

# NEXUS COMPUTER OPERATION MANUAL

## TABLE OF CONTENTS

I.	DEFINITIONS.....	Page 3
II.	NEXUS COMPUTER - AN INTRODUCTION.....	Page 3
III.	FOR YOUR SAFETY.....	Page 4
	AIR DIVING	
	NITROX DIVING	
	2- MIX NITROX DIVING	
	CLOSED-CIRCUIT DIVING (CONSTANT PO <sub>2</sub> )	
	PRECAUTIONS	
IV.	OVERVIEW OF THE NEXUS COMPUTER.....	Page 8
	A.    FEATURES	
	B.    LCD DISPLAYS	
	C.    DIVE TABLES AND NITROX FEATURES	
V.	CARRYING THE NEXUS COMPUTER.....	Page 12
VI.	GETTING AROUND THE NEXUS COMPUTER - THE BASICS.....	Page 13
	A.    ACTIVATING THE COMPUTER	
	B.    COMPUTER SELF TEST	
	C.    BATTERY TEST	
	D.    FUNCTION BUTTONS	
	E.    TAP SWITCH	
	F.    TURNING OFF THE COMPUTER	
VII.	NEXUS COMPUTER ON THE SURFACE – FUNCTIONS & PRE-DIVE SELECTIONS.....	Page 16
	FUNCTION MODES	
	A.    SURFACE DISPLAYS	
	B.    MODE	Page 17
	▪    Temperature Units Setting Function	
	▪    Metric/Imperial Units Setting Function	
	▪    Audible Warning Signal on/off Setting Function	
	▪    User Selectable Features Setting Function	
	▪    Closed Circuit (on/off) Setting Function	
	C.    COND-ALT (CLOSED CIRCUIT)	Page 21
	▪    1 <sup>st</sup> Oxygen Setpoint (CC1) Setting Function	
	▪    1 <sup>st</sup> Switch Depth Setting Function	
	▪    2 <sup>nd</sup> Oxygen Setpoint (CC2) Setting Function	
	▪    2 <sup>nd</sup> Switch Depth Setting Function	
	▪    Auto-Switch on/off Setting Function	
	▪    Conditions Setting Function	
	▪    Altitude Setting Function	
	▪    Water Salinity Setting Function	
	D.    COND-ALT (OPEN CIRCUIT)	Page 27
	▪    (FO <sub>2</sub> ) Setting Function	
	▪    (PO <sub>2</sub> ) Warning Setting Function	
	▪    Second (FO <sub>2</sub> ) Setting Function	
	▪    Switch Depth Setting Function	
	▪    Auto-Switch on/off Setting Function	
	▪    Conditions Setting Function	
	▪    Altitude Setting Function	
	▪    Water Salinity Setting Mode	

E.	SCROLL/MEM/PLAN MODE	Page 32
	▪ Scrolling Mode	
	▪ Memory Mode	
	▪ Planning Mode (dive simulator)	
F.	PC	
	▪ PC Interface/Downloading	
VIII.	NEXUS COMPUTER UNDERWATER DIVE FUNCTIONS.....	Page 36
	A. Visual display	
	B. Ascent rate	
	C. Nitrox safety feature: CNS% and current PO <sub>2</sub>	
	D. Decompression diving	
	E. Diving with two pre-programmable Nitrox mixes	
	F. Diving with two pre-programmable setpoints in Closed-Circuit Mode	
IX.	CARE & MAINTENANCE.....	Page 41
	A. General	
	B. Battery	
X.	TECHNICAL SPECIFICATIONS.....	Page 43

**!WARNING**

**PAY CLOSE ATTENTION TO INFORMATION MARKED WITH THIS SYMBOL**

**!WARNING**

**READ THIS MANUAL IN ITS ENTIRETY AND COMPLETELY UNDERSTAND HOW THE NEXUS COMPUTER WORKS BEFORE USING IT. THE INFORMATION CONTAINED WITHIN THIS MANUAL IS IMPORTANT TO YOUR PERSONAL SAFETY. IMPROPER USE, OR MISUSE, OF THIS PRODUCT CAN CAUSE SERIOUS INJURY OR DEATH.**

## I. Definitions:

**Closed Circuit:** any reference to closed circuit implies the diver is breathing a nitrogen-based gas with a constant PO<sub>2</sub> (partial pressure of oxygen), i.e. using a constant PO<sub>2</sub> rebreather such as the Buddy Inspiration. The closed circuit mode of the Nexus is not to be used when diving with a semi-closed rebreather, as these are constant FO<sub>2</sub> devices, not constant PO<sub>2</sub>

**Open Circuit:** any reference to open circuit implies the diver is breathing a nitrogen-based gas with a constant FO<sub>2</sub> (fraction of oxygen or percentage of oxygen), i.e. using conventional SCUBA equipment (cylinder and regulator) or a semi-closed rebreather.

## II. NITROX DIVING COMPUTER - AN INTRODUCTION

Welcome to the Buddy NEXUS computer!

The NEXUS computer has been designed to be easy to use and to offer you the quality and features that will help make your time underwater as enjoyable as possible.

The NEXUS computer is an electronic dive instrument designed for use in nitrox OPEN CIRCUIT (Constant FO<sub>2</sub>) or Nitrogen-based CLOSED CIRCUIT (Constant PO<sub>2</sub>) SCUBA diving. It provides information to the diver by monitoring the dive parameters and calculating no-stop times and decompression, along with other important information.

- Two different programmes – NORMAL (0) or SHORT (1) can be selected based on the physical conditions of the diver, water conditions and recent dive history
- LCD light
- Underwater operation switch for the LCD light and audible warning option
- Complete dive simulation program

The NEXUS computer offers the following unique information:

NEXUS – Closed Circuit Mode: (CC = On)

- Calculates decompression requirements for constant PO<sub>2</sub> diving whilst using the Buddy Inspiration Closed Circuit Mixed Gas Rebreather, with air in the diluent cylinder and oxygen in the oxygen cylinder.
- Two user-selectable setpoints (both adjustable from 0.5 to 1.5 bar)
- Capable of switching during the descent from 1<sup>st</sup> setpoint to 2<sup>nd</sup> setpoint automatically, using a depth operated switch, at depths from 5m to 49m
- Capable of switching back to the 1<sup>st</sup> setpoint automatically, using a depth operated switch, at depths from 29m to 1m.
- The setpoint switch can be automatic or manual. Auto is strongly recommended as the Nexus can be changed manually back to the previous setpoint at any time using the tap-switch feature.
- Modified Bühlmann algorithm with EAD calculation for Nitrox (EAN calculations by Dr Bill Hamilton, Hamilton Research Inc.)
- CNS clock during diving in percentage digits
- Current PO<sub>2</sub> display during diving
- Ascent speed indicator (bar graph)
- Ascent speed violation warnings
- Water salinity correction factor for calibration

NEXUS – OPEN Circuit Mode: (CC = Off)

- Nitrox (EAN) diving capabilities:
- Two adjustable pre-programmable nitrox mixes, ( FO<sub>2</sub>(1) - 21% to 50%, and ( FO<sub>2</sub>(2) – from FO<sub>2</sub>(1) to 100%, with either automatic or manual gas-switch depth
- Adjustable oxygen partial pressure warnings from 1.2 to 1.6
- Modified Bühlmann algorithm with EAD calculation for Nitrox (EAN calculations by Dr Bill Hamilton, Hamilton Research Inc.)
- CNS clock during diving in percentage digits
- Current PO<sub>2</sub> display during diving
- Ascent speed indicator (bar graph)
- Ascent speed violation warnings
- Water salinity correction factor for calibration

This owner's manual includes detailed instructions and helpful diagrams to teach you how to properly use the NEXUS computer. It is crucial that you read this manual in its entirety and completely understand the features and functions, *before* you use the NEXUS computer.

### **III. FOR YOUR SAFETY**

#### **! WARNING**

**ALL DIVERS MUST UNDERSTAND THAT THERE IS NO PROCEDURE OR DIVE COMPUTER, EVEN WHEN USED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS, THAT WILL TOTALLY PREVENT THE POSSIBILITY OF DECOMPRESSION SICKNESS. ANY DIVING, OR FLYING AFTER DIVING, INVOLVES SOME RISK OF GETTING SOME FORM OF DECOMPRESSION SICKNESS. YOU MUST BE WILLING TO ACCEPT THIS RISK WHEN YOU DIVE.**

No dive computer is a substitute for proper training and common sense. A dive computer should never be relied upon as the sole means of planning and monitoring a dive. Use back-up equipment and check it regularly. The purpose of this manual is to teach you how to use the NEXUS dive computer. It is your responsibility to know, understand and follow safe diving principles. Read and understand this manual in its entirety before using the NEXUS computer.

#### **AIR DIVING**

The NEXUS dive computer can be used by divers breathing ordinary diving grade compressed air, but the NEXUS must be set to open circuit mode (CC=Off) and the gas choices in Cond.Alt (FO<sub>2</sub>(1) and FO<sub>2</sub>(2)) must be set to 21% O<sub>2</sub>.

#### **NITROX DIVING**

Additionally, the NEXUS may be used by certified Nitrox (EAN) divers in open circuit mode (CC=Off) and FO<sub>2</sub>(1) set to 21-50% O<sub>2</sub>. If used by semi-closed rebreather divers, then the O<sub>2</sub>% should be reduced to reflect the expected drop in FO<sub>2</sub> in the loop during the dive.

#### **2-MIX NITROX DIVING**

The NEXUS may also be used by suitably certified divers for 2 mix Nitrox dives. The NEXUS must be set to open circuit mode (CC=Off). FO<sub>2</sub>(1) is adjustable from 21-50%; FO<sub>2</sub>(2) is adjustable from FO<sub>2</sub>(1) to 100% O<sub>2</sub>. The FO<sub>2</sub>(2) selected may be limited to a lower FO<sub>2</sub> by the combination of warning PO<sub>2</sub> level and switching depth.

#### **CLOSED-CIRCUIT DIVING (Constant PO<sub>2</sub>)**

Unique in a compact, wrist-mounted, dive computer, the NEXUS may be used by suitably certified closed circuit divers in Closed Circuit Mode (CC=On). This is for use when using closed circuit rebreathers that maintain a constant partial pressure of oxygen. (This mode is NOT to be used when diving with a semi-closed rebreather). Two setpoints may be selected, with auto-setpoint switching activated when the depth is reached during the descent and ascent. It is possible to manually override this PO<sub>2</sub> switch whilst underwater with the use of the tap-switch facility.

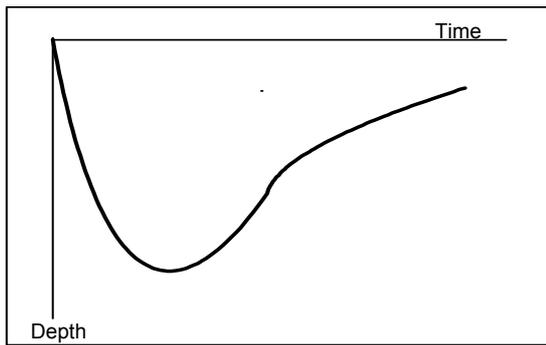
## **Safety precautions**

To be able to use the NEXUS computer, you need to fully read and understand its operation principles:

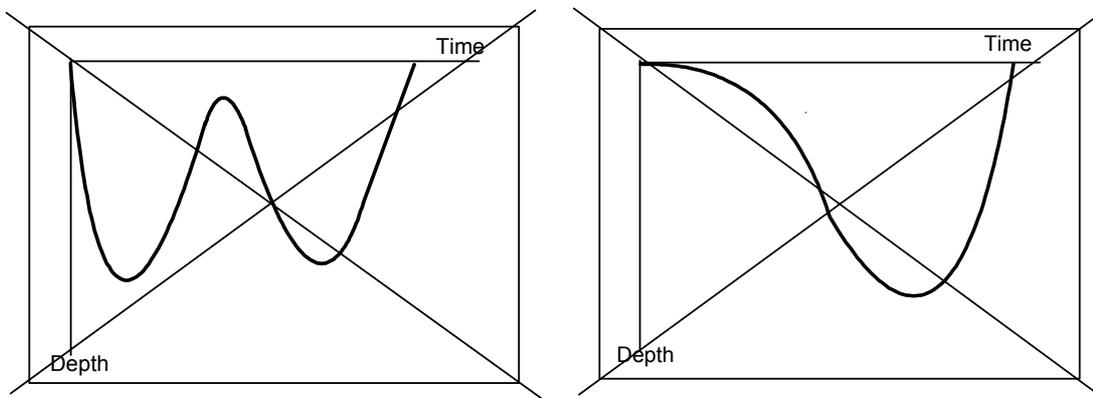
- You need to understand the working principles of dive tables and their use, along with EAD calculation from dive tables
- You need to understand and be able to calculate CNS oxygen toxicity effects
- You need to understand and be able to calculate whole body or pulmonary oxygen toxicity effects. The NEXUS does NOT calculate Oxygen Toxicity Units (OTUs).
- 
- You need to understand oxygen partial pressure limits and your personal limits in relation to oxygen partial pressure. EXCEEDING 1.4 BAR (ATA) PO<sub>2</sub> CAN CAUSE SERIOUS INJURY OR DEATH !!!!
- Know and remember the signs, symptoms, predisposing factors, prevention measures and treatment of CNS toxicity (oxygen toxicity). Constantly monitor yourself and your dive buddy for these signs and symptoms. Always take into account the predisposing factors to CNS toxicity.
- Know and remember the signs, symptoms, predisposing factors, prevention measures and treatment of pulmonary oxygen toxicity. Constantly monitor yourself and your dive buddy for these signs and symptoms.
- Always dive with a dive plan that excludes the possibility of pulmonary toxicity
- Understand hypoxia and know how to avoid it
- The NEXUS computer does not free you from making complete dive plans with table calculations for nitrox open circuit or closed circuit diving.
- The NEXUS computer does not free you from making complete dive plans including the calculation of emergency “bail-out” gas requirements for nitrox open circuit or closed circuit diving.
- The NEXUS computer does not prevent you from taking a gas mix deeper than that which is safe for that mix - you have to plan the mix and the dive.
- The NEXUS computer does not prevent you from being injured by miscalculating the oxygen dosage for a dive - you have to plan the oxygen dosage prior to diving
- The NEXUS computer does not prevent you from being injured due to inaccurate gas analysis, that is, before the dive using open circuit equipment, and during the dive using closed circuit equipment.

### Multilevel diving safety precautions:

The only dive profile that is considered safe is one where the deepest portion of the dive is made first and the diver then gradually works his way to shallower water, avoiding additional descents. The following diagram gives an example of a correct dive profile:



Reverse profiles (maximum depth reached shortly before surfacing), yo-yo profiles (repeated descents and ascents), consecutive deep dives and repetitive decompression dives, should all be avoided. The following diagrams give examples of incorrect profiles:



### Things to consider prior to diving with any dive computer:

1. Read the instructions and understand the operation of the computer thoroughly.
2. Do not dive for a minimum of 24 hours before starting to use a dive computer to control your diving. This will allow your body to eliminate any nitrogen gained from previous dives. Not doing so will invalidate the data provided by the computer.
3. Make sure the computer is functioning properly.
4. Do not share a dive computer while diving. Follow the most conservative computer when diving in pairs.
5. If your dive computer malfunctions do not dive for a minimum of 24 hours.
6. Always plan your dive and dive your plan. Prior to initiating each dive, review the following with your buddy and any others with whom you are diving: maximum depth; profile; return time; bail-out requirements; safety stops and signals between buddies
7. Establish a back-up ascent procedure should the computer fail, or if it seems that the data presented by the computer is erroneous.
8. Check the computer for the no-stop time for the planned maximum depth. No-stop dives should always include a planned safety stop at between 6m (20') and 3m (10') for 3-5 minutes.
9. When diving with open-circuit SCUBA, decide the point at which the air available will end the dive, which will include sufficient air for a controlled ascent (including safety stops), return to the shore/dive vessel and exit from the water with some amount of air remaining.
10. When diving with closed-circuit, a number of limiting factors may determine the endpoint of the dive and all of these must be taken into account to determine the limiting factor in YOUR circumstances. These include, but are not limited to, CNS oxygen toxicity, CO<sub>2</sub> scrubber duration, gas duration and bail-out gas capability. Please refer to the rebreather manual or training materials for further information.
11. Understand factors that may affect your ability to perform mentally and physically under potentially demanding and stressful conditions. These factors may include temperature, exhaustion, dehydration, age, physical condition, etc.
12. Never dive under the influence of alcohol or drugs. Even some over-the-counter drugs may have side effects incompatible with safe diving.

13. After exhausting travel take at least one day off before diving.
14. Be sure to drink plenty of non-alcoholic, non-caffeinated, beverages.
15. Learn and remember the signs and symptoms of decompression illness. Report any signs and/or symptoms (or anything out of the ordinary) promptly for rapid and effective evaluation and possible treatment. Rapid reporting of decompression illness may increase the likelihood of symptom resolution.

If you have any questions regarding your fitness to dive, drug interaction in the underwater environment, or the signs/symptoms of decompression illness call the Divers Alert Network (D.A.N.) information line at (USA) 919-684-2948 (9-5 EST Monday - Friday). For diving emergencies, call (USA) 919-684-8111. In the UK call Diving Diseases Research Centre (DDRC) on 01752 209 999; international call +44 1752 209 999.

#### **Things to consider while diving with a computer:**

1. Check that the computer is activated prior to entering the water and monitor its performance throughout the dive. If it appears to be functioning improperly, abort the dive and follow pre-determined ascent procedures.
2. If you and your buddy are using the same model of computer, compare your display with your buddy's while underwater.
3. Frequently check for no decompression time.
4. Frequently check your air supply and communicate that information to your buddy.
5. When closed-circuit diving frequently check your PO<sub>2</sub> on both displays and ensure the actual PO<sub>2</sub> you are breathing is the same as the current PO<sub>2</sub> programmed into the NEXUS.
6. Make the deepest portion of the dive first and work your way up to shallower water towards the end of your dive.
7. Avoid repeated ascents and descents ('yo-yo' diving) even in shallow water.
8. If your computer, or your buddy's computer, malfunctions, terminate the dive and initiate pre-determined ascent procedures immediately.

#### **Things to consider while ascending with a computer:**

1. Start the ascent according to the most conservative dive profile.
2. Do not exceed the ascent rate defined on the computer.
3. Always do safety stops.

#### **Things to consider when doing repetitive dives with a computer:**

1. Do the deepest dive of the day first. All subsequent dives should be shallower.
2. Data provided by D.A.N. indicates an increased risk of decompression illness on repetitive dives deeper than 24m (80').
3. If you have violated any of your computer's parameters do not dive for a minimum of 24 hours.
4. Avoid repetitive dives if you have any factors that may contribute to decompression illness (exhaustion, dehydration, poor physical condition, fatigue, etc.)

#### **Things to consider after diving with a computer:**

Be sure to follow all rules and regulations regarding flying after diving.

## **IV. OVERVIEW OF THE NEXUS computer**

### **FEATURES**

**The NEXUS provides the following information to help you control your dive:**

- Dive time
- Depth
- Maximum depth
- CNS %
- Current PO<sub>2</sub> (open circuit, when CC=Off)
- Current setpoint (closed circuit, when CC=On)
- Dive number
- No-stop time (time remaining before a decompression stop is required)
- Total ascent time (if you are in a decompression situation)
- Surface time
- Desaturation time
- CC (Closed Circuit) Mode selected

**It gives the following warnings:**

- PO<sub>2</sub> limit violation in open circuit mode (when CC=Off)
- CNS% violation
- Ascent rate
- Start ascent (no decompression stop time is up)
- Decompression dive is being entered and every 30 seconds afterwards.
- Stop-depth or depth ceiling (diver must not ascend above this depth)
- Move to stop depth (decompression stop ceiling has been violated)
- Battery low

**It gives the diver choices:**

**The diver can choose between Open Circuit and Closed Circuit Modes, and change modes between dives, without waiting for the computer to desaturate.**

(Some other makes of computers on the market have a Gauge mode, Air mode and Nitrox mode BUT the diver cannot change modes until the computer desaturates.)

**Closed Circuit Mode choices:**

- Diver adjustable two pre-programmable PO<sub>2</sub> settings (setpoints)
- Decompression programmes - conservative or normal
- Imperial or metric scale
- Altitude group

**Additional features:**

- Dive profile memory
- Dive planning mode (dive simulator)
- Scroll mode (allows you to scroll through the no-stop times)
- PC down-load capability
- Battery can be replaced by the user without loss of profile memory
  - Diver-adjustable automatic or manual switching of setpoints during diving
  - Diver-adjustable switch depth for setpoint switching during diving

**Open Circuit Mode choices:**

Fraction of oxygen (FO<sub>2</sub>) setting  
Capability to calculate two pre-programmable nitrox mixes, independently, for each dive.  
Oxygen partial pressure (PO<sub>2</sub>) warning limit setting  
Decompression programmes - conservative or normal  
Imperial or metric scale  
Altitude group

**Additional features:**

Dive profile memory  
Dive planning mode (dive simulator)  
Scroll mode (allows you to scroll through the no-stop times)  
PC down-load capability  
Battery can be replaced by the user without loss of profile memory  
Diver-adjustable two pre-programmable nitrox mixes  
Diver-adjustable automatic or manual switching of nitrox mixes during diving  
Diver-adjustable switch depth for nitrox mix switching during diving

## LCD DISPLAYS

The visual displays on the LCD screen will change according to the information being delivered.

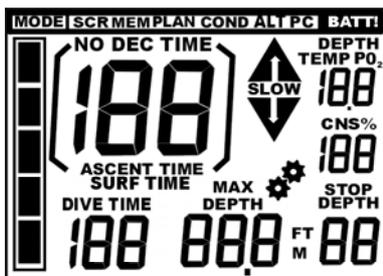
To protect the LCD from scratching, you should apply one of the protective sheets that come with each unit, to the LCD surface. It is a removable sticker, which can be changed to a new one once it becomes worn out.

The screen examples in the manual are shown in either metric or imperial units, but you should use the display with which you are most comfortable.

The diagrams below show how the screen will appear at different points in the dive.

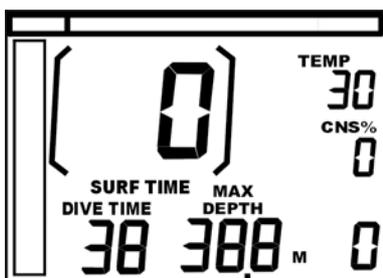
Select NEXT+NEXT

START – UP:



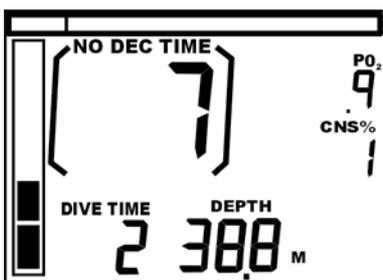
At start-up all segments light for 5-10 sec showing unit self-test and computer adjusts to ambient pressure.

BEFORE ENTERING THE WATER:



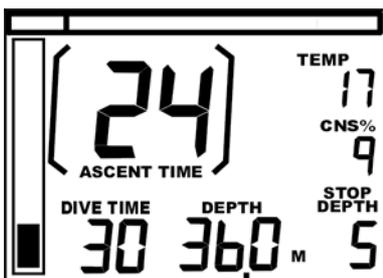
Before entering the water, the computer shows surface time (=time from start-up), current PO<sub>2</sub> or temperature, whichever was chosen, or scrolling through all three. Also displayed are CNS% and last dive info.

DURING THE DIVE:



During the dive, computer shows dive time (2 mins), Depth (38.8 m), current PO<sub>2</sub> (0.9), no-dec time left (7 mins), CNS% (1%).

DURING DECOMPRESSION:

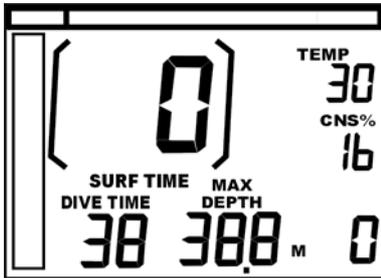


During decompression computer shows: dive time (30 mins), depth (38 m), water temperature (17 degrees), ascent time to surface (4 min) with depth ceiling of 5 meters. CNS% (9%).

## DURING SURFACE INTERVAL

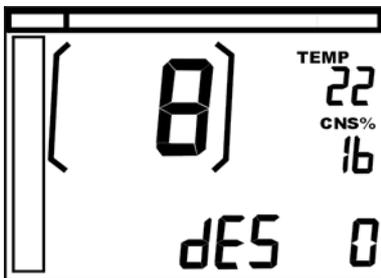
During the surface interval, the NEXUS computer will scroll between two different displays: surface display and CNS/desaturation display:

### SURFACE DISPLAY



In this example the surface display shows: surface time 0Hrs 0 mins (from last dive), temperature 30°, last dive time 38min, max depth 38.8m, CNS% 16.

### DESATURATION TIME DISPLAY



The other surface display of the NEXUS is the desaturation time display, which gives the diver the time to desaturate in hours and minutes. Here shown as 8 hrs 0 mins. The NEXUS desaturation time is calculated to normal sea level pressure + pressure equal to ½ foot sea water. The desaturation time can also be considered as do not fly time.

The current CNS percentage is shown and this is also updated at the surface. CNS clock half time is 60 mins.

The CNS% follows the IANTD guidelines, e.g. on 1.3 bar, 100% CNS = 150 mins. Note: this is more conservative than the NOAA table which indicates 180 mins for 1.3 bar.

## DIVE TABLES

The NEXUS uses a modified Bühlmann-type dive calculation model, with eight tissue groups and equivalent air depth calculation for EAN/nitrox.

### Tissue half-times:

<u>Tissue Group</u>	<u>Half-Time (minutes)</u>
1	5
2	11
3	17
4	24
5	61
6	125
7	271
8	480

### Comparison with dive table no decompression stop time:

Depth (feet):	40	50	60	70	80	90	100	110	120	130	140	150
(m):	12	15	18	21	24	27	30	33	36	39	42	45

---

### NEXUS air diving no-stop times:

Normal Dive (Cnd=0):	130	85	54	41	31	24	19	13	10	9	7	6
Short Dive (Cnd=1):	98	60	43	31	24	18	12	10	8	7	6	5
USN Dive:	200	100	60	50	40	30	25	20	15	10	10	5

NEXUS EANX32 table:                   199 141 93 63 47 37 29 24

NEXUS EANX36 table:                   199 194 113 80 56 44

(Both EAD calculations with Normal profile and PO<sub>2</sub> 1.4)

EAD calculated tables profiles are dependent on chosen FO<sub>2</sub> and the Short/Normal (1/0) “Cnd” setting. There is insufficient space in the manual to print all the combinations, so only EANX32 and EANX36 with Normal profiles have been chosen as examples here.

### Dive profile comparison:

From the above no-stop table it can be seen that by changing the Cnd setting in “Cond. Alt.” a degree of decompression conservatism can be incorporated into the dive computer. Additionally, varying degrees of decompression conservatism can be included by selecting a higher altitude setting, e.g. at sea level you could select A1, A2, A3 or A4 – increasingly adding decompression conservatism compared to A0.

Having made the selection, the diver can use the scroll function to see the effect of the changes on the no-stop times and choose his/her own level of conservatism.

## V. CARRYING THE NEXUS computer

### The NEXUS comes with:

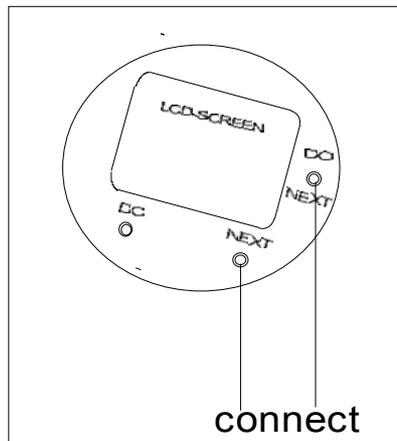
1. Storage bag
2. Wrist strap
3. Operation manual
4. Plastic strip with two LCD lens overlay cover sheets

## VI. GETTING AROUND THE NEXUS COMPUTER - THE BASICS

### Activating the computer

The NEXUS can be activated in one of 3 ways:

1. Manually, before entering the water, by connecting NEXT+NEXT with moist fingertips
2. Immersing the unit before the dive
3. Automatic activation if the diver enters the water with the computer off



It is recommended that the computer be activated manually so that it can measure the exact ambient pressure. If it is not activated manually prior to the dive, it will activate automatically upon entry into the water and will use a reference value that is sea level air pressure (1.013 mbar).

### Computer self-test

After activation the LCD will show different displays; it will show all segments during a self-test procedure, test the battery, and show Surface Mode after it has measured the ambient pressure and is ready to dive.

### Battery test

After the self test procedure the computer will perform a battery test. During this test the LCD will display numbers (9 to 0). If the battery is sufficiently charged the LCD will show all segments and then begin working.

If the battery is not giving full power the computer will run a function that will try to revive the battery. This will take max 3 minutes per cycle, and during this time the LCD display will count down from 9 to 0, if needed. If the battery revival is successful, the LCD screen will show all segments again then begin working. If it is not successful the computer will turn off, and a new reviving cycle is needed. **EVEN A NEW BATTERY MIGHT NEED SEVERAL CYCLES BEFORE BEING FULLY OPERABLE IF IT HAS BEEN STORED FOR A LONG PERIOD AND/OR HAS BEEN EXPOSED TO EXCESSIVE HEAT.**

**AFTER THE REVIVAL CYCLES THE BATTERY IS AS GOOD AS NEW !**

If, after several revival cycles, the unit still does not turn on, the battery should then be replaced. However, if you do not have a spare battery for immediate replacement, the computer can be turned on and used, but the audible warnings will not work. To turn the computer back on in this case connect OK/NEXT+NEXT+OK switches simultaneously and wait for the 9 on the LCD to change to 8. The battery should be replaced before the next dive.

## Function Buttons

The NEXUS has 4 function buttons that allow you to operate the computer:

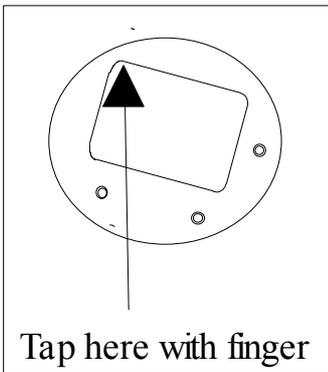
1. OK/NEXT
2. NEXT
3. OK
4. TAP SWITCH

After activation, self-test and battery test, the computer goes into Surface Mode. From here the various functions are accessed by connecting the function buttons in different combinations with moist fingertips as follows:

1. NEXT+NEXT selects the function modes
2. OK+OK starts selected function mode
3. OK/NEXT+NEXT+OK terminates function mode and returns to Surface Mode
4. Tap Switch - see the detailed explanation below

## Tap Switch

The Tap Switch operates the audible warnings. To turn the functions on and off, tap the computer with a hard object or fingertip (avoid scratching the unit though) as described below.



### Tap switch operation underwater:

**Audible Warnings** - tap the unit twice to turn the audible warning on.  
To turn the audible warning off, tap the unit twice.

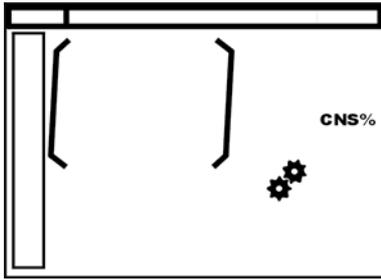
Instead of tapping the unit with fingertip, you might find it easier to operate the switch by gently touching the unit's side against your tank, or other hard object.

### Tap switch operation on surface:

With one hand connect all three pins (OK/NEXT+NEXT+OK), simultaneously and with the other hand tap the unit in the upper left corner area of the LCD as described above (avoid scratching the unit!).

## TURNING OFF THE NEXUS

After a dive the NEXUS will remain on for 15 minutes. It will then go into an energy efficient calculation mode. This is indicated by a clock icon on the LCD. The computer remains in this mode until the desaturation time is complete. Connecting NEXT+NEXT will bring the NEXUS back to the Surface Mode where the desaturation or no-fly time can be seen.



If the NEXUS is turned on but not used for 30 minutes, it will turn off automatically.

## VII. NEXUS COMPUTER FUNCTIONS & PRE-DIVE SELECTIONS

### FUNCTION MODES

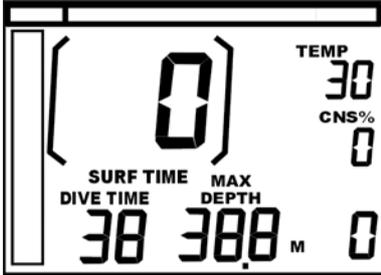
The NEXUS has a number of function modes in which to review information, or make choices about the information being provided:

1. SURFACE MODE (Surface, CNS & Desaturation time displays)
2. MODE
  - temperature units setting mode
  - metric/imperial units setting mode
  - audible warning signal on/off setting mode
  - user-selectable features setting mode
  - closed circuit On or Off setting mode
3. COND-ALT MODE (**Closed Circuit**, CC=On)
  - 1<sup>st</sup> oxygen setpoint (PO<sub>2</sub>) setting mode
  - switch depth setting (depth to change from 1<sup>st</sup> setpoint to 2<sup>nd</sup>)
  - 2<sup>nd</sup> oxygen setpoint (PO<sub>2</sub>) setting mode
  - switch depth setting (depth to change from 2<sup>nd</sup> setpoint to 1<sup>st</sup>)
  - auto-switch on/off setting mode
  - conditions setting mode
  - altitude setting mode
  - water salinity setting mode
4. COND-ALT MODE (**Open Circuit**, CC=Off)
  - (FO<sub>2</sub>) setting mode
  - PO<sub>2</sub> warning setting mode
  - second (FO<sub>2</sub>) setting mode
  - switch depth setting mode
  - auto-switch on/off setting mode
  - conditions setting mode
  - altitude setting mode
  - water salinity setting mode
5. SCROLL/MEM/PLAN MODE
  - Scrolling mode
  - Memory mode
  - Planning mode
6. PC MODE

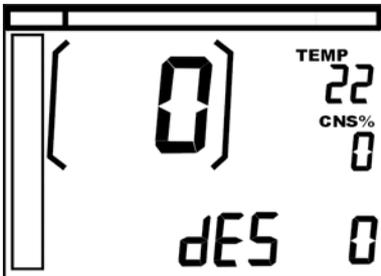
## SURFACE MODE

When the NEXUS is manually activated it performs the self-test and battery test and then goes into the Surface Mode. In the Surface Mode the LCD display scrolls continually between 2 displays (Surface and CNS/Desaturation Time displays):

Also, if the unit is on but not touched for 15 minutes, it will present a third display, a clock icon indicating an energy efficient calculation mode.



The first screen shows information about the last dive, dive time, max depth, CNS% and surface interval from last dive in hours and mins. The diagram shows temperature in the upper right hand corner but the current PO<sub>2</sub> or other information can also be show here.



The second display shows the desaturation time remaining, which can also be used for do-not fly time. It also shows the CNS%.

### Desaturation time indicator

The desaturation time indicator gives the exact time for tissue desaturation, calculated to ½ foot of water (= +15 mbar).

If you have not dived within the last 24 hours, the desaturation time is 0hrs 0mins.

## USER OPTIONS SELECTION MODE

In the User Options Selection Mode you select imperial or metric units for each of temperature and depth; audible warning signals on/off; the secondary dive parameter display function in the upper right hand corner of the display; AND MOST IMPORTANTLY YOU CHOOSE BETWEEN OPEN CIRCUIT AND CLOSED CIRCUIT MODES.

(The choice you make here alters the available settings in Cond.Alt Mode). If Closed Circuit Mode is selected then CC is displayed in the bottom right corner when submerged until decompression is required, when CC is replaced by the stop depth or ceiling depth. To check whether Closed Circuit is selected prior to diving, simply wet all three contact pins.

To access User Options Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 3 times to get to the mode
2. Connect OK+OK until the measurement unit you want to use is displayed

In User Options Selection Mode, you have the following functions:

- Temperature unit selection in imperial or metric
- Depth measurement selection in imperial or metric
- Audio warning on/off selection
- Secondary dive parameter display selection
- Closed Circuit On/Off selection

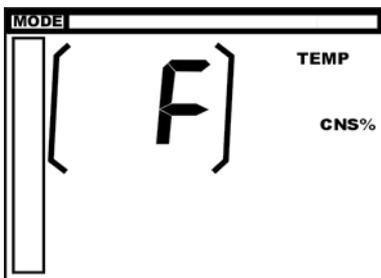
### Temperature displayed in imperial or metric?

To access User Options Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 3 times to get to the mode

To access the temperature display function from User Options Selection Mode

2. Connect OK+OK once to get to the Temperature Units Selection Function
3. Connect OK+OK until Celsius(C) or Fahrenheit(F) is displayed
4. To confirm your selection connect NEXT+NEXT. If you have changed the selection for this parameter the Mode is exited. If you do not change the selection the next parameter is shown.



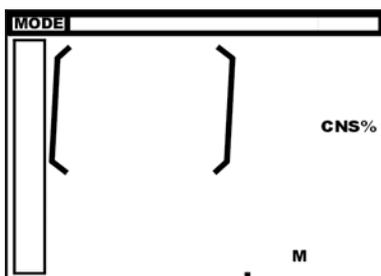
### Depth displayed in imperial (feet) or metric (metres)?

To access User Options Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 3 times to get to the Mode

To access the Imperial or Metric Depth Units Selection Function:

2. Connect OK+OK once to activate the Mode
3. Connect NEXT+NEXT once to get to the Imperial or Metric Selection Mode
4. Connect OK+OK until the unit you want to use is displayed
5. To confirm your selection connect NEXT+NEXT. If you have changed the selection for this parameter the Mode is exited. If you do not change the selection the next parameter is shown.



Depth combination options: feet/meters

## Audible Warning on/off Selection Function

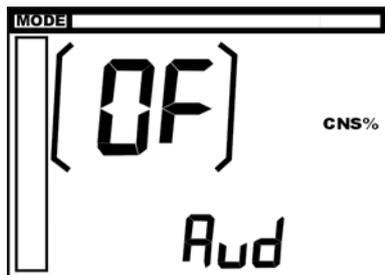
This function enables the diver to turn the audible warning on or off.

To access User Options Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 3 times to get to the Mode

To access the Audible Warnings On/Off Selection Function:

2. Connect OK+OK once to activate the Mode
3. Connect NEXT+NEXT twice to access the Audible Warning On/Off Selection Function
4. Connect OK+OK until the setting you want to use is displayed
5. To confirm your selection connect NEXT+NEXT. If you have changed the selection for this parameter the Mode is exited. If you do not change the selection the next parameter is shown.



The beeps can also be turned on and off with the Tap Switch.

## Secondary Dive Parameter Display Selection Function

In the Secondary Dive Parameter Display Selection Mode, you can select 4 different pieces of information to be displayed in the upper right hand corner of the display, individually or sequentially:

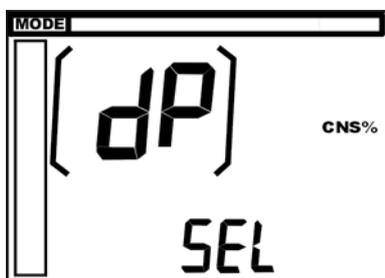
- current PO<sub>2</sub> (O<sub>2</sub>)
- current maximum depth (dp)
- water temperature (te)
- current leading tissue in algorithm (ti)
- all information sequentially (au)

To access User Options Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 3 times to get to the Mode

To access the Secondary Dive Parameter Selection Function:

2. Connect OK+OK once to activate the Mode
3. Connect NEXT+NEXT 3 times to get to the Units Mode
4. Connect OK+OK until the setting you want to use is displayed
5. To confirm your selection connect NEXT+NEXT. If you have changed the selection for this parameter the Mode is exited. If you do not change the selection the next parameter is shown.



In Secondary Dive Parameter Selection Function, the unit will automatically return to Surface Mode if the contacts are not touched for a while.

The NEXUS will also return automatically to the Surface Mode when the computer has remained inactive for a few seconds.

## CLOSED CIRCUIT ON OR OFF

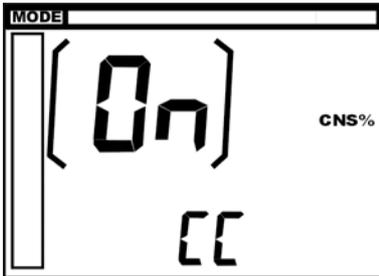
This enables the choice between Closed and Open Circuit to be made; CC=On is Closed Circuit; CC=Off is Open Circuit.

To access User Options Selection Mode from Surface Mode:

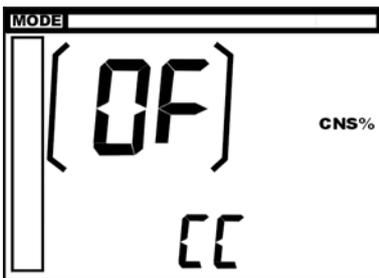
1. Connect NEXT+NEXT 3 times to get to the Mode

To access the Closed Circuit On/Off Selection Function:

2. Connect OK+OK once to activate the Mode
3. Connect NEXT+NEXT 4 times to get to the Closed Circuit On/Off Selection Function
4. Connect OK+OK until the setting you want to use is displayed
5. To confirm your selection connect NEXT+NEXT and the Mode is exited.



**CC=On, Closed Circuit mode is now selected**



**CC=Off; Open Circuit Mode is now selected**

## COND-ALT.MODE

There are effectively two Cond.Alt sections; one for open circuit and one for closed circuit. Select which to use by altering the selection for CC in the User Options Selection Mode. CC=On is Closed Circuit. It is in Cond.Alt Mode that the breathing gas details are entered.

It is important to remember that in open circuit mode the FO<sub>2</sub> settings revert back to 21% when the computer desaturates, BUT in closed circuit mode the CC1 and CC2 setpoints & switching depths are retained in the memory, until you remove the battery or the battery dies.

### COND-ALT.MODE (Closed Circuit)

Cond-Alt Mode allows you to set your 1<sup>st</sup> setpoint (CC1), switch depth to change from 1<sup>st</sup> setpoint(CC1) to 2<sup>nd</sup> (CC2), switch depth to change from 2<sup>nd</sup> setpoint (CC2) back to 1<sup>st</sup> (CC1) , auto-switch on/off for setpoint switching, dive conditions selection of Normal/Short dive profiles, altitude group selection and water salinity correction factor selection.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

In the Cond-Alt (closed circuit) Mode, you have the following functions:

- 1<sup>st</sup> setpoint selection function (CC1)
- Switch depth selection function to change from CC1 to CC2
- 2nd setpoint selection function (CC2)
- Switch depth selection function to change from CC2 to CC1
- Auto-switching on/off function
- Dive conditions selection function for Normal/Short profiles
- Choice of altitude group function
- Water salinity correction factor function

The next sections discuss changing the oxygen setpoints.

## ! WARNING

**CHANGING THE OXYGEN SETPOINT SETTINGS TO A HIGHER SETPOINT THAN THE O<sub>2</sub> PRESSURE BREATHED, CAN RESULT IN DECOMPRESSION SICKNESS AND DEATH...**

### Oxygen Setpoint(CC1) Selection Function

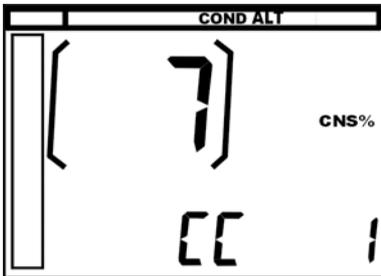
In the Oxygen Setpoint(CC1) Selection Function you select the oxygen pressure of the breathing gas for the next dive.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the O<sub>2</sub> Setpoint Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the O<sub>2</sub> Setpoint Selection
3. Connect OK+OK to select the desired O<sub>2</sub> pressure. In this section there is no decimal point i.e. 07 = 0.7 bar, 13 = 1.3 bar.
4. Connect NEXT+NEXT to confirm the setting and move to the next parameter



Each time you connect OK+OK the O<sub>2</sub> pressure will increase by 0.1 bar. Selection range is 0.5 to 1.5 bar.

The NEXUS will remember last chosen PO<sub>2</sub>, and use this for the next dive, if the user does not specify another PO<sub>2</sub>.

After a change in setting the NEXUS will not record the new setting before returning to the surface mode. Simply connect NEXT+NEXT to confirm setting and move to next parameter

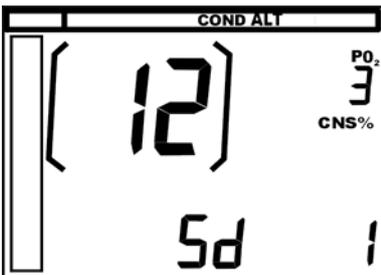
*The NEXUS retains this value in memory, but, it is imperative that you check the value of this setting and ensure it matches your expected PO<sub>2</sub> during the dive. Thereafter it is vital to monitor the PO<sub>2</sub> of your breathing mixture throughout the entire dive to ensure the chosen setpoint for decompression is valid.*

## !WARNING

**THE NEXUS DOES NOT KNOW THE GAS MIX YOU ARE BREATHING, IT IS YOUR RESPONSIBILITY TO ENSURE IT IS COMPATIBLE WITH THE SETTINGS IN THE NEXUS AND VICE VERSA.**

**REMINDER: BE SURE TO CHECK AND CONFIRM THE SETTING BEFORE GETTING IN THE WATER ON EACH DIVE.**

### Switch Depth Selection Function (SD1)



Switching Depth 1 (Sd1) is the depth at which you expect to change between the first and second pre-selected setpoints

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Switch Depth Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT twice to get to the SD1 selection
4. Connect OK+OK to select the desired switching depth
5. Connect NEXT+NEXT to confirm the setting and move to the next parameter

### Oxygen Setpoint(CC2) Selection Function

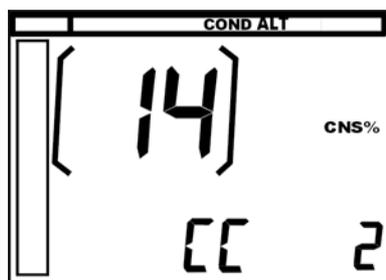
In the Oxygen Setpoint (CC2) Selection Function you select the 2<sup>nd</sup> oxygen pressure of the breathing gas for the next dive.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the O<sub>2</sub> Setpoint Selection Function from Cond-Alt Mode:

2. Connect OK+OK three times to enter the CC2 O<sub>2</sub> Setpoint Selection
3. Connect OK+OK to select the desired O<sub>2</sub> pressure. In this section there is no decimal point i.e. 07 = 0.7 bar, 13 = 1.3 bar.
4. Connect NEXT+NEXT to confirm the setting and move to the next parameter



Each time you connect OK+OK the O<sub>2</sub> pressure will increase by 0.1 bar. Selection range is 0.5 to 1.5 bar.

The NEXUS will remember last chosen PO<sub>2</sub> and use this for the next dive, if the user does not specify another PO<sub>2</sub>.

After a change in setting, the NEXUS will not record the new setting until returning to the Surface Mode.

### **!WARNING**

**THE NEXUS RETAINS THIS VALUE IN MEMORY, BUT, IT IS IMPERATIVE THAT YOU CHECK THE VALUE OF THIS SETTING AND ENSURE IT MATCHES YOUR EXPECTED PO<sub>2</sub> DURING THE DIVE. THEREAFTER IT IS VITAL TO MONITOR THE PO<sub>2</sub> OF YOUR BREATHING MIXTURE THROUGHOUT THE ENTIRE DIVE TO ENSURE THE CHOSEN SETPOINT FOR DECOMPRESSION IS VALID.**

### **!WARNING**

**THE NEXUS DOES NOT KNOW THE GAS MIX YOU ARE BREATHING, IT IS YOUR RESPONSIBILITY TO ENSURE IT IS COMPATIBLE WITH THE SETTINGS IN THE NEXUS.**

**REMINDER: BE SURE TO CHECK AND CONFIRM THE SETTING BEFORE GETTING IN THE WATER ON EACH DIVE.**

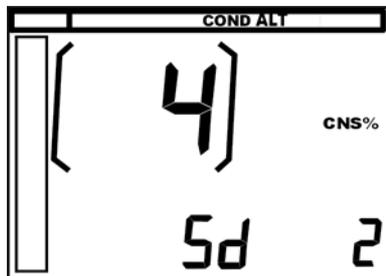
## Switch Depth Selection Function (SD2)

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Switch Depth Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 4 times to get to the SD2 Switch Depth Selection
4. Connect OK+OK to select the desired switching depth
5. Connect NEXT+NEXT to confirm the setting and move to the next parameter



Switching Depth 2 (Sd2) is the depth at which you expect to change back from the second to the first pre-selected setpoint.

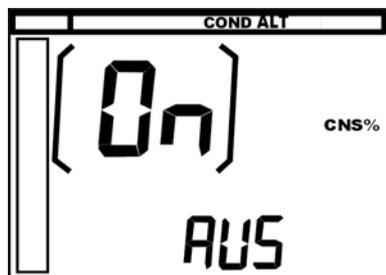
## Auto Switch On/Off Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Auto Switch Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 5 times to get to the Auto-Setpoint Switch Selection
4. Connect OK+OK to select the auto switching on or off
5. Connect NEXT+NEXT to confirm the setting. If you have changed the setting for this parameter, the Cond. Alt Mode is exited. If you do not change the selection, the next parameter is shown.



The default setting of the auto switching is automatic, but after a setpoint switch the computer will always default to manual setting, so that a switch back to the original setpoint is possible at any time, with the manual switch procedure !

*Always use automatic switching, as manual switching can be tricky and difficult to remember underwater!*

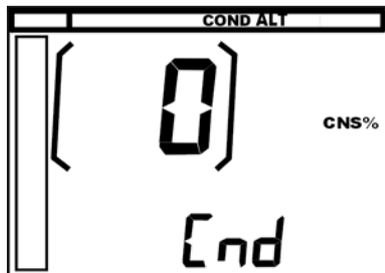
## Dive Conditions Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Dive Conditions Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 6 times to get to the Dive Conditions Mode
4. Connect OK+OK to select the NORMAL or SHORT profiles
5. Connect NEXT+NEXT to confirm the setting. If you have changed the setting for this parameter, the Cond. Alt Mode is exited. If you do not change the selection, the next parameter is shown.



The Normal setting is indicated with a “0” in the display, and the Short table setting is indicated with a “1” in the display.

The NORMAL (0) dive profile is designed to be used in calm waters under normal dive conditions, when the diver is fit and well-rested.

The SHORT (1) dive profile is more conservative and limits the bottom time the deeper you dive, making the profile shorter than the NORMAL mode. It is designed to be used in cold water 47°F and below, when the diver has made repetitive dives; or harsh conditions exist (current, bad visibility, etc.); it is anticipated that diving will be strenuous; the dive is at altitude; or the diver is not well/fit.

The dive profile must be chosen before entering the water and cannot be changed while underwater. You can choose a different mode for each dive and the computer will calculate all subsequent dives accordingly.

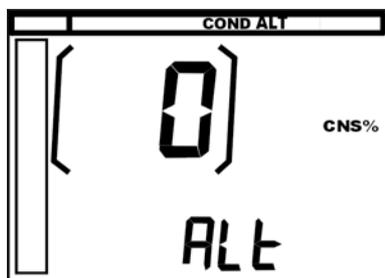
## Altitude Group Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Altitude Group Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 7 times to get to the Altitude Group Selection Function
4. Connect OK+OK to move through the altitude groups.
5. To select an altitude group, stop at the altitude group at which you will be diving.
6. Connect NEXT+NEXT to confirm the setting. If you have changed the setting for this parameter, the Cond. Alt Mode is exited. If you do not change the selection, the next parameter is shown.



In the Altitude Selection Mode you must manually enter the altitude range at which you will be diving.

Before diving, the correct altitude group at which you will be diving must be set in the Altitude Selection Mode.

The altitude groups are as follows:

Level	Table Correction % (no stop times)
A0: 0-984 feet(300m)	0
A1: 984 feet(300m) - 2,952 feet(900m)	10
A2: 2,952 feet(900m) - 4,920 feet(1500m)	15
A3: 4,920 feet(1500m) - 7,872 feet(2400m)	20
A4: 7,872 feet +(2400m+)	25

The NEXUS is designed to operate up to 11,480 feet (3500m).

### **! WARNING**

**NOT SETTING THE CORRECT ALTITUDE GROUP BEFORE DIVING GREATLY INCREASES THE RISK OF DECOMPRESSION SICKNESS, WHICH COULD RESULT IN SERIOUS INJURY OR DEATH. THE NEXUS DOES NOT HAVE AUTOMATIC ALTITUDE ADJUSTMENT, IT MUST BE MADE BY THE USER !**

### **! CAUTION**

**When the diver has been at altitude for less than 24 hours, only the SHORT (1) dive conditions setting should be used to compensate for the extra nitrogen stored in body tissues. After an adaptation period of 24 hours at altitude the NORMAL dive conditions setting can be used, but it is recommended that the SHORT (1) setting continues to be used to give an extra margin of safety.**

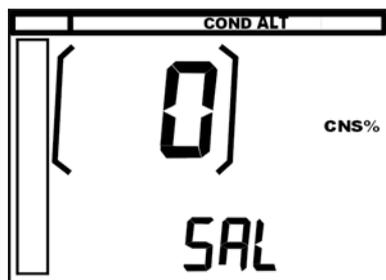
### **Water Salinity Correction Function**

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Water Salinity Correction Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 8 times to get to the Water Salinity Correction Function
4. Connect OK+OK to select the desired water salinity percentage
5. Connect NEXT+NEXT to confirm the selection



The water salinity correction factor corrects your computer's calibration to match the water salinity in your diving area. The selection range is from 0% to 8%. The default setting is always fresh water, 0%.

To exit Cond-Alt Selection Mode connect NEXT+NEXT once after making your selection.

The NEXUS will return automatically to the Surface Mode when the computer has remained inactive for a few seconds.

## COND-ALT MODE (Open Circuit )

Cond-Alt Mode allows you to set your FO<sub>2</sub> mix; PO<sub>2</sub> warning limit; second FO<sub>2</sub> mix; switch depth for second FO<sub>2</sub>; auto-switch on/off for second mix switching; dive conditions selection of Normal/Short dive profiles; altitude group and water salinity correction factor.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

In the Cond-Alt (open circuit) Mode, you have the following functions:

- FO<sub>2</sub> Selection Function
- PO<sub>2</sub> Selection Function
- Second FO<sub>2</sub> Selection Function
- Switch Depth Selection Function for second mix
- Auto Switching On/Off Function for second mix
- Dive Conditions Selection Function for Normal/Short profiles
- Altitude Group Selection Function
- Water Salinity Correction Factor Function

***The next five sections discuss changing the oxygen gas fraction and partial pressure. Please do not make changes to your computer unless you have completed the proper training and understand what you are doing. Changing the oxygen fraction settings from 21% O<sub>2</sub> to another mixture while using air in your tank can result in decompression sickness and death...***

### Fraction of Oxygen FO<sub>2</sub>(1) Selection Function

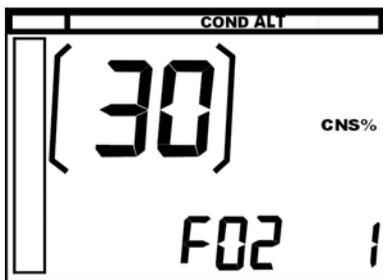
In the Fraction of Oxygen (FO<sub>2</sub>) Selection Function you select the fraction of oxygen of the breathing gas mix being used during the next dive.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the FO<sub>2</sub> Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the FO<sub>2</sub> function
3. Connect OK+OK to select the desired percentage
4. Connect NEXT+NEXT to confirm the selection



Each time you connect OK+OK the percentage will increase by 1 %. Selection range is 21% to 50%.

The NEXUS will remember last chosen FO<sub>2</sub>, and use this for the next dive, if the user does not specify another FO<sub>2</sub>.

The FO<sub>2</sub> will be reset when the unit is turned off (when the desaturation calculation is complete), and when restarted it will always start with a default FO<sub>2</sub> value of 21%.

After a change in setting, the NEXUS will not record the new setting until returning to the surface mode.

***In open circuit mode the NEXUS will always default when desaturated to air (21% O<sub>2</sub>).***

***The user is responsible for checking his/her gas mix each time prior to making adjustments to the NEXUS, to make sure the computer is set correctly.***

***The computer does not know the gas mix you are using and will assume 21% if not told otherwise.***

***If the NEXUS is set to a gas mix other than 21% oxygen and it turns off prior to the dive, it will default back to 21% oxygen in water.***

***Be sure to check and confirm the setting before getting in the water on each dive.***

***The NEXUS, in Open Circuit Mode, will allow you to use two gas mixes per dive. The NEXUS will increase the setting in 1% increments to a maximum of 50% for the first mix and 100% for the second mix, before looping back to 21%.***

## Oxygen partial pressure (PO<sub>2</sub>) limit setting function

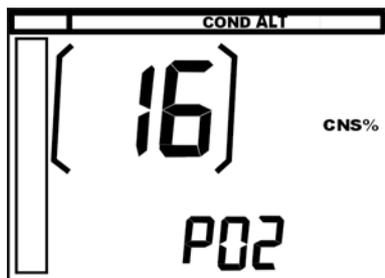
This enables you to set an oxygen partial pressure limit. If this set limit is exceeded during diving, audible and visual warning signals are given. The PO<sub>2</sub> limit can be set from 1.2 to 1.6 bar.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the PO<sub>2</sub> Limit Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT once to enter the PO<sub>2</sub> Limit Mode
4. Connect OK+OK until the desired PO<sub>2</sub> is displayed
5. Connect NEXT+NEXT to confirm the selection



The NEXUS will remember the last chosen PO<sub>2</sub> and use this for the next dive, providing the desaturation calculation is not complete. The selection range is 1.2 to 1.6 bar.

The PO<sub>2</sub> will be reset when the unit is turned off (when desaturation calculation is complete), and when restarted it will always start with a default PO<sub>2</sub> value of 1.2

After a change in setting, the NEXUS will not record the new setting until it has returned to the surface mode.

***Please refer to your nitrox/EANx course training material to determine the PO<sub>2</sub> setting that you should use. Increasing the PO<sub>2</sub> from 1.2 to a higher value will increase your risk of oxygen toxicity.***

## The Second Fraction of Oxygen, FO<sub>2</sub> (2) Selection Function

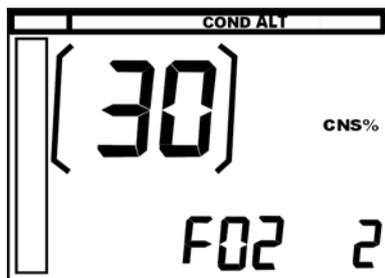
In the Second Fraction of Oxygen FO<sub>2</sub> (2) Selection Function you select the fraction of oxygen of the breathing gas mix to be used during your decompression.

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Second FO<sub>2</sub> Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 3 times to get to the Second FO<sub>2</sub> Function
4. Connect OK+OK to select the desired second FO<sub>2</sub>
5. Connect NEXT+NEXT to confirm the selection



The second FO<sub>2</sub> can never be a smaller O<sub>2</sub> percentage than the first FO<sub>2</sub>, and if not set it will always default to the same value as the first FO<sub>2</sub>. The selection range is 21% to 100%.

The NEXUS will remember last chosen FO<sub>2</sub>, and use this for the next dive if the user does not specify another FO<sub>2</sub>. The FO<sub>2</sub> will be reset when the unit is turned off (when desaturation calculation is complete), and when it is restarted it will always start with a default FO<sub>2</sub> value of 21%.

After a change in setting, the NEXUS will not record the new setting until it returns to the surface mode.

*The NEXUS will always default to air (21% O<sub>2</sub>, when the desaturation calculation is completed.*

*The user is responsible for checking his/her gas mix each time prior to making adjustments to the NEXUS, to make sure the computer is set correctly. The computer does not know the gas mix you are using.*

*If the NEXUS is set to a gas mix other than 21% oxygen and it turns off prior to the dive, it will default back to 21% oxygen in water. Be sure to check and confirm the setting before getting in the water on each dive.*

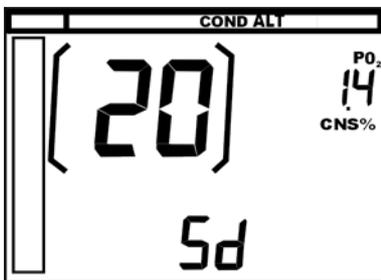
### Switch Depth Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Switch Depth Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 4 times to get to the Dive Conditions Mode
4. Connect OK+OK to select the desired switching depth
5. Connect NEXT+NEXT to confirm the selection



During the selection of the switch depth you can see the PO<sub>2</sub> of the new gas at the switching depth presented in the upper right hand corner. The PO<sub>2</sub> will increase with increasing switch depth.

*When setting your switching depth, watch the PO<sub>2</sub> presented in the upper right hand corner carefully. Increasing the PO<sub>2</sub> from 1.2 to a higher number will increase your risk of oxygen toxicity.*

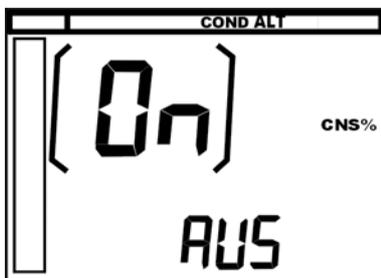
### Auto Switch On/Off Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Auto Switch Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 5 times to get to the Dive Conditions Mode
4. Connect OK+OK to select the auto switching on or off
5. Connect NEXT+NEXT to confirm the selection. If you have changed the selection for this parameter, the Cond. Alt Mode is exited. If you do not change the selection, the next parameter is shown.



The default setting of the auto switching is automatic, but after a gas switch the computer will always default to manual setting, so that a switch back to the original gas is possible at any time with the manual switch procedure !

*Always use automatic switching, as manual switching can be tricky and difficult to remember underwater !*

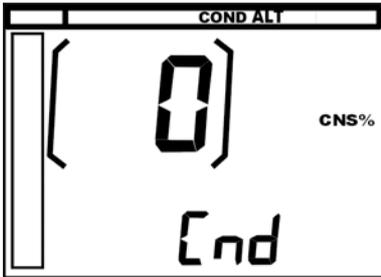
### Dive Conditions Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Dive Conditions Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 6 times to get to the Dive Conditions Mode
4. Connect OK+OK to select the NORMAL or SHORT profiles
5. Connect NEXT+NEXT to confirm the selection. If you have changed the selection for this parameter, the Cond. Alt Mode is exited. If you do not change the selection, the next parameter is shown.



The Normal setting is indicated with a “0” in the display, and the Short table setting is indicated with a “1” in the display.

The NORMAL (0) dive profile is designed to be used in calm waters under normal dive conditions, when the diver is fit and well-rested.

The SHORT (1) dive profile is more conservative and limits the bottom time the deeper you dive, making the profile shorter than the NORMAL mode. It is designed to be used in cold water 8°C(47°F) and below; when the diver has made repetitive dives; harsh conditions exist (current, bad visibility, etc.); it is anticipated that diving will be strenuous; the dive is at altitude; or the diver is not well/fit.

The dive profile must be chosen before entering the water and cannot be changed while underwater. You can choose a different mode for each dive and the computer will calculate all subsequent dives accordingly.

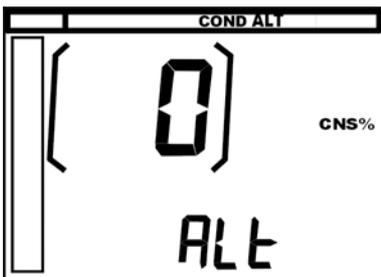
### Altitude Group Selection Function

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Altitude Group Selection Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 7 times to get to the Altitude Group Selection Function
4. Connect OK+OK to move through the altitude groups.
5. To select an altitude group, stop at the altitude group at which you will be diving.
6. Connect NEXT+NEXT to confirm the selection. If you have changed the selection for this parameter, the Cond. Alt Mode is exited. If you do not change the selection, the next parameter is shown.



In the Altitude Selection Mode you must manually enter the altitude range at which you will be diving.

Before diving, the correct altitude group at which you will be diving must be set in the Altitude Selection Mode.

The altitude groups are as follows:

Level	Table Correction % (no stop times)
A0: 0-984 feet(300m)	0
A1: 984 feet(300m) - 2,952 feet(900m)	10
A2: 2,952 feet(900m) - 4,920 feet(1500m)	15
A3: 4,920 feet(1500m) - 7,872 feet(2400m)	20
A4: 7,872 feet +(2400m+)	25

The NEXUS is designed to operate up to 11,480 feet (3500m).

**! WARNING**

**NOT SETTING THE CORRECT ALTITUDE GROUP BEFORE DIVING GREATLY INCREASES THE RISK OF DECOMPRESSION SICKNESS WHICH COULD RESULT IN SERIOUS INJURY OR DEATH. THE NEXUS DOES NOT HAVE AUTOMATIC ALTITUDE ADJUSTMENT, IT MUST BE MADE BY THE USER !**

**! CAUTION**

**When the diver has been at altitude for less than 24 hours, only the SHORT (1) dive conditions setting should be used, to compensate for the extra nitrogen stored in body tissues. After an adaptation period of 24 hours at altitude the NORMAL dive conditions setting can be used, but it is recommended that the SHORT (1) setting continues to be used to give an extra margin of safety.**

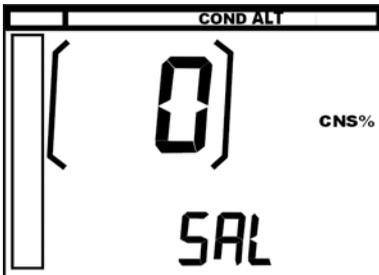
**Water Salinity Correction Function**

To access Cond-Alt Mode from Surface Mode:

1. Connect NEXT+NEXT twice to get to the Cond-Alt Mode

To access the Water Salinity Correction Function from Cond-Alt Mode:

2. Connect OK+OK once to enter the Cond-Alt Mode
3. Connect NEXT+NEXT 8 times to get to the Water Salinity Correction Function
4. Connect OK+OK to select the desired water salinity percentage
5. Connect NEXT+NEXT to confirm the selection.



The water salinity correction factor corrects your computer's calibration to match the water salinity in your diving area. The selection range is from 0% to 8%. The default setting is always fresh water, 0%.

To exit Cond-Alt Selection Mode connect NEXT+NEXT once after making your selection.

The NEXUS will also return automatically to the Surface Mode when the computer has remained inactive for a few seconds.

## SCROLL/MEM/PLAN MODE

Scroll/Mem/Plan Mode allows you to access the no-stop time scrolling function, the dive-log and dive-profile memory functions, and the dive-planner functions (dive simulator).

To access Scroll/Mem/Plan Mode from Surface Mode:

1. Connect NEXT+NEXT once to get to Scroll/Mem/Plan Mode from the Main Menu

### Scroll Function

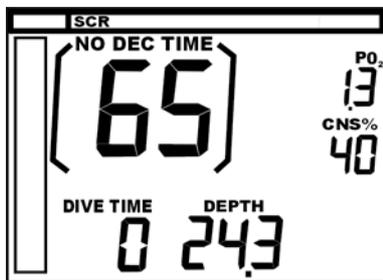
To access the Scroll Function from Scroll/Mem/Plan Mode:

1. Connect OK+OK to get into the Scroll Function
2. Connect OK+OK again to activate the Scrolling Function

What you will see in the Scroll Function:

- No decompression times shown in 3m (10') increments showing depth and time
- Current PO<sub>2</sub> (here 1.3) for each depth at the upper right hand corner
- Current CNS percentage from the last dive (or CNS% 0 if no dive made)
- In Open Circuit Mode, scrolling is to a depth where the current PO<sub>2</sub> reaches the set PO<sub>2</sub> limit, with the chosen FO<sub>2</sub>

(Example: EANX36 with set PO<sub>2</sub> limit of 1.4 only scrolls to 90ft /27 m depth)



Once the computer has scrolled through a complete cycle it returns to the Surface Mode; to exit sooner connect all three pins (OK/NEXT+NEXT+OK).

Here the no-stop time is 65 mins at 24.3 metres.

### Memory Function (MEM) or Dive Log

The Memory Function stores the dive details of the last 10 dives or 10 hours of diving, whichever limit is met first. It scrolls from the last dive to the first dive, with the highest number being the latest dive.

To access Scroll/Mem/Plan Mode from Surface Mode:

1. Connect NEXT+NEXT once to get to Scroll/Mem/Plan Mode from the Main Menu

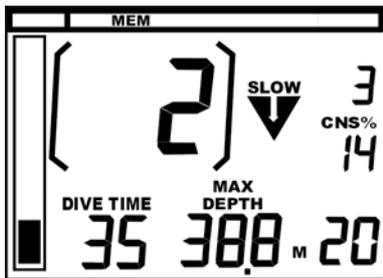
To access the Memory Function from Scroll/Mem/Plan Mode:

2. Connect OK+OK once to get to the Scrolling Function
3. Connect NEXT+NEXT once to get into the Memory Function
4. Connect OK+OK to activate the memory functions

The Memory Function has been designed with 2 'layers' of memory - the Dive Log and the Dive Profile - making it very easy to review the information.

After choosing the dive the user wants to see, he/she will be presented first with that particular dive's log information, then FO<sub>2</sub> / PO<sub>2</sub> / FO<sub>2</sub> (2) settings, or in closed circuit mode, the chosen setpoints for that dive and the last dive-profile, will be displayed.

## Dive Log



The Dive Log, the first screen of the three memory displays, shows the general information for that dive:

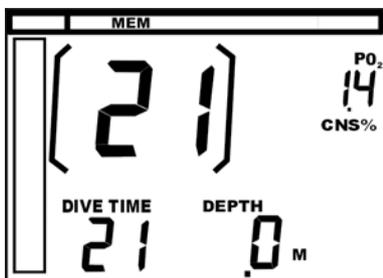
dive number, maximum depth, dive time, surface time, any violations and CNS%

The dive log can be scrolled through by connecting OK+OK once for each dive.

## Violations:

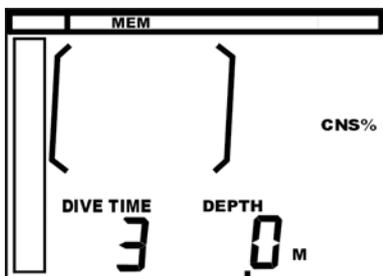
The Dive Log will also show if the ascent rate or a decompression stop were violated. This will be shown by that particular icon remaining on.

## FO<sub>2</sub> / PO<sub>2</sub> settings for each dive



Settings for this open circuit dive were: FO<sub>2</sub> 21% / PO<sub>2</sub> limit 1.4 / second FO<sub>2</sub> 21%

## Dive Profile:



The Dive Profile, the third screen of the three displays, will show the details of any dive:

If you pause at a particular dive in the Dive Log, the dive details of that dive will be shown. The dive profile is broken into 3 minute segments. The average depth for each segment is shown. Surface times of less than 10 minutes will be calculated, shown as 0 depth, and included in the total dive time.

## 0-depths:

0-depths will be added to the total dive time as extra segments, so every time the diver surfaces, even if it is for only one minute, one full 3 min segment with 0 depth is added to the profile.

Therefore, the actual dive-time in the dive log memory and the dive-time in the profile memory can be different. The difference is the time for the 0-depths.

To exit Memory Mode connect all three pins (OK/NEXT+NEXT+OK)

## Planning Function

In the Planning Function you can simulate single or repetitive dives.

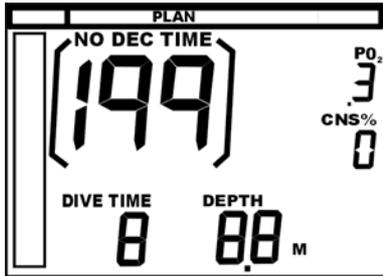
The simulation program can be used at any time, even directly after diving when the unit is still calculating desaturation. The Planning Function will take into consideration and display CNS%, and in open circuit mode current PO<sub>2</sub>, for the chosen FO<sub>2</sub>. Your previous diving history will be taken as a starting point for simulation.

To access Scroll/Mem/Plan Mode from Surface Mode:

1. Connect NEXT+NEXT once to get to Scroll/Mem/Plan Mode from Surface Mode

To access the Planning Function from Scroll/Mem/Plan Mode:

2. Connect OK+OK once to get to the Scrolling Function
3. Connect NEXT+NEXT twice to get into the Planning Function
4. Connect OK+OK to activate the Planning Function



To move up and down inside the planner:

1. Activate Planning Function (Note that time starts running immediately)
2. Connecting OK/NEXT + NEXT will increase depth
3. Connecting OK/NEXT + OK will decrease depth

The Planning Function will:

- Simulate repetitive dives taking into consideration previous dive history
- Run 12 times faster than normal time to allow shorter planning times, so one minute of planning equals 12 minutes of dive time.
- Show the same information as in actual diving, except for ascent warnings
- Show current PO<sub>2</sub> reading in the upper right corner of the display and CNS% in left middle area of the display
- Simulate multilevel and decompression diving (see section on decompression diving)
- Simulate dives at altitude (see section on Altitude Mode)

The Planning Function will not:

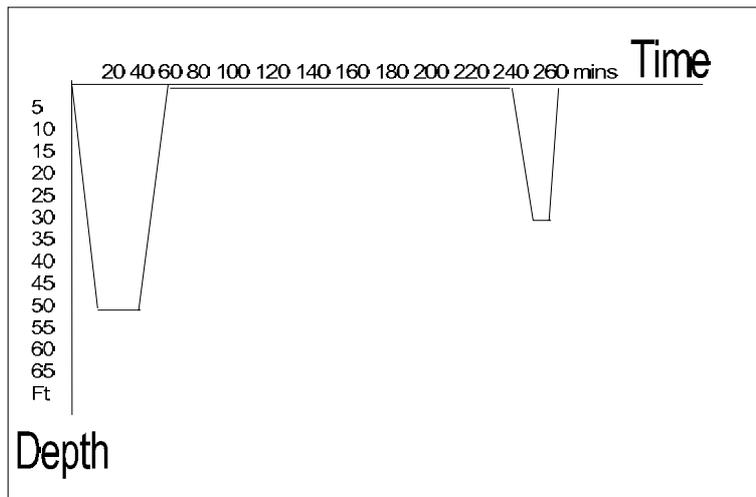
- Beep or give ascent rate warnings
- Store anything in dive history memory

To plan a dive:

1. From the Planning Function, connect OK+OK and start the (dive) time running
2. To enter the depth, connect NEXT+NEXT to go down and OK+OK to move up. During depth changes the clock stops running.
3. To simulate a surface interval bring the depth back to 0. The clock will continue to run on a 180-minute cycle, so be sure to note the time at which the surface interval begins and the time at which it ended.
4. To plan another dive repeat step number 2. Be sure to note the time at which the surface interval ended and the next dive started.
5. If your planning brings you through an entire 180-minute cycle, the dive time will start over again, so keep track of the number of cycles.
6. If you wish to plan a nitrox dive, prepare the unit for the FO<sub>2</sub> and PO<sub>2</sub> for the simulated dive just as you would do for real diving.

### Dive plan example:

Here is an example of how this works: if you plan two dives, the first with dive time of 1 hour and the second 30 minutes with a surface time of 3 hours - the time reading in the dive time will be from 0 to 60 minutes for the first dive, then from 60 minutes to 180 minutes to 60 minutes for the 3 hour surface interval and then from 60 minutes to 90 minutes for the second dive. Here you have two 180 minutes sequences, one full and one to 90 minutes.



To exit the Planning Function connect all three pins (OK/NEXT+NEXT+OK)

### PC INTERFACE MODE

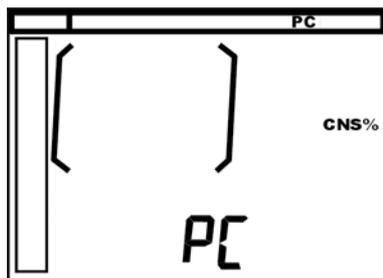
The PC Mode allows you to download the information from the NEXUS to a PC.

To access PC Interface Mode from Surface Mode:

1. Connect NEXT+NEXT 4 times to get to the PC Mode

To enter and activate the PC Interface Mode:

1. Connect OK+OK once to enter the PC Interface Function
2. Connect OK+OK a second time to activate the data transfer



To download the information, set the PC interface cable in place on top of the NEXUS so that the interfaces optical reader faces the LCD.

Prepare your PC to accept data, connect OK+OK on the NEXUS to initiate transfer.

The data will then be transferred in 5-10 seconds.

The NEXUS will return automatically to Surface Mode after the data transfer, or when it has remained inactive for a few seconds.

## VIII. NEXUS COMPUTER UNDERWATER DIVE FUNCTIONS

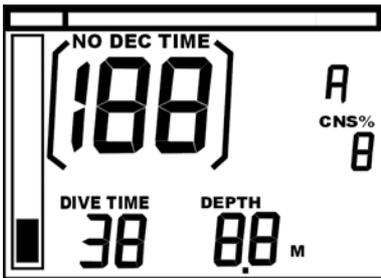
Underwater the following information is shown:

- Dive time (0-180 minutes, then starts again from zero)
- Depth
- Water temperature
- Current leading tissue for algorithm
- Current maximum depth reading
- Current PO<sub>2</sub> reading
- No-stop time (time remaining before a decompression stop is required)
- CNS percentage reading
- Total ascent time
- Ceiling depth (you MUST stop your ascent at a point NO shallower than this depth)
- Low battery warning
- Closed Circuit Mode is indicated when CC=ON

The Tap Switch is used for manual gas switching in open circuit mode and for setpoint switching in closed circuit mode.

(It is strongly recommended that the gas/setpoint switching be done automatically by pre-programmed depth switches. It reduces the task loading and the diver loses none of the functionality. The switch can always be re-set to the previous setting, even when the AUS option in Cond. Alt is set to ON.

The following sequence is useful to learn, whichever switching method is chosen.



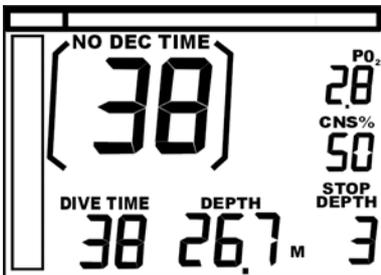
The manual gas (OC) and setpoint (CC) switching sequence goes as follows:  
Second tap will display letter "A" for mix 1 or CC1  
Third tap will change to new mix, displaying letter "b" for mix 2 or CC2  
Third tap has to be made within three seconds of the second tap

With a three tap sequence the user can change to the second pre-programmed mix/setpoint, and back, once the pre-programmed depth limit requirement has been reached.

After manual gas mix/setpoint switching, the display will look the same as with automatic switching.

### PO<sub>2</sub> Violation (Open Circuit Mode only)

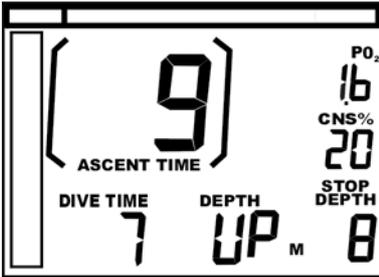
Current depth reading blinking, (with LCD light blinking) for PO<sub>2</sub> violation



CNS% warning  
Current depth reading blinking, (with LCD lights blinking) for CNS% violation

**Depth limit violation**

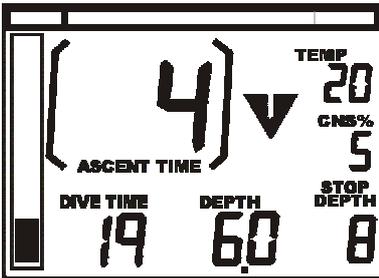
**Maximum Depth Exceeded.**



The NEXUS maximum depth display is 64.8m (213 feet). If this is exceeded, the depth display will change to UP.

NOTE that if this happens, the computer will not go into error state, but will continuously assume a depth of 64.8m (213 feet), until the diver ascends back to shallower than 64.8m (213 feet). The timer continues as normal but the decompression calculation is done assuming a depth of 64.8m (213 ft)

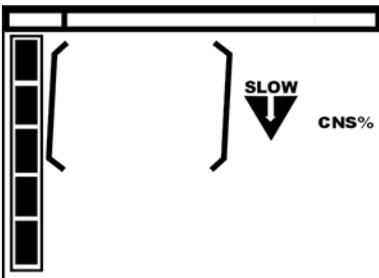
**Move to Stop Depth**



- If the diver has ascended above the stop depth, an arrow pointing down will flash on the screen to guide the diver back to the stop depth (see section on Decompression Diving).

If a decompression stop is missed, the NEXUS does not “sulk”, freeze up, show “Er” or go into gauge mode. It continues to operate showing depth, time and decompression required.

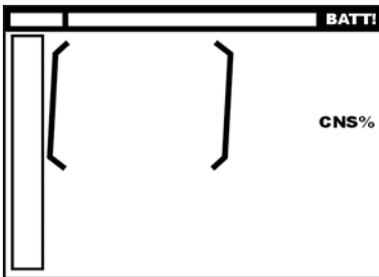
**Ascent rate warning -**



The bar graph consists of five segments which fill with increasing ascent speed. Once 3 segments are filled the word SLOW appears on the screen and the LCD lights will flash until you have slowed to within the programmed ascent rate (see ASCENT RATE below for the parameters) .

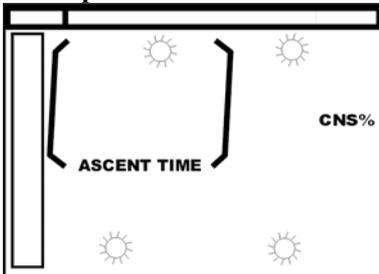
Once the maximum ascent rate is exceeded then the word SLOW with two arrows will appear on the screen with flashing LCDs until the ascent speed is slowed.

**Battery low caution -**



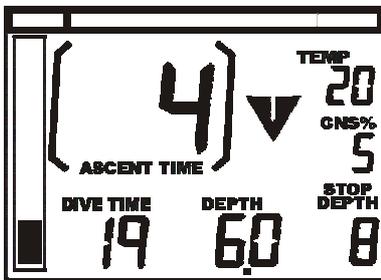
The battery icon will be shown on the LCD screen .

**Decompression dive**



– If you have entered into a decompression situation, the NEXUS will flash the LCD lights 3 times, the No Stop Remaining Time will change to Ascent Time and then every 30 seconds the LCD lights will flash accompanied with a single beep (If Audible Warning Mode is ON).





If you do not do the decompression stop, the NEXUS will continue to calculate the ascent, however, the ignored decompression stop will be recorded in Memory Mode under the dive profile.

When the decompression stop is completed, the stop depth will change to the next stop depth or return to a no decompression screen, showing 199 mins no-stop time.

If a decompression stop is missed, the NEXUS does not “sulk”, freeze up, show “Er” or go into gauge mode. It continues to operate showing depth, time and decompression required.

## DIVING WITH TWO PRE-PROGRAMMED MIXES IN OPEN CIRCUIT MODE

### Important safety precautions

Only certified technical divers may use the NEXUS computer for two-gas mix diving, even when using higher O<sub>2</sub> percentages during ascent for added safety.

Refer to your technical diving certification material for dive-planning advice to plan for two-nitrox mix diving, for all of the following items:

#### How to plan for two mixes

1st FO<sub>2</sub>

PO<sub>2</sub>

2nd FO<sub>2</sub>

Switch depth

*Always plan your diving according to your certification material, and do a detailed written dive plan, and dive your plan !!*

*Never dive relying solely on your computer, and / or without a written dive plan!*

*Always carry back-up equipment for your dive computer!*

### Gas exchange procedures underwater

#### Default settings

Always remember, when in open circuit mode and desaturated, the NEXUS will always default to air when turned on. Also, if set to other than 21% O<sub>2</sub>, the NEXUS will default back to air (21% O<sub>2</sub>) if not dived within 1 hr of setting the parameters, or if the unit has turned itself off prior to diving.

#### Auto switching

Always use auto switching for your gas mix switching, as the manual switching may be difficult to operate and remember during diving.

Remember also, that once a gas switch has been made, the NEXUS automatically locks into manual switching, to allow for switching back to the original mix.

#### Manual switching / switching back to original first mix

The manual switching possibility has been added to the NEXUS to allow for switching back to the original gas mix, in case the second mix is not available to the diver for some reason.

The manual gas mix switching should never be used for the first gas mix switching purpose!

## DIVING WITH TWO PRE-PROGRAMMED SETPOINTS IN CLOSED-CIRCUIT MODE

### Important safety precautions

Only certified closed-circuit rebreather divers may use the NEXUS computer in closed circuit mode. Refer to your diving certification material and rebreather manufacturer's manual for dive-planning advice to plan for setpoint selection, CNS limitations, CO<sub>2</sub> duration, bail-out scenarios as well as how to plan:

- 1st setpoint (CC1)**
- 1<sup>st</sup> switching depth (SD1)**
- 2<sup>nd</sup> setpoint (CC2)**
- 2nd switching depth (SD2)**

*Always plan your diving according to your certification material, and do a detailed written dive plan, and dive your plan !!*

*Never dive relying solely on your computer, and / or without a written dive plan!*

*Always carry back-up equipment for your dive computer!*

### Gas exchange procedures underwater

#### Default settings

In Closed Circuit Mode, the setpoints and switching depths are held in memory until they are altered by you, or until you remove the battery (or the battery fails) However, all parameters should be checked prior to diving including Cnd (Conditions); Altitude and Salinity

#### Auto switching

Always use auto switching for your setpoint switching, as manual switching may be difficult to remember and operate during diving.

Remember also that once a setpoint switch has been made, the NEXUS automatically locks into manual switching, to allow for switching back to the original setpoint.

#### Manual switching/ switching back to original setpoint

The manual switching possibility has been added to the NEXUS to allow for switching back to the original setpoint. The manual setpoint switching should never be used for the first setpoint switch!

## **IX. CARE & MAINTENANCE**

### **NEXUS GENERAL CARE & MAINTENANCE**

1. After use, rinse the NEXUS thoroughly with fresh water and let it dry in a cool place
2. For hard to remove dirt, use only a mild detergent and soft brush
3. Never use solvents or compressed air to clean or dry the NEXUS.
4. Do not leave the NEXUS where it is exposed to direct sunlight or other sources of extreme heat.
5. Always store your NEXUS in the protective pouch in which it comes and protect it from shock and dropping. Do not pack it at the bottom of a dive bag under other equipment
6. Do not open the NEXUS case other than to change the battery
7. If the NEXUS is put in a pressure chamber, it should always be underwater. The unit should never be pressurised in a chamber without water as this may damage the unit.
8. **NEVER CLEAN THE UNIT WITH ALCOHOL OR OTHER SOLVENT AS THIS WILL DAMAGE THE UNIT IRREVOCABLY !**

For servicing other than battery replacement, contact:

Parker Diving Ltd (T/as A.P.Valves)  
Water-ma-Trout Industrial Estate,  
Helston, Cornwall, TR13 OLW  
ENGLAND  
Telephone: (+44) (0)1326 561040  
Fax: +44 (0)1326 573605

### **! WARNING**

**ALCOHOL AND OTHER SOLVENTS MAY PERMANENTLY DAMAGE THE LCD LENS IF APPLIED TO ITS SURFACE. NEVER CLEAN THE UNIT WITH ANY SOLVENT !**

## BATTERY INFORMATION AND REPLACEMENT

The NEXUS computer constantly monitors the battery to draw out its full energy potential, thus increasing the life of the battery.

### Battery self-test procedure:

When the computer is turned on and after the self-test procedure, the computer will perform a battery test. During this test the LCD will display the number 9. If the battery is sufficiently charged the LCD will show all segments and then begin working.

If the battery is not giving full power the computer will run a function that will try to revive the battery. This will take a maximum of 3 minutes and during this time the LCD display will count down from 9 to 0, if needed. If the battery revival is successful, the LCD screen will show all segments again and then begin working. If it is not successful the computer will turn off.

The battery should then be replaced.

### A low battery when the computer is in use is indicated by:

A battery icon displayed.

### After the low battery indication is given:

After the low battery indication is given, the computer will continue to operate, for approximately 50 hours before it is inoperable.

### Dive memory retention:

If the battery goes dead while changing the battery, the computer will retain all the information that is in the Memory Mode. The information from the last dive that is shown in the Surface Mode, will be lost in the Surface Mode but can be obtained from the Memory Mode.

### Battery specifications:

Battery type: SAFT LS 14250 inorganic lithium battery, 3.5 volts, size 1/2 AA

Battery life: 300 hours of diving, approximately

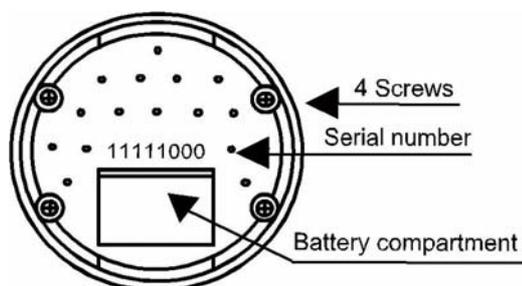
Remaining time once low batt signalled:  
50 hours, approximately (without sound function)

Shelf life: 8 years, approximately

### Changing the battery:

The NEXUS battery can be replaced by the user, although we recommend the user takes his/her unit to a qualified dive shop for battery exchange.

Change the battery as follows:



### Opening the back cover

1. Remove the unit from console, or remove the wrist strap.
2. Unscrew the four screws to loosen the bottom plate.
3. Separate the bottom plate from the computer main body.
4. Locate the battery chamber on the computer main body, and lift up the battery compartment lid (do not use tools).
5. Replace the battery, being sure to match the positive end of the battery with the positive side of the compartment, (indicated at the bottom of the battery chamber).
6. While inserting the new battery, avoid touching the battery contacts with your fingers

#### Re-assembly of the unit

1. Clean the O-ring and the battery chamber door first, to make sure that there is no debris or hair on the O-ring or sealing surface.
2. Place the O-ring on the battery chamber door (lid). A small amount of silicon lubricant may be used on the O-ring to help it slide into the battery chamber.
3. Slide the battery chamber door to the battery chamber one side first, and then press the door into its place with even pressure. Put your forefinger through the square opening in the bottom plate and use your finger to maintain pressure.
4. As you slide the bottom plate down your finger and into place, line up the ridges on the inside of the bottom plate with the grooves on the battery chamber door.
5. The computer main body and the bottom plate have guiding rails, to only allow installation in the correct position. Do not force them together in an incorrect position.
6. Keep the unit pressed together while replacing the four screws.
7. Re-fit strap or console

#### IMPORTANT NOTICE

**Failure to follow the above instructions and/or to use authentic NEXUS O-rings, will invalidate the warranty of this product.**

### **X. TECHNICAL SPECIFICATIONS**

Electronics:	printed circuit board
Microprocessor:	8 bit CMOS processor
Production method:	SMD COB
Depth gauge resolution:	0.3m (1 foot)
Depth range:	64.8m (213 feet)
Temperature range:	-14° to 50°C (4° to 122°F)
Altitude range:	0 – 3,500m (0 - 11,480 feet)
Ascent rate:	64.8m to 20m (213 feet to 66 feet): 20 metres per minute (66 ft per minute) 20m (66 feet) to surface: 10 metres per minute (33 ft per minute)
Battery:	
Power source:	1 lithium battery SAFT LS3 or LS 14250
Size:	1/2 AA
Voltage:	3.5V
Life:	Approximately 300 hours of diving without use of light with use of light approximately 15% less
Housing Material:	Polycarbonate
Other materials:	Glassfiber armoured PA12
Dive programmes (Cnd – conditions):	
Normal (0) & Short (1)	Modified Bühlmann
EAN/nitrox safety (open circuit) precautions:	Adjustable FO <sub>2</sub> and PO <sub>2</sub> Current PO <sub>2</sub> displayed during diving CNS clock
Memory capacity:	10 dives for 10 hours whichever is met first
Warranty	1 year from purchase of unit

**FOR THIS WARRANTY TO BE VALID, A COPY OF THE PURCHASE RECEIPT MUST BE SIGNED, DATED AND RETURNED TO PARKER DIVING LTD., ALONG WITH THE UNIT INTENDED FOR WARRANTY COVERAGE.**

**Thank you for reading this manual completely. Should you have any questions regarding the NEXUS diving computer, please phone us at +44 (1326) 561040 and ask for the NEXUS Product Manager.**