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# NEMO AIR

Dive computer

**User's Guide** 

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# QUICK GUIDE



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# • NEMO AIR DIVE COMPUTER

#### Congratulations!

Your new Nemo Air dive computer is the result of the latest Mares technology, and has been designed to guarantee maximum safety, efficiency, reliability and long life.

Simple and easy to use, it is ideal for all types of dives.

This manual contains all the instructions for its use.

Mares thanks you for your choice and urges you to always practice safe and responsible diving. Enjoy!

No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form without the written permission of Mares S.p.A.

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.

#### IMPORTANT WARNINGS

# A WARNING

Before the dive you must be sure to have read and understood the entire manual.

### **WARNING**

Correctly setting the tank volume is essential for obtaining a precise indication of the breathing rate.

#### ▲ WARNING

When using oxygen rich (EAN) mixtures, you are advised to replace the high pressure (HP) hose every two years.

#### 

The high-pressure gaskets on Nemo Air must be lubricated exclusively with oxygencompatible grease. Using other types of lubricants in the presence of oxygen-rich mixtures may spark an explosion.

#### **▲** WARNING

The air used in the tank must comply with the EN 12021 European standard. For safety reasons, mixtures other than that indicated may not be used.

#### **▲** WARNING

Do not under any circumstances use EAN mixes with oxygen percentages greater than 50%. In the event of use with mixtures contaminated with oil, the entire system must be cleaned by trained personnel.

#### **WARNING**

Before starting an EAN dive, check that the dive computer is set to EAN mode, then check the composition of the breathing mix you will be using and enter its oxygen percentage in the appropriate setting. Entering an incorrect oxygen percentage will lead to errors in the readouts for:

- no-decompression time remaining;
- decompression stop times;
- alarm for exceeding the "Maximum Permitted O<sub>2</sub> Partial Pressure."

#### **▲** WARNING

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

#### **WARNING**

It must be kept in mind that the depth and duration of the dive are strictly dependent on the percentage of oxygen in the breathable mixture.

#### 

Only divers who have the necessary certification should use Nemo Air for diving with oxygen-rich mixes (EAN). Attempting to dive without adequate Nitrox training might result in serious injury.

# A WARNING

During dives in cold water, air consumption could be higher than during standard dives. Consult the gauge indications frequently.

# **▲** WARNING

During dives that include greater physical exertion than standard dives, air consumption could be higher. Consult the gauge indications frequently.

#### **▲** WARNING

Check the position of the hose to avoid the risk of entanglement.

# **▲** WARNING

The Nemo Air dive computer is designed exclusively for recreational sports use and not for professional applications.

# **▲** WARNING

The dive computer cannot ensure against possible decompression sickness. The dive computer cannot take into account the physical condition 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.

#### **A** WARNING

Never dive alone. Nemo Air cannot substitute for a diving buddy.

#### **▲** WARNING

Do not dive if the readings on the instrument appear irregular or unclear.

#### A WARNING

Always check the battery power level before starting the dive. Do not dive if the icon indicates that the battery is low. Replace the battery.

#### **▲** WARNING

Do not fly within 24 hours of your last dive, and in any case wait until the Nemo Air "NO FLY" warnings turn off.

#### A WARNING

Never dive to depths greater than 40 meters (130 feet) and never take decompression dives with Nemo Air unless you possess the specific license (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 experienced 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.

#### 

Mares recommends that divers never exceed the maximum permitted depth for their qualification. Dives deeper than 40 m or outside the safety curve (decompression dives) significantly increase the risk of decompression sickness. Always ascend several minutes before going into DEC mode, and allow yourself even more time in the case of cold water conditions, repetitive dives deeper than 60 ft (18 m), or for any dive involving unusually high exertion. Failure to do this will increase your risk of decompression sickness.

#### **▲** WARNING

Do not use Nemo Air, or any other dive computer, for repetitive "square profile" dives (dives to the same or nearly the same depth) deeper than 60 ft (18 m). This is an unsafe diving practice which will greatly increase your risk of decompression sickness regardless of the information provided by Nemo Air.

#### A WARNING

Before diving, make sure you have correctly set the units of measurement. An incorrect setting may give rise to confusion during the dive, and hence to underwater behavior errors.

#### **▲** WARNING

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

# **▲** WARNING

In order to use your Nemo Air safely, Mares suggests, in addition to the dive computer, also use a depth gauge, a submersible pressure gauge, a timer or watch, and dive tables.

#### **▲** WARNING

When diving in poor visibility conditions, the indications provided by the computer may not be visible.

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 below:

# **RESPONSIBLE DIVING PRACTICES**

- Always plan your dives in advance.
- Never exceed the limits of your skill and experience.
- Go to your deepest planned depth at the beginning of the dive.
- Check your computer frequently during the dive.
- Comply with the ascent rate indicated by the computer.
- Always do a safety stop between -6 and -3 m (-20 and -10 ft) for at least 3 minutes.
- After any decompression stops, ascend very slowly to the surface.
- Avoid yo-yo dives (repeatedly ascending and descending underwater).
- Avoid strenuous activity during the dive and for half an hour after surfacing.
- When diving in cold water or after an intense exertion, start ascending well before reaching the no-decompression limits.
- In the case of a decompression dive, prolong the decompression stop nearest the surface for safety.
- Repetitive dives should be separated by a surface interval of at least 2 hours.
- Your deepest dive should be the first one of the day.
- Avoid diving until the computer memory has cleared from the preceding day's dive.
- When doing repetitive dives for several consecutive days, take at least one day off from diving every week.
- In the case of decompression-stop diving, it is recommended to take one day off from diving every three days.
- Avoid decompression-stop dives and do not dive deeper than 40 m (130 ft) unless you

have been specifically trained in this type of technical diving.

- Avoid repetitive "square profile" dives (dives to a single depth) deeper than 18 m (60 ft).
- Always wait at least 12 hours, and preferably 24 hours, after a dive before flying, in accordance with the recommendations of the Divers Alert Network (DAN).

# FLYNG AFTER DIVES

Mares Dive computers give the follow information:

- Single no-decompression dive: a minimun no-fly time of 12 hours is suggested
- Single dives with decompression stops: a minimun no-fly time of 24 hours is suggested
- Repetitive dives: a minimun no-fly time of 24 hours is suggested

# • HOW THE NEMO AIR DIVE COMPUTER WORKS

Nemo Air has 10 operating modes, each identified by an icon and the corresponding label. Figure 1 shows the 10 items in the main menu with the corresponding icons:



Press any button to turn Nemo Air on. The Mares icon appears, followed by the welcome message, which you can skip by pressing a button. After the message, the computer enters the DIVE operating mode (figure 2).



FIG. 2

Using the three buttons, you can easily navigate among the functions in the computer.

# HOW THE BUTTONS WORK

The buttons are used the same way in every operating mode (figure 3).



FIG. 3

- <+> button, located on the right: scroll forward.
- <-> button, located on the left: scroll backward.
- <CENTRAL> button, located in the center: this button has various functions.
  - <OK> function: press the button to confirm your selection.
  - <ESC> function: press and hold to return to the previous step.
  - <LIGHT> function: press and hold the button for more than two seconds.

#### NOTE

During the dive, pressing the <CENTRAL> button will temporarily activate the backlighting.

# CHECK THE BATTERY POWER LEVEL

The Nemo Air periodically monitors the battery power level.

The charge level can be viewed in the SYSTEM menu in the graphic area of the display (figure 4).



....

- BATTERY: OK;BATTERY: LO1;
- BATTERY: LU1;
  BATTERY: L02.
- BAITERY: LU2

If Nemo Air detects a low charge level (LO1), the battery icon turns on and the display backlight function is disabled. When the icon first appears, replace the battery as soon as possible.

#### **▲** WARNING

If backlighting has been disabled due to low temperature, you can repeat the battery status check by entering STATUS mode. If the battery icon disappears, the backlighting function has been re-enabled.

If the charge has reached the minimum value (LO2), the battery icon remains on and flashes, all Nemo Air functions are disabled, and only SYSTEM mode can be accessed.

#### A WARNING

If the charge level reaches the minimum value (LO2), you can only scroll through the SYSTEM menu.

If the battery check is repeated and the battery status has changed, Nemo Air will become operative again.

# A WARNING

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

# BACKLIGHTING

Turn on backlighting (for about 8 seconds) as follows:

- in non-dive mode, press and hold down the <CENTRAL> button for more than two seconds;
- in dive mode, press the <CENTRAL> button.

#### 

Temperature can noticeably affect battery voltage. The icon that signals a low battery level may appear due to low temperatures, even if the battery still has sufficient capacity. In this case, backlighting is disabled.

# A WARNING

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

# **AUTOMATIC SWITCH-OFF**

If Nemo Air is turned on but no button is pressed for a certain period of time, it will turn off automatically.

The delay before automatic switch-off varies depending on the current operating mode.

# SETTING PARAMETERS FOR THE NEMO AIR DIVE COMPUTER

DEFAULT SETTINGS

Dive mode: air water: fresh alt: 0-700 m (0-2296 ft); Pfactor: PF0 Units : metric Tank units: bar/lit Air reserve H alarm: 0FF Air reserve L: 50 bar (725 psi) Tank vol: 10,0 lit

Audio alarms: ON fast asc alarm: ON watch display (12h-24h): 24h Contrast:03 keybeep:ON

Nemo Air has 4 menus in which you can set helpful parameters for your dive. These menus are (figure 5):



The first menu is SET DIVE, where you can set the type of dive you wish to take.

#### 1. Set Dive

- 1.1. mode: AIR-EAN-BT
  - 1.1.1. oxygen percentage in the breathing mix (EAN only)
  - 1.1.2. maximum PPO<sub>2</sub> (EAN only)
- 1.2. water: fresh/salt
- 1.3. altitude (only AIR and EAN)
- 1.4. personal correction factor (only AIR and EAN)

To enter the SETDIVE menu, press the <CENTRAL> button.

# 🖲 Set Dive

This will display the MODE menu, and the last operating mode will flash:

- AIR
- EANBOTTOM TIME
- BOITOM TIME

Use the <+> and <-> keys to choose the dive type desired, and the <CENTRAL> button to confirm your selection.

You can now change the parameters for the selected dive.

# NOTE

These settings cannot be changed during the dive. Therefore, it is recommended that you check all adjustments carefully before each dive.

# MODE: AIR

This section addresses dives taken with AIR breathing mixtures.

#### NOTE

If you complete an EAN dive, and you wish to take another dive with air, set the computer to EAN with  $\%O_2$  at 21%. By so doing, the calculation of the % CNS will remain active.

The following parameters can be set: • water (salt/freshwater);

- altitude;
- personal correction factor.

To select the AIR type of dive, press the <CENTRAL> button when MODE:AIR appears and begins to flash.

# WATER (WATER SELECTION)

To ensure maximum accuracy, you need to set Nemo Air for either freshwater ("FRESH") or seawater ("SALT") as appropriate. Check this setting often, especially if you use the instrument in a variety of environments (lake, sea, swimming pool). When you enter this setting, an indication of the type of water selected will flash. Use the <+> and <-> buttons to select the type of water in which you will be diving. Press the <CENTRAL> button to record your setting and move on to set the altitude.

# ALT (ALTITUDE)

The following altitude programs are available:

- 0-700 m (0-2296 ft);
- 700-1500 m (2296-4921 ft);
  - 1500-2400 m (4921-7874 ft);
  - 2400-3700 m (7874-12139 ft).

An indication of the current altitude program will flash (figure 6).



Use the <+> or <-> buttons to enter the selected altitude program. Press the <CENTRAL> button to record the new setting and move on to the next parameter.

# A WARNING

Before diving in mountain lake, check that you have activated the altitude program appropriate to your location.

# PFACTOR (PERSONAL CORRECTION FACTOR)

Nemo Air allows you to set an additional personal safety factor. This additional safety factor is suitable for inexperienced divers or for when programming demanding dives. The PF0 program introduces no additional margin of safety.

If you set a value of PF1 or PF2, one of these two icons

p++

# **p+**

will be visible during the dive, showing that the personal factor has been activated, and indicating its level.

An indication of the current personal safety program, among PF0, PF1, and PF2, will flash (figure 7):



Use the <+> and <-> buttons to set the selected personal safety program. Press the <CENTRAL> button> to record the new setting and move on to subseque

Press the <CENTRAL> button to record the new setting and return to the SETDIVE menu.

# MODE: EAN

This section addresses dives with oxygen-rich mixtures.

We recommend that you carefully read the MODE: AIR section before proceeding further.

In EAN mode you can set:

- oxygen percentage (%0 $_2$ ) in the breathing mix;
- maximum O<sub>2</sub> partial pressure (PPO<sub>2</sub>);
- water selection;
  altitude:
- attitude;

• personal correction factor.

To set this dive mode, press the <CENTRAL> button when "EAN" begins to flash.

# %02 (OXYGEN PERCENTAGE)

The percentage of oxygen in the mix can be adjusted within the interval 21% - 50%, in increments of 1%.

When you enter this section the current oxygen percentage set will flash (figure 8).



Use the <+> or <-> buttons to enter the desired value.

Press the <CENTRAL> button to record the value selected and move to the next setting.

# PPO<sub>2</sub> (MAXIMUM PARTIAL OXYGEN PRESSURE)

Nemo Air features an alarm that signals the diver when oxygen partial pressure reaches the limit levels.

This limit can be varied from a minimum of 1.2 bar to a maximum of 1.6 bar, in increments of 0.1 bar.

When you enter this section, the last value entered will flash.



As this value changes, Nemo Air will show the maximum dive depth compatible with the oxygen percentage and maximum partial pressure that have been programmed (figure 9).

Use the <+> or <-> buttons to enter the desired value.

Press the <CENTRAL> button> to record the new setting and move on to subsequent settings, reviewed in the previous AIR section, which are:

- WATER:
- ALT (altitude);
- PFACTOR (personal correction factor).

# **▲** WARNING

The use of oxygen-rich mixes 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

Do not use breathing mixes with an oxygen percentage greater than 50%.

# 

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

- no-decompression time remaining;
- decompression stop times;
- alarm on exceeding the maximum permitted PPO<sub>2</sub>.

# MODE:BOTTOM TIME

In this case you can only set the WATER option, described previously.

To select BOTTOM TIME dive mode, press the <CENTRAL> button when BTIME appears and flashes.

# SET TANK

In this menu you can adjust the parameters for the tank used:

### 1. Set Tank

- 1.1. units of measurement: bar-litres / psicubic feet
- 1.2. first alarm: limit value for air reserves, can be set from 80 bar (1160 psi) to 120 bar (1740 psi).
- 1.3. second alarm: limit value for air reserves, can be set from 50 bar (725 psi) to 70 bar (1015 psi).
- 1.4. tank capacity

To enter the SET TANK menu, press the <CENTRAL> button

# Set Tank

# UNITS (UNIT OF MEASURE FOR THE TANK)

In this setting you can select the unit of measure you wish to use:

- units:psi-cubic feet;
- units:bar-liters.

Entering this section, the unit of measure for the tank volume will flash (figure 10).



Use the <+> or <-> buttons to change the setting. Press the <CENTRAL> button to record the selection made and move on to the next section.

#### AIR RESERVES ALARMS

With Nemo Air you can set two different alarm thresholds that will signal the minimum air reserves. When these thresholds are reached, there will be various audible signals and visible indications on the display.

The first threshold that can be set is:

# RESERVE H

This first alarm can be set from 80 bar (1160 psi) to 120 bar (1740 psi) in increments of 10 bar (145 psi), or it can be deactivated. Entering this section will display the value selected for air reserves; the value will flash. The default value is 100 bar (1450 psi). This value can be changed in increments of 10 bar (145 psi) using the <+> and <-> buttons (figure 11), or this alarm can be switched off.



Press <CENTRAL> to save your selection and move to the next setting.

If you exceed the programmed threshold during the dive, an audible alarm will sound and the pressure value will flash.

The visible alarm will deactivate in surfacing mode (figure 12).



RESERVE L (MINIMUM RESERVE) Values can be set from 50 bar (725 psi) to 70 bar (1015 psi) in increments of 10 bar (145 psi). The default value is 50 bar (725 psi) (figure 13).



If the tank pressure drops below the value set during the dive, a constant audible alarm will sound, the word DANGER will appear on the screen (figure 14), and the tank pressure value will flash. The alarms can be switched off by pressing any button. When the tank pressure drops below 30 bar (450 psi) the alarms will be switched on again. The alarms can be switched off again by pressing any button.



Use the <+> and <-> buttons to change the value in increments of 10 bar (145 psi). Press the <CENTRAL> button to record the new setting and move on to the next section.

# VOL (TANK CAPACITY)

This section serves to set the tank capacity. As a function of the units of measure set previously, entering the VOLUME setting is done as follows (figure 15):

• liters - bar: enter the tank capacity in liters (from 0 to 39.9 liters)



• cubic feet - psi: enter the tank capacity in cubic feet (from 0 to 399 Cuft) and the nominal reference pressure in psi (from 0 to 4999 psi) (figures 15-1 and 15-2).





# **▲** WARNING

In this case, the theoretical pressure (in psi) must be set that gives the tank the nominal capacity in cu.ft. Do not use the real pressure reading on the instrument. Example: tank from 80 cu.ft. to 3000 psi. Even if charged to a pressure other than 3000 psi, set 3000 psi on Nemo Air.

The above settings take place as follows: The units digit will flash. Use the <+> and <-> buttons to set the desired value, and press the <CENTRAL> button to record the selection made and move on to the next number. The tens digit will flash. Use the <+> and <-> buttons to set the desired value, and press the <CENTRAL> button to record the selection made and move on to the next number. The hundreds digit will flash. Use the <+> and <-> buttons to set the desired value, and press the <CENTRAL > button to record the selection made and move on to the next number. The thousands (psi) digit will flash. Use the <+> and <-> buttons to set the desired value. If the value entered is correct, press the <CENTRAL> button to record your selection and return to the SET TANK menu. If not, repeat the operation using the <+> and <-> buttons.

# 

Entering the correct tank volume is crucial for correctly calculating air consumption.

# SET ALARM

In this menu you can activate or deactivate the alarm signals that can be triggered during the dive.

#### 1. Set Alarm

1.1. audio: on/off;

1.2. fast asc: on/off (AIR and EAN only). To enter the SET ALARM menu, press the <CENTRAL> button.

# 🖁 Set Alarm

# AUDIO (ACTIVATE SOUND)

This function enables or disables all audible alarms. When activated, the current setting will be displayed: either "ON" or "OFF" will flash.

Use the <+> and <-> buttons to activate or deactivate all the audible alarms. Press the <CENTRAL> button to save the changes and advance to the next setting.

#### NOTE

The alarm that indicates a DEEPSTOP when applicable is always activated.

#### NOTE

The air RESERVE alarm is always activated.

# 

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

#### FAST ASC (UNCONTROLLED ASCENT CHECK)

This function enables or disables the "Stop" function in case of uncontrolled ascent, to prevent the dive computer from locking out after a rapid ascent. The feature can be useful for instructors who need to practice emergency ascents.

When activated, the current setting will be shown: either ON or OFF will flash. Use the <+> or <-> buttons to enter the desired value.

Press the <CENTRAL> button to record your choice and return to the SETALARM menu.

#### **▲** WARNING

A rapid ascent increases the risk of decompression sickness.

# 

This function is intended only for highly experienced divers, who take full responsibility for the consequences of disabling the "Stop" on uncontrolled ascent.

# SET WATCH (SETTING THE WATCH)

This menu allows you to set the date and time on Nemo Air.

Press the <CENTRAL> button to enter the SET WATCH menu.

# 🗑 Set Watch

You can adjust:

- year;
- month;day:
- uay;
  watch display (12h-24h);
- hour;
- minutes.

The digit for the year will be shown first, flashing (figure 16).



FIG. 16

Use the <+> or <-> buttons to adjust the values. Press and release the button to change the value by one unit at a time, or hold down the buttons to scroll.

Press the <CENTRAL> button to record the new setting and move on to the next. The criteria for changing and recording is always the same.

After making all of your changes, you return to the SET WATCH menu.

### DIVING WITH NEMO AIR

With Nemo Air you can dive in the following modes:

- AIR
- EAN
- BOTTOM TIME (Gauge)

To help clarify Nemo Air functions during the dive, the display screens have been grouped into four phases:

- PREDIVE
- DIVF
- SURFACING
- SURFACE MODE

To enter PREDIVE mode, press the <CENTRAL> button when the following text appears in the graphic section of the screen:

# **FR**Dive

#### **WARNING**

Early in your dive, always check that the dive computer is switched on.

#### **A** WARNING

We advise that when diving you always put Nemo Air into PREDIVE mode.

#### **BREATHING RATE GAUGE**

The breathing rate value is updated every 20 seconds

The information shown is normalized with respect to ambient pressure to make it easier to understand.

For example, if a diver breathing normally at the surface has an air consumption of 15 liters/min, when breathing at the same rate at a depth of 10 meters his consumption would become 30 liters/min, and at 30 meters it would be 60 liters/min. This kind of reading, though correct, would not be at all clear.

Normalization removes the effect of variations in depth, so that the data displayed gives a direct indication of the diver's actual breathing rate. With reference to the above example, the instrument would display a breathing rate of 15 liters/min at every depth.

#### LOW-AIR ALARMS

If the measurement of tank pressure drops below 100 bar, or the set value (RESERVE H), a brief audible alarm will sound and the air pressure value will blink continuously. If the measurement of tank pressure is lower than 50 bar, or the set value (RESERVE L), a continuous alarm will be triggered, and the word DANGER will appear. Pressing any button will clear the alarms.

When the tank pressure drops below 30 bar (450 psi) the alarms will be switched on again. The alarms can be switched off again by pressing any button.

# DIVE - AIR

#### **PREDIVE - AIR**

This operating mode remains active until the diver goes below 1.2 meters (4 feet). The following details are displayed (figure 17): • type of dive (AIR);

- units of measurement (m-°C or ft-°F);
- type of water (SALT, FRESH):
- altitude program (if enabled) and level;
- personal correction factor (if enabled) and level:
- tank pressure in bar or psi and tank capacity in liters or cubic feet, alternately.



To exit this mode and return to the main menu. press and hold the <CENTRAL> button.

#### A WARNING

Even if the tank volume is entered under SET TANK in liters and tenths, the volume will always be displayed in liters without the tenths. The air consumption calculations are performed using the actual capacity entered.

#### NOTE

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

#### NOTE

It is advisable to check all parameter settings before every dive.

#### DIVE - AIR: "NO-DECOMPRESSION" DIVE

Once you descend past 1.2 meters (4 feet), Nemo Air switches to DIVE mode and begins showing dive data.

Remaining in this mode for more than 20 seconds will make the computer begin recording the dive details in the LOGBOOK memory.

The following details are displayed (figure 18):



FIG. 18

- current depth (in "m" or "ft");
- no-decompression time remaining, expressed in minutes;
- NO DECO icon;
- DEEPSTOP icon (if active);
- icons for the altitude program and personal correction factor (if enabled):
- temperature (in °C or in °F);
- total length of the dive (DIVE TIME);
- ascent rate in analog and digital mode;
- tank pressure in bar or psi;
- air time remaining at the current depth;
- breathing rate in liters/min or cubic feet/min.

In this mode, the <+> and <-> buttons have the same function: pressing either one will display the following information for a few seconds (figure 19):



FIG. 19

- maximum depth reached;
- current time;
- current temperature:
- application of the PLAN DEEPSTOP icon and the DEEPSTOP level (if activated);
- ascent rate in analog and digital mode; • tank pressure in bar or psi;
- •
- air time remaining at the current depth; breathing rate in liters/min or cubic feet/min.

#### NOTE

To activate the display backlight, press the <CENTRAL> button.

Pressing and holding the <+> or <-> key for a few seconds will temporarily display the dive settinas.

# **A** WARNING

When the <+> or <-> buttons are pressed during the dive, Nemo Air will temporarily display the estimated DEEPSTOP required. The data displayed during the ascent may vary as a result of the diver's behavior. Divers should check this data during the ascent for more precise information on the estimated stop.

# **DIVE - AIR: "DECOMPRESSION STOP" DIVE**

If the diver does not ascend when the residual time has expired, Nemo Air switches to "decompression stop" mode, indicated by the appearance of the "DECO" message and by an audible alarm. The following data are displayed in this mode (figure 20):



FIG. 20

- DECO icon;
- current depth (in "m" or "ft");
- depth of deepest decompression stop (in "m" or "ft"):
- duration of the deepest decompression stop; icons for the altitude program and personal correction factor (if enabled):
- actual length of the dive (DIVE TIME) in minutes;
- ASCENT TIME in minutes;
- DEEPSTOP icon (if active);
- ascent rate in analog and digital mode;
- tank pressure in bar or psi;
- air time remaining at the current depth;
- breathing rate in liters/min or cubic feet/min.

In this mode, the <+> and <-> buttons have the same function. Pressing the <+> or <-> button will display the following information for a few seconds (figure 21):



FIG. 21

- maximum depth reached;
- current time;
- application of the PLAN DEEPSTOP icon and the DEEPSTOP level (if activated);
- ascent rate in analog and digital mode:
- temperature (in °C or in °F);
- tank pressure in bar or psi;
- air time remaining at the current depth;

• breathing rate in liters/min or cubic feet/min. Pressing and holding the <+> or <-> key for a few seconds will temporarily display the dive settings.

#### NOTE

When the no-decompression time remaining is one minute, an audible alarm is sounded to indicate that the diver is about to exceed the no-decompression limits.

#### ASC TIME (TIME TO SURFACE)

- The ASCENT TIME is given by the sum of: · duration of the various decompression
- stops
- time required to ascend at an average speed of 10 m/min (32 ft/min).
- DEEPSTOPS if any.

#### DECOMPRESSION STOPS

Nemo Air also checks that the decompression stops are performed correctly: two icons graphically indicate what action the diver should take (figure 22).



- triangles: correct decompression stop depth;
- upward triangle: diver below decompression stop depth, ascend;
- downward triangle: diver has ascended beyond decompression stop depth, descend.

If the decompression stop depth is exceeded by more than 30 cm (11 inches), the "downward triangle" icon will flash; if it exceeds 1m (3 ft) it keeps flashing and an audible alarm will sound. These warnings remain active until the diver returns to the correct depth.

# **WARNING**

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

# 

Never ascend above the correct decompression stop depth.

#### NOTE

If the deco-stop overshoot exceeds one meter and lasts more than three minutes, the computer switches to "Omitted Stop" mode and the corresponding icon appears. After the dive, if you wish to dive again before 24 hours have elapsed, Nemo Air will function only as a depth gauge and timer (BOTTOM TIME mode), and will display the errors.

# 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, Nemo Air prompts for a series of one-minute deep stops at different depths depending on the dive profile. Thus, when the applicable conditions exist during the dive, Nemo Air will display a DEEPSTOP icon (figure 23).



FIG. 23

This display indicates that the need for a deep stop during the ascent has been detected. As the diver nears the depth set for the deep stop, Nemo Air will sound an audible alarm, and will display how long the diver must remain at the stop depth (figure 24).

In this mode, the ascent rate is only shown analogically.



FIG. 24

There can be more than one deep stop during a dive. This depends on the dive profile and on the type of decompression.

#### NOTE

During a dive with Nemo Air, if the DEEPSTOP icon is active, pressing the <+> or <-> button will temporarily display the estimated stop required.

# **DIVE - AIR: ASCENT**

#### 

A rapid ascent increases the risk of decompression sickness.

# **A** WARNING

Disabling the "STOP" on an uncontrolled ascent should only be done by highly experienced divers, who take full responsibility for the consequences of this action.

As the diver ascends, Nemo Air activates the ascent rate control algorithm, displaying the value both in m/min (ft/min) and graphically (figure 25).



FIG. 25

If the ascent rate exceeds 120% of the optimal value of 10 m/min (33 ft/min), the word "SLOW" will appear, and Nemo Air will sound an audible alarm that continues until

the ascent rate returns below the maximum allowable speed. At the same time as the audible alarm is triggered, the computer begins monitoring an "Uncontrolled Ascent." An ascent is considered "uncontrolled" when the diver exceeds the maximum rate for a stretch equal to at least two thirds of the depth at which the audible alarm was triggered. This criterion only applies to alarms triggered below a depth of 12 m (39 ft). In case of an uncontrolled ascent, upon surfacing Nemo Air disables the AIR and EAN functions of DIVE mode, and will only function as a timer and depth gauge (BOTTOM TIME).

The stop on the uncontrolled ascent function can be disabled in SET ALARM mode.

#### SAFETY STOP

If the maximum depth of a dive exceeds 10 meters, a "SAFETY STOP" is activated for the ascent. Nemo Air suggests that divers take a 3-minute safety stop between 2.5 and 6 m in depth (8 - 19 ft), and will display the words SAFE STOP. A timer indicates the time needed to complete the stop (figure 26).

In this mode, the ascent rate is only shown analogically.



FIG. 26

If the diver moves outside the above-mentioned depth range, the safety stop timer is halted. When the diver reenters the correct depth range, the SAFETY STOP timer resumes from where it left off.

If the diver returns to a depth below 10 m (32 ft), the SAFETY STOP timer will ignore the previously aborted stop and subsequently start counting down from 3 minutes again. In the case of a decompression-stop dive, the SAFETY STOP extends the duration of the decompression stop at 3 m (10 ft) by an additional 3 minutes, displaying the information described previously.

#### DIVE - AIR: SURFACING

When the measured depth is less than 1 m (3 ft), Nemo Air considers the dive to be suspended ("SURFACING") and halts the dive timer. If the diver does not return below 1.2 m (4 ft) within the next 3 minutes, the computer considers the dive to be finished and records its data in the LOGBOOK. If the diver does re-descend within 3 minutes, the dive continues and the dive timer resumes from where it left off. Data displayed in SURFACING mode (figure 27):



FIG. 27

- duration of the dive;
- maximum depth;
- any icons for underwater behavior errors (omitted stop, uncontrolled ascent);
- tank pressure at the end of the dive;average breathing rate for the dive.

#### **▲** WARNING

If an AIR or EAN dive ends with an uncontrolled ascent or an omitted stop, Nemo Air will restrict Dive - AIR and Dive -EAN modes for 24 hours and will only allow the BOTTOM TIME operation mode.

#### **▲** WARNING

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

#### NOTE

The <+> and <-> buttons are disabled in SURFACING mode.

#### NOTE

To activate the display backlight, press the <CENTRAL> button.

#### DIVE - AIR: SURFACE MODE

When the dive is considered finished, Nemo Air moves from DIVE mode to TIME mode. In this situation, the following are displayed (figure 28):



FIG. 28

- desaturation time (if other than zero);
- the NO FLY icon;
- icons for any errors committed during the dive (omitted stop, uncontrolled ascent).

Use the <+> and <-> buttons to view: • no-fly time;

- surf time;
- time, date, temperature.

# DIVE - EAN

Because of the lower percentage of nitrogen in the breathing mix, oxygen-rich mixtures make it possible to extend the no-decompression limits, as compared with the same dive with air. However, the higher oxygen content in the mix exposes the diver to oxygen toxicity hazards which are not generally encountered in recreational dives with compressed air. In EAN mode, Nemo Air computes oxygen toxicity on the basis of the dive time, the depth, and the oxygen percentage setting, providing indications that enable the diver to remain within the safe limits for oxygen exposure. To dive with an EAN mixture, you must first set EAN mode in SET DIVE.

Nemo Air manages dives with EAN using the same procedures as dives with AIR. That means that you will have the same functions and procedures for selecting the DIVE mode. The only differences in managing the two types of dives lie in setting the general parameters for EAN dives and in the display of these parameters in addition to the normal AIR dive parameters, discussed in the preceding section.

This section will examine the general parameters for EAN dives monitored by Nemo Air and the differences in how the data are displayed.

# **▲** WARNING

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

- no-decompression time remaining;
- decompression stop times;
- alarm on exceeding the maximum permitted PPO<sub>2</sub>.

# **▲** WARNING

Before the dive, make sure you have correctly set up all the EAN dive parameters: percentage of oxygen in the mix and limit for the partial pressure of oxygen, which together determine the maximum depth of the dive.

# **▲** WARNING

The use of oxygen-rich mixes 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.

# 

Only divers who have the necessary certification should use Nemo Air for diving with oxygen-rich mixes (EAN). Lack of appropriate diver training may result in serious injury.

#### **▲** WARNING

The user is advised to carefully read the section on compressed air diving before reading the section on EAN dives.

#### DIVE - EAN: 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 ATM), an alarm condition is triggered, indicated by:

- blinking depth indication;
- audible alarm.

The alarm persists until the diver has ascended enough for the PPO<sub>2</sub> to return to within the programmed limit.

#### **▲** WARNING

When the max PPO<sub>2</sub> alarm triggers, ascend immediately until the alarm condition ceases. In this case you should finish the dive and return to the surface. Pay attention to respect all indicated decompression and safety stops. Mares recommend not to dive in the follow 12 hours.

#### EFFECTS ON THE CENTRAL NERVOUS SYSTEM

Oxygen toxicity exposure is monitored by means of a CNS (Central System Calculation), based on currently accepted recommendations for exposure limits.

This toxicity is expressed as a percentage value which ranges from 0% to 100%. The percentage CNS value is shown on the display. An alarm is triggered when it exceeds 75%,

signaled by blinking of the value.

# DIVE - EAN: PREDIVE

This operating mode remains active until the diver goes below 1.2 meters (4 feet). The data displayed are shown in figure 29.



#### \_\_\_\_\_

**NOTE** Before every dive, it is advisable to enter SETDIVE mode and check all the parameter settings, and the EAN parameters in particular.

# A WARNING

We advise that when diving you always put Nemo Air into PREDIVE mode. Early in your dive, always check that the dive computer is switched on.

# DIVE - EAN: "NO-DECOMPRESSION" DIVE

When the diver descends below 1.2 meters (4 ft) Nemo Air automatically switches to DIVE mode and starts displaying the dive data. If this mode persists for more than 20 seconds, Nemo Air will begin recording the dive details in the LOGBOOK memory.

The data displayed are shown in figures 30 and 31.



FIG. 30

NOTE

The display modes are identical to those described in the chapter for dives with air.



Pressing and holding the <+> or <-> key for a few seconds will temporarily display the dive settings.

# DIVE - EAN: "DECOMPRESSION STOP" DIVE

If the diver does not ascend when the residual time has expired, Nemo Air switches to "decompression stop" mode, indicated by the appearance of the "DECO" message and by an audible alarm. The data displayed in this mode are shown in figures 32 and 33.







Pressing and holding the <+> or <-> key for a few seconds will temporarily display the dive settings.

# 

To fully understand how to perform decompression with EAN, the user should also carefully read the corresponding section for compressed-air deco stop dives.

# NOTE

The display modes are identical to those described in the chapter for dives with air.

If you complete an EAN dive, and you wish to take another dive with air, set the computer to EAN with  $0_2$  at 21%. By so doing, the calculation of the % CNS will remain active.

# DIVE - EAN: SURFACING

When the measured depth is less than 1 m (3 ft), Nemo Air considers the dive to be suspended ("SURFACING") and halts the dive timer.

If the diver does not return below 1.2 m (4 ft) within the next 3 minutes, the computer considers the dive to be finished and records its data in the LOGBOOK. If the diver does redescend within 3 minutes, the dive continues and the dive timer resumes from where it left off. The data displayed in SURFACING mode are shown in figure 34.



FIG. 34

# 

If an AIR or EAN dive ends with an uncontrolled ascent or an omitted stop, Nemo Air will restrict AIR and EAN modes for 24 hours and will only allow the BOTTOM TIME operation mode.

#### NOTE

The buttons in SURFACING mode are disabled.

# NOTE

To activate the display backlight, press the <CENTRAL> button.

# **▲** WARNING

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

#### DIVE - EAN: SURFACE MODE

The data displayed in SURFACE - EAN mode are the same as that for SURFACE - AIR mode, except for the addition of the % CNS value (figure 35).



FIG. 35

# **DIVE - BOTTOM TIME (GAUGE)**

In this mode Nemo Air functions as an electronic timer and depth gauge, but does not perform any calculations for no-deco limits or for deco-stop times.

Responsibility for planning the no-

decompression limits or an adequate decompression therefore lies entirely with the

user. Displays in PREDIVE and SURFACING modes are the same as those seen earlier for AIR or EAN dives.

# **DIVE - BOTTOM TIME**

The data displayed in DIVE mode are shown in figures 36 and 37





FIG. 37

#### NOTE

After a dive in BOTTOM TIME mode, switching to AIR and EAN mode is suppressed for 24 hours. (This lockout can be disabled by clearing the residual nitrogen memory in SET DIVE - DATA mode.)

#### **A** WARNING

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

#### **DIVE - BOTTOM TIME: SURFACE MODE**

The desaturation time and the delay before flying or traveling to high altitudes are displayed in the same way as for AIR or EAN dives.

# **BOTTOM TIME WITH BEHAVIOR ERROR**

The following errors can occur during an AIR or EAN dive:

- uncontrolled ascent;
- omitted stop.

In this case, Nemo Air will inhibit the use of AIR and EAN modes for 24 hours, allowing operation in BOTTOM TIME mode only, and will continue to display the underwater behavior error from the previous dive. The icons corresponding to the error committed will be displayed in DIVE, TIME and LOGBOOK modes.

# TIME MODE

In the TIME menu, you can always check the current watch data, the date, and the temperature.

To enter TIME mode, press the <CENTRAL> button when the following text appears in the graphic section of the screen:

# **A Time**

Press the <CENTRAL> button to enter this menu.

This will display the current time, date, and temperature (figure 38).



Press the <CENTRAL> button to return to the TIME menu.

# SYSTEM MODE

In the SYSTEM menu you can set general parameters and display important information about Nemo Air:

#### 6. System

- 6.1. contrast 6.2. keybeep 6.3. N2erase 6.4. units 6.5 intro 6.6. SN 6.7. FW
- 6.8. HW
- 6.9. reset
- 6.10.battery

To enter SYSTEM mode, press the <CENTRAL> button when the corresponding words appear on the display:

# **g System**

The first item you can program is the display contrast. The word CONTRAST is displayed with the current contrast value flashing.

# CONTRAST

In this setting you can adjust the display contrast. This value can be adjusted, using the <+> or <-> buttons, from a minimum of 1 to a maximum of 15 (figure 39).



Press the <CENTRAL> button to save the value entered and move to the next setting.

#### **KEY BEEP**

This function will enable or disable the key beep. The word KEYBEEP will appear with the setting flashing (figure 40).



Use the <+> and <-> buttons to select whether or not a beep should sound when a button is pressed.

Press the <CENTRAL> button to save the value entered and move to the next setting.

# N2ERASE

This item is used for clearing the residual nitrogen memory of the tissue compartments. The word "N2erase" will display with the word "no" flashing (figure 41).



Use the <+> and <-> buttons to change your selection. To clear the residual nitrogen memory in the tissue compartments press the <CENTRAL> button when the word "yes" appears. In order to really clear the residual nitrogen memory in the tissue compartments you have to confirm your choice (figure 41-1)



If you do NOT wish to clear the residual nitrogen memory in the tissue compartments, press the <CENTRAL> button when the word "no" appears.

# **▲** WARNING

This option is intended only for highly experienced divers. Users who clear the residual nitrogen memory cannot use the instrument for repetitive dives. After this operation, do not dive with Nemo Air if you have already dived within the previous 24 hours.

# °C METERS / °F FEET

You can select which units of measure you want to use: metric (°C and m) or Imperial (°F and ft). The unit of measure flashing is the current selection (figure 42).



Use the <+> and <-> buttons to adjust the values.

# 

Before diving, make sure you have correctly set the units of measurement. An incorrect setting may give rise to confusion during the dive, and hence to underwater behavior errors.

# INTRO

You can enable or disable the introduction displayed each time Nemo Air is switched on. The default option will enable the initial display. (figure 43).



Use the <+> or <-> buttons to adjust the values. Press the <CENTRAL> button to record the new setting and move on to display the following information (figure 44):



the serial number;

- the software version;
- the hardware version;
- the number of times the battery has been replaced;
- the charge level of the battery. When you enter this section, an automatic battery check is performed, and while the computer is measuring power, the string "battery: check" will display for a few seconds.

There are three possible values for this measurement:

- battery: OK;
- battery: L01;
- battery: LO2.

For more information about the level of battery charge, see the section entitled "Check the battery power level".

Press the <CENTRAL> button to move from one screen to the next, and eventually return to the SYSTEM menu.

# PLANNING: SCROLLING OF NO DECOMPRESSION LIMITS

This function allows the user 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 through the no-decompression limits take into account the settings under SETDIVE, such as MODE (AIR or EAN), ALT (altitude), PFACTOR (personal factor), and, for EAN dives, the  $\%O_2$  (oxygen percentage) and the PPO<sub>2</sub> (maximum partial oxygen pressure).

From the Main Menu, use the <+> or <-> buttons to select PLANNING, and press the <CENTRAL> button to enter this mode.

# Planning

Repeatedly press the <+> button to increase the depth by three meters each time, up to a maximum of 48 m (157 ft).

Press the <-> button to decrease the depth indicated in three-meter increments, down to 12 m (39 ft).

For each depth, the display shows the corresponding no-decompression time expressed in minutes.

If EAN mode is enabled, the oxygen percentage set is also shown (figure 45).



FIG. 45

In this case, the maximum depth allowed in Plan mode will depend on the values entered for  $\% O_2$  and maximum PPO<sub>2</sub>.

Press the <CENTRAL> button to return to the PLANNING menu.

# NOTE

The Plan function will only be active after having selected AIR or EAN mode in SET DIVE.

# LOG BOOK

LOGBOOK mode is used for viewing the details of past dives on the display.

The dives are organized as in the pages of a "log book", with the number "1" assigned to

the most recent dive, "2" to the preceding dive, and so forth, until the memory is full. If the memory is full, when the user dives again the oldest record is deleted to free up memory for the new dive. Maximum capacity of approximately 40 hours of diving with profile points at 20-second intervals. To enter LOGBOOK mode, select the corresponding choice in the main menu and press the <CENTRAL> button.

# Logbook

The first page in the LOGBOOK contains a summary history of dives, with the following information:

- maximum depth reached;
- total diving time (hours and minutes);
- total number of dives done;
- coldest logged temperature.

Press the <+> or <-> keys to access the display for the individual dives (figure 46).



NOTE



management and viewing functionality, use a PC with a USB interface (optional).

#### LOG BOOK - DIVE NO.

The dives are numbered in order, from the most recent to the oldest. The following data are displayed (figure 47).



FIG. 47

- type of dive (AIR, EAN, BOTTOM TIME);
- sequential dive number;
- start date and time of the dive.

Press the <+> or <-> buttons to advance from one dive to the next.

Press and hold the <CENTRAL> button to return to the main menu. Press the <CENTRAL> button to view the details of the selected dive.

#### LOG BOOK - TECH DATA

This mode displays the summary details of each individual dive (figure 48).



FIG. 48

- maximum depth reached;
- duration of the dive;
- personal correction factor selected (only AIR, EAN);
- selected altitude program (only AIR, EAN);
- "No deco" icon for no-decompression dives (only AIR, EAN);
- "deco" icon for decompression-stop dives (only AIR, EAN);
- omitted deco stop icon (only AIR, EAN);
- omitted deco stop (only AIR, EAN);
- type of dive: AIR, EAN, BOTTOM TIME; •
- %CNS (only EAN);
- coldest logged temperature;
- "uncontrolled ascent" icon" (only AIR, EAN);
- average breathing rate in liters/min or cubic • feet/min:
- final tank pressure in bar or psi.

Pressing <+> or <-> buttons will replace some data (figure 49).



FIG. 49

- maximum ascent rate in analog and digital mode;
- type of water (SALT, FRESH);
- %O<sub>2</sub> of the mixture (only EAN).

Press the <CENTRAL> button to view the dive profile.

Press and hold the <CENTRAL> button to return to the previous menu.

#### NOTE

For dives in BOTTOM TIME mode, the uncontrolled ascent and omitted deco stop icons refer to errors committed during the preceding dive.

#### LOG BOOK- PROFILE

In PROFILE you can review the profile points of a dive, spaced at 20-second intervals. Press the <+> button once to advance to the next profile point, or hold it down to scroll forward.

The details displayed in PROFILE mode are the following (recorded at the end of the time interval) (figure 50):



- current depth;
- fastest ascent rate;
- duration of the dive;
- "deco" icon for decompression-stop dives (only AIR, EAN):
- omitted deco stop icon (only AIR, EAN);
- personal correction factor (only AIR, EAN);
- "No deco" icon for no-decompression dives (only AIR, EAN);
- selected altitude program (only AIR, EAN).
- tank pressure in bar or psi;
- breathing rate in liters/min or cubic feet/min.

Press the <CENTRAL> button at any time to return to the previous menu.

# PC LINK MODE

Using a special interface unit and a dedicated Windows software application, you can transfer all the data from the Nemo Air LOGBOOK to a personal computer.

Nemo Air and the PC communicate through a special USB interface module (optional). In order to transfer the data to the PC, put Nemo Air into PC LINK mode. Using the <+> or <-> button, select PC LINK from the main menu

# **FR PC Link**

Press the <CENTRAL> button, and LINK ON will appear on the display (figure 51).



FIG. 51

Position Nemo Air with the display facing upward and plug the interface into the special port.

More detailed information is available in the special software required to communicate with Nemo Air.

For more information about options for interaction between Nemo Air and the PC, check the special section of the www.mares. com web site.

You can download the dedicated software and any updates from the web site.

To return to the previous menu, press and hold the <CENTRAL> button.

# FAQ

Q: What happens if I replace the battery after a dive before the desaturation time has gone to zero?

A: The residual nitrogen memory will be cleared, and the RGBM calculations for any previous dives aborted. The diver who used the computer in the previous dive must not dive for at least 24 hours.

Q: What happens if I start a dive while Nemo Air is still in SYSTEM mode?

A: If left in SYSTEM mode when you begin the dive. Nemo Air will still activate DIVE mode within 20 seconds of descending past 1.5 m (5 ft).

Q: When I replace the battery, will my LOGBOOK dive data be lost?

A: No

Q: What happens if there is an uncontrolled ascent or omitted decompression stop during an AIR or EAN dive?

A: Nemo Air automatically switches to STOP mode at the end of the dive. The only Scuba mode that remains active in this case is **BOTTOM TIME** 

**Q:** What indicates that BOTTOM TIME mode was chosen by the user, rather than forced as a result of underwater behavior errors during the preceding dive?

A: In the latter case, during the dive and in surface mode, the pertinent error icons are displayed along with the standard BOTTOM TIME indications.

Q: If AIR or EAN mode is selected after completing a dive in BOTTOM TIME mode, how will the new dive be managed?

A: Nemo Air does not allow you to do an AIR or EAN dive in the 24 hours immediately following a BOTTOM TIME dive.

Q: Why is the PLANNING mode sometimes disabled after a dive?

A: This happens if you end a dive with an omitted stop or an uncontrolled ascent. If this happens, Nemo Air moves to BOTTOM TIME mode and prevents the use of AIR and EAN modes for 24 hours.

Q: What is SYSTEM mode for?

A: Placing Nemo Air in SYSTEM mode will allow you to view specific information and adjust certain settings on your dive computer. Q: Where can I find the product serial number? A: In SYSTEM mode.

Q: If I already own the Iris interface, can I use it with Nemo Air?

A: No.

Q: Are the 3 minutes of the safety stop included in the ASC TIME?

A: The 3 minutes of the safety stop are not included in the ASC TIME.

Q: What is the DEEPSTOP?

A: To reduce the chances of micro-bubbles forming and growing, during decompressionstop dives or dives very close to the

no-decompression limits, Nemo Air will prompt for a series of deep stops of a minute each at variable depths, as a function of the dive profile. This is one of the special characteristics of the RGBM Mares-Wienke Algorithm. For more information visit: www.rgbm.mares.com.

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

A: If you surpass the DEEPSTOP depth by more than a meter, this stop will be canceled. Q: Why didn't the DEEPSTOP icon appear during the dive?

A: The DEEPSTOP icon only appears during decompression-stop dives or dives very close to the no-decompression limits. **Q:** If I begin the DEEPSTOP and then go back

down what happens?

A:If you start the DEEPSTOP and then go back down, the count will stop. It will resume when you return to the DEEPSTOP depth.

Q: Why doesn't Nemo Air turn off after a dive? A: If the no-fly period has not expired, after a dive Nemo Air switches to TIME mode and shows information about the most recent dive. Q: If I am in PREDIVE with the hose inserted. can I exit PREDIVE to change the settings? A: Even in PREDIVE and when Nemo Air is reading the tank data, you can exit this mode by pressing and holding the <CENTRAL> button and then change the settings.

# 

If the battery is replaced after a dive before the desaturation time has gone to zero, the residual nitrogen memory will be cleared, and the RGBM calculations for any previous dives aborted. The diver who used the computer in the previous dive must not dive for at least 24 hours.

# MAINTENANCE

After diving in seawater it is recommended that you rinse Nemo Air with freshwater to remove any salt residues. This operation should be done with the Nemo Air connected to the hose

Do not use chemical products; just put the Nemo Air under running water.

# NOTE

With regard to downloading data from the logbook to the PC, it is important that the two pins located in the back near the battery plug are carefully cleaned with freshwater after every dive.

In the event of a malfunction, do not use the instrument for diving and have it checked by an authorized Mares service center. In any case, every 2 years or after completing 100 dives, the instrument must be serviced at an authorized Mares service center.

# NOTE

If you notice signs of moisture on the inner wall of the mineral glass, take your Nemo Air immediately to an authorized Mares service center. In any case, Mares declines responsibility for any water seepage resulting from an incorrect battery replacement procedure.

# **WARNING**

If you notice any malfunction or water seepage, bring your Nemo Air to an authorized Mares service center immediately. It is strictly prohibited to disassemble the computer. Doing so will void the warranty.

# **WARNING**

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

# STORAGE INSTRUCTIONS

Storage temperature: from -20 to +70° C (-4/+158° F). When replacing the hose be careful not to damage it by folding it too far (bending radius not less than 31 mm).

#### TRANSPORT INSTRUCTIONS

No special operations are required for transport. It can be transported with the rest of your equipment, being careful to avoid violent blows.

#### **REPLACING THE BATTERY**

Replacing the battery is a delicate operation, and requires close attention.

We suggest that you visit an authorized Mares center.

Mares declines all responsibility for any damage caused by replacing the battery.

# 

When changing the battery, it is advisable to replace the O-ring (Mares part code xxxxxxx). Otherwise, inspect the O-ring with care, checking for any signs of damage, tearing, or warping.

Unscrew the waterproof cover located on the back of the Nemo Air, turning it counterclockwise (figure 52).



FIG. 52

# Remove the battery.

Clean the battery compartment carefully, with particular focus on the area where the gasket is located

Insert a new battery, Lithium CR 2450, making sure the polarity is correct

Position the gasket in the cover.

Set the cover on the Nemo Air, making sure that the icons are positioned correctly (figure 53).



FIG. 53

Turn clockwise, pressing the cover until the icons are aligned (figure 54).



#### **▲** WARNING

Before closing the cover, check that the gasket is positioned correctly in its seat. Make sure it is perfectly clean, and lubricate it with a thin film of silicone grease.

#### NOTE

When applying the silicone grease, be careful not to get the battery or contact plates dirty.

#### NOTE

Nemo Air may show a low battery charge after the battery has been replaced. If this happens, run a battery check by entering SYSTEM mode.

#### NOTE

Do not discard the old battery in the environment. Mares adopts a policy of respect for the environment, and urges use of the appropriate separated waste collection service.

#### 

Do not replace the battery within the 3 minutes immediately following a dive. Replacing the battery too soon after the dive will result in loss of the data for that dive. In any case, remember that replacing the battery causes the residual nitrogen, desaturation time and no-fly time data to be lost. It is therefore advisable to make a note of this information before replacing the battery.

#### 

Do not replace the battery between repetitive dives.

# INSTRUCTIONS FOR CONNECTING NEMO AIR TO THE HP HOSE

Nemo Air is made up of two distinct elements: the computer and the high-pressure hose, which are connected to each other by means of a quick-release coupling designed and tested for an operating pressure of 300 bar. The hose must be connected to the regulator's first stage before the latter is mounted on the tank: if this operation is carried out when the regulator is already assembled on the tank, make sure that the tank valve is fully closed and that the entire system is depressurized by pressing the purge button on the regulator second stage.

#### 

Under no circumstances replace the hose fitted on the computer with one of a different type; consult your dealer or Mares for information about the type of hose to be used.

# A WARNING

Before pressurizing the instrument, check that the quick coupling has been correctly engaged.

#### **▲** WARNING

The Nemo Air can only be connected and subsequently disconnected from the high-pressure hose after depressurizing the group. Therefore, if the computer is assembled on the first stage of a regulator that is already connected to a tank, depressurize the group as described above.

In order to connect the computer to the hose, insert the connector attached to the hose into the connector attached to the computer, and then press all the way in (figure 55 and 56):



FIG. 55



FIG. 56

Do not use tools to tighten the Nemo Air connection.

#### 

Attempting to carry out operations in the presence of high pressure may result in serious injury.

Connect the threaded 7/16" UNF terminal to a high-pressure outlet on the regulator's first stage (check the regulator instruction manual to find out which are the high pressure outlets) and tighten (max 4-5 N.m. / 35.4-44.3 lb.in) with a hexagon wrench (14 mm).

#### INSTRUCTIONS FOR ATTACHING THE COMPASS

#### (OPTIONAL COMPONENT, SOLD SEPARATELY)

With reference to figure 57, the following steps are necessary in order to attach the compass:

- 1. Unscrew the 6 screws that fasten the two shells of Nemo Air.
- 2. Remove the bottom shell.
- 3. Remove the top shell.
- 4. Remove the top cover.
- 5. Fit the compass module.
- 6. Replace the bottom and top shells and lock the 6 screws back down.



FIG. 57

# TECHNICAL/FUNCTIONAL CHARACTERISTICS

#### **TECHNICAL FEATURES**

#### PRESSURE GAUGE FUNCTION

The pressure gauge integrated with the Nemo Air dive computer has been tested and CE certified by Registered Test Center #0426 -ITALCERT, V.le Sarca, 336 - 20126 Milan - Italy and by - INPP – Entrée n°3 – Port de la Pointe Rouge BP 157 -13267- Marseille - France. The pressure gauge integrated with the Nemo Air computer is a Category III device as defined under European Directive 89/686/ CEE, and complies with the specifications set out in the harmonized European Standard EN 250/2000 for use with air compliant with Standard EN 12021 (oxygen content of 21%). The pressure gauge is compliant with the specifications set forth in the European Standard EN 13949: 2003 for use with oxygenrich mixtures (Nitrox).

The EC certification process and verification of the operating performance of the pressure

gauge in the Nemo Air dive computer under standards EN 250:2000 and EN 13949: 2003 are understood to be applicable to a maximum depth of 50 m below the surface.

The Nemo Air dive computer can be used in cold water (water at temperatures below 10°C).

# MARKING

The instrument markings are located on the back of the case, and consist of the following:

- working pressure rating: 300 bar / 4,350 psi;
- reference standard: EN 250/2000;reference marking: CE 0426.

The conformity marking indicates compliance with the essential health and safety requirements as per attachment II D. and 89/686/EEC. The number alongside the EC identifies the Notified Body #0426 - ITALCERT V.le Sarca, 336 – 20126 Milan - Italy, authorized to inspect the finished product under art. 11 B D.e. 89/686/CEE.

# CHARACTERISTICS

Maximum operating pressure: 360 bar (5150 psi).

Accuracy: The guaranteed accuracy of the pressure measurement is:

- at 50 bar ± 5 bar at 750 psi ± 72 psi
- at 100 bar ± 10 bar at 1450 psi ± 145 psi
- at 200 bar ± 10 bar
  at 2900 psi ± 145 psi
  at 300 bar ± 15 bar
  at 4350 psi ± 217 psi
- at 300 bar ± 15 bar at 4350 psi ± 217 psi

Connecting port airflow: <100 liters/min. at a pressure of 100 bar.

#### Measurement resolution

Metric: 1 bar Imperial : 10 psi.

#### Depth measurement

- maximum displayed depth: 150 m (492 ft);
- measurement resolution:
- 10 cm (3.95 in) in the 0-100 m (0-328 ft) range;
- 1 m (3.28 ft) in the 100-150 m (328-492 ft) range;
- 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;
- depth display: meters (m) / feet (ft);
- manual fresh/seawater selection;
- difference between fresh/seawater: 2,5%.

#### 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).

#### Battery

- Lithium 3V CR 2450 battery;
- Life: over 170 dives.

#### NOTE

Data refer to calculations performed with the following parameters:

- Average length of each dive 45 min: • 12 months of Off-Mode;
- battery life is affected by the operating temperature;
- at lower temperatures the battery life decreases;
- the life of the battery will vary depending on use.

# Algorithm

- RGBM Mares-Wienke, the result of a collaboration between Dr. Bruce R. Wienke and the Mares Research and Development Center;
- 10 tissue compartments;
- reduction of the permissible gradient (M factors) in case of repetitive dives, deeperthan-previous dives or multi-day diving;
- deep stops;
- safety stop;
- ascent rate: 10 m/min;
- altitude programs:
- P0 from 0 to 700 meters ASL (0-2296 ft);
- P1 from 700 to 1500 meters ASL (2296-4921 ft);
- P2 from 1500 to 2400 meters ASL
- (4921-7874 ft); • P3 from 2400 to 3700 meters ASL
- (7874-12139 ft);personal correction factor for added safety.

### MECHANICAL CHARACTERISTICS

- mineral glass;
- 3 buttons.

# FUNCTIONAL CHARACTERISTICS

#### User Interface

• 3-button easy access.

- DIVE operating mode
- AIR
- EAN
- BOTTOM TIME

# Scrolling of no-decompression limits

• from 12 to 48 m (39 -157 ft).

# LOG BOOK

- dive history;
- all dives are stored with profile points at 20 second intervals, for a total of max 36 hours.

# Backlighting

• temporary.

#### Audible alarms

- omitted decompression stop;
- excessive ascent rate;no-decompression limit reached;
- deep stop;
- maximum depth in relation to the max PPO<sub>2</sub> setting:
- tank reserve alarms.

# PC INTERFACE

# • USB (optional).

# SOFTWARE UPGRADE

 if Mares produces new functional characteristics for the Nemo Air, it will be possible to upgrade your computer by updating the software. The Nemo Air software can be updated using the USB interface (optional) and downloading the software from the Mares web site.

# • WARRANTY

#### 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 improper use of compressed air with pressure higher than the indicated maximun operating pressure, 360 bar (5150 psi).

#### HOW TO CHECK THE SERIAL NUMBER

The serial number is displayed in the System menu.

You can access the System option from the main menu using the <+> and <-> keys. Press the <CENTRAL> button until the graphic section of the screen displays the serial number of the instrument (figure 58):



FIG. 58

You should note this number on the warranty certificate inside the packaging. The serial number can also be found on the Nemo Air packaging.

# **DISPOSAL OF THE DEVICE**



Dispose of this device as electronic waste.

Do not throw it away with regular garbage.

local Mares dealer

If you prefer, you can return the device to your

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Deep Stop

CE

