EON

Air Integrated Dive Computer

INSTRUCTION MANUAL

SUUNTO


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THE SUUNTO Eon DIVE COMPUTER FEATURES:

- AIR INTEGRATION, CONNECTED TO THE SCUBA CYLINDER
- DISPLAYS CYLINDER PRESSURE AND REMAINING AIR TIME
- BUILT-IN SIMULATOR, INCLUDING CYLINDER PRESSURE AND AIR TIME DEMONSTRATION
- BUILT-IN CALENDAR CLOCK
- PERSONAL ADJUSTMENT
- ADJUSTMENT FOR ALTITUDE
- PHOSPHORESCENT LCD DISPLAY/EON LUX WITH THE EL BACKLIGHT
- COMPLETE MEMORY CAPABILITIES INCLUDING 25 HOUR PROFILE MEMORY
- VISUAL AND AUDIBLE ALARMS
- PC INTERFACE CAPABILITY
- EASILY REPLACEABLE PROTECTIVE SHIELD
- CAN BE UPGRATED TO INCLUDE SUUNTO CB-51 COMPASS

DEFINITION OF WARNINGS, CAUTIONS AND NOTES

Throughout this manual, special references are made when deemed important. Three classifications are used to separate these references by their order of importance.

WARNING - is used in connection with a procedure or situation that may result in serious injury or death.
CAUTION - is used in connection with a procedure or situation that will result in damage to the product.
NOTE - is used to emphasize important information.

⚠ WARNING ! ⚠

READ THIS MANUAL !

Carefully read this instruction manual in its entirety, including Section 1, "For Your Safety". Make sure that you fully understand the use, displays and limitations of the **Eon**.

⚠ WARNING ! ⚠

NO DIVE COMPUTER WILL PREVENT THE POSSIBILITY OF DECOMPRESSION SICKNESS (DCS) !

All divers must understand and accept that there is no procedure or dive computer that will totally prevent the possibility of a decompression accident. For example, the individual physiological make up can vary within an individual from day to day. The dive computer cannot account for these variations. As an added measure of safety, you should consult a physician regarding your fitness to dive with Eon computer.

⚠ WARNING ! ⚠

ONLY DIVERS TRAINED IN THE PROPER USE OF SCUBA EQUIPMENT SHOULD USE THE **Eon** !

No dive computer can replace the need for proper dive training.

⚠ WARNING ! ⚠

NOT FOR PROFESSIONAL USE !

SUUNTO diving computers are intended for recreational use only. The demands of commercial or professional diving often expose the diver to depths and prolonged exposures including multiday exposures that tend to increase the risk of decompression sickness. Therefore, Suunto specifically recommends that the **Eon** be not used for commercial or other severe diving activity.

⚠ WARNING ! ⚠

PERFORM PRECHECKS !

Always check the **Eon** before diving in order to ensure that all LCD segments are completely displayed, that the air pressure reading is correct, that the **Eon** has not run out of battery power, and that the altitude/personal adjustment mode is correct.

⚠ WARNING ! ⚠

USE BACK-UP INSTRUMENTS

Make certain that you use back-up instrumentation including a depth gauge, submersible pressure gauge, timer or watch, and have access to decompression tables whenever diving with the **Eon**.

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INTRODUCTION

Congratulations on your choice of the SUUNTO **Eon** Dive Computer. The **Eon** is a compact and most sophisticated dive instrument that will give you years of trouble free and joyful diving. Once connected to the first stage of your regulator, it will provide you with important information that you will need during, between, and after your dives.

KEY FEATURES

The **Eon** monitors and reports vital information such as your dive time, current depth, maximum depth, no-decompression time, cylinder pressure, remaining air time and ascent rate. It will give you visual and audible warnings, as required. Its built-in simulator allows you to get acquainted with the features and displays of the **Eon** before diving and to plan dives in advance. The **Eon** will also give you information, if through carelessness or emergency you are forced to exceed the no-decompression limits for any dive.

The **Eon** has a built-in calendar and clock. It features versatile memory capabilities, including both detailed profiles and long-term historical data. It can interface with a PC, allowing for additional log book features and dive simulation. The instrument can be adjusted for diving at different altitudes and for personal conditions. The screen is protected against scratches and damage by an integrated replaceable shield.

The **Eon** is available either as a single instrument or with the CB-51 compass module. The construction allows for the separate compass module to be attached to the **Eon** at a later stage.

GETTING STARTED

A fast way for you to get started with the **Eon** is to let the built-in dive simulator demonstrate its features and displays. This is

described in Section 2, "Getting Acquainted with the **Eon**". Before your first actual dive you must also read and understand Section 1, "For Your Safety" and Section 3, "Diving with the **Eon**" in their entirety.

Section 4, "Menu Based Functions" teaches you how to access the memory functions and simulator, and how to set the altitude/ personal adjustment mode and the clock. Section 5, "PC Interface" gives you some information on the capability of this optional package.

Section 6, "Care and Maintenance" and Section 7, "Technical Description" gives you detailed information on these two subjects. Finally, there is warranty information in Section 8, and a glossary in Section 9.

METRIC AND IMPERIAL UNITS

All examples in this manual are shown in metric units, including meters, bars, and °C. The corresponding imperial units are shown in brackets. The **Eon** is also available with imperial units, i.e. feet, psi and °F.

⚠ WARNING ! ⚠

VERIFY THAT THE UNITS OF MEASURE, WHETHER METRIC OR IMPERIAL, ARE CORRECTLY SELECTED BEFORE STARTING TO DIVE. ANY CONFUSION RESULTING FROM IMPROPER SELECTION OF UNITS MAY CAUSE THE DIVER TO COMMIT ERRORS THAT MAY LEAD TO SERIOUS INJURY.

1. FOR YOUR SAFETY

Always remember that **THE DIVER IS RESPONSIBLE FOR HIS OR HER OWN SAFETY !**

When used properly the **Eon** is an outstanding tool for assisting properly trained, certified divers in planning and executing standard and multi-level sport dives within the described no-decompression limits. It is **NOT A SUBSTITUTE FOR CERTIFIED SCUBA INSTRUCTION** including training in the principles of decompression.

DO NOT attempt to use the Suunto **Eon** without reading this entire Instruction Manual. If you have any questions about the manual or the **Eon**, contact your Suunto dealer before diving with the **Eon**.

BACK-UP INSTRUMENTS

⚠ WARNING ! ⚠

USE BACK-UP INSTRUMENTS

Make certain that you use back-up instrumentation including a depth gauge, submersible pressure gauge, timer or watch, and have access to decompression tables whenever diving with the **Eon**.

AIR TIME

Before each dive, make sure that your air pressure is sufficient for the planned dive. While diving, check cylinder supply pressure frequently.

SHARING THE **Eon**

⚠ WARNING ! ⚠

THE **Eon** SHOULD NEVER BE TRADED OR SHARED BETWEEN USERS WHILE IT IS IN OPERATION !

Its information will not apply to someone who has not been wearing it throughout a dive or sequence of repetitive dives. Its dive profiles must match that of the user. If it is left on the surface during any dive, it will give inaccurate information for subsequent dives.

No dive computer can take into account dives made without the computer. Thus any diving activity 48 hours prior to initial use of the computer may give misleading information and must be avoided.

HIGH ALTITUDE/PERSONAL ADJUSTMENT

More information about this is given in Section 3.6, "High Altitude Dives and Personal Adjustment".

⚠ WARNING ! ⚠

SET THE CORRECT ALTITUDE/PERSONAL ADJUSTMENT MODE !

When diving at altitudes greater than 700 m [2300 ft] the altitude/personal adjustment feature must be correctly selected in order for the computer to calculate no-decompression status. The diver should also use this option to make the calculations more conservative, whenever it is believed that factors which tend to increase the possibility of DCS exist (see Section 3.6). Failure to properly select the altitude/personal adjustment mode correctly will result in erroneous data and can greatly increase the risk of DCS.

⚠ WARNING ! ⚠

The **Eon** is not intended for use at altitudes greater than 2400 m (8000 ft). Diving at altitudes above this limit may significantly increase the risk of DCS.

When diving at higher altitudes (above 700 m / 2300 ft), it is essential that the entered altitude mode, i.e. maximum altitude limit of the **Eon**, exceeds or is equal to the altitude of the dive site. The altitude mode indicator must show either A1 or A2, depending on the altitude. More information about this is given in Section 3.6, "High Altitude Dives and Personal Adjustment".

DECOMPRESSION DIVES

⚠ WARNING ! ⚠

DO NOT USE THIS INSTRUMENT TO CONDUCT DECOMPRESSION DIVES !

Suunto does not recommend this instrument to be used to conduct decompression dives. However, if through carelessness or emergency a diver is forced to exceed the no-decompression limits on a dive, the **Eon** will provide decompression information required for ascent. After this the **Eon** will continue to provide subsequent interval and repetitive dive information.

EMERGENCY ASCENTS

In the unlikely event that the **Eon** malfunctions during a dive, follow the emergency procedures provided by your certified dive training or, alternatively, immediately ascend at a rate slower than 10 m/min [33 ft/min] to a depth between 3 and 6 meters [10 to 20 ft] and stay there as long as your air supply will safely allow.

HIGHER RISK DIVE PROFILES

The user must understand that all decompression devices (decompression tables and/or dive computers) are based on mathematical models and that many experts are currently concerned that these models may not under certain conditions adequately describe the physiological phenomena. These conditions are presently identified as dives which incorporate the following:

- REVERSE PROFILES — where the diver spends the majority of the dive at shallow depths and then descends to the maximum depth shortly before surfacing.
- SAWTOOTH PROFILES — where the diver alternates between greater and shallower depths repeatedly throughout the dive.
- CONSECUTIVE DIVES — where the diver performs repetitive dives to approximately the same maximum depth with only short surface intervals between dives. The risk of DCS increases when depth and the number of repetitive dives increases and when the surface intervals are decreased.
- MULTIDAY DIVES — repetitive dives performed for several consecutive days.
- DECOMPRESSION DIVES — any dive during which the no-decompression limit has been exceeded or the diver is advised by the computer that he may not return directly to the surface.

⚠ WARNING ! ⚠

Dive practices which include the above described "Higher Risk Dive Profiles" are considered potentially dangerous and should be avoided even if they conform to the mathematical model.

DIVE COMPUTER LIMITATIONS

While the **Eon** is based on current decompression research and technology, the user/diver must realize that the computer cannot monitor the actual physiological functions of an individual diver. All decompression schedules currently known to the authors, including the U.S. Navy Tables, are based on a theoretical mathematical model which is intended to serve as a guide to reduce the

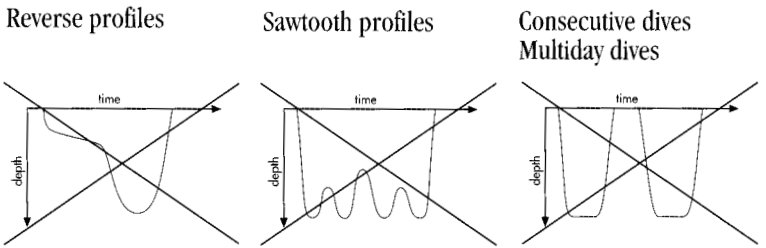


Fig. 1.1 HIGHER RISK DIVE PROFILES

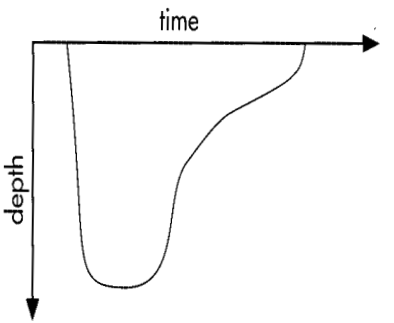


Fig. 1.2 RECOMMENDED PROFILE

probability of decompression sickness.

The mathematical model utilizes an ascent rate of 10 m/min [33 ft/min]. Therefore it is critical that a proper ascent rate is used at all times.

The reader/diver is forewarned that individual physiological differences, severe environmental conditions and predive activities, especially those which tend to increase dehydration, may increase the risk of decompression sickness.

As a safety precaution Suunto recommends that divers using the **Eon** should maintain no less than 5 to 10 minutes no-decompression time remaining at all times during the dive. This is especially important for divers in poor physical condition, in cold water or other arduous conditions.
Historically divers have been advised to always include a margin of safety in their diving activities. Suunto supports these practises and strongly recommends that the diver make the deepest portion of the dive near the beginning of the dive and gradually progress into shallower depth, allowing time for a 3 to 5 minutes "safety stop" at a depth range of 3 to 6 meters (10 to 20 ft.). This is believed to be effective in further reducing the risk of decompression sickness.

Furthermore, the reader/diver is advised that any dive carries some risk of decompression sickness and neither the authors, nor SUUNTO OY will assume any responsibility or liability for accidents or injuries which might occur for any reason.

⚠ WARNING ! ⚠

DO NOT USE THE EON WITH NITROX MIX !

The mathematical tissue calculation model of the **Eon** has been designed for use with standard breathing air only (approximately 21 % oxygen and 79 % nitrogen by volume). Therefore, the **Eon** must not be used for diving with "Nitrox" or other mixed gases.

2. GETTING ACQUAINTED WITH THE EON

This brief introduction will utilize the unique built-in dive simulator of the **Eon**. Following the simple steps described below you will be able to see exactly what the display might show during different stages of a typical dive sequence.

⚠ WARNING ! ⚠

READ AND UNDERSTAND THE ENTIRE OWNER'S MANUAL BEFORE DIVING !

Failure to complete this step may result in serious personal injury.
The purpose of this section is to provide the user with initial information to preview the operation of the computer. Since this information is limited, it is imperative that you read and understand the entire owner's manual before attempting to dive.

In dive simulation mode the computer will operate without being connected to your regulator. However, before performing real dives the **Eon** must be attached to the first stage of your regulator, as described in Section 3.1, "Installation".

2.1 WATER CONTACTS

The **Eon** has three water contacts on the face of the instrument:

- **COM:** COMMON CONTACT
- **ON/PLAN:** ACTIVATION AND DIVE PLANNING CONTACT
- **TIME/MODE:** TIME DISPLAY AND MODE SELECTION CONTACT

On the surface the **Eon** is operated by simultaneously touching the COM contact and one or two of the other contacts. When doing this, your finger tips should be wet or moist in order to establish the necessary electric contact. When submerged these contacts are automatically connected by the conductivity of the water.

2.2 ACTIVATION

The **Eon** is activated by touching the ON/PLAN and COM contacts (Fig 2.1). The Eon confirms this with a short beep.

The first display, the STARTUP, shows all available elements and immediately after this the serial number of the unit. A few seconds later the READY display will appear, showing zero values (Fig. 2.2).

2.3 THE DIVE SIMULATOR – FOR EASY LEARNING

The **Eon** built-in Dive Simulator is an excellent tool for getting familiarized with the **Eon**. It will allow you to "perform" dive profiles of your choice and see exactly what the display would look like during an actual dive. This includes basic dive information, as well as audible and visual warnings.

In simulation mode the time has been speeded up, moving four times faster than real time when diving and 12 times as fast on the surface.

ENTER THE DIVE SIMULATION MODE

To enter the dive simulation mode, keep your moistened fingers against the TIME/MODE and COM contacts. A bar on the right hand side of the display will scroll through the different modes available. Lift your fingers when the scroll bar is in line with the letters dSI (dive simulation) next to the screen and the text dSi is shown on the display.

NOTE: In dive simulation mode the lower frame of the center window will blink, as a warning that the Eon is showing simulated data. In normal surface or dive situations it will not blink.

AIR TIME/CYLINDER PRESSURE DEMONSTRATION

It is impossible to predict reliably the air consumption of future dives, but an example air consumption has been programmed for demonstration purposes. Therefore the consumption **is not** the same as your own air consumption. **Do not use this information to plan your dive.**

The cylinder pressure will start to drop immediately after you descend with the simulator and the cylinder will automatically be refilled after a simulated surfacing.

The air time and cylinder pressure demonstration is only available before any dive has been performed. When the simulator is used after an actual dive, this information will not be shown. The purpose of this is to avoid any risk of confusion between the real air pressure and the simulated one.

BEFORE DIVING (SIMULATION)

To make the first dive. When you enter the dive simulation mode, as described above, the initial display is the READY display (Fig 2.2).

Next, enter the DIVE PLANNING mode by touching the ON/PLAN and COM contacts for about one second. Release your fingers immediately when you hear a short beep.

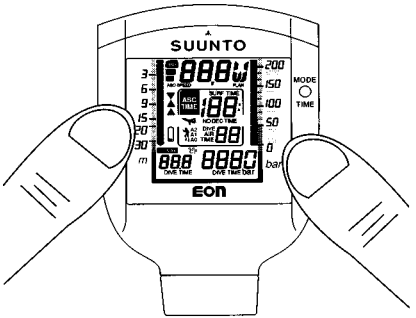


Fig. 2.1 ACTIVATION
Touch the ON/PLAN and COM contacts with moistened fingers.

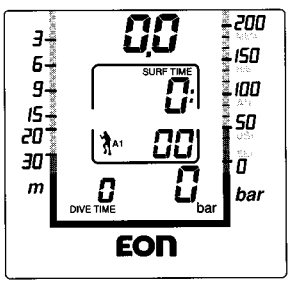


Fig. 2.2 READY display

The DIVE PLANNING display will rapidly cycle through the no-decompression limits for various depths (Fig 2.3, display A).

DIVING (SIMULATION)

To simulate a dive, use the three contacts as follows:

To descend: touch the ON/PLAN and COM contacts for as long as you want to descend.

To ascend: touch the TIME/MODE and COM contacts. You will have to lift your fingers momentarily to avoid an excessive ascent speed rate.

We are now ready to descend. Keep your fingers on the ON/PLAN and COM contacts for a couple of seconds at the time.

Fig. 2.3 SIMULATED DIVE PROFILE AND CORRESPONDING DISPLAYS

A: DIVE PLANNING: *At 30.0 m [100 ft] the No Dec time is 14 minutes in A1 mode. The dive counter shows 0, i.e. no dive has been made, and the simulated pressure is 200 bar [2900 psi].*

B: DIVING: *At 29.8 m [98 ft] depth after 6 minutes of diving. The No Dec time is 11 minutes, the remaining air time 14 minutes and the air pressure 150 bar [2170 psi].*

C: DIVING: *The ascent speed is 7.5 – 10 m/min [25 – 33 ft/min], as shown by the three segments in the upper left corner.*

D: DIVING: *The pressure reaches 50 bar [725 psi]. Two beeps are heard and the pressure bar graph blinks.*

E: DIVING: *The pressure reaches 35 bar [500 psi] and the remaining air time is 0 minutes. Two beeps are heard and the pressure figure continues to blink.*

F: SURFACE: *The maximum depth was 29.8 m [98 ft], the dive time was 20 minutes, the surface time is 10 minutes and the air cylinder has been "refilled" to 200 bar [2900 psi].*

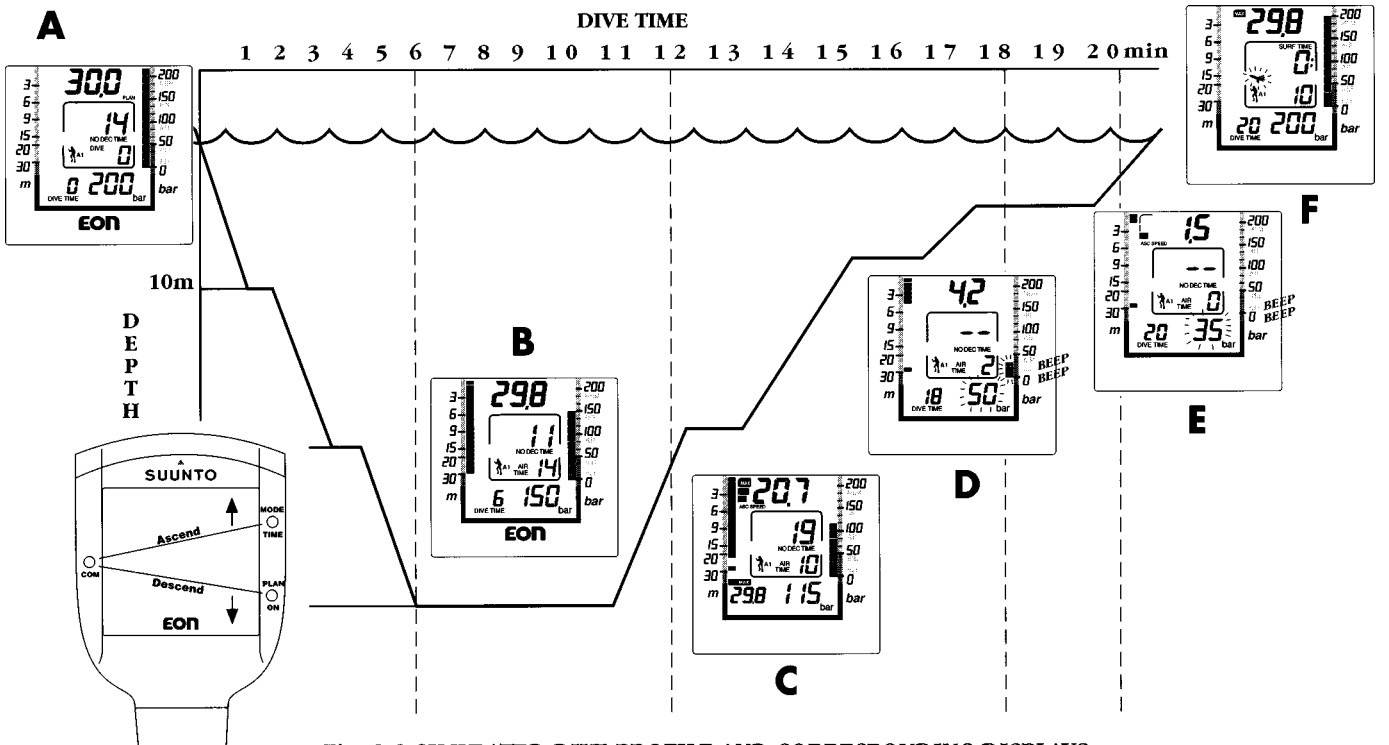


Fig. 2.3 SIMULATED DIVE PROFILE AND CORRESPONDING DISPLAYS

Descend step by step to about 30 m [100 ft]. Your screen will now look something like display B in fig. 2.3.

After about 9 minutes of diving, start the ascent. Check your ascent rate on the ascent rate indicator. The ascent rate is indicated in the upper left corner by one, two, or three bars indicating a maximum ascent rate of 5, 7.5, and 10 m/min [16, 25, and 33 ft/min, respectively (Fig. 2.3 C). If you exceed the maximum allowed ascent rate of 10 m/min [33 ft/min], all three bars and a blinking SLOW will be shown.

Remember to make a safety stop at a depth of about 4,5 m [15 ft] before surfacing (Fig. 2.3 D). While making the safety stop you can follow the digital and analog cylinder pressure and air time displays to learn the warnings (beeps and blinking displays) related to the pressure dropping below 50 bar [725 psi] and 35 bar [500 psi]. The air time will run to zero in between these two pressure values depending on the air consumption (here at 40 bar [580 psi]). Now it is time to surface (Fig. 2.3 E).

SURFACE INTERVAL (SIMULATION)

Back on the surface the display shows the maximum depth and dive time of your simulated dive (Fig. 2.3, display F). Your cylinder will automatically be refilled to 200 bar [2900 psi]. For the first ten minutes of simulated surface time, you will also see the remaining air time. After ten minutes, the air time will be replaced by the no-flying time display.

It is also possible to simulate repetitive dives and to see how the **Eon** works e.g. during a decompression dive.

EXIT THE DIVE SIMULATION MODE

You may at any time exit the simulation mode by making contact between all three water contacts. This is most easily done by first covering the TIME/MODE and ON/PLAN contacts with your right thumb and then touching the COM contact with your left thumb. As usual, it helps if your fingers are wet or moist.

This procedure will bring you back to the normal READY mode. The **Eon** is now ready for a dive. It will automatically switch off in about 10 minutes of surface time in case you do not use it anymore and no real dives have been performed.

3. DIVING WITH THE EON

This section contains instructions on how to operate the **Eon** and interpret its displays. Each display has been carefully designed to provide important information you will need to plan your dive or dive series.

You will find that the **Eon** is easy to use and read. Each display shows only the data relevant to that specific diving situation. For example, while you are on a dive, surface interval data is irrelevant and therefore not shown. On the other hand, while you are on the surface after a dive, remaining no-decompression dive time for that dive is irrelevant and therefore replaced with information for your next dive.

3.1 INSTALLATION

CAUTION!

BEFORE DIVING, MAKE SURE THAT THE EON IS PROPERLY ATTACHED TO THE FIRST STAGE OF YOUR REGULATOR BY AN AUTHORIZED DEALER !

When purchasing the **Eon**, have your dealer attach it to the first stage of your regulator. If you decide to attach it yourself, the following steps should be followed:

1. Remove the high pressure (HP) port plug on the first stage of your regulator using an appropriate sized wrench.
2. Thread the high pressure hose of the **Eon** into the port of your regulator with your fingers. Tighten the hose fitting with a 16 mm [5/8"] wrench. DO NOT EXCEED 5 Nm (40 lbf -in) TORQUE !
3. Attach the regulator to a charged scuba cylinder. Slowly open the valve. Check for leaks e.g. by submerging the regulator first stage in water. If leaks are detected, consult your dealer.

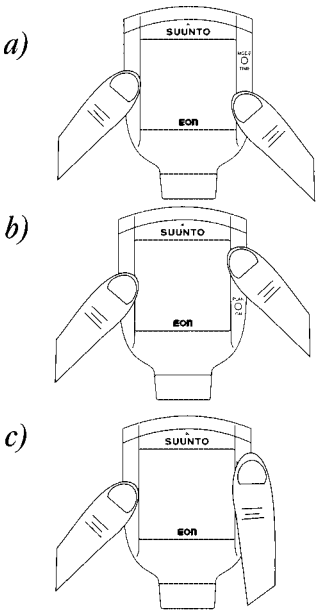


Fig. 3.1 USING THE WATER CONTACTS
a) Activation and dive planning
b) Time display and menu based modes
c) Exit the modes

3.2 USE OF WATER CONTACTS

As described in Section 2.1, "Water Contacts", the **Eon** is controlled with the COM (common), ON/PLAN, and TIME/MODE contacts (Fig 3.1), as follows:

Activation: touch the ON/PLAN and COM contacts.

Dive planning: once the **Eon** has been activated, touch the ON/PLAN and COM contacts.

Clock: touch the TIME/MODE and COM contacts for a second. The time is then displayed for four seconds.

When the TIME/MODE and COM contacts are being touched over two seconds, the display will start to scroll through the following modes. Lift your fingers when the desired mode is displayed:

Memories: at LOG the logbook and profile memories are accessed.

Dive history: at HIS the history memory is accessed.

Altitude/ personal adjustment setting: at Alt the altitude and/or personal adjustment can be set.

Dive simulator: at dSI the dive simulator is ready for use.

Time setting: at Set the clock can be adjusted.

Return: you can at any time exit the above modes by touching all three contacts at the same time. First make contact between the

ON/PLAN and TIME/MODE contacts, e.g. by covering both contacts with your right thumb. Without lifting your right thumb, touch the COM contact with your left thumb.

Alternatively, you can exit the modes simply by submerging the **Eon** in water.

You may sometimes encounter problems in using the contacts, or the **Eon** may activate on its own. The reason for this is probably contamination or invisible marine growth that may create an unwanted electric current between the water contacts. It is therefore important that the **Eon** be carefully washed in fresh water after the day's diving is completed. The contacts can be cleaned with a soft pencil eraser.

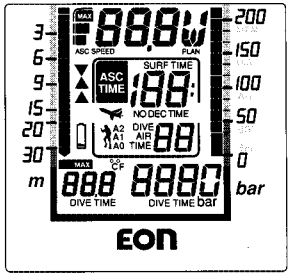


Fig. 3.2 STARTUP I. *All segments shown*

3.3 BEFORE DIVING

3.3.1 Activation, Prechecks and Battery Warning

The **Eon** is always ready for use and will activate if submerged. However, it is necessary to turn it on before diving to check the cylinder pressure, altitude/personal adjustment setting, battery warning, etc. This is done, either by immersing it in water for couple of seconds or by connecting the ON/PLAN and COM contacts with fingertips.

A short beep is heard. All display elements will turn on (showing mostly figure 8's and graphical elements) (Fig. 3.2). A few seconds later the serial number of the unit is shown (Fig. 3.3).

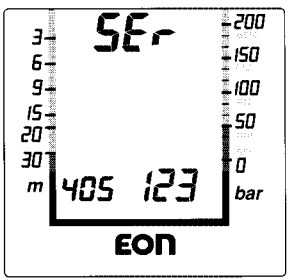


Fig. 3.3 STARTUP II
The serial number of the unit is 405123. This means the unit was the 123rd unit made during week no 05 of the year 1994.

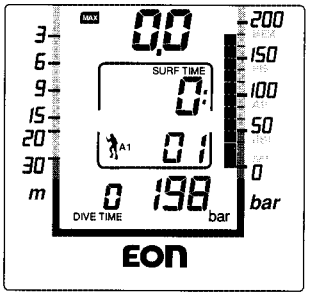


Fig. 3.4 READY I
The maximum depth and dive time are zero (as no dives have yet been made), the surface interval time is 0 hours 01 min (in this case from activation), the cylinder pressure 198 bar [2870 psi] (also shown on the right side bar graph), and the altitude/personal adjustment mode A1. The screen will alternate between READY I and READY II.

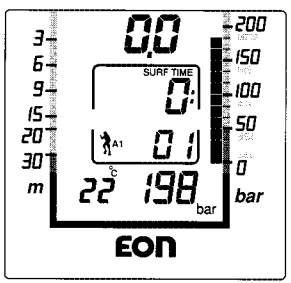


Fig. 3.5 READY II
The present depth is 0.0 m [0 ft] and the temperature 22 °C [72 °F].

Next, the screen will alternate between two READY displays, confirming that the activation is complete (Fig. 3.4 and 3.5).

At this time, perform your precheck making sure that:

* the **Eon** operates and provides a display
* its battery power is not low
* your scuba cylinder valve is open
* the altitude/ personal adjustment setting is correct
* you have enough air for your planned dive. You should also check the pressure reading against your back-up pressure gauge.

The **Eon** is now ready for diving.

If the **Eon** is not taken on a dive after activation, it will automatically turn off in 10 minutes to conserve the battery power.

The **Eon** does not need to be reactivated for repetitive dives. It will remain active until it has calculated that all residual nitrogen has off-gassed. This may take up to 48 hours, as described in Section 7.1, "Operating Principles".

HIGH ALTITUDE DIVING AND PERSONAL ADJUSTMENT

⚠ WARNING ! ⚠

SET THE CORRECT ALTITUDE/
PERSONAL ADJUSTMENT MODE !

When diving at altitudes greater than 700 m [2300 ft] the altitude/personal adjustment feature must be correctly selected in order for the computer to calculate no-decompression status. The diver should also use this option to make the calculations more conservative, whenever it is believed that factors which tend to increase the possibility of DCS exist (see Section 3.6). Failure to properly select the altitude/personal adjustment mode correctly will result in erroneous data and can greatly increase the risk of DCS.

⚠ WARNING ! ⚠

The **Eon** is not intended for use at altitudes greater than 2400 m (8000 ft). Diving at altitudes above this limit may significantly increase the risk of DCS.

If you are diving at higher altitudes, make sure that the altitude mode has been set according to the altitude of your dive site.

For information on how to select the correct altitude setting and how to use the personal adjustment, see Section 3.6, "High Altitude Dives and Personal Adjustment"

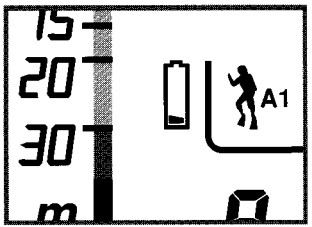


Fig. 3.6 BATTERY WARNING
The battery symbol indicates that the battery is too low for diving.

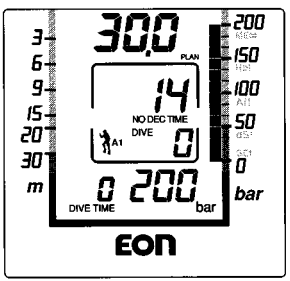


Fig. 3.7 DIVE PLANNING
The no-decompression limit at 30.0 m [100 ft] is 14 minutes in A1 mode.

BATTERY WARNING

If the battery symbol is displayed, the **Eon should not be used** (Fig. 3.6). It indicates that the battery is too low to operate the **Eon**. If the low battery symbol appears during a dive, you should abort the dive and begin ascent to the surface.

NOTE: Temperature affects the battery voltage.
If the **Eon** is stored at temperatures below freezing point, the low battery warning may be displayed even though the battery has enough capacity in warmer conditions. Make sure that the low battery warning disappears before diving.

3.3.2 Dive Planning

It is possible at any time on the surface to enter the DIVE PLANNING mode, simply by touching the ON/PLAN and COM contacts. The display will rapidly cycle through the no-decompression limits for various depths in 3 m [10 ft] increments starting at 9 m [30 ft] (Fig. 3.7). It takes about 30 seconds to run through the complete cycle, after which the **Eon** will automatically return to the READY display.

Higher altitude/personal adjustment modes will shorten the no-decompression time limits. These limits at different altitude/personal adjustment mode selections are shown in Tables 7.1 and 7.2 in Section 7.1, " OPERATING PRINCIPLES".

3.3.3 Calendar Clock Function

The TIME display can be retrieved at any time on the surface by touching the TIME/MODE and COM contacts for about a second. The current time and date will be shown for four seconds (Fig. 3.8).

When diving, the dive entry time and date is registered in the logbook memory. Remember always to check before diving that the clock is set, especially when travelling to different time zones. For adjusting the clock, refer to Section 4.5, "Setting Time and Date".

In the metric version of the **Eon**, the 24 hour system is used, while in the imperial version the 12 hour system is used.

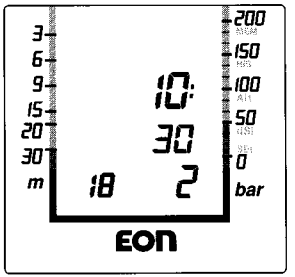


Fig. 3.8 TIME DISPLAY
The time is 10:30 (in case of imperial units, A for a.m. and P for p.m. would be shown in the upper left corner of the display). The date is 18.2 or February 18th.

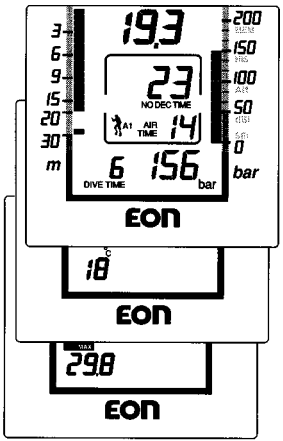


Fig. 3.9 DIVING DISPLAY
The present depth is 19.3 m [63 ft] and the present cylinder pressure 156 bar [2260 psi]. The no-decompression time limit is 23 minutes and the remaining air time 14 minutes. The dive time 6 minutes, water temperature 18°C [64°F] and maximum depth during this dive 29.8 m [98 ft] are alternating in the lower left corner.

The depth is also shown on the left hand side bar graph, with the maximum depth shown with a single bar. The pressure is also shown on the right hand side bar graph.

3.4 DIVING

3.4.1 Basic Dive Data

The **Eon** will remain in the SURFACE mode at depths less than 1,5 m [5 feet]. At depths greater than 1,5 m the **Eon** will turn to the DIVE mode.
Each piece of information on the display is clearly marked (Fig. 3.9). During a no-decompression dive, the following information will be shown:

- the available no-decompression time in minutes is shown as NO DEC TIME. It is calculated based on the five factors listed in Section 7.1, "OPERATING PRINCIPLES".
- your present depth is shown in meters [ft]. In addition to the digital display, the present depth is also presented graphically with a depth bar graph along the left side of the display window.
- the cylinder pressure and air time, is discussed in Section 3.4.2.
- the altitude/personal adjustment setting (A0, A1, or A2).

In the lower left corner the following information will alternate:

- the elapsed dive time in minutes, shown as DIVE TIME, for 6 seconds.
- the water temperature, followed by °C for Centigrade [or °F for Fahrenheit], for about 1 second.
- the maximum depth during this dive in meters [ft], as MAX, for about 2.5 seconds. A single bar on the depth bar graph also shows the maximum depth reached.

3.4.2 Air Pressure Data

The air pressure of your scuba cylinder in bars [psi] will be shown digitally in the lower right corner of the display and as a bar graph along the right side of the display. Anytime you enter into a dive, the remaining air time calculation begins. After 30 – 60 seconds (sometimes more, depending on your air consumption), the first estimation of remaining air time will be shown in the center window of the display (Fig. 3.10 and 3.11). The calculation is always based on the actual pressure drop in your cylinder and will automatically adapt to your cylinder size and current air consumption.

The change in your air consumption will be based on constant one second interval pressure measurements over 30 – 60 second period. An increase in air consumption will influence the remaining air time rapidly, while a drop in air consumption will increase the air time slowly. Thus an unrealistic air time estimation, caused by a temporary drop in air consumption, is avoided.

The calculations of the remaining air time include a 35 bar [500 psi] safety buffer. This means that when the **Eon** shows the air time to be zero, there is still about 35 bar [500 psi] pressure remaining in your cylinder depending on your air consumption rate. With a high consumption rate the limit will be close to 50 bar [725 psi] and with a low rate close to 35 bar [500 psi].

NOTE: Filling your BC will affect the air time calculation, due to the temporary increase of air consumption.

NOTE: A change of temperature will affect the cylinder pressure and consequently the air time calculation e.g. cold cylinder to warm water or vice versa.

See also chapter 3.5.1.

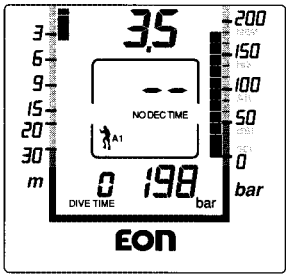


Fig. 3.10 DIVING
The dive has just begun and no air time is shown. The first remaining air time estimate will be shown after 30 – 60 seconds.

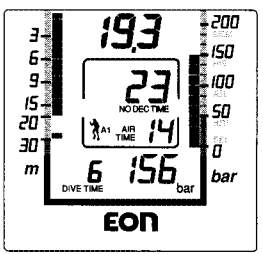


Fig. 3.11 DIVING
The present cylinder pressure is 156 bar [2260 psi] and the remaining air time 14 minutes.

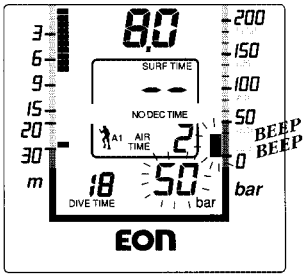


Fig. 3.12 CYLINDER PRESSURE WARNINGS
The pressure has dropped below 50 bar [725 psi]. The digital and analog pressure displays are blinking and a double beep is heard.

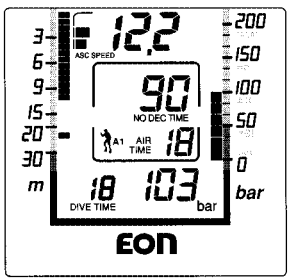


Fig. 3.13 ASCENT METER
Two segments shown: ascent speed 5 – 7.5 m/min [16 – 25 ft/min]

LOW AIR PRESSURE WARNINGS

The **Eon** will warn you with audible double beeps and a blinking pressure display when the cylinder pressure reaches 50 bar [725 psi] (Fig. 3.12). The following double beeps are heard when the remaining air time reaches zero and the cylinder pressure reaches 35 bar [500 psi].

⚠ WARNING ! ⚠

In decompression mode, always compare the ascent time to the air time remaining and air pressure. It is important that you have sufficient air to make proper decompression stops.

3.4.3 Ascent Meter

The ascent rate is shown graphically in the upper left corner, next to the notation ASC SPEED, as follows:

Ascent rate indicator	Ascent speed	Example in Fig. no.
No segments	Below 2.5 m/min [8 ft/min]	
One segment	2.5 – 5.0 m/min [8 – 16 ft/min]	
Two segments	5.0 – 7.5 m/min [16 – 25 ft/min]	3.13

Three segments	7.5 – 10 m/min [25 – 33 ft/min]	3.14
Blinking SLOW and three segments	Above 10 m/min [33 ft/min]	3.15

The SLOW warning alternates with the depth.

The SLOW warning is an indication that the maximum ascent rate has been exceeded.

Whenever the SLOW warning appears, you should immediately slow down or stop your ascent until the warning disappears. You must not ascend shallower than 3 m [10 ft] with the SLOW warning on. If you reach this depth with SLOW on, you must stop at this depth and wait until the warning disappears.

⚠ WARNING ! ⚠

RAPID ASCENTS INCREASE THE RISK OF INJURY. DO NOT EXCEED THE MAXIMUM RECOMMENDED ASCENT RATE.

You must never surface with the SLOW warning on. If you do this, the warning will continue to flash until the unit deactivates itself in the normal manner. This may take up to 48 hours.

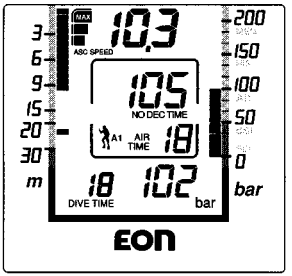


Fig. 3.14 ASCENT METER
Three segments shown: ascent speed 7.5 – 10 m/min [25 – 33 ft/min]

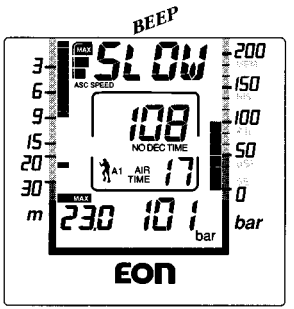


Fig. 3.15 ASCENT METER
Blinking SLOW and three segments shown: ascent speed more than 10 m/min [33 ft/min]. This is a caution to slow down !

⚠ WARNING ! ⚠

Do not attempt to dive following a surface interval during which the slow indicator remains activated. Violation of the maximum ascent rate may invalidate the calculations for the next dive.

NOTE: SUUNTO highly recommends a safety stop at the end of every dive in the range of 3 m – 6 m [10 ft – 20 ft] for 3 – 5 minutes.

3.4.4 Audible and Visual Alarms

The **Eon** features audible and visual alarms to alert you when you are approaching dangerous situations or to acknowledge certain commands given by you:

Acknowledgment of commands using the water contacts: a short single beep, occurs when:

- the **Eon** is activated
- the DIVE PLANNING mode is activated
- scrolling the menu based functions, at each step
- returning from the menu based modes

Potential danger situations during a dive: a single beep, occurs when:

- 60 m [197 ft] depth is reached. Two arrows pointing upwards will appear, as dives below this depth are extremely dangerous.
- the no-decompression dive turns into a decompression dive. Two arrows pointing upwards and the ascend warning ASC TIME will appear.

NOTE: Suunto strongly recommends that sport divers limit their maximum depth to 40 m [130 ft] !

Immediate danger: continuous beeps. This happens when:

- the maximum allowed ascent rate, 10 m/min [33 ft/min], is exceeded. A blinking SLOW warning will alternate with the depth display.
- the ceiling depth is exceeded. A blinking error warning Er appears. You should immediately descend to or below the ceiling. The **Eon** will otherwise enter a permanent error mode in three minutes, indicated by a non-blinking Er.

Cylinder pressure and air time alarms: a double beep. This happens when:

- The cylinder pressure reaches 50 bar [725 psi]. The cylinder pressure display and the cylinder pressure bar will start to blink.
- The cylinder pressure reaches 35 bar [500 psi].
- The calculated remaining air time reaches zero.

3.4.5 Decompression dives

⚠ WARNING ! ⚠

DO NOT USE THIS INSTRUMENT TO CONDUCT DECOMPRESSION DIVES !

Suunto does not recommend this instrument to be used to conduct decompression dives. However, if through carelessness or emergency a diver is forced to exceed the no-decompression limits on a dive, the **Eon** will provide decompression information required for ascent. After this the **Eon** will continue to provide subsequent interval and repetitive dive information.

Rather than requiring you to make stops at fixed depths, the **Eon** permits you to decompress within a range of depths.

BACKGROUND

When your NO DEC TIME becomes zero, your dive becomes a decompression dive, i.e. you must perform one or several decompression stops on your way to the surface. The NO DEC TIME on your display will be replaced by a flashing notation ASC TIME.

⚠ WARNING ! ⚠

You should ascend and begin decompression immediately when the **Eon** shows you that decompression is required. Note the upward pointing arrows.

The ascent time (ASC TIME) is the minimum amount of minutes needed to reach the surface in a decompression dive. It includes:
The time needed to ascend to the ceiling at an ascent rate of 10 m/min [33 ft/min]
plus
The time needed at the ceiling. The ceiling is the shallowest depth to which you should ascend
plus
The time needed to reach the surface after the ceiling has been removed.

⚠ WARNING ! ⚠

YOUR ASCENT TIME MAY BE LONGER THAN SHOWN ON THE EON.

The ascent time will increase if you:
- remain at depth
- ascend slower than 10 m/min [33 ft/min], or
- make your decompression stop deeper than at the ceiling.

These factors will also increase the amount of air required to reach the surface.

CEILING, FLOOR, AND DECOMPRESSION RANGE

When in decompression, it is important that you understand the meaning of ceiling, floor, and decompression range:

- The ceiling is the shallowest depth to which you should ascend when in decompression. At this depth, or below, you must perform one or several decompression stops. All decompression stops must be performed at or below the ceiling depth.

- The floor is the deepest depth at which decompression takes place. Decompression will start when you pass this depth during your ascent.

- The decompression range is the depth range between the ceiling and floor. Within this range, decompression takes place. However, it is important to remember that the decompression will be very slow at or close to the floor.

The depth of the ceiling and floor will depend on your dive profile. They will be fairly shallow when you enter the decompression mode, but if you remain at depth, they will move downward and the ascent time will increase. Likewise, the floor and ceiling may change while you are decompressing.

The graphical depth scale on the **Eon** will show your ceiling. All of the depth bars shallower than your ceiling will blink. For example, if your ceiling is at 3 m[10 ft], all of the bars between 0 and 3 m [10 ft] will blink.

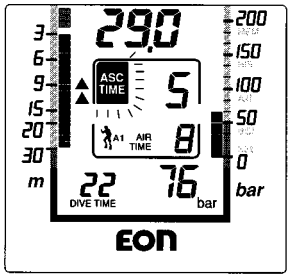


Fig. 3.16 DECOMPRESSION DIVE, BELOW FLOOR
The minimum ascent time is 5 minutes. Two upward pointing arrows tell you to ascend. The blinking ASC TIME tells you that you are below the floor. The ceiling is at 3 m [10 ft], as shown by the blinking part of the depth bar graph.

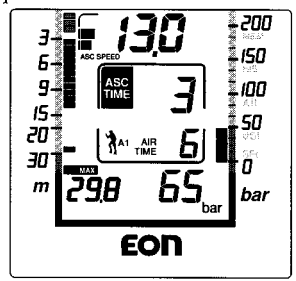


Fig. 3.17 DECOMPRESSION DIVE, ABOVE FLOOR
The blinking of the ASC TIME symbol has stopped and the two arrows disappeared. The present ASC TIME value is 3 minutes and the ceiling is at 3 m [10 ft], as indicated by the blinking section of the depth bar graph

⚠ WARNING ! ⚠

NEVER ASCEND ABOVE THE CEILING !

You must not ascend above the ceiling. In order to avoid doing so by accident, you should stay slightly below the ceiling.

When the sea surface is rough, it may be difficult to maintain a constant depth near the surface. In this case it will be more manageable to maintain an additional distance below to the ceiling, to make sure that the waves do not lift you above the ceiling. SUUNTO recommends that decompression takes place deeper than 4 m [13 ft], even if the indicated ceiling is shallower.

REMEMBER: IT WILL TAKE MORE TIME AND MORE AIR TO DECOMPRESS BELOW THE CEILING THAN AT THE CEILING.

DISPLAY BELOW FLOOR

The blinking ASC TIME and two upwards pointing arrows indicate that you are below the floor (Fig. 3.16). You should start your ascent immediately.

DISPLAY ABOVE FLOOR

When you ascend above the floor, the ASC TIME display stops blinking and the two upward pointing arrows disappear (Fig. 3.17). Decompression will now begin, but is very slow. You should therefore continue your ascent.

DISPLAY AT CEILING

When you reach the ceiling, the display will show you two arrows pointing toward each other (Fig. 3.18). Do not ascend above this depth. As described above, it is recommended to do the decompression stop somewhat below the ceiling, in order to avoid accidental ascent above the ceiling.

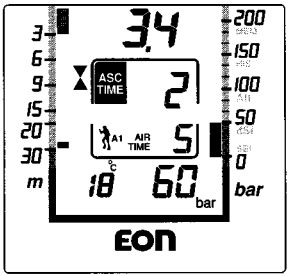


Fig. 3.18 DECOMPRESSION DIVE, AT THE CEILING
The two arrows point at each other ("hour glass"). You are at the ceiling at 3.4 m [11 ft] and your minimum ascent time is 2 minutes.

DISPLAY ABOVE CEILING

If you ascend above the ceiling, a downward pointing arrow will appear and continuous beeping starts (Fig 3.19). In addition a blinking error warning Er reminds you that you have only three minutes to correct the situation. You must immediately descend to or below the ceiling.

If you continue to violate the decompression, the **Eon** goes into a permanent ERROR MODE. In this mode the **Eon** can only be used as a depth and cylinder pressure gauge and timer (Fig. 3.20). You should not dive again for 48 hours. See also Section 3.7, "Error Conditions".

During decompression, ASC TIME will count down towards zero. The ceiling may move upwards, at which time you can ascend to the new ceiling. You may surface only when the ascent time reaches zero and ASC TIME is replaced by NO DEC TIME.

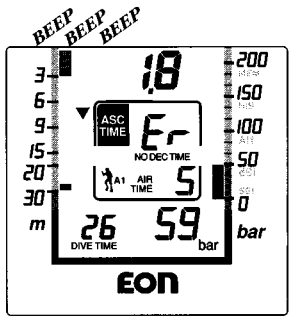


Fig. 3.19 DECOMPRESSION DIVE, ABOVE CEILING
Note the downward pointing arrow and the blinking Er warning. You will also hear an audible alarm. You should immediately descend to or below the ceiling.

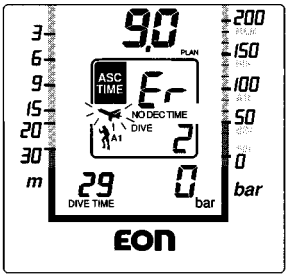


Fig. 3.20 SURFACE MODE AFTER VIOLATED DECOMPRESSION DIVE
The Er warning and the ASC TIME symbol indicate that you have violated the ceiling for more than three minutes. You should not dive again for 48 hours.

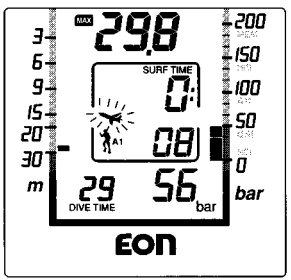


Fig. 3.21 SURFACE INTERVAL, DISPLAY I
You have surfaced 8 minutes ago from a 29 minute dive that reached a maximum depth of 29.8 m [98 ft] (also indicated by the single bar on the depth bar graph). The blinking airplane symbol indicates that you should not fly. DISPLAY I will alternate with one of the two DISPLAY II displays.

⚠ WARNING ! ⚠

In decompression mode, always compare the ascent time to the remaining air time and air pressure. It is important that you have sufficient air to make proper decompression stops.

3.5 AT SURFACE

3.5.1 Surface Interval

An ascent to any depth shallower than 1.5 m [5 ft] will cause the DIVING display to be replaced by the SURFACE displays, giving the following information (Fig. 3.21, 3.22 and 3.23).

- The surface time in hours and minutes (separated by a colon), telling the duration of the present surface interval. It is shown below SURF TIME in the center window of the display.
- The dive time in minutes, i.e. the total duration of the most recent dive, is displayed above DIVE TIME.
- The maximum depth of your most recent dive in meters [ft] is shown in the same position as your depth readings during the dive. MAX is shown in

front of the value. In addition the graphical depth display shows a single bar at the maximum depth.

- The air pressure in bar [psi] is shown in the lower right corner.
- The temperature in °C [°F] is shown in the lower left corner.
- The no-flying warning is indicated by a blinking airplane.
- For the first 10 minutes of surface time, remaining air time in minutes is shown in the center next to AIR TIME.
- After 10 minutes of surface time the desaturation/no flying time in hours and minutes is shown next to the non-blinking airplane.

If you start a new dive after less than 10 minutes at the surface, the **Eon** interprets this as a continuation of the previous dive. The DIVING display will return, the DIVE number will remain unchanged, and DIVE TIME will begin where it left off. After 10 minutes on the surface, subsequent dives are by definition repetitive. The DIVE counter displayed in the dive planning mode will progress to the next higher number if you make another dive.

The change or charge of your scuba cylinder during the first 10 minutes of surface time will temporarily drop the remaining air time to zero. In 30 – 60 seconds of diving, the air time will be corrected based on the new situation.

DIVE PLANNING

You may, at any time, on the surface enter the DIVE PLANNING mode in the way described in Section 3.3.2, by touching the ON/PLAN and COM contacts. The **Eon** will

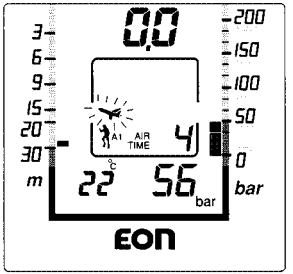


Fig. 3.22 SURFACE INTERVAL, DISPLAY II *(within 10 minutes of surfacing).*
The air time remaining is 4 minutes, in case you decide to continue your diving within 10 minutes of surface time. The depth is 0.0 m [0 ft] and the temperature 22 °C [72 °F].

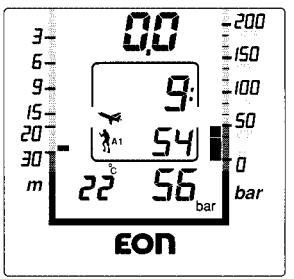


Fig. 3.23 SURFACE INTERVAL, DISPLAY II *(after 10 minutes on the surface).*
The desaturation time/no-flying time, indicated by a non blinking airplane symbol, is 9 h 54 min.

take into account the residual nitrogen caused by your previous dives. The no-decompression times given for different depths will therefore be shorter than before your first dive.

You may also read the time by touching the TIME/MODE and COM contacts, as described in Section 3.3.3.

3.5.2 Flying After Diving

When the surface interval time reaches 10 minutes, the no-flying time is shown in the center window next to the non-blinking airplane image. The airplane is blinking as a reminder, when the alternative display showing surface time is on. Flying or traveling to a higher altitude should be avoided anytime the airplane symbol is displayed.

The no-flying time displayed by the **Eon** is equivalent to the so called desaturation time. When this time has elapsed, the residual nitrogen is no longer a factor for subsequent dives. At this time the **Eon** will automatically deactivate itself.

⚠ WARNING ! ⚠

You are advised to avoid flying anytime the computer displays the do not fly warning - indicated by an airplane.
Further, the Divers Alert Network (DAN) advises as follows:

- A minimum surface interval of 12 hours would be required in order to be reasonably assured a diver will remain symptom free upon ascent to altitude in a commercial jetliner (altitude up to 2400 m [8000 ft]).
- Divers who plan to make daily, multiple dives for several days, or make dives that require decompression stops, should take special precautions and wait for an extended interval beyond 12 hours before flight.

Suunto recommends that flying be avoided until both the DAN guidelines and the **Eon** wait to fly conditions are satisfied.

3.6 HIGH ALTITUDE DIVES AND PERSONAL ADJUSTMENT

The **Eon** can be adjusted for diving at altitude or for increasing the conservatism of the mathematical model.
When programming the **Eon** for the correct altitude, the diver needs to select the correct altitude mode according to Table 3.1. As a result the **Eon** adjusts its mathematical model according to the entered altitude, giving shorter no-decompression times at higher altitudes (Tables 7.1 and 7.2). The entered altitude/personal adjustment mode is indicated by a A0, A1, or A2. Modes A1 and A2 are shown together with a diver symbol. Section 4.3, "Altitude Setting" describes how the altitude mode is adjusted.

TABLE 3.1 ALTITUDE RANGES.

Altitude mode	Altitude range	
A0	0 – 700 m	[0 – 2300 ft]
A1	700 – 1500 m	[2300 – 5000 ft]
A2	1500 – 2400 m	[5000 – 8000 ft]

⚠ WARNING ! ⚠

SET THE CORRECT ALTITUDE/PERSONAL ADJUSTMENT MODE !

When diving at altitudes greater than 700 m [2300 ft] the altitude/personal adjustment feature must be correctly selected in order for the computer to calculate no-decompression status. The diver should also use this option to make the calculations more conservative, whenever it is believed that factors which tend to increase the possibility of DCS exist (see Section 3.6). Failure to properly select the altitude/personal adjustment mode correctly will result in erroneous data and can greatly increase the risk of DCS.

⚠ WARNING ! ⚠

The **Eon** is not intended for use at altitudes greater than 2400 m (8000 ft). Diving at altitudes above this limit may significantly increase the risk of DCS.

⚠ WARNING ! ⚠

DO NOT USE THIS INSTRUMENT TO CONDUCT DECOMPRESSION DIVES !

Suunto does not recommend this instrument to be used to conduct decompression dives. However, if through carelessness or emergency a diver is forced to exceed the no-decompression limits on a dive, the **Eon** will provide decompression information required for ascent. After this the **Eon** will continue to provide subsequent interval and repetitive dive information.

Traveling to a higher elevation can temporarily cause a change in the equilibrium of dissolved nitrogen in the body with the sur-

roundings. It is recommended that the diver allow the body conditions to stabilize over a period of at least three hours before beginning to dive at altitude.

PERSONAL ADJUSTABILITY

The factors, which tend to increase the possibility of DCS, include but are not limited to:

- cold exposure – water temperature less than 20 °C [68 °F]
- the diver is below average physical fitness level
- multiday or repetitive dive exposure
- diver fatigue
- dehydrated conditions
- previous history of DCS

This feature should be used to adjust the computer to intentionally introduce a factor to make it more conservative according to personal preference by entering higher altitude mode than required in table 3.1 (i.e. diving at sea level with the altitude/personal adjustment set at A1 or A2). The no-decompression limits are then shortened accordingly.

3.7 ERROR CONDITIONS

The **Eon** is provided with warning indicators that advise the user to react to certain situations that would otherwise give rise to a significant increase risk of DCS if left unattended. If you do not respond to its warnings, it will enter an ERROR MODE, indicating the risk of DCS has greatly increased. If you understand and operate the **Eon** sensibly, it is very unlikely you will ever put the **Eon** into the ERROR MODE.

The ERROR MODE is shown by a blinking Er in the center display. Once in ERROR MODE, the **Eon** will continue to display current depth, dive time, cylinder pressure and remaining air time. You should immediately ascend or descend to a depth of

3 to 6 m [10 to 20 ft] and remain at this depth until air supply limitations require you to surface. When the surface has been reached, no further diving should take place for a minimum of 48 hours.

OMITTED DECOMPRESSION

The most common ERROR MODE results from omitted decompression, when the diver stays above the ceiling for more than three minutes. During this three minute period the Er warning will blink. The **Eon** will continue to function normally if the diver descends below the ceiling within three minutes. After this the **Eon** will enter a permanent ERROR MODE.

In the permanent ERROR MODE the **Eon** will not show no-decompression or ascent times. Only a permanent Er warning is shown in the center window. However, all the other displays will function as before, to provide information for ascent. At the surface, the ASC TIME will be displayed in the center window.

OTHER ERROR MODES

Diving to a depth below 99 m [325 ft] will place the EON in the ERROR MODE.

An OVERFLOW ERROR (blinking OE in the center window) will be shown when the microprocessor of **Eon** is not able to calculate any further nitrogen absorption in one or several compartments. This will, however, only occur under severe exposure conditions outside the limits of recreational diving. This feature can be observed in simulator mode.

If the entire **Eon** display begins to blink, allow the computer to complete its functional cycle and to deactivate. If, when reactivated, the display continues to blink, do not use the computer. Return your **Eon** to your dealer for service.

The display will start to blink if the voltage of the battery drops occasionally to a level which is not sufficient for the operation of the **Eon**. This may be due to very low battery, poor battery contacts or leakage to the battery compartment.

4. MENU BASED MODES

The menu based functions include the memories, the altitude/personal adjustment setting, the dive simulator and the date and time setting. The menu based functions are activated using the water contacts. Keep your fingers on the TIME/MODE and COM contacts while the **Eon** scrolls through the menu (Fig. 4.1). The desired mode is selected by breaking the finger contact when the desired mode appears on the display:

- **LOG:** Logbook and Dive Profile Memories. The Logbook gives a summary of each dive to approximately 25 hours of diving. The Profile Memory shows the detailed profile of these dives.
- **HIS:** Dive History Memory. The Dive History is a summary of all dives recorded by the **Eon**.
- **Alt:** Altitude/Personal Adjustment setting
- **dSI:** Dive Simulator
- **Set:** Date and Time Setting

When scrolling through the menu, a bar segment on the right hand side of the display will indicate the scrolling sequence.

Note that the menu based modes can be activated only when 10 minutes have elapsed after dive. Make sure that the contacts and the instrument itself are dry and clean before trying to use the menu based modes.

All menu based modes can be deactivated by the RETURN command, i.e. by connecting all three contacts simultaneously, or by immersing the **Eon** in water.

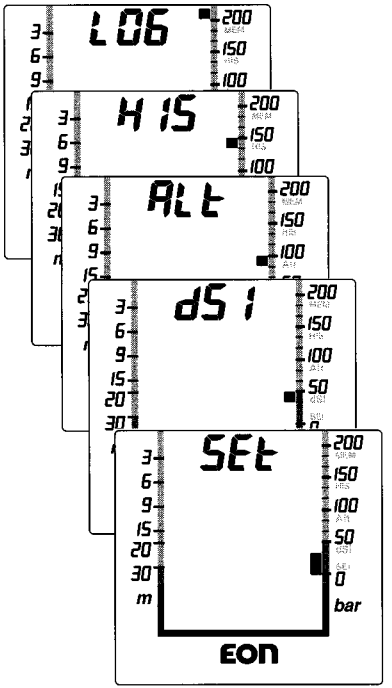


Fig. 4.1 MENU
The **Eon** *will scroll through the above displays.*

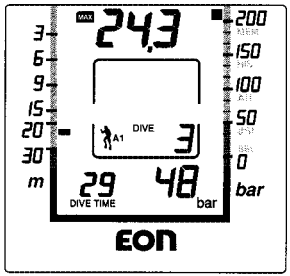


Fig. 4.2 LOGBOOK, DISPLAY I
The maximum depth of dive number 3 was 24,3 m [80 ft] and the total dive time 29 min. The altitude/personal adjustment mode was set to A1 and the cylinder pressure at the end of the dive was 48 bar [670 psi].

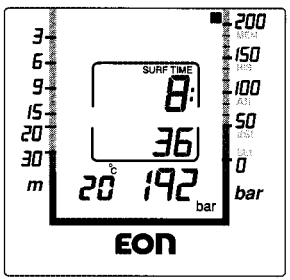


Fig. 4.3 LOGBOOK, DISPLAY II
The surface interval time before the dive was 8 h 36 min, the temperature at the maximum depth 20°C [68 °F], and the cylinder pressure at the beginning of the dive 192 bar [2785 psi].

4.1 Logbook and Dive Profile Memory

The **Eon** has a very sophisticated high capacity Logbook and Profile Memory, with data being recorded every 60 seconds. Dives shorter than the recording interval are not registered. This interval can be reduced to 20 or 30 seconds using the optional **Eon** PC INTERFACE.

LOGBOOK MEMORY

The logbook memory is activated by touching the TIME/MODE and COM contacts until LOG appears. It will give access to approximately 25 hours of diving (14 or 9 hours in case the recording interval has been set to 30 or 20 seconds), starting with the most recent dive made. The following information will be shown on three alternating displays (Figs. 4.2 – 4.5):

DISPLAY I, MAIN DISPLAY:

- maximum depth
- dive time
- dive number
- cylinder pressure at the end of dive
- altitude/personal adjustment setting
- a blinking SLOW if the diver has surfaced with this warning on
- ASC TIME if the dive became a decompression dive
- downward pointing arrow if the ceiling was violated

DISPLAY II:

- temperature at maximum depth
- cylinder pressure at the beginning of dive
- surface interval time before dive

DISPLAY III:

- dive entry time and date

The data of the most recent dive is shown first. Preceding dives are called by touching the TIME/MODE and COM contacts. A brief touch of the contact will bring you to the preceding dive, continuous contact scrolls backwards through the dives. Only DISPLAY I is shown, while scrolling the dives. The desired dive is selected by breaking the contact when that dive appears on the display.

When new dives are added (after approximately 25 hours of diving), the oldest dives are deleted. The memory will always retain approximately the last 25 hours of dive time. The contents of the memory will remain even when the battery is changed (assuming that the replacement has been done according to the instructions).

DIVE PROFILE MEMORY

The detailed profile of each dive shown in the logbook at that moment is accessed by touching the ON/PLAN and COM contacts. Two bar segments in the upper right hand corner shows that the **Eon** is now in the Dive Profile mode. When in the Logbook mode, only one segment is shown.

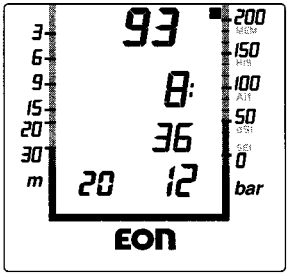


Fig. 4.4 LOGBOOK, DISPLAY III
The dive started on the 20th of December (12), 1993 at 8:36. When set to imperial version, A for a.m. or P for p.m. are also shown in the upper left corner of the display. The display will alternate between DISPLAYS I, II, and III.

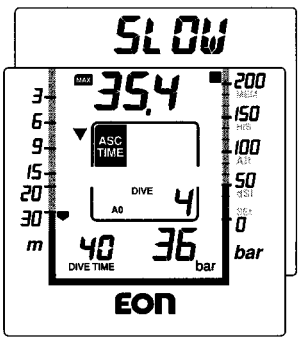


Fig. 4.5 LOGBOOK WARNINGS
DISPLAY I shows ASC TIME for a decompression dive, a downward pointing arrow for a violated ceiling, and a blinking SLOW warning for surfacing with the SLOW warning on.

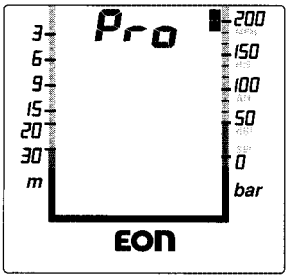


Fig. 4.6 PROFILE
Immediately after access.

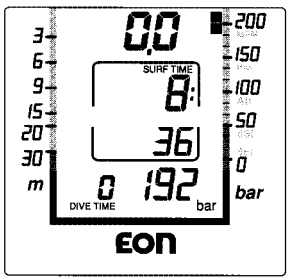


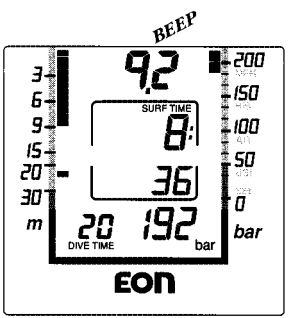
Fig. 4.7 PROFILE
Automatic scrolling of the profile starts. The surface time before this specific dive was 8 h 36 min and the cylinder pressure 192 bar [2785 psi].

The scrolling of the profile will start automatically (Figs. 4.6 – 4.9). The dive time is displayed in one minute increments with each display being shown for about 4 seconds. The depths shown are the maximum values of each interval.

If the recording interval is set to 20 or 30 seconds, three or two maximum depths values, respectively, are shown within each time increment. A new depth value is marked with a beep.

After the last depth figure of the selected profile, **Eon** automatically returns to the same dive in the logbook. If desired, the profile of the same dive can be recalled again following the above procedure.

When scrolling the Profile Memory, surfacing (depth 0.0 m [0 ft]), surfacing with SLOW warning on, the ASC TIME and downward pointing arrow are shown in case they occurred during the actual dive.



At the end of the profile the depth 0.0 m [0 ft] is displayed together with the total dive time of that dive.

NOTE: The cylinder pressure shown, 192 bar [2785 psi] is the pressure at the beginning of the dive, not after 20 minutes of diving. The surface time 8 h 36 min is still shown.

Fig. 4.8 PROFILE
Between 19 and 20 minutes of diving time (with 1 minute recording interval) the maximum depth was 9,2 m [30 ft].

DIVE NUMBERING

A number of dives are considered to belong to the same repetitive dive series when the **Eon** has not deactivated itself. Within each series, the dives are given individual numbers. Thus the memory will contain dives with the same dive numbers, as these dives have been made within different dive series.

When the surface time has been less than 10 minutes, the dives are considered to be one and the same. The dive number will not change for the second part of such a dive.

4.2 DIVE HISTORY MEMORY

The Dive History is activated by touching the TIME/MODE and COM contacts until HIS appears. This mode will show (Fig. 4.10):

- the maximum depth ever reached
- the total accumulated dive time in hours
- the total number of dives

Totally 999 dives and 999 hours of diving can be registered. When these maximum values are reached, the counters will start again from 0.

4.3 ALTITUDE / PERSONAL ADJUSTMENT SETTING

The current altitude/personal adjustment mode is shown when diving as well as on the surface display. If the mode is not correct (see Chapter 3.6), it is imperative that the

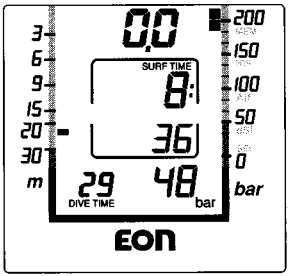


Fig. 4.9 PROFILE
At the end of the profile the depth is 0,0 m, the total dive time was 29 minutes and the cylinder pressure when surfacing was 48 bar [700 psi]. The **Eon** *will now automatically return to the same dive in the logbook.*

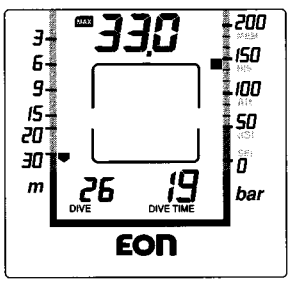


Fig. 4.10 DIVE HISTORY
The maximum depth ever reached is 33,0 m [108 ft], the total accumulated dive time 19 hours, and the total number of dives 26.

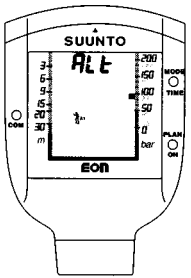


Fig. 4.11 ALTITUDE/PERSONAL ADJUSTMENT SETTING, step 1
The current mode is A1.

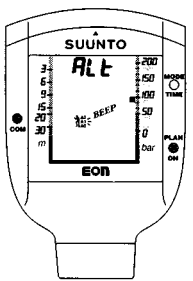


Fig. 4.12 ALTITUDE/PERSONAL ADJUSTMENT SETTING, step 2
The current mode A1 is blinking.

diver enter the correct one before diving.

The new altitude/personal adjustment setting is entered in the following way. In these figures the contacts which are connected are shadowed.

1. Activate the altitude/personal adjustment setting mode by connecting the TIME/MODE and COM contacts continuously. Release your fingers immediately when Alt appears on the display. Within a couple of seconds the present altitude/personal adjustment setting is shown (Fig. 4.11).

2. Connect the ON/PLAN and COM contacts until a beep is heard and all three altitude/personal adjustment modes appear. Release your fingers immediately at this point. The current mode is now blinking (Fig. 4.12). Wait at least two seconds but not more than four seconds before the next step.

3. Connect again the ON/PLAN and COM contacts until the blinking altitude/personal adjustment mode starts to scroll. Release your fingers when the desired mode is blinking (Fig. 4.13). Wait at least two seconds but no more than four seconds before next step.

4. Connect the TIME/MODE and COM contacts to confirm this new altitude/personal adjustment mode (Fig. 4.14). A beep is heard, the blinking will stop and the other mode indicators will disappear.

5. The process is ended by the RETURN command, i.e. by connecting all three contacts at the same time (Fig. 4.15). A double beep is heard and the **Eon** will return to the surface mode.

⚠ WARNING ! ⚠

ALWAYS RECHECK THE ALTITUDE/PERSONAL ADJUSTMENT SETTING TO ENSURE THAT IT IS NOT SET FOR AN ALTITUDE LESS THAN THAT OF THE DIVE SITE.

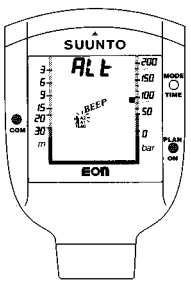


Fig. 4.13 ALTITUDE/PERSONAL ADJUSTMENT SETTING, step 3
The desired mode is A2. Lift your fingers.

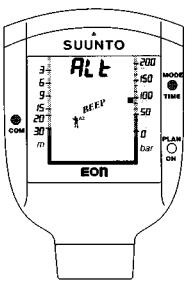


Fig. 4.14 ALTITUDE/PERSONAL ADJUSTMENT SETTING, step 4
The desired mode A2 is confirmed.

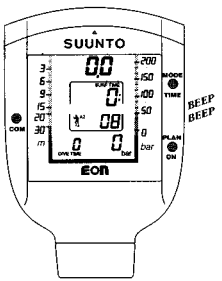


Fig. 4.15 ALTITUDE/PERSONAL ADJUSTMENT SETTING, step 5
Return to the surface mode. Check that the selected mode A2 is displayed.

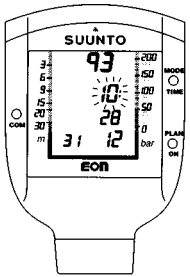


Fig. 4.16 TIME SETTING
Ready to adjust the hour reading (blinking).

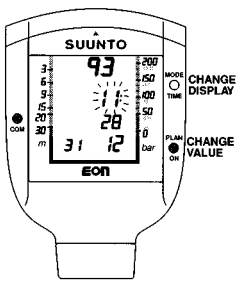


Fig. 4.17 TIME SETTING
Adjusting the hour reading, ON/PLAN & COM.

4.4 DIVE SIMULATOR

The simulation mode can be used to plan dives in advance, for demonstrational or educational purposes, or just for pleasure. The **Eon** has complete dive simulating capabilities, including repetitive dives. Before actual diving has taken place, the simulation includes a demonstration display for cylinder pressure, air time, and related warnings. This is not available between or after dives, until the **Eon** has deactivated itself.

The dive simulator is activated using the menu selection. Lift your fingers when dSI is displayed.

When in simulation mode, the depth is controlled using the three water contacts. This has been described in detail in Section 2.3, "The Dive Simulator – For Easy Learning".

4.5 SETTING TIME AND DATE

The current date and time is read by connecting the TIME/MODE and COM contacts for about one second, as described in Section 3.3.3, "Calendar Clock Function".

The principle when adjusting the clock is that the TIME/MODE and COM contact scroll through the different displays, while ON/PLAN and COM scroll through the values of the selected display. In these figures the contacts which are connected are shadowed.

Thus, to correct the time, do as follows:

1. Activate the Time Setting mode by connecting the TIME/MODE and COM contacts continuously to scroll through the menu. Release your fingers immediately when Set

appears on the display. The Time Setting display will now be shown (Fig. 4.16).

2. The hour display starts to blink immediately (Fig. 4.17). If you want to change it, keep the ON/PLAN and COM contacts connected. The hours will start to scroll. Release your fingers immediately when the correct value is displayed. [To change the A or P for a.m. or p.m. scroll the hours past 12:00].

3. To scroll through the minute, month, date, and year, keep the TIME/MODE and COM contacts connected. Release your fingers when the desired display is blinking (Fig. 4.18). Repeat step 2 to change this value (Fig. 4.19).

NOTE: In case of the minutes, date and year, the change is made separately for both digits, as shown by the blinking digit. In case of the hours and month, the complete number is changed simultaneously.

4. Repeat steps 3 and 2 to change any additional values.

5. Restart the clock with the RETURN command, i.e. by connecting all three contacts at the same time. First make contact between the ON/PLAN and TIME/MODE contacts and after that with the COM contact.

In case something goes wrong during this procedure, do not perform step 5. Within about two minutes the **Eon** will automatically return to the normal surface mode and restore the original time setting. You can now repeat the time setting procedure. In case you give the RETURN command, the modified time will be set.

Remember to regularly check that the clock is on time especially when travelling to different time zones, as the entry time of all dives is stored in the memories.

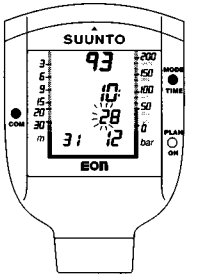


Fig. 4.18 TIME SETTING
Scrolling through hours, minutes, month, date, and year, TIME/MODE & COM.

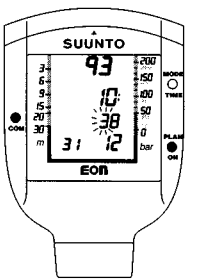


Fig. 4.19 TIME SETTING
Adjusting the ten minute reading (blinking), ON/PLAN & COM.

5. PC INTERFACE

The **Eon** can be connected to an IBM compatible PC computer, using the optional SUUNTO PC-Interface and its software. With the Interface the **Eon** dive data can be downloaded to a PC. The PC-Interface software can be used for educational and demonstrational purposes, for planning dives, as well as for keeping complete record of your dive history with the **Eon**. Paper copies of your dive log and profiles can then easily be printed.

The data transfer is carried out using the water contacts of the **Eon**. The following data is transferred to the PC:

- depth profile of dive
- dive time
- dive number
- cylinder pressure at the beginning of the dive
- cylinder pressure at the end of the dive
- dive entry time (year, month, day and time)
- temperature at maximum depth
- surface interval time
- altitude/personal adjustment setting
- additional dive information (e.g. violations)
- serial number
- 20 characters name or personal information stored in the EON's memory

It is also possible to manually add comments and other personal information to PC based dive data file.

The PC-Interface package comes complete with the interface box, the software on 3.5" and 5.25" diskettes, and a complete instruction manual.

6. CARE AND MAINTENANCE

The Suunto **Eon** diving computer is a sophisticated precision instrument. Remember to treat it as such ! It has been designed to withstand the rigors of scuba diving. It has a rigid housing, installed in a durable thermoplastic console boot and its display is protected by a display shield.

The user should wash and rinse the unit in fresh water after every use. Protect it from shocks, extreme heat or direct sunlight and chemical attack. The **Eon** cannot withstand the impact of heavy objects like scuba cylinders, nor chemicals like acetone and alcohols (ethanol, isopropanol).

NOTE: Keep the water contacts clean to assure correct operation of the Eon. Store the Eon in a dry place.

NOTE: Frequently check the battery compartment for moisture through the triangular holes in the back of the Eon.

The Eon should be serviced every two years or after 200 dives (whichever comes first) by an authorized dealer. This service will include a general operational check, the HP hose and the battery replacement. The **Eon** should also be serviced immediately when defects e.g. in the HP hose are visible.

The user himself can disassemble and reassemble the console for a thorough clean-up of the **Eon**. The user can also change the protective display shield and add the compass module. Further service requires special tools and training. Therefore, it is advisable to contact an authorized Suunto dealer for battery or HP hose replacement and other service. Do not attempt to do any service that you are not sure about how to do.

The **Eon** will display a battery symbol as a warning when the power gets too low. When this happens, the **Eon** should not be used until the battery has been replaced (see also chapter 3.3.1 /Battery warning).

6.1 MAINTENANCE

If left without care for an extended period, a thin film (often invisible to the eye) will cover the unit. Much like the build-up on the glass of an aquarium, this film is the result of organic contaminates found in both salt and fresh water. Suntan oil, silicon spray and grease will speed up this process. As a result of this build-up, moisture will be trapped next to the contacts and will not allow your **Eon** to operate properly.

THE WATER CONTACTS CAN BE CLEANED WITH SOFT PENCIL ERASER.

IMPORTANT: The **Eon** should be soaked, then thoroughly rinsed with fresh water after each dive. Make sure that all salt crystals and sand particles have been flushed out of the console. At the end of a dive trip, the **Eon** should be rinsed thoroughly and then dried with a soft towel.

The computer unit will periodically need to be removed from the console boot and cleaned. This is not required after every dive trip.

IMPORTANT: When removing the computer from the console, check the battery compartment for possible moisture or water. This is easily done through the transparent window covering the compartment. DO NOT use the **Eon** if you detect any moisture or water inside.

CAUTION !

- DO NOT USE COMPRESSED AIR TO BLOW WATER OFF THE UNIT
- DO NOT USE SOLVENTS OR OTHER CLEANING FLUIDS THAT MIGHT CAUSE DAMAGE
- DO NOT TEST OR USE THE EON IN PRESSURIZED AIR.

6.2 ASSEMBLY AND DISASSEMBLY

THE EON CAN BE DISASSEMBLED, AS SHOWN IN FIG. 6.1. THIS NEEDS TO BE DONE PARTLY OR COMPLETELY WHEN:

- adding or removing the compass unit
- cleaning or replacing the display shield
- cleaning the unit thoroughly
- replacing the high pressure hose
- replacing the battery

COMPASS UNIT, DISPLAY SHIELD OR REPLACEMENT OF THE BATTERY

1. Unscrew the two screws at the back of the unit.
2. Pull out the crossbar.
3. Remove or install the display shield, the compass module or the rear cover for battery replacement (Fig. 6.2, see chapter 6.3 for the battery replacement).
4. Refit the crossbar.
5. Fasten the two screws.

COMPASS MODULE

The compass module itself is mounted very tightly into the boot and it should preferably not be removed. If necessary, bring the console to an authorized dealer.

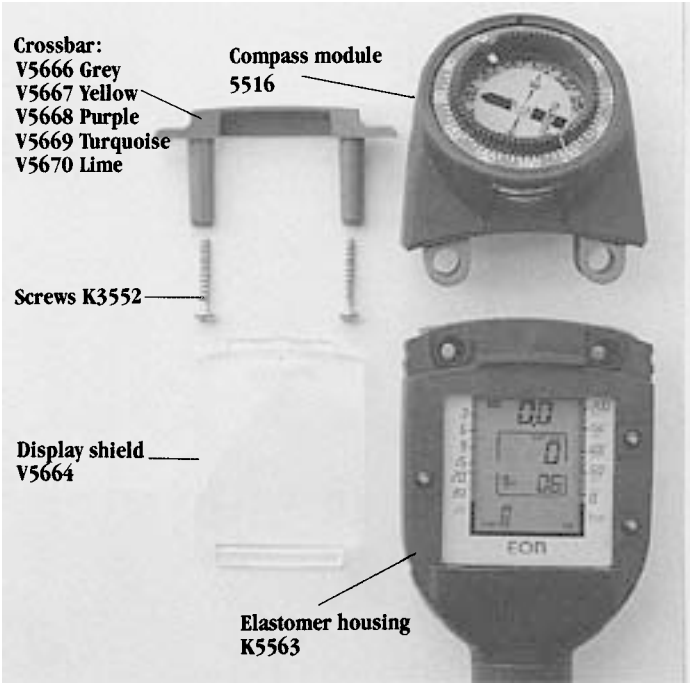


Fig. 6.1 DISASSEMBLED Eon COMPUTER.
The related parts are with spare part numbers.

Fig. 6.2 REPLACING THE DISPLAY SHIELD

COMPUTER REMOVAL

This needs to be done for cleaning the inside of the console or for replacing the hose:

1. Remove the crossbar as described above.
2. Pull out the compass module, if fitted.
3. Lift out the display shield.
4. Open the rear cover.
5. Carefully remove the computer by pressing at the top edge of the front side of the **Eon**. DO NOT press on the LCD display itself (see chapter 6.1 for cleaning the console).
6. Reassemble the **Eon** by carrying out the above steps in reverse order. Ensure that the instrument fits properly into the console before assembling the rear cover.

6.3 BATTERY REPLACEMENT

NOTE: It is advisable to contact an authorized Suunto dealer for battery replacement. It is imperative that the change is made in a proper manner to avoid any leakage of water into the battery compartment.

CAUTION !

DEFECTS CAUSED BY IMPROPER BATTERY INSTALLATION
ARE NOT COVERED BY THE WARRANTY.

⚠ WARNING ! ⚠

WHEN THE BATTERY IS CHANGED, ALL NITROGEN UPTAKE DATA IS LOST. THE **EON** MUST THEREFORE HAVE TURNED ITSELF OFF BEFORE BATTERY CHANGE OR YOU MUST WAIT FOR 48 HOURS BETWEEN DIVES BEFORE YOU MAY DIVE AGAIN.

All history and profile data will remain in the **Eon** memory after the battery is replaced. However, the clock time may be lost, if the **Eon** is without battery power for more than 15 seconds.

When working with the battery compartment, cleanliness is extremely important. Even the smallest dirt particles may cause leakage when you dive.

Battery Kit

The battery kit includes a Saft LS 14250 3.6 V 1/2AA (1/2R6) lithium cell battery and a new 31.4 mm x 1.78 mm 70 Shore A hardness nitrile O-ring lubricated with silicone grease.

Battery Replacement

The battery and the buzzer are located in the back of the **Eon** in a separate compartment, the parts of which are shown in Fig. 6.3. To change the battery, complete the following instructions exactly as described.

CAUTION !

MAKE SURE THAT THE WATER CONTACTS ARE NOT CONNECTED WHILE INSTALLING A NEW BATTERY.

1. Remove the console's back cover, as described in Section 6.2, "Assembly and Disassembly". You do not need to remove the high pressure hose.
2. Thoroughly rinse and dry the computer.
3. Open the locking ring of the battery compartment lid by pushing it down and turning it counterclockwise. If finger power is not sufficient, you may use a pencil (or screwdriver). Lay it over the ring into the slots and turn the ring with the pencil.
4. Remove the ring.
5. Carefully remove the lid with the beeper attached to it. The lid can be removed by pressing with your finger on the outermost edge of the lid while at the same time pulling with your nail at the opposite side. Do not use sharp metal objects as they might damage the O-ring or the sealing surfaces.
6. Remove the O-ring and the colored battery retainer.
7. Carefully remove the battery. Do not damage the electrical contacts or the sealing surface.
8. Check for any traces of flooding, particularly between the beeper and the lid, or for any other damage. If any moisture or water is observed, refer to Section 6.4, Battery Compartment Inspection. Also check the condition of the O-ring, because a defective O-ring may indicate sealing or other problems. Always dispose of the old O-ring, even if it seems to be in good condition.
9. Check that the battery compartment, battery retainer and lid are clean. Clean if necessary. Fresh water is allowed, provided that you dry everything properly before the reassembly.
10. Orient the battery according to the "+" and "–" marks at the bottom of the battery compartment. Gently insert the new battery in the battery compartment.
11. Reinstall the battery retainer in its correct position.
12. Check that the new lubricated O-ring is in good condition and completely free of any contamination from dust or lint etc. Remove any excess silicone grease from the O-ring leaving only a thin shiny film on the O-ring. Put it in the right position on the battery compartment lid. Be very careful not to get any dirt on the O-ring or its sealing surfaces.

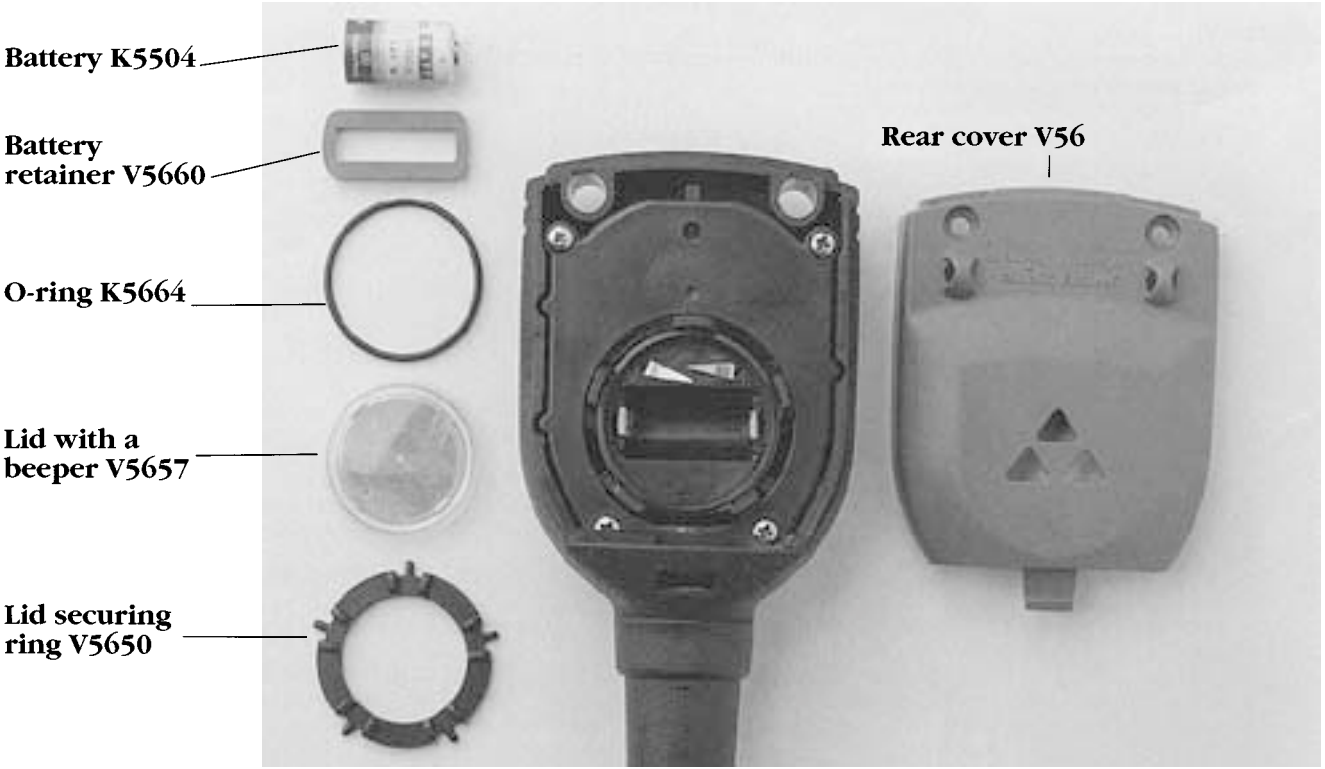


Fig 6.3 BATTERY COMPARTMENT AND RELATED PARTS WITH SPARE PART NUMBERS.

13. Carefully press the lid onto the battery compartment with your thumb, while making sure that the O-ring is not at any point protruding out on the edge.
14. Put your other thumb through the locking ring with the "ribs" facing the hand. Press this thumb firmly against the lid and release the other one. Make sure that the lid is pressed completely down !
15. Turn the locking ring clockwise with your free thumb and fingers until it snaps into its locked position. Visually confirm that the locking ring is secure by observing that the prongs of the locking ring are completely in the hooks.

CAUTION !

Make sure that the lid is completely pressed down when turning the locking ring. The battery compartment hooks may get seriously damaged if the locking ring is used to press the lid down.

16. Activate the **Eon**. Check that:

* all display segments work
* the low battery warning is off
* the TIME and ALTITUDE/PERSONAL ADJUSTMENT settings are correct. Readjust if necessary.
* the buzzer beeps

17. Push the **Eon** back into the console and reassemble the display shield, cross bar and screws. The **Eon** is now ready for use.

CAUTION !

CHECK AFTER THE FIRST DIVES FOR POSSIBLE MOISTURE UNDER THE TRANSPARENT BATTERY COMPARTMENT LID, INDICATING A LEAK.

This can easily be done by looking through the triangular holes in the back of the console.

6.4 BATTERY COMPARTMENT INSPECTION

Frequently check for leaks in the battery compartment. Look through the triangular holes in the back of the console. If you find moisture inside the transparent battery compartment lid, there is a leak.

A leak must be corrected without delay, as moisture will seriously damage the computer, even beyond repair. Suunto does not take any responsibility for damage caused by moisture in the battery compartment, if the instructions of this manual are not carefully followed.

In case of a leak immediately bring the **Eon** to an authorized Suunto dealer. Alternatively, you may open it yourself as described in Section 6.3, "Battery Replacement" to find the cause of the leak. The compartment must be thoroughly flushed with fresh water (preferably pure distilled water) and dried before it is closed again. DO NOT USE ANY SOLVENTS. Remember to use a new O-ring from Suunto when closing the compartment again. Never reuse an old O-ring.

If any uncertainty exists regarding the battery compartment, the **Eon** must be taken to an authorized Suunto dealer or service point.

7. TECHNICAL DESCRIPTION

7.1 OPERATING PRINCIPLES

The Suunto **Eon** is a multi-functional sport diving instrument, which provides information on depths, times, cylinder pressures and decompression requirements. Its electronic microprocessor mathematically models the absorption and release of nitrogen during all phases of diving, including ascents, surface intervals and repetitive dives.

⚠ WARNING ! ⚠

THE **Eon** MUST BE ACTIVATED BEFORE DIVING AND OPERATED CORRECTLY IN ORDER TO PROVIDE ACCURATE AND CORRECT INFORMATION.
DO NOT ATTEMPT TO USE THE **Eon** WITHOUT FIRST READING THE ENTIRE OWNER´S MANUAL.

NO-DECOMPRESSION LIMITS

The no-decompression limits displayed by the **Eon** upon activation are for most dives to a single depth slightly more conservative than those permitted by the U.S. Navy tables, Tables 7.1–2.

TABLE 7.1 NO-DECOMPRESSION TIME LIMITS (min) FOR VARIOUS DEPTHS [m] FOR THE FIRST DIVE OF A SERIES.

High altitude / personal adjustment mode

Depth [m]	A0	A1	A2
9	---	153	104
12	127	90	67
15	72	58	43
18	52	40	30
21	37	29	23
24	29	24	19
27	23	19	15
30	18	14	12
33	13	11	9
36	11	9	8
39	9	8	6
42	7	6	5
45	6	5	5

TABLE 7.2 NO–DECOMPRESSION TIME LIMITS (min) FOR VARIOUS DEPTHS [ft] FOR THE FIRST DIVE OF A SERIES

High altitude / personal adjustment mode

Depth [ft]	A0	A1	A2	U.S. Navy
30	---	149	102	---
40	120	86	65	200
50	70	56	41	100
60	51	38	29	60
70	36	29	23	50
80	28	23	19	40
90	22	18	15	30
100	17	14	11	25
110	13	11	9	20
120	10	9	8	15
130	9	7	6	10
140	7	6	5	10
150	6	5	4	5

Unlike the U.S. Navy tables, the **Eon** does interpolate between depths, giving a diver "credit" for time spent in shallower water, rather than calculating no-decompression limits based on the maximum depth of a dive. As a result, no-decompression dive times permitted by the **Eon** are often much longer than those that would be allowed by the U.S. Navy tables.

⚠ WARNING ! ⚠

The user should be aware that any dive, including ones within the U.S. Navy or **Eon** limits, does carry some risk of decompression sickness.

COMPARTMENTS AND HALF TIMES

When you dive with the **Eon**, it measures and displays depths and times as your dive progresses. It shows you available no-decompression time and possible decompression required based upon the following five factors:

1. your present depth,
2. excess nitrogen absorbed during earlier portions of the dive,
3. residual nitrogen remaining from previous dives,
4. the no-decompression limits that apply to that depth,
5. the altitude/personal adjustment mode in use.

In addition the **Eon** calculates the available air time, which is completely independent of the above five factors.

Back on the surface, the **Eon** will continue to calculate the no-decompression dive times available for various depths on the next dive. As the surface interval increases, so does the available dive time for the next dive.

In order to perform these calculations, the **Eon** continuously models the absorption and release of excess nitrogen from theoretical "compartments". Each of the compartments absorbs and releases nitrogen at a different rate. The compartments that absorb

and release nitrogen rapidly are believed to have a high tolerance for excess nitrogen, whereas compartments that absorb and release nitrogen more slowly are believed to be more sensitive.

The no-decompression limits in the U.S. Navy tables are based upon six theoretical compartments for single dives, and one compartment for surface intervals and repetitive dives. If you are familiar with table theory, you may know that they are characterized by half times (i.e. the time required for 50 % equilibration to a pressure change) ranging from 5 minutes to 120 minutes.

The **Eon** includes the same six compartments, and three additional compartments for an increased range of the mathematical model. The calculations are based on all nine compartments for all phases of diving, including surface intervals and repetitive dives. The **Eon**´s half times range from 2.5 to 480 minutes.

ALTITUDE DIVING

The atmospheric pressure is lower at high altitudes than at sea level. After travelling to a higher altitude, the diver has "additional" nitrogen in his body, compared to the equilibrium situation at the original altitude. This "additional" nitrogen is released gradually in time and equilibrium is reached within a couple of days.

Prior to high altitude diving the **Eon** must be set to high altitude diving mode to take this into account. The maximum partial pressures of nitrogen allowed by the mathematical model of the **Eon** are reduced according to the lower ambient pressure. As a result the allowed no-decompression limits are considerably reduced.

SURFACE INTERVALS

The **Eon** requires a minimum surface interval of 10 minutes between dives. If a surface interval is shorter than 10 minutes, the **Eon** dive counter and dive timer treat the next dive as a continuation of the previous dive. It adds the dive times, and calculates

no-decompression limits or decompression stops based on excess nitrogen absorbed on both dives. In this regard, it is similar to the U.S. Navy tables.

DEPTH LIMITS

⚠ WARNING ⚠

SUUNTO STRONGLY RECOMMENDS THAT SPORT DIVERS LIMIT THEIR MAXIMUM DEPTH TO 40 m [130 ft]

However, the **Eon** will calculate below that depth to provide a wide margin of flexibility if, through carelessness or emergency, you are forced to exceed this recommended depth limit for a dive.

7.2 TECHNICAL SPECIFICATION

DIMENSIONS AND WEIGHT:

- Length: 145 mm [5,7 in]
- Width: 72 mm [2,8 in]
- Depth: 46 mm [1,8 in]
- Weight: 310 g [0,68 lb] (without hose and compass module)

DEPTH GAUGE:

- Temperature compensated pressure sensor
- Salt water calibrated (in fresh water the readings are about 3% smaller)
- Depth display range: 0 to 99 m [325 ft]
- Accuracy: ± 1 % FS (0 to 60 m [200 ft])
- Resolution: 0,1 m [1 ft]

SCUBA CYLINDER PRESSURE GAUGE:

- Pressure range: 0 to 280 bar [4000 psi] in standard version (nominal pressure 200 bar/300 psi)
  0 to 350 bar [5000 psi] in high pressure version (nominal pressure 300 bar/4000 psi)
- Note: the nominal pressure value is marked in the lower right corner on the face of the instrument
- Resolution: 1 bar [10 psi]

TEMPERATURE DISPLAY:

- Resolution: 1 °C [1,5 °F]
- Display range: -40...+50 °C [-40...+122 °F]
- Accuracy: ±2 °C [±3,6 °F] within 20 minutes of temperature change

CALENDAR CLOCK:

- Accuracy: ±2 s /24 h
- 24 h display [12 h display in imperial version]

OTHER DISPLAYS:

- Dive time: 0 to 999 min
- Remaining air time : 0 to 99 min
- Surface time: 0 to 48 h
- Dive counter: 0 to 99
- No-decompression time: 0 to 199 min (– – after 199)
- Ascent time: 0 to 199 min (– – after 199)
- Ceiling depths: 2,5 to 30 m [8 to 100 ft]

OPERATING CONDITIONS

- Normal altitude range: 0 to 2400 m [8000 ft] above sea level
- Operating temperature: 0 to 40°C [32°F to 104°F]
- Storage temperature: -20°C to +50°C [-4°F to +122°F]

However, it is recommended that the unit be stored in a dry place at room temperature.

NOTE: Do not leave the Eon in direct sunlight !

BATTERY

- One 3,6 V lithium battery (Saft LS 14250), size 1/2 AA (ANSI) or 1/2 R6 (IEC)
- Battery life: typically 2000 hours (at 20°C [68°F])

8. WARRANTY

NOTE: The warranty arrangements are different in different countries. Information is contained in the Eon packaging regarding the warranty benefits and requirements applicable to your purchase.

The Suunto **Eon** is warranted against defects in workmanship and materials for a period of two years after purchase to the original owner, the respective warranty for the high pressure hose being one year, subject to and in accordance with the terms and conditions set forth below:

This warranty does not cover damage to the product resulting from improper usage, improper maintenance, neglect of care, alteration or unauthorized repair. This warranty will automatically become void if proper preventive maintenance procedures have not been followed as outlined in the use and care instructions for this product.

If a claim under this or any other warranty appears to be necessary, return the product, freight prepaid, to your Suunto Dealer or qualified repair facility. Include your name and address, proof of purchase and/or service registration card, as required in your country. The claim will be honored and the product repaired or replaced at no charge and returned in what your Suunto Dealer determines a reasonable amount of time, provided all necessary parts are in stock. All repairs made, not covered under the terms of this warranty, will be made at the owner's expense. This warranty is non-transferable from the original owner.

All implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, are limited from date of purchase and in scope to the warranties expressed herein. Suunto shall not be liable for loss of use of the product or other incidental or consequential costs, expenses or damage incurred by the purchase. All warranties not stated herein are expressly disclaimed.

Some states do not allow the exclusion or limitation of implied warranties of consequential damages, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

This warranty does not cover any representation or warranty made by dealers or representatives beyond the provisions of this warranty. No dealer or representation is authorized to make any modifications to this warranty or to make any additional warranty.

This Instruction Manual should be kept with your **Eon**.

9. GLOSSARY

Altitude dive	A dive made at an elevation above 700 m [2300 ft] above sea-level.
Air time	The amount of dive time remaining, based on a calculation of cylinder pressure and present air consumption.
Ascent speed	The speed at which the diver ascends toward the surface.
ASC SPEED	Abbreviation for ascent speed.
Ascent time	The minimum amount of time needed to reach the surface in a decompression dive.
ASC TIME	Abbreviation for ascent time.
Ceiling	On a decompression dive the shallowest depth to which a diver may ascend based on computer nitrogen load.
Compartment	See "Tissue group".
DCS	Abbreviation for decompression sickness.
Decompression	Time spent at a decompression stop or range before surfacing, to allow absorbed nitrogen to escape naturally from tissues.
Decompression range	On a decompression dive the depth range, between the floor and ceiling, within which a diver must stop for some time during ascent.
Decompression sickness	Any of a variety of maladies resulting either primarily or secondary from the formation of nitrogen bubbles in tissues or body fluids, as a result of inadequately controlled decompression. Commonly called "bends" or "DCS".
Dive series	A group of repetitive dives between which the **Eon** indicates some nitrogen loading is present. When nitrogen loading reaches zero the **Eon** deactivates.
Dive time	Elapsed time between leaving the surface to descend, and returning to the surface at the end of a dive.
Floor	The deepest depth during a decompression dive at which decompression takes place.

Half-time	After a change in ambient pressure, the amount of time required for the partial pressure of nitrogen in a theoretical compartment to go half-way from its previous value to saturation at the new ambient pressure.
HP	Abbreviation for high pressure (= cylinder pressure).
Multi-level dive	A single or repetitive dive that includes time spent at various depths and whose no-decompression limits are not determined solely by the maximum depth attained.
No-decompression time	The maximum amount of time a diver may remain at a particular depth without having to make decompression stops or remain below a ceiling during the subsequent ascent.
No-decompression dive	Any dive which permits a direct, uninterrupted ascent to the surface at any time.
NO DEC TIME	Abbreviation for no-decompression time limit.
Repetitive dive	Any dive whose no-decompression time limits are affected by residual nitrogen absorbed during previous dives.
Residual nitrogen	The amount of excess nitrogen remaining in a diver after one or more dives.
SURF TIME	Abbreviation for surface interval time.
Surface interval time	Elapsed time between surfacing from a dive and beginning a descent for the subsequent repetitive dive.
Tissue group	Theoretical concept used to model bodily tissues for the construction of decompression tables or calculations.

EON LUX INSTRUCTION MANUAL

1. DESCRIPTION

The Eon Lux is equipped with an electroluminescent film backlight of the LCD-display. This is a very sophisticated light system. The Eon Lux has an added printed circuit board with a dedicated driver chip for driving the lamp and circuitry for controlling when the lamp will go on and off. This has been done to create a highly efficient light with excellent backlighting quality.

Battery life is not significantly reduced because of the highly energyefficient system design and because the lamp goes off automatically after approximately 10 seconds from activation. The typical expected battery life of 2000 hours might go down to approximately 1900 hours if the lamp is used about 5000 times.

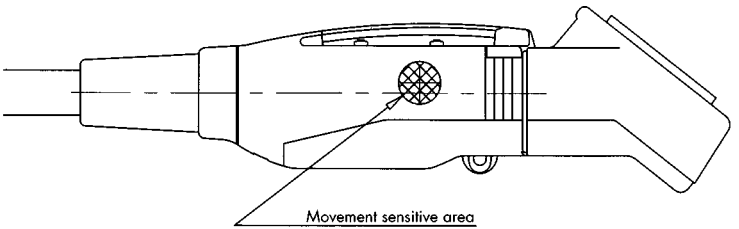
NOTE: The light can be activated only when the computer is on.

NOTE: For safety reasons the lamp will not come on if the battery voltage is low. This can also cause very short illumination time (less than 10 seconds) even though the computer hasn't displayed the low battery warning.

The electroluminescent lamp will give excellent backlight quality in darkness and low ambient light conditions. During daylight the backlight will not be visible.

2. HOW TO ACTIVATE THE LIGHT

The light is put on by pressing or tapping the movement sensitive area on the right side of the computer-console. This area is in the middle of the right side at the level of the text "Time" below the watercontact, see figure below.



With a little try and error you will quickly figure out how to activate the light. Do the practicing in a dark room so you can see when the light goes on. You can put the Eon Lux into simulator mode in order to keep it on during your light activation practice.

NOTE: When activating by pressing ("squeezing"), for example by holding the console in your right hand and pressing with your right hand thumb, the lamp goes on when you *release* the pressure (not by pressing harder). A very small movement is needed to activate the lamp.

The sensor area is limited in order to minimize unintentional light activation.