OCEANIC

INNOVATION FIRST

VEO 2.0 OPERATING MANUAL

LIMITED TWO-YEAR WARRANTY
For details, refer to the Product Warranty Registration Card provided. Register on-line at www.OceanicWorldwide.com

TRADEMARK, TRADE NAME, AND SERVICE MARK NOTICE
Oceanic, the Oceanic logo type, VEO 2.0, the VEO 2.0 logo,Diver Replaceable Batteries, Graphic Diver Interface, Tissue Loading Bar Graph (TLBG), Pre Dive Planning Sequence (PDPS), Set Point, Control Console, and OceanLog are all registered and unregistered trademarks, trade names, and service marks of Oceanic. All rights are reserved.

PATENT NOTICE
U.S. Patents have been issued, or applied for, to protect the following design features:
Data Sensing and Processing Device (U.S. Patent no. 4,882,678). Set TLBG Alarm and other patents pending. User Setable Display (U.S. Patent no. 5,845,235) is owned by Suunto Oy (Finland).

DECOMPRESSION MODEL
The programs within the VEO 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 VEO dive computer model is based upon the latest research and experiments in decompression theory. **Still, using the VEO, 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.

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**Welcome to
OCEANIC
and
THANK YOU
for choosing the
VEO 2.0**

FEATURES AND FUNCTIONS

DISPLAY LAYOUT

ICONS

Algorithm

Log Mode

Nitrox

Surface Interval

On

Depth id

value is Max Depth

Time id

Low Batt

value is FO2

value is PO2 (ATA)

Time or #

Temp

Descend, Ascend, or Stop

Deep Stop is triggered
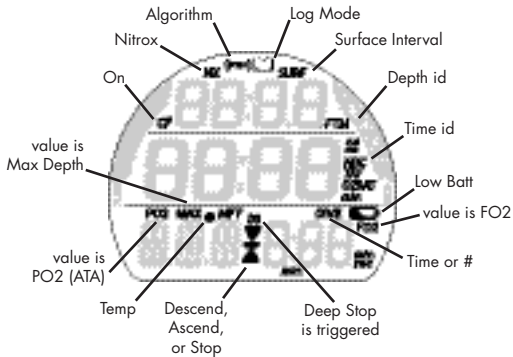
OVERVIEW

The VEO 2.0 is a unique Dive Computer featuring >>

- 2 Control Buttons
- 9 Menus
- 29 Set Selections
- Variable Set Values
- 3 Operating Modes
- 1 Nitrox Gas Mix
- 18 Warnings/Alarms
- Dual Algorithm
- No Deco Deep Stop
- No Deco Safety Stop
- Gauge Depths to 400 FT/120 M
- Altitude Compensation
- NDL Conservative Factor
- Variable Ascent Rate
- PC Settings Upload/Data Download
- Audible Alarm with flashing LED
- User Replaceable Battery
- User Upgradeable Firmware

INTERACTIVE CONTROL CONSOLE

The Interactive Control Console utilizes 2 control buttons that allow you to maneuver through the VEO's unique system of menus.

The buttons will be referred to as S and A.

- Left Front >> Advance (A)
- Right Front >> Select (S)
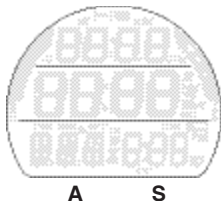
MENU SYSTEM

The LCD viewing area is used to display alpha numeric messages and measured values as well as Menu type systems for selection of settings and various auxiliary functions.

There are 9 Menus that include the -

- NORM Menu
- GAUG Menu
- FREE Menu
- Set F Menu
- Set A Menu
- Set M Menu
- Set T Menu
- Set U Menu
- Set FA Menu

Each Menu has a Start (First) selection and a Stop (Last) selection. Upon entering a Menu, movement through it starts at the Start (First) selection, then continues in a rolling manner showing one selection at a time.

- The sample at the left shows how a menu would look if all of the selections would be displayed on one screen.

GAUG SURF MENU
SURF MAIN
SURF ALT 1
SURF ALT 2
FLY
LOG
SET A
SET U
SET T
SET M
HISTORY
SN

Sample Menu
(all selections shown)

Menu button action >>
   A (< 2 sec) - to access and step forward through menu selections
   A (hold) - to scroll forward through menu selections
   S (< 2 sec) - to access or save selections

Pressing A (< 2 sec) while viewing the last selection in the menu will revert to the first selection (such as Surface Main).

At any time while on the surface, depressing the A and S buttons simultaneously for 2 seconds will revert operation to the Surface Main. Exception is during the first 10 minutes after surfacing from NORM/GAUG dive, or first minute after surfacing from a FREE dive.

SMARTGLO® Backlight
The VEO is configured with a sensor capable of measuring the intensity of ambient light. The Backlight will only come on when light level is low.

To activate the SmartGlo Backlight >> press the S button.
   • If ambient light level is low, the Backlight will activate and illuminate the display
     for button depression time* plus the Duration time set (0, 5, or 10 seconds), for a
     maximum of 20 seconds.
     (*The Backlight will turn Off if S is depressed for more than 10 seconds.)
   • Press S again to activate as desired.

   **Extensive use of the Backlight reduces estimated Battery life. Also,
   the Backlight does not operate during a Low Battery Condition or
   when the VEO is connected to a PC.**

AUDIBLE ALARM

While operating in NORM or GAUG Mode, the Audible will emit 1 beep per second for 10 seconds when alarms strike, unless it is set Off. During that time, the Audible can be acknowledged and silenced by pressing the S button (less than 2 seconds).

An LED Warning Light, on the lower end of the housing, is synchronized with the Audible and flashes as the Audible sounds. It will turn Off when the Alarm is silenced. The Audible and LED will not be active if the Audible is Set OFF (a group A setting).

FREE Dive Mode has its own set of Alarms which emit 3 short beeps either 1 or 3 times which cannot be acknowledged or set Off.

Situations that will activate the NORM/GAUG 10 second Alarm include -
** Items activate only in NORM mode.
- Descent deeper than the Depth Alarm Set Point selected.
- Dive Time Remaining at the Set Point selected**.
- Elapsed Dive Time at the Set Point selected.
- PO2 at the Set Point selected**.
- High O2 of 300 OTU (100%)**.
- TLBG at the Set Point selected**.
- Ascent Rate exceeds 60 FPM (18 MPM) when deeper than 60 FT (18 M), or 30 FPM (9 MPM) at 60 FT (18 M) and shallower.
- Entry into Decompression Mode (Deco)**.
- Conditional Violation (above a required Deco Stop Depth for less than 5 minutes)**.
- Delayed Violation (above a required Deco Stop Depth for more than 5 minutes)**.
- Delayed Violation (a Deco Stop Depth greater than 60 FT/18 M is required)**.

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- Delayed Violation (Max Operating Depth of 330 FT/100 M is exceeded in NORM or FREE mode, or 399 FT/120 M in GAUG mode).

A single short beep (which cannot be disabled) sounds when -
- After 10 minutes on the surface after the Violation dive.

3 short beeps (which cannot be disabled) sound when -
- Ascent Rate is 51 to 60 FPM (15.1 to 18 MPM) when deeper than 60 FT (18 M), or 26 to 30 FPM (7.5 to 9 MPM) at 60 FT (18 M) and shallower.
- FREE Dive Elapsed Dive Time Alarm (3 beeps every 30 seconds if set On).
- FREE Dive Depth Alarms 1, 2, 3 (set sequentially deeper) - each 3 beeps 3 times.
- FREE Dive TLBG Alarm (Caution zone, 4 segments) - 3 beeps 3 times.
- Entry into Deco during a FREE Dive (Violation) - 3 beeps 3 times.
- Free Dive Mode Countdown Timer reaches 0:00 - 3 beeps 3 times.

During the following NORM Dive situations, the 10 second continuous tone will be followed by a 5 second steady beep that will not turn off when acknowledged -
- Ascent above a Deco Stop for more than 5 minutes.
- Deco requires a Stop Depth deeper than 60 FT/18 M or deeper.
- On the Surface during a Conditional Violation.

PC INTERFACE

Interface with a PC, to allow uploading settings and downloading data, is accomplished by connecting the VEO to a PC USB Port using the special VEO USB Interface Cable.

The software program together with the USB Driver required is on the Oceanlog CD, and can be downloaded from the OceanicWorldwide web site. The program's HELP** serves as the user manual which can be printed for personal use.

* Prior to attempting to Download data from your VEO or Upload Settings to it, review the HELP section of the Oceanlog program. Recommended is to print those sections of HELP that you consider appropriate for your Interface activities.*

The Settings Upload portion of the Oceanlog program can be used to set/change Set A (Alarms), Set U (Utilities), Set T (Time, Date), and Set FA (Free Alarms) using the same Interface System. FO2 related items must be set using the control buttons.

Information available for retrieval (download) from the VEO to the PC Download portion of the program includes dive data such as dive number, surface interval time, maximum depth, elapsed dive time, no deco status, start date/time, lowest temperature under water, sampling rate, dive profile, and Set Points.

The Oceanlog program also allows upgrade of select versions of the VEO's firmware (operating system software) after which the VEO resets all operating data. Since the upgrades require reset of the VEO, they are blocked during 24 hours after dives.

• *Refer to page 88 for more details relating to Oceanlog and PC Interface.*

POWER SUPPLY

- Battery >> (1) 3 vdc, CR2450, Lithium battery
- Shelf life >> up to 5 years depending on specific battery
- Use life >> 100 dive hours if (1) 1 hour dives per dive day to 300 dive hours if (3) 1 hour dives per dive day
- Replacement >> by user (annual recommended)

Fig. 1 - LOW BATTERY

LOW BATTERY WHILE ON THE SURFACE

<= 2.75 volts (warning level)
- DC functions continue, Backlight is disabled.
- Battery icon appears solid (Fig. 1a).

<=2.50 volts (Too Low - alarm level)
- All operations cease.
- Battery icon flashes for 5 seconds then the unit shuts off.

LOW BATTERY DURING A DIVE

<= 2.75 volts (warning level)
- DC functions continue, Backlight is disabled.
- Battery icon appears solid upon entry into Surface Mode.

<= 2.50 volts (Too Low - alarm level)
- DC functions continue, Backlight is disabled.
- Battery icon appears flashing with graphics CHG >> BAT alternating (Fig. 2) upon entry into Surface Mode, then after 5 seconds the unit shuts off.

Fig. 2 - CHANGE BATTERY

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OPERATING MODES

NORM Mode >> for Air and Nitrox SCUBA activity
GAUG Mode >> for SCUBA activity
FREE Mode >> for breath hold diving activity with Depth/Time indication

If no previous dive has been taken within the past 24 hours, NORM is the default upon activation. Others accessed using the Surface Menu.

At any time while operating in Surface Modes, operation will enter the Dive Mode selected upon descent to 5 FT (1.5 M) for 5 seconds.

- When Wet Activation is set Off, Dive Mode will not be activated unless the unit is turned On while on the surface.
- When Wet Activation is set On, immersion in water will activate the unit which will then enter the Dive Mode selected upon descent.

Operation will revert from Dive Mode to Surface Mode upon ascent to 4 FT (1.2 M) for 1 second. During the first 10 minutes after a NORM/GAUG dive or 1 minute after a FREE dive, the Dive Main screen will remain on displaying Max Depth and Elapsed Dive together with Surface Interval Time with the colon flashing.

- A descent during the first 10 minutes after surfacing from a NORM or GAUG dive, or the first 1 minute after surfacing from a FREE dive, is a continuation of that dive.
- After the 10 minute (or 1 minute) interval has elapsed, the normal Surface Main will be displayed. A descent is then considered a new dive.

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NORM SURFACE MENU/MODES

ACTIVATION

To activate the VEO, press/release any button.

- The unit will enter Diagnostic Mode displaying all segments of the LCD as 8's, followed by dashes (- -), then a countdown from 9 to 0. It checks the display and voltage to ensure that everything is within tolerance.
- After manual activation, it will also check the ambient barometric pressure, and calibrate its present depth as 0. At elevations of 3,001 feet (916 meters) or higher, it will adjust depth calibration for the higher altitude.

The VEO is configured with contacts located on the stems of the buttons and pins of the PC Data Port that will automatically activate the unit and cause it to enter dive mode when the contacts become wet and it senses depth of 5 FT (1.5 M).

After activation and diagnostics, the VEO will enter NORM Surface Mode displaying the Main screen and allow access to the NORM Surface Menu.

NORM Surface Main/Menu, button action

- A (< 2 sec) >> step forward through Menu items.
- A (hold) >> scroll forward through Menu items.
- S (press) >> activate the SmartGlo Backlight.
- 2 min (of no button action) >> revert to Main.

NORM SURF MAIN, information includes (Fig. 3A, B):
> Surface Interval time (hr:min) with SURF icon; if no dive yet, this is time since activation
> Time of Day (hr:min) with AM or PM icon if 12 Hour Format; no icon if 24 Hour Format
> Graphic NOR
> Dive number with DIVE icon, up to 24 for that operating period (0 if no dive made yet)
> NX icon, if FO2 is set for Nitrox
> (PZ+) icon, if selected, no icon if Dsat is selected
> CF icon, if Conservative Factor is set On
> TLBG with icon, if any after a NORM or FREE dive
> Battery icon, if voltage is low

• A (< 2 sec) to access ALT 1.
• A (hold) to scroll forward through Menu items.
• S (press) to activate SmartGlo Backlight.

Upon surfacing during dives, the Dive Main will remain on display for the first 10 minutes (with SI in place of Depth) after which the Surface Main will be displayed.

Fig. 3A - NORM SURF MAIN
(no dive yet)

Fig. 3B - NORM SURF MAIN
(> 10 min after dive 1)

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Fig. 4 - NORM SURF ALT 1
(Last dive's data)

NORM SURF ALT 1, information includes (Fig. 4):
> SI* (hr:min) with SURF icon, prior to Last dive
> Graphic LAST, indicating data is for dive previously conducted while still in NORM mode
> Max Depth* of dive previously conducted while still in NORM mode with MAX and FT (or M) icons
> EDT* (Elapsed Dive Time up to 999 min) with DIVE and min icons

* dashes if no previous dive conducted

- A (< 2 sec) to access ALT 2.
- A (hold) to scroll forward through Menu items.
- S (press) to activate SmartGlo Backlight.

NORM SURF ALT 2, information includes (Fig. 5):
> Temperature with ° icon and graphic F (or C)
> Altitude graphic, if EL2 (to EL7), blank if Sea level

- A (< 2 sec) to access ALT 3 (if a Nitrox dive has been conducted, bypassed to Fly/Sat if not).
- A (hold) to scroll forward through Menu items.
- S (press) to activate SmartGlo Backlight.

Fig. 5 - NORM SURF ALT 2

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NORM SURF ALT 3, information includes (Fig. 6):
> Current O2 (%) with O2SAT icon
> PO2 alarm value set (ATA) with PO2 and MAX icons
> FO2 set with FO2 icon
> NX icon
> (PZ+) icon, if selected, no icon if Dsat is selected
> CF icon, if Conservative Factor is set On

Fig. 6 - NORM SURF ALT 3
(only if Nitrox)

• A (< 2 sec) to access Fly/Sat.
• A (hold) to scroll forward through Menu items.
• S (press) to activate SmartGlo Backlight.

FLY/SAT TIME
Time to Fly is a countdown timer that begins counting down from 23:50 to 0:00 (hr:min) 10 minutes after surfacing from a dive (NORM, GAUG, or FREE).

Time to Dsaturation, also a countdown timer, provides calculated time for tissue desaturation at sea level taking into consideration the Conservation Factor setting. It also begins counting down 10 minutes after surfacing from a dive (NORM or FREE), counting down from 23 to 10 (hr only), then 9:59 to 0:00 (hr:min).

When the SAT countdown reaches 0:00, which will generally occur prior to the FLY countdown reaching 0:00, it will remain on the display until the FLY countdown reaches 0:00.

Fig. 7A - FLY/SAT
(no dive since activated)

Fig. 7B - FLY/SAT
(10 min after dive)

Fig. 7C - FLY/SAT
(no Desat time remains)

> When other screens are accessed, the FLY and SAT countdowns continue in the background.
> Dsat is not displayed after a Gauge or Violation dive.
> Desaturation requiring Times greater than 24 hours will display 24 until it decreases to 23 (hr) .
> In the event that Time to Desaturate still remains at the end of 24 hours, any remaining time will be cleared.

Fly/Sat, information includes (Fig. 7A, B, C):
> Graphic FLY with Time to Fly (hr:min), - : - - if no dive yet
> Graphic SAT with Time to Desat (hr:min), - : - - if no dive yet, 0:00 if no time remaining

• A (< 2 sec) to access Plan.
• A (hold) to scroll forward through Menu items.
• S (press) to activate SmartGlo Backlight.

PLAN MODE (NORM)

No Deco Dive Times (NDLs/OTLs) in Plan Mode are based on -
> the algorithm selected (DSAT or PZ+)
> the FO2 set
> the setting for the Conservative Factor (Off or On*)
> any residual nitrogen or oxygen remaining from previous
  dives (NORM or FREE)

*When the Conservative Factor is set On, Dive times are reduced to the values
of the next higher 3000 foot (915 meter) Altitude. Refer to tables in back.*

Fig. 8A - PLAN LEAD-IN
(Gas 1 set for Air)

Plan Lead-in, information includes (Fig. 8A, B):
> Graphic PLAN
> PO2 alarm value set (ATA) with PO2 icon, blank if Air
> FO2 Set Point, graphic Air or numeric value (21 to 100),
  with FO2 icon
> Nx icon, if Nitrox
> (PZ+) icon, if selected, no icon if Dsat is selected
> CF icon, if Conservative Factor is set On

• A (< 2 sec) to access Log.
• A (hold) to scroll forward through Menu items.
• S (< 2 sec) to access PDPS.
• S (press) to activate SmartGlo Backlight.

Fig. 8B - PLAN LEAD-IN
(Gas 1 set for Nitrox)

Fig. 9A - PDPS
(nitrogen control)

PDPS (Pre Dive Planning Sequence)

The PDPS displays Depths and allowable No Deco Dive Times (up to 999 minutes), NDLs if nitrogen is in control or OTLs if O2 is in control.

It will sequence through PDPS screens displaying Depths from 30 to 190 FT (9 to 57 M) with Plan times* based upon the previous dive profiles in a series of repetitive dives and taking into account descent and ascent rates of 60 FPM (18 MPM).

> *If less than 1 minute time is available, dashes will be displayed for time, and Depth values will flash.

PDPS, information includes (Fig. 9A, B):
> - Plan Depth value with FT (or M) icon
> - Dive Time allowed NDC (or O2) and min icons
> - Max Depth allowed for the PO2 alarm value set with MAX and FT (or M) icons, blank if FO2 is set for Air
> - FO2 Set Point, graphic Air or numeric value (21 to 50), with FO2 icon
> - (PZ+) icon, if selected, no icon if Dsat is selected
> - CF icon, if Conservative Factor is set On

Fig. 9B - PDPS
(oxygen control)

- A (< 2 sec) to step up through PDPS screens.
- A (hold) to scroll up through PDPS screens at a rate of 8 per second from 30 to 190 FT (9 to 57 M) in increments of 10 FT (3 M).

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- S (< 2 sec) to revert to the Lead-in after the last screen.
- S (2 sec) to revert to the Lead-in screen.
- S (press) to activate SmartGlo Backlight.

LOG MODE (NORM/GAUG)

Information from the latest 24 NORM and/or GAUG dives is stored for viewing.
> After exceeding 24 dives, the most recent dive is stored while the oldest is deleted.
> Dives are numbered from 1 to 24 starting each time NORM (or GAUG) Dive Mode is activated. After the post dive 24 hour period has elapsed and the unit shuts off, the first dive of the next activation period will be #1.
> In the event that a dive's elapsed time (EDT) exceeds 599 (min), the data at the 599 interval is recorded in the Log upon surfacing of the unit.

**FREE Dive information is only available using the OceanLog PC Interface program.

Log sequence >> Lead-in >> Preview >> Data 1 >> Data 2 >> Data 3

Log Lead-in, information includes (Fig. 10):
> Log (book) icon
> Graphics NOR - GAU

- A (< 2 sec) to access Set F Lead-in.
- S (< 2 sec) to access Log Preview.
- S (press) to activate SmartGlo Backlight.

Fig. 10 - LOG LEAD-IN

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Fig. 11A - LOG PREVIEW
(no dives recorded)

Fig. 11B - LOG PREVIEW
(after NORM dive 1)

Fig. 12A - LOG DATA 1

Log Preview, information includes (Fig. 11A, B):
> Log Mode (book) icon
> Date (month.day or day.month), the dive was conducted; or blank if none recorded
> Time dive began (hr:min) with AM (or PM) icon if 12 Hour Format, no icon if 24 Hour Format; or graphic NONE
> Graphic NOR (or GAU or VIO or YET -)
> Dive number (1 to 24, 0 if no dive yet) with DIVE icon
> NX, (PZ+), CF, DS icons - those that apply

• A (< 2 sec) to step through Preview screens from the most recent to the oldest recorded.
• A (hold) to scroll through Preview screens from the most recent to the oldest recorded at a rate of 8 per second.
• S (< 2 sec) to access Data 1 for the dive Preview displayed.
• S (2 sec) to revert to the Lead-in screen.
• S (press) to activate SmartGlo Backlight.

Log Data 1, information includes (Fig. 12A, B):
> Log Mode (book) icon
> Pre dive SI (hr:min), - : - - if no pevious dive that activation period, with SURF icon
> Total Ascent Time (min) with TAT and min icons, if Deco
> Max Depth with MAX and FT (or M) icons
> EDT with DIVE and min icons

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> TLBG with the max accumulation segment flashing, others
  fixed up to end of dive accumulation. All segments flashing
  if a Delayed Violation. No TLBG if Gauge Mode.
> VARI, max Ascent Rate sustained for 4 sec
> NX, (PZ+), CF, DS icons - those that apply

• S (< 2 sec) to access Data 2 for that dive.
• S (2 sec) to revert to the Data 1 screen.
• S (press) to activate SmartGlo Backlight.
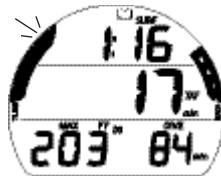
Fig. 12B - LOG DATA 1
(Deco during dive)

Log Data 2, information includes (Fig. 13):
> Log Mode (book) icon
> Temperature (minimum that dive) with ° icon and graphic F
  (or C)
> Graphic SEA (or EL2 to EL7), indicating the Altitude at
  which the dive was conducted

• S (< 2 sec) to access Data 3 for that dive; or revert to
  Preview if a GAUG dive.
• S (2 sec) to revert to the Data 2 screen.
• S (press) to activate SmartGlo Backlight.

Fig. 13 - LOG DATA 2

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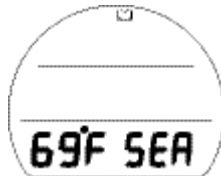
Fig. 14 - LOG DATA 3

Log Data 3, information includes (Fig. 14):
> Log Mode (book) icon
> O2% at end of dive, 2 dashes if Violation Gauge Mode, with O2SAT icons
> Highest PO2 (ATA) reached during the dive with PO2 and MAX icons
> FO2 Set Point (or graphic Air) with FO2 icon
> NX, (PZ+) icons - if they apply

- S (< 2 sec) to revert to the Preview screen.
- S (2 sec) to revert to the Data 2 screen.
- S (press) to activate SmartGlo Backlight.

SET F MENU (NORM FO2)
Sequence >> FO2 value >> 50% Default

With the FO2 50% Default selection set Off, the VEO will remain set at the last FO2 Set Point for that period of activation.

When the FO2 50% Default is set On and FO2 is set for a numerical value, 10 minutes on the surface after that dive the FO2 will be displayed as 50 and further dives will be calculated based on 50% O2 for oxygen calculations and 21% O2 for Nitrogen calculations (79% Nitrogen), unless FO2 is set before the dive.

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FO2 will continue to reset to the FO2 50% Default after subsequent repetitive dives until 24 hours elapse after the last dive, or the FO2 50% Default is set Off.

FO2 set to Air
The default FO2 setting for each new activation period will be Air.

When FO2 is set for Air -
> calculations are the same as when FO2 is set for 21%.
> it will remain set for Air until set for a numerical FO2 value (21 to 100%).
> O2 data (such as PO2, O2%) will not be displayed at any time during the dive, on the surface, or during the PDPS.
> MODs (Max Operating Depths) will not be displayed on the FO2 set screen.
> internally, it will keep track of O2 data in case FO2 is subsequently set for Nitrox for repetitive dives.

FO2 set for Nitrox
When FO2 is set for a numerical value (21 to 50%), the dive is considered Nitrox and the NX icon will be displayed.
> The Air option will not be displayed as a FO2 set selection until 24 hours elapse after the last dive.
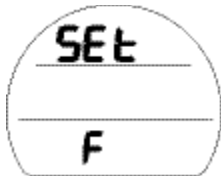
Fig. 15 - SET F LEAD-IN
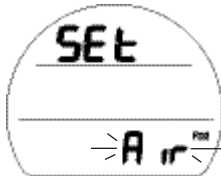
Fig. 16 - SET FO2 (Air)
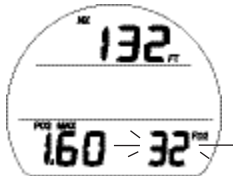
Fig. 17 - SET FO2 (Nitrox)

Set F Lead-in, information includes (Fig. 15):
> Graphics SEt and F

- A (< 2 sec) to step forward to Set A Lead-in.
- S (< 2 sec) to access Set FO2.

Set FO2, information includes (Fig. 16, 17):
> Graphic SEt if Air; or Max Depth allowed for the PO2 alarm set with FT (or M) and NX icons if Nitrox
> PO2 alarm value set (ATA) with PO2 and MAX icons, blank if Air
> Graphic Air, or numeric FO2 Set Point value if Nitrox, flashing, with FO2 icon

- A (hold) to scroll upward through Set Points at a rate of 8 per second from Air (default) to 21 through 100 (%) in increments of 1%.
  > The scroll will stop when A is released, or at 32%, (even if A is held depressed). Pressing and holding A again will resume the scroll through 50, then stop at Air or 21%.
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the setting and access Set FO2 Default.
- S (2 sec) to revert to Set FO2 Lead-in.

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Set FO2 Default, information includes (Fig. 18):
> Graphics SEt, dFLt, and 50 -
> Graphics OFF (or ON) flashing
> NX and FO2 icons

• A (< 2 sec) to toggle OFF and ON.
• S (< 2 sec) to save the setting and revert to Set F Lead-in.
• S (2 sec) to revert to Set FO2.

Fig. 18 - SET FO2 DEFAULT

Fig. 19 - SET A LEAD-IN

Fig. 20 - SET AUD AL

Fig. 21 - SET DEPTH AL

SET A MENU (NORM/GAUG ALARMS)

Sequence >> Lead-in >> Aud >> Depth >> EDT >> TLBG* >> DTR* >> PO2*

Items apply to NORM only

Set Points remain as set until changed.

Set A Lead-in, information includes (Fig. 19):
> Graphics SEt and A

- A (< 2 sec) to step forward to Set U Lead-in.
- S (< 2 sec) to access Set Audible Alarm.

Set Audible Alarm, information includes (Fig. 20):
> Graphics SEt and AUD -
> Set Point graphics ON (or OFF) flashing

- A (< 2 sec) to toggle ON/OFF.
- S (< 2 sec) to save the setting and access Set Depth Alarm.
- S (2 sec) to revert to Set A Lead-in.

Set Depth Alarm, information includes (Fig. 21):
> Graphics SEt and -dA
> Graphic OFF or Depth value flashing with MAX and FT (or M) icons

- A (< 2 sec) to step upward through Set Points one at a time.

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- A (hold) to scroll upward through Set Points at a rate of 8 per second from 30 to 330 FT (10 to 100 M) in increments of 10 FT (1 M).
- S (< 2 sec) to save the setting and access Set EDT Alarm.
- S (2 sec) to revert to Set Audible Alarm.

Set EDT Alarm, information includes (Fig. 22):
> Graphics SEt and EDT -
> Time value flashing with DIVE and min icons

- A (< 2 sec) to step upward through Set Points one at a time.
- A (hold) to scroll upward through Set Points at a rate of 8 per second from OFF to 10 through 180 (min) in increments of 5 min.
- S (< 2 sec) to save the setting and access Set TLBG Alarm.
- S (2 sec) to revert to Set Depth Alarm.

Fig. 22 - SET EDT AL

Set TLBG Alarm, information includes (Fig. 23):
> Graphics SEt and TBG (Tissue Bar Graph)
> Graphic OFF or TLBG segments with icon flashing

- A (< 2 sec) to step upward through Set Points from OFF to 1 through 4 segments one at a time.
- S (< 2 sec) to save the setting and access Set DTR Alarm.
- S (2 sec) to revert to Set EDT Alarm.

Fig. 23 - SET TLBG AL

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Fig. 24 - SET DTR AL

Set DTR Alarm, information includes (Fig. 24):

> Graphics SEt and DTR -
> Time Value (min) flashing with min icon

- A (hold) to scroll upward through Set Points at a rate of 8 per second from OFF to 5 through 20 (min) in increments of 1 min.
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the setting and access Set PO2 Alarm.
- S (2 sec) to revert to Set TLBG Alarm.

Set PO2 Alarm, information includes (Fig. 25):

> Graphic SEt with NX icon
> Set Point value (ATA) flashing with PO2 and MAX icons

- A (< 2 sec) to step upward through Set Points from 1.20 to 1.60 one at a time.
- S (< 2 sec) to save the setting and revert to the Set A Menu.
- S (2 sec) to revert to Set DTR Alarm.

Fig. 25 - SET PO2 AL

SET U MENU (NORM/GAUG UTILITIES)

Sequence >> Lead-in >> Wet >> Units >> DS* >> SS* >> Algo* >> CF*
>> Glo >> SR

Items apply to NORM only.

Set Points remain as set until changed.

Set U Lead-in, information includes (Fig. 26):
> Graphics SEt and U

- A (< 2 sec) to step forward to Set T Lead-in.
- S (< 2 sec) to access Set Wet.

Fig. 26 - SET U LEAD-IN

Set Wet Activation, information includes (Fig. 27):
> Graphics SEt and WET
> Set Point ON (or OFF) flashing

- A (< 2 sec) to toggle Set Points.
- S (< 2 sec) to save the setting and access Set Units.
- S (2 sec) to revert to Set U Lead-in.

Fig. 27 - SET WET ACTIVATION

Set Units, information includes (Fig. 28):
> Graphic Set
> Set Point IMP (or MET) flashing with FT (or M) icon

- A (< 2 sec) to toggle Set Points.
- S (< 2 sec) to save the setting and access Set DS.
- S (2 sec) to revert to Set Wet.

Fig. 28 - SET UNITS

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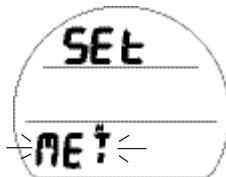
Fig. 29 - SET DS

Set Deep Stop (DS), information includes (Fig. 29):
> Graphics SEt and DS with DS and Stop arrow/bar icons
> Set Point ON (or OFF) flashing

- A (< 2 sec) to toggle Set Points.
- S (< 2 sec) to save the setting and access Set SS.
- S (2 sec) to revert to Set Units.

Set Safety Stop (SS), information includes:
> Graphic SEt with Stop arrow/bar icons
> Graphic SS with Set Point ON (or OFF) flashing, or graphic TMR with ON flashing

Fig. 30A - SET SS OFF

- A (< 2 sec) to step forward through the Set Points (SS OFF, SS ON, TMR ON.
- S (< 2 sec) to save the setting.
- S (2 sec) to revert to Set DS.

  >> If SS OFF (Fig. 30A) or TMR ON (Fig. 30B) is selected, operation will access Set Algorithm.
  >> If SS ON is selected (Fig. 30C), Stop Depth and Time is displayed with the min and sec icons, Time flashing.

Fig. 30B - SET SS TIMER

- A (< 2 sec) to toggle Time Set Points between 3:00 and 5:00 (min:sec).

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- S (< 2 sec) to save the Stop Time setting and flash the Stop Depth setting.
- A (< 2 sec) to step up through Depth Set Points of 10, 15, and 20 FT (or 3, 4, 5, and 6 M) one at a time
- S (< 2 sec) to save the Stop Depth setting and access Set Algorithm.

Set Algorithm, information includes (Fig. 31):
> Graphics SEt and ALGO
> Set Point graphic PZ+ (or DSAT) flashing

- A (< 2 sec) to toggle Set Points.
- S (< 2 sec) to save the setting and access Set CF.
- S (2 sec) to revert to Set SS.

  This feature allows selection of the algorithm to be used for nitrogen and oxygen calculations for Plan and DTR values.
  The setting locks in for 24 hours after NORM dives.

Set Conservative Factor (CF), information includes (Fig. 32):
> Graphics SEt and CF with CF icon
> Set Point graphics ON (or OFF) flashing

- A (< 2 sec) to toggle Set Points.
- S (< 2 sec) to save the setting and access Set Glo.
- S (2 sec) to revert to Set Algorithm.

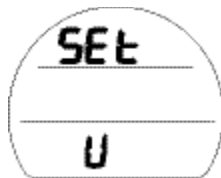Fig. 30C - SET SS TIME/DEPTH

Fig. 31 - SET ALGORITHM

Fig. 32 - SET CF

Fig. 33 - SET GLO

When CF is set On, NDLs are reduced to values equivalent to those that would be available at the next higher 3000 foot (915 meter) Altitude. Refer to tables in back of manual.

Set Backlight Duration (Glo), information includes (Fig. 33):
> Graphics Set and GLO -
> Time Set Point flashing with sec icon

- A (< 2 sec) to step upward through Set Points of 0, 5, and 10 (sec) one at a time.
- S (< 2 sec) to save the setting and access Set SR.
- S (2 sec) to revert to Set CF.

Backlight (Glo) Duration is the time the backlight will remain On after S is released (0 = no additional time).

Set Sampling Rate (SR), information includes (Fig. 34):
> Graphics Set and SR -
> Time Set Point flashing with sec icon

- A (< 2 sec) to step upward through Set Points of 2, 15, 30, and 60 (sec) one at a time.
- S (< 2 sec) to save the setting and revert to Set U Lead-in.
- S (2 sec) to revert to Set Glo.

Fig. 34 - SET SAMPLING

Sampling Rate is the frequency at which data is sampled and stored for download to the OceanLog PC Interface program.

SET T MENU (TIME)

Sequence >> Lead-in >> Date Format >> Hour Format >> Time >> Date

Set Points remain as set until changed.

Set T Lead-in, information includes (Fig. 35):
> Graphics SEt and T

- A (< 2 sec) to step forward to Set M Lead-in.
- S (< 2 sec) to access Set Date Format.

Fig. 35 - SET T LEAD-IN

Set Date Format, information includes (Fig. 36):
Date Format establishes the location that the Month (M) digits
are displayed relative to the Day (D) digits, on the left or right.

> Graphic SEt
> Set Point graphics M - D (or D - M) flashing

- A (< 2 sec) to toggle Set Points.
- S (< 2 sec) to save Set Point and access Set Hour Format.
- S (2 sec) to revert to Set T Lead-in.

Fig. 36 - SET DATE FORMAT

Set Hour Format, information includes (Fig. 37):
> Graphics SEt and HR -
> Set Point 12 (or 24) flashing

- A (< 2 sec) to toggle Set Points.
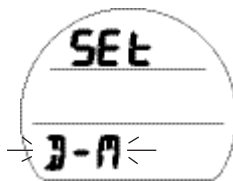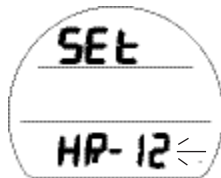
Fig. 37 - SET HOUR FORMAT

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Fig. 38 - SET TIME

- S (< 2 sec) to save Set Point and access Set Time.
- S (2 sec) to revert to Set Date Format.

Set Time, information includes (Fig. 38):
> Graphic SEt
> Time of Day (hr:min), Hour digits flashing, with AM (or PM) icon if 12 Hour Format, no icon if 24 Hour Format

- A (hold) to scroll upward through Hour Set Points at a rate of 8 per second from 12: (AM) to 11: (PM), or 0: to 23: if 24 Hour Format, in increments of 1: (hr).
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the Hour and flash the Minute digits.
- A (hold) to scroll upward through Minute Set Points at a rate of 8 per second from :00 to :59 in increments of :01 (min).
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the Time Set Point and access Set Date.
- S (2 sec) to revert to Set Hour Format.

Fig. 39 - SET DATE

Set Date, information includes (Fig. 39):
The sequence for setting date is Year, then Month, then Day, regardless of the Date Format set.

> Month.Day (or Day.Month)
> Year flashing
> Graphics M - D (or D - M), to identify top row digits

- A (hold) to scroll upward through Year Set Points at a rate of 8 per second from 2009 to 2052, in increments of 1.
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the Year and flash the Month digits.
- A (hold) to scroll upward through Month Set Points at a rate of 8 per second from 1 to 12 in increments of 1.
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the Month and flash the Day digits.
- A (hold) to scroll upward through Day Set Points at a rate of 8 per second from 1 to 31 (max) in increments of 1.
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the Date Set Point and revert to Set T Lead-in.
- S (2 sec) to revert to Set Time.

SET M (DIVE OP MODE)
Sequence >> Lead-in >> NOR (or GAU or FRE)

Set Point remains as set until changed.

Set M Lead-in, information includes (Fig. 40):
> Graphics SEt and M

- A (< 2 sec) to step forward to History.
- S (< 2 sec) to access Set Dive Op Mode.

Fig. 40 - SET M LEAD-IN

Fig. 41 - SET DIVE OP MODE

Set Dive Operating Mode, information includes (Fig. 41):
> Graphics SEt and OP with DIVE icon
> Set Point flashing

- A (< 2 sec) to step forward through Set Points of NOR, GAU, and FRE.
- S (< 2 sec) to save the setting and access that mode's Surface Main screen.
- S (2 sec) to revert to Set M Lead-in.

HISTORY MODE (NORM/GAUG)
History is a summary of basic data recorded during all NORM and GAUG dives* conducted.

FREE Dive information is only available using the OceanLog PC Interface program.

History 1, information includes (Fig. 42):
> Graphic Hour with Total hours of EDT (dive time) ever recorded (up to 1999), 0 until > 1 hour
> Graphic HIS with Total number dives ever recorded (up to 999) with MAX and DIVE icons, 0 if no dive yet

- A (< 2 sec) to step forward to Serial Number.
- S (< 2 sec) to access History 2.

Fig. 42 - HISTORY 1

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History 2, information includes (Fig. 43):
> Graphic SEA, or EL2 to EL7, highest Altitude at which a dive was conducted
> Temperature with graphic F (or C), lowest recorded
> Max Depth ever reached (to 400 FT/120 M) with MAX and FT (or M) icons
> Longest EDT (dive time) recorded during a single dive (up to 599 min) with DIVE and min icons

Fig. 43 - HISTORY 2

• S (< 2 sec) to revert to History 1.

SERIAL NUMBER
Information displayed on this screen should be recorded and kept with your sales receipt, it will be required in the event that your VEO requires factory service.

Serial Number, information includes (Fig. 44):
> Graphic r1A (or higher), indicating the revision level of the firmware (VEO's operating software)
> Graphic SN with the factory programmed serial number

• A (< 2 sec) to step forward to Surface Main.
• S (< 2 sec) to access Clear (Reset), only if in NORM.
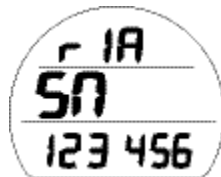
Fig. 44 - SN

CLEAR (RESET)

The VEO is configured with a feature that allows data to be cleared, including nitrogen and oxygen calculations and Log entries. This is intended for facilities using the VEO for rental or training activities, not for general use by individual divers.

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

Upon access, a factory assigned code number is displayed with the graphics CLR and id, all solid (Fig. 45).

Reset procedure:
- S (2 sec), at any time, to cancel the procedure and revert to the SN screen.

- S (< 2 sec) to start the first 2 digits (left) flashing.
- A (hold) shall scroll upward through the first digits (left) at a rate of 8 per second.
- A (< 2 sec) shall step upward through the digits (left) one at a time.
- S (< 2 sec) shall save the first 2 digits (left) and the second 2 digits (right) shall flash.
- A (hold) shall scroll upward through the second digits (right) at a rate of 8 per second.
- A (< 2 sec) shall step upward through the digits (right) one at a time.
- S (< 2 sec) shall save the Reset Code, Clear the unit, and turn it Off.

Fig. 45 - CLEAR

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DIVE MODE FEATURES

Fig. 46 - NO DECO

BAR GRAPHS

The VEO features 2 specific bar graphs.

> The one on the left represents nitrogen loading. It is referred to as the TLBG (Tissue Loading Bar Graph).
> The one on the right represents ascent rate. It is referred to as the VARI (Variable Ascent Rate Indicator).

TLBG (NORM only)

The TLBG represents your relative No Deco (Fig. 46a) or Deco status (Fig. 47a). The first 4 segments represent No Deco status and the fifth indicates a Deco condition.

As your Depth and Elapsed Dive Time increase segments add.

As you ascend segments recede, indicating that additional no deco time is available.

The VEO monitors 12 different nitrogen compartments simultaneously and the TLBG displays the one that is in control of your dive at any given time.

Fig. 47 - DECO

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VARI (NORM and GAUG)

The VARI (Fig. 48a) provides a visual representation of ascent speed (i.e., an ascent speedometer).

The segments represent two sets of speeds which change at a reference depth of 60 FT (18 M). Refer to the chart.

When ascent is too fast, all segments will be displayed flashing (Fig. 49) until ascent is slowed.

⚠ **WARNING: When deeper than 60 FT (18 M), ascent rates should not exceed 60 FPM (18 MPM). At depths of 60 FT (18 M) and shallower, ascent rates should not exceed 30 FPM (9 MPM).**

Fig. 48 - DIVE MAIN
(Ascent normal)

Deeper than 60 FT (18 M)			**60 FT (18 M) & Shallower**		
VARI	Ascent Rate		VARI	Ascent Rate	
Segments	FPM	MPM	Segments	FPM	MPM
0	0 - 20	0 - 6	0	0 - 10	0 - 3
1	21 - 30	6.1 - 9	1	11 - 15	3.1 - 4.5
2	31 - 40	9.1 - 12	2	16 - 20	4.6 - 6
3	41 - 50	12.1 - 15	3	21 - 25	6.1 - 7.5
4	51 - 60	15.1 - 18	4	26 - 30	7.6 - 9
5	60 +	18 +	5	30 +	9 +
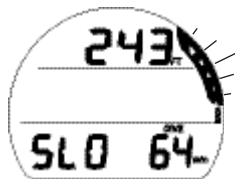
Fig. 49 - DIVE MAIN
(Ascent Too Fast)

ALGORITHM

The VEO is configured with 2 algorithms which allows you to choose which set of NDLs (No Deco Limits) will be used for nitrogen/oxygen calculations and displays relating to Plan and DTR (Dive Time Remaining).

You can select to use either the DSAT or the PZ+. The selection will lock in for 24 hours after the last dive.

DSAT has been the standard used by Oceanic in all of its dive computers until this time. It features NDLs that are based on exposures and test data which also formed validation for the PADI RDP. It imposes restrictions for repetitive Deco dives, considered more risky.

PZ+ (Pelagic Z+) performance is based on Buhlmann ZHL-16c. It features NDLs that are considerably more conservative especially at shallower depths.

To create even greater margins of safety with respect to decompression, a Conservative Factor as well as No Deco Deep and Safety Stops can be included for No Deco dives.

CONSERVATIVE FACTOR (CF)

When the CF is set On, the NDLs which are based on the algorithm selected and used for Ni/O2 calculations and displays relating to Plan and DTR, will be reduced to the values available at the altitude level that is 3,000 feet (915 meters) higher. Refer to the charts in the back of this manual for times.

DEEP STOP (DS), No Deco only

When the DS selection is set On, it will trigger during NORM No Deco dives when you descend to 80 FT (24 M), then calculate (and continually update) a Stop Depth equal to 1/2 the Max Depth.

While 10 FT (3 M) deeper than the calculated DS, you will be able to access a DS Preview screen that will display the current DS Stop Depth/Time.

Upon initial ascent to within 10 FT (3 M) below the calculated Stop Depth, a DS screen displaying a Stop Depth at 1/2 the Max Depth will appear with a Countdown Timer beginning at 2:00 (min:sec) and counting down to 0:00.

> If you descend 10 FT (3 M) below, or ascend 10 FT (3 M) above, the calculated Stop Depth for 10 seconds during the countdown, the No Deco Main will replace the DS Main display and the DS feature will be disabled for the remainder of that dive. There is no Penalty if the DS is ignored.
> In the event that you enter Deco, exceed 190 FT (57 M), or a High O2 condition (=> 80%) occurs, the DS will be disabled for the remainder of that dive.
> The DS is disabled during a High PO2 Alarm condition (=> Set Point).

SAFETY STOP (SS), No Deco only

<u>If set On:</u>

Upon ascent to within 5 FT (1.5 M) deeper than the SS Depth set for 1 second on a No Deco dive in which Depth exceeded 30 FT (9 M) for 1 second, a beep will sound and a SS at the Depth set will appear on the Main display with a countdown beginning at the SS Time set and counting down to 0:00 (min:sec).

- If the SS was set for OFF or Timer, the display will not appear.
- In the event that you descend 10 FT (3 M) deeper than the Stop Depth for 10 seconds during the countdown, or the countdown reaches 0:00, the No Deco Main screen will replace the SS Main screen which will reappear upon ascent to within 5 FT (1.5 M) deeper than the Safety Stop Depth set for 1 second.
- In the event that you enter Deco during the dive, complete the Deco obligation, then descend below 30 FT (9 M); the SS Main will appear again upon ascent to within 5 FT (1.5 M) deeper than the SS Depth set for 1 second.
- If you ascend 2 FT (0.6 M) shallower than the SS Depth for 10 seconds prior to completing it, the SS will be canceled for the remainder of that dive.
- There is no Penalty if you surface prior to completing the SS or ignore it.

If set for Timer On:
Upon ascending to 20 FT (6 M) for 1 second on a No Deco dive in which Depth exceeded 30 FT (9 M) for 1 second, 1 beep will sound and a Run Timer will appear (if set On) displaying 0:00 (min:sec) until started.

- If the SS was set for Off or On, the Timer display is not to appear.
- If you descend deeper than 30 FT (9 M) for 10 seconds, the No Deco Main will replace the Timer screen which will reappear upon ascent to 20 FT (6 M) for 1 second.
- If you ascend above 10 FT (3 M) for 10 seconds, or enter Deco, or a High O2 alarm condition occurs (100%), while the SS Timer is active, the SS Timer will be disabled for the remainder of that dive.

DTR (DIVE TIME REMAINING)

The VEO constantly monitors No Deco status and O2 Accumulation, and will display whichever Time is the least amount available as DTR on the No Deco Dive Main screen. The Time being displayed will be identified by the NDC or O2 icon.

NDC (No Deco DTR)

NDC is the maximum amount of time that you can stay at your present Depth before entering Deco. 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 (NDC) will be displayed as DTR (Fig. 50a). It will also be displayed graphically as the TLBG (Fig. 50b).

As you ascend, the TLBG segments 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 Oceanic dive computers offer.
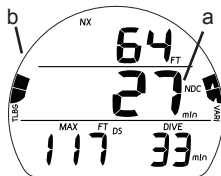
Fig. 50 - NO DECO MAIN

Fig. 51 - NO DECO ALT 1

OTR (O2 DTR)

When set for Nitrox operation, O2 during a dive is displayed on an ALT screen as a % of allowed saturation (Fig. 51a) identified by the O2SAT icons.

The limit for O2 exposure (100%) is set at 300 OTU (oxygen tolerance units) per dive or 24 hour period. As time before reaching the limit decreases, % O2 increases and OTR (O2 DTR) decreases.

When OTR becomes less than the NDC, calculations for the dive will be controlled by O2 and OTR will be displayed as DTR on the Main (Fig. 52a), identified by the O2 and min icons.

Fig. 52 - NO DECO MAIN

OXYGEN EXPOSURE LIMITS (from NOAA Diving Manual)				
PO2	Max Duration Single Exposure		Max Total Duration 24 Hour Day	
(ATA)	(min)	(hr)	(min)	(hr)
0.60	720	12.0	720	12.0
0.70	570	9.5	570	9.5
0.80	450	7.5	450	7.5
0.90	360	6.0	360	6.0
1.00	300	5.0	300	5.0
1.10	240	4.0	270	4.5
1.20	210	3.5	240	4.0
1.30	180	3.0	210	3.5
1.40	150	2.5	180	3.0
1.50	120	2.0	180	3.0
1.60	45	.75	150	2.0

NORM DIVE MODES

Fig. 53 - NO DECO MAIN

NO DECO DIVE MAIN, information includes (Fig. 53) -
> Current Depth with FT (or M) icon
> DTR (min) with NDC (or O2) and min icons
> Max Depth with MAX and FT (or M) icons
> EDT (Elapsed Dive Time) with DIVE and min icons
> TLBG with icon
> VARI while ascending
> NX, (PZ+), CF, DS icons - those that apply

- A (< 2 sec) to access ALTs.
- A (2 sec) to access Deep Stop Preview, if triggered.
- S (< 2 sec) to acknowledge alarms and activate Backlight.

Upon ascending to 2 FT (0.6 M) during a dive, Surface Interval time will be displayed with the SURF icon flashing for the first 10 minutes and NDC will be displayed as 2 dashes (Fig. 54).

- A (< 2 sec) to access Dive ALTs.
- S (< 2 sec) to activate Backlight.

Fig. 54 - NO DECO MAIN
(during < 10 min on surface)

After 10 minutes elapse, operation will revert to Surface Mode and full access given to the NORM Surface Menu items.

If a descent is made to 5 FT (1.5 M) for 5 seconds, the dive will be continued. Surface time will not be added to Dive Time.

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No Deco Alt 1, information includes (Fig. 55) -
> Time of Day (hr:min), with AM (or PM) icon if 12 Hour
  Format, no icon if 24 Hour Format
> Temperature with ° icon and graphic F (or C)

- A (< 2 sec) to access ALT 2 (if Nitrox).
- Revert to Main in 5 sec, if A not pressed.
- S (press) to activate Backlight.

Fig. 55 - NO DECO ALT 1

No Deco Alt 2 (only if Nitrox), information includes (Fig. 56) -
> NX icon
> % O2 with O2SAT icons
> Current PO2 value (ATA) with PO2 icon
> FO2 Set Point with FO2 icon

- 5 sec or A (< 2 sec) to revert to Main.
- S (press) to activate Backlight.

Fig. 56 - NO DECO ALT 2

Deep Stop (DS) Preview, information includes (Fig. 57) -
> same as Main except Max Depth and EDT replaced by -
> Stop Depth with FT (or M) icon, DS icon, and Stop Time as
  2:00 with min and sec icons

- Revert to Main after 5 sec or A (< 2 sec).
- S (press) to activate Backlight.

Fig. 57 - DS PREVIEW

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DEEP STOP MAIN, information includes (Fig. 58) -
> Current Depth with FT (or M) icon
> DTR (min) with NDC (or O2) and min icons
> Stop Depth with FT (or M) icon
> Stop icon (arrows/bar) and DS icon
> Stop Time with min and sec icons, counting down
> TLBG with icon
> NX, (PZ+), CF, icons - those that apply

- A (< 2 sec) to access ALTs**.
- S (< 2 sec) to acknowledge alarms and activate Backlight.

** DS features up to 3 ALT displays which are similar to the No Deco Main, ALT1, and ALT2 displays, respectively.

Fig. 58 - DS MAIN

SAFETY STOP MAIN (On), information includes (Fig. 59) -
> Current Depth with FT (or M) icon
> DTR (min) with NDC (or O2) and min icons
> Stop Depth set with FT (or M) icon
> Stop icon (arrows/bar)
> Stop Time set with min and sec icons, counting down
> TLBG with icon
> NX, (PZ+), CF, icons - those that apply

- A (< 2 sec) to access ALTs**.
- S (< 2 sec) to acknowledge alarms and activate Backlight.

Fig. 59 - SS MAIN
(On - Depth/Time set)

When the SS is set for Timer, the graphic TMR with Run Time counting up from 0:00 to 9:59 (min:sec) then 10 to 999 (min) will be displayed (Fig. 60) instead of a set Stop Depth/Time.

- A (< 2 sec) to access Dive ALTs**.
- S (< 2 sec) to acknowledge alarms and activate Backlight.
- S (< 2 sec) to start/stop Timer, blocked when pressed to acknowledge/silence alarms.
- S (2 sec), when Timer is stopped, to reset it to 0:00, blocked when pressed to acknowledge/silence alarms.

** SS features up to 3 ALT displays which are similar to the No Deco Main, ALT1, and ALT2 displays, respectively.

Fig. 60 - SS MAIN
(set for Run Timer)

DECOMPRESSION
Decompression mode activates when theoretical No Decompression time and depth limits are exceeded.

Upon entry into Deco, the audible will sound and the alarm LED will flash. The full TLBG and Up Arrow icon will flash (Fig. 61) until the audible is silenced.

- S (< 2 sec) to silence Audible.
- > Once within 10 FT (3 M) below the required Stop Depth (stop zone), the full Stop icon (both Arrows with Stop Bar) will be displayed solid.

Fig. 61 - DECO ENTRY
(during audible)

To fulfill your decompression obligation, you should make a safe controlled Ascent to a depth slightly deeper than, or equal to, the required Stop Depth indicated and decompress for the Stop Time indicated.

The amount of decompression credit time that you receive is dependent on Depth, with slightly less credit given the deeper you are below the Stop Depth indicated.

You should stay slightly deeper than the required Stop Depth indicated until the next shallower Stop Depth appears. Then, you can slowly ascend to, but not shallower than that indicated Stop Depth.

DECO STOP MAIN, information includes (Fig. 62) -
> Current Depth with FT (or M) icon
> TAT (Total Ascent Time)* with TAT and min icons
> Stop Depth with FT (or M) icon
> Stop icon (arrows/bar)
> Stop Time with min icon
> Full TLBG with icon
> NX, (PZ+), CF, icons - those that apply

• A (< 2 sec) to access ALTs.
• S (< 2 sec) to acknowledge alarms and activate Backlight.

Fig. 62 - DECO STOP MAIN

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Deco Stop Alt 1, information includes (Fig. 63) -
> Current Depth with FT (or M) icon
> TAT (min) with TAT and min icons
> Max Depth with MAX and FT (or M) icons
> EDT (Elapsed Dive Time) with DIVE and min icons
> Full TLBG with icon
> NX, (PZ+), CF, icons - those that apply

- A (< 2 sec) to access ALT 2.
- Revert to Main in 5 sec, if A not pressed.

Fig. 63 - DECO STOP ALT 1

Deco Stop Alt 2, information includes (Fig. 64) -
> Time of Day (hr:min)
> Temperature with ° icon and graphic F (or C)

- A (< 2 sec) to access ALT 2 (if Nitrox).
- Revert to Main in 5 sec, if A not pressed.

Fig. 64 - DECO STOP ALT 2

Deco Stop Alt 3 (if Nitrox), information includes (Fig. 65) -
> NX icon
> % O2 with O2SAT icons
> Current PO2 value (ATA) with PO2 icon
> FO2 Set Point with FO2 icon

- 5 sec or A (< 2 sec) to revert to Main.

Fig. 65 - DECO STOP ALT 3

59

CV (CONDITIONAL VIOLATION)

Upon ascent above the required Deco Stop Depth, operation will enter CV during which no off gassing credit will be given.

The Audible will sound and the alarm LED will flash. The full TLBG and Down Arrow icon will flash (Fig. 66) until the audible is silenced, then the TLBG will be solid.

- S (< 2 sec) to silence audible and activate Backlight.
- > Down Arrow icon continues to flash until descent to below required Stop Depth (within stop zone), then full Stop icon (Stop Bar with both Arrows) will be on solid.

ALTs are similar to those for Deco.

If you descend deeper than the required Deco Stop before 5 minutes elapse, Deco operation will continue with no off gassing credit given for time above the Stop. Instead, for each minute above the Stop 1-1/2 minutes of penalty time will be added to required Stop Time.

- > The added penalty (deco) time will have to be worked off before obtaining off gassing credit.
- > Once the penalty time is worked off, and off gassing credit begins, required Deco Stop Depths and Time will decrease toward zero. The TLBG will recede into the No Deco zone and operation will revert to No Deco mode.

Fig. 66 - CV MAIN (after Audible)

60

DV 1 (DELAYED VIOLATION 1)

If you remain shallower than a Deco Stop Depth for more than 5 minutes, operation will enter DV1* which is a continuation of CV with penalty time still being added. Again, the audible will sound and the full TLBG will flash (Fig. 67) until it is silenced.

> *The difference is that 5 minutes after surfacing from the dive, operation will now enter Violation Gauge Mode.*

Fig. 67 - DV1 MAIN
(during Audible)

- S (< 2 sec) to silence audible and activate the Backlight.
- > Down Arrow icon continues to flash until descent to below required Stop Depth, then full Stop icon will be on solid.

DV 2 (DELAYED VIOLATION 2)

If the calculated Deco obligation requires a Stop Depth between 60 FT (18 M) and 70 FT (21 M), operation will enter DV2.

The Audible will sound and the alarm LED will flash. The full TLBG will flash (Fig. 68) until the audible is silenced.

- S (< 2 sec) to silence audible and activate the Backlight.
- > Up Arrow icon flashes if 10 FT (3 M) deeper than the required Stop Depth.
- > Once within 10 FT (3 M) of and below the required Stop Depth, the Stop icon (both Arrows with Stop Bar) will be displayed solid.

Fig. 68 - DV2 MAIN

Fig. 69 - DV 3 MAIN

DV 3 (DELAYED VIOLATION 3)

If you descend deeper than the MOD*, the audible will sound and the alarm LED will flash. Also, the Up Arrow will flash, and Current Depth and Max Depth will only indicate 3 dashes (- - -) signifying that you are Too Deep (Fig. 69).

MOD is the Max Operating Depth at which the VEO can properly perform calculations or provide accurate display information. Refer to the Specifications in the back.

Upon ascending above the MOD, Current Depth will be restored, however, Max Depth will continue to be displayed as dashes for the remainder of that dive. The Log for that dive will also display dashes for Max Depth.

VGM (VIOLATION GAUGE MODE)

During NORM dives, operation will enter VGM when Deco requires a Stop Depth greater than 70 FT (21 M). It will also enter VGM if Deco is activated during a dive in FREE mode, described later.

Operation would then continue in VGM during the remainder of that dive and for 24 hours after surfacing. VGM turns the VEO into a digital instrument without any decompression or oxygen related calculations or displays.

Upon activation of VGM, the Audible will sound and the alarm LED will flash. The graphic VIO and Up Arrow icon will flash.

62

VGM Dive Main, information includes (Fig. 70) -
> Current Depth with FT (or M) icon
> Graphic VIO (in place of Max Depth which moves to Alt 1) with Up Arrow icon, flashing until on surface
> EDT with DIVE and min icons
> NX, Gas icons - if they apply
> VARI while ascending

- A (< 2 sec) to access ALTs (similar to those for Deco).
- S (< 2 sec) to acknowledge alarm and activate Backlight.

Fig. 70 - VGM DIVE MAIN

VGM on Surface
Upon surfacing, the VGM Dive Main will remain on display for 10 minutes with Surface Interval Time displayed in place of Current Depth with the SURF icon flashing. The graphic VIO will also still be displayed flashing.

Operation will also enter VGM 5 minutes after surfacing from a dive in which a Delayed Violation occurred.

After 10 minutes elapse, VIO alternates with NOR (Fig. 71) until the unit shuts off after 24 hours with no dives.

> A full 24 hour continuous surface interval must then be served before all functions are restored.

alt w/ NOR
Fig. 71 - VGM SURF MAIN

> During that 24 hours, VGM does not allow access to the Set F, Plan, Dsat, and FREE Mode features/screens.
> The Fly countdown indicates time remaining before normal operation can resume with full features and functions.

HIGH PO2 (NORM only)

Warning >> at Alarm Set Point value minus .20 (1.00 to 1.40).
Alarm >> at Set Point value, except in Deco then at 1.60 only.

When PO2 (partial pressure of oxygen) increases to the Warning level; the audible sounds, the Up Arrow icon will flash, and the PO2 value will flash (in place of max Depth) until the audible is silenced (Fig. 72).

• S (< 2 sec) to acknowledge alarm.
> When the audible is silenced, Max Depth is restored.

The Up Arrow remains on solid until PO2 decreases below the Warning level.

If PO2 continues to increase and reaches the Alarm Set Point, the audible sounds again.

• S (< 2 sec) to acknowledge alarms
> The PO2 value and Up Arrow icon will flash until PO2 decreases below the Alarm Set Point.

Fig. 72 - PO2 WARNING (during audible)

64

PO2 Alarm Main, information includes (Fig. 73) -
> NX icon
> Current Depth with FT (or M) icon
> DTR with NDC (or O2) and min icons
> PO2 value (ATA) with PO2 icon, flashing until < Set Point, then solid
> Up Arrow icon, flashing until < Set Point, then solid
> TLBG with icon
> VARI while ascending
> (PZ+), CF icons - those that apply

• A (< 2 sec) to access ALTs (similar to those for No Deco).
• S (< 2 sec) to activate Backlight.

Fig. 73 - PO2 ALARM MAIN

High PO2 during Deco (Fig. 74)
The PO2 alarm setting does not apply when in Deco.

> If PO2 reaches 1.60 while at a Deco Stop, the PO2 value (1.60) with icon will alternate with Deco Stop Depth/Time once each minute*.

PO2 on for 10 seconds, Deco Stop Depth/Time on for 50 seconds until PO2 decreases below 1.60, then PO2 will not be displayed.

alt w/ Stop Depth/Time
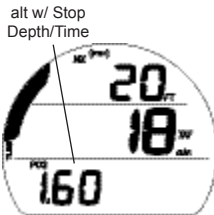
Fig. 74 - PO2 ALARM (while in Deco)

Fig. 75 - O2 WARNING
(during audible)

HIGH O2 (NORM only)

Warning >> at 80 to 99% (240 OTU).
Alarm >> at 100% (300 OTU).

When O2 reaches the Warning Level; the audible sounds and the O2 value will flash (in place of DTR), Fig. 75, until the audible is silenced, then DTR will be restored.

• S (< 2 sec) to acknowledge alarm.

If O2 reaches the Alarm level; the audible sounds and the Up Arrow icon and the O2 value will flash (in place of DTR) until on the surface (Fig. 76).

• S (< 2 sec) to acknowledge alarm and activate Backlight.
• A (< 2 sec) to access ALTs (similat to those for No Deco).

High O2 during Deco

When O2 reaches the Warning Level; the audible sounds and the O2 value will flash (in place of TAT) until the audible is silenced, then TAT will be restored.

• S (< 2 sec) to acknowledge alarm.

Fig. 76 - O2 ALARM

66

If O2 reaches the Alarm level; the audible sounds and the Up Arrow icon and the O2 value will flash (in place of TAT) until on the surface. Max Depth and EDT will be displayed in place of Deco Stop Depth/Time, Fig. 77.

- S (< 2 sec) to acknowledge alarm and activate Backlight.
- A (< 2 sec) to access ALTs.

High O2 on Surface
Upon ascent to 2 FT (.6 M) for 1 second (surfacing), the Dive Main screen is displayed for 10 minutes with access to the Dive ALTs allowed.

- If O2 is 100%, the value will flash on the Main until it is < 100%, then it will be replaced with dashes (if Violation) or Time of Day.
- If you surface due to 100% O2 without having completed the Deco obligation, the full TLBG and O2 value (100) will flash with O2SAT icons for the first 10 minutes, then operation will enter VGM.
- Access to Dive ALTs is allowed during the first 10 minutes, then access to the NORM Surface Menu is allowed.
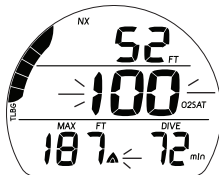
Fig. 77 - O2 ALARM
(during Deco)

DIGITAL GAUGE MODE

Fig. 78 - GAUG SURF MAIN

GAUG SURF MAIN, information includes (Fig. 78):
> SI (hr:min) with SURF icon; if no dive yet, this is time since activation
> Time of Day (hr:min) with AM (or PM) icon if 12 Hour Format; no icon if 24 Hour Format
> Graphic GAU
> Dive number with DIVE icon, up to 24 for that operating period (0 if no dive made yet)
> Battery icon, if voltage is low

• A (< 2 sec) to access ALT 1.
• A (hold) to scroll forward through Menu items.
• S (press) to activate SmartGlo Backlight.

Upon surfacing during dives, the Dive Main will remain on display for the first 10 minutes (with SI in place of Depth) after which the Surface Main will be displayed

Fig. 79 - GAUG SURF ALT 1
(Last Dive's Data)

GAUG SURF ALT 1, information includes (Fig. 79):
> SI (hr:min) with SURF icon, prior to Last dive
> Graphic LAST, indicating data is for dive previously conducted while still in GAUG mode
> Max Depth of dive previously conducted while still in GAUG mode with MAX and FT (or M) icons
> EDT (up to 999 min) with DIVE and min icons

70

- A (< 2 sec) to access ALT 2
- S (press) to activate SmartGlo Backlight

GAUG SURF ALT 2, information includes (Fig.80):
> Temperature with ° icon and graphic F (or C)
> Altitude graphic, if EL2 (to EL7), blank if Sea level

- A (< 2 sec) to access Fly
- S (press) to activate SmartGlo Backlight

Fig. 80 - GAUG SURF ALT 2

GAUG SURF MENU
In addition to the Main and ALT screens, the Gauge Surface
Menu provides access to most other selections that are similar to
those described previously for NORM Mode*.

Refer to pages 23 through 47 for descriptions of those menu items.

Button operations are also similar to those in NORM.

- A (< 2 sec) >> step forward through Menu items.
- A (hold) >> scroll forward through Menu items.
- S (press) >> activate the SmartGlo Backlight.
- 2 min (of no button action) >> revert to Main.

GAUG SURF MENU
MAIN
ALT 1
ALT 2
FLY
LOG
SET A
SET U
SET T
SET M
HISTORY
SN
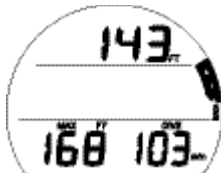
Fig. 81 - GAUG DIVE MAIN

Upon descent to 5 FT (1.5 M) for 5 seconds, operation will enter Gauge Dive Mode.

GAUG DIVE MAIN, information includes (Fig. 81) -
> Current Depth with FT (or M) icon
> Max Depth with MAX and FT (or M) icons
> EDT (Elapsed Dive Time) with DIVE and min icons
> VARI while ascending

- A (< 2 sec) to access ALTs.
- S (< 2 sec) to acknowledge alarms, and activate Backlight.

Upon ascending to 2 FT (0.6 M) during a dive, Surface Interval time will be displayed with the SURF icon flashing for the first 10 minutes (Fig. 82).

After 10 minutes elapse, operation will revert to Surface Mode and full access given to the GAUG Surface Menu items.

If a descent is made to 5 FT (1.5 M) for 5 seconds, the dive will be continued. Surface time will not be added to Dive Time.

Once a dive is completed in Gauge Mode, operation will lock into Gauge Mode for 24 hours.

Fig. 82 - GAUG DIVE MAIN
(during < 10 min on surface)

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GAUG DIVE ALT, information includes (Fig. 83) -
> Time of Day (hr:min), with AM (or PM) icon if 12 Hour
> Temperature with ° icon and graphic F (or C)

• 5 sec or A (< 2 sec), revert to Main.

DV 3 (DELAYED VIOLATION 3)
Upon descent deeper than the MOD*, the audible will sound and the alarm LED will flash. Also, the Up Arrow will flash, and Current Depth and Max Depth will only indicate 3 dashes (- - -) signifying that you are too deep (Fig. 84).

**MOD is Max Operating Depth. Refer to the Specifications in the back.

Upon ascending above the MOD, Current Depth restored. Max Depth will display 3 dashes for the remainder of that dive and will be recorded in the Log.

Fig. 83 - GAUG DIVE ALT
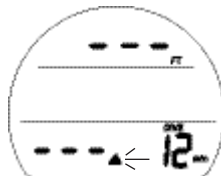
Fig. 84 - GAUG DIVE OOR

INFORMATION PERTAINING TO FREE DIVE MODE

- Although breathing apparatus is not utilized for Free Dive activities, nitrogen tissue loading remains a factor.   Nitrogen loading is calculated based upon a fixed FO2 of Air.
- Since a user has the option of alternating between SCUBA and Free Dive activities within a 24 hour period, nitrogen calculations and the displayed value of No Deco Dive Time Remaining (NDC time) are carried over from one operating mode to the other, which permits the user to maintain awareness of nitrogen absorption and offgasing status.
- The mathematical models currently used in the VEO are based on no decompression/ decompression multilevel repetitive dive schedules.
- These algorithms do not take into account the physiological changes associated with the high pressures that competitive type Free diving can expose a diver to.

⚠ **WARNINGS**

- **Ensure that you know which Operating Mode is selected (NORM, GAUG, or FREE) prior to commencing any dive.**
- **Conducting Free dives within a 24 hour period after conducting SCUBA dives, combined with the effects of multiple rapid Free Dive ascents, increases your risk of decompression sickness. Such activities may result in accelerated entry into decompression which could cause serious injury or death.**
- **Combining competitive type Free dive activities that involve multiple descents/ ascents with activities utilizing SCUBA during the same 24 hour period is not recommended. Presently, there is no data relating to such activities.**
- **It is highly recommended that anyone planning to become involved in competitive type Free dive activities obtain proper instruction and training from a recognized Free Diving trainer. It is imperative that the physiological affects be understood and the diver is physically prepared.**

FREE DIVE MODE

Fig. 85 - FREE SURF MAIN

FREE SURF MAIN, information includes (Fig. 85):
> Surface Interval time (min:sec up to 59:59, then hr:min)
  with SURF icon; if no dive yet, this is time since activation
> Time of Day (hr:min)
> Graphic FRE
> Dive number with DIVE icon, up to 99 for that operating
  period (0 if no dive made yet)
> (PZ+), CF icons - if selected
> TLBG with icon, if any after a NORM or FREE dive
> Battery icon, if voltage is low

• A (< 2 sec) to access ALT 1.
• A (hold) to scroll forward through Menu items.
• S (press) to activate SmartGlo Backlight.

Upon surfacing during dives, the Dive Main will remain on display for the first 1 minute (with SI in place of Depth) after which the Surface Main will be displayed.

pre dive SI (min:sec)
Fig. 86 - FREE SURF ALT 1 (Last Dive Data))

FREE SURF ALT 1, information includes (Fig. 86):
> SI (min:sec or hr:min) with SURF icon, prior to Last dive
> Graphic LAST, indicating data is for dive previously
  conducted while still in FREE mode
> Max Depth of dive previously conducted while still in FREE
  mode with MAX and FT (or M) icons
> EDT (min:sec or hr:min) with DIVE and min/sec icons

- A (< 2 sec) to access ALT 2
- S (press) to activate SmartGlo Backlight

FREE SURF ALT 2, information includes (Fig. 87):
> Temperature with ° icon and graphic F (or C)
> Altitude graphic, if EL2 (to EL7), blank if Sea level

- A (< 2 sec) to access CDT Lead-in.
- S (press) to activate SmartGlo Backlight.

Fig. 87 - FREE SURF ALT 2

FREE SURF MENU

Button operations. -
- A (< 2 sec) >> step forward through Menu items.
- A (hold) >> scroll forward through Menu items.
- S (press) >> activate the SmartGlo Backlight.

CDT (Countdown Timer)
While on the surface, the CDT can be set, started, and stopped. Once set and started, it continues to run in the background when a dive is started and becomes available as an ALT display.

FREE SURF MENU
MAIN
ALT 1
ALT 2
CDT
SET FA
SET M

Fig. 88 - CDT LEAD-IN

CDT Lead-in, information includes (Fig. 88):
> Graphics Cdt and FRE

- A (< 2 sec) to step forward to Set FA Lead-in.
- S (< 2 sec) to access CDT Status.

CDT Status, information includes (Fig. 89):
> Countdown Time (min:sec) remaining or set/ready to start, 0:00 if complete
> Graphics CDT - with OFF (or ON) flashing

- A (< 2 sec) to step up through OFF, ON, SEt (Fig. 90).
- S (< 2 sec) to save the setting.

>> If On is saved and a CDT was set, the CDT will start counting down and operation will revert to the Lead-in.
>> If Off is saved, the Timer will stop counting down and operation will revert to the Lead-in.
>> If Set is saved, the Set CDT.

- S (2 sec) to revert to CDT Lead-in.

Fig. 89 - CDT STATUS
(On, running)

The CDT will run in the background, while on the surface and during dives, until it counts down to 0:00, or it is turned OFF.

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When a set Countdown Time reaches 0:00, the audible will sound during which time the graphic CDT will be displayed flashing on the Surface or Dive Main until the audible is silent.

Set CDT, information includes (Fig. 91):
> Graphics SEt and CDT
> CDT (min:sec) with Minute digits flashing
> min and sec icons

- A (hold) to scroll upward through Minute Set Points at a rate of 8 per second from 0: to 59: in increments of 1: (min).
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the Minute Set Point and flash the Seconds digits.
- A (hold) to scroll upward through Seconds Set Points at a rate of 8 per second from :00 to :59 in increments of :01 (sec).
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the CDT Set Point and revert to the CDT Status screen with OFF flashing.

Fig. 90 - CDT STATUS (to access Set)

Fig. 91 - SET CDT

Fig. 92 - SET FA LEAD-IN

SET FA (FREE ALARMS) MENU
Sequence >> Lead-in >> EDT >> DA1 >> DA2 >> DA3

Set Points remain as set until changed.

Set FA Lead-in, information includes (Fig. 92):
> Graphics SEt and FA

- A (< 2 sec) to step forward to Set M Lead-in.
- S (< 2 sec) to access Set EDT Alarm.

EDT ALARM
Factory set for a fixed 30 seconds, the EDT (Elapsed Dive Time) alarm sounds the audible every 30 seconds while underwater in FREE Dive Mode.

Set EDT Alarm, information includes (Fig. 93):
> Graphics SEt and EDT -
> OFF (or ON) flashing

- A (< 2 sec) to toggle between ON and OFF.
- S (< 2 sec) to save the setting and access Set DA1.
- S (2 sec) to revert to Set FA Lead-in.
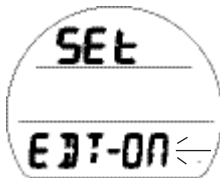
Fig. 93 - SET EDT ALARM

80

DA (DEPTH ALARMS)

There are 3 Free Depth Alarms (DAs) that can be set at progressively deeper depths*.

> *The DA2 setting must be deeper than DA1 and DA3 must be deeper than DA2.*

Set DA 1 Alarm, information includes (Fig. 94A, B):
> Graphics SEt and - dA1
> Graphic OFF, or Depth value with MAX and FT (or M) icons, flashing

- A (hold) to scroll upward through Set Points at a rate of 8 per second from OFF to 30 to 330 FT (10 to 100 M) in increments of 10 FT (1 M).
- A (< 2 sec) to step upward through Set Points one at a time.
- S (< 2 sec) to save the setting.
  > If OFF is saved, operation reverts to Set FA Lead-in.
  > If a Depth value is saved, Set DA 2 is accessed.
- S (2 sec) to revert to Set EDT Alarm.

Set DA 2 and DA 3 are similar with Depth values beginning 1 increment higher than the previous selection set. If DA 1 is set for 100 FT, DA 2 settings start at 110 FT.

Fig. 94A - SET DA 1
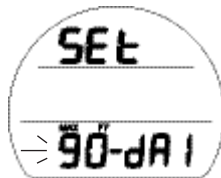
Fig. 94B - SET DA 1

Fig. 95 - SET M

SET M (DIVE MODE)

Set M (Fig. 95) is similar to that previously described for NORM. Refer to page 43.

SHARED SETTINGS

To change items that FREE Mode shares with NORM Mode, access the NORM Menu, then Set U, then -

> Wet Activation
> Units
> Algorithm
> Conservative Factor
> Glo Duration

Upon descent to 5 FT (1.5 M) for 5 seconds, operation will enter Free Dive Mode.

FREE DIVE MAIN, information includes (Fig. 96) -
> Current Depth with FT (or M) icon
> DTR (min) with NDC and min icons
> Temperature with ° icon anf graphic F (or C)
> EDT (min:sec) with DIVE and min sec icons
> TLBG with icon
> (PZ+), CF icons - those that apply

- A (< 2 sec) to access ALTs.
- S (press) to activate Backlight.

Fig. 96 - FREE DIVE MAIN

Upon ascending to 2 FT (0.6 M) during a dive, Surface Interval time will be displayed with the SURF icon flashing for the first 1 minute and NDC will be displayed as 2 dashes (Fig. 97).

- A (< 2 sec) to access Dive ALTs.
- S (press) to activate Backlight.

After 1 minute elapses, operation will revert to Surface Mode and full access given to the FREE Surface Menu items.

If a descent is made to 5 FT (1.5 M) for 5 seconds, the dive will be continued. Surface time will not be added to Dive Time.

Fig. 97 - FREE DIVE MAIN
(during < 1 min on surface)

Fig. 98 - FREE DIVE ALT 1

FREE DIVE ALT 1, information includes (Fig. 98) -
> Remaining Countdown Time (min:sec) if On and a CD is in progress or 0:00 if On and the CD is complete, with colon flashing. If Off, the CD Time previously set is displayed with colon solid indicating it is ready to start.
> Graphics CDT - , and OFF (or ON) flashing

- S (< 2 sec) to toggle between ON and OFF*, and activate Backlight.

  *Start or Stop the countdown and revert to Main.

- A (< 2 sec) to access ALT 2.
- Revert to Main in 10 sec, if S or A is not pressed

When On, the CDT will run in the background until it counts down to 0:00, or it is turned Off.

FREE DIVE ALT 2, information includes (Fig. 99) -
> Time of Day (hr:min), with AM (or PM) icon if 12 Hour
> TMax Depth with MAX and FT (or M) icons

- 5 sec or A (< 2 sec), revert to Main.
- S (press) to activate Backlight.

Fig. 99 - FREE DIVE ALT 2

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FREE DIVE ALARMS
FREE mode alarms, which are separate from NORM (or GAUG) alarms, sound either 1 or 3 times as 3 beeps then clear.

They cannot be acknowledged or silenced.

FREE CDT Alarm
When a set Countdown Time reaches 0:00, the audible will sound during which time the graphic CDT will flash on the Main in place of Temperature (Fig. 100).

Fig. 100 - CDT AL

FREE EDT Alarm
When set On, the EDT alarm activates every 30 seconds during a dive. The audible will sound during which time the graphic EDT and time digits will flash on the Main in place of Temperature (Fig. 101).

Fig. 101 - EDT AL

FREE Depth Alarms
When set On, the Depth alarms (1, 2, 3) activate at their respective set Depths. The audible will sound during which time the Depth digits, and graphic DA1 (2, 3) in place of Temperature, will flash on the Main (Fig. 102).

Fig. 102 - DEPTH AL

85
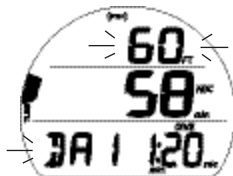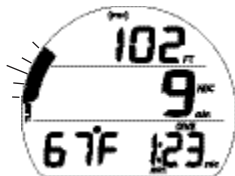
Fig. 103 - FREE TLBG AL
(during audible)

Fig. 104 - FREE VIOLATION
(after audible)

alt w/
FRE

Fig. 105 - FREE VIOLATION
(after 1 min on surface)

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High Nitrogen Alarms

When nitrogen increases to the caution level (4 TLBG segments), the audible will sound during which time the TLBG segments will flash on the Main (Fig. 103).

In the event that nitrogen continues to increase and reaches the Deco level, the audible will sound during which time; all 5 TLBG segments, the Up Arrow icon, and the graphic VIO (in place of Temperature), will flash, and NDC will display 0.

When the audible is silent, the TLBG and NDC digits are removed. The graphic VIO and Up Arrow icon flash until on the surface (Fig. 104), then the Up Arrow is removed.

The graphic VIO flashes until 1 minute elapses on the surface (Fig. 105), then it alternates with FRE and operation reverts to Violation Gauge Mode for 24 hours.

REFERENCE

PC INTERFACE

The VEO is configured with a Data Port located on the side of the module (Fig. 106a) that enables it to be connected to a PC through a USB port using a special interface cable that is available as an optional accessory.

The USB Driver required for the interface system is downloadable from the Oceanic Worldwide web site.

The Settings Upload portion of the program can be used to set/change the Set A group (Alarms), Set U group (Utilities), and Set T group (Time/Date) using the same Interface System. The FO2 and Mode settings must be entered using the button controls.

Information available for retrieval* (downLoad) from the VEO to the PC Download portion of the program includes items such as dive number, surface interval time, depth, dive time, start date and time, lowest temperature, sampling rate, Set Points, TLBG, and VARI.

FREE Dive information is only available using the PC Interface system.

The VEO checks for the presence of an interface device connection to the Data Port once every second* while in Surface mode.

Checks are not made if the Wet Activation contacts are wet.

Fig. 106 - DATA PORT

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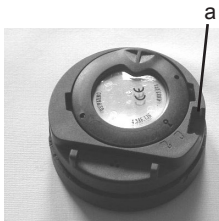
Upon sensing an interface connection, the requesting device (PC) connects to the VEO and is prepared for Upload of settings or Download of data which is then initiated using the PC program. During the process, which is a 2 minute window there is a PC countdown screen displayed on the VEO (Fig. 107).

Prior to attempting to Download data from your VEO or Upload Settings to it, review the HELP section of the interface program. Recommended is to print those sections of HELP that you consider appropriate for your Interface activities.

Fig. 107 - PC INTERFACE
(2 min countdown)

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

- Mouse
- CD Rom drive
- Printer

For software updates, refer to the Oceanic web site at ->> **www.OceanicWorldwide.com**

For support, call OceanLog Support toll free at ->> **(866) 732-7877**, 8 Am to 5 Pm USA Pacific time.

CARE AND CLEANING

Protect your VEO from shock, excessive temperatures, exposure to chemicals, and tampering. Protect the lens against scratches with a Instrument Lens Protector. Small scratches will naturally disappear underwater.

- Soak and rinse the VEO 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. 108a), PC Interface Data Port (Fig. 108b), and buttons are free of debris or obstructions.
- To dissolve salt crystals, use lukewarm water or a slightly acidic bath (50% white vinegar/50% fresh water). After removal from the bath, place the VEO under gently running fresh water and towel dry before storing.
- Transport your VEO cool, dry, and protected.
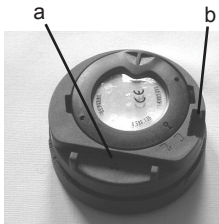
Fig. 108 - CASE BACK

INSPECTIONS AND SERVICE

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

Oceanic recommends that you continue to have an inspection performed every year to ensure it is working properly. The costs of annual inspections, or inspections relating to water tight integrity, are not covered under the terms of the 2 year limited warranty.

To Obtain Service:
Take your VEO to your local Authorized Oceanic Dealer.

If required to return your VEO to the Oceanic USA factory:
- Obtain an RA (Return Authorization) number by contacting Oceanic USA at 510/562-0500 or send an e-mail to service@oceanicusa.com.
- Record all dive data in the Log and/or download the data stored in memory. All data will be erased during factory service.
- Package it using a protective cushioning material.
- Include a legible note stating the specific reason for return, your name, address, daytime phone number, serial number(s), and a copy of your original sales receipt and Warranty Registration.
- Send freight prepaid and insured using a traceable method.
- Non-warranty service must be prepaid. COD is not accepted.
- Additional information is available on the Oceanic web site OceanicWorldwide.com or on the local Oceanic web site that serves your global region.

The procedures that follow must be closely adhered to. Damage due to improper battery replacement is not covered by the VEO's warranty.

MODULE REMOVAL FROM BOOT

If the module is in a console, bend the rubber console boot back to expose the edge of the module. If the boot is flexible enough to permit, you may bend it back far enough to scoop the module out with your finger. Otherwise, it may be necessary to insert a blunt screwdriver until the tip rests just underneath the module.

DO NOT pry the module from the console! Slowly increase the pressure under the module by releasing the tension on the rubber boot. The module will slide up the screwdriver and exit the console.

If the module is in a wrist boot, it will be necessary to peel the lips of the boot downward off the module while applying pressure from underneath, working it out slowly.

When the battery is removed, settings and calculations for repetitive dives are retained in the unit's memory while a new battery is installed.

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 or dust.

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).

Battery Cover Removal
- Turn the module over to expose the Battery Cover.
- While applying steady inward pressure on the center of the Battery Cover, rotate the Retaining Ring 10 degrees clockwise by pressing against the upper tab of the Ring with a small blade screwdriver (Fig. 109).
- Lift the Ring up and away from the Housing, or turn the Module over to allow the Ring to drop out into your hand.
- Remove the Battery Cover.
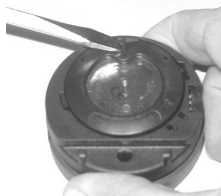
Fig. 109 - COVER RING

Battery Removal
- Remove the Retaining Bar located across the lower portion of the Battery (Fig. 110a).
- Remove the Cover O-ring. DO NOT use tools.
- Slide the Battery up and out of the Battery Compartment.

Inspection
- Closely check all of the sealing surfaces for any signs of damage that might impair proper sealing.
- Inspect the Button, Lens, and Housing to ensure they are not cracked or damaged.

⚠ **WARNING: If damage or corrosion is found, return your VEO to an Authorized Oceanic Dealer, and DO NOT attempt to use it until it has received factory prescribed service.**
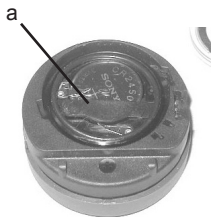
Fig. 110 - RETAINING BAR

Fig. 111 - BATTERY

Fig. 112 - RETAINING BAR

Fig. 113 - COVER O-RING

Battery Installation

- Slide a new 3 volt type CR2450 Lithium Battery, (-) negative side down into the Battery Compartment. Slide it in from the right side and ensure that it slides under the contact clip on the left rim (Fig. 111).
- Orient the Retaining Bar across the lower portion of the Battery and carefully push it down into position (Fig. 112).

Battery Cover and Retaining Ring Installation

- Lightly lubricate a new Cover O-ring* with silicone grease and place it on the inner rim of the Battery Cover (Fig. 113). Ensure that it is evenly seated.

    *The O-ring must be a genuine Oceanic part that can be purchased from an Authorized Oceanic Dealer. Use of any other O-ring will void the warranty.

- Slide the Cover Ring, top portion first (small opening), onto your thumb.
- Carefully place the Battery Cover (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 Cover securely in place and, using your other hand, slide the Cover Ring down off your thumb and into position around the Battery Compartment.
- The tabs on the Cover Ring fit down into the two slots located at the 2 and 8 o'clock positions.

- Using your fingers, turn the Ring counter clockwise 5 degrees until the tabs engage (Fig. 114), then tighten it 5 more degrees by turning it counter clockwise with the aide of a small blade screwdriver (Fig. 115).
- While tightening the Retaining Ring, exert continuous inward pressure on it until it is secured in the proper position. A small symbol located on the Ring should be aligned with the Locked symbol located on the Housing (Fig. 116a)

Inspection
- Activate the unit and watch carefully as it performs a full diagnostic and battery check, and enters Surface Mode.
- Observe the LCD display to ensure it is consistently clear and sharp in contrast throughout the screen.

⚠ **WARNING: If there are any portions of the display missing or appearing dim, or if a Low Battery condition is indicated, return the unit to an Authorized Oceanic Dealer for a complete evaluation before attempting to use it.**

Fig. 114 - TABS ENGAGE
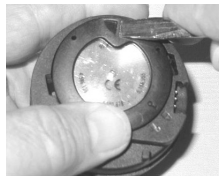
Fig. 115 - TABS TIGHT
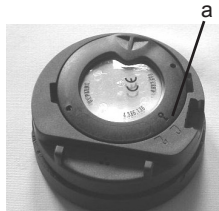
Fig. 116 - RING SECURE

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RETURNING THE MODULE TO BOOT

- If the boot was fitted with a spacer and it was previously removed, replace the spacer into the boot.
- Orient the module over the opening in the boot, and dip the bottom edge into it while pressing the top edge with the palm of your hand. Stop pressing when the bottom edge of the module has just entered the boot.
- Correct the alignment of the module as needed so that it is straight.
- Press the module completely into place with your thumbs, watching the alignment, until it snaps into place.

ALTITUDE SENSING AND ADJUSTMENT

Altitude (i.e., ambient pressure) is measured upon activation and every 15 minutes until a dive is made.

> Measurements are only taken when the unit is dry.
> Two readings are taken, the second reading 5 seconds after the first. The readings must be within 1 foot (30 cm) of each other to record that ambient pressure as the current Altitude.
> No adjustments are made during any time that the Wet Contacts are bridged.
> When diving in high altitude waters from 3,001 to 14,000 feet (916 to 4,270 meters), the VEO automatically adjusts to these conditions providing corrected Depth, and reduced No Deco and O2 Times at intervals of 1,000 feet (305 meters).
> When the Conservative Factor is set On, NDLs are calculated based upon the next higher 3,000 foot (915 meter) Altitude.
> At Sea Level, calculations are based upon an Altitude of 6,000 feet.
> All adjustments for Altitudes greater than 11,000 feet (3,355 meters) are then made to allowable dive times for 14,000 feet (4,270 meters).
> The VEO will not function as a Dive Computer above 14,000 feet (4,270 meters).

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TECHNICAL DATA

PZ+ ALGORITHM >> NDLS (HR:MIN) AT ALTITUDE (IMPERIAL)

Altitude (feet)	0 to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000	10001 to 11000	11001 to 12000	12001 to 13000	13001 to 14000
Depth (FT)												
30	3:17	2:30	2:21	2:14	2:08	2:02	1:57	1:52	1:47	1:39	1:34	1:29
40	1:49	1:21	1:15	1:11	1:08	1:05	1:02	1:00	0:57	0:55	0:53	0:51
50	1:05	0:53	0:51	0:49	0:47	0:44	0:42	0:39	0:37	0:35	0:34	0:33
60	0:48	0:37	0:35	0:33	0:32	0:30	0:28	0:26	0:24	0:23	0:22	0:21
70	0:35	0:26	0:24	0:23	0:21	0:20	0:19	0:18	0:17	0:16	0:16	0:14
80	0:26	0:19	0:18	0:17	0:16	0:15	0:14	0:13	0:12	0:11	0:11	0:10
90	0:19	0:15	0:14	0:13	0:12	0:11	0:10	0:10	0:10	0:09	0:08	0:08
100	0:16	0:11	0:10	0:10	0:09	0:09	0:08	0:08	0:07	0:07	0:07	0:07
110	0:12	0:09	0:08	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:05
120	0:10	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05
130	0:08	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04
140	0:07	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04
150	0:06	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03
160	0:06	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03
170	0:05	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03
180	0:05	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03
190	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:00

PZ+ ALGORITHM >> NDLS (HR:MIN) AT ALTITUDE (METRIC)

Altitude (meters)	0 to 915	916 to 1220	1221 to 1525	1526 to 1830	1831 to 2135	2136 to 2440	2441 to 2745	2746 to 3050	3051 to 3355	3356 to 3660	3661 to 3965	3966 to 4270
Depth (M)												
9	3:37	2:41	2:31	2:23	2:16	2:10	2:04	1:59	1:54	1:50	1:43	1:37
12	1:55	1:27	1:21	1:15	1:12	1:08	1:05	1:03	1:00	0:58	0:55	0:54
15	1:08	0:55	0:53	0:51	0:49	0:47	0:44	0:42	0:39	0:37	0:36	0:34
18	0:50	0:39	0:37	0:35	0:33	0:32	0:30	0:28	0:26	0:24	0:23	0:22
21	0:36	0:28	0:26	0:24	0:23	0:21	0:20	0:19	0:18	0:17	0:16	0:16
24	0:27	0:20	0:19	0:18	0:17	0:16	0:15	0:14	0:13	0:12	0:11	0:11
27	0:20	0:16	0:15	0:13	0:12	0:11	0:11	0:10	0:09	0:09	0:09	0:08
30	0:16	0:12	0:11	0:10	0:09	0:09	0:09	0:08	0:08	0:07	0:07	0:07
33	0:13	0:09	0:09	0:08	0:08	0:07	0:07	0:07	0:07	0:06	0:06	0:06
36	0:10	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05
39	0:09	0:07	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:05	0:04
42	0:08	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04
45	0:06	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04
48	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03
51	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03
54	0:05	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03
57	0:05	0:04	0:04	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03	0:03

DSAT ALGORITHM >> NDLS (HR:MIN) AT ALTITUDE (IMPERIAL)

Altitude (feet)	0 to 3000	3001 to 4000	4001 to 5000	5001 to 6000	6001 to 7000	7001 to 8000	8001 to 9000	9001 to 10000	10001 to 11000	11001 to 12000	12001 to 13000	13001 to 14000
Depth (FT)												
30	4:20	3:21	3:07	2:55	2:45	2:36	2:28	2:21	2:15	2:10	2:04	1:58
40	2:17	1:43	1:36	1:30	1:25	1:20	1:16	1:12	1:09	1:06	1:03	1:01
50	1:21	1:03	1:00	0:58	0:55	0:52	0:48	0:45	0:43	0:41	0:39	0:37
60	0:57	0:43	0:40	0:38	0:36	0:34	0:33	0:31	0:30	0:29	0:28	0:27
70	0:40	0:31	0:30	0:28	0:27	0:26	0:24	0:23	0:22	0:20	0:19	0:18
80	0:30	0:24	0:23	0:21	0:20	0:19	0:18	0:17	0:16	0:16	0:14	0:13
90	0:24	0:19	0:18	0:17	0:16	0:15	0:14	0:13	0:12	0:11	0:10	0:10
100	0:19	0:15	0:14	0:13	0:12	0:11	0:10	0:10	0:09	0:09	0:08	0:08
110	0:16	0:12	0:11	0:10	0:09	0:09	0:08	0:08	0:08	0:07	0:07	0:07
120	0:13	0:09	0:09	0:08	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06
130	0:11	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05
140	0:09	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05
150	0:08	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04
160	0:07	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04
170	0:07	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04	0:03
180	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03
190	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03

DSAT ALGORITHM >> NDLS (HR:MIN) AT ALTITUDE (METRIC)

Altitude (meters)	0 to 915	916 to 1220	1221 to 1525	1526 to 1830	1831 to 2135	2136 to 2440	2441 to 2745	2746 to 3050	3051 to 3355	3356 to 3660	3661 to 3965	3966 to 4270
Depth (M)												
9	4:43	3:37	3:24	3:10	2:58	2:48	2:39	2:31	2:24	2:18	2:12	2:07
12	2:24	1:52	1:44	1:37	1:30	1:25	1:21	1:17	1:13	1:10	1:07	1:04
15	1:25	1:06	1:03	1:00	0:57	0:55	0:52	0:49	0:46	0:43	0:41	0:39
18	0:59	0:45	0:42	0:40	0:38	0:36	0:34	0:32	0:31	0:30	0:29	0:28
21	0:41	0:33	0:31	0:29	0:28	0:27	0:26	0:24	0:23	0:21	0:20	0:19
24	0:32	0:26	0:24	0:22	0:21	0:20	0:19	0:18	0:17	0:16	0:15	0:14
27	0:25	0:19	0:18	0:17	0:16	0:16	0:14	0:13	0:12	0:12	0:11	0:10
30	0:20	0:16	0:15	0:13	0:12	0:12	0:11	0:10	0:10	0:09	0:09	0:08
33	0:17	0:12	0:11	0:11	0:10	0:09	0:09	0:08	0:08	0:08	0:07	0:07
36	0:14	0:10	0:09	0:09	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06
39	0:11	0:08	0:08	0:07	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05
42	0:09	0:07	0:07	0:07	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05
45	0:08	0:06	0:06	0:06	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04
48	0:07	0:06	0:05	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04
51	0:06	0:05	0:05	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:04
54	0:06	0:05	0:05	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03
57	0:05	0:04	0:04	0:04	0:04	0:04	0:04	0:03	0:03	0:03	0:03	0:03

SPECIFICATIONS

CAN BE USED AS
- Dive Computer (Air or Nitrox)
- Digital Depth Gauge/Timer
- Free Dive activity

DIVE COMPUTER PERFORMANCE
- Buhlmann ZHL-16c based PZ+, or DSAT based, algorithm
- No Deco limits closely follow PADI RDP
- Decompression in agreement with Buhlmann ZHL-16c and French MN90
- No Deco Deep Stops - Morroni, Bennett
- Deco Deep Stops (not recommended) - Blatteau, Gerth, Gutvik
- Altitude - Buhlmann, IANTD, RDP (Cross)
- Altitude corrections and O2 limits based on NOAA tables

OPERATIONAL PERFORMANCE

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

Dive Counter:
- NORM/GAUG displays Dives #1 to 24, FREE displays #1 to 99 (0 if no dive made yet)
- Resets to Dive #1, upon diving (after 24 hours with no dives)

Dive Log Mode:
- Stores 24 most recent NORM/GAUG dives in memory for viewing
- After 24 dives, adds 25th dive in memory and deletes the older dive

Altitude:
- Operational from sea level to 14,000 feet (4,270 meters) elevation
- Measures ambient pressure every 30 minutes when inactive, upon activation, every 15 minutes while activated.
- Does not measure ambient pressure when Wet.
- Compensates for Altitudes above sea level beginning at 3,001 feet (916 meters) elevation and every 1,000 feet (305 meters) higher.

SPECIFICATIONS (CONTINUED)

Power:
- (1) 3 vdc, CR2450, Lithium battery (Panasonic or equivalent)
- Shelf life   Up to 5 years (dependent on battery manufacturer)
- Replacement   User (annual recommended)
- Use Life   100 dive hours if (1) 1 hour dives per dive day to 300 hours if (3) 1 hour dives per day

Battery Icon:
- Warning - icon on solid at 2.75 volts, Battery change recommended
- Alarm - icon on flashing at 2.50 volts, change the Battery

Activation:
- Manual - push button (recommended), required prior to dive if Wet Activation is set OFF.
- Automatic - by immersion in water (if Wet Activation is set ON)
- Cannot be manually activated deeper than 4 FT (1.2 M), if Wet Activation is set OFF.
- Cannot operate at elevations higher than 14,000 feet (4,270 meters)

Operating Temperature:
- Out of the water - between 20 °F and 140 °F (-6 and 60 °C).
- In the water - between 28 °F and 95 °F (-2 and 35 °C).

TLBG	segments
• No Deco Normal zone	1 to 3
• No Deco Caution zone	4
• Decompression zone	5 (all)

VARI	60 FT (18 M) & Shallower			Deeper than 60 FT (18 M)		
	segments	FPM	MPM	segments	FPM	MPM
	0	0 - 10	0 - 3	0	0 - 20	0 - 6
• Normal zone	1	11 - 15	3.5 - 4.5	1	21 - 30	6.5 - 9
Normal zone	2	16 - 20	5 - 6	2	31 - 40	9.5 - 12
Normal zone	3	21 - 25	6.5 - 7.5	3	41 - 50	12.5 - 15
• Caution zone	4	26 - 30	8 - 9	4	51 - 60	15.5 - 18
• Too Fast zone (flashing)	5 (all)	> 30	> 9	5 (all)	> 60	> 18

SPECIFICATIONS (CONTINUED)

NUMERIC DISPLAYS:	Range:	Resolution:
• Dive Number	0 to 24	1
• Depth	0 to 400 FT (120 M)	1 FT (.1/1 M)
• FO2 Set Point	Air, 21 to 100 %	1 %
• PO2 Value	0.00 to 5.00 ATA	.01 ATA
• Dive Time Remaining	0 to 999 min	1 minute
• Total Ascent Time	0 to 999 min	1 minute
• No Deco Deep Stop Time	2:00 to 0:00 min:sec	1 second
• No Deco Safety Stop Time	5:00 to 0:00 min:sec	1 second
• Deco Stop Time	0 to 999 min	1 minute
• Norm/Gaug Elapsed Dive Time	00 to 999 min	1 minute
• Free Elapsed Dive Time	0:00 to 59:59 min:sec	1 second
	10 to 999 min	1 minute
• Surface Interval Time	0:00 to 23:59 hr:min	1 minute
• Free Surface Interval Time	0:00 to 59:59 min:sec	1 second
	1:00 to 23:59 hr:min	1 minute
• Time to Fly & Desaturate	23:50 to 0:00 hr:min*	1 minute
	(* starting 10 min after the dive)	
• Temperature	0 to 99°F (-18 to 60°C)	1°
• Time of Day	0:00 to 23:59 hr:min	1 minute
• Free Countdown Timer	59:59 to 0:00 min:sec	1 second
• Violation Countdown Timer	23:50 to 0:00 hr:min	

MOD (Max Operating Depth:	Limit:
• Norm/Free	330 FT (100 M)
• Gaug	399 FT (120 M)

INSPECTION / SERVICE RECORD

Serial Number: _____

Firmware Rev: _____

Date of Purchase: _____

Purchased from: _____

Below to be filled in by an Authorized Oceanic Dealer:

Date	Service Performed	Dealer / Technician

DESIGNED BY OCEANIC CALIFORNIA

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