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VOYAGER EVOLUTION

Nitrox Diving Computer

ED. 09/2009

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Pay special attention to items marked with this Warning symbol.

LIMITED TWO-YEAR WARRANTY

For details, refer to the Product Warranty Registration Card provided.

COPYRIGHT NOTICE

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TRADEMARK NOTICE

PATENT NOTICE

U.S. Patents have been issued, or applied for, to protect the following design features:
Dive Time Remaining (U.S. Patent no. 4,586,136), Data Sensing and Processing Device (U.S. Patent no. 4,882,678), and Ascent Rate Indicator (U.S. Patent no. 5,156,055).

DECOMPRESSION MODEL

The programs within the Voyager simulate the absorption of nitrogen into the body by using a mathematical model. This model is merely a way to apply a limited set of data to a large range of experiences. The Voyager dive computer model is based upon the latest research and experiments in decompression theory. **Still, using the Voyager, just as using the U.S. Navy (or other) No Decompression Tables, is no guarantee of avoiding decompression sickness, i.e. "the bends."** Every diver's physiology is different, and can even vary from day to day. No machine can predict how your body will react to a particular dive profile.

FEATURES and DISPLAYS

WELCOME TO BEUCHAT !
AND
THANK YOU FOR CHOOSING THE VOYAGER !

Your Voyager presents the information that you need before, during, and after your air (or nitrox) dives using a combination of easy to read displays and identification icons. It can also be set to operate simply as a digital depth gauge/timer. This instructional guide is intended to help you become familiar with the functions and features available and show you examples of displays that you could expect to see in the various operational modes. Read through the complete manual thoroughly.

Remember that the rules you learned in your basic scuba certification course(s) still apply to the diving you will do while using a dive computer - some will become even more important. Technology is no substitute for common sense, and a dive computer only provides the person using it with data, not the knowledge to use it.

Since the Voyager can be used when diving with either Air or Nitrox, the term Breathing Gas is used in this manual.

- Breathing Gas is the gaseous mixture breathed during a dive.
- Air is a breathing gas that contains approximately 21% oxygen and 79% nitrogen (nature's common nitrogen-oxygen mixture).
- Nitrox is a nitrogen-oxygen breathing gas that contains a higher fraction of oxygen (22 to 50%) than air.

CONTROL BUTTONS

The two Control Buttons allow you to select display options, access specific information when you want to see it, and activate the Backlight.

The Left button is named **Advance** (Fig. 1a) and the Right button **Select** (Fig. 1b).

BAR GRAPHS

Nitrogen Bar Graph

The Nitrogen Bar Graph (Fig. 1c) represents tissue loading of nitrogen, showing your relative No Decompression or Decompression status. As your Depth and Elapsed Dive Time increase, segments will add to the Graph, and as you Ascend to shallower depths, the Bar Graph will begin to recede, indicating that additional No Decompression Time is allowed for multilevel diving.

The Nitrogen Bar Graph monitors 12 different nitrogen compartments simultaneously and displays the one that is in control of your dive. It is divided into a No Decompression (normal) zone, a Caution zone (also No Decompression), and Decompression (danger) zone.

While you cannot provide a guarantee against the occurrence of decompression sickness, you may choose your own personal zone of caution based upon age, physique, excessive weight, etc., to reduce the statistical risk.

Fig. 1 - Buttons and NiBG

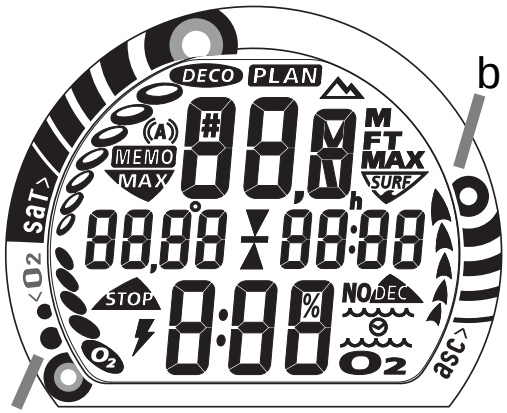


Fig. 2 - O2BG & ARI

Oxygen Accumulation Bar Graph (O2BG)

The O2 Bar Graph (Fig. 2a) represents Oxygen Loading, your relative oxygen tolerance dosage (OTU), showing the maximum of either per dive accumulated Oxygen, or 24 hour period accumulated Oxygen. As your accumulation increases during the dive, segments will add to the Bar Graph, and as loading decreases, it will begin to recede, indicating that additional exposure is allowed.

NOTE: Displays associated with Oxygen and the O2 Bar Graph will only appear if FO2 has been set at a value other than 'Air' (e.g., a numerical value).

Ascent Rate Indicator

Deeper than 18 meters (60 feet)

Segments Displayed	Ascent Rate = MPM	FPM
0	0-6	0-20
1	6,5-9	21-30
2	9,5-12	31-40
3	12,5-15	41-50
4	15,5-18	51-60
5	> 18	> 60

18 meters (60 feet) & Shallower

Segments Displayed	Ascent Rate = MPM	FPM
0	0-3	0-10
1	3,5-4,5	11-15
2	5-6	16-20
3	6,5-7,5	21-25
4	8-9	26-30
5	> 9	>30

Ascent Rate Indicator (ARI)

The Ascent Rate Indicator (Fig. 2b) provides a visual representation of Ascent Speed (i.e., an ascent speedometer). More segments indicate faster rates of ascent.

The segments of the Ascent Rate Indicator represent 2 sets of speeds which change at a reference depth of 18 meters (60 feet). Refer to the chart for segment values.

WARNING: At depths greater than 18 meters (60 feet), Ascent Rates should not exceed 18 meters per minute (60 feet per minute). At depths of 18 meters (60 feet) and shallower, Ascent Rates should not exceed 9 meters per minute (30 feet per minute).

INFORMATIONAL DISPLAYS

Each numeric and graphic display represents a unique piece of information. It is imperative that you understand the formats, ranges, and values of the information represented to avoid any possible misunderstanding that could result in error.

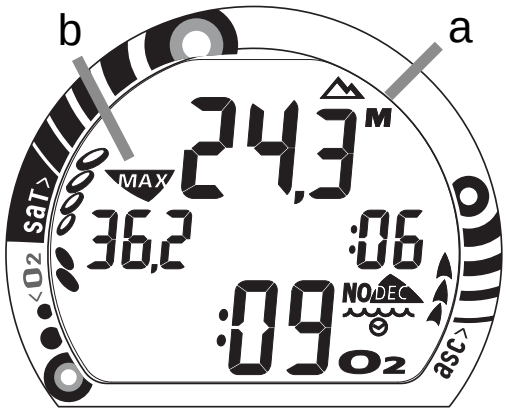


Fig. 3 - Current & Max Depth

Depth Displays

During a dive, the **Current Depth** display (Fig. 3a), indicates Depths from 0 to 99,9 meters (330 feet) in 0,1 meter (1 foot) increments. The **Maximum Depth** reached during that dive will also be displayed (Fig. 3b).

- When the unit is set to operate as a digital depth gauge/timer (referred to as Digital Gauge Mode), the Depth Display range is 'extended' to 120 meters (399 feet). At depths greater than 99,9 meters, it will indicate values in increments of 1 meter.

During a Decompression Dive, the required **Ceiling Stop Depth** is displayed (Fig. 4a). Maximum Depth can then be viewed by pressing the Advance (Left) button.

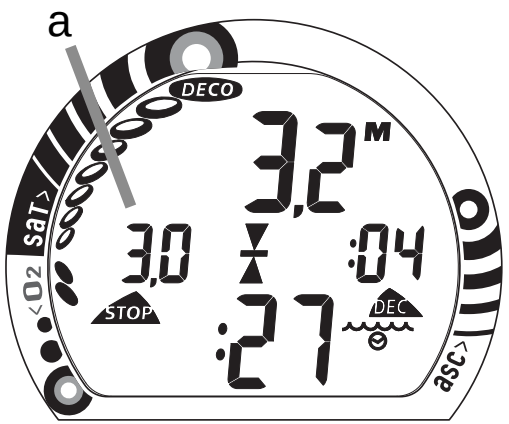


Fig. 4 - Depth Displays

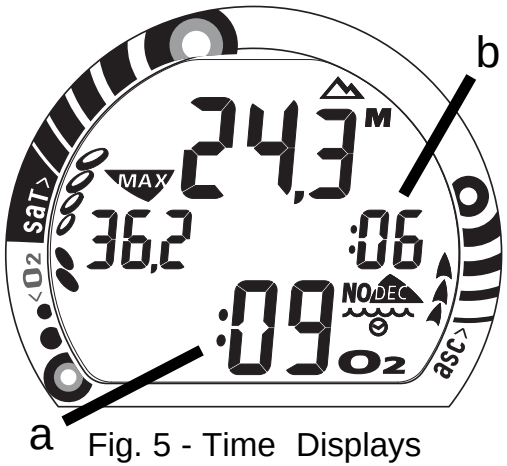


Fig. 5 - Time Displays

Time and Date Displays

Time displays are shown in hour:minute format (i.e., 1:22 represents 1 hour and 22 minutes, not 122 minutes!). The colon that separates hours and minutes blinks once per second when the display is indicating real time (e.g., Elapsed Dive Time), and is solid (non-blinking) when times are calculated projections (e.g., Time to Fly).

The **Elapsed Dive Time** (bottom time) display (Fig. 5a) is configured with the largest segments of the LCD. A **second time display** (Fig. 5b) is located in the middle row of digits.

- Time of Day (Fig. 6a) can be set for 12 hour format or 24 hour format.

Date is displayed in the middle row only to identify dive data while it is viewed in the Log Mode.

- When Units of Measure are set for Metric, the Month appears to the right of Day. When set for Imperial units, the Month appears to the left of Day.

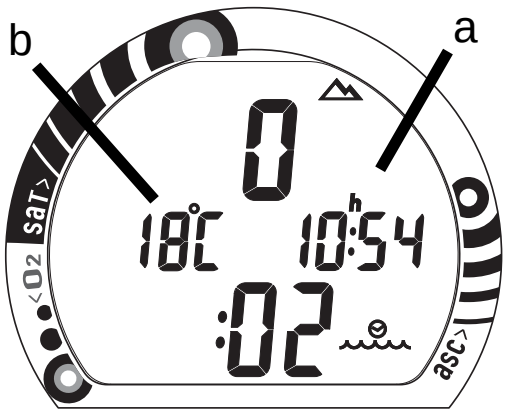


Fig. 6 - Temperature

Temperature Display

Ambient Temperature is displayed while in the Surface Mode (Fig. 6b) and can be viewed as part of an Alternate Display when the Advance (Left) button is pressed while in a dive mode.

NOTE: The Informational Displays are described in detail as the various operating modes they appear in are presented throughout this manual.

AUDIBLE ALARM

When warning situations activate the Alarm, the unit will emit a continuous tone for 30 seconds, or until the situation is corrected, or it is acknowledged by pressing the Advance (Left) button for 2 seconds. If acknowledged by the diver and the situation corrected, the Alarm will sound again upon re-entry into the warning situation, or entry into another type of warning situation.

Warning situations that will sound the Alarm, if it is turned ON (a user setting), include -

- Entry into Decompression Mode
- PO2 => than the Max PO2 Alarm (a user setting), or => 1,60 ATA.
- Descent deeper than the Max Depth Alarm (a user setting).
- Nitrogen Bar Graph Alarm (a user setting).
- Dive Time Remaining Alarm (a user setting).
- Elapsed Dive Time Alarm (a user setting).
- O2 Accumulation => allowable per dive limit, or limit for a 24 hour period (300 OTU).
- Ascending above a required Decompression stop depth for < 5 min. (Conditional Violation).
- Ascent rate exceeds 18 mpm (60 fpm) if > 18 m (60 ft), or 9 mpm (30 fpm) if =< 18 m (60 ft).

During the following situations, the 30 second continuous tone will be followed by a 5 second steady beep that will not turn off when acknowledged, even if it was user Set OFF -

- Ascending above a required Decompression stop depth for more than 5 min. (Delayed Violation).
- Decompression requires a ceiling stop depth => 18 M (70 FT).
- Being on the surface for 5 minutes after a Conditional Violation (Permanent Violation).

A single short beep (which cannot be disabled) is emitted - after the Diagnostic check, upon completion of a fast battery change with calculations/settings saved, and upon change from Delayed to Full Violation after that dive.

BACKLIGHT

To activate the Backlight while in the Surface, Fly, Sat, or any dive mode:

- press the Select (Right) button for 2 seconds. The screens will be illuminated for button depression time plus 0, 5, or 10 seconds (a user setting). Press the button again to activate as desired.

- The Backlight does not operate during a Low Battery condition.

NOTE: Beuchat recommends that you always carry primary and backup dive lights when conducting dives that could include low light situations.

POWER SUPPLY

The Voyager utilizes one (1) type CR 2450 Lithium 3 volt cell that should provide approximately 300 hours of continuous, or 50 activation periods, of operation.

- If you conduct 1 dive each time the unit is activated, you should obtain approximately 50 dives.

- If you conduct 3 dives each time the unit is activated, you should obtain approximately 150 dives.

Battery Status Indication

The status of the Battery is displayed on an Altitude/Battery Status screen that appears after Activation and the Diagnostic check and as the lead-in screen of Plan Mode.

If battery voltage is satisfactory (=> 2,75 volts), the graphics BATT and OP will be displayed (Fig. 7a/b). If voltage is below 2,75 volts, the graphic BATT will be displayed with the Low Battery icon that will continue to be displayed in Surface Mode, flashing (Fig. 8a).

Fig. 7 - Battery Operational

Low Battery Condition

Voltage level is checked upon activation and every minute during operation on the surface.

- If a Low Battery Condition exists <u>when the unit is activated (by pressing the button),</u> the Low Battery icon will appear flashing once per second for 5 seconds followed by shutdown of the unit.
- If the <u>button is not pressed to activate the unit</u> prior to a dive, and a Low Battery Condition exists, the Low Battery icon will appear flashing as a warning upon descent past 1,2 meter (4 feet). No other information will be displayed.
- If the unit did not display the Low Battery icon 'prior to' entering the Dive Mode, and a Low Battery Condition occurs <u>during the dive</u>, there will be sufficient battery power to maintain unit operation for the remainder of 'that dive'. The Low Battery icon will appear upon surfacing when Surface Mode is displayed.

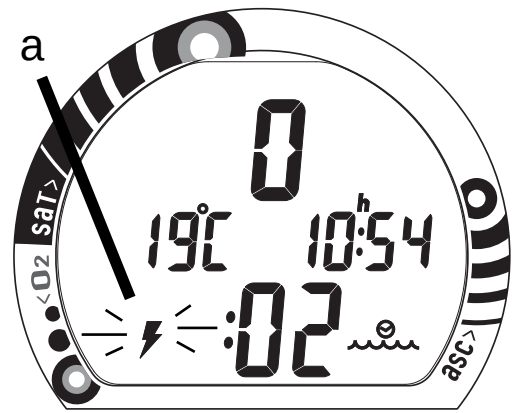


Fig. 8 - Low Battery (replace)

When the Battery is removed, nitrogen and oxygen calculations for repetitive dives are reset to zero after 8 seconds. Also, settings such as Time, Date, and FO2 must be reset. If a new battery can be inserted within 8 seconds, the calculations and settings will be retained.

NOTE: Battery change procedures are described on page 82 of this manual.

FO2 MODE

After Activation, the Voyager will operate as an Air computer without displaying information associated with oxygen calculations, unless it is set for a percentage of oxygen (FO2) other than Air (a numerical value between 21 and 50 %).

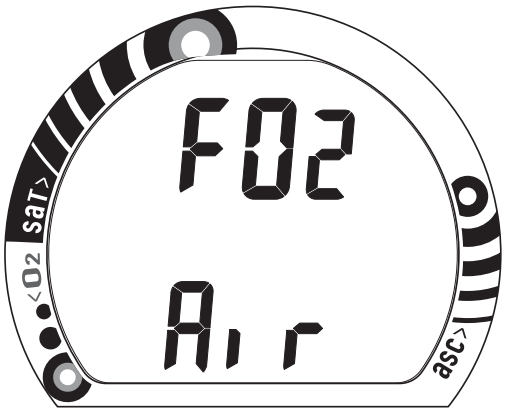


Fig. 9 - FO2 set for Air

NOTE: Setting FO2 is described on Page 26.

When set with an **FO2 value of 'Air'** (Fig. 9), the Voyager will perform calculations the same as if FO2 were set for 21% oxygen, internally accounting for oxygen loading for any subsequent Nitrox dives. However, oxygen related displays, warnings, and the O2 bar graph will not appear on the display for that dive, or subsequent dives, unless FO2 is set for a numerical value (21 to 50).

Once a dive is made with the unit set as a nitrox computer with FO2 set for a numerical value (Fig. 10), the unit cannot be programmed to operate as an 'Air' computer until 24 hours after the last dive. 'Air' will not be displayed as an option in the FO2 Mode. However, you can set FO2 for 21% for use with Air.

When FO2 is set at a **value of 21%**, the unit will remain set at 21% for subsequent nitrox dives until FO2 is set to a higher value, or until it automatically turns off and is reactivated.

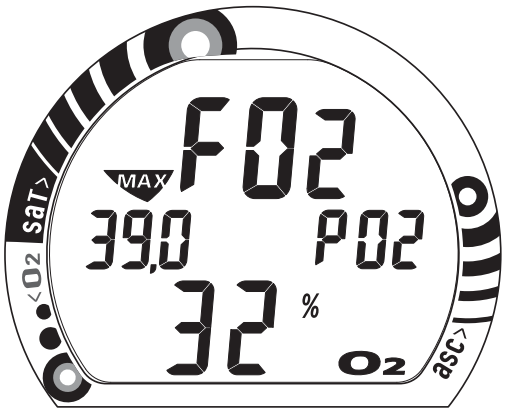


Fig. 10 - FO2set for 32%

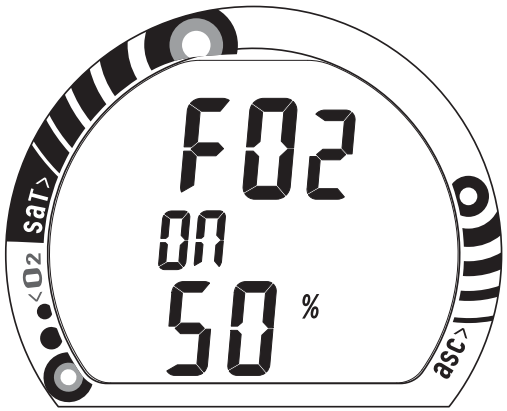


Fig. 11 - FO2 Default set ON

WARNING: The percentage of oxygen (FO2) in the nitrox mix being used must be set 'before each' nitrox dive, unless the FO2 50% Default feature has been turned OFF.

FO2 50% Default

If the Default is set to ON (Fig. 11) and FO2 is set to a value 'greater than 21%', the FO2 set point value will automatically revert to 50% 10 minutes after that dive. The Maximum Depth that can be achieved with a PO2 of 1,60 ATA will also be displayed.

- FO2 must therefore be reset for each repetitive nitrox dive, or the value will automatically 'default' to 50(%) and the dives will be calculated based on 50% O2 (50% nitrogen) for oxygen calculations and 21% O2 (79% nitrogen) for nitrogen calculations.

WARNING: If you surface for greater than 10 minutes during a dive, a subsequent descent will be considered a new dive and FO2 must be reset.

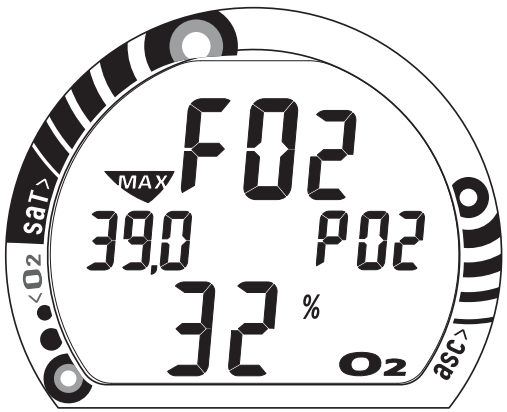


Fig. 12 - FO2 Default set OFF

If the Default is set to OFF (Fig. 12), the FO2 value for repetitive dives remains the same until the set point is manually changed.

WARNING: Even if the Default is set to OFF, the FO2 set point should be 'verified' to match the FO2 in the nitrox mix being used before each nitrox dive.

DIVE TIME REMAINING

One of the most important pieces of information on the Voyager dive computer is the 'Dive Time Remaining numeric display'. The dive computer constantly monitors no decompression status and oxygen exposure.

The Dive Time Remaining* display will indicate <u>the time that is more critical for you</u> at that particular moment (i.e.; whichever time is the least amount available). The specific time being displayed is identified by the No Decompression Dive Time icon, or the O2 Time icon.

(* This unique feature has been granted U.S. Patent No. 4,586,136.)

No Decompression Dive Time Remaining

No Decompression Dive Time Remaining is the maximum amount of time that you can stay at your present depth before entering a decompression situation. It is calculated based on the amount of nitrogen absorbed by hypothetical tissue compartments. The rates each of these compartments absorb and release nitrogen is mathematically modeled and compared against a maximum allowable nitrogen level. Whichever one is closest to this maximum level is the controlling compartment for that depth. Its resulting value will be displayed numerically (Fig. 13a) along with the No Decompression Dive icon and graphically as the Nitrogen Bar Graph (Fig. 13b).

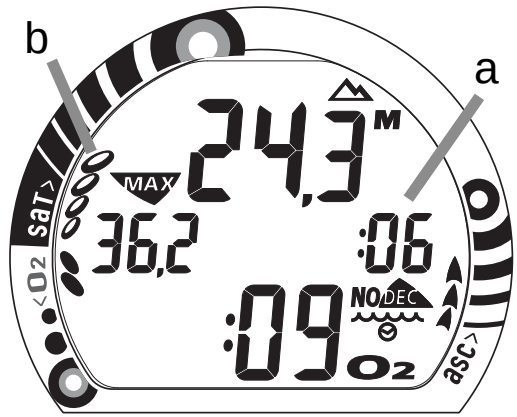


Fig. 13 - No Decompression Dive Time Remaining

As you ascend from depth following a dive that has approached the no decompression limit, the Nitrogen Bar Graph will recede as control shifts to slower compartments. This is a feature of the decompression model that is the basis for multilevel diving, one of the most important advantages that the Voyager offers.

The no decompression algorithm is based upon Haldane's theory using maximum allowable nitrogen levels developed by Merrill Spencer. Repetitive diving control is based upon experiments designed and conducted by Dr. Ray Rogers and Dr. Michael Powell in 1987. Diving Science and Technology® (DSAT), a corporate affiliate of PADI®, commissioned these experiments.

Oxygen Accumulation Time Remaining

Oxygen accumulation (exposure) during a dive, or 24 hour period, appears graphically as the Oxygen Accumulation (O2) Bar Graph (Fig. 14a). As time remaining before reaching the oxygen exposure limit decreases, segments are added to the O2 Bar Graph.

When the amount of time remaining before reaching the oxygen limit becomes less than the No Decompression Dive Time Remaining, calculations for that depth will be controlled by oxygen. Oxygen Time Remaining will then appear as the main numeric time display (Fig. 14b) as signified by the O2 icon flashing. As oxygen accumulation continues to increase, the O2 Bar Graph will enter the Caution Zone.

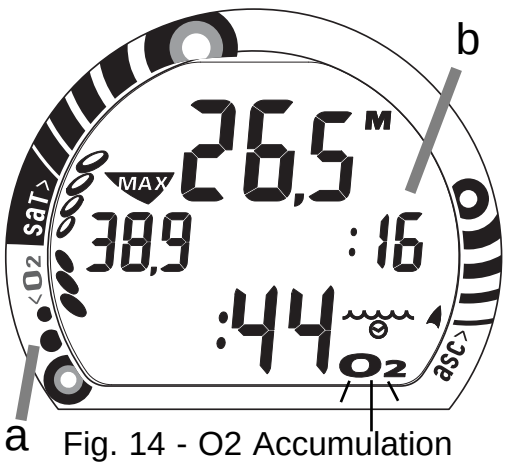


Fig. 14 - O2 Accumulation
Dive Time Remaining

WARNINGS AND SAFETY RECOMMENDATIONS

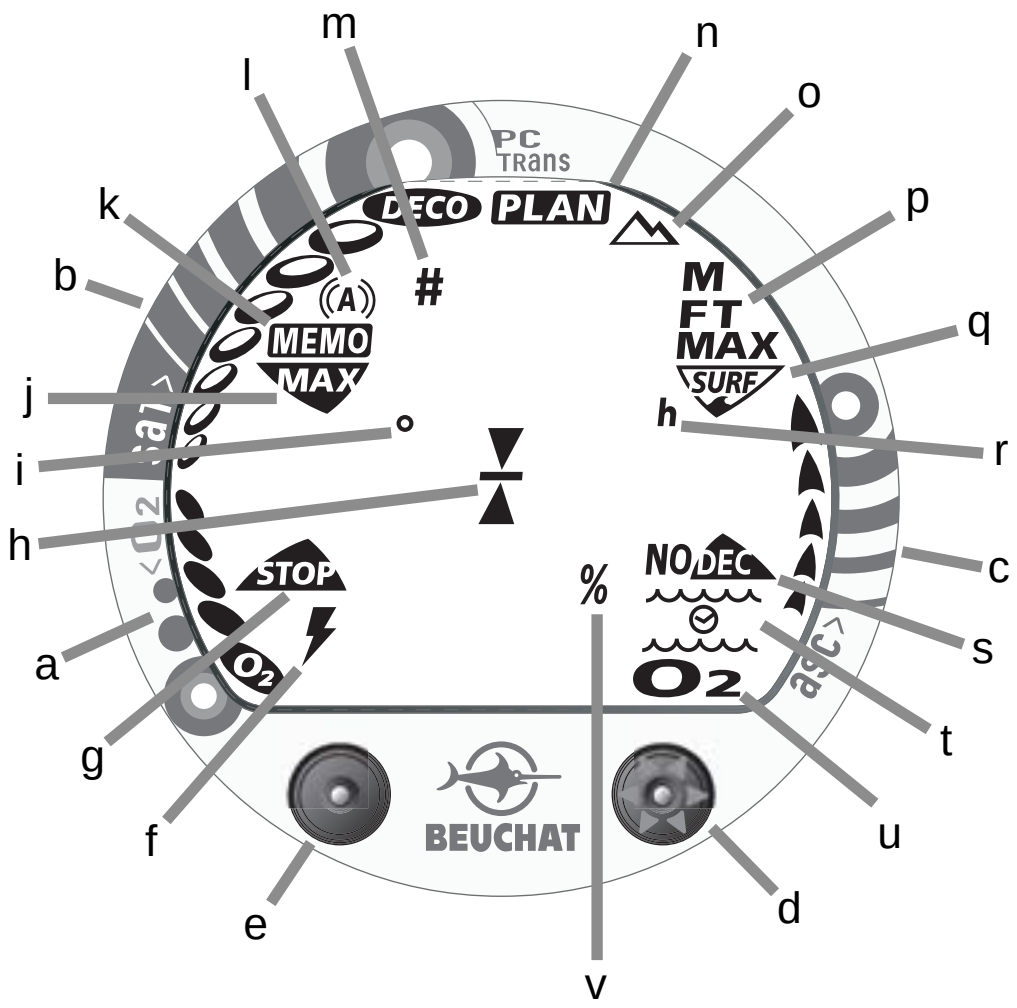
- **It should not be considered that the capabilities built into the Voyager provide an implied approval or consent from Beuchat for individuals to exceed the defined limits for recreational diving, as agreed on by all internationally recognized training agencies.**

- **The oxygen features of the Voyager are intended for use by recreational divers trained for nitrox diving by an instructor certified by a recognized training agency to teach diving with nitrox.**

- **Conducting repetitive dives using enriched nitrogen-oxygen mixtures can lead to oxygen buildup, reducing oxygen tolerance while increasing the risk of pulmonary oxygen toxicity.**

- **The Voyager provides information based upon a personal dive profile, and therefore must not be shared between divers. It is impossible for two divers to stay precisely together underwater, and your computer's dive profile tracking of previous dives will be pertinent to you only. Nitrogen and oxygen loading of a second user may be significantly different and swapping dive computers could lead to inaccurate and dangerous predictions of decompression and oxygen accumulation status.**

ICONS / SYMBOLS



Components:

a. Oxygen Accumulation Bar Graph
b. Nitrogen Loading Bar Graph
c. Variable Ascent Rate Indicator
d. Select (Right) Button
e. Advance (Left) Button
f. Icon - Low Battery Condition
g. Icon - Stop Depth
h. Icon - Ascend Arrow
   Icon - Decompression Ceiling Bar
   Icon - Descend Arrow
i. Icon - Temperature
j. Icon - Maximum Depth
k. Icon - Memo Mode
l. Icon - Alarm
m. Icon - Dive Number
n. Icon - Plan Mode
o. Icon - Altitude
p. Icon - Depth
q. Icon - Surface Time, or -
   Total Ascent Time
r. Icon - Time of Day
s. Icon - No Dec/Dec Time/Mode
t. Icon - Elapsed Time
u. Icon - Nitrox Mode
v. Icon - % FO2

WARNING: During Activation and Diagnostics, if any display or function varies from the information presented here, return the Voyager to your Authorized Beuchat Dealer for inspection.

ACTIVATION and SETUP

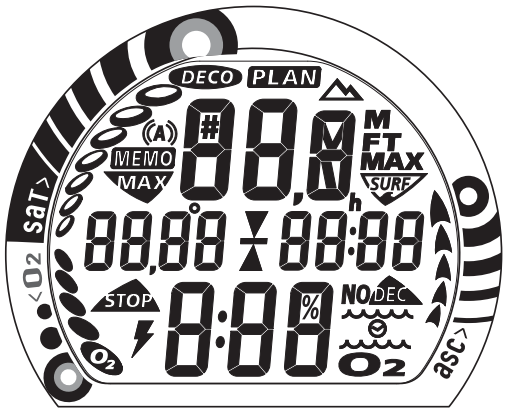


Fig. 15 - Diagnostic Mode

ACTIVATION

<u>To Manually Activate the Voyager, press and release the Advance (Left) button.</u>

<u>Automatic Activation</u>
(only functional if the Water Activation feature is set ON)

The Voyager will also automatically activate <u>by water contact</u>. This is accomplished by bridging the gap between contacts located on the stems of the control buttons and back of the module.

If the Water Activation feature (a user setting) is set OFF, the Voyager will only activate by push button and only if shallower than 1,2 meter (4 feet) depth.

- Upon manual activation, the unit will enter Diagnostic Mode (Fig. 15), displaying all segments of the LCD (as 8's), followed by dashes, then a countdown from 9 to 0. The Backlight will be on.
- Diagnostic Mode checks the display and battery voltage to ensure that everything is within tolerance and functioning properly.
- When the Advance (Left) button is held depressed as the Diagnostic countdown reaches 00, an External Access request is initiated. A Serial Number screen then appears displaying the unit's Serial Number and firmware code Revision Number as long as the button is held depressed (Fig. 16). Upon releasing the button, the unit shuts Off.

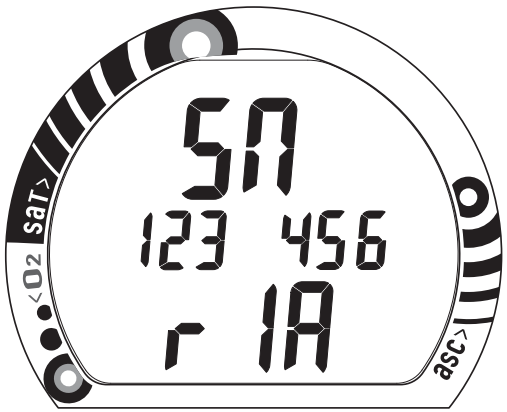


Fig. 16 - Serial Number

- After manual activation and release of the button, it will check ambient barometric pressure and calibrate its present depth as zero. At elevations of 916 meters (3001 feet) or higher, it will recalibrate itself to measure depth in meters/feet of fresh water instead of meters/feet of sea water.
- During the next 5 seconds, the Altitude Level and Battery Status screen will be displayed. The graphic ALT appears with the level number 0 or 2 through 7 (Fig. 17a) and the graphic bAtt appears with the graphic OP (Fig. 17b) indicating the Battery is operational or the Low Battery icon indicating the battery should be replaced.
- If values are acceptable, the unit will enter Surface Mode. If any value is not acceptable, the unit will shut down in 5 seconds.
- If no dive is made within 2 hours after initial activation, the unit will automatically deactivate. If the wet contacts are still bridged, the unit will then reactivate and display the H2O graphic.

ALTITUDE LEVELS (Fig. 17a)

0 = 0 to 915 m (0 to 3000 ft)
2 = 916 to 1525 m (3001 to 5000 ft)
3 = 1526 to 2135 m (5001 to 7000 ft)
4 = 2136 to 2745 m (7001 to 9000 ft)
5 = 2746 to 3355 m (9001 to 11000 ft)
6 = 3356 to 3965 m (11001 to 13000 ft)
7 = 3966 to 4270 m (13001 to 14000 ft)

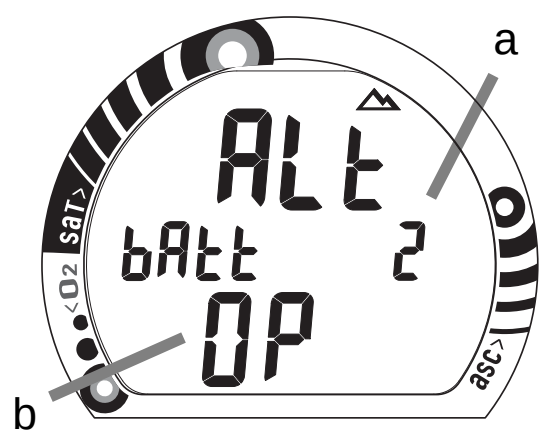


Fig. 17 - Altitude/Battery Status

Fig. 18 - Surface Mode

Fig. 19 - Surface Mode (unit wet)

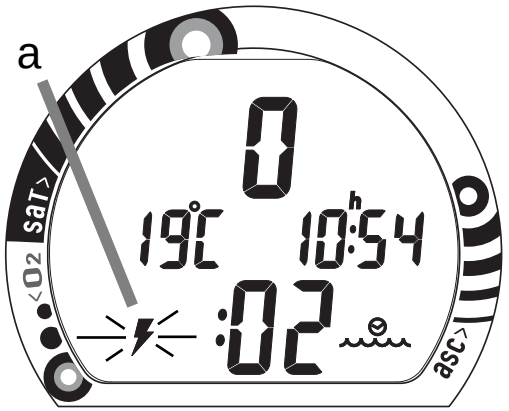


Fig. 20 - Surface (Low Battery)

SURFACE MODE

Surface Mode, identified by the Surface Time icon (Fig. 18a), follows the Altitude/Battery Status screen after Activation and Diagnostics.

Information displayed includes:

- Dive Number '0' (no dive made yet), Temperature (and icon), Time of Day (with the symbol 'h'), and Surface Time (with flashing colon and icon).
- If at Altitude level 2 through 7, the Mountains icon will be displayed (Fig. 18b) to indicate that No Decompression Limits have been automatically adjusted.

NOTE: If the wet contacts are bridged, the graphic H2O will appear in place of the dive number (Fig. 19a). After the unit is rinsed and dried, the dive number will replace the graphic H2O.

WARNING: If a Low Battery condition is displayed after activation as indicated by the icon flashing (Fig. 20a), DO NOT dive with the Voyager until the battery is changed.

SET MODES

To help simplify the operations you might perform at the dive site, settings are divided into 2 groups:

- Set Mode # 1 includes several settings that you would change more often and Set Mode #2 includes those items not likely to change once you set them.
- Set Mode # 2 can be accessed by first entering settings in Set Mode # 1, or by bypassing Set Mode # 1.

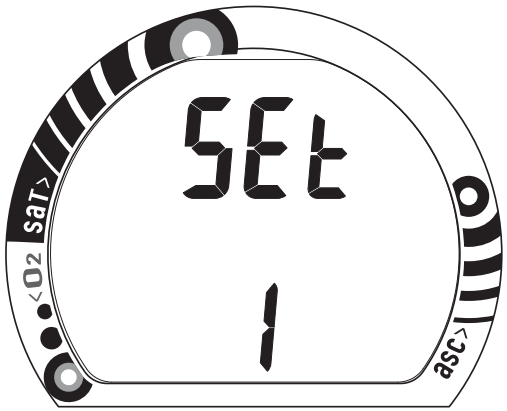


Fig. 21 - Set Mode # 1

After gaining access to Set Mode # 1 or Set Mode # 2, settings can be made in sequence one after the other, or you can access a specific item that you want to set bypassing others.

Set Mode Access and Timing

While in Surface Mode, press Both buttons simultaneously and hold -

- after 2 seconds, SET: 1 appears (Fig. 21)
- after 4 seconds, SET: 2 appears (Fig. 22)

- Access is gained to Set Modes by releasing the buttons during the 2 second window in which SET: 1 or SET: 2 appears, then pressing the Advance (Left) button.
- If the buttons are held longer and SET 1 and 2 are both bypassed, the unit will revert to Surface Mode.
- While in the Set Mode, if neither button is pressed during a period of 2 minutes, the unit will revert to Surface Mode.

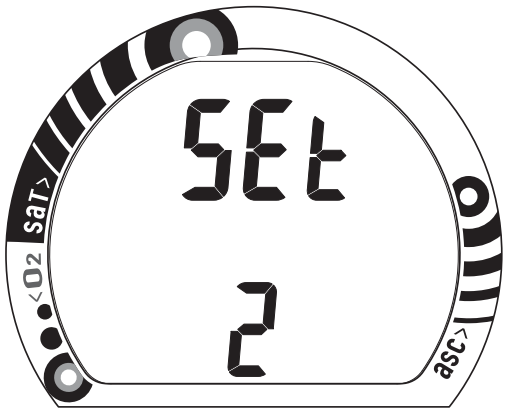


Fig. 22 - Set Mode # 2

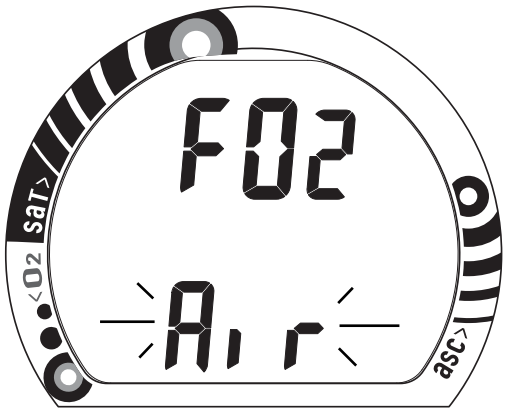


Fig. 23 - FO2 set for AIR

ENTERING SETTINGS - SET MODE #1

To set - FO2 (while in the Surface Mode)

Factory set for AIR, FO2 can also be set to values between 21 and 50% in increments of 1%. FO2 defaults to the AIR setting whenever the Voyager shuts Off.

- Press Both buttons simultaneously, release when **SET: 1** appears.
- Press and release the Advance (Left) button, **FO2** appears with the setting flashing (Fig. 23).
- Press and release the Select (Right) button to increase the FO2 value 1% per second from 21 to 50%, then display AIR again; or Press and hold the button to scroll from AIR to 32% (Fig. 24), press and hold again to scroll from 32 to 50%, then AIR.
- For each FO2 value that appears, the Maximum Depth that can be achieved for a PO2 of 1,60 ATA will be displayed (Fig. 24a). If FO2 is set for AIR, the Depth will not be displayed.
- Press the Advance (Left) button to accept the setting and advance to Set Depth Alarm, or press and hold Both buttons for 2 seconds to revert to Surface Mode.
- Unit reverts to Surface Mode in 2 minutes if no button is pressed.

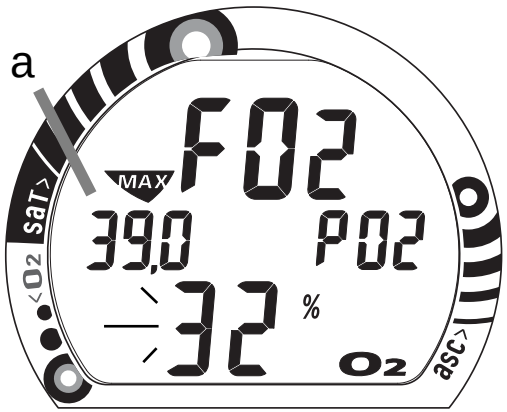


Fig. 24 - FO2 32% setting

To set - MAX DEPTH ALARM (while in the Surface Mode) Factory set for 99 meters, the Maximum Depth Alarm can be set to values between 9 meters (30 feet) and 99 meters (330 feet) in increments of 3 meters (10 feet).

- Press Both buttons simultaneously, release when **SET: 1** appears.
- Press and release the Advance (Left) button, **FO2** appears with the setting flashing.
- Press the Advance (Left) button **1 more time.**
- The graphics **M (Meters)** or **FT (Feet)** and **dEEP,** and Alarm icon **((A))** appear with the **Max Depth Alarm** value flashing (Fig. 25).
- Press and release the Select (Right) button until the desired Alarm value appears, or press and hold the button to scroll through the Set Points.
- Press the Advance (Left) button to accept the setting and advance to Set Elapsed Dive Time Alarm, or press and hold Both buttons for 2 seconds to revert to Surface Mode.
- Unit reverts to Surface Mode in 2 minutes if no button is pressed.

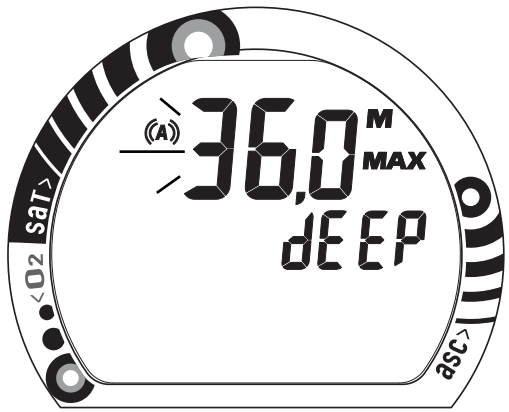


Fig. 25 - Set Depth Alarm

To set - ELAPSED DIVE TIME ALARM
(while in the Surface Mode)

Factory set for :00 hr:min, the Alarm can be set to values between :10 and 3:00 (hr:min) in increments of :05 (hr:min).

- Press Both buttons simultaneously, release when **SET: 1** appears.
- Press and release the Advance (Left) button, **FO2** appears with the setting flashing.
- Press the Advance (Left) button **2 more times.**
- The graphic **Edt**, Alarm icon **((A))**, and Dive Time icon appear with the **Elapsed Dive Time Alarm** value flashing (Fig. 26).
- Press and release the Select (Right) button until the desired Alarm value appears, or press and hold the button to scroll through the Set Points.
- Press the Advance (Left) button to accept the setting and advance to PC Interface, or press and hold Both buttons for 2 seconds to revert to Surface Mode.
- Unit reverts to Surface Mode in 2 minutes if no button is pressed.

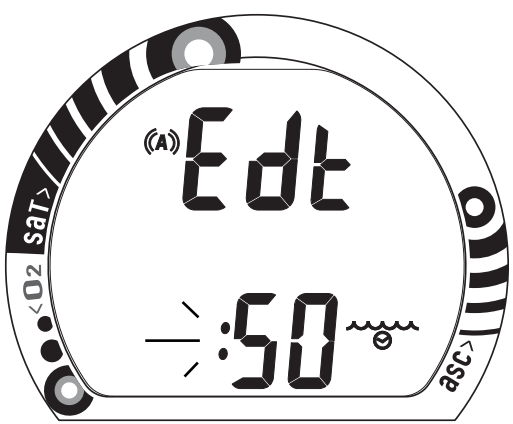


Fig. 26 - Set Elapsed Time Alarm

PC INTEFACE

PC Interface is not a setting, it is included in the Set 1 menu for easy access when data in the unit's memory is to be downloaded (copied) to the PC download software program for storage and viewing.

To download data (while in the Surface Mode) -

- Press Both buttons simultaneously, release when **SET: 1** appears.
- Press and release the Advance (Left) button, **FO2** appears with the setting flashing.
- Press the Advance (Left) button **3 more times.**
- The graphic **PC** appears with a 120 second countdown (Fig. 27). Download must be initiated before the countdown reaches 0.
- Download is initiated by the external device requesting data transfer (i.e., the PC download program).
- Press the Advance (Left) button to revert to Surface Mode.
- The unit reverts to Surface Mode after completion of the Download operation, or after 2 minutes if neither button is pressed.

NOTE: For more information regarding PC Interface, refer to page 75 of this manual and to documents provided with the interface product.

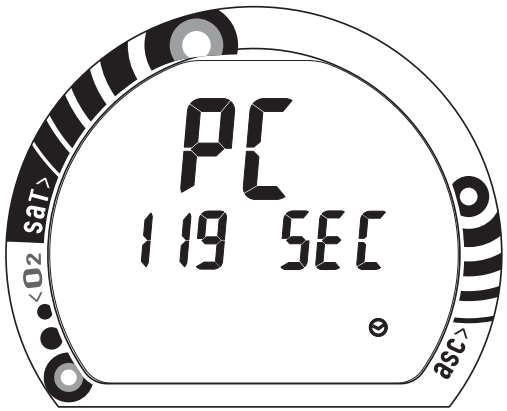


Fig. 27 - PC Interface

ENTERING SETTINGS - SET MODE #2

NOTE: To return to Surface Mode at any time while in Set Mode, press and hold Both buttons for 2 seconds. The unit will automatically revert to Surface Mode after 2 minutes if no button is pressed.

To set - UNITS OF MEASURE (while in the Surface Mode)

Factory set for Imperial, Units of Measure can also be set for Metric.

- Press Both buttons simultaneously, release when SET: 2 appears.
- Press and release the Advance (Left) button, the Units screen appears with the graphic **M** (Meters) **or FT** (Feet), and the Temperature icon and graphic **C** or **F** appear flashing (Fig. 28).
- Press the Select (Right) button to toggle between Metric (M, C) and Imperial (FT, F) units.
- Press the Advance (Left) button to accept the setting and advance to Set Hour Format, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

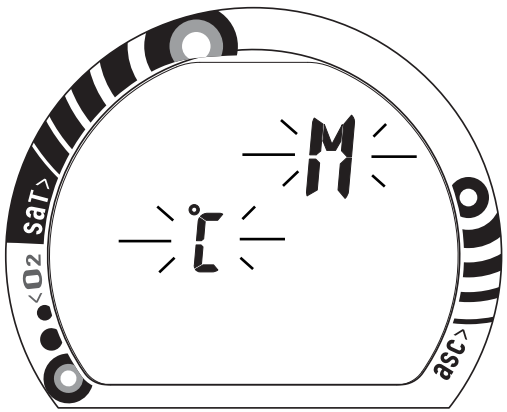


Fig. 28 - Set Units of Measure

To set - HOUR FORMAT (while in the Surface Mode)

Factory set for 12 Hour (12: AM to 11: PM), the Format can also be set for 24 Hour (0: to 24: hours).

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **1 more time.**
- The graphic **Hour** appears with **12** (or 24) flashing (Fig. 29).
- Press and release the Select (Right) button to toggle between 12 and 24.
- Press the Advance (Left) button to accept the setting and advance to Set Time of Day, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

Fig. 29 - Set Hour Format

To set - TIME OF DAY (while in the Surface Mode)
Factory set for factory local time, Time can be set between :00 to 12:59 (AM/PM) or :00 to 23:59 (24 Hour Format).

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the set point flashing.
- Press the Advance (Left) button **2 more times.** The Time of Day appears with the **Hour** setting flashing (Fig. 30a).
- Press and release the Select (Right) button to advance the Hour setting in increments of one hour, or press and hold the button to scroll through the Hours.
- Press the Advance (Left) button to accept the setting. The **Minute** setting flashes.
- Press and release the Select (Right) button to advance the Minute setting in increments of one minute, or press and hold the button to scroll through the settings.
- Press the Advance (Left) button to accept the setting and advance to Set Date, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

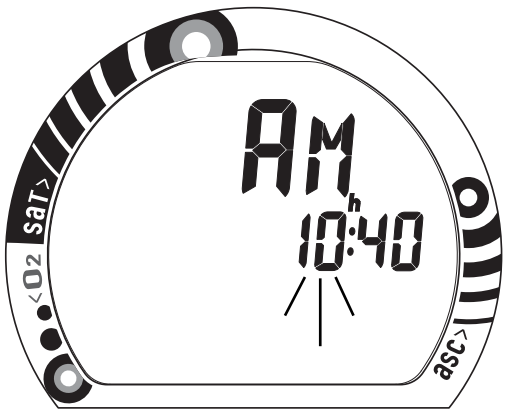


Fig. 30 - Set Time

To set - YEAR (while in the Surface Mode)
Factory set for the factory local Date, the Date can be set to values between 01/01/04 and 12/31/49.

- After having set and accepted the Time of Day, the Date appears with the graphic **dAY,** and **Year** value flashing (Fig. 31).

- Press and release the Select (Right) button to advance the Year setting in increments of one year, or press and hold the button to scroll through the settings.

- Press the Advance (Left) button to accept the setting. The **Month** value flashes.

- Press and release the Select (Right) button to advance the Month setting in increments of one month, or press and hold the button to scroll through the settings.

- Press the Advance (Left) button to accept the setting. The **Day** value flashes.

- Press and release the Select (Right) button to advance the Day setting in increments of one day, or press and hold the button to scroll through the settings.

- Press the Advance (Left) button to accept the setting.

Fig. 31 - Set Date

To set - AUDIBLE ALARM (while in the Surface Mode) Factory set for ON, the Alarm can be also be set to OFF.

When set OFF, the Alarm will not sound during the conditions described on page 11.

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **7 more times.**
- The graphic **ALM** and Alarm icon **((A))** appear with the graphic **ON** or **OFF** flashing (Fig. 32).
- Press the Select (Right) button to toggle between ON and OFF.
- Press the Advance (Left) button to accept the setting and advance to Set Max Nitrogen Bar Graph Alarm, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

Fig. 32 - Set Audible Alarm

To set - MAX NITROGEN BAR GRAPH ALARM

(while in the Surface Mode)

Factory set for DECO (all 8 segments), the Maximum Nitrogen Bar Graph (NiBG) Alarm can be set to values between DECO (8 segments) and 1 segment.

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **8 more times.**
- The graphic **ndc** and Alarm icon **((A))** appear with the full **Nitrogen Bar Graph** flashing (Fig. 33).
- Press and release the Select (Right) button to decrease the number of segments one at a time, or press and hold the button to scroll through the setting.
- Press the Advance (Left) button to accept the setting and advance to Set Dive Time Remaining Alarm, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

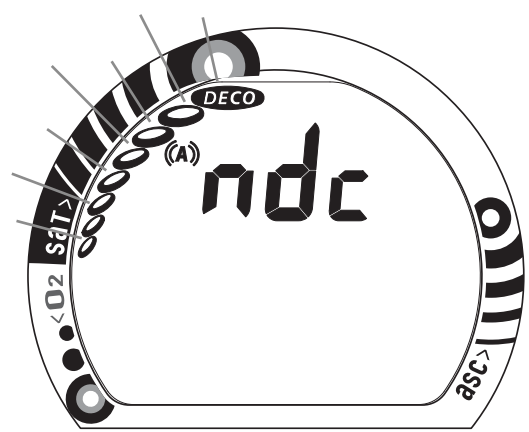


Fig. 33 - Set Max Nitrogen Bar Graph Alarm

<u>To set - DIVE TIME REMAINING ALARM</u>
(while in the Surface Mode)

Factory set for :00 (minutes), the Dive Time Remaining Alarm can be set to values between :00 and :20 (minutes) in increments of 1 minute.

- Press <u>Both</u> buttons simultaneously, release when **SET: 2** appears.
- Press and release the <u>Advance (Left)</u> button, the Units screen appears with the setting flashing.
- Press the <u>Advance (Left)</u> button **<u>9 more times.</u>**
- The graphic **dtr** and Alarm icon **((A))**,and Dive Mode icon appear with the **Dive Time Remaining** setting flashing (Fig. 34).
- Press and release the <u>Select (Right)</u> button to advance the Alarm value in increments of one minute, or press and hold the button to scroll through the settings.
- Press the <u>Advance (Left)</u> button to accept the setting and advance to Set Max PO2 Alarm, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

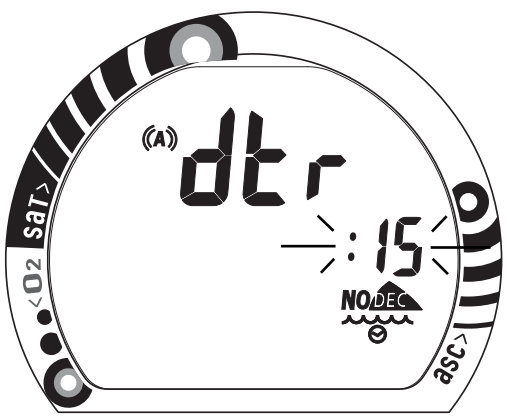


Fig. 34 -Set Dive Time Remaining Alarm

To set - MAXIMUM PO2 ALARM (while in the Surface Mode)

Factory set for 1,60 (ATA), the Maximum PO2 Alarm can be set to values between 1,20 and 1,60 (ATA) in increments of 0,10 (ATA).

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **10 more times.**
- The graphic **PO2,** and **MAX** and Alarm icons appear with the **PO2 Alarm setting** flashing (Fig. 35).
- Press and release the Select (Right) button to advance the Alarm setting in increments of 0,10 (ATA), or press and hold the button to scroll through the settings.
- Press the Advance (Left) button to accept the setting and advance to Set FO2 50% Default, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

Fig. 35 - Set Max PO2 Alarm

To set - FO2 50% DEFAULT (while in the Surface Mode)

Factory set ON, the FO2 50% Default feature can be set to OFF. The effects of this feature being ON or OFF are described on page 16.

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **11 more times.**
- The graphics **FO2** and **50** and % icon appear with the setting **ON** or **OFF** flashing (Fig. 36).
- Press the Select (Right) button to toggle between ON and OFF.
- Press the Advance (Left) button to accept the setting and advance to Set Backlight Duration, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

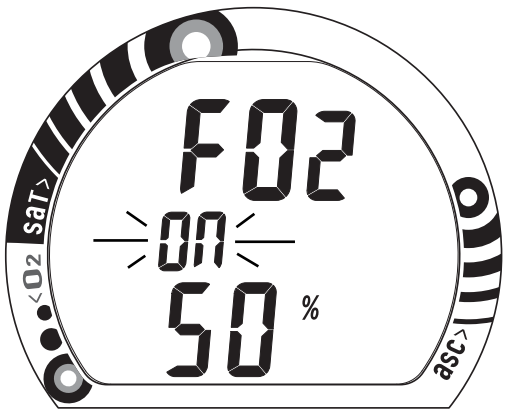


Fig. 36 - Set FO2 50% Default

To set - BACKLIGHT DURATION

(while in the Surface Mode)

> **NOTE: Backlight Duration is the time the Backlight will remain on upon release of the actuating button.**

Factory set for 5 (seconds), the Backlight Duration can be set to values of 0 , 5 , or 10 (seconds).

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **12 more times.**
- The graphic **GLO** and Time icon appear with the Duration setting flashing (Fig. 37).
- Press and release the Select (Right) button to advance the Duration from :00 to :05 to :10 (seconds)
- Press the Advance (Left) button to accept the setting and advance to Set Sampling Rate, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

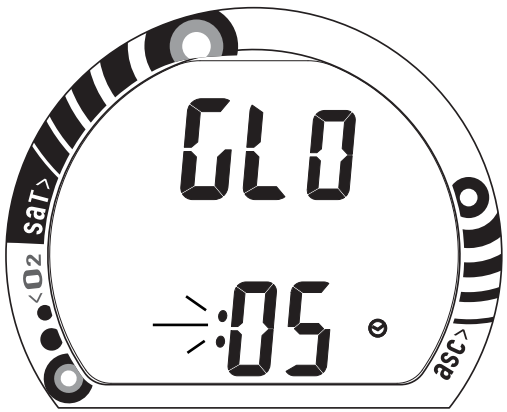


Fig. 37 - Set Backlight Duration

NOTE: Sampling Rate is the interval at which data samples are recorded during a dive for subsequent download to the PC program. This setting has no effect on displayed data or data in the unit's Log.

To set - SAMPLING RATE (while in the Surface Mode)

Factory set for 30 (seconds), the Sampling Rate can be set to values of 2 , 15 , 30 , or 60 (seconds), or 0,5 , 1,5 , or 3 meters (2 , 5 , or 10 feet).

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **13 more times.**
- The graphics SR and SEC (or M or FT) appear with the setting flashing (Fig. 38).
- Press and release the Select (Right) button to advance the setting one selection at a time, or press and hold the button to scroll through the settings.
- Press the Advance (Left) button to accept the setting and advance to Set Digital Gauge Mode, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

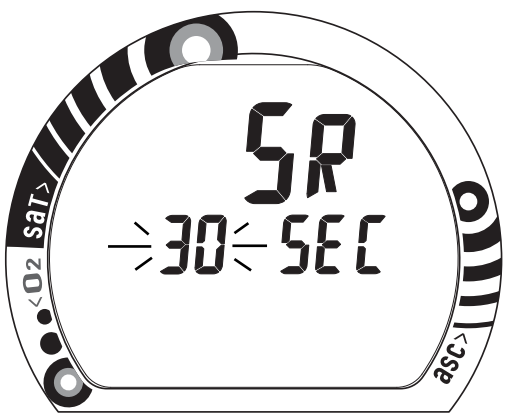


Fig. 38 - Set Sampling Rate

To set - USER SET DIGITAL GAUGE MODE
(while in the Surface Mode)

Factory set OFF, User Set Digital Gauge Mode can also be set ON.

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **14 more times.**
- The graphic **GAU** appears with **OFF** or **ON** flashing (Fig. 39).
- Press and release the Select (Right) button to toggle between ON and OFF.
- Press the Advance (Left) button to accept the setting and advance to Set Wet Activation, or press and hold Both buttons for 2 seconds to revert to Surface Mode.

NOTE: Once a dive is made with this feature set ON, the setting will be locked ON for 24 hours after the dive. Set Digital Gauge Mode will not appear as a selection for 24 hours after the dive.

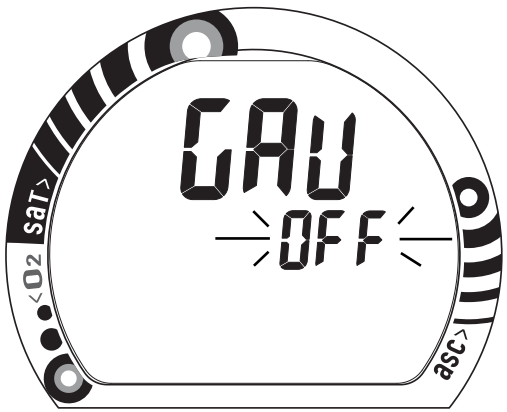


Fig. 39 - User Set Gauge Mode

⚠ WARNING: If the Wet Activation feature is set OFF, the Voyager must be manually (push button) activated prior to commencing a dive.

To set - WATER ACTIVATION (while in the Surface Mode)

Factory set ON, this feature can also be set OFF (disabled). When set ON, the Voyager will automatically Activate and enter Dive Mode upon immersion in water and descent to 1,5 meters (5 feet).

- Press Both buttons simultaneously, release when **SET: 2** appears.
- Press and release the Advance (Left) button, the Units screen appears with the setting flashing.
- Press the Advance (Left) button **15 more times** (14 more times if a dive was made with Digital Gauge Mode set ON).
- The graphics **ACt** and **H2O** appear with **ON** or **OFF** flashing (Fig. 40).
- Press and release the Select (Right) button to toggle between ON and OFF.
- Press the Advance (Left) button to accept the setting and revert to Surface Mode.

Fig. 40 - Set Wet Activation

PRE DIVE PLAN MODE

Depth meters	(feet)	NDL hours:mins	
9	(30)	3:37	(3:17)
12	(40)	1:55	(1:49)
15	(50)	1:08	(1:05)
18	(60)	:50	(:48)
21	(70)	:36	(:35)
24	(80)	:27	(:26)
27	(90)	:20	(:19)
30	(100)	:16	(:16)
33	(110)	:13	(:12)
36	(120)	:10	(:10)
39	(130)	:09	(:08)
42	(140)	:08	(:07)
45	(150)	:06	(:06)
48	(160)	:06	(:06)
51	(170)	:05	(:05)
54	(180)	:05	(:05)
57	(190)	:05	(:04)

No Decompression Limits
(no dive made yet, sea level)

Fig. 41 - Plan Lead-in Screen

DIVE PLANNER

The Dive Planner should be reviewed prior to every dive to help you plan your dive as required to avoid exceeding No Decompression or Oxygen Exposure Limits. For repetitive dives, the Planner indicates adjusted dive times that are available for the next dive, based on residual nitrogen or oxygen accumulation (whichever is in control) following the last dive and surface interval.

To access the Dive Planner (while in Surface Mode) -

- Press the Advance (Left) button **1 time**.
- The Altitude/Battery Status screen will be displayed (Fig. 41) to indicate the Altitude that the No Decompression Times are adjusted to.

- Press and release the Select (Right) button to access the first Depth/Time screen then advance through the sequence of Depths/Times available one screen at a time.
- Press the Advance (Left) button to access Fly Mode.
- The unit will revert to Surface Mode after 2 minutes if no button is pressed.

The Dive Planner provides a sequence of theoretical dive times available for depths ranging from 9 meters (30 feet) to 57 meters (190 feet) in 3 meter (10 foot) increments.

No Decompression Times are only displayed for depths where there is at least 3 minutes of theoretical dive time available at the depth, taking into account a descent rate of 18 meters (60 feet) per minute. Depths greater than the Maximum Depth that can be achieved with a PO2 of 1,60 ATA will not be displayed.

Fig. 42 - Nitrogen Control

With each Depth displayed by the Dive Planner, you will see either predicted No Decompression Limits (NDLs) based upon your previous dive profiles (if calculated to be nitrogen controlled), or predicted Oxygen Tolerance Limits (OTLs) based upon either a single dive exposure or your 24 hour accumulation of oxygen (if calculated to be oxygen controlled).

If the Nitrogen Bar Graph is displayed (Fig. 42), that next dive is calculated to be controlled by Nitrogen loading. If the O2 Bar Graph and O2 symbol are displayed (Fig. 43), it is calculated to be controlled by Oxygen loading.

△ **NOTE: The Voyager will store oxygen accumulation calculations for up to 10 dives conducted during a 24 hour period. If the maximum limit for oxygen loading has been exceeded for that day (24 hour period), all of the segments of the O2 bar graph will be displayed flashing . Depth/ Time values will not appear until the O2 bar graph recedes into the green (normal) zone (i.e., your daily oxygen dosage decreases an amount equivalent to the amount accumulated during the latest dive completed).**

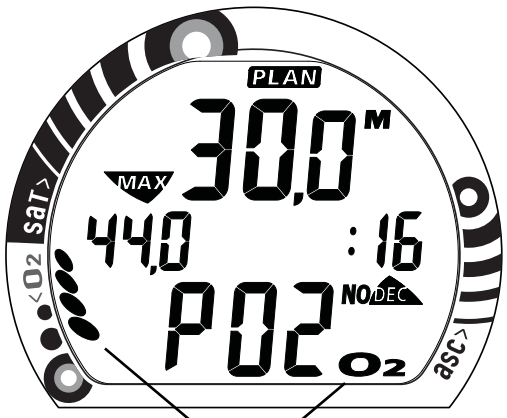


Fig. 43 - Oxygen Control

⚠ WARNINGS AND SAFETY RECOMMENDATIONS

- **The percentage of oxygen (FO2) in the nitrox mix being used must be 'set before each nitrox dive', unless the FO2 50% Default feature is set OFF (a user setting).**

- **The Dive Planner provides predicted times for subsequent dives. Depending on cylinder size, breathing gas consumption, and oxygen accumulation, you may have less time available than indicated because of breathing gas quantity or other limitations.**

- **Until it has shut itself off, you must not use the Voyager at a different Altitude than the Altitude at which it was activated. Doing so will result in an error equal to the difference in barometric pressure, and possibly a false dive mode with erroneous data.**

- **To provide proper Altitude compensation, the Voyager must be manually activated at the new altitude. Dive computers, such as the Voyager cannot sense changes in barometric pressure if activated by immersion in water at higher Altitudes.**

- **Use the Caution Zone of the Nitrogen Bar Graph as a visual reference to provide a greater margin of protection between you and the No Decompression Limits.**

- **Every effort should be made to keep each of the Bar Graphs in the normal zone throughout your dives to reduce your risk of exposure to decompression sickness, oxygen toxicity, and the effects of excessive ascent rates.**

WARNINGS:

Making decompression dives without the proper preparation and training will place you in an unnecessarily dangerous situation.

Existing data for making planned decompression dives is extremely limited, and virtually non-existent for repetitive decompression diving.

Decompression diving greatly increases your risk of decompression sickness.

Special training, equipment, and support are necessary for diving deeper than the maximum recommended sport diving depth limit(s).

DIVE MODES

DIVE MODE BAR GRAPHS

As your Depth and Elapsed Dive Time increase, the **Nitrogen Bar Graph** (Fig. 44a) will fill upward with segments to represent the absorption of Nitrogen.

While ascending to shallower depths, the segments that have filled the Nitrogen Bar Graph will begin to recede, offering a graphic representation of your multilevel diving capability.

If FO2 was set for a numerical value (nitrox), the **O2 Bar Graph** (Fig. 44b) will fill downward with segments to represent Oxygen Accumulation for that dive or 24 hour period, whichever amount is greater.

The **Ascent Rate Indicator** (Fig. 44c) shows how fast you are Ascending. When you exceed the maximum recommended Ascent Rate for the depth you are at, it will enter the Too Fast zone and you will be alerted by all segments of the bar graph flashing, and an Audible alarm (unless set OFF). The warnings will stop when your Ascent Rate is slowed.

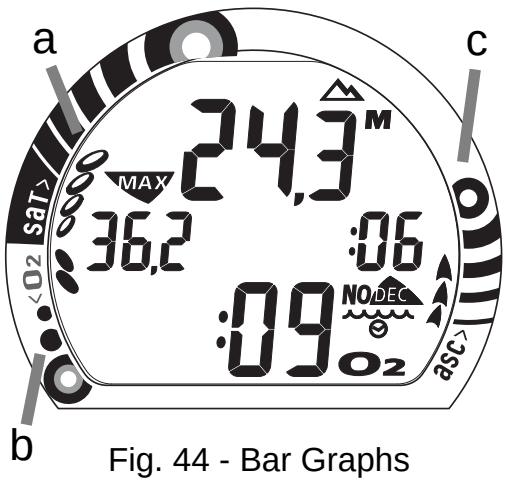


Fig. 44 - Bar Graphs

CONTROL OF DISPLAYS

During Dive Modes, there is a Main Display of important information relevant to the specific condition. Alternate Displays can be accessed which will automatically revert to the Main Display after 3 seconds.

To activate the Backlight during a dive, press the Select (Right) button for 2 seconds.

- The displays will be illuminated as long as the button is depressed, plus it will remain illuminated for the Backlight Duration time that has been set (0 , 5 , or 10 seconds).
- The Backlight will not activate during a Low Battery condition.

During Dive Modes, the Mountain icon (Fig. 45a) will be displayed as an indication that the Voyager adjusted to an Altitude level of 2 through 7 prior to commencing the dive. The O2 icon (Fig. 45b) will be displayed as an indication that the unit is set for Nitrox.

NO DECOMPRESSION DIVE MODE

The Voyager will enter the No Decompression Dive Mode when you descend deeper than 1,2 meters (4 feet).

No Deco - Main (Default) Display (Fig. 45)

Information includes the mountain icon (if at Altitude level 2 through 7), Current Depth (and icon), Dive Time Remaining (and icon), Max Depth for that dive (and icon), Dive Time Remaining (and icon), Elapsed Dive Time (and icon), and the applicable bar graphs.

- press and release the Advance (Left) button to view Alternate Display #1.

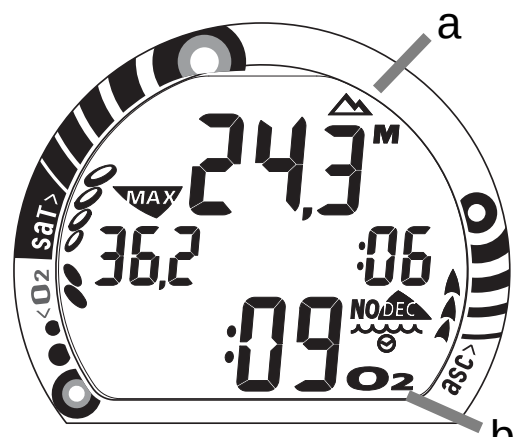


Fig. 45 - No Deco MAIN

Fig. 46 - No Deco ALT#1

Fig. 47- No Deco ALT #2

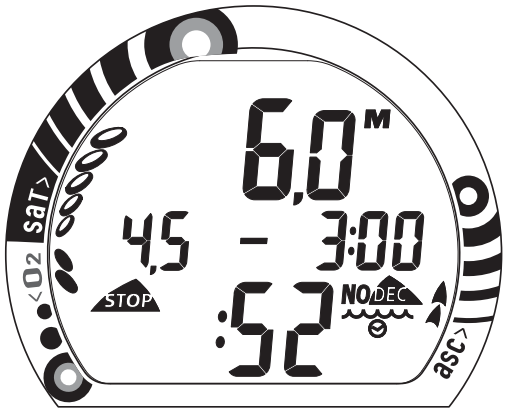


Fig. 48- No Deco Safety Stop

No Deco - Alternate Display #1 (Fig. 46)
Information includes - the mountain icon (if at Altitude level 2 through 7, Current Depth (and icon), Temperature (and icon), Time of Day (and icon), and the applicable bar graphs.

- press and release the Advance (Left) button to view Alternate Display #3 (only available if set for Nitrox).

No Deco - Alternate Display #2 (Fig. 47)
Information includes - Current Depth, Dive Time Remaining (and Mode icon), current value of PO2 (if a nitrox dive), and applicable bar graphs.

- press the Advance (Left) button to view Display #1.

No Deco - SAFETY STOP
Upon ascending to 6 meters (20 feet) on any No Decompression dive in which Depth exceeded 9 meters (30 feet), a short beep will sound and a Safety Stop screen (Fig. 48) will appear displaying a Stop at 4,5 meters (15 feet) with a 3 minute countdown timer that counts down from 3:00 to :00 (min:sec).

Information includes - Current Depth (and icon), Stop Depth (4,5 meters or 15 feet), Stop Bar icon, Countdown Timer, Elapsed Dive Time (and icon), and applicable bar graphs.

The Safety Stop screen will be displayed until the countdown times out, or a descent is made below 9 meters (30 feet), or the diver surfaces.

There is no Penalty if the diver surfaces prior to completing the Safety Stop.

DECOMPRESSION DIVE MODE

The Voyager is designed to help you by providing a representation of how close you are to entering Decompression. Decompression Dive Mode activates when theoretical No Decompression time/depth limits are exceeded.

Entry into Decompression Dive Mode (Fig. 49)

Upon entering Decompression Mode, the Audible Alarm will sound for 10 seconds or until acknowledged unless the Audible feature is set OFF. The Up Arrow with Deco Bar (flashing), STOP Depth, and DEC Mode icons will be displayed.

At that time, you should begin a safe controlled ascent to a depth slightly deeper than, or equal to, the Required Stop Depth indicated (Fig. 49a) and decompress for the Stop Time indicated (Fig. 49b). Current Depth with M or FT (Fig. 49c) and Elapsed Dive Time (Fig. 49d) are also displayed with applicable bar graphs.

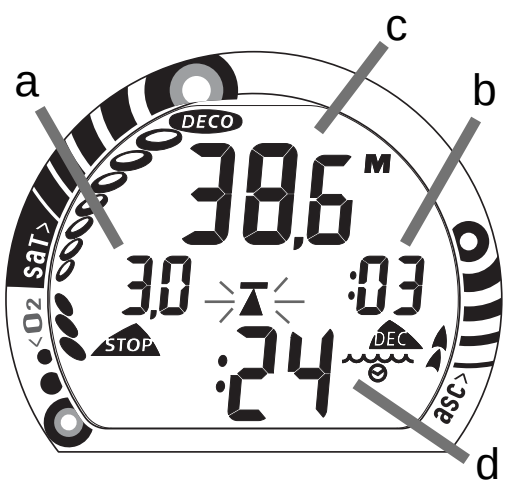


Fig. 49 -Entry into DECO

- The UP Arrow and Deco Bar will flash if you are greater than 3 meters (10 feet) deeper than the Required Ceiling Stop Depth.

- Total Ascent Time, which can be viewed by accessing Alternate Display #1, includes Stop Times required at all ceilings plus vertical Ascent Time calculated at 18 meters (60 feet) per minute for depths deeper than 18 meters (60 feet), and 9 meters (30 feet) per minute for depths of 18 meters (60 feet) and shallower.

Managing Decompression Stops

- While within 3 meters (10 feet) of, and below, the Stop Depth, both Arrows and the Deco Bar appear solid (Fig. 50a).

The amount of Decompression Credit Time that you receive is dependent on Depth, with slightly less Credit given the deeper you are.

- You should stay slightly deeper (Fig. 50b) than the Required Stop Depth indicated (Fig. 50c) until the next shallower Stop Depth appears.

- Then, you can slowly Ascend to, but not shallower than that indicated Stop Depth.

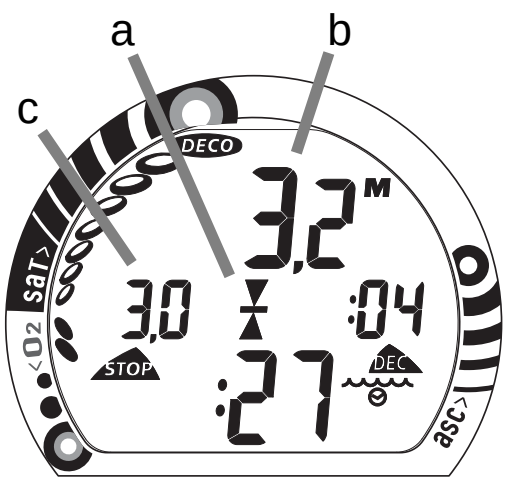


Fig. 50 -Managing a Deco Stop

Deco - Main (Default) Display (Fig. 51)

Information includes - Current Depth (with M or FT icon), Required Decompression Stop Depth and Time (with STOP and DEC icons), both Arrows and the Deco Bar, Elapsed Dive Time (with wave/clock icon), and the applicable bar graphs.

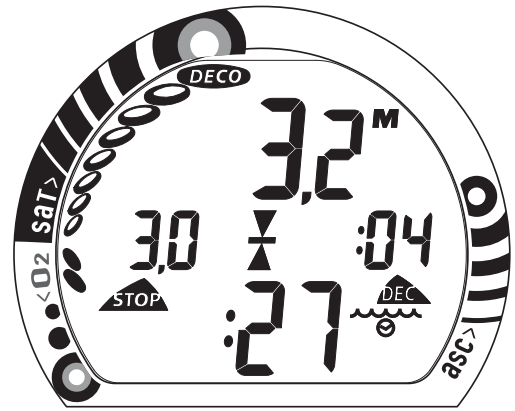


Fig. 51 -Deco MAIN

- press and hold the Advance (Left) button for 2 seconds to acknowledge and silence the Audible Alarm (unless set OFF).

- press and release the Advance (Left) button to view Alternate Display #1.

- press and hold the Select (Right) button for 2 seconds to activate the Backlight.

Deco - Alternate Display #1 (Fig. 52)

Information includes - Current Depth (with M or FT icon), Maximum Depth for that dive (with MAX icon), Total Ascent Time (with SURF icon), Elapsed Dive Time (with wave/clock icon), and the applicable bar graphs.

Fig. 52 -Deco ALT #1

- press and release the Advance (Left) button to view Alternate Display #2.

Fig. 53 -Deco ALT #2

Deco - Alternate Display #2 (Fig. 53)

Information includes - Current Depth (with M or FT icon), Temperature (with icon and C or F), Time of Day (with H icon), and the applicable bar graphs.

- press and release the Advance (Left) button to view Alternate Display #3.

Deco - Alternate Display #3 (Fig. 54)

This display is only available when set for Nitrox dives (numerical FO2 of 21 to 50%).

Information includes - Current Depth (with M or FT icon), the current value of PO2 (ATA) with the graphic PO2, Elapsed Dive Time (with wave/clock icon), and applicable bar graphs.

Fig. 54 -Deco ALT #3

- press the Advance (Left) button to view the Main Display.

NOTE: While in Deco Dive Mode, the Voyager will automatically revert to the Main (Default) Display after 3 seconds unless the Advance (Left) button is pressed to view another Alternate Display.

WARNING: If you exceed certain limits, the Voyager will not be able to tell you how to get safely back to the surface. These situations exceed tested limits and can result in loss of some Voyager functions for 24 hours after the dive in which a Violation occurred.

VIOLATION MODES

Violation Modes that the Voyager can enter are termed - Conditional, Delayed, and Immediate. Permanent Violation Mode and Gauge Mode are continuations of these.

WARNING: It is important to understand each different Violation Mode and how to carry out emergency procedures in the event that you enter one.

NOTE: Upon entry into certain Violation Modes, the Audible Alarm will emit a 30 second continuous tone followed by a 5 second steady beep. The Alarm will sound even if it is user Set OFF. It also cannot be turned off (acknowledged) by pressing the Advance (Left) button.

While in Violation Modes, the Alternate Displays previously described can be accessed using the Advance (Left) button, and the Backlight can be activated using the Select (Right) button.

NOTE: While in Violation Modes, the Voyager will automatically revert to the Main Display after 3 seconds unless the Advance (Left) button is pressed to view another display of information.

Conditional Violation Mode

The Voyager will enter the Conditional Violation Mode **if you ascend to a Depth shallower (Fig. 55a) than the Required Decompression Ceiling Stop Depth displayed (Fig. 55b).**

- Unless set OFF (a user setting), the Audible Alarm will emit a continuous tone for 10 seconds or until acknowledged by pressing the Advance (Left) button for 2 seconds.

- The Down Arrow and Deco Bar will flash until you descend below the Required Stop Depth. Also displayed will be Current Depth (with M or FT), Elapsed Dive Time (with wave/clock icon), and applicable bar graphs.

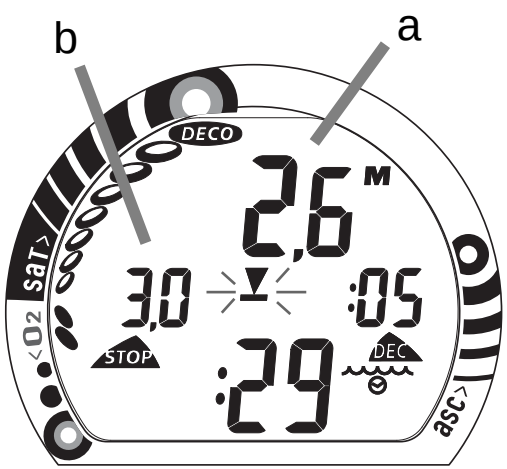


Fig. 55 - Conditional Violation

If you descend below the required decompression ceiling before 5 minutes have elapsed, the Voyager will continue to function in Decompression Dive Mode. In this case, no off-gassing Credit will be given, and for each minute above the ceiling $1^{1}/_{2}$ minute of **Penalty Time** will be added to Required Stop Time.

The added Penalty Time will have to be 'worked off' first, before obtaining off-gassing Credit. Once the Penalty Time is worked-off, and off-gassing Credit begins, required Stop Depths and Time will decrease toward zero, then the Nitrogen Bar Graph will recede into the Caution Zone and the Voyager will revert to No Deco Dive Mode.

NOTE: Upon entry into Delayed Violation Modes, the Audible Alarm will sound, <u>even if it is user Set OFF.</u> It cannot be turned Off (acknowledged) by pressing the Advance (Left) button.

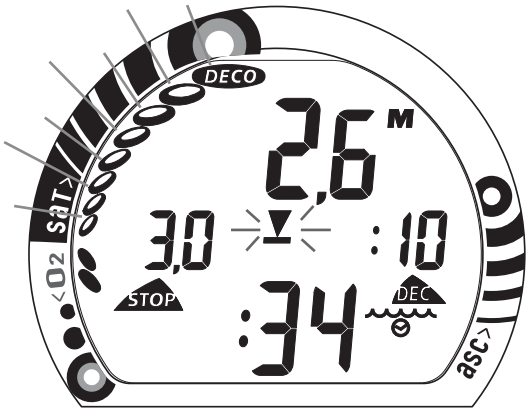


Fig. 56 - Delayed Violation #1

Delayed Violation Mode #1 (Fig. 56)

If you remain above the Required Ceiling Stop Depth for 'more than 5 minutes', the Nitrogen Bar Graph and Down Arrow with Deco Bar will flash until you descend below the Stop Depth indicated. This is a continuation of a Conditional Violation.

Delayed Violation Mode #2 (Fig. 57)

The Voyager cannot calculate decompression times for Stop Depths much greater than 18 meters (60 feet) and offers no indication of how much dive time would result in the need for a greater Stop Depth.

If your Decompression obligation requires a Ceiling Stop Depth 'between' 18 meters (60 feet) and 21 meters (70 feet), the Nitrogen Bar Graph will flash.

You must ascend to just deeper than, and stay as close as possible to, 18 meters (60 feet). When the Required Stop Depth indicates 15 M (50 FT), etc., you can ascend to those depths and continue decompressing.

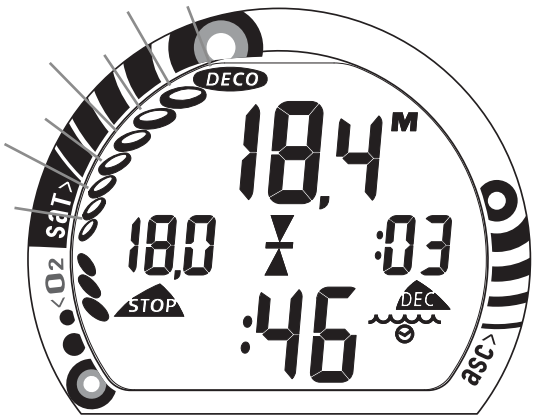


Fig. 57 - Delayed Violation #2

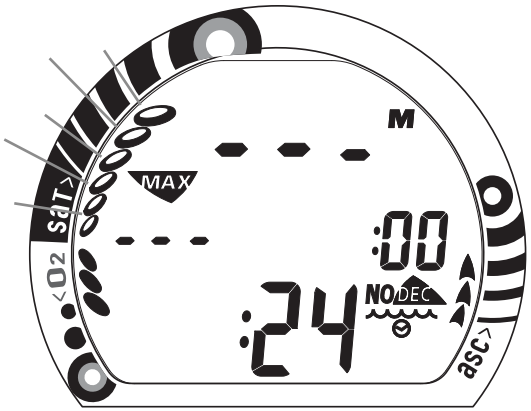


Fig. 58 - Delayed Violation #3

Delayed Violation Mode #3 (Fig. 58)

If you descend deeper than 99,9 meters (330 feet), the displayed segments of the Nitrogen Bar Graph will flash and the Current Depth and Max Depth displays will only indicate 3 dashes (- - -). If the unit is set for a Nitrox dive, the O2 icon will go off the display.

The dashes will also replace the Depth values if you descend deeper than 120 meters (399 feet) when Digital Gauge Mode is set On.

Upon ascending above 99,9 meters (330 feet) ,or 120 meters (399 feet) when Digital Gauge Mode is set On, the Current Depth display will be restored, however, Max Depth will only display the 3 dashes for the remainder of that dive. The Memo (Log) for that dive will also only indicate 3 dashes as the Max Depth achieved.

Immediate Violation Mode and Gauge Mode

WARNING: The Voyager enters Immediate Violation Mode when a situation totally exceeds its capacity to predict an Ascent procedure. These dives represent gross excursions into Decompression that are beyond the boundaries and spirit of the Voyager's design, and a Voyager should not be used for such dives.

During a Dive, if a Deco ceiling Stop Depth much greater than 18 Meters (60 Feet) is required, an **Immediate Violation Mode** will be entered. This situation would be preceded by entering Delayed Violation Mode #2, previously described.

The Voyager would then operate with limited functions in **Violation Gauge Mode** during the remainder of that dive and for 24 hours after surfacing.

Fig. 59 - Immediate Violation/ Gauge Mode (underwater)

Violation Gauge Mode turns the Voyager into a digital instrument without any decompression or oxygen monitoring functions. Only Current Depth, Max Depth, Elapsed Dive Time, and the Ascent Rate Indicator will be displayed (Fig. 59). The Nitrogen Bar Graph and O2 Bar Graph (if set for Nitrox) will flash as a warning.

- To view Temperature and Time of Day - press the Advance (Left) button.
- To activate the Backlight - press the Select (Right) button.

The Voyager will also enter an **Immediate Violation Mode** 5 minutes after reaching the Surface from a dive in which a Delayed Violation occurred.

On the surface, **Violation Gauge Mode** displays the Dive Number, Temperature, Time of Day, and Surface Interval time, with the full Nitrogen and O2 Bar Graphs (if set for Nitrox) flashing (Fig. 60).

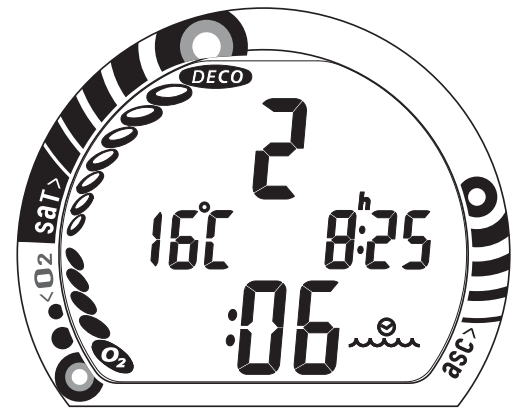


Fig. 60 - Immediate Violation/ Gauge Mode (after surfacing)

Once violated, it does not provide the FO2, Dive Planner, or Time to Fly and Desaturate features.

The countdown timer that appears when you try to access Time to Fly does not represent Time to Fly. It is the time remaining before the Voyager can resume operation with full features and functions.

This condition is considered a Permanent Violation, and in the event that a dive is made during the 24 hour period that follows, a full 24 hour surface interval must then be served before all normal dive computer functions are restored.

HIGH PO2 DIVE MODE

As Depth increases during a dive, the partial pressure of oxygen (PO2) increases. When PO2 becomes equal to, or greater than, **1,40 ATA, or 0,20 ATA less than the PO2 Alarm setting,** the current PO2 value, PO2 symbol, O2 segment of the O2 Bar Graph, and UP Arrow with Bar will appear on the Main Display as a warning until PO2 decreases below 1,40 or 0,20 less than the Alarm setting.

Fig. 61 - PO2 Warning

Current Depth and Elapsed Dive Time will be displayed (Fig. 61).

- To view Temperature and Time of Day - press the Advance (Left) button.
- To activate the Backlight - press the Select (Right) button.

If PO2 continues to increase, the value displayed will increase toward a maximum value of 5,00 ATA in increments of 0,01 ATA. When it reaches a value of **1,60 ATA**, **or the PO2 Alarm setting),** the Audible Alarm will sound (unless set OFF) and the current PO2 value, PO2 symbol, O2 segment of the O2 Bar Graph, and UP Arrow with Bar will flash (Fig. 62) until PO2 decreases below the Alarm setting.

WARNING: In the event that you enter High PO2 Dive Mode, you must immediately focus on reducing the partial pressure of oxygen by slowly Ascending to a shallower depth at a safe rate in accordance with your nitrox training. If you continue the dive at your current depth, or descend deeper, your exposure to CNS oxygen toxicity will increase.

While in High PO2 Mode, the Alternate Displays previously described can be accessed using the Advance (Left) button, and the Backlight can be activated using the Select (Right) button.

NOTE: While in High PO2 Mode, the Voyager will automatically revert to the Main Display after 3 seconds unless the Advance (Left) button is pressed to view another Alternate Display of information.

Fig. 62 - PO2 Alarm

HIGH OXYGEN ACCUMULATION

It is important that you understand that conducting repetitive dives using enriched nitrogen-oxygen (nitrox) mixtures can lead to oxygen buildup, reducing oxygen tolerance while increasing the risk of pulmonary oxygen toxicity.

Beuchat strongly recommends that you avoid exceeding oxygen exposure limits, and reminds you that nitrox diving requires special training and understanding of the effects of oxygen toxicity.

The O2 Bar Graph (O2BG) provides a graphic representation of your Oxygen Accumulation, displaying either oxygen accumulated during that dive, or during the repetitive dives you conduct during that 24 hour period, whichever of the two is greater at that time.

The **Caution Zone** of the O2 Bar Graph offers you a way to consistently monitor how close you are coming to the limits of oxygen exposure.

Use the O2BG as a visual reference to place a wider margin of protection between you and the Limits.

If the theoretical amount of oxygen accumulated equals, or exceeds, the limit for a single exposure, or the exposure limit for a 24 hour period, Oxygen Dive Time Remaining becomes zero (:00) and the O2 Bar Graph will enter the **O2 (Danger) Zone** (Fig. 63). The Audible Alarm will sound (unless set OFF) and the UP Arrow, full O2 Bar Graph, and O2 icon will flash as a warning until the level of oxygen decreases below the limit (300 OTU).

You must immediately focus on making a safe controlled ascent to the surface to prevent further exposure. As your accumulation (dose) decreases during your surface interval, the O2 Bar Graph will gradually recede into the Caution zone then the Normal zone.

WARNING: In the event that you exceed the maximum per dive allowable oxygen exposure (dose), it is recommended that you allow a Surface Interval of at least 2 hours before reentering the water. If you exceed the maximum 24 hour period allowable oxygen exposure (dose), you must allow a surface interval of at least 24 hours before reentering the water.

While in High O2 Mode, the Alternate Displays previously described can be accessed using the Advance (Left) button, and the Backlight can be activated using the Select (Right) button.

Fig. 63 - High O2 Warning

Fig. 64 - Digital Gauge MAIN

USER SET DIGITAL GAUGE MODE

When Digital Gauge Mode is set for ON, the Voyager will operate as a digital Depth Gauge/Timer without performing nitrogen and oxygen calculations.

While in this mode, the range of the Current and Max Depth displays are extended to 120 meters (399 feet) to accommodate activities involving diving with advanced breathing gas mixtures or free diving beyond the normal depth limit of the unit.

Information displayed includes (Fig. 64) - Current Depth (with M or FT), Maximum Depth (with MAX icon), and Time of Day (with **h** icon), and Elapsed Dive Time (with wave/clock icon).

- To view Temperature and Time of Day (Fig. 65) - press the Advance (Left) button.
- To activate the Backlight - press the Select (Right) button.

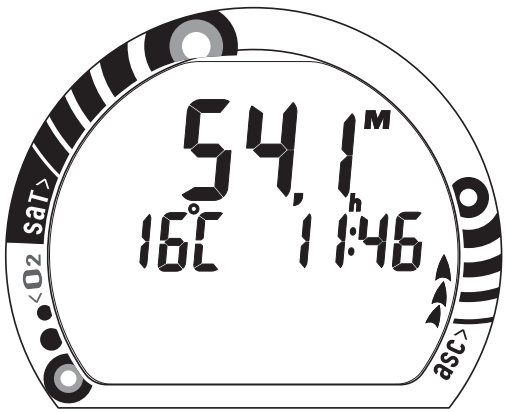


Fig. 65 - Digital Gauge Alternate

△ **NOTE: Once a dive is made with this feature set ON, the setting will be locked ON for 24 hours after the dive. Set Digital Gauge Mode will not appear as a selection for 24 hours after the dive.**

POST DIVE MODES

POST DIVE SURFACE MODE

When you ascend to 1 meter (3 feet), or shallower, the Voyager will enter Surface Mode and begin counting your surface interval.

TRANSITION PERIOD

The first 10 minutes is, in affect, a Transition Period during which time the following information is displayed (Fig. 66):

- Mountain icon - if at Altitude level 2 to 7
- Number of that dive (during that period of activation)
- Temperature (with icon and graphic C or F)
- Time of Day (with **h** icon)
- Surface Interval time (colon flashing) with clock/wave icon (flashing). After 9:59 (hours:minutes), Hours only will be displayed from 10 through 23 as 10H, 11H, etc.
- Nitrogen Bar Graph indicating current nitrogen loading
- O2 Bar Graph indicating current oxygen accumulation (if a Nitrox dive)
- Battery icon (if a Low Battery Condition exists)
- O2 icon (if a Nitrox dive)

Fig. 66 - Transition Period

During the Transition Period, Memo (Log) Mode can be accessed. No other modes (e.g., Plan, Fly, Desat, History, Set, PC) are accessible until after being on the surface for a full 10 minutes.

- To activate the Backlight, press the Select (Right) button.

To view that dive's Memo (Log) (Fig. 67) -

Refer to page 72 for a description of the Memo Mode and displays.

- press the Advance (Left) button **1 time**
- press the Select (Right) button **1 time** to view the Nitrogen data screen
- press the Select (Right) button **again** to view the Oxygen data screen (if a nitrox dive)
- press Both buttons simultaneously for 2 seconds to return to Surface Mode
- the unit will revert to Surface Mode after 2 minutes if no button is pressed

Memo (Log) Data will not be recorded in the unit's memory until the 10 minutes Transition Period on the surface is completed.

Once 10 minutes have elapsed, the Surface Interval time display colon stops flashing indicating that the Dive and Transition Period are completed, and a subsequent Descent will be considered a new dive.

If you descend during the 10 minutes Transition Period, time underwater will be considered a continuation of that dive. The time at the surface (if less than 10 minutes) will not be added as Dive Time.

Fig. 67 - Memo (Log) Mode

Fig. 68- Surface Mode

AFTER THE TRANSITION PERIOD (THE FIRST 2 HOURS)

For the remainder of the **first 2 hours after surfacing**, information will be displayed as Surface Mode (Fig. 68) and you will have full access to other modes (e.g., Plan, Fly, Desat, History, Log, Set, PC).

To activate the Backlight, press the Select (Right) button.

To access the Dive Planner (Plan Mode) -

- press the Advance (Left) button 1 time (while in Surface Mode)
- press and release the Select (Right) button to advance through the sequence of available 'adjusted' depths/times one screen at a time.
- The unit will revert to Surface Mode after 2 minutes, unless the Advance (Left) button is pressed to access the Fly Mode.

The Dive Planner now shows 'adjusted' No Decompression Limits (Fig. 69) based on residual nitrogen and accumulated oxygen calculated to be remaining from the previous dives.

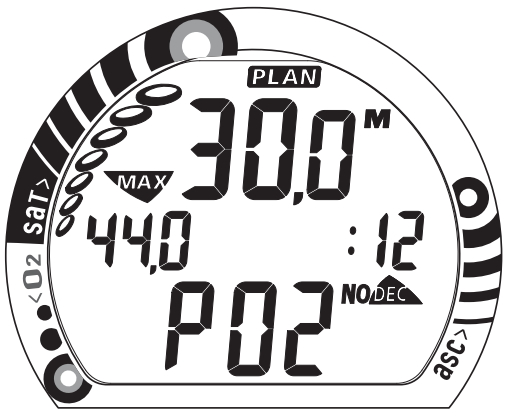


Fig. 69 - Plan Mode

△ **NOTE: The Planning Sequence will only advance to the Maximum Depth allowed by the nitrogen or oxygen Limit, whichever is in control. The respective bar graph will be displayed to indicate which is in control.**

To access the Time to Fly Countdown -

- press the Advance (Left) button **2 times** (while in Surface Mode)
- The unit will revert to Surface Mode after 2 minutes, unless the Advance (Left) button is pressed to access the Desat Time Countdown.
- If a violation occurred during the dive a single dash (-) will appear instead of the graphic FLY.

The Time to Fly counter (Fig. 70) is provided to assist you with deciding when enough surface time has elapsed to Fly (or travel to higher elevations).

It begins counting down 10 minutes after surfacing from a dive (after the Transition Period) displaying the graphic **FLY** and a countdown that begins at 23:50 (hr:min) and counts down to :00 (hr:min).

If the module is still Wet, the graphic H2O will be displayed indicating that the unit should be dried off.

After a surface interval of 12 hours, you may choose to Fly (or travel to higher elevations), provided that your dive Profile(s) did not enter Decompression. If your diving involved Decompression or a Repetitive, Multi Day Profile, it is strongly recommended that you wait a full 24 hours after your last dive to add a greater degree of protection.

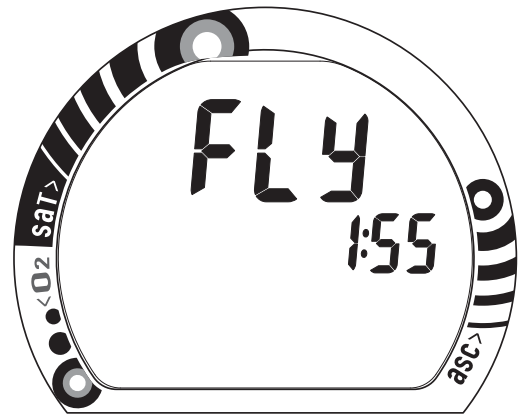


Fig. 70 - Time to Fly

As you should be aware from your own training, the longer you wait to Fly (or travel to higher elevations) after diving, the more you will reduce your exposure to decompression sickness.

To access the Time to Desaturate Countdown -

- press the Advance (Left) button **3 times** (while in Surface Mode)
- The countdown starts 10 minutes after surfacing at 23:50 (hr:min) maximum and counts down to :00 (hr:min). The Time to Desaturate Countdown displays the graphic **SAt** and a counter (Fig. 71) that provides calculated time for tissue desaturation (release of nitrogen loading) at sea level.
- If the module is still Wet, the graphic H2O will be displayed indicating that the unit should be dried off.
- If a violation occurred during the dive, Desaturation Time will not be displayed.
- The unit will revert to Surface Mode after 2 minutes, unless the Advance (Left) button is pressed to access the Log Mode.

Fig. 71 - Time to Desaturate

NOTE: Two hours after the last dive, the Time to Fly and Desaturation countdowns will be displayed alternately for 3 seconds each until they count down to :00 or another dive is made. Access to other modes is then gained by pressing either button to return to Surface Mode.

HISTORICAL (HISTORY) MODE

The Voyager stores information accumulated from the time that it is taken on the first dive in the **Historical (History) Mode** for viewing.

Historical information will not be lost when the battery is removed, but factory service may delete data.

Button Control in Historical Mode -

- To return to Surface Mode at any time while in Historical Mode, press Both buttons simultaneously for 2 seconds.
- The unit will automatically revert to Surface Mode after 2 minutes if no button is pressed while in the Historical Mode.
- Press the Advance (Left) button momentarily (< 2 seconds) to advance to the Memo (Log) Mode.

To access Historical Mode-

- press the Advance (Left) button **4 times** (while in Surface Mode)

Displayed (Fig. 72) will be -

- Maximum Depth achieved with **MAX** icon and **M** (or FT) icon.
- Total Number of Dive conducted (up to 999 maximum).
- Total Hours of Elapsed Dive Time (in hours) and graphic **H**.
- Graphic **HSt**.

Fig. 72 - Historical Mode

MEMO (LOG) MODE

Information from your latest 24 dives is stored in the **Memo (Log)** for viewing. The first dive of a new Activation Period will be #1, then #2, etc. After 24 dives are accumulated, each subsequent dive will overwrite the oldest dive in the Memo (i.e., the most recent dive deletes the oldest).

Memo information will not be lost when the battery is removed, but factory service will delete data.

Dives are displayed in a reverse sequence that starts with the dive most recently recorded back to the oldest of the 24 dives stored. Your most recent dive will always be the first shown in the sequence. Memo screens are Preview (Date/Time started), Nitrogen data, and Oxygen data (if a Nitrox dive).

Button Control in Memo Mode -

- The Advance (Left) button is used to access a specific dive's Memo Preview (identification) screen.
- The Select (Right) button is then used to view the Nitrogen data and Oxygen data (if set for Nitrox) screens for that dive.
- To return to Surface Mode at any time while in Log Mode, press Both buttons simultaneously for 2 seconds.
- The unit will automatically revert to Surface Mode after 2 minutes if no button is pressed while in the Memo Mode.

To access Memo Mode and view the first Preview screen

- press the Advance (Left) button **5 times** (while in Surface Mode)

Displayed (Fig. 73) for the most recent dive will be -

- MEMO icon
- Dive Number (for that period of activation)
- Date and Time of Day that the dive started

Fig. 73 - Memo Preview screen
(Dive started at 11:10 on March 31)

- press the Select (Right) button to display the Nitrogen Data screen, or press the Advance (Left) button to step through other dive's Preview screens bypassing other screens for that dive

Nitrogen Data for that dive (second screen) includes (Fig. 74) -

- MEMO icon
- Maximum Depth - reached during the dive (with M or FT and MAX icons)
- Temperature - minimum during that dive (with icon and C or F)
- Surface Interval - prior to that dive (with SURF icon)
- Elapsed Dive Time (with wave/clock icon)
- Ascent Rate Indicator - showing the maximum ascent rate maintained for 4 consecutive seconds during the dive.

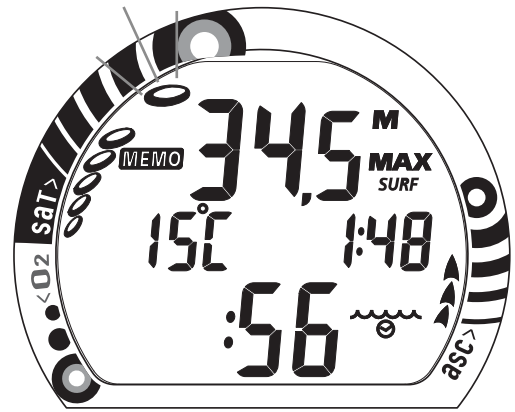


Fig. 74 - Memo Nitrogen Data

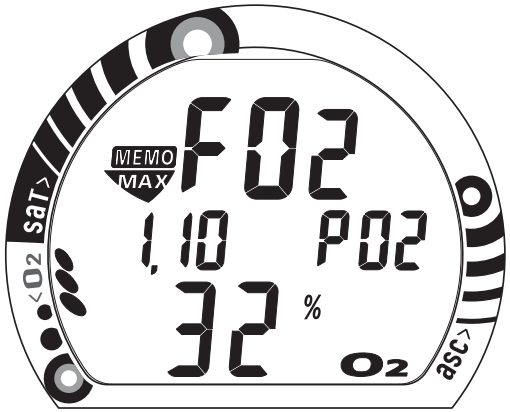


Fig. 75 - Memo Oxygen Data

- Nitrogen Bar Graph - showing tissue nitrogen loading at the time you surfaced at the end of the dive. Also, the segment that reflects the maximum loading during the dive will appear flashing.
- press the Select (Right) button to display the O2 Data screen.

O2 Data for that dive (third screen) includes (Fig. 75) -

- MEMO icon
- FO2 graphic
- Maximum PO2 level - reached during that dive (with MAX icon and PO2 graphic)
- FO2 setting - for that dive (with % and O2 icons)
- O2 Bar Graph - showing oxygen loading at the end of the dive.

To access the Preview screen of the previous dive's Memo -

- press the Advance (Left) button **1 time**

AFTER THE FIRST 2 HOURS

Two hours after the last dive, Surface Mode will no longer be displayed continuously.

The Time to Fly and Desaturation countdown screens will be displayed alternately for 3 seconds each until they count down to :00 or another dive is made, or a button is pressed to access Surface Mode.

To access other modes or enter settings -

- press either button to return to Surface Mode.
- the unit will again revert to the Time to Fly and Desaturation countdowns after 2 hours, if no button is pressed.

Fig. 76 - Fly (unit is wet)

Wet Contacts

If the graphic **H2O** appears during the Fly Mode (Fig. 76) and Desaturation Mode (Fig. 77) countdowns, it is an indication that the water activation contacts are bridged (still wet) and the unit should be rinsed in fresh water and thoroughly dried.

- Once the unit is dry, the graphic **H2O** will disappear.
- If the unit is not cleaned and dried prior to the countdowns reaching :00 (hr:min), or making another dive, it will shut off then automatically reactivate.
- The graphic H2O would then appear in place of Dive Number when Surface Mode is displayed during the Surface Mode.
- If no dive is made, the unit would shut off after 2 hours, then automatically reactivate again, repeating the action until cleaned and dried.

Fig. 77 - Sat (unit is wet)

DOWNLOADING DATA TO A PC

Using special linking hardware and a custom designed PC software program, dive data can be downloaded (copied) from the memory of your Voyager to an IBM compatible PC program running on a Microsoft® Windows® operating system.

Instructions for use of the PC Interface hardware and software are provided with the optional PC Interface package that is available from your Authorized Beuchat Dealer.

NOTE: Ensure that the download product that you acquire is compatible with the Voyager and the PC equipment that you will be using.

The software program provides tabular and graphic profile data sampled throughout the dives.

The Interface Cable will be connected to the Data Port located on the side of the Voyager housing and a USB port of the PC.

Prior to attempting to download data from your Voyager, refer to the instructions provided in the User Manual that is incorporated into the CD provided in the Interface package.

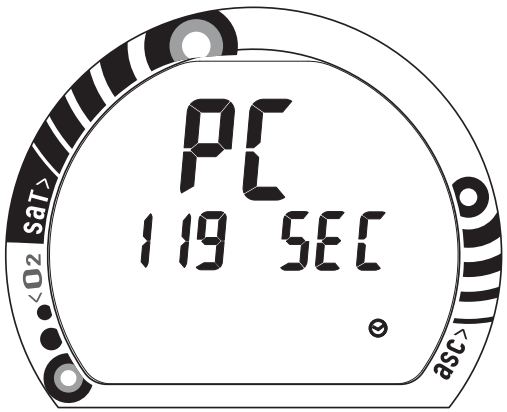


Fig. 78 - PC Interface

Refer to page 29 of this manual for instructions regarding access to PC Interface (Fig. 78).

PC System Requirements

IBM®, or compatible, Personal Computer with -

- Intel® Pentium 200 MHz or better microprocessor
- Microsoft® Windows® 98 Second Edition, ME, NT, 2000, or XP
- CD Rom drive, USB Port, Mouse, Printer (optional)
- Super VGA card or compatible video graphics adaptor (256 color or greater) with a minimum 800 X 600 pixel screen area of display settings
- 20MB of available hard drive storage and 16MB of available RAM

CLEAR (RESET) FEATURE

The Voyager is configured with a Clear (Reset) feature that allows data to be cleared, including Nitrogen and Oxygen calculations, FO2 setting, and Log Mode entries.

- Modules are shipped from the factory set at 00 00.
- The Key Code to be entered to Reset is the module **13 13**.

CLEAR (RESET) PROCEDURE:

- While in Surface Mode (new activation period or after a 10 minute post dive surface interval), press the Advance (Left) button 1 time to access Plan Mode.
- While the Altitude/Battery Status screen is displayed in the Plan Mode, press and hold Both buttons until SET 2 appears, then release the buttons.
- Press and release the Advance (Left) button to display the Clear screen (Fig. 79). The first 2 digits of the KEY CODE flash.
- If necessary to change the number, press and release the Select (Right) button until the digits change to **13**.
- Press and release the Advance (Left) button to save the first number and display the second 2 digits of the KEY CODE, flashing.
- If necessary to change the number, press and release the Select (Right) button until the digits change to **13**.
- Press and release the Advance (Left) button to complete the RESET operation and turn the unit OFF.

⚠ WARNING: Reset after a dive and subsequent use for a Repetitive Dive conducted by the same diver could result in serious injury or death.

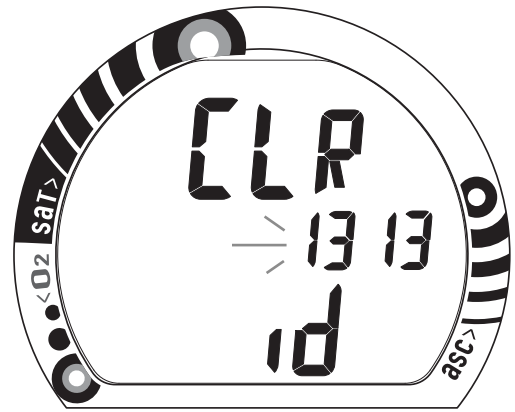


Fig. 79 - Clear (Reset)

WARNINGS AND SAFETY RECOMMENDATIONS

- **The Voyager is not intended for use by military or commercial divers.**
- **The Voyager is intended for use by recreational divers who have successfully completed a nationally recognized course in scuba diving, and diving with enriched nitrogen-oxygen (nitrox) mixtures.**
- **It must not be used by untrained persons who may not have knowledge of the potential risks and hazards of scuba diving, and diving with nitrox.**
- **You must obtain scuba certification, and certification in diving with nitrox before using the Voyager, if you have not already done so.**
- **It is NOT for use by military and commercial divers.**
- **It should NOT be utilized for any competitive, or repetitive square wave or unplanned de-compression diving, it is intended solely for recreational use and multilevel diving.**
- **As with all underwater life support equipment, improper use or misuse of this product can cause serious injury or death.**
- **Conduct your dives in such a manner so as to insure that you continuously check the computer's proper function.**
- **If you do not fully understand how to use this dive computer, or if you have any questions, you should seek instruction in its use from your authorized Beuchat dealer before you uti-lize this product.**
- **Never participate in sharing or swapping of a dive computer. Doing so may result in injury or death.**
- **If you exceed certain limits, the Voyager will not be able to tell you how to get safely back to the surface. These situations exceed tested limits and can result in loss of some Voyager functions for 24 hours after the dive in which a Violation occurred.**
- **The Voyager enters Immediate Violation Mode when a situation totally exceeds its capacity to predict an ascent procedure. These dives represent gross excursions into decompres-sion that are beyond the boundaries and spirit of the Voyager design. If you are following these dive profiles, Beuchat advises you not to use an Voyager dive computer.**

CARE and MAINTENANCE

CARE AND CLEANING

Protect your Voyager from shock, excessive temperatures, chemical attack, and tampering. Protect the lens against scratches with an Instrument Lens Protector. Small scratches will naturally disappear underwater.

⚠ CAUTION: Never spray aerosols of any kind on, or near, the instrument. The propellants may chemically attack the plastic.

- Soak and rinse the Voyager in fresh water at the end of each day of diving, and check to ensure that the areas around the low pressure (depth) sensor (Fig. 80a), download interface port (Fig. 80b), and buttons are free of debris or obstructions.
- To dissolve salt crystals, soak the unit in a bath consisting of 50% white vinegar and 50% fresh lukewarm water.
- After removal from the bath, place the unit under gently running water and towel dry before storing.
- Transport your unit cool, dry, and protected.

Fig. 80 -Case Back

⚠ WARNING: Never force any object through any slots or holes of the Housing. Doing so may damage the depth sensor, possibly resulting in erroneous depth and/or dive time remaining displays.

WARNING: If a Low Battery Condition is indicated prior to a dive, DO NOT attempt to dive with the Voyager until the battery is replaced.

INSPECTIONS AND SERVICE

Your Voyager should be **inspected annually** by an Authorized Beuchat Dealer who will perform a factory prescribed function check and inspection for damage or wear. To keep the 2 years limited warranty in effect, this inspection must be completed one year after purchase (+/- 30 days).

Beuchat recommends that you continue to have this inspection performed every year to ensure it is working properly.

The costs of annual inspections are not covered under the terms of the 2 years limited warranty.

WARNING: If you are in doubt about the accuracy of your Voyager's depth readings, DO NOT attempt to dive with it until it has been inspected by Beuchat Customer Service.

It is possible to damage the Depth Sensor of the Voyager if it is not pressure tested properly. Ensure that the Dealer adheres to the following warning.

WARNING: Ensure that the Voyager is never pressure tested in an air environment. Doing so may damage the Depth Sensor, possibly resulting in erroneous depth or time readings.

To Obtain Service

Take your Voyager to an Authorized Beuchat Dealer.

To return your Voyager to Beuchat:

- Record all dive data in the Log and/or download the data in memory. All data will be erased when it receives factory service.
- Package it using a protective cushioning material.
- Include a legible note stating specific reason for return, your name, address, daytime phone number, serial number, and a copy of your original sales receipt and Warranty Registration Card.
- Send freight prepaid and insured using a traceable method to Beuchat.
- Non-warranty service must also be prepaid (call for an estimate). COD is not accepted.

BATTERY REPLACEMENT

The Battery Compartment should only be opened in a dry and clean environment with extreme care taken to prevent the entrance of moisture, sand, debris, or dust.

As an additional precautionary measure to prevent formation of moisture in the Battery Compartment, it is recommended that the Battery be changed in an environment equivalent to the local outdoor temperature and humidity (e.g., do not change the Battery in an air conditioned environment then take it outside during a hot sunny day).

NOTE: The procedures that follow must be closely adhered to. Damage due to improper Battery replacement is not covered by the 2 years warranty.

Battery Hatch Removal

- Inspect the Buttons, Lens, and Housing to ensure they are not cracked or damaged.
- If there is any sign of moisture in the module, DO NOT use the Voyager until it receives proper service by an Authorized Beuchat Dealer, or the factory.
- Locate the Battery Compartment on the back of the Housing.
- While applying steady inward pressure on the clear Battery Hatch, rotate the Hatch Ring clockwise 10 degrees by turning it with the Battery Hatch tool, or by pressing on the upper/right arm of the Ring with a small blade screwdriver (Fig. 81).
- An adjustable face spanner tool or a pair of pointed pliers can also be used instead of the Battery Hatch tool by inserting the tips of the spanner tool in the small holes in the Ring (Fig. 82).

Fig. 81 -Ring Removal (alternate)

- Lift the Hatch Ring up and away from the Housing.
- Remove the Battery Hatch.

⚠ WARNING: If damage, moisture, or corrosion is found, it is recommended that you return your Voyager to an Authorized Beuchat Dealer, and DO NOT attempt to use it until it has received factory prescribed service.

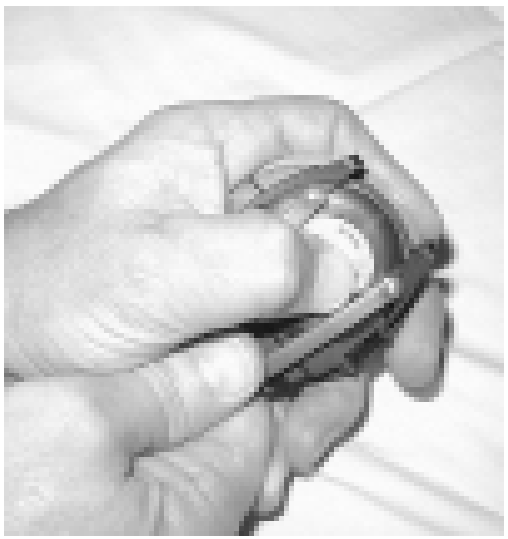


Fig. 82 - Ring Removal (alternate)

NOTE: If the old battery can be removed and the new one inserted within 8 seconds, nitrogen and oxygen calculations ,and settings, will be retained for repetitive dives.

Battery Removal

- Remove the Retaining Bar located across the lower portion of the Battery (Fig. 83a).
- Remove the Hatch O-ring. DO NOT use tools.
- Using care not to damage the Battery Contacts (Fig. 83 b/c), slide the Battery up and out of the right side of the Battery Compartment.

CAUTION: Do not allow a metal object to short circuit the top of the Battery which is positive (+) to the negative (-) contact of the Battery Compartment.

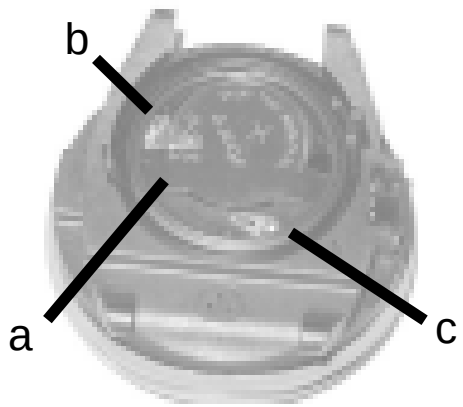


Fig. 83 - Battery Compartment

- Closely check all of the sealing surfaces for any signs of damage that might impair proper sealing.
- Inspect the Buttons, Lens, and Housing to ensure they are not cracked or damaged.
- If it is necessary to clean the Battery Compartment, flush it and all components with a solution of 50% white vinegar and 50% fresh water. Rinse with fresh water, and allow to dry overnight, or blow dry with a hair dryer (set at 'no heat').

Battery Installation

- Slide a **new** 3 volt type CR2450 Lithium Battery, negative (-) side down into the Battery Cavity from the right side and ensure that it slides under the contact clip on the left rim of the cavity.
- Orient the Retaining Bar across the lower portion of the Battery (Fig. 84a) and carefully push it down into position.

Fig. 84 - Battery Installation

Battery Hatch and Hatch Ring Installation

- Lightly lubricate the **new** Hatch O-ring with silicone grease and place it on the inner rim of the Battery Hatch. Ensure that it is evenly seated. This O-ring must be a genuine Beuchat part that can be purchased from an Authorized Beuchat Dealer. Use of any other O-ring will void the warranty.
- Slide the Hatch Ring, top portion first (small opening), onto your thumb (Fig. 85).
- Carefully place the Battery Hatch (with O-ring) into position on the rim of the Battery Compartment, then press it evenly and completely down into place with your same thumb.
- Maintain the Battery Hatch securely in place and, using your other hand, slide the Hatch Ring down off your thumb and into position around the Battery Compartment (Fig. 86). The tabs on the Ring fit down into the slots located at the 2 and 9 o'clock positions.

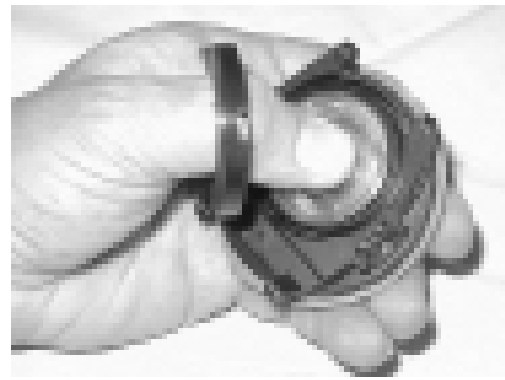


Fig. 85 -Hatch Installation

Fig. 86 -Orientation of Hatch Ring

(continued on page 86)

Fig. 87 -Ring Installation (alternate)

- Using your fingers, turn the Ring counter clockwise 5 degrees until the tabs engage, then tighten it 5 more degrees by turning it counter clockwise with the aide of the Battery Hatch tool,or a small blade screwdriver, pressing against the upper/left arm of the Ring (Fig. 87).

- An adjustable face spanner tool or pair of pointed pliers can be used by placing the tips in the small holes of the Ring (Fig. 88).

Inspection

- Activate the unit and watch carefully as it performs Diagnostic and Altitude/Battery Status checks, and enters Surface Mode. Observe the LCD display to ensure it is consistently clear and sharp in contrast throughout the screen.

WARNING: If any portions of the display are missing or appear dim, or a Low Battery condition is indicated, return your Voyager to an Authorized Beuchat Dealer for a complete evaluation before attempting to use it.

Fig. 88 -Ring Installation (alternate)

REFERENCE

DECOMPRESSION MODEL

The decompression model used is based on no decompression multi level repetitive dive schedules successfully tested and validated. **Using a Beuchat dive computer, just as using decompression tables, is no guarantee of avoiding decompression sickness.** Every diver's physiology is different, and can even vary from day to day. No machine can predict how your body will react to a particular dive profile.

TISSUE COMPARTMENT CONTROL

The Voyager tracks 16 tissue compartments with halftimes ranging from 5 to 480 minutes. The Nitrogen Bar Graph always displays the controlling compartment that is the only one important at that time. Think of the Nitrogen Bar Graph as twelve separate transparent displays laid on top of one another. The compartment that has filled up fastest is the only one the viewer can see from the top.

At any particular point, one compartment may be absorbing nitrogen, while another that was previously higher may be off-gassing. Figure 89 illustrates a sample of one compartment "handing over" control to another compartment at a different depth. **This feature of the Decompression Model is the basis of multilevel diving, one of the most important contributions the Voyager offers you.**

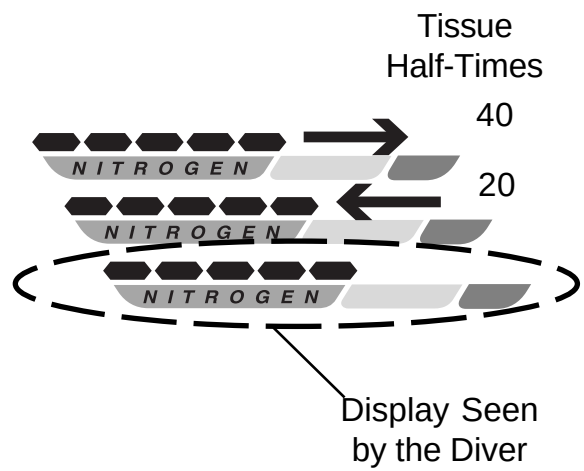


Fig. 89 - Tissue Compartment Control Hand Over

NO DECOMPRESSION LIMITS

Note how the No Decompression Limits for the Voyager are contrasted with the U.S. Navy limits (Fig. 90). The Voyager's Dive Planner does not scroll past 57 meters (190 feet), or to depths at which projected dive time is less than one minute.

WARNING: Using the Voyager, just as using the U.S. Navy (or other) No Decompression Tables, is no guarantee of avoiding decompression sickness (i.e., the bends).

WARNING: Beuchat advocates responsible diving practices . Decompression diving is inherently hazardous and greatly increases your risk of decompression sickness - even when performed according to the computer's calculations. In the event that you must make an emergency decompression dive, you must not make another dive for at least 24 hours.

Depth M (FT)	Voyager NDL-mins. Metric (Eng)	USN NDL mins.
9 (30)	217 (197)	- - -
10,5 (35)	- - -	310
12 (40)	115 (109)	200
15 (50)	68 (65)	100
18 (60)	50 (48)	60
21 (70)	36 (35)	50
24 (80)	27 (26)	40
27 (90)	20 (19)	30
30 (100)	16 (16)	25
33 (110)	13 (12)	20
36 (120)	10 (10)	15
39 (130)	9 (8)	10
42 (140)	8 (7)	10
45 (150)	6 (6)	5
48 (160)	6 (6)	5
51 (170)	5 (5)	5
54 (180)	5 (5)	5
57 (190)	5 (4)	- - -

Fig. 90 - No Decompression Limits (at sea level)

OXYGEN EXPOSURE LIMITS

Predicted exposure limits and oxygen calculations of the Voyager are based on maximum exposure durations (Fig. 91) published by the U.S. National Oceanic and Atmospheric Administration (NOAA) in the October 1991 NOAA Diving Manual.

Both central nervous system (CNS) oxygen toxicity and pulmonary oxygen toxicity were taken into consideration when the limits were published by NOAA.

Although CNS oxygen toxicity is considered the primary constraint for higher levels of PO2, there are circumstances in which pulmonary oxygen toxicity can limit exposures.

CNS oxygen toxicity is not considered likely at PO2 levels below 1,30 ATA. It is however related to the diver's work level. Performing strenuous tasks could cause the symptoms of oxygen poisoning to occur at PO2 levels lower than they normally would appear during casual recreational diving.

⚠ WARNING: The nitrox features of the Voyager are intended for use only by recreational divers trained for nitrox diving by an instructor certified by a recognized training agency to teach diving with nitrox.

	Maximum Exposure Time	
PO2 (ATA)	Per Dive (Min)	Per 24hr (Min)
0,60	720	720
0,70	570	570
0,80	450	450
0,90	360	360
1,00	300	300
1,10	240	270
1,20	210	240
1,30	180	210
1,40	150	180
1,50	120	180
1,60	45	150

Fig. 91 - Oxygen Exposure Limits

Diving with enriched nitrogen-oxygen (Nitrox) mixtures requires special knowledge of the variations imposed upon divers, their activities, and their equipment by the increased percentage of Oxygen. Beuchat recommends completion of a specialized Nitrox training course by a recognized training agency prior to diving with any enriched nitrogen-oxygen (Nitrox) mixtures.

⚠ WARNING: In the event that you exceed the maximum limit of per dive allowable Oxygen exposure, it is recommended that you allow a surface interval of at least 2 hours before reentering the water. If you exceed the maximum limit of 24 hour period allowable Oxygen exposure, you should allow a surface interval of at least 24 hours before reentering the water.

ALTITUDE SAMPLING/COMPENSATION

Diving at high Altitude requires special knowledge of the variations imposed upon divers, their activities, and their equipment by the decrease in atmospheric pressures. Beuchat recommends completion of a specialized Altitude training course by a recognized training agency prior to diving in high altitude lakes or rivers.

Atmospheric (barometric) Pressure decreases as Altitude increases above sea level. Weather systems and ambient temperature also affect barometric pressures. Consequently, Depth reading instruments that do not compensate for the decrease in pressure indicate Depth readings shallower than the Depth they are actually at.

The Voyager automatically compensates for decreased ambient pressure when activated at high Altitudes up to 4270 meters (14000 feet). Its program contains a high altitude Algorithm that reduces no decompression and oxygen exposure limits (times) to add a larger zone of caution.

The Voyager senses ambient pressure when it is manually activated, every 15 minutes while operating on the surface, or every 30 minutes when not activated. At 916 meters (3001 feet), it will automatically calibrate itself to measure Depth in meters (feet) of fresh water rather than feet of sea water. It will then readjust the no decompression and oxygen limits at additional intervals of 305 meters (1000 feet). Therefore, when returning to lower Altitudes, diving should not be conducted until the unit automatically clears of any residual nitrogen and oxygen loading and resets to operate at the new lower Altitude level.

⚠ WARNING: The Voyager will not sense ambient pressures or provide Altitude Compensation when it is wet. DO NOT dive at any different Altitude until the unit shuts off and is reactivated at the new Altitude level. If the unit is activated at elevations higher than 4270 meters (14000 feet), it will perform a Diagnostic check followed by immediate shutdown.

FLYING AFTER DIVING

In 1990 the Undersea and Hyperbaric Medical Society (UHMS) published a set of guidelines aimed at minimizing the possibility of decompression sickness due to **flying** too soon **after diving**. The UHMS suggests***** that divers using standard Air and exhibiting no symptoms of decompression sickness wait 24 hours after their last dive to fly in aircraft with the cabin pressurized up to 2440 meters (8000 feet).

* excerpted from "The UHMS Flying After Diving Workshop"

The two exceptions to this recommendation are:

- If a diver had less than 2 hours total accumulated dive time in the last 48 hours, then a 12 hour surface interval before flying is recommended.
- Following any dive that required a decompression stop, flying should be delayed for at least 24 hours, and if possible, for 48 hours.

Since the 1990 UHMS guidelines were introduced, data from the Diver's Alert Network (DAN) was introduced that resulted in DAN's position** that "A minimum surface interval of only 12 hours would be required in order to be reasonably assured a diver will remain symptom free upon ascent to Altitude in a commercial jet airliner (Altitude up to 2440 meters/8000 feet). Divers who plan to make daily, multiple dives for several days, or make dives that require decompression stops, should take special precautions and wait for an extended surface interval beyond 12 hours before flight".

Both the UHMS and DAN agree that "There can never be a flying after diving rule that is guaranteed to prevent decompression sickness completely. Rather, there can be a guideline that represents the best estimate for a conservative . . . surface interval for the vast majority of divers. There will always be an occasional diver whose physiological makeup or special diving circumstances will result in the bends".

To reduce the risk of developing decompression sickness after a single no decompression dive, current guidelines suggest waiting 12 hours prior to exposure to atmospheric pressures equivalent to 305 meters (1000 feet) and higher above sea level. When repetitive dives are conducted during the same day, or period of days, it is suggested that the interval be increased to a minimum of 24 hours. Note that land travel to higher elevations after diving must also be considered as an exposure to Altitude.

** excerpted from "DAN's Position on Recreational Flying After Diving"

CONCLUSION

The Voyager is an informational tool whose entire worth depends on understanding all of its features and functions, and using it correctly.

Learn how to use it and use it wisely. Be a Responsible Diver!

SPECIFICATIONS

CAN BE USED AS

- Air Computer
- Nitrox Computer
- Digital Depth Gauge/Timer

PERFORMANCE BASIS

- Buhlmann ZHL-16c based Pelagic Z+ algorithm
- No Deco Limits closely follow PADI RDP
- Decompression in agreement with Buhlmann ZHL-16c
- Altitude - Buhlmann, IANTD, RDP (Cross)
- Altitude corrections and oxygen limits based on NOAA tables
- 16 Tissue Compartments

OPERATIONAL MODES

- Activation/Diagnostic
- Altitude/Battery Status Check
- Surface
- Plan
- Time to Fly Countdown
- Desaturation Countdown (if set for Nitrox)
- Historical (History)
- Dive Memo (Log) - Date/Time, Nitrogen, and Oxygen
- Clear (Reset)

- Set Mode # 1:
  - FO2 (Air, 21 to 50% O2)
  - Max Depth Alarm (9 to 99 m/30 to 300 ft)
  - Elapsed Dive Time Alarm (:10 to 3:00 hr:min)
  - PC Interface (to Download data)

- Set Mode # 2:
  - Units of Measure (Metric/Imperial)
  - Hour Format (12 or 24)
  - Time (Hour, Minute)
  - Date (Year, Day, Month)
  - Audible Alarm / LED Warning (On or Off)
  - Max Nitrogen Bar Graph Alarm (1 to 8 segments)
  - Dive Time Remaining Alarm (:00 to :20 min)
  - Max PO2 Alarm (1,20 to 1,60 ATA)
  - FO2 50% Default (On or Off)
  - Backlight Duration (0 , 5, or 10 sec)
  - Sampling Rate (2 sec, 15 sec, 30 sec, 60 sec, 0,5 m , 1,5 m , 3 m , 2 ft , 5 ft , or 10 ft),
  - Digital Gauge Mode (On or Off)
  - Wet Activation (On or Off)

SPECIFICATIONS (CONTINUED)

OPERATIONAL MODES (continued)

- No Decompression Dive:
  - Main - default (Current Depth, Max Depth, Dive Time Remaining, Elapsed Dive Time, Bar Graphs)
  - Alternate #1 (Current Depth, Temperature, Time of Day, Bar Graphs)
  - Alternate #2 - only if a nitrox dive (Current Depth, Current PO2, Elapsed Dive Time, Bar Graphs)
  - Safety Stop - for dives deeper than 9 meters /30 feet (Current Depth, Stop Depth/Time)
- Decompression Dive:
  - Main - default (Current Depth, Stop Depth/Time, Elapsed Dive Time, Bar Graphs)
  - Alternate #1 (Current Depth, Max Depth, Total Ascent Time, Elapsed Dive Time, Bar Graphs)
  - Alternate #2 (Current Depth, Temperature, Time of Day, Bar Graphs)
  - Alternate #3 - only if set for a nitrox dive (Current Depth, Current PO2 value, Elapsed Dive Time, Bar Graphs)
- Violation (Conditional, Delayed, and Immediate/Gauge)
- High PO2 (1,20 to 1,60 ATA)
- High Oxygen Accumulation - allowed per dive or 24 hour period (300 OTU maximum)

DISPLAY RANGE/RESOLUTION

Numeric Displays:	Range:	Resolution:
• Dive Number	0 to 24	1
• Depth	0 to 120 m (0 to 399 ft)	0,1 m / 1 m > 99,9 m (1 ft)
• Maximum Depth	120 m (399 ft)	0,1 m / 1 m > 99,9 m (1 ft)
• FO2 Set Point	Air, 21 to 50 %	1 %
• PO2 Value	0,00 to 5,00 ATA	0,01 ATA
• Dive Time Remaining	:00 to 9:59 hr:min	1 minute
• Total Ascent Time	:00 to 9:59 hr:min	1 minute
• Decompression Stop Time	:00 to 9:59 hr:min	1 minute
• Elapsed Dive Time	:00 to 9:59 hr:min	1 minute
• Surface Time	:00 to 9:59 hr:min,1.0H to 23H	1 minute, hours only after 9:59
• Dive Memo Surface Interval	:00 to 9:59 hr:min,1.0H to 23H	1 minute, hours only after 9:59
• Temperature	-18° to 100° C (0° to 212° F)	1°

SPECIFICATIONS (CONTINUED)

DISPLAY RANGE/RESOLUTION (continued)

Numeric Displays:	Range:	Resolution:
• Time to Fly	23:50 to :00 hr:min* (* starting 10 min after the dive)	1 minute
• Time to Desaturate	23:50 (max) to :00 hr:min* (* starting 10 min. after the dive)	1 minute

Special Displays:	Occurrence
• Diagnostic Display	After Manual Activation
• Altitude/Battery Status	After Diagnostic and as lead-in for Plan
• Out of Range (- - -)	>99,9 meters (>330 feet)
• Violation Gauge Mode Countdown	23:50 to :00 hr:min (after surfacing)

BAR GRAPHS

Nitrogen Bar Graph:	segments
• No Decompression Normal zone	5
• No Deco Caution zone	2
• Decompression Warning zone	1

Oxygen (O2) Bar Graph:	segments
• Normal zone	3
• Caution zone	1
• Danger zone	1

Ascent Rate Indicator:	18 meters (60 feet) and Shallower			Deeper than 18 meters (60 feet)		
	segments	meters/min	feet/min	segments	meters/min	feet/min
	0	0 to 3	0 to 10	0	0 to 6	0 to 20
• Normal Zone	1	3,5 to 4,5	11 to 15	1	6,5 to 9	21 to 30
• Normal Zone	2	5 to 6	16 to 20	2	9,5 to 12	31 to 40
• Normal Zone	3	6,5 to 7,5	21 to 25	3	12,5 to 15	41 to 50
• Caution Zone	4	8 to 9	26 to 30	4	15,5 to 18	51 to 60
• Too Fast Zone (all flashing)	5	> 9	> 30	5	> 18	> 60

SPECIFICATIONS (CONTINUED)

OPERATIONAL PERFORMANCE

Function:	Accuracy:
• Depth	±1% of full scale
• Timers	1 second per day

Dive Counter:
- Displays Dives #1 to 24 , 0 if no dive made yet
- Resets to Dive #1 , after #24 or upon reactivation after having shut Off

Dive Memo (Log) Mode:
- Stores 24 most recent dives in Memo memory for viewing
- After 24 dives, adds 25th dive in memory and deletes the first dive

Altitude:
- Operational from sea level to 4270 meters (14000 feet) elevation
- Samples Ambient Pressure every 30 minutes when not activated, when manually activated, and every 30 minutes while activated. Does not sample Ambient Pressure while it is wet.
- Adjusted No Decompression and O2 Limits and recalibration of Depth readings at elevations between 916 meters (3001 feet) and 4270 meters (14000 feet) at intervals of 305 meters (1000 feet).

Power:	
• Battery	1 - 3 vdc, type CR2450 Lithium battery
• Shelf life	Up to 5 years
• Replacement	User replaceable (annual recommended)
• Life expectancy	100 dive hours (if 1 - 1 hour dive per dive day) to over 300 dive hours (if 3 - 1 hour dives per dive day)

SPECIFICATIONS (CONTINUED)

OPERATIONAL PERFORMANCE (continued)

Activation:
- Manual - push button (recommended)
- Automatic - by immersion in water (if set ON)
- H2O graphic indicates Wet Contacts are bridged (unit must be dried prior to transport or storage).
- Cannot be manually activated deeper than 1,2 meters (4 feet), if the Water Activation feature is set OFF.
- Cannot be activated at elevations higher than 4270 meters (14000 feet)

Shutoff:
- Automatically shuts off if no dive is made within 120 minutes after initial activation. Reactivation required.
- Automatically shuts off 24 hours after last dive (will reactivate if the H2O graphic is displayed).
- Cannot be shut off manually.

Setting FO2:
- Automatically set for 'Air' upon activation
- Remains set for Air unless an FO2 numerical value is set
- Nitrox set points from 21 to 50 %
- If set for 21%, remains set for 21% until changed
- If set for >21%, it reverts to 50% 10 minutes after the dive, if the FO2 Default is ON. If the FO2 Default is OFF, the value will remain at the value set during that activation period.

Operating Temperature:
- Out of the water - - between -6 °C and 56 °C (20 °F and 140 °F).
- In the water - - between -2 °C and 35 °C (28 °F and 95 °F).

ACCESSORIES **(**optional items available from your Authorized Beuchat Dealer)
- Lens Guard - covers the lens face, prevents scratches
- PC download package (hardware and software)
- Battery Kit - includes 1 battery, 1 battery hatch o-ring, silicone grease

GLOSSARY

Air Dive - A dive conducted using air (approximately 21% oxygen & 79% nitrogen) as the breathing gas.
Algorithm - A step-by-step mathematical formula designed to accomplish a particular result (i.e. Dive Time Remaining in the Voyager).
Alternate Display - Additional information accessible by pressing a control button.
Altitude Dive - A dive made at an elevation above 915 meters (3000 feet) where reduced no decompression and O2 times used.
Ascent Rate - The speed that a diver ascends toward the surface.
Ascent Rate Indicator - A display that shows ascent rate as a bar graph alongside an indicator.
Audible Alarm - A computer emitted tone that alerts the diver to potential danger.
Battery Icon - A display symbol that flashes (while in Surface Mode) to indicate a Low Battery Condition.
Caution Zone - The sections of the Nitrogen Bar Graph, O2 Bar Graph, and Ascent Rate Indicator that give a visual warning of a diver's proximity to decompression limits, oxygen tolerance limits, and ascent rate, respectively.
Ceiling - See decompression ceiling.
Clean Dive - A dive preceded by 24 hours of no diving activity.
CNS - Abbreviation for the Central Nervous System of the body.
Competitive Dive - A dive conducted for profit or prize.
Compartment - A term applied to the hypothetical modeling of nitrogen absorption in the tissues (more accurate than the term "tissue" because dive computer models have no direct relation to human tissues).
DCS - Abbreviation for decompression sickness, i.e., "the bends".
DEC or **DECO** - Abbreviation for Decompression.
Decompression Ceiling - The shallowest depth a diver may reach upon ascent without risking decompression sickness.
Decompression Stop - The depth(s) at which a diver must pause during ascent to allow absorbed nitrogen to escape naturally from the tissues.
Depth Sensor - an electro-mechanical device that converts water pressure into an electrical signal, that is converted to a visual depth display.
Diagnostic Mode - The first display seen on dive computers after manual activation during which time a self–check for internal faults is performed.
Display - A visual readout of information.
Dive Memo Mode - A computer display of previous dive information stored in memory.
Dive Plan Mode - A display of available dive times at 3 meter (10 foot) intervals from 9 to 48 meters (30 to 160 feet) used when dive planning.
Dive Time Remaining - A display of the time before a diver must surface based on no decompression status and/or accumulated O2.
Elapsed Dive Time - The total time spent underwater during a dive between 1,5 meters (5 feet) on initial descent to 1 meter (3 feet) on final ascent.
FO2 - The fraction (percent / 100) of oxygen (O2) in the breathing gas mixture.

GLOSSARY (CONTINUED)

Icon - a small pictorial representation (symbol) of an operational mode.
LCD - Abbreviation for liquid crystal display, an easily viewed low voltage display usually found on dive computers
Maximum Depth - The deepest depth attained during a dive.
Mode - A specific set of functions in a dive computer.
Multi-level Dive - A type of dive profile where the diver spends various times at different depths (opposite of a “Square Wave” dive profile).
Nitrogen Bar Graph - A graphic display of simulated nitrogen absorption on Beuchat dive computers.
Nitrox - A nitrogen-oxygen breathing gas mixture that contains a higher fraction of oxygen than air.
Nitrox Dive - A dive conducted using nitrox (22 to 50 % O2) as the breathing gas.
NOAA - Abbreviation for National Oceanic and Atmospheric Administration.
No Deco - Abbreviation for No Decompression.
No Deco Time Remaining - The amount of dive time remaining based on no-decompression status.
No Decompression - Any part of a dive where the diver can surface without requiring a decompression stop.
O2 Bar Graph - A visual representation of oxygen accumulation on a dive computer display.
OTU - Abbreviation for oxygen tolerance unit. A Hamilton's Repex method term for oxygen dose.
Out of Range - The point at which a dive computer can no longer supply correct dive information.
Oxygen Tolerance - Dose or exposure to the physiological affects of elevated levels of oxygen.
Oxygen Toxicity - The adverse physiological affects of exposure to elevated levels of oxygen.
Partial Pressure - The proportion of the total pressure contributed by a single gas in a mixture of gases.
PO2 - Partial pressure of oxygen. The proportion of total pressure of a gas mixture contributed by oxygen.
Repetitive Dive - Any dive that takes place within 12 hours of a previous dive.
Safety Stop - A depth at which a diver may choose, but is not required, to pause during ascent to allow absorbed nitrogen to escape naturally from the tissues.
Square Wave Dive - A type of dive profile where the entire dive is spent at one depth between descent and ascent.
Tissue - See Compartment.
Tissue Compartment - See Compartment.
Transducer - An electro-mechanical device in a dive computer that acts as a depth or pressure sensor.
Transition Period - The first 10 minutes of surface time after ascending above 1 meter (3 feet) from a dive.

RESPONSIBLE COMPUTER DIVING

Since the advent of dive computers, it is a common mistake to assume that the old traditional rules of diving no longer apply, but the truth is just the opposite. Keep these basic rules in mind:

- **Plan each dive, and dive your plan - Your computer was not designed to make decisions for you, only to provide you with the information you need to make responsible decisions for yourself. This begins with a dive plan that will help you avoid a low air or decompression situation.**
- **Do not plan any dive that exceeds your training or experience level.**
- **Inspect your computer before every dive - If it shows any signs of damage or abnormal function, DO NOT dive with it until it has received factory service.**
- **Make your deepest dive first - When making repetitive dives, it is imperative to ensure that each consecutive dive is shallower than the one before. This will allow your body's slower tissues to continue outgassing nitrogen.**
- **Make the deepest part of your dive first, and gradually work your way to the surface using a "staircase" profile - The ability to perform multilevel diving is one of the most important contributions of a dive computer, and you should take advantage of it. It will increase your bottom time and at the same time decrease your risk of decompression sickness.**
- **Ascend slowly by following an ascent line whenever possible, or by ascending diagonally toward the surface - Watch the Ascent Rate Indicator closely while you ascend, and keep it in the green zone as much as possible.**
- **Make a safety stop at 4,5 to 6 meters (15 to 20 feet) at the end of every dive - A safety stop of as little as 5 minutes has been shown to have a dramatic effect on the bubble formation in divers. It's important. Don't forget it.**
- **You should make every effort to complete all of your ascents with the Nitrogen Bar Graph inside the normal No Decompression zone.**
- **If you inadvertently entered Decompression Mode, you must not complete your ascent until the Nitrogen Bar Graph is at least inside the No Decompression Caution Zone.**
- **While you cannot provide a guarantee against the occurrence of decompression sickness, you may choose your own personal zone of caution based upon your individual age, physique, excessive weight, training, experience, etc. to reduce the statistical risk. By 'backing off' on the bar graph (maintaining fewer segments) and not pushing the limits, you can establish and adjust your personal level of conservatism and margin of safety.**

⚠ WARNINGS AND SAFETY RECOMMENDATIONS

- **There are few legitimate excuses for making unplanned Decompression dives, and the consequences of this type of diving can be severe. By making an unplanned Decompression dive without the necessary preparation and training, you will have placed yourself in an unnecessarily dangerous situation. Allow a surface interval of at least 24 hours before reentering the water in the event a dive requires emergency decompression.**
- **By entering Decompression, you impose a "ceiling" above you which you cannot immediately ascend beyond, denying you free access to the surface.**
- **Exiting the water with the Nitrogen Bar Graph in the DECO zone greatly increases the risk of decompression sickness, and may result in injury or death.**
- **Existing data for making planned decompression dives is extremely limited, and virtually nonexistent for repetitive decompression diving. Decompression diving greatly increases your risk of decompression sickness.**
- **Special training, equipment, and support are necessary for planned decompression diving and diving deeper than the maximum recommended sport diving limit(s).**
- **Decompression diving will greatly increase your risk of decompression sickness.**
- **If your Voyager stops working for any reason, it is important that you have anticipated this possibility and are prepared for it. This is an important reason for not pushing the No Decompression and Oxygen accumulation limits, and a critical reason to avoid entering decompression.**
- **If you dive in situations where your trip would be ruined or your safety jeopardized by losing the use of your Voyager, an analog or digital backup instrument system and use of standard Air (or Nitrox) tables is highly recommended.**

SERVICE RECORD

Serial Number _____

Date of purchase _____

Purchased from _____

Below to be filled in by an Authorized Beuchat Dealer:

Date	Service Performed	Dealer / Technician

NOTES

Coupon à envoyer chez votre distributeur. / *Card to mail your distributor*
Schein an den verkaüfer zurücksenden / *Cupón para enviar a su distribuidor*

BEUCHAT®

Coupon à envoyer à votre distributeur : (ci-dessous)
Card to mail your distributor : (hereunder)
Garantiekarte an den Verkäufer zurücksenden (unten)
Cupón para emviar a su distribuidor : (más abajo)

BEUCHAT International
34, av Boisbaudran
13015 Marseille - FRANCE

Distributor Stamp

BEUCHAT®

Coupon à conserver

Customer copy

Garantieschein für Endverbraucher

Cupón para conservar

Certificat de garantie

Warranty certificate
Garantiekarte
Certificado de garantia

N°.....

Coupon à conserver / *Customer copy*
Garantieschein für Endverbraucher
Cupón para el propietario

Modèle / Réf : .....
Ref. / Modell / Modelo

N° série : .....
Serial N° / Seriennummer / N° Serie

Date et lieu d'achat : .....
Date & place of purchase / Einkaufsort
Einkaufsdatum / Fecha y lugar de compra

.....

Cachet vendeur / *Dealer stamp*
Verkäuferstempel / Sello del vendedor

Carte d'enregistrement / *Warranty Registration card*

Registrierkarte / Tarjeta de registro **N°**.....

Afin d'assurer un meilleur service auprès des clients utilisateurs des produits BEUCHAT (SAV, etc...), merci de nous retourner cette carte dûment remplie dans les meilleurs délais.

In order to register and maintain your warranty program, complete and return the registration card within 30 days from date of purchase from authorized dealer.

Um dem Verbraucher einen optimalen Service zu garantieren, bitten wir die Registrierkarte umgehend ausgefüllt zurückzusenden.

Para asegurar un optimo servicio post venta a los usuarios de productos BEUCHAT le agradecemos que devuelva esta tarjeta con sus datos a la mayor brevedad.

Modèle / Réf / *Ref.* **:** .....
Modell / Modelo

N° série / *Serial N°* **:** .....
Seriennummer / N° serie

Date d'achat / *Date of purchase* **:** .....
Einkaufsort / Lugar de compra

Lieu d'achat : .....
Place of purchase / Einkaufsdatum / Fecha de compra

Nom / *Name* **:** .....
Name / Nombre

Adresse / *Address* **:** .....
Adresse / Direccion

.....

Code postal / *Code* **:** .....
Postleitzahl / Codigo postal

Ville / *City* **:** .....
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Verkäuferstempel / Sello del vendedor

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All over the world

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