic memory remain stored in the memory even after the device's reset. This function may be especially useful in case of device's renting by Diving Centres.

**DANGER:** Do not reset your device if it has to be used to compute subsequent dives!  
The procedure to perform this operation is already explained in the chapter "Before diving".

## CARE AND MAINTENANCE

Giotto by Cressi has been designed and made to operate in extreme conditions with extensive underwater use. You should remember that it is a precision device deserving appropriate care. Please avoid any violent shock, protect it from extreme heat sources, always wash it in fresh water after using, dry it carefully and do not store it wet, avoid contact with heavy equipment, like diving cylinders.

**IMPORTANT:** avoid contact between the computer and solvents or chemical substances. Do not use compressed air to dry the computer

The button does not need any particular care: never grease with oil or spray of any kind.

**REMARK:** When replacing the battery check its housing: should any case of moisture be visible, please have the device checked by an authorised service centre.

Should you notice any anomaly in functioning, do not use the device to dive and have it checked by an authorised Cressi retailer.

### BATTERY REPLACEMENT.

Replacing the battery is a very simple operation which does not require any special service and which can be carried out by the user. It must be done every time the device display shows the low battery symbol.

**IMPORTANT:** when replacing the battery, all information related to desaturation, time and date will be lost. Reset the time and date, in order to get correct entries in your computer's logbook. Do not replace the battery when desaturation is in progress since all the information related to desaturation computing will be cancelled. In this case, do not dive for the next 48 hours. After the battery replacement, all settings go back to the latest value set by the user. Time and date must be reset.

To replace the battery, unscrew the battery cover on the back of the device, using a coin. Remove the lid and check the battery and its housing. Should you note traces of corrosion due to water entry, have the device checked by an authorised Cressi centre. If everything appears in good condition, remove the battery from its housing by holding the computer face down. Replace the battery respecting the polarity (an incorrect polarity may damage the device). Before closing the cover, check that there is no soiling on its seat and apply a thin layer of silicone grease to battery cover seal.

**REMARK:** it is important to remember that different factors may affect battery life, such as: time of storage before acquiring the device, dive time, use of backlight, quality of battery whose average life varies depending, for example, on temperature.

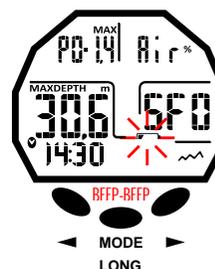
**REMARK:** Do not over-tighten the battery cover! Over-tightening the cover does not create a better seal; much on the contrary, it can result in cover cracking or difficulty removing the cover afterwards.

**REMARK:** Make sure that the device is watertight!

**IMPORTANT:** any malfunction or water filtration due to incorrect battery replacement will void the warranty.



**LOW BATTERY WARNING**



# TECHNICAL SPECIFICATIONS

Algorithm: CRESSI RGBM algorithm.

Sample tissues: 9 with saturation half-times between 2.5 and 480 minutes

Sizes and Weight: Diameter: 65 mm – Height: 27 mm – Weight: 135 g

Depth sensor:

- Sea water setting (fresh water depths are about 3% lower)
- Measuring field: 0-120 m, measured every second.
- GAGE function measuring field: 0-120 m.
- Precision: +/- 1% (T 20°C).
- Reading resolution: 10 cm (from 0 to 100 m) / 1 m (from 100 to 120 m) / 1 ft (from 0 to 316 ft)
- Dive time: from 0 to 255 min.
- Data acquisition interval: 20 sec.

THERMOMETER:

- Resolution: 1 °C / 1 °F
- Measuring field: -5 °C +40 °C.
- Precision: +/- 2 °C /10 min change °T.

WATCH:

- Precision: +/- 50 sec month average.
- 24-hour display.

BATTERY:

CR 2430 - 3V battery. 2 years average life (by 50 yearly dives).

**REMARK:** it is important to remember that different factors may affect battery life, such as: time of storage before acquiring the device, dive time, use of backlight, quality of battery whose average life varies depending, for example, on temperature.

## WARRANTY

### LIMITED WARRANTY FOR CRESSI UNDERWATER COMPUTERS AND RELATED ACCESSORIES

Important notice: this warranty does not limit the statutory rights granted to consumers by applicable National Laws concerning the sales of consumer products.

Cressi issues this limited warranty to the purchaser of a Cressi underwater computer and relevant accessories for the Cressi underwater computer (product).

During the warranty period, Cressi, or a Cressi authorised service centre, according to their exclusive judgement, will solve any defect in terms of material, design and workmanship, free of charge, by means repairing or replacing the product according to this limited warranty.

This limited warranty is valid and effective exclusively in the country where the product was purchased, provided that Cressi has provided for the sale of the product in such country. However, in case the product is purchased in any of the member states of the European Union, in Iceland, Norway, Switzerland and Turkey, and if Cressi has originally foreseen the sale of the product in one of these countries, this limited warranty is valid and effective in all such countries.

Limitations to the service provided by this warranty could be caused by the presence in the products of specific items for a country.

For countries not belonging to the European Union, other than Iceland, Norway, Switzerland and Turkey, provided that the purchaser agrees to pay a service fee and a refund for shipping expenses borne by Cressi or by a Cressi authorised centre, the service foreseen by the warranty can be obtained in countries other than those where the product was purchased. In that case, any spare part will be provided free of charge.

### Warranty period

The warranty period starts on the date of retail purchase by the first end user purchaser.

The product can consist of several components which may be covered by a different warranty period; in particular, this limited warranty is valid for a period of:

- A) two years for underwater computers
- B) one year for consumables and accessories, including but not limited to, watchbands, buckles, etc. (either included in the underwater computer package or sold separately).

Within the limits allowed by applicable National Laws, the warranty period will not be extended, renewed or changed in any way following a later resale, product repair or product replacement authorised by Cressi. However, the parts of the product repaired or replaced during the warranty period, or the replaced product, are warranted for the remaining original warranty period or for three months from the repair or replacement date, depending on which period is longer.

### How to get warranty services

If you want to submit a claim according to this limited warranty, contact your Cressi authorised dealer for information about claim submission; information will be provided about how to request the application of the warranty to your product. If you want to return the product by shipping it to your authorised Cressi dealer, make sure that shipping is prepaid.

The validity of the claims submitted according to this limited warranty is subject to notification to Cressi or to a Cressi authorised service centre of the alleged defect within a reasonable time after such defect is found; however, this should not be beyond the expiry of the warranty period.

For any claim, based on this limited warranty, you should also submit your name and address, the purchase receipt which shall clearly indicate name and address of seller, date and place of purchase and type of product. The request of repair under warranty shall be satisfied free of charge by Cressi or by a Cressi authorised service centre, according to their exclusive judgement, and the product shall be repaired or replaced within a reasonable time.

If the product is deemed non compliant with the terms and conditions of this limited warranty, Cressi or a Cressi authorised service centre reserve the right to charge for the service and/or repair costs incurred.

### Other important notes

In case of product repair or replacement, the data and contents stored in it may be lost. Cressi or a Cressi authorised service centre will not be liable for any damage or loss of contents or data during product repair or replacement.

Cressi recommends making back-ups or to take written note of each important content or data stored in the product.

The Product or part of it, when replaced, will become property of Cressi. In case a refund is granted, the related product must be returned to a Cressi authorised service centre, since it becomes a property of Cressi and/or the Cressi authorised centre. In case of repair or replacement of the Product, Cressi or a Cressi authorised service centre, can use new, as new or repaired products or parts.

### Exceptions and limitations

This limited warranty does not cover:

1. a) product deterioration due to standard wear, b) defects caused by improper use (including, but not limited to, defects caused by sharp objects, bending, compression, fall, shocks, etc.) c) defects or damages due to improper use of the product, including use non compliant with the instructions provided by Cressi (e.g. those indicated in the instruction manual of the product) d) defects caused by other events not depending on Cressi;
2. user manuals or software by third parties (even if included in the package or sold together with Cressi hardware), settings, contents or data, either provided with the product or obtained by means of downloading provided together with installation, assembly, shipping or other stage of the supply chain or otherwise purchased by the buyer;
3. defects or alleged defects caused by the use or connection of the product, with any accessory, software and/or service not produced or provided by Cressi or by using the product differently from the intended use;
4. replaceable batteries.

**This limited warranty is void in the following cases:**

1. if the Product has been opened, changed or repaired by personnel not belonging to Cressi or a Cressi service centre;
2. if the Product has been repaired using non-authorized spare parts;
3. if the Product has been exposed to chemical substances such as (including, but not limited to) insect repellents.

Cressi does not guarantee uninterrupted or error free operation of the Product or that the Product will operate in combination with other hardware or software provided by third parties.

**Limitation of Cressi liability**

THIS LIMITED WARRANTY IS THE SOLE AND EXCLUSIVE REMEDY AVAILABLE FOR THE PURCHASER AND REPLACES ANY OTHER WARRANTY, EITHER EXPLICIT OR IMPLICIT. HOWEVER, THIS LIMITED WARRANTY DOES NOT PREJUDICE THE RIGHTS GRANTED BY THE APPLICABLE NATIONAL REGULATIONS. CRESSI SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR FORESEEN BENEFITS, LOSS OF SAVINGS OR INCOME, DATA LOSS, PUNITIVE DAMAGES, UNSUCCESSFUL USE OF THE PRODUCT OR ASSOCIATED EQUIPMENT (IF ANY), COST OF THE CAPITAL, COST OF THE REPLACEMENT EQUIPMENT OR STRUCTURES, DOWNTIME, CLAIMS BY THIRD PARTIES, INCLUDING CUSTOMERS AND DAMAGES TO PROPERTIES CAUSED BY THE PURCHASE OR USE OF THE PRODUCT OR RESULTING FROM BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, ABSOLUTE RESPONSIBILITY OR OTHER LEGAL MEANS, EVEN IF CRESSI KNEW THE PROBABILITY OF SUCH DAMAGES. CRESSI SHALL NOT BE LIABLE FOR DELAYS IN THE PROVISION OF THE SERVICE TO WHICH THIS LIMITED WARRANTY REFERS OR OF THE IMPOSSIBILITY OF USE DURING THE PRODUCT REPAIR PERIOD.