NiTek3 Dive Computer

User Guide

Date of purchase: _____

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Chapter 1

Introduction

Summary

This chapter provides an overview of the NiTek3, lists the NiTek3's features and functions, and covers warning information that should be read before using your NiTek3.

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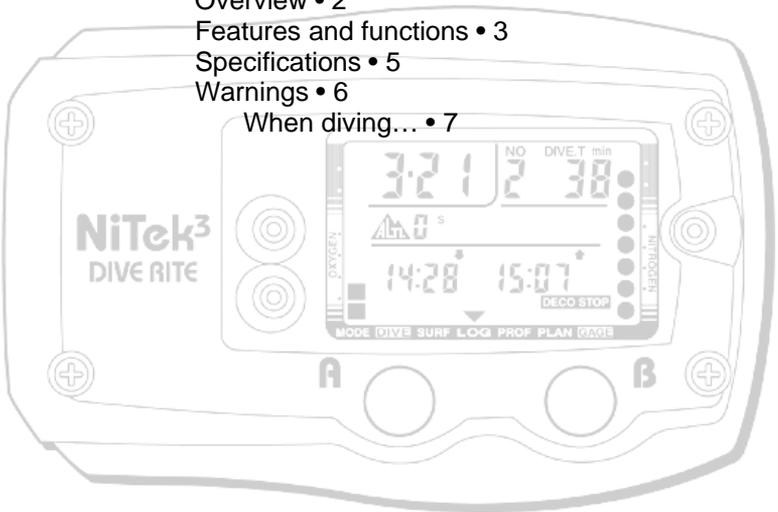
Overview

Congratulations on your purchase of the NiTek3 dive computer. The NiTek3 is a sophisticated and comprehensive dive computer that was designed to offer you the latest in dive computer technology, safety, and reliability.

The NiTek3 dive computer is a multifunctional computer for recreational diving, providing information on depth, dive times, no-decompression and decompression times, and nitrogen absorption and elimination during all dive phases, including ascent, surface interval times, and subsequent dives.

This information is displayed on an easy-to-read display, providing simple and direct communication between the diver and the computer. With an easy-to-read display, the diver has no problem following and reading the displayed information.

The NiTek3 comes standard with a number of modes, including a dive set mode, dive plan mode, log mode, profile mode, PC transfer mode, and dive mode.

Note: It is extremely important that you carefully read and understand this manual. Make sure you fully understand how the NiTek3 operates before diving with it.

This manual has been divided into three chapters:

- **Introduction:** Covers the features and functions, specifications, and warnings for the NiTek3

- **Using the NiTek3:** Covers the operation of each mode for the NiTek3

- **Care and maintenance:** Covers how to properly care for and maintain the NiTek3 and change the battery

Features and functions

The NiTek3 incorporates a number of important modes and features:

- The NiTek3 turns on automatically upon descent

- On the surface, the NiTek3 constantly displays a minimum of date and time

- The NiTek3 uses easily accessible and highly reliable push buttons instead of exposed electrical contacts

- The NiTek3 can be programmed to monitor exposure to three different gas mixtures during a dive. Gas mixtures including combinations of oxygen and nitrogen can be programmed. Underwater, NiTek3 users can switch between mixes at the push of a button.

- The NiTek3 is capable of functioning up to a depth of 328 feet (100 meters) when in dive computer mode and 656 feet (200 meters) when in gauge mode

- The NiTek3 automatically adjusts for altitudes up to 19,685 feet (6,000 meters)

- The NiTek3 displays a variety of data underwater including: date, time of day, current and maximum depths, no-decompression dive time elapsed and remaining, and water temperature

- The NiTek3 displays data specifically related to the use of Enriched Air Nitrox (EANx) including: fraction of oxygen (FO2) setting, partial pressure of oxygen (PO2), and an oxygen limit index (OLI) representing the cumulative effect of a diver's exposure to elevated PO2s (the theoretical "CNS clock") as a bar graph

- Through a combination of audible and visible alarms, the NiTek3 helps to alert the diver to a number of possibly hazardous situations including: violation of ascent rate, no-decompression state, and whether mandatory decompression stops are necessary or if the diver has ascended above a mandatory stop ceiling. Nitrox specific warnings occur when the diver approaches or exceeds a limiting PO2 of 1.6

atmospheres depending on what is set, and when cumulative exposure to elevated PO2s exceeds recommended limits.

- The NiTek3 can be programmed to display data in Imperial or metric units

- Dive depth can be displayed in fresh or salt water equivalents

- Special mode indicators makes it easy to determine what display mode or screen you are in at any time

- The NiTek3 glows in the dark after exposure to light

- The NiTek3's memory capability enables it to hold and display log data on up to 10 dives

- Detailed dive-profile information can be stored for each dive through user-programmable sample intervals of 5, 10, 20, 30 or 60 seconds (longer intervals allow data for a greater number of dives)

- Dive data can be uploaded and stored in a dive log format on a desktop or laptop computer using the NiTekLogic™ software and optional PC interface

Specifications

Algorithm: Modified Buhlmann

Sample tissues: 9

Tissue half-lives: from 5 to 640 minutes

Size and weight
>   Length: 4.25 in (10.8 cm)
>   Height: 1.25 in (3.2 cm)
>   Weight: 8 ounces (226 g)

Display face
>   Low battery indicator
>   Two user buttons
>   Water immersion switch

Depth sensor
>   Sea and fresh water calibration
>   Measuring range: 0 to 328 feet (0 to 100 m) measured every second
>   (Gauge mode 656 feet (200 m)
>   Accuracy: +/- 3% + 2 feet (0.5 m)
>   Surface interval time: from 0 to 48 hrs
>   Diving time: from 0 to 599 minutes
>   Ascent rate warning: 26 to 52 feet per minute (8 to 16 m)

Thermometer
>   Measuring range: 23 °F to 104 °F (-5 to 40 °C)
>   Accuracy: +/- 4 °F (2 °C)
>   Measurement interval: Every minute during dive mode

Clock
>   Accuracy: +/- 30 sec on average per month
>   24-hour display

Altitude
>   Altitude function monitoring: from 0 to 19,685 feet (6,000 m)
>   Measurement interval: Every 10 minutes

Battery
>   Li/MnO2 CR 123A 3V button battery
>   Average battery life: About 3 years (50 dives/year)
>   Replacement: User replaceable

Breathing gas
>   Mixes: 3 gas settings
>   O2 setting range: 21 to 99 percent
>   O2 setting: 1% increments

Dive log
>   Dive logging: Maximum of 10 dives
>   Profile sampling rates: 5, 10, 20, 30, or 60 seconds

Warnings

This information has been developed for your safety. Please read and understand this manual completely before using your NiTek3 dive computer.

Important safety information:

- Before using your NiTek3, it is extremely important that you read the following points—as well as similar warning and caution notices that appear throughout this manual. Failure to do so could result in damage to or loss of equipment, serious personal injury, or death.

- The NiTek3 is designed for use by certified divers who have maintained a sufficient level of knowledge and skill proficiency through a combination of formal training, ongoing study, and experience. It is not intended for use by persons who lack these qualifications and thus, may not be able to identify, assess, and manage the risks scuba diving entails. Use of the NiTek3 in conjunction with Enriched Air Nitrox (EANx) requires that divers be trained and certified for Nitrox diving.

- The NiTek3 is not intended for use by commercial or military divers whose activities may take them beyond the commonly accepted depth limits for recreational or technical diving.

- Although the NiTek3 is capable of calculating decompression stop requirements, users must remember that dives requiring mandatory stage decompression carry substantially greater risk than dives made well within no-decompression limits.

- The NiTek3 is designed for use by one diver at a time. Divers should not share a single NiTek3—or any other dive computer—on the same dive. Additionally, no diver should lend their NiTek3 to anyone else until it calculates that no measurable residual nitrogen remains after previous dives and no longer displays the "desaturation time" indicator while in time mode. Further, no diver should use their NiTek3 for repetitive dives—unless that same properly functioning NiTek3 has accompanied them on all previous

dives in the same repetitive dive series and is thus, accurately monitoring the diver's total exposure to oxygen and nitrogen.

- Neither the NiTek3—nor any other dive computer— physically measures the amount of nitrogen present in body tissues or the rate at which nitrogen is being absorbed or released. The NiTek3 monitors depth and time, and uses this data to work a mathematical formula designed to emulate how individuals in good general health and whose physical characteristics do not place them among those at higher risk of decompression illness (DCI) are assumed to absorb and release nitrogen from body tissues. Thus, the NiTek3 cannot compensate for factors such as age, obesity, dehydration, cold, or exertion, which experts believe place divers at greater risk of DCI. If these, or similar factors apply to you, use the NiTek3—and other dive computers or dive tables— with even greater caution.

- Experts still know surprisingly little regarding the exact nature and causes of decompression illness (also known as decompression sickness, DCI, or DCS). Susceptibility to DCI may vary substantially from person to person and from day to day. Neither the NiTek3—nor any other dive table or computer—can guarantee that you will not suffer decompression illness. Even though you use these items correctly, you may still suffer DCI. Use your NiTek3 conservatively and in conjunction with other dive planning devices, such as dive tables. Do not rely on the NiTek3, or any similar device, as your sole means of avoiding decompression illness.

When diving…

- Do not "push" the no-decompression limits (NDLs). Make safety stops before ascending. If you exceed the no-decompression limits, check your breathing gas supply at all stop depths.

- The NiTek3 does not monitor breathing gas supply. You must monitor this yourself, on every dive, using a submersible pressure gauge or equivalent device.

- Do not rely solely on this or any other dive computer. Take a back-up dive computer or dive tables (along with a separate means of monitoring depth and dive time).

- Be aware that the NiTek3 makes assumptions regarding residual nitrogen based on altitude settings. Avoid making abrupt changes in altitude following a dive, as doing so may be very dangerous.

Chapter 2

Using the NiTek3

Summary

This chapter provides topics about using, setting, and understanding each of the modes and options of the NiTek3.

Content

Getting started

The NiTek3 has many modes and screens and a number of options that can be changed depending on your dive location and profile. The following is a checklist of general things that you should pay attention to before, during, and after a dive.

Before a dive

*   Check that the proper time and date are set. If you traveled, your NiTek3 may be set to your home time zone.

*   Check that the proper mixes are set. If you are using gauge mode, make sure it is set to "GAGE."

*   Make sure that you review the dive plan mode for maximum depths and times for the mixes you are using

During a dive

*   Monitor the NiTek3 throughout your dive for depth and time

*   Monitor the N2 and O2 loading bar graphs

*   Pay attention to any alarms, such as an ascent rate warning

*   Follow the no-decompression limits or complete the required decompression displayed

After a dive

*   Monitor surface interval time if making another dive

*   Follow the no-fly requirements

*   Review your dive using the log mode and profile mode

*   Download the dive log to your PC if you have the optional PC interface

Accessing display modes and screens

There are some display modes that the NiTek3 enters and/or exits automatically. For example, by taking the NiTek3 underwater, the dive mode automatically turns on. Upon surfacing, the NiTek3 automatically enters the surface mode.

To access other modes or screens requires the use of the NiTek3's buttons.

Button operation

The NiTek3 has two buttons (A and B), which are used to access the different modes and screens. To use the buttons, simply press the button once or hold the button down depending on what you are trying to do. The correct procedure to use is clearly defined in each topic throughout the manual.

- A button: This button is used to select and scroll through the different modes, such as plan mode and locks in setting values when setting options

- B button: This button is used to set an option's setting, such as setting the date

Button A   Button B
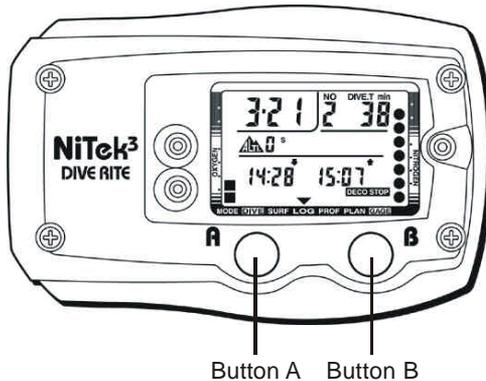
The front of the NiTek3, showing the two buttons that are used to access and setup the different modes and options

Surface mode

Surface mode is the NiTek3's default mode. The computer returns to this mode automatically upon surfacing from a dive and from other modes when two to three minutes of inactivity have passed.

Note: The NiTek3 may display additional information concerning exposure to nitrogen and oxygen, desaturation time, surface interval time, and altitude. These items are covered in "Surface mode (upon surfacing from a dive)" and "Altitude operation."

(1) Date: This is the month and day. The first digit is the month and the second digit is the day. For example, 1-24 represents the twenty-fourth day of January.

(2) Time of day: This is the time of day expressed in hours and minutes. Time is displayed in 24-hour (military) format.

(3) Altitude: This is the current altitude you are at. See "Altitude operation" for more information.

(4) Salt or fresh water: This is if the NiTek3 is set for salt (S) or fresh (F) water use.

Setting the time and date

Setting the time and date is done through the surface mode. You can enter or change the year, month, day, hours, and minutes in this mode.

To set the time and date:

1. Press and hold button A for ten seconds.

    The profile sampling rate flashes.

2. Press buttons A and B simultaneously for ten seconds.

    The "minutes" field flashes.

3. Press button B to set the minutes or press button A to go to another field, such as hours.

4. Using buttons A and B, set the year, month, day, hour, and minutes. The time is based on a 24-hour format.

    For example, 1:00 PM would be 13:00.

5. When finished, press button A to return to surface mode.

Note: When you press button A from the "day" field, the metric/Imperial field flashes. See the topic below for more information.

Setting the computer for metric or Imperial operation

The NiTek3 can calculate and give you values in Imperial units or metric units. When in Imperial, depth values are expressed in feet and temperatures are expressed in Fahrenheit (°F). When in metric, depth values are expressed in meters and temperatures are expressed in Celsius (°C).

To set for metric or Imperial operation:

1. Press and hold button A for ten seconds.

    The profile sampling rate flashes.

2. Press buttons A and B simultaneously for ten seconds.

    The "minutes" field flashes.

3. Press button A to go to the metric/Imperial field.

    The "M or FT" field flashes.

4. Press button B to change to metric (M) or feet (FT) operation.

5. Press button A to return to surface mode.

Setting the dive options

Setting the dive options includes setting up the following:

- **Dive profile sampling rate:** This is how frequently depth data is measured and stored during a dive, which is 5, 10, 20, 30, or 60 seconds.

- **Salt or fresh water use:** This is the setting for salt water or fresh water use.

- **FO2 gas percentage:** This is the oxygen percentage for the mix number selected. The O2 percentage setting range is 21 to 99 percent.

Setting the dive profile sampling rate

The NiTek3 allows you to choose how frequently it samples and stores depth, time, temperature, etc. data. The data it samples and stores is used in profile mode or when the data is uploaded to a personal computer. There are five sampling rates to choose from, 5, 10, 20, 30, or 60 seconds.

The faster the sampling rate, the more detailed the dive profile, but because it stores more information, fewer dives can be stored. The slower the sampling rate, the less detailed the dive profile, but it is capable of storing more information for more dives.

Sampling rate	Approximate dive time storage capacity
5	2 hours and 30 minutes
10	5 hours
20	7 hours and 30 minutes
30	15 hours
60	30 hours

Note: When the computer's memory storage is full, it overwrites the oldest dive profile data stored with the new information.

To set the dive profile sampling rate:

1. Press and hold button A for ten seconds.

The profile sampling rate flashes.

2. Press button B to change the sampling rate.

3. When finished, press button A twice to return to surface mode.

Setting for fresh or salt water use

The NiTek3 is capable of operating using fresh or salt water calculations. This is based on:

*   One atmosphere of saltwater is 33 feet (10 meters)
*   One atmosphere of freshwater is 34 feet (10.3 meters)

Before going diving, set the computer to the type of water you are diving in. This allows for the most accurate calculations with respect to no-decompression limits, etc.

To set for fresh or salt water use:

1. Press and hold button A for ten seconds.

    The profile sampling rate flashes.

2. Press button A to select the fresh or salt water field.

    The F or S flashes.

3. Press button B to select fresh (F) or salt (S) water use.

4. When finished, press button A to return to surface mode.

Setting mix1 through mix3 gas percentages

You must set the breathing mix you plan on using on your dive. There are up to three different mixes that can be used for any one dive. Not all of the mixes have to bet set, only the mixes that you plan on using. Each mix can have an oxygen (FO2) setting of 21 to 99 percent oxygen.

Note: If you only plan on using one mix on your dive, you only need to set mix1.

To set gas mix percentages:

1. Press and hold button B for five seconds.

    Mix1 flashes.

2. Press button B to change mix1.

   Press and hold button B to increase the percentages rapidly

3. Press button A to select mix2.

4. Press button B to change mix2.

   Press and hold button B to increase the percentages rapidly

5. Press button A to select mix3.

6. Press button B to change mix3.

   Press and hold button B to increase the percentages rapidly

7. When finished, press button A to return to surface mode.

Using gauge mode

If you do not want to use the NiTek3 as a normal "dive computer," the NiTek3 has a gauge operation. Gauge operation is when the NiTek3 is operating simply as a depth gauge and bottom timer. Exposure to nitrogen and oxygen and no-decompression limits are not tracked and no bar graphs are displayed. This mode is used by divers who are relying solely on dive tables for decompression information. The operating depth limit when in gauge operation is 656 feet (200 meters).
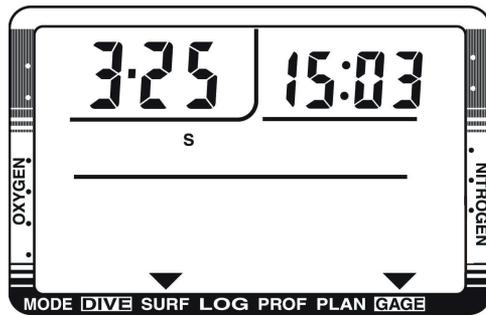
Note: You cannot select gauge operation if the computer calculates that there is still residual nitrogen remaining from a previous dive. Also, you cannot return to dive computer operation until 24 hours have passed since your last dive in gauge mode.

To select gauge operation:

1. Press and hold button B for five seconds.

    Mix1 flashes.

2. Press button B to change mix1's FO2 percentage to "0%."

3. Press button A.

    Arrows at the bottom of the screen point to "GAGE" and "SURF."

Understanding default mode

In your entry-level Enriched Air Nitrox training, you learned that among the greatest risks Nitrox (EANx) use poses is CNS oxygen toxicity. CNS oxygen toxicity can occur if Nitrox is breathed at depths where the partial pressure of oxygen (PO2) exceeds safe limits.

The NiTek3 is designed to help divers avoid such situations by presenting information and warnings regarding current PO2 levels and cumulative exposure to elevated PO2s. To do so, the NiTek3 must be set to an FO2 that accurately matches the concentration of oxygen in the gas mixture being breathed.

Similarly, the NiTek3 is designed to help divers avoid decompression illness by providing no-decompression limits (NDLs) or mandatory decompression stop information. Again, to do so, the NiTek3 must be set in a manner that accurately matches the concentration of nitrogen being breathed.

When this information is not available, the NiTek3 attempts to protect divers by basing its oxygen- and nitrogen-exposure calculations on a "worst case" assumption. This is, that calculations are based on a mixture containing up to 79 percent nitrogen and 99 percent oxygen. This "worst case" calculation is what is referred to as the FO2 default setting.

When and how FO2 default occurs

One factor in determining if and when your NiTek3's FO2 setting is in default, is whether you set it for air or Nitrox.

- If you set the mix for air (an FO2 of 21 percent), the computer assumes that subsequent dives will be made using air. This means that the mix set for air remains set for air, dive after dive, without defaulting.

- If you set the mix for Nitrox (FO2s of 22 to 99 percent), the computer assumes that subsequent dives will be made on Nitrox. Thus, to protect you from accidentally diving a Nitrox mixture that cannot accurately be monitored, the computer's FO2 setting defaults 10 minutes after surfacing from a dive.

- If you set a Nitrox mixture, but do not dive with the computer, the NiTek3 holds the programmed gas mixture until midnight, then defaults. The computer does not default at midnight if you are diving.

Dealing with FO2 default

The best way to deal with FO2 default is to simply avoid it. Make sure that prior to every dive you check the FO2 setting for gas mix you are diving. Make sure it accurately matches what you are going to breath during the dive.

When the computer is in FO2 default mode, dashed lines appear in place of the gas percentage and NDL. This indicates that you need to set the gas percentages to the correct FO2.

If you go diving when the computer is in FO2 default mode, the NiTek3's alarm sounds and the O2 bar graph and PO2 Limit symbols flash. The computer's ability to accurately monitor your exposure to oxygen no longer exists.

Note: You should not rely on the NiTek3 as the sole means of tracking your exposure to elevated partial pressures of oxygen (PO2s). It is recommended that you use either a second Nitrox-capable computer or another tracking method, such as Nitrox tables.

Plan mode

Plan mode enables you to determine how long you can stay at various depths while remaining within the no-decompression limits. The no-decompression time limits are based on the gas mix that is selected. If you are making a dive within 24 hours of a previous dive, the no-decompression time limits are based on the residual nitrogen remaining.

The most important values that are displayed on the screen in plan mode are the depth and no-decompression time limits for the mix number that is selected.
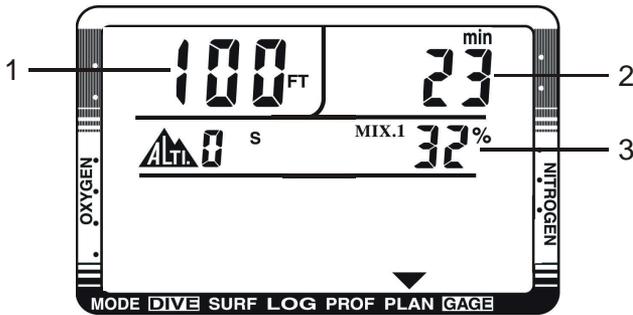
(1) Depth: When you first enter plan mode, the initial depth displayed is 30 feet (9 meters). You can advance the depth in 10-foot (3 meter) increments. Fourteen different dive plan depth increments can be displayed to a maximum depth of 160 feet (48 meters).

(2) No-decompression limit (NDL): Depending on the depth displayed and the current FO2 setting, the available no-decompression limit, up to a maximum of 200 minutes, is displayed. If the computer is in default mode, a series of horizontal lines appears.

(3) Mix number and FO2 gas percentage: This is the mix number and associated FO2 gas percentage that is selected, which is used to determine the depth and NDL limits.

If the NiTek3 calculates that there is residual nitrogen present from previous dives, the available no-decompression limits are shorter. Depending on how much residual nitrogen is present, no

NDL time may be displayed for some deeper depths. If this takes place, a series of horizontal lines are displayed. Similarly, for combinations of depth and FO2 that would cause a diver to exceed a limiting PO2 of 1.6 atmospheres, a series of horizontal lines appears in place of the no-decompression limit.

To enter plan mode:

1. Press button A.

   The arrow at the bottom of the display points to PLAN.

2. Press button B or wait four to five seconds until the mixes auto-scroll.

3. Press button A.

   The mix indicator flashes.

4. Press button A to select a mix number.

5. Press button B.

   The computer automatically scrolls through the available depth and NDLs for the gas mix that is selected.

   To quickly scroll the depths, press button B to advance the depth. The no-decompression time limits change automatically based on the depth.

6. The computer automatically returns to surface mode when it scrolls through the last depth.

WARNING: Do not plan dives to depths deeper than those for which the NiTek3 is capable of displaying an available no-decompression limit. Doing so could cause you to exceed the no-decompression limits or a limiting PO2 of 1.6 atmospheres. This may increase your risk of decompression illness or CNS oxygen toxicity and can lead to serious personal injury or death.

Dive computer mode

Dive computer mode is automatically entered when the computer enters the water. It begins performing its dive calculations once you descend below 5 feet (1.5 meters).

Caution: Prior to diving, always check to ensure that the FO2 settings are correct and that the computer is not in default mode.

While in diving mode, the computer calculates and displays information about your dive and prompts you with safety stop information and warnings if needed.

Dive mode screen

When you enter the water, the screen shows your depth, remaining no-decompression limit, dive time, max depth, PO2 for selected mix, mix number, O2 percentages for gas selected, and the OLI and nitrogen bar graphs.
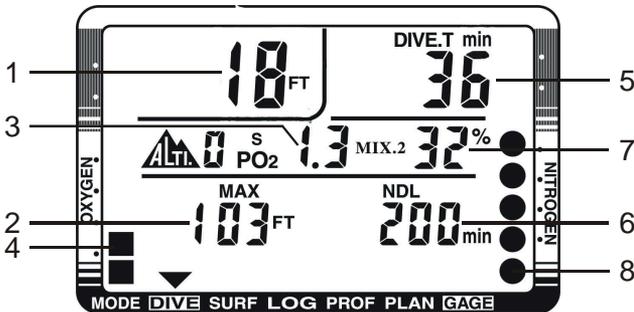
(1) Depth: This is the current depth.

(2) Maximum depth: This is the maximum depth that has been reached during the dive.

(3) PO2: This is the partial pressure of O2 at your current depth. It is based on the FO2 setting for the mix selected.

(4) O2 (OLI) bar graph: This is the oxygen limit index (OLI) that calculates the cumulative effect of your exposure to elevated partial pressures of oxygen (PO2s). There are a maximum of

eight bars. When all bars are displayed, it means that you have used 100 percent of your "CNS" clock. This graph increases when you descend due to higher partial pressures and may decrease when you ascend.

(5) Dive time: This is the time spent (in minutes) underwater, measured from the time you descended below 5 feet (1.5 meters).

(6) Remaining no-decompression limit (NDL): This is the time that is remaining (in minutes) before you reach the no-decompression limit. This NDL time limit increases when you ascend and decreases when you descend.

(7) Mix number and O2 percentage: This is the mix number the computer is currently calculating dive data for and the oxygen percentage programmed for that mix number.

(8) Residual nitrogen bar graph: This is how much nitrogen the computer assumes your body has absorbed. There are a maximum of nine bars. When all bars are displayed, it means that you are at or have exceeded the no-decompression limits.

Changing gas mixes underwater

Because the NiTek3 has the ability to use three different gas mixes during a dive, you need the ability to switch between these mixes while underwater. When you switch mixes, the PO2 adjusts to reflect the current mixture you are breathing.

Note: Only switch gas mixes when you have reached the safe operating depth limit for the gas you are switching to.

To change gases underwater:

1. Press button A.

    The mix number flashes.

2. Press button A to select a mix number.

3. Press button B to "lock in" the mix number.

    The O2 percentages change to the programmed mix and the PO2 indicator changes to reflect the PO2 for the selected mix.

Note: Only the mix numbers that have been programmed with a gas mixture are available.

Note: You cannot lock in a mix if it causes you to exceed a PO2 of 1.6 atmospheres.

Warnings while in dive mode

While in diving mode, there are several warnings that you should be alert to.

• Decompression warning
• Default warning
• Ascent rate warning
• PO2 limit warning
• Oxygen limit index (OLI) warning
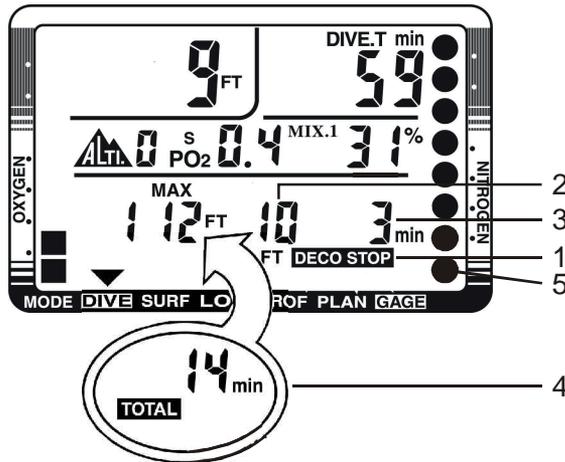• Decompression stop violation warning
• Out-of-range warning

Decompression warning

If you exceed the no-decompression limits, the computer enters decompression mode. An audible alarm sounds for three seconds indicating that you have decompression stop requirements.

Caution: Decompression diving is considered to substantially increase your risk of decompression illness.

Decompression warning with "DECO STOP" displayed on the screen

(1) Deco stop symbol: The "DECO STOP" symbol displays indicating that you have to stop at the depth displayed.

(2) Required stop depth: This is the required decompression stop depth.

(3) Required stop time: This is the time you must remain at the indicated stop depth.

(4) Total ascent time: This is the total amount of time (in minutes) you must spend at the decompression stops and the ascent time between decompression stops. **Note:** The total ascent time and max depth toggle back and forth.

(5) N2 bar graph: This is how much nitrogen the computer assumes your body has absorbed. There are a maximum of nine bars. When all bars are displayed, it means that you are at or have exceeded the no-decompression limits and have entered decompression.

Default warning

If the computer is in default mode at the beginning of a dive, an audible alarm sounds for three seconds. If you ascend and set the

mix percentages, you can restart the dive. See "Understanding default mode" for more information.

Ascent rate warning

The NiTek3 assumes that you keep your ascent rate within the following limits:

Depth range	Ascent rate
0 to 19 feet (0 to 5.9 meters)	26 feet (8 meters) per minute
20 to 58 feet (6 to 17.9 meters)	39 feet (12 meters) per minute
59 feet (18 meters) or deeper	52 feet (16 meters) per minute

If you exceed these ascent rates, an audible alarm sounds and the current depth flashes. The warning displays until you slow your ascent to an acceptable rate or you reach 5 feet (1.5 meters).
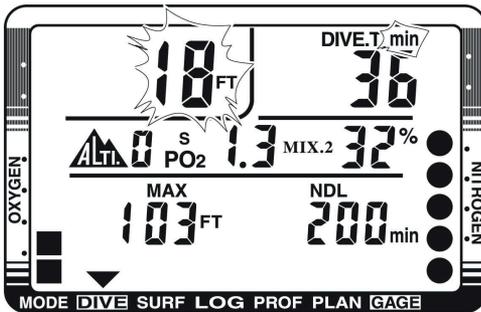
PO2 limit warning

The PO2 warning indicates that you have exceeded the 1.6 atmospheres for the gas you are breathing. When you reach 90 percent of the PO2 limit of 1.6 atmospheres, an audible alarm sounds for three seconds and PO2 and depth flashes for three seconds. If you continue to descend and exceed a PO2 of 1.6 atmospheres, the audible alarm sounds again for three seconds and the PO2 and depth flash until you ascend to a safer depth.

Note: If the PO2 alarms activate at a depth of 20 feet (6 meters) or less, you most likely have not exceeded the limiting PO2. It is more likely that you forgot to set the FO2 percentages prior to

the dive. As a result, the computer has entered the FO2 default. See "Understanding default mode" for more information.

Oxygen limit index (OLI) warning

The NiTek3's oxygen limit index (OLI) reflects the cumulative effect of your exposure to elevated partial pressures of oxygen. The PO2 warning only accounts for the intensity of the exposure, but the OLI accounts for both the intensity and length.

When seven of the O2's eight bars are displayed, the computer's audible alarm sounds for three seconds, and the oxygen bar graph flashes for three seconds. If you do not ascend to a shallower depth, and all eight of the O2's bars are displayed, the alarm sounds again and oxygen bar graph flashes again. The oxygen bar graph continues to flash until the bar graph drops to seven bars. This warning will appear in log mode after the dive.

Note: Should the OLI and PO2 warnings activate at roughly the same time—and at relatively shallows depths, early in the dive— you most likely have not exceeded your actual oxygen limits. What has happened, is that you forgot to set the FO2 percentages prior to the dive and the computer has FO2 defaulted. See "Understanding default mode" for more information.

Decompression stop violation warning

A decompression stop violation warning takes place when you ascend to a shallower depth than the indicated stop depth or if you do not spend sufficient time at the required depth before ascending. When you enter this violation, the computer's audible alarm sounds and the stop depth, stop time, and "DECO STOP" flashes. These items continue blinking as long as you remain shallower than the indicated stop depth.

Note: During a deco stop violation, the computer's ascent rate warning does not function.

Caution: If you do not correct an indicated deco stop violation, the warnings continue for several minutes after surfacing. At this point, the computer is not usable for the next 24 hours.
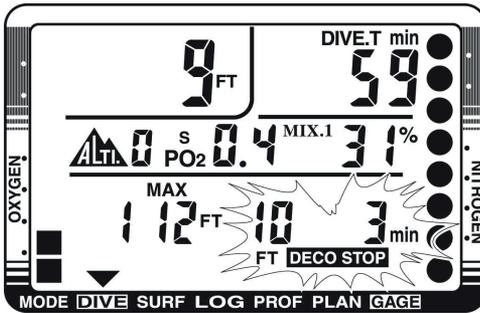
Out-of-range warning

The following can cause the out-of-range warning:

• Descend below the computer's maximum operating depth of 328 feet (100 meters)

• Exceed an actual bottom time of 599 minutes

• Accrue decompression stops depths of greater than 90 feet (27 meters)

The out-of-range warning consists of:

• The audible alarm sounds for ten seconds

• The entire screen flashes

WARNING: A NiTek3 displaying an out-of-range warning is incapable of displaying other critical information such as depth, time, ascent rate, PO2, OLI and deco stop violations, and required decompression stops. For this reason, you should not, under any circumstance, use a NiTek3 in such a way that would cause an out-of-range warning. Under such conditions, the risk of serious personal injury or death would be substantial.

Gauge mode

When selected, gauge mode is automatically entered when the computer enters the water. It begins displaying depth and time once you descend below 5 feet (1.5 meters).

Note: To enter and set up gauge mode operation, see "Using gauge mode."

While in gauge mode underwater, depth and time is displayed. While in gauge mode on the surface, surface interval time is displayed.
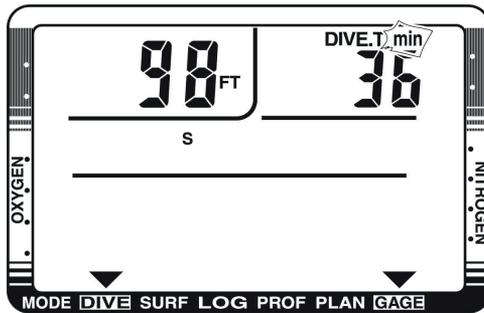
Surface mode (upon surfacing from a dive)

Once you surface from a dive, the NiTek3 automatically switches to surface mode. In addition to the normal information displayed in surface mode such as time of day, there is other information that is displayed that pertains to the dive you just completed. This includes:

• Desaturation time
• Surface interval time
• Nitrogen (N2) bar graph
• Oxygen limit index (OLI) bar graph

This information is displayed on both screens until the NiTek3 calculates that it is no longer needed or after 24 hours have passed since the last dive.

Note: If you are making repetitive dives, you need to pay attention to your surface interval and use it in conjunction with plan mode. This ensures that you stay within no-decompression limits.
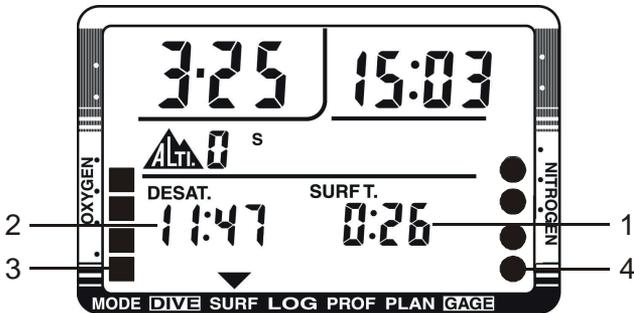
(1) Surface interval time: This is the amount of time you have spent on the surface since your last dive if there is residual nitrogen present from a previous dive. It can display up to 24 hours of surface interval time.

(2) Desaturation time: This is the amount of time, expressed in hours and minutes, that must pass before the residual nitrogen levels drop to a point where subsequent dives are treated as a single (non-repetitive) dives. This is not the same as "time to fly."

(3) O2 OLI bar graph: This indicates CNS toxicity level at the end of the dive. This drops as your surface interval time increases.

(4) N2 exposure bar graph: This is the amount of residual nitrogen in your body at the end of the dive. This drops as your surface interval time increases.

WARNING: It is recommended that you wait at least 24-hours following any dive before flying in an aircraft or driving to altitude. Failure to allow sufficient surface interval time before doing so may increase your risk of decompression illness (DCI).

Log mode

For each dive, the NiTek3 stores information, such as depth, time, temperature, etc. in a log. This stored log information can be viewed directly from the NiTek3's screen when in log mode. A total of 10 dives can be stored.

Because of the amount of information the NiTek3 stores, there are two pages that you can toggle between for each dive. Each dive is assigned a number and has a date for the day. Each log page displays the log number, making it easy for you to toggle between the dive log pages.
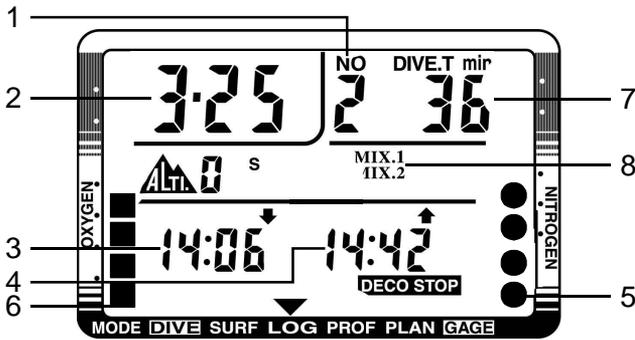
Page one for a dive in log mode
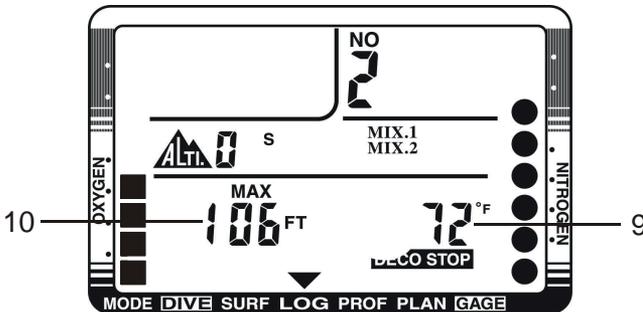
Page two for a dive in log mode

(1) Log entry number: This is the sequence in which the log appears. The most recent log entry has the highest number,

which began with log one. When the computer's memory is full, the oldest dives are overwritten with the new dives. This causes the log entry number assigned to a particular dive to change.

(2) Date: This the month and day of the dive.

(3) Descent time: This is the time you started the dive, indicated by a down arrow.

(4) Ascent time: This is the time you surfaced from the dive, indicated by an up arrow.

(5) N2 exposure bar graph: This is the amount of residual nitrogen in your body at the end of the dive.

(6) O2 OLI bar graph: This indicates CNS toxicity level at the end of the dive.

(7) Dive time: This is the actual bottom time for the dive.

(8) Gas mixes used: These are the gas mixes that you used during the dive.

(9) Temperature: This is the coldest temperature reached during the dive.

(10) Max depth: This is the maximum depth reached during the dive.

To view a dive log:

1. Press button A twice.

    The arrow at the bottom the screen points to "LOG."

2. Press button B to scroll "down" through the logged dives.

    Note: The computer automatically switches between the two log pages for each dive.

3. When finished, press button A twice to return to surface mode.

Profile mode

Profile mode enables you to see a record of the depths you reached at various points during a dive. You can display a detailed profile of each dive stored in the log. When a dive is selected, the computer automatically displays the depth and the time in the dive when you reached that depth until it reaches the end of the dive.

Dive profile information is stored in 5-, 10-, 20-, 30-, or 60-second intervals during a dive. This must be set before a dive. Refer to "Setting the dive profile sampling rate" for more information.
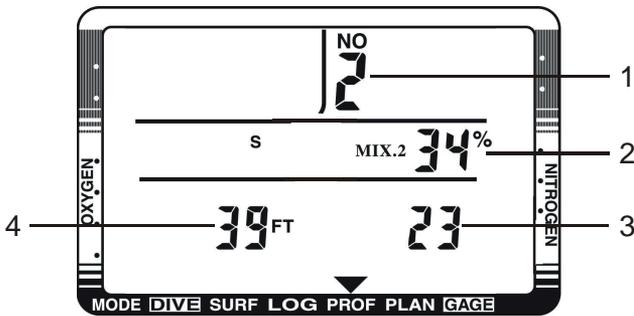
(1) Dive log number: This is the dive number that corresponds to the dive number when in log mode.

(2) Gas mix number and gas percentage: This is the gas mix number that was used on the dive and the FO2 gas percentage that was set for that mix number.

(3) Dive time: This tells you at what time during the dive you reached the depth indicated.

(4) Depth: This is the depth that corresponds to the displayed dive time.

To view a dive profile:

1. Press button A twice.

   The arrow at the bottom the screen points to "LOG."

2. Press button B to select the dive that you want to view profile data.

3. Press button A.

    The arrow at the bottom of the screen points to "PROF."

    Note: Once a dive profile is selected, the computer automatically progresses through the different depths and times of the dive.

4. When finished, press button A to return to surface mode.

PC transfer mode

If you purchased the optional personal computer interface for the NiTek3, you can transfer the stored dive log information to your PC.

Before transferring the dive log

You must complete the following before transferring the dive log.

*   Install the NiTekLogic software onto your PC. Open the program > click Options > and check the Uploader tab. Make sure the COM port selection in the NiTekLogic software matches the COM port you are connecting to.

*   Plug one end of the cable supplied with the interface into a COM port on your PC. Plug the other end into the interface module.

*   Set the NiTek3 to PC transfer mode as described below.

*   Place the NiTek3 on the interface module and secure the strap over the computer. Click the computer icon in NiTekLogic. A dialog box should appear indicating the beginning of data transfer. If it is not uploading, check your COM port settings.

Notes

*   If the dialog box says "negotiating" and cuts off before saying "transfer," you probably is a COM port setting issue. Check to see that you are using the correct COM port.

*   If there is an error reported after the dialog box says "transfer," check for a loose or dirty connection between the NiTek3 and the interface module.
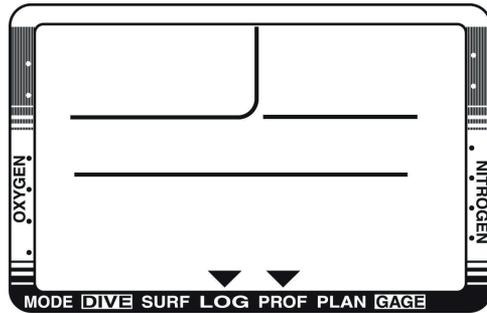
To enter PC transfer mode:

1. Press button A twice.

   The arrow at the bottom the screen points to "LOG."

2. Press button A.

   The arrow at the bottom of the screen points to "PROF."

3. Press and hold button B for five seconds.

   Arrows at the bottom of the screen point to "LOG" and "PROF."

4. Transfer the dive log data to your PC.

5. When finished, press button B to return to profile mode.

6. Press button A to return to surface mode.

Altitude operation

The NiTek3 adjusts automatically for diving at altitudes of up to 19,685 feet (6,000 meters). To show that the NiTek3 has made the altitude adjustment, it displays the altitude setting using a symbol representing a mountain and a corresponding number.

Altitude rank numbers

Number	Altitude range
0	Sea Level to 3,281 feet (1000 meters)
1	2,297 to 5,906 feet (700 to 1,800 meters)
2	4,593 to 8,530 feet (1,400 to 2,600 meters)
3	7,546 to 19,685 feet (2,300 to 6,000 meters)
ERR	Out of range above 19,685 feet (6,000 meters)

Prior to using the NiTek3 at altitudes substantially above sea level, you should find out what the actual altitude of your dive site is. Make certain that the altitude settings the NiTek3 displays accurately match the altitude you are at.

Notes

• Do not use the NiTek3 unless the altitude settings accurately match the actual height above sea level you are diving in. Doing so could cause the NiTek3 to display inaccurate information.

- Do not use the NiTek3 when the "ERR" symbol is displayed. This means that you are above an altitude of 19,680 feet (6,000 meters), which is beyond the NiTek3's ability to function accurately.

- Do not place the NiTek3 in dive mode when making sudden, substantial changes in altitude, such as when flying in an airplane. This can be caused by storing the NiTek3 with wet dive gear, which can touch its external electrical contacts and cause it to enter dive mode. This can interfere with the computer's ability to function accurately.

The NiTek3 monitors and displays altitude information in all modes, except PC transfer mode. Upon arriving at altitude, the NiTek3's N2 bar graph may show that there is excess nitrogen present, even though you may not have made any dives in the preceding 24 hours.

If you have obtained the altitude specialty diver training which everyone should do before diving at altitudes substantially above sea level, you already understand that this should be expected. By ascending to a higher altitude from a lower one, your body has more nitrogen saturated in body tissues than would be present had you spent the preceding 24 hours at the higher altitude. By displaying residual nitrogen and a surface interval, your NiTek3 is merely reflecting this fact.

If the level of residual nitrogen calculated by the NiTek3 is unusually high (seven or eight bars) when going to altitude, the computer will be unable to enter dive mode. Avoid taking the computer to altitude when residual nitrogen levels are this high, and do not enter the water until nitrogen levels have dropped substantially.

NiTek3 Dive Computer User Manual

Chapter 3

Care and maintenance

Summary

This chapter provides care and maintenance and battery information for the NiTek3.

Content

Proper handling techniques

The NiTek3 is constructed to withstand the most demanding diving conditions. It is, however, a high precision instrument, which requires proper care.

Caution: Failure to follow these handling techniques may result in damage to the NiTek3.

- Do not store the computer in hot, humid, or wet environments. The pressure transducer is sensitive to both heat and humidity. If impaired, it may cause incorrect altitude or depth readings.

- When in hot and/or humid environments, dip the computer in water for several minutes to cool it to room temperature before using it. If it is cold, allow the computer to warm to room temperature. Do not take it underwater immediately after doing so.

- Do not transport your NiTek3 on an aircraft or take it to altitude while it is sealed in an air-tight container or in a damp environment. Doing so may interfere with its ability to correctly read, display, and track depth information.

- The NiTek3's Liquid Crystal Display (LCD) may darken if left in a hot environment (such as on a car's dashboard). It will return to normal once allowed to cool, however, extensive exposure to heat may shorten LCD life. Cold weather can dim the LCD display.

- Be aware that weather-related changes in air-pressure can cause incorrect display of altitude settings. Be sure to check indicated altitude settings against actual altitude before use. Your NiTek3 is not to be disassembled by anyone other than Dive Rite or its authorized dealers. Unauthorized disassembly will violate the warranty.

- If the NiTek3 does not appear to be functioning properly, do not use it to dive. Return it to your authorized Dive Rite dealer for repair.

- The NiTek3 should not come in contact with solvents or any type of chemical substances

- Do not use compressed air to dry the NiTek3

- Do not use the NiTek3 in hyperbaric chambers if the device is not fully submerged in water

- Always rinse the computer with freshwater after use

- Store the NiTek3 in a cool, dry location. After diving, wipe the computer dry and store it in a location separate from other damp items.

Low battery warning

The battery that comes with the NiTek3 is designed to last for up to three years under normal use. You may get more or less use from the battery depending on how often it is used and how it is cared for.

Note: The battery symbol blinks when the battery starts to run low and is on constantly when the battery is critically low.

Cautions

• All NiTek3 functions may cease within two to three days of the low battery symbol first appearing. Always have low a battery replaced promptly.

• A depleted battery that is left in a NiTek3 for a long period of time may leak. Replace batteries promptly.

Replacing the battery

Battery replacement is an easy operation that can be done by the user. The battery must be replaced whenever the low battery symbol (fixed or blinking) is displayed.

Note: When you replace the battery, all data regarding desaturation, time, and date, etc. is lost. Never replace the battery when desaturation is under way, since all data for desaturation calculation would be lost.

Before replacing the battery, you should have a clean working area free of dirt, dust, and moisture, and you need the following items:

• CR123A Lithium battery
• Silicone grease
• Lint-free cloth
• Cotton swabs
• Denatured alcohol
• Pencil with a good eraser tip
• Small Phillips head screwdriver

To replace the battery:

1. Locate the battery compartment. It is the small section on the back of the computer that does not hold the wrist strap.

2. Remove the four screws holding the panel in place using the Phillips head screwdriver.

3. Examine the battery and battery housing for signs of corrosion. Wipe off any sand or dirt from the cover and o-ring using a cotton swab soaked in denatured alcohol.

4. Remove the old battery.

5. Clean the new battery's contacts with the pencil eraser.

6. Remove the o-ring from its slot. Be careful not to damage the o-ring.

7. Install the new battery; making sure that the polarity is correct.

8. Clean the o-ring, and place a thin layer of silicone grease on the o-ring.

9. Install the o-ring in its slot.

10. Screw the battery cover back into place. Do not over tighten.

11. Reset the time and date.

Care and maintenance

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