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• ICON HD

*Congratulations on your purchase of an **ICON HD**.*

ICON HD represents the cutting edge in Mares technology, and was designed to ensure maximum safety, efficiency, reliability and durability over time. Simple and easy to use, it is ideal for all types of dives.

In this manual you will find all the instructions needed to enjoy the product to its fullest.

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Mares adopts a policy of continuing improvement, and therefore reserves the right to make changes and enhancements to any of the products described in this manual without notice.

Under no circumstances shall Mares be held responsible for any loss or damage sustained by third parties deriving from the use of this instrument.

CHARACTERISTICS OF ICON HD

ICON HD is a color-display dive computer and much, much more.

With **ICON HD**, you can:

- display your information digitally or graphically during the dive;
- have a clear indication at all times of the stops you need to make;
- display a map of the seabed during the dive;
- keep the compass active at all times, or use it on demand;
- store and view .jpg format files;
- instantly review the logbook of your dives in both digital and graphic formats;
- recharge the **ICON HD** battery anywhere, even from your PC.

IMPORTANT WARNINGS

Before diving, make sure you have read and understood all parts of this manual.

WARNING

ICON HD is intended strictly for recreational diving.

WARNING

In addition to the dive computer, also use a depth gauge, a submersible pressure gauge, a timer or watch, and dive tables.

WARNING

Never dive alone. **ICON HD** is not a replacement for a dive buddy.

WARNING

Do not dive if the display appears unusual or unclear.

WARNING

ICON HD must not be used in conditions that preclude its use (e.g.: low or no visibility, making it impossible to read the gauge).

WARNING

The dive computer cannot ensure against possible decompression sickness. The dive computer cannot take into account the physical conditions of the individual diver, which may vary from one day to the next. For your safety, have a general medical check-up before undertaking a dive.

WARNING

Always check the battery power level before starting the dive. Do not dive if the display indicates that the battery is low. Recharge the battery. If this doesn't work, contact an authorized center to replace the battery.

WARNING

Do not fly within 24 hours of your last dive, and in any case wait until the **ICON HD** "no fly" warning disappears.

WARNING

Recreational divers should not dive deeper than 40 m (130 ft). Although this computer will continue to provide information for compressed-air dives deeper than 40 m (130 ft), the risk of nitrogen narcosis and decompression sickness (DCS) is greatly increased.

WARNING

Never dive to depths greater than 40 m (130 ft), and never take decompression dives with **ICON HD** unless you possess the specific certification (IANTD, NAUI, PADI, DSAT, PSA, SSI, TDI, etc.) for deep scuba diving to depths of more than 40 m (130 ft) and fully understand the risks and the skills that this type of dive requires. This type of dive can entail a greater risk of decompression sickness, even for the most qualified and expert divers, and regardless of the instrumentation or computer used. Divers attempting these types of dives must have completed a specialist course and gained the necessary experience. The safety of a dive can only be increased through adequate preparation and training. Mares therefore recommends using the dive computer only after having completed a specialist diver training course. Mares recommends scrupulous adherence to the simple rules of behavior listed in the next column.

RESPONSIBLE DIVING PRACTICES

- Always plan your dives in advance.
- Never exceed the limits of your skill and experience.
- Check your computer frequently during the dive.
- Do not exceed a safe ascent rate as indicated by the dive computer.
- Always do a safety stop between -6 and -3 meters (-20 and -10 feet) for at least 3 minutes during your final ascent.
- After any decompression stops, don't exceed the recommended ascent speed, 10 m/min (30 ft/min).
- Avoid yo-yo dives (repeatedly ascending and descending).
- Avoid strenuous activity during and after the dive.
- Consider following a more conservative profile when diving in cold water or when exerting yourself heavily during the dive.
- In the case of a decompression dive, prolong the decompression stop nearest the surface for additional safety.
- Repetitive dives should be separated by a surface interval of at least 1 hour.
- Your deepest dive should be the first one of the day.
- When doing repetitive dives for several consecutive days, take at least one day a week off. In the case of decompression-stop diving, it is recommended to take one day off every three days.
- Avoid decompression-stop dives and do not dive deeper than 40 meters (130 feet) unless you have been specifically trained in this type of technical diving.
- Avoid repetitive "square profile" dives (dives to a constant depth) deeper than 18 meters (60 feet).
- After a single dive wait at least 12 hours, for multiple dives and/or multiple days wait at least 18 hours and preferably 24 hours before flying, in accordance with the recommendations of the Divers' Alert Network (DAN).
- Each member of a buddy team must have his or her own dive computer and the whole buddy team must follow whichever is the most conservative profile.

• HOW ICON HD WORKS

Pressing any key will turn on **ICON HD** and call up the welcome screen.
ICON HD then moves to the main menu, which offers eight icons representing the main functions:



DIVE



SETTINGS



COMPASS



LOGBOOK



DIVE PLANNER






MAPS



PHOTOS



BUTTON LOCK

In the main menu you can move among the icons using the central buttons  . With the first button from the left  you can display your Personal Information, or **ICE** (In Case of Emergency), which is entered via the Dive Organizer software. The first line of the ICE information is displayed also in the upper left corner of the main menu (Figure 1).

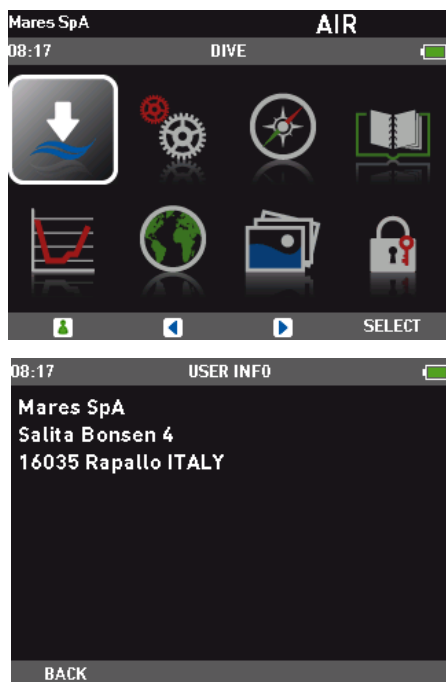


Fig. 1

The **SELECT** button accesses the submenu of the highlighted icon. The image below shows access to the **SETTINGS** submenu. Use the **BACK** button to return to the main menu (Figure 2).

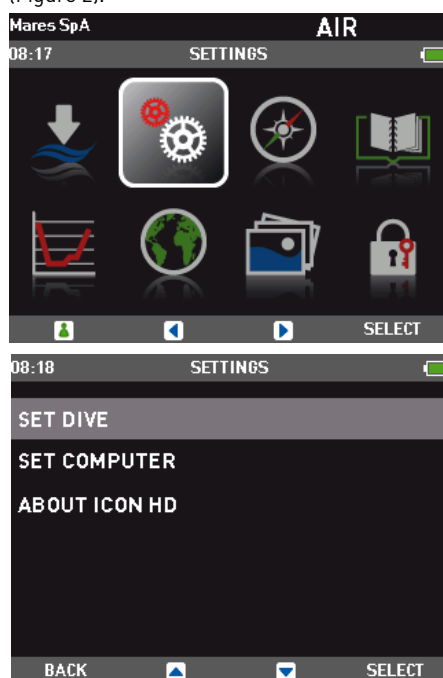


Fig. 2

NOTE

Surface shut-off mode: if **ICON HD** is switched on but you don't press any buttons for a certain period, it will switch off automatically. The delay before automatic switch-off depends on the active operating mode:
 Pre-dive: 10 minutes.
 All other modes: 1 minute.


• DURING THE DIVE WITH ICON HD

ICON HD can manage three kinds of dives:

- AIR
- NITROX
- BOTTOM TIMER (Gauge)

The information can be displayed in two different ways:

- **EXTENDED**: digital mode (Figure 3).
- **PROFILE**: graphic mode (Figure 4).

You can easily toggle between the two displays pressing the  button.

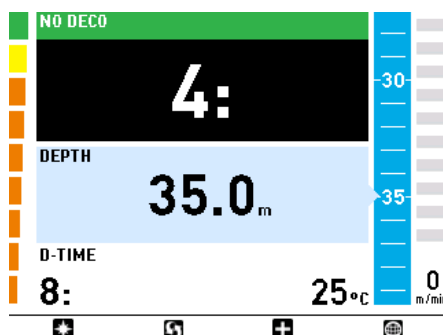


Fig. 3

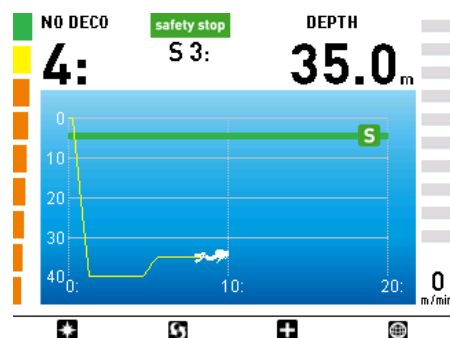


Fig. 4

You can access **DIVE** mode (Figure 5) by pressing the **SELECT** button when the corresponding icon is highlighted.



Fig. 5

To better understand how **ICON HD** works during a dive, the displays have been organized into four distinct phases:

- PreDive
- Dive
- Surfacing
- On the Surface (Post Dive)

BACKLIGHT

The high-resolution color display of **ICON HD** is permanently lit. During the dive there are two levels of backlight available: normal and low power. The normal mode is activated by pressing any button, and it remains active for the amount of time defined under **SETTINGS/SET COMPUTER/BACKLIGHT TIMER**, after which it reverts to low power. The default setting is 10s, and the possible range is between 10 and 60s or always on. The information is always visible, even in low power.

NOTE

The duration of the normal mode cannot be changed during the dive.

• AIR MODE

PREDIVE PHASE

This mode is activated by selecting **DIVE** from the main menu, and remains active until the diver descends below 1.2m (4ft) (Figures 6-7).

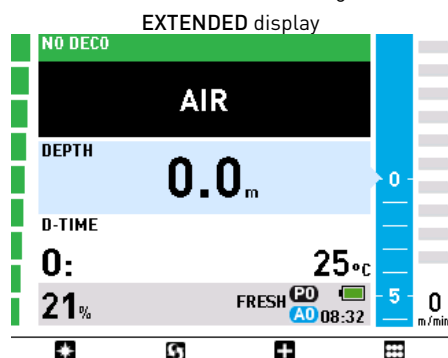


Fig. 6

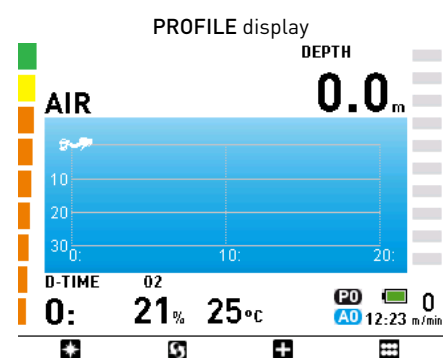


Fig. 7

NOTE

If you remain in PREDIVE mode for longer than 10 minutes without pressing any buttons, ICON HD will switch off.

NOTE

Before each dive, it is recommended that you enter the **SETTINGS** submenu to verify all parameters that have been set.

WARNING

It is recommended that you put **ICON HD** into **DIVE** mode before you start a dive. If **ICON HD** is not in **DIVE** mode or even turned off, it will automatically go into **DIVE** mode within one minute of having descended below 1.2m (4ft). Placing it manually into **DIVE** mode ensures that it starts computing the dive right away.

BUTTON FUNCTIONS

- Displays the **COMPASS** Mode. Carefully read the **COMPASS** chapter to take full advantage of this feature.
- Switches between display modes (**EXTENDED** ↔ **PROFILE**).
- Returns to the main menu.

DIVE PHASE: "NO-DECOMPRESSION" DIVE

As soon as the diver descends past 1.2m (4ft), the display switches to dive phase and begins displaying the dive data. Remaining in this mode for more than 5 seconds will cause **ICON HD** to begin recording the dive details in the logbook memory.

The information displayed in the two modes (**EXTENDED**, **PROFILE**) is as follows (Figures 8-9):

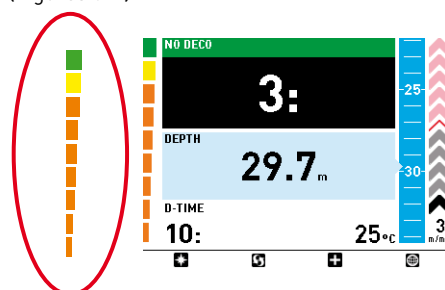


Fig. 8

The **EXTENDED** display shows, from top to bottom, the no deco time, the current depth, the elapsed dive time and the water temperature. To the left there is a bar graph which represents the nitrogen tissue load in the leading compartment: the more green elements you see, the less nitrogen you have absorbed. As you approach the limit of the no deco time, the bar is almost entirely orange. To the right there is a scroll bar graphically representing the current depth, and an arrow bar which lights up in case of ascent or descent, indicative of the vertical speed. This is supported by a numerical speed indication at the bottom. If your speed is excessive during ascent, the arrows will turn red.

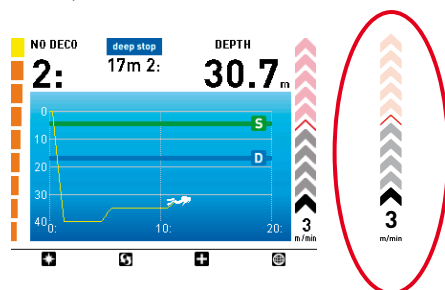


Fig. 9

The **PROFILE** display shows the no deco time and the current depth at the top, and a live graph of the depth profile in the remainder of the screen. To the left and the right we find again the nitrogen load and the ascent/descent speed representations.

BUTTON FUNCTIONS

- Displays the map, if one was selected in advance. Read the **MAPS** chapter carefully to take full advantage of this feature.
- Additional data is shown, such as time of day, maximum depth, and various settings (Figures 10-11).

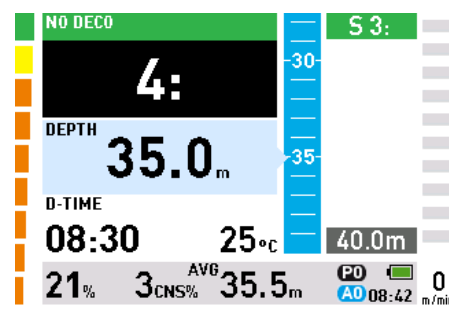


Fig. 10

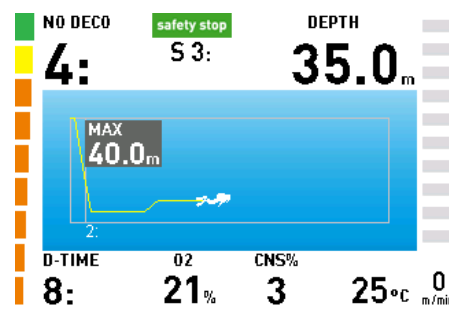


Fig. 11

Returns to the main display.

WARNING

If **ICON HD** was not set to **DIVE** mode before you start, always check, early in your dive, that **ICON HD** has switched on.

WARNING

When you select a display mode (**COMPASS**, **EXTENDED**, **PROFILE**), the computer will stay in this mode until you switch to a different mode.

DIVE PHASE: "DECOMPRESSION STOP" DIVE

If the diver does not ascend when the no deco time has expired, **ICON HD** switches to decompression stop mode, indicated by the appearance of the message **ENTERING DECO** at the bottom of the display and by an audible alarm.

The switch to decompression stop mode is also indicated by the graphic bar on the left, now completely orange.

NOTE

When the no deco time remaining is one minute, an audible alarm goes off to indicate that the diver is about to exceed the no deco limits.

In decompression stop mode, **EXTENDED** lists all stops sequentially next to the depth scroll bar (Figure 12). In **PROFILE**, the display adds a graphic representation of the ascent and all the required stops to the dived profile. By pressing , the graphic portion will zoom in on the ascent only (Figure 13). Note that stops include deep stops, decompression stops and safety stop.

NOTE

In dives that call for more than 5 stops, ICON HD will only display the 5 deepest at once. When the deepest stop has been completed, the deeper of the unlisted ones will appear, and so on.

- time scheduled for the deep stops
- time scheduled for the deco stops
- time required to ascend at an average speed of 10 m/min (30 ft/min).

NOTE

The ascent time does not include the safety stop.

ASCENDING IN PRESENCE OF A DECOMPRESSION OBLIGATION

When ICON HD has determined that a decompression stop is necessary before reaching the surface, it is paramount that you don't violate this recommendation. You must stop at or slightly below the suggested stop for as long as ICON HD displays the stop in question.

WARNING

Ascending beyond a required decompression stop before the stop is extinguished from the display could result in serious injury or death.

EXTENDED MODE

In EXTENDED mode, the deco stops are shown on the right side of the screen inside an orange box, in terms of the depth of each stop and its duration in minutes (Figure 16).

The following icons are a graphic aid during a decompression stop:

- ▲ Diver in optimal depth range for the decompression stop.
- ▲ Diver below decompression stop depth.
- ▲ Diver above decompression stop depth, descend immediately!

PROFILE MODE

In PROFILE mode, the dive profile includes a graphic representation of the complete ascent. By pressing **+** a detail of the ascent is displayed, with the addition of orange tags indicating depth and duration of each stop (Figure 18).

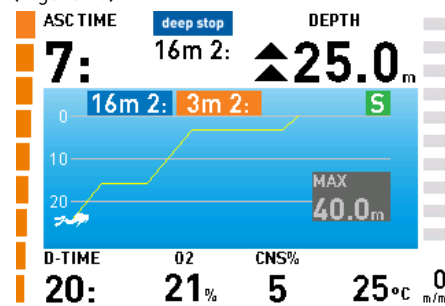


Fig. 18

When the stop depth is reached, two opposing arrows indicate that you are in the optimal depth range to perform the stop (Figure 19).

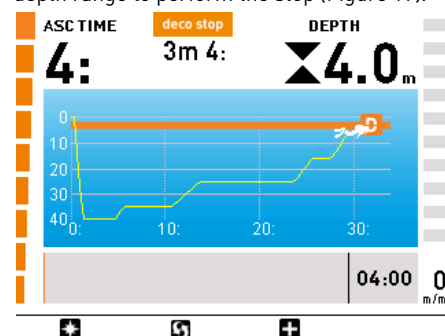


Fig. 19

The following icons are a graphic aid during a decompression stop:

- ▲ Diver in optimal depth range for the decompression stop.
- ▲ Diver below decompression stop depth.
- ▲ Diver above decompression stop depth, descend immediately!

MISSED DECO STOP

If you ascend above the decompression stop depth by more than 0.3m (1ft), a downward pointing red triangle appears, an audible alarm goes off and the message **BACK TO STOP DEPTH** is displayed at the bottom of the screen.

This alarm remains active until you return to the correct depth (Figures 20-21). Note that while the alarm is active, it is not possible to consult the map, and the compass can be viewed only for 10 seconds before the screen returns to the default display.

Also in decompression stop mode, pressing the **+** button will bring up additional information on the display, such as time of day, max depth and various settings. This will remain on the screen until you press **-** (Figures 14-15).

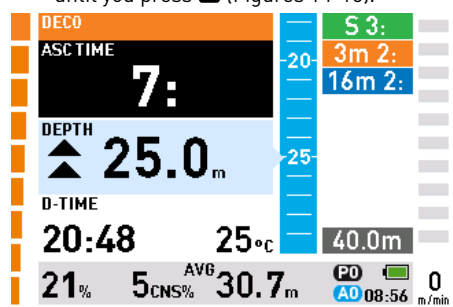


Fig. 14

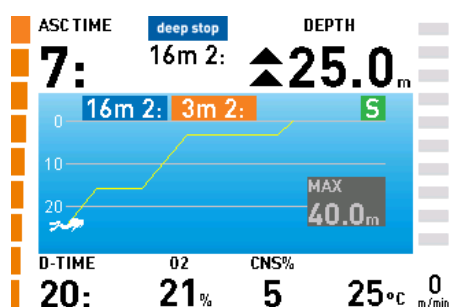


Fig. 15

ASCENT TIME

The ascent time (ASC) is given by the sum of:

When nearing the deco stop depth, ICON HD will sound an audible signal.

When the current depth is within 1.5m (3ft) of the deco stop depth, the tag that shows the deco information will enlarge, showing the minutes remaining for that stop. The displayed minutes are indicative of the actual duration if you are exactly at the stop depth. It will take a little longer to clear the stop the further away you are from the exact depth.

Simultaneously, inside the box with the current depth two small opposing arrows appear to indicate that you are in the optimal range to carry out the decompression stop (Figure 17).

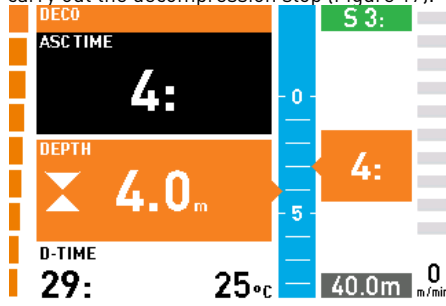


Fig. 17

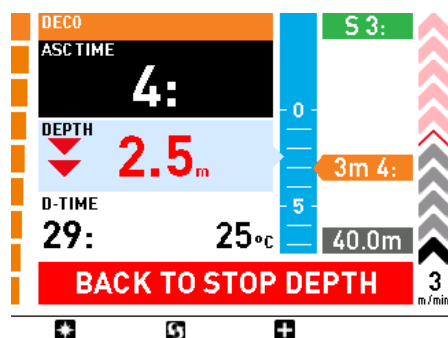


Fig. 20

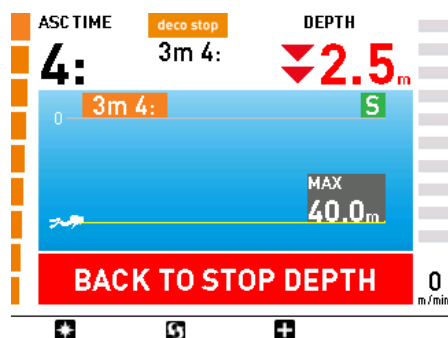


Fig. 21

WARNING

When the missed deco stop alarm is triggered, desaturation of the simulated tissue compartments is halted and resumes only when the diver returns to the correct stop depth.

WARNING

Buttons are disabled when an alarm is active.

WARNING

Never ascend above the displayed decompression stop depth.

MISSED DECO STOP MODE

If the stop depth is exceeded by more than 1m (3ft) for more than three minutes (Figures 22-23), ICON HD considers it a dive violation and the display will show **VIOLATION - DECO**.

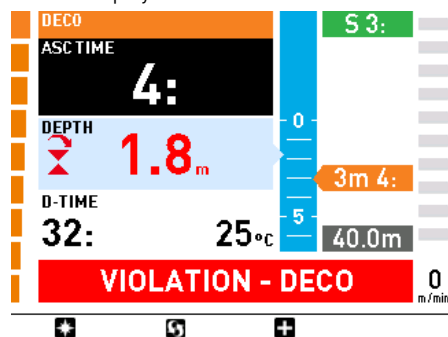


Fig. 22

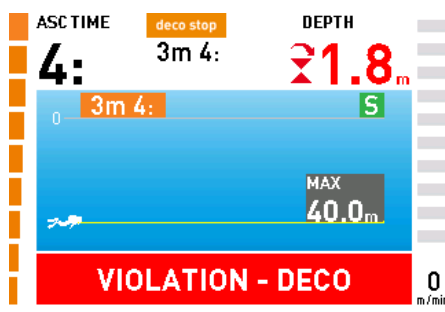


Fig. 23

In this case, if the diver attempts a repetitive dive after surfacing, ICON HD will function only as a depth gauge and timer (Bottom Timer mode), and it will display the message **LOCKED BY PREVIOUS DIVE**.

DEEP STOPS

To minimize the likelihood of critical bubble seed formation, in the case of decompression dives or dives close to the no deco limit, ICON HD prompts for one or two deep stops: as a function of your dive profile, ICON HD may suggest to perform one 2-minute stop or two 1-minute stops.

These are shown on the screen in the same manner as the decompression stops described above, with the only difference that deep stops are displayed in blue instead of orange (Figure 24). Deep stops are NOT mandatory and if you ascend 1m (3ft) above the indicated depth the stop itself will simply disappear.

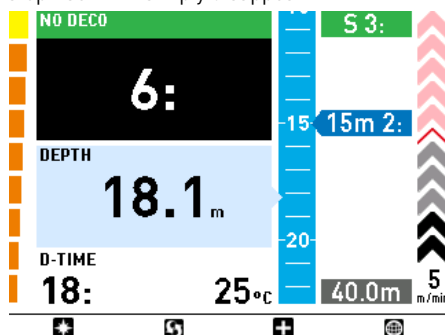


Fig. 24

When nearing the deep stop depth, ICON HD will sound an audible signal and the tag will enlarge to show the countdown (Figure 25).

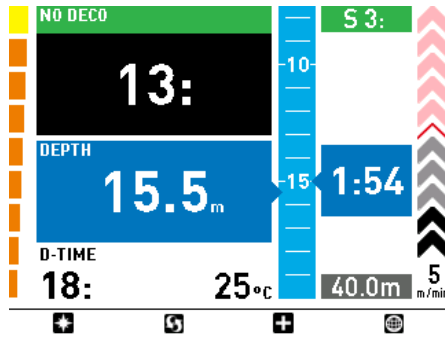


Fig. 25

If the computer is in **MAPS** or **COMPASS** mode and the diver enters a deep stop, there will simply be a longer audible signal. In **PROFILE** mode, the deep stops are displayed in the dive profile with blue lines (Figure 26-27).

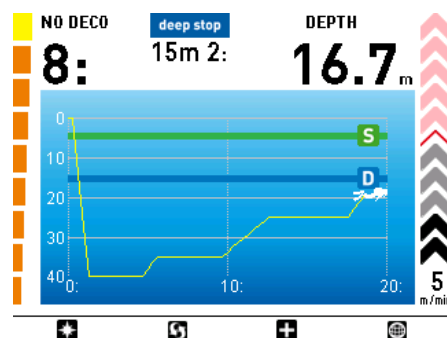


Fig. 26

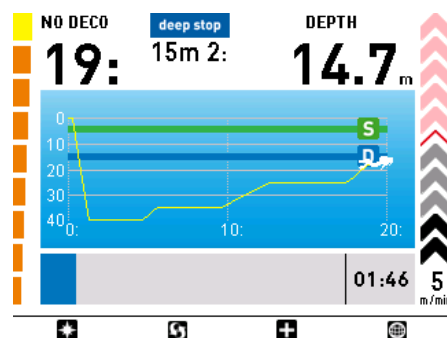


Fig. 27

NOTE

The algorithm does not introduce penalties if you skip the deep stops.

RATE OF DESCENT

As soon as the depth increases, ICON HD monitors the descent rate and displays the calculated value both numerically and graphically.

NOTE

There is no alarm for an excessively fast descent rate.

EXCESSIVE ASCENT RATE ALARM

As soon as depth decreases ICON HD activates the ascent rate control algorithm and displays the calculated value both numerically and graphically.

WARNING

A rapid ascent increases the risk of decompression sickness.

ICON HD checks that the ascent rate does not exceed the optimum rate of 10 m/min (30 ft/min).

If ICON HD determines an ascent rate of 10m/min (30ft/min) or higher, the fast ascent alarm is triggered: an audible alarm goes off, the arrows on the right side turn red and the message **SLOW DOWN** is displayed at the bottom of the screen. This persists until the ascent rate is reduced to 10m/min (30ft/min) or less.

If the ascent rate exceeds 12m/min (40ft/min) at a depth below 12m (40ft), the message on the screen changes to **UNCONTROLLED ASCENT**. If a speed in excess of 12m/min (40ft/min) is maintained for two thirds or more of the depth at which the alarm was first triggered, ICON HD considers it a dive violation and the display will show **VIOLATION - ASCENT**.

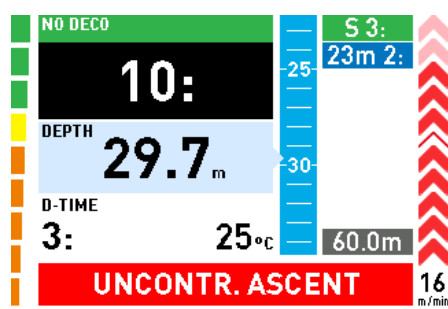


Fig. 28

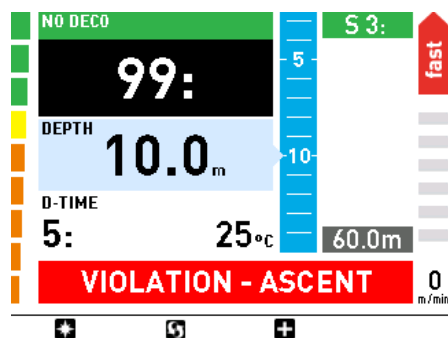


Fig. 29

In this case, if the diver attempts a repetitive dive after surfacing, ICON HD will only function as a depth gauge and timer (Bottom Timer mode), and it will display the message **LOCKED BY PREVIOUS DIVE**.

WARNING

You can disable the uncontrolled ascent function under the **Settings** submenu. This should only be done by highly experienced divers, who take full responsibility for the consequences of this action.

WARNING

You can remove the restriction to Bottom Timer mode after an uncontrolled ascent by clearing the tissue memory in the **Settings** submenu. This should only be done by highly experienced divers, who take full responsibility for the consequences of this action.

SAFETY STOP

If the maximum depth of a dive exceeds 10m (30ft), ICON HD suggests a 3 minute stop in the 3-6m (10-20ft) range at the end of the dive for additional safety.

Safety stops are displayed and managed in the same way as the deco stops described above though in green instead of orange. The images that follow show the various phases (Figures 30-31).

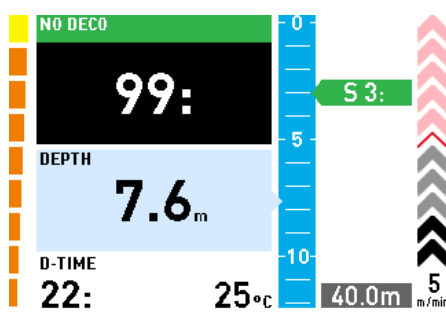


Fig. 30

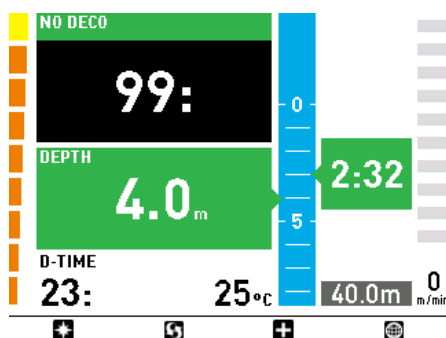


Fig. 31

In **PROFILE** mode, the safety stops are displayed with a green line (Figures 32-33).

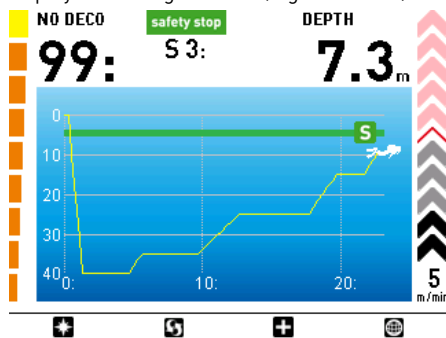


Fig. 32

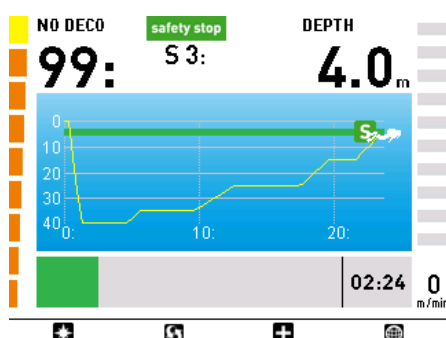


Fig. 33

If the diver moves outside the depth range mentioned above, the safety stop timer is halted. When the diver returns within the correct range, the countdown will resume from where it left off. If the diver returns to a depth deeper than 10 m (30 ft), ICON HD disregards the previous safety stop and schedules a new one.

NOTE

The algorithm does not introduce penalties if you skip the safety stop. Keep in mind, however, that a safety stop in the 3-6m (10-20ft) range significantly increases your safety!

SURFACING - AIR

When the diver reaches a depth of less than 1 m (3 ft), the dive is considered suspended. The dive time is not updated any longer and ICON HD displays the dive profile and all the relevant information (Surfacing mode, Figure 34). If the diver returns below 1.2m (4ft) within 3 minutes, ICON HD resumes the dive and updates the dive time to include the time spent on the surface. Else it considers the dive finished, records the data to the logbook and switches to **POST DIVE** mode.

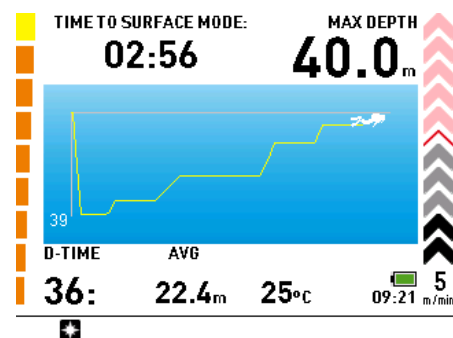


Fig. 34

WARNING

If an Air or Nitrox dive ends in an uncontrolled ascent or a missed deco stop, ICON HD will disable the use of Air and Nitrox mode for 24 hours, allowing the computer to be used only in Bottom Timer mode during that period.

POST DIVE MODE - AIR

After three minutes at a depth shallower than 1m(3ft), ICON HD switches to **POST DIVE** mode, showing surface interval, desaturation and no-fly times along with other information about the dive that has just ended (Figure 35).

WARNING

Do not fly or travel to high altitudes while the no-fly indication remains active.

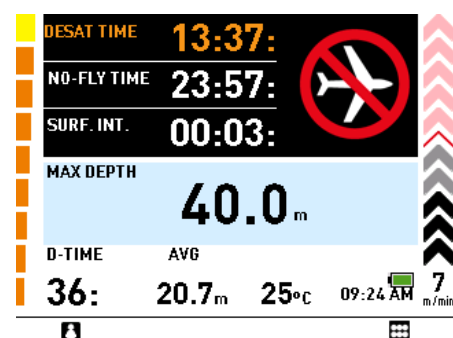



Fig. 35

The  button will call up the user's personal information (ICE).

While ICON HD is in **POST DIVE** mode, it continues to perform decompression-related calculations for as long as there is desaturation or no-fly time left. This is indicated by a red LED that blinks even when ICON HD is turned off.

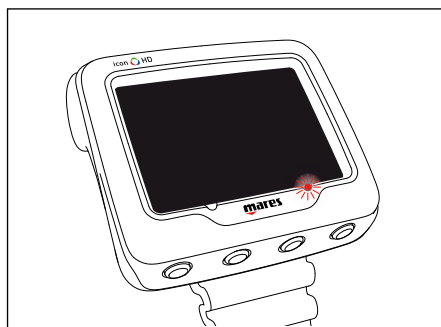


Fig. 36

⚠ WARNING

If the battery is completely drained during or right after a dive, ICON will lose the nitrogen loading information in the tissues, and hence it will calculate the next dive wrongly. Do not dive for 24 hours following a dive in which the battery was completely drained.

• NITROX

⚠ WARNING

Before reading this chapter, you must carefully read the chapter on dives with Air.

Due to the lower percentage of nitrogen in the breathing gas, oxygen-rich mixtures make it possible to extend the no-decompression limits as compared to the same dive with air. However, the higher oxygen content in the gas exposes the diver to oxygen toxicity hazards which are not generally encountered in recreational dives with compressed air. In Nitrox mode, ICON HD computes oxygen toxicity based on dive time, depth, and the oxygen percentage setting, providing indications that enable the diver to remain within safe limits of oxygen exposure. In order to dive with a Nitrox breathing gas, Nitrox mode must first be set in the **SETTINGS** submenu.

ICON HD manages the dive with Nitrox following the same procedures as an air dive. That means that you will have the same selection functions and procedures as those in Air mode. The only differences between compressed-air and Nitrox dives concern the monitoring and display of Nitrox dive parameters in addition to the normal air dive parameters (discussed in the Air section).

This section will examine the general parameters for Nitrox dives monitored by ICON HD, and the differences to how the data are displayed in Air mode.

⚠ WARNING

It is essential to correctly set the oxygen percentage in the gas to ensure correct readouts of:

- no-decompression time remaining;
- decompression stop times;
- alarm on exceeding the maximum permitted ppO_2 .

⚠ WARNING

Before the dive, make sure you have correctly set the Nitrox dive parameters: percentage of oxygen in the breathing gas and limit for the partial pressure of oxygen, which together determine the maximum operating depth (MOD) of the dive.

⚠ WARNING

The use of oxygen-rich gases exposes the diver to different hazards from those associated with compressed air. The diver should be aware of these risks and understand how to avoid them.

⚠ WARNING

ICON HD should be used for diving with oxygen-rich gases (Nitrox) only by divers who have the necessary certification. Lack of appropriate diver training may result in potentially serious injury.

CHECKING THE GENERAL DIVE PARAMETERS

OXYGEN PARTIAL PRESSURE

When the diver reaches a depth at which the ppO_2 exceeds the maximum limit entered in the corresponding parameter (from 1.2 to 1.6 bar), ICON HD triggers an alarm signaled by:

- depth shown in red;
- audible alarm;
- the message **MOD EXCEEDED** at the bottom of the display.

The alarm persists until the diver has ascended enough for the ppO_2 to return within the set limit. While the alarm is active, the map function is disabled and the compass can only be called up for 10 seconds, after which the default display with the alarm message is shown again.

⚠ WARNING

When the MOD alarm is triggered, ascend immediately until the alarm stops. Failure to do so could result in serious injury or death.

EFFECTS ON CENTRAL NERVOUS SYSTEM

Oxygen toxicity exposure is tracked on ICON HD by means of the CNS value, where CNS stands for Central Nervous System, based on currently accepted recommendations for

exposure limits. This toxicity is expressed as a percentage value which ranges from 0% to 100%. When the value exceeds 75%, it will turn red.

If the oxygen toxicity level reaches 75%, ascend to shallower depth to decrease oxygen loading and consider terminating the dive.

When the oxygen toxicity level approaches 100%, you must terminate the dive immediately.

⚠ WARNING

Diving with oxygen toxicity at levels of 75% or greater may put you into a potentially hazardous situation, which could result in serious injury or death.

PREDIVE PHASE

This operating mode remains active until the diver goes below 1.2m (4ft). The display looks as follows (Figures 37-38):

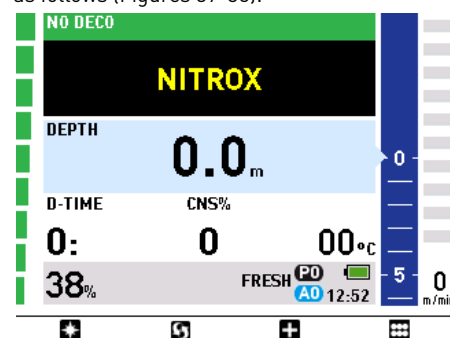


Fig. 37

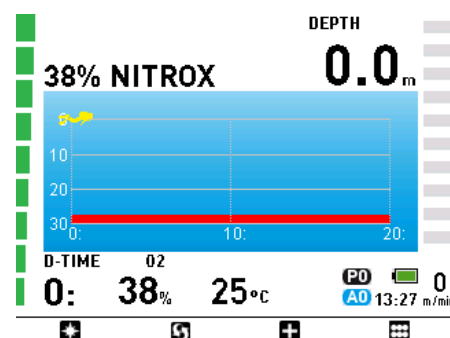


Fig. 38

NOTE

Before each dive, it is recommended that you enter the **SETTINGS** submenu and verify all the parameters that have been set.

⚠ WARNING

It is recommended that you put ICON HD into dive mode before every dive. Early in your dive, always check that the dive computer is switched on.

DIVE PHASE: "NO-DECOMPRESSION" DIVE

When the diver descends below 1.2 m (4 ft), the display switches to dive phase and starts displaying the dive data. The display looks as follows (Figures 39-40):

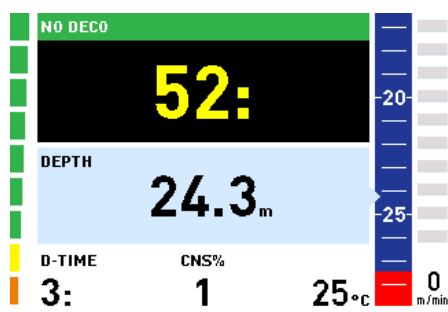


Fig. 39

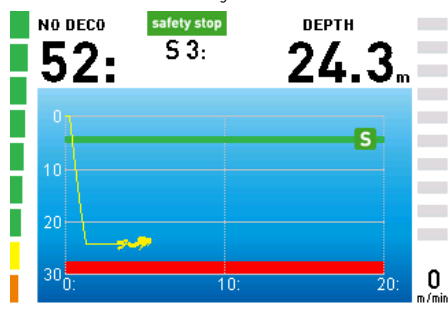


Fig. 40

The Maximum Operating Depth (MOD) is displayed graphically in red and is a function of the set maximum ppO₂.

Additional data is also shown, such as time of day, maximum depth, and various settings (Figures 41-42).

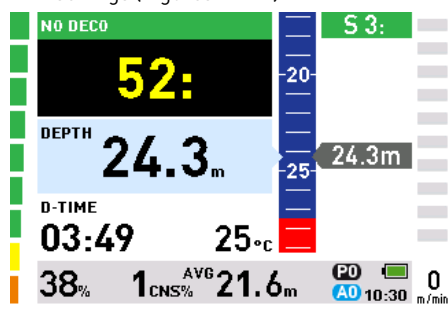


Fig. 41

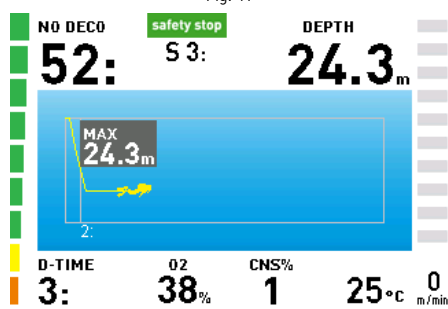


Fig. 42

DIVE PHASE: "DECOMPRESSION STOP" DIVE

If the diver does not ascend when the no stop time has expired, ICON HD switches to decompression stop mode, indicated by the appearance of the message ENTERING DECO at the bottom of the screen and by an audible alarm.

The switch to decompression stop mode is also indicated by the left bar graph, which now is completely orange (Figures 43-44).

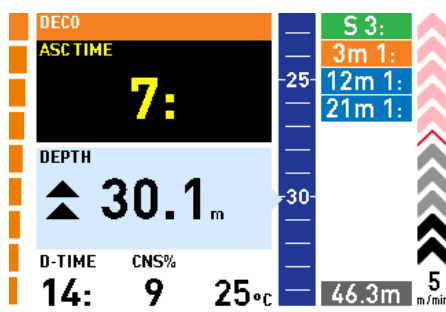


Fig. 43

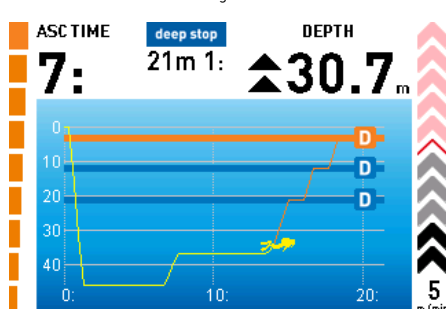


Fig. 44

Pressing **+** will display additional information (Figures 45-46).

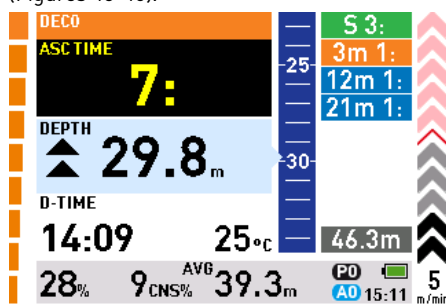


Fig. 45

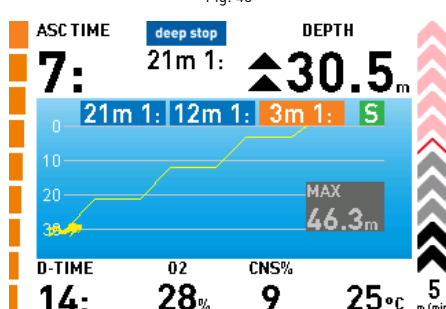


Fig. 46

NOTE

Indications for the deco phase and deep stops are the same as for Air mode.

WARNING

Decompression stops, deep stops, descent and ascent speeds, uncontrolled ascents, missed deco stops, and safety stops are all managed the same way as described for Air mode. Carefully read the chapter about dives with Air.

SURFACING MODE: NITROX

When the diver reaches a depth of less than 1 m (3 ft), the dive is considered suspended: the dive time is not updated any longer and ICON HD displays the dive profile and all the relevant information (Surfacing mode, Figure 46). If the diver returns below 1.2m (4ft) within 3 minutes, ICON HD resumes the dive and updates the dive time to include the time spent on the surface. Else it considers the dive finished, records the data to the logbook and switches to POST DIVE mode.

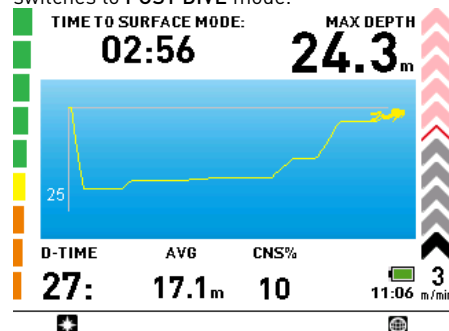


Fig. 47

WARNING

If an Air or Nitrox dive ends in an uncontrolled ascent or a missed deco stop, ICON HD will disable the use of Air and Nitrox modes for 24 hours, allowing the computer to be used only in Bottom Timer mode during that period.

POST DIVE MODE: NITROX

After three minutes at a depth shallower than 1m(3ft), ICON HD switches to POST DIVE mode, showing surface interval, desaturation and no-fly times along with other information about the dive that has just ended (Figure 48).

The **+** button will call up the user's personal information (ICE).

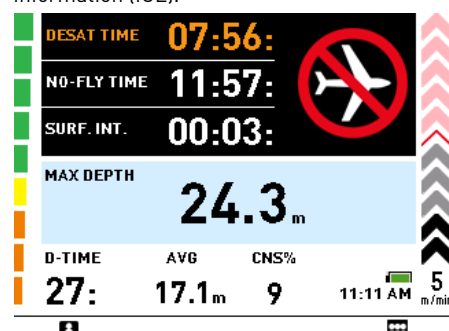


Fig. 48

WARNING

Do not fly or travel to high altitudes while the no-fly indication remains active.

WARNING

If the battery is completely drained during or right after a dive, ICON will lose the nitrogen loading information in the tissues, and hence it will calculate the next dive wrongly. Do not dive for 24 hours following a dive in which the battery was completely drained.

DIVING WITH MORE THAN ONE GAS

ICON HD allows divers to use up to three different gases during a single dive. During dives with more than one gas, the first will be the one with the lowest percentage of oxygen, the second that with the intermediate oxygen percentage, and third that with the highest percentage.

The depths at which the various gases are allowed is indicated graphically using different shades of blue (Figures 49-50):

1. bottom gas: dark blue
2. travel gas: light blue
3. deco gas: sky blue.

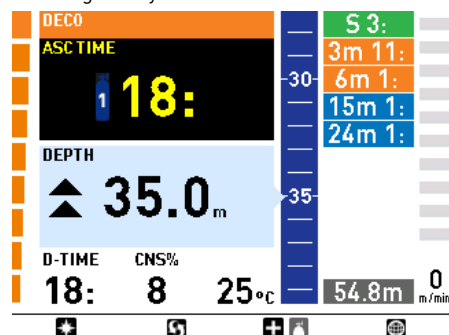


Fig. 49

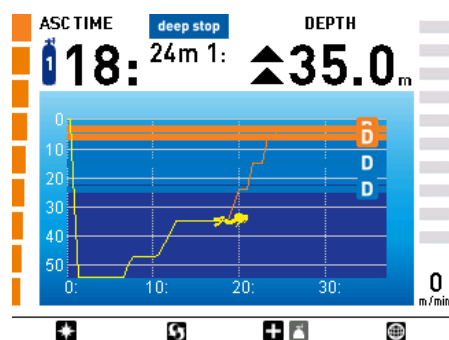


Fig. 50

NOTE

You can set all the gases to the same oxygen percentage.

WARNING

It is not possible to switch to a gas at a depth at which the oxygen partial pressure for that gas is greater than the set maximum value.

SWITCHING GAS

During Nitrox dives with the gas switching function enabled, the third button from the left has two functions, indicated by a double icon:

- Brief pressure: displays the additional information screen
- Prolonged pressure (1 second): displays the gas switch screen

ICON HD will indicate the anticipated gas switch and will allow the change only if the depth is shallower than the MOD corresponding to the set ppO_2 max. ICON HD will not allow the gas switch if you are deeper. During the ascent, when reaching the depth at which the gas switch is permitted, ICON HD sounds an audible signal and displays the message **GAS 1 -> GAS 2** at the bottom of the screen (Figure 51).

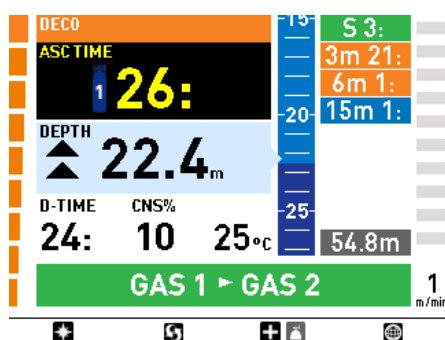


Fig. 51

At this point you can switch the gas by holding down for 1 second the button.

The following screen will appear, showing the gases available, and ICON HD will indicate the one ready to be selected with a yellow arrow (Figure 52).

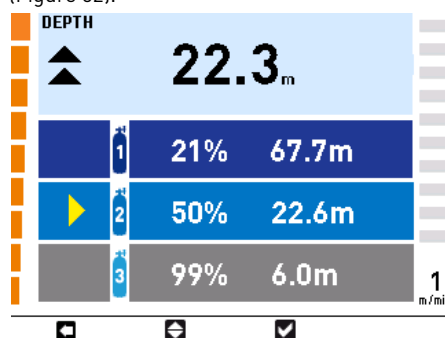


Fig. 52

Press to scroll through the available gases, then press to activate it. The display will now show the symbol of the new gas and, in the display, its oxygen concentration. (Figure 53).

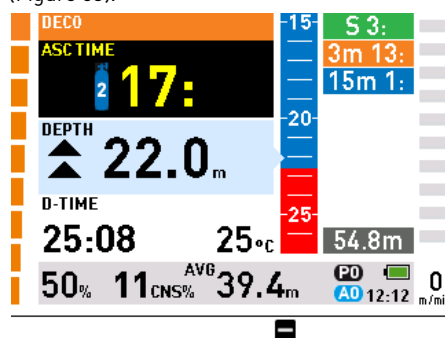


Fig. 53

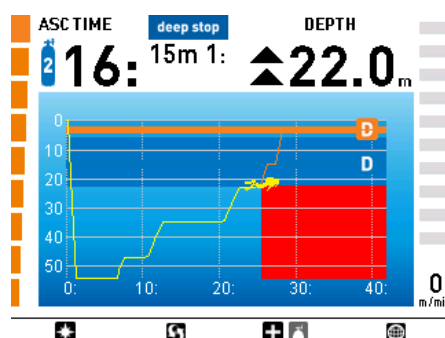


Fig. 54

NOTE

You can select another gas using the button, if permitted at that depth.

NOTE

You can exit this mode without changing the gas by pressing .

NOTE

If there is only one gas set, the computer will not enter this menu.

DIVE - BOTTOM TIMER (GAUGE)

In this mode, ICON HD operates as a depth gauge, electronic timer and stopwatch, but does not perform any decompression calculations.

Responsibility for planning the no-decompression limits or adequate decompression therefore lies entirely with the user.

PREDIVE - BOTTOM TIMER

This operating mode remains active until the diver goes below 1.2m (4ft). The display will look as follows (Figure 55):

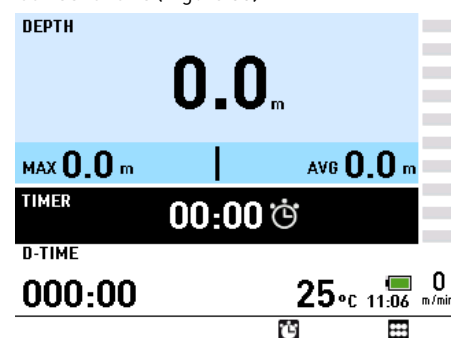


Fig. 55

NOTE

Before each dive, it is recommended that you enter the **Settings** submenu and verify all the parameters that have been set.

DIVE - BOTTOM TIMER

When the diver descends below 1.2 m (4 ft), the display switches to dive phase and starts displaying the dive data. Remaining in this mode for more than 5 seconds will cause ICON HD to begin recording the dive details in the logbook memory, such as current depth, maximum depth, and dive time (Figure 56).

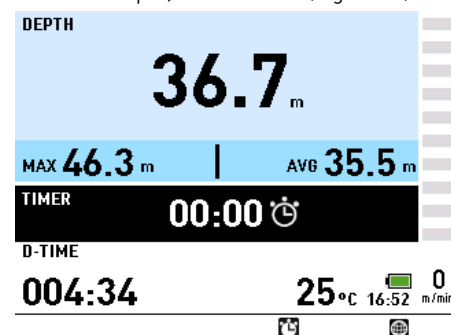



Fig. 56

Pressing will activate the stopwatch. Pressing the same button again will reset and restart the stopwatch.

The  button displays the map if one has been entered.

WARNING

After a dive in Bottom Timer mode, the transition to Air or Nitrox mode will be disabled for 24 hours (you can bypass this block by resetting the residual nitrogen in the Settings submenu).

WARNING

Clearing the residual nitrogen should only be done by your local Dive Center or Dive Store. Diving after clearing the residual nitrogen may put you into a potentially hazardous situation, which could result in serious injury or death.

WARNING

After resetting the residual nitrogen, do not dive for at least 24 hours or longer.

WARNING


If the computer is in a "rental" situation, the "new diver" must not have made a previous dive in the last 24 hours.

• VIOLATION-INDUCED BOTTOM TIMER MODE

The following violations can occur during an Air or Nitrox dive:

- Uncontrolled ascent.
- Missed deco stop.

In this case, **ICON HD** will restrict the use of Air and Nitrox mode for 24 hours, and will only allow operation in Bottom Timer mode, continuously displaying the message **LOCKED BY PREVIOUS DIVE**.

The graphic indications are the same as those given in Bottom Timer mode, with the addition of the icon , which indicates that a violation was committed in a previous dive and the computer is "locked" in Bottom Timer mode.

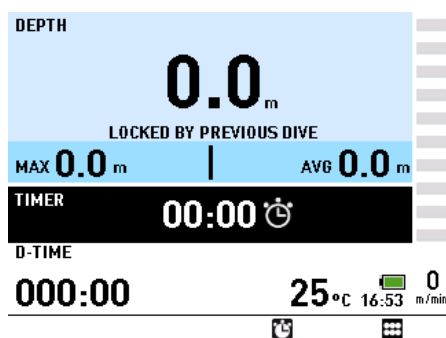



Fig. 57

• COMPASS MODE

The compass is active both on the surface and during the dive.

ON THE SURFACE

To enter **COMPASS** mode when on the surface, use the **SELECT** button when the compass icon is highlighted in the main menu.

The sighting function can be activated by pressing .

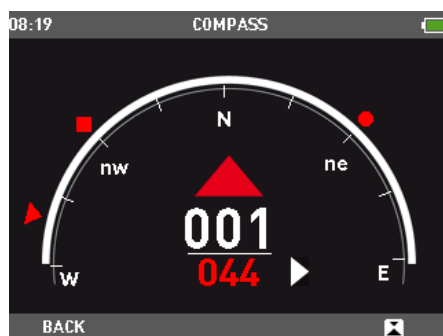





Fig. 58

To set a new direction, press  again. Press and hold  for two seconds to remove the sighting.

Use the **BACK** button to return to the Main Menu.

DURING THE DIVE

During the dive, pressing  will access the compass function (Figure 59).

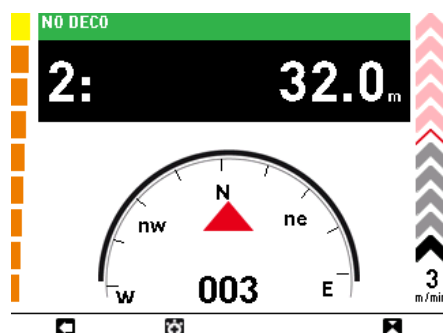





Fig. 59

In this mode, the no deco time (ascent time for decompression stop dives and dive time for Bottom Timer dives), the current depth, and the ascent rate are visible.

Pressing  button brings up the stopwatch. Press  button to start the stopwatch. Press  button to remove the stopwatch from the screen (Figure 60).

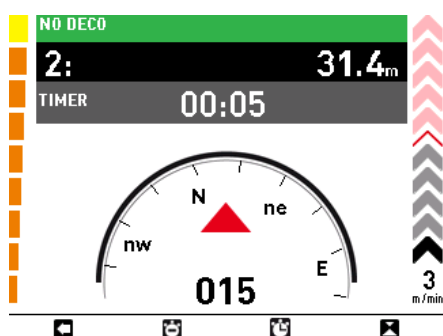



Fig. 60

Pressing the left button exits the compass mode.

ACTIVATING SIGHTING

Divers can activate sighting so that the compass will show the selected direction. To do this, press  (Figure 61).

ICON HD places symbols at 90, 120 and 180 degrees off the set direction as an aid in navigation on square, triangular and reciprocal courses.

Pressing the same button again sets a new sighting direction. Press and hold the same button to remove the sighting.

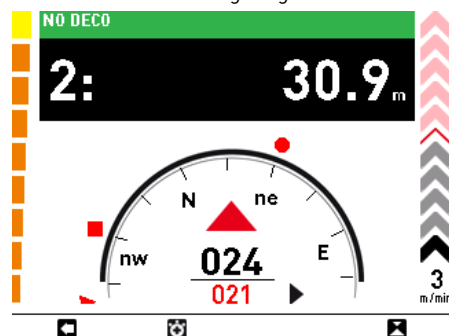



Fig. 61

NOTE

This display remains active until you press .

• MAPS

Maps loaded into the memory of **ICON HD** can be viewed using the special submenu. You can select a map that you can consult during the dive using the **SETTINGS** submenu. The maps can be entered using the software interface.

VIEWING A MAP ON THE SURFACE

To access the **MAPS** submenu, use the **SELECT** button to choose the **MAPS** icon from the main menu.

Use the central buttons to scroll through the list of maps that have been loaded (Figure 62). Use the **VIEW** button to display the selected map.

Use the **BACK** button to return to the previous menu.

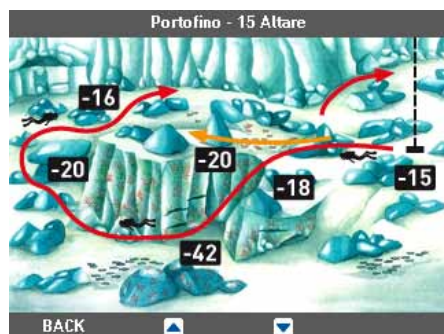


Fig. 62

LOADING A MAP FOR VIEWING DURING THE DIVE

If you want to view a map during the dive, you need to select it using the **SETTINGS** submenu (**SETTINGS** -> **SET DIVE** -> **LINKED MAP**).

VIEWING A MAP DURING THE DIVE

You can view the preselected map during the dive using the button (Figure 63).

NOTE
You can view one map only while diving

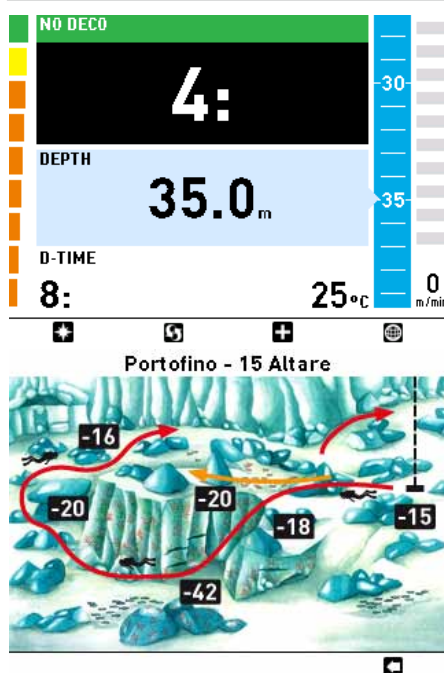


Fig. 63

Use the button to return to the previous screen.

NOTE

The image is static; it does not follow the dive profile.

NOTE

The map remains on the display for 10 seconds, after which the screen reverts to the default display.

• PHOTO

On the surface you can view photos or other files in .jpg format. Photos can be entered using the software interface.

VIEWING PHOTOS

To enter the **PHOTOS** submenu, use the **SELECT** button when the **PHOTOS** icon is highlighted in the main menu (Figure 64).

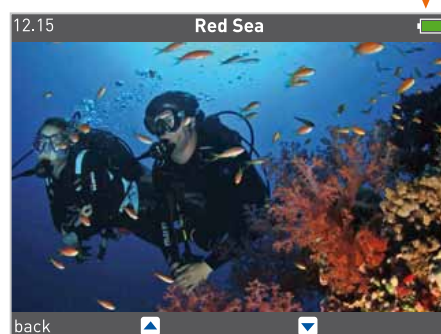
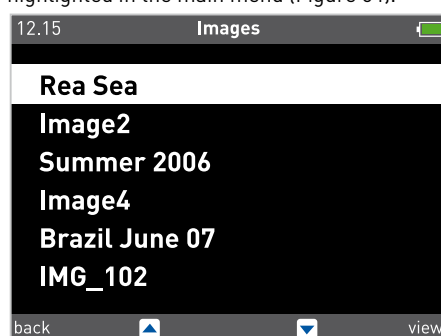


Fig. 64

Use the central buttons to scroll through the list of photos that have been loaded. Use the **VIEW** button to display the selected photo. Use the **BACK** button to return to the previous menu.

• BATTERY

ICON HD is supplied with a high-efficiency lithium-ion rechargeable battery that has no memory effect. A single charge is sufficient for approximately 6 dives.

NOTE

Battery life depends GREATLY on the usage of the backlight AND the length of dives.

The battery charges fully in about 4 hours.

NOTE

The battery lifetime is approximately 500 charging cycles.

NOTE

The information stored will not be lost even if the battery runs completely out of power. This, however, does not apply to residual nitrogen information.

RECHARGING THE BATTERY

The battery is charged using a USB connection with a special adapter that can be connected to a power supply or a USB port on a computer with a standard USB cable (Figure 65).



Fig. 65

The adapter, the cable, and the power supply are included with your **ICON HD**. If **ICON HD** is turned off and you begin charging it, you will see the following (Figure 66):

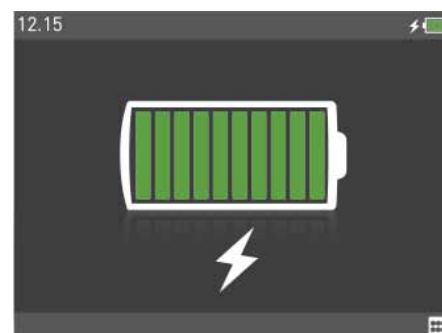
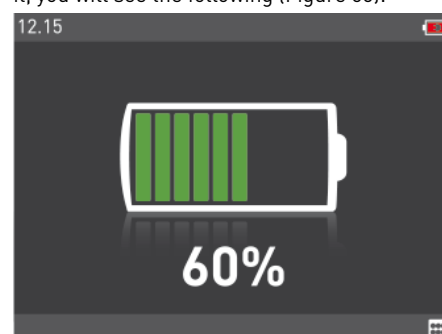


Fig. 66

NOTE

Make sure that the contacts are clean before connecting the charger.

Press the **SELECT** button to return to the main menu. The charging process will continue. If **ICON HD** is turned on and you begin charging it, you will see an indication that the battery is charging on the upper right.

CHECKING THE BATTERY POWER LEVEL

ICON HD constantly monitors the battery power level.

On the surface, the power level is indicated by an icon on the upper right: this can be completely green, partially green, yellow or red.

- As long as it is all green or partially green, you have enough battery charge remaining for a few dives.
- If it is yellow, the **CHARGE BATTERY** screen appears upon turning on **ICON HD**, but you can override this by pressing the right button (Figura 67 top). You do however have only limited battery charge left and can do one dive only at the most. It is recommended that you charge **ICON HD** before diving if the battery icon is yellow.
- If the battery icon is red, the **CHARGE BATTERY** screen will appear and you cannot override it (Figura 67 bottom). **ICON HD** will not function as a dive computer until it is recharged.



Fig. 67

WARNING

When the computer has not been used for a long time, we recommend that you check the battery power, and recharge it if necessary.

WARNING

Temperature can noticeably affect battery performance. The icon that signals a low battery level may appear due to low temperatures, even if you think that the battery should have enough charge left.

WARNING

We advise that you recharge the battery if you intend to dive in cold water.

During the dive, the battery icon is visible in the lower right corner upon pressing **+**. If **ICON HD** detects that the battery power level is getting low, it will show the message **LOW BATTERY** on the display. In a **LOW BATTERY** situation, map and compass functions are disabled, as well as audible signals, and the backlight is reduced to a low-power safety level (readability of the display is ensured). You can still access the additional information via the **+** button, but the **LOW BATTERY** message will reappear after 4s. (Figure 68).

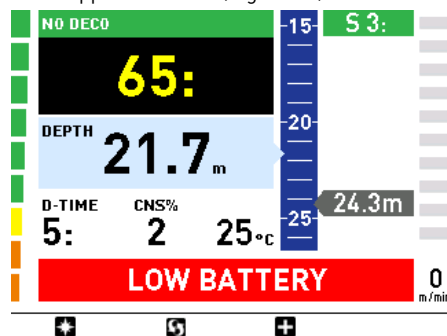


Fig. 68

WARNING

When this warning appears, you should stop the dive, safely, without delay.

WARNING

If the battery is completely drained during or right after a dive, **ICON** will lose the nitrogen loading information in the tissues, and hence it will calculate the next dive wrongly. Do not dive for 24 hours following a dive in which the battery was completely drained.

• SETTINGS MENU

To enter this submenu, use the **SELECT** button when the **SETTINGS** icon is highlighted in the main menu.

In this submenu you can check or change parameters for the **ICON HD**.

SET DIVE

With the **DIVE** setting you can set the parameters for the dive.

WARNING

Before diving, make sure you have correctly set the units of measurement. An incorrect setting could cause confusion during the dive and lead to underwater behavior errors.

DIVE - MODE

Set the dive type: Air, Nitrox, Bottom Timer.

If you select a Nitrox dive, move to the next window where you can change the oxygen concentration and the ppO_2 max (Figure 69).

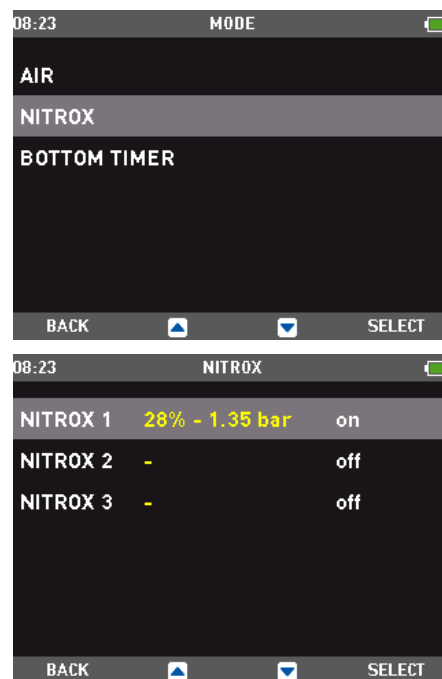


Fig. 69

WARNING

The use of oxygen-rich gases exposes the diver to different hazards from those associated with compressed air. The diver should be aware of these risks and understand how to avoid them.

WARNING

Setting the oxygen percentage in the breathing gas correctly is crucial for precise estimates of:

- no-decompression time remaining;
- decompression stop times;
- alarm for exceeding the maximum ppO_2 .

DIVE - NITROX - %O₂

The percentage of oxygen can be set to:

Nitrox 1: 21% - 50%

Nitrox 2: 21% - 99%

Nitrox 3: 21% - 99%

Press **+** or **-** to set the oxygen concentration to the desired value. Then press **NEXT** to set the value of the ppO_2 max. Note that the **MOD** changes as a function of the %O₂ and the ppO_2 max and cannot be changed independently. Press **SET** to save the setting and exit the menu. (Figure 70).

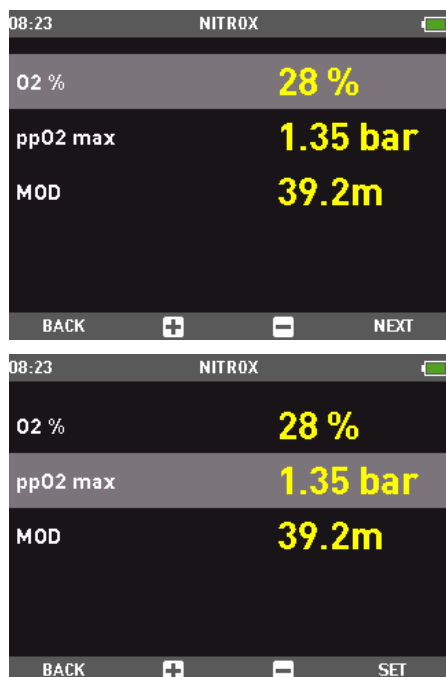


Fig. 70

DIVE - NITROX - OXYGEN PARTIAL PRESSURE

ICON HD features an alarm that signals when the maximum oxygen pressure partial has been exceeded. This value can be adjusted between 1.2 bar and 1.6 bar, in increments of 0.05 bar.

NOTE

While setting the oxygen concentration, ICON HD shows the MAXIMUM OPERATING DEPTH (MOD) which is a function of the set oxygen concentration and ppO2max.

SETTING MORE THAN ONE GAS

ICON HD allows you to use up to 3 different gases during a single dive.

If you dive using just one gas, select **NITROX 1** and deselect the other two. For dives with two gases, select **NITROX 1** and **2** and deselect the third.

The characteristics of the three gases must be entered in the computer before the dive. **It will then be your responsibility** to tell ICON HD which gas is currently being used during the various phases of the dive.

If you want to dive using multiple gases, you will need to enable the gases and set the individual parameters for each one: %O₂ and ppO₂ max.

The procedure for setting the individual parameters is described above. First of all, you must enable the gases you want to use, using the options **NITROX 2** and **NITROX 3**.

The figures that follow describe how to enable **Nitrox 2**. Press **+** to enable Nitrox 2, then press **NEXT**. Now press **+** or **-** to set the value of the oxygen concentration, then press **NEXT** to set the ppO₂max. Press **SET** to save the setting and exit the menu. (Figure 71)

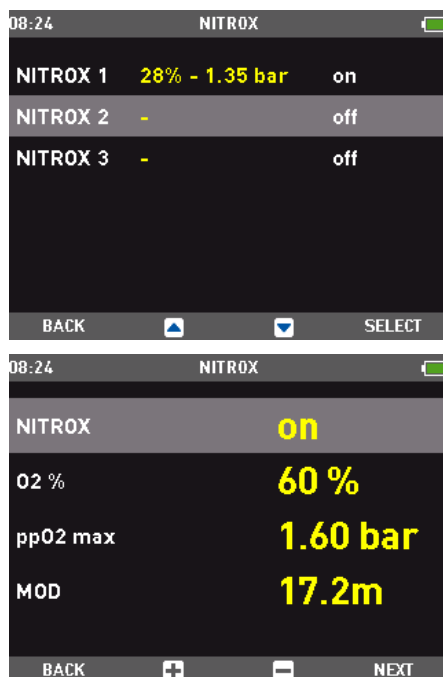


Fig. 71



Fig. 72

Press **BACK** to return to the Nitrox menu, which will display all the characteristics set for each gas (Figure 72).

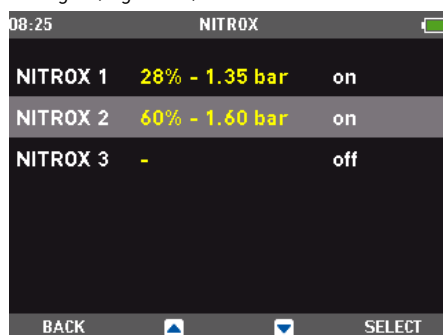


Fig. 73

NOTE

The second gas cannot have a %O₂ value higher than the third gas.

DIVE - P FACTOR

ICON HD lets you set an additional personal safety factor to increase your safety during the dive. The safety factor should be used by inexperienced divers, for strenuous dives or when diving after a prolonged period of inactivity. ICON HD shows the personal safety factor in use on the display: P0 is the standard program, set as default, whereas P1 and P2 have incremental safety margins.

DIVE - ALTITUDE

Set the altitude at which you'll be diving. You can select from the following intervals:

- A0 [0-700 m][0-2296 ft]
- A1 [700-1500 m][2296-4921 ft]
- A2 [1500-2400 m][4921-7874 ft]
- A3 [2400-3700 m][7874-12139 ft]

NOTE

This setting cannot be changed during the dive. Therefore, carefully check all settings before going underwater.

WARNING

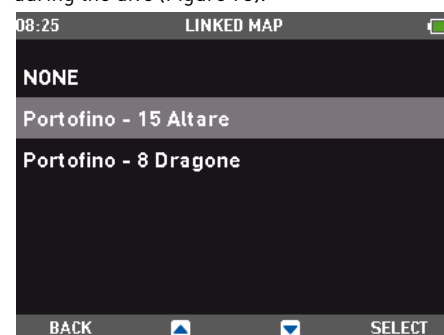
Do not dive in mountain lakes without having first checked that the appropriate altitude program is selected.

DIVE - WATER

For the greatest precision, you must set ICON HD to salt or fresh water. Check this setting often, especially if you use the instrument in a variety of environments (lake, sea, swimming pool).

DIVE - LINKED MAP

This function allows you to select a map to use during the dive (Figure 73).



NOTE

You can decide not to load any map onto ICON HD. In this case, the corresponding button is disabled during the dive.

DIVE - DISPLAY

Sets the default display in dive mode (EXTENDED, PROFILE).

DIVE - AUDIBLE ALARMS

This function enables or disables the audible alarms.

NOTE

You cannot activate the third gas if you haven't activated the second gas.

NOTE

The alarm for any deep stop is always enabled.

WARNING

The audible alarms should only be disabled by experienced divers, who take full responsibility for this operation.

DIVE - UNCONTROLLED ASCENT

This function enables or disables the "computer lock" function in case of uncontrolled ascent, which allows you to prevent **ICON HD** from locking out after a rapid ascent. The feature can be useful for instructors who need to practice emergency ascents.

WARNING

A rapid ascent increases the risk of decompression sickness (DCS).

WARNING

This function is intended only for highly experienced divers, who take full responsibility for the consequences of disabling this function.

DIVE - ERASE DESAT

Use this function to clear the residual nitrogen memory in the tissue compartments.

WARNING

This option is intended only for Dive Centers and Dive Stores.

WARNING

Users who clear the residual nitrogen cannot use the instrument for repetitive dives. After this operation, do not dive with **ICON HD** if you have already dived within the previous 24 hours.

Diving after clearing the residual nitrogen may put you into a potentially hazardous situation, which could result in serious injury or death.

WARNING

After resetting the residual nitrogen, do not dive for at least 24 hours or longer.

WARNING

If the computer is in a "rental" situation, the "new diver" must not have made a previous dive in the last 24 hours.

To clear the residual nitrogen, enter the code 1234.

Enter the numbers in sequence: 1, 2, 3, 4. After each entry, confirm your choice with the **NEXT** button.

After getting the confirmation from **ICON HD**, press the **BACK** button to return to the previous menu (Figure 74).

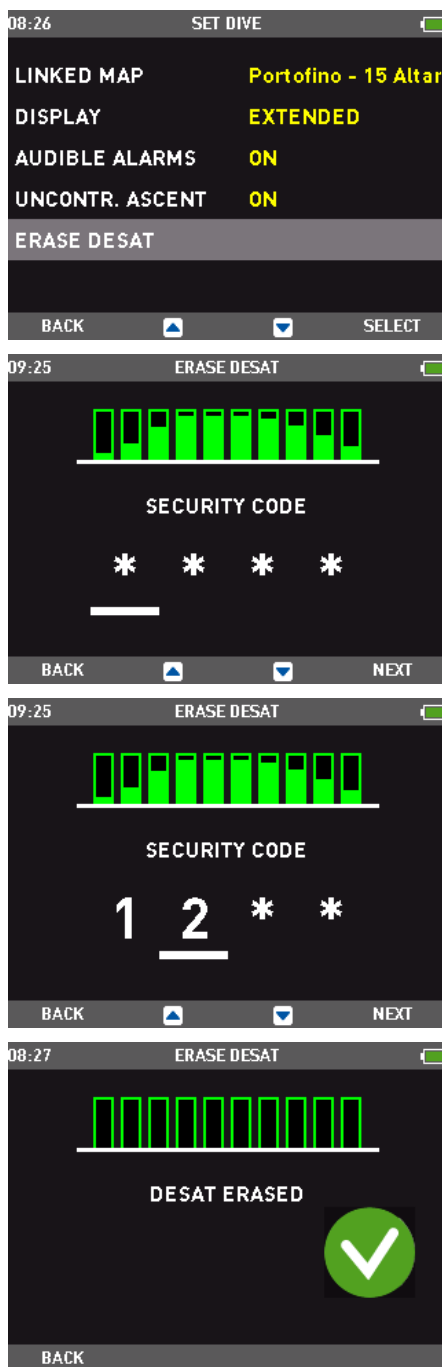


Fig. 74

NOTE

If you decide to exit from this setting without clearing the tissues, simply select the **BACK** button to exit this mode.

SET COMPUTER

In this submenu you can set the general functions of **ICON HD**.

COMPUTER - LANGUAGE

Set the language used for alarm messages during the dive and menu navigation on the surface.

COMPUTER - TIME

Change the clock and calendar

- Format: Select 12 or 24 hour format.
- Time: Change the time.
- Date: Change the date.

After making your changes, use the **BACK** button to return to the previous submenu.

COMPUTER - UNITS

Set metric or imperial units of measure.

COMPUTER - BRIGHTNESS

You can adjust the display brightness using a screen that lets you see what the setting will look like (Figure 75).

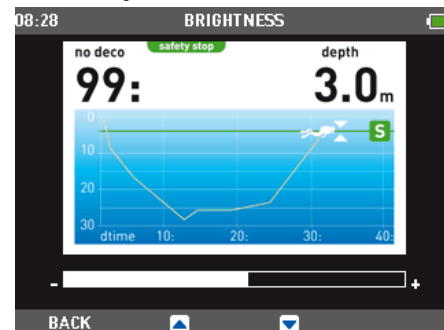


Fig. 75

COMPUTER - LCD ADJUSTMENTS

This setting provides a test screen you can use to optimize how the display looks. Make your changes using the central buttons. Confirm the new setting using the **SELECT** button.

COMPUTER - BACKLIGHT TIMER

Set the duration of the backlight in normal mode during the dive: from 10 seconds to always-on mode (Figure 76).

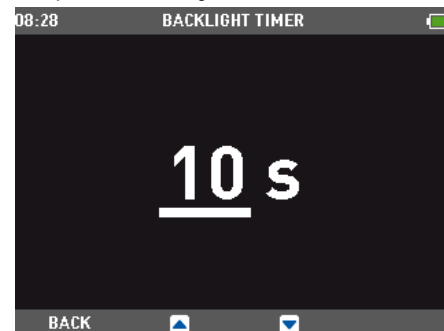


Fig. 76

NOTE

Using the backlight continuously in normal mode instead of low power mode will shorten battery life.

COMPUTER - DECLINATION

Compensates for the difference between geographic north and magnetic north. To perform this operation you need to set the magnetic declination value. The declination is provided on nautical maps or topographical maps for the area. Enter the declination angle first, and then the direction (Figure 77).

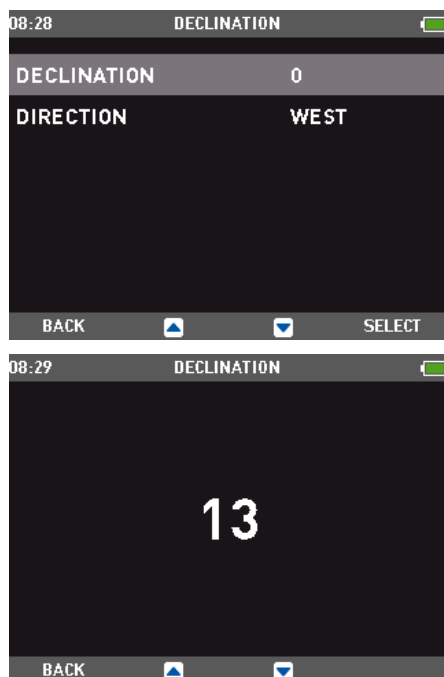


Fig. 77

COMPASS CALIBRATION

The digital compass in **ICON HD** is calibrated from the factory and does not require, under normal circumstances, any further maintenance. In certain instances, however, such as after exposure to extremely intense magnetic fields, it may be necessary to recalibrate the compass to ensure its accuracy. If you notice an obvious deviation in the indication of the compass, access this menu and perform the calibration as described below.

First you must enter the security code, 1234. Then the following image will appear on the display.

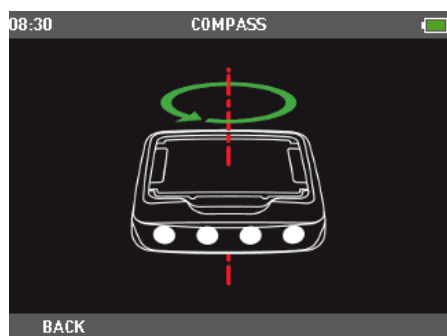


Fig. 78

Now hold **ICON HD** horizontal to the surface and perform one slow counterclockwise circle. Once you have finished the circle, the calibration is completed. Press **BACK** to return to the **SET COMPUTER** menu.

ABOUT ICON HD

This submenu provides various information about the hardware and software of your **ICON HD**. It also lists information about the use of the dive computer, such as longest dive, deepest dive, total number of dives and total dive time. In addition, you can revert to the original settings configuration via the **FACTORY RESET** option. The option **FACTORY**

MAINTENANCE is for use by authorized personnel only.

• LOGBOOK

Using the **LOGBOOK** submenu, you can display all the information about your most recent dives.

To enter this submenu, use the **SELECT** button when the **LOGBOOK** icon is highlighted in the main menu.

The first page of the logbook contains the list of dives, numbered progressively from the most recent to the oldest (Figure 79).

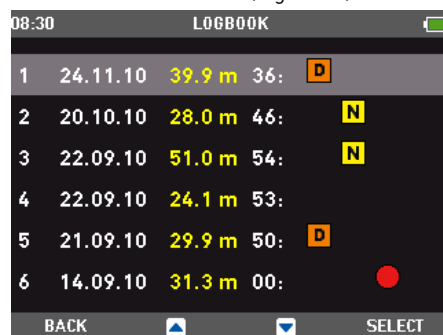


Fig. 79

The following icons are included when applicable:

- N** NITROX DIVE
- BT** BOTTOM TIMER DIVE
- D** DECO DIVE
- VIOLATION COMMITTED

If the computer runs out of memory during a new dive, the oldest dive will be erased to allow the information of the current dive to be saved.

ICON HD can save more than 100 hours of dive profile at 5 second sampling rate. Press the **SELECT** icon to view the selected dive in digital mode.

DIGITAL VIEW

This format displays all information about the dive.

Use the central buttons to scroll through your other dives.

Use the **PROFILE** button to move to a graphic display of the current dive.

Use the **BACK** button to return to the previous menu (Figure 80).

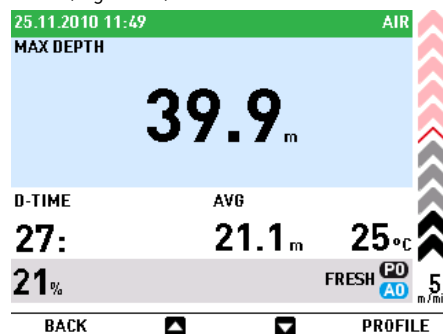


Fig. 80

NOTE

The battery icon shows the battery power level in real time, not that of the dive displayed in the logbook.

PROFILE VIEW

This mode shows a graphic display of the dive. Use the central buttons to scroll through your dives.

Press the **BACK** button to return to the digital display (Figure 81).

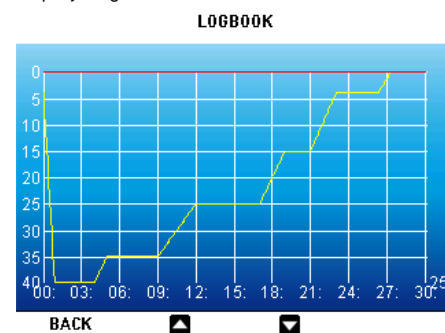


Fig. 81

NOTE

In Bottom Timer dives with a violation present, the uncontrolled ascent and missed deco stop icons refer to violations committed during the previous dive.

• DIVE PLANNER

SCROLLING OF NO DECOMPRESSION LIMITS

This function allows you to scroll through the no decompression limits, automatically taking into account the current residual saturation of the tissue compartments from a preceding dive.

The times shown when scrolling the no decompression limits take into account the information entered under the **SETTINGS** submenu: altitude, personal safety factor, Air, or in the case of Nitrox, the values for the oxygen percentage and its maximum partial pressure.

Select the **PLANNER** function using the central buttons.

Press the **SELECT** button to display the dive planner table, which shows the depth in increments of 3 m (10 ft), down to 48 m (157 ft). For each depth, the display shows the corresponding no deco time expressed in minutes.

If Nitrox mode is selected, the maximum depth shown in the planner is limited by the MOD. Press **BACK** to return to the previous menu.

NOTE

The **PLANNER** function is enabled only if either Air or Nitrox mode is set.

• BUTTON LOCK

This function allows you to lock the buttons so that the computer is not inadvertently

turned on. This is very useful for instance while travelling to a dive site, since otherwise **ICON HD** might unintentionally drain the battery before the dive.

To lock the buttons, from the main menu press **SELECT** for one second, or press it normally when the **BUTTON LOCK** icon is highlighted. This will blacken the display.

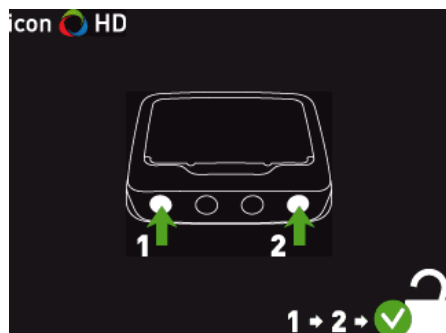


Fig. 82

To unlock the buttons, press the left button followed by pressing the right button. The main display now reappears.

• HOW TO CONNECT ICON HD TO A PC

Place **ICON HD** facing downward and plug the interface into the proper seat as shown in the following figures: if the connection has been made correctly, the active connection message will be displayed.

At this point, **ICON HD** is ready to interact with the PC through the software interface.



Fig. 83



Fig. 84

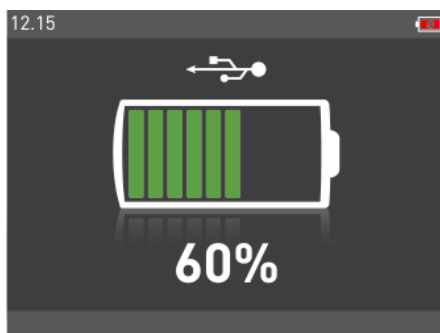


Fig. 85

• SOFTWARE UPGRADE

When Mares develops new functional options for the **ICON HD**, you will be able to upgrade your software.

The **ICON HD** software can be upgraded by downloading the new version from the Mares website and using the dedicated interface.

• FAQ

Q: Are the colors visible in deep water?

A: The colors are visible at any depth because the display is backlit.

Q: What happens if **ICON HD** isn't set to dive mode when I start the dive?

A: If dive mode is not set when you start the dive, **ICON HD** will still enable dive mode within 20 seconds of when you descend past 1.2 m (4 ft).

Q: What happens if there is an uncontrolled ascent or missed decompression stop during an Air or Nitrox dive?

A: At the end of the dive, **ICON HD** will be in a locked mode, and subsequent dives within 24 hours will be possible in Bottom Timer mode only.

Q: What indicates that Bottom Timer mode was chosen by the user, rather than forced as a result of underwater violations during the preceding dive?

A: During the dive and in surface mode, in addition to the standard indications shown in Bottom Timer mode, there is a special icon that indicates that **ICON HD** is blocked.

Q: If I select Air or Nitrox mode after completing a dive in Bottom Timer mode, how will the new dive be managed?

A: **ICON HD** will not permit an Air or Nitrox dive within 24 hours of a dive in Bottom Timer mode.

Q: Why is the dive planner sometimes disabled after a dive?

A: This happens if you end a dive with an missed deco stop or an uncontrolled ascent. When this happens, **ICON HD** switches to Bottom Timer mode, and disables use of Air and Nitrox modes for 24 hours.

Q: Where can I find the product serial number?

A: In the **SETTINGS** submenu, use the central buttons to select **About ICON HD**.

Q: If I already own an IRIS or DRAK interface, can I use it with the **ICON HD**?

A: No. You need to use the specific interface provided with the computer.

Q: Are the 3 minutes of the safety stop included in the ascent time?

A: No.

Q: What is the deep stop?

A: To minimize the likelihood of critical bubble seed formation, in the case of decompression dives or dives close to the no-deco limit, **ICON HD** prompts for one or more one-minute deep stops depending on the dive profile. This is one of the special characteristics of the RGBM Mares-Wienke Algorithm.

Q: If I ascend beyond the deep stop depth, can I go back down to do it?

A: If you ascent beyond the deep stop depth by more than a meter, this stop will be removed.

Q: Why doesn't the deep stop icon appear during my dive?

A: The deep stop icon only appears during decompression-stop dives or dives very close to the no-decompression limits.

• MAINTENANCE

After diving in seawater it is recommended that you rinse **ICON HD** with fresh water to remove any salt residues. Do not use chemical products. Simply rinse **ICON HD** under running water.

NOTE

If you notice signs of moisture on the inner wall of the mineral glass, take your **ICON HD** immediately to an authorized Mares service center.

WARNING

The mineral glass is not exempt from scratches resulting from improper use.

WARNING

Do not blow compressed air onto **ICON HD**, because it could damage the pressure sensor area.

REPLACING THE BATTERY

ICON HD uses a rechargeable battery, so it may be necessary to replace it after approximately 500 charging cycles. The battery should only be replaced in a center authorized by Mares. Mares declines all responsibility for any damage caused by replacing the battery.

NOTE

Dispose of the old battery properly. Mares adopts a policy of respect for the environment, and urges use of the appropriate separated waste collection services.

TECHNICAL/FUNCTIONAL CHARACTERISTICS

GENERAL CHARACTERISTICS

Depth measurement

- Maximum displayed depth 150m (492 ft).
- Measurement resolution:
 - 10 cm (1 ft) in the interval 0-100 m (0-328 ft).
 - 1 m (1 ft) in the interval 100-150 m (328-492 ft).
- Temperature compensation of the measurement between -10 and +50 °C

{14/122 °F}.

- Measurement accuracy from 0 to 80 m (0-262 ft): ±1% of full scale.

Temperature measurement

- Measurement range: -10/+50 °C {14/122°F}.
- Measurement resolution: 1°C (1°F).
- Measurement accuracy: ±2°C (±4°F).
- Temperature display: Celsius (°C)/ Fahrenheit (°F).
- Operating temperature: from -10 to +50°C {14/122 °F}.
- Storage temperature: from -20 to +70°C (-4/+158°F).

Digital compass Yes, with TILT compensation

Characteristics of the Battery

- Rechargeable lithium-ion battery
- Operating temperature:
 - Discharging: from -10 to +50°C {14/122°F}
 - Charging: from -0 to +45°C {32/113°F}
- Battery life from one charge:
 - approx 6 dives
- Lifetime of the battery:
 - 500 charging cycles

NOTE

Battery life calculations assume dives that are 45 minutes long and carried out in temperate waters. Battery life is affected by water temperature and decreases as the water temperature decreases. Overall the life of the battery will vary depending on the use of ICON HD.

Battery charge indicator: Yes

Battery charger: Yes

Backlight [permanent]: Yes

Audible alarms

- Omitted decompression stop
- Excessive ascent rate
- No-decompression limits reached
- Deep stop depth reached
- Maximum Operating Depth reached

Options for units of measure: Metric/Imperial: Yes

Fresh and salt water settings: Yes

Dive Planner: Yes, from 12 - 48 m (39 - 157 ft)

Seabed map: Yes, available during the dive

Images: Yes

ICE data (In Case of Emergency): Yes

PC Interface: Yes, included

Software updatable by the end user: Yes

DISPLAY

Diagonal: 2.7"

Technology: TFT

Resolution: QVGA 320*240

Colors: 256000

Brightness: 420 cd/m²

MECHANICAL CHARACTERISTICS

Mineral glass: Yes

Buttons: 4

OPERATING MODES DURING THE DIVE

Air: Yes

Nitrox: Yes

Option to use different gases: 3 gases

Bottom Timer/Gauge: Yes, with stopwatch

DIVE MODE

EXTENDED display: Yes

PROFILE display: Yes

Digital descent speed indicator (m/min-ft/min): Yes

Digital ascent speed indicator (m/min-ft/min): Yes

Full decompression information: Yes

Decompression model: RGBM Mares-Wienke (10 tissues)

Personal safety factor setting: Yes

Altitude setting: Yes

Safety stop: Yes

Deep stops: Yes

NITROX CHARACTERISTICS

Oxygen concentration range: 21-100%

ppO₂ range: 1.2-1.6bar

Oxygen toxicity computation: Yes

LOGBOOK

Logbook size: over 100 dive hours

Sampling interval in the profile: 5 s

Display of profile points: graphic

• WARRANTY

MARES products are guaranteed for a period of two years subject to the following limitations and conditions:

The warranty is non-transferable and applies strictly to the original purchaser.

Mares products are warranted free from defects in materials and workmanship: components that, upon technical inspection, are found to be defective, will be replaced free of charge.

Mares S.p.A. declines all responsibility for accidents of any kind that result from tampering or incorrect use of its products. Any products returned for overhaul or repairs under warranty, or for any other reason, must be forwarded exclusively via the vendor and accompanied with a proof of purchase slip. Products travel at the risk of the sender.

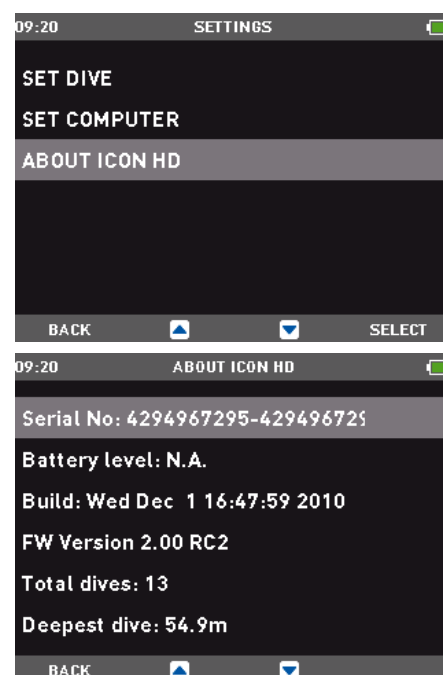
WARRANTY EXCLUSIONS

Damage caused by water seepage resulting from improper use (e.g. dirty seal, battery compartment closed incorrectly, etc.).
Rupture or scratching of the case, glass or strap as a result of violent impact or blows.
Damage resulting from excessive exposure to elevated or low temperatures.
Damage caused by the use of compressed air to clean the dive computer.

HOW TO FIND THE PRODUCT SERIAL NUMBER

To see the product serial number, enter the **SETTINGS** submenu, go to **About ICON HD** using the central buttons, and press **SELECT**.

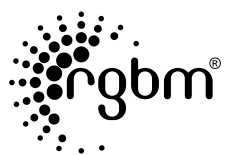
This number should be noted on the warranty certificate in the package. The serial number is also found on the **ICON HD** packaging.



• DISPOSAL OF THE DEVICE



Dispose of this device as electronic waste. Do not throw it away with regular rubbish. If you prefer, you can return the device to your local Mares dealer.



Algorithm



Deep Stops

