

DIVE TABLES

The EquaNO²x uses a modified Bühlmann type dive table calculation model, with eight tissue groups, and equivalent air depth calculation for EAN/nitrox.

Tissue half times:

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

Dive table comparison with no decompression stop time:

Depth (feet): 40 50 60 70 80 90 100 110 120 130 140 150

EquaNO²x air diving no stop times:

Normal Table:	117	75	51	38	28	23	16	12	10	8	7	6
Hard Table:	91	54	40	29	23	15	11	9	8	6	6	5
USN Table:	200	100	60	50	40	30	25	20	15	10	10	5

EquaNO²x EANX32 table: 199 127 88 57 44 34 27 23 17

EquaNO²x EANX36 table: 199 168 105 71 52 41 32

(Both EAD calculations with Normal-profile and PO₂ 1,4)

EAD calculated tables profiles are dependent on chosen FO₂ and Hard/Normal profile, and the manual space does not allow to print all the combinations, so only EANX32 and EANX36 with Normal profiles have been chosen as examples here.

Dive Profile Comparison:

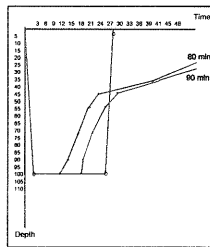
With a simulated dive to 30m, dive time as long as possible, within no-stop time limits.

Dive #1: Dive to 100 feet, ascent within no-stop time limits of each table:

US Navy tables = 0

EquaNO²x NORMAL tables (on air FO₂ 21%) = *

EquaNO²x HARD tables (on air FO₂ 21%) = +



V. CARRYING THE EquaNO²x COMPUTER

The EquaNO²x comes with:

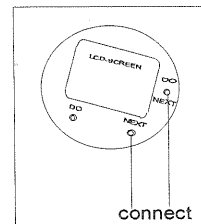
1. Storage bag
2. Wrist strap
3. Operation manual
4. Plastic quick reference card.
5. Plastic strip with two LCD lens overlay cover sheets

The EquaNO²x can be worn either at wrist (wrist unit configuration) or in its console boot (console unit configuration).

V. GETTING AROUND THE EquaNO²x COMPUTER - THE BASICS ACTIVATING THE COMPUTER

The EquaNO²x 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 light and show all segments during a self-test procedure, test the battery, and light again for 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 10 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, WHEN TAKEN IN USE, MIGHT NEED SEVERAL CYCLES BEFORE BEING FULLY OPERABLE, IF IT HAS BEEN STORED FOR LONG AND/OR 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 beeps and LCD light will not work. To turn the computer back on in this case connect DO/NEXT+NEXT+DO switches simultaneously and wait for the 9 on the LCD to change to 8. The battery should then be replaced before the next dive.

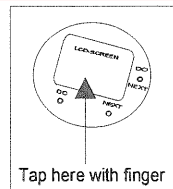
FUNCTION BUTTONS

The EquaNO²x has 4 function buttons that allow you to operate the computer:

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

After activation and the 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. DO+DO starts selected function mode
3. DO/NEXT+NEXT+DO terminates function mode and returns to Surface Mode
4. Tap Switch - see the detailed explanation below



TAP SWITCH

The tap switch operates the LCD light and warning beeps. 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:

LCD light - tap the unit with fingertip one time. The light will remain on for 7 seconds and then will turn off.

Audible beeps - tap the unit one time to turn the light on, then a second time to turn the beeps on. To turn the beeps off, tap the unit 2 times.

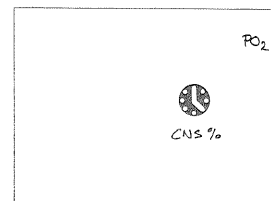
Instead of tapping the unit with fingertip, you might find it easier to operate the switch by gently touching the units side against your tank, or other hard object.

Tap switch operation on surface:

With one hand connect the DO/NEXT+NEXT+DO switches, simultaneously with other hand tap the unit in the upper left corner area of the LCD as described above. (Avoid scratching the unit!).

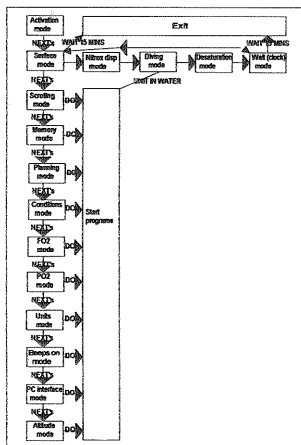
TURNING OFF THE EquaNO²x

After a dive the EquaNO²x will remain on for 15 minutes. It will then go into an energy efficient calculation mode. This is indicated with a clock icon on the LCD. The computer remains in this mode until the desaturation time is fully calculated down. Connecting NEXT+NEXT will bring the EquaNO²x back to the Surface Mode where the desaturation and no fly time can be seen.



If the EquaNO²x is turned on, but not used for 30 minutes it will turn off automatically.

VI. EquaNO²x COMPUTER FUNCTIONS & PRE-DIVE SELECTIONS



FUNCTION MODES

The EquaNO²x has 11 function modes in which to review information or make choices about the information being provided:

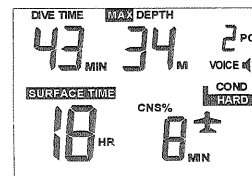
1. SURFACE MODE (Surface, Nitrox features and Desaturation time displays)
2. SCROLL MODE
3. MEMORY MODE (Dive log and dive profile history displays)
4. PLANNING MODE
5. DIVE CONDITIONS SELECTION MODE
6. FRACTION OF OXYGEN (F_{O₂}) SELECTION MODE
7. OXYGEN PARTIAL PRESSURE (P_{O₂}) LIMIT SELECTION MODE
8. UNITS SELECTION MODE
9. BEEPS ON/OFF SELECTION MODE
10. PC INTERFACE MODE
11. ALTITUDE SELECTION MODE

SURFACE MODE

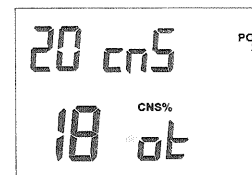
When the EquaNO²x is manually activated it performs the Self Test and Battery Test and then goes into the Surface Mode. In the Surface Mode the LCD display scrolls continually between 3 displays (Surface- Nitrox features- and Desaturation time displays):

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

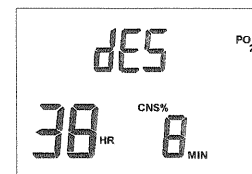
1. The first screen shows information about the last dive, dive time, depth and dive number, warning beeps on, Hard conditions chosen and surface time 18hrs 8mins. The current P_{O₂} is displayed also at surface, indicating also chosen F_{O₂}



2. The second display shows current CNS% and gained OTU's. OTU's are given per dive, and should be multiplied by ten to get actual number (here 180 OTU's, from last dive)



3. The third display shows the desaturation time remaining, which can also be used for do not fly time



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

SCROLL MODE

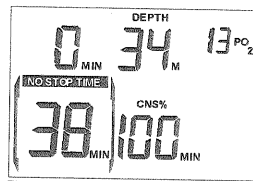
Scroll Mode allows you to scroll through the dive tables so you can plan your next dive.

To access Scroll Mode from Surface Mode:

1. Connect NEXT+NEXT one time to get to the Scroll Mode
2. Connect DO+DO to get into the Scroll Mode

What you will see in the Scroll Mode:

- No decompression times shown in 10' increments showing depth and time
- Current PO₂ (here 1.3) for each depth at the upper right hand corner
- Current CNS percentage from last dive (or CNS% 0 if no dive made)
- The scrolling is done to a depth where the current PO₂ reaches the set PO₂ limit, with the chosen FO₂
(Example: EANX36 with set PO₂ limit of 1.4 only scrolls to 90 f/27 m depth)
The maximum depth to scroll is 200 feet (air/1.6) !



Once the computer has scrolled a complete cycle it returns to the Surface Mode or to exit sooner connect DO/NEXT+NEXT+DO.

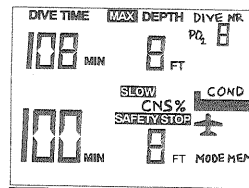
MEMORY MODE

The Memory Mode stores the dive profiles 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 Memory Mode from Surface Mode:

1. Connect NEXT+NEXT 2 times to get to the Memory Mode
2. Connect DO+DO to get into the Memory Mode
3. Connect NEXT+NEXT again to move to the next dive

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



Dive Log:

The Dive Log, in the upper half of the display, shows the general information for that dive. Dive number, Maximum depth and Dive time

Dive Profile:

The Dive profile memory, at the lower half of the display, will show the details of any dive. If you pause at a particular dive in the Dive log, for 5 seconds, the dive details on 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 and shown as 0 depth and included in the total dive time.

All violations to the dive parameters, such as ascent rate violation, will be indicated. If you want to scroll quicker than the scrolling is automatically being done, connecting the DO + DO will always step one 3 minute segment.

0-depths:

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

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

Violations:

The dive profile will also show if the ascent rate, safety stop or decompression stop were violated. This will be shown by that particular icon remaining on.

To exit Memory Mode connect DO/NEXT+NEXT+DO

PLANNING MODE

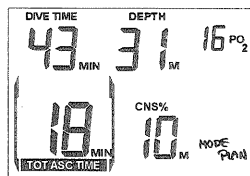
In the Planning Mode you can simulate single or repetitive dives. The simulation program can be used at any time, even directly after diving when the unit is calculating desaturation. The planning mode will take into consideration and display CNS% and current PO_2 for chosen FO_2 .

To access Planning Mode from Surface Mode:

1. Connect NEXT+NEXT 3 times to get to the Planning Mode
2. Connect DO+DO to get into the Planning Mode

To move up and down inside the planner:

1. Activate planning mode (Note that time starts running immediately)
2. Connecting DO/NEXT + NEXT will descend
3. Connecting DO/NEXT + DO will ascend



The Planning Mode will:

- Simulate repetitive dives taking into consideration previous dive history
- Run 12 times faster than normal time to allow shorter planning times, meaning one minute of planning equals 12 minutes of dive time.
- Show same information as in actual diving except ascent warnings
- Show current PO_2 reading in the upper right corner of the display and CNS% in lower middle area of the display
- Simulate multilevel and decompression diving (see section on Decompression Diving)
- Simulate dives at altitude (see section on Altitude Mode)

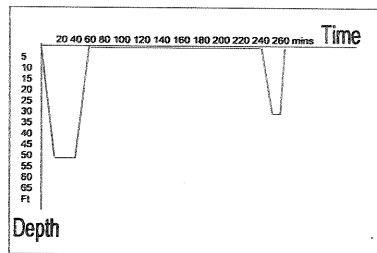
The Planning mode will not:

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

To plan a dive:

1. From the Planning Mode, connect DO+DO - this will take you into the program and start the dive time running
2. To enter the depth connect NEXT+NEXT to go down and DO+DO 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_2 and PO_2 for planning just as you would do for real diving

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.



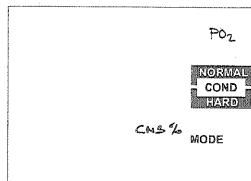
To exit Planning Mode connect DO/NEXT+NEXT+DO

DIVE CONDITIONS SELECTION MODE

In Dive conditions selection mode you select either the NORMAL or HARD dive profile.

To access Dive Conditions Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 4 times to get to the Dive Conditions Mode
2. Connect DO+DO to select the NORMAL or HARD Dive Conditions



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

The HARD dive profile is more conservative and limits the bottom time the deeper you dive, making the profile shorter in depth than the NORMAL mode. It is designed to be used in cold water 47° 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 or you are diving 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 consecutive dives accordingly.

To exit Dive Conditions Selection Mode connect DO/NEXT+NEXT+DO

The EquaNO²x will also return automatically to the Surface Mode when the computer has remained inactive for a few seconds.

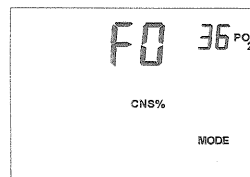
The next two sections discuss the changing of the oxygen gas fraction and partial pressure. Please do not make changes to your computer unless you have completed the proper training and understand what you are doing. Changing the oxygen fraction settings from 21% O₂ to another mixture while using air in your tank can result in decompression sickness and death...

FRACTION OF OXYGEN (FO₂) SELECTION MODE

In the Fraction of oxygen (FO₂) Selection Mode you select the fraction of oxygen of the breathing gas mix being used during next dive.

To access FO₂ Selection Mode from Surface Mode:

1. Connect NEXT+NEXT 5 times to get to the FO₂ selection mode
2. Connect DO+DO until the FO₂ percentage you want to use is displayed



The EquaNO²x will remember last chosen FO₂, and use this for the next dive, if the user does not specify other FO₂.

The FO₂ will be reset when the unit is turned off (when desaturation calculation is done), and when restarted, it will always start with a default FO₂ value of 21%.

After a change in setting, the EquaNO²x will not record the new setting before returning to the surface mode. Connect NEXT + NEXT to return to surface mode to record the change to the computer memory.

The EquaNO²x will always default from a cold start on air 21% O₂.

The user is responsible of checking his/her gas mix each time prior to making adjustments to the EquaNO²x, to make sure the computer is set right. The computer does not know the gas mix you are using, and will assume 21% if not told otherwise.

If the EquaNO²x is set on 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 EquaNO²x will allow you to use only one gas mix per dive. The EquaNO²x will increase the setting in 1% increments to a maximum of 50% before looping back to 21%.