



### 6.1.7. Decompression dives

When your NO DEC TIME becomes zero, your dive changes into a decompression dive. Therefore, you must perform one or more decompression stops on your way to the surface. The NO DEC TIME on your display will be replaced by an ASC TIME, and a CEILING notation will appear. An upward pointing arrow will also prompt you to start your ascent.

If you exceed the no-decompression limits on a dive, the dive computer will provide the decompression information required for ascent. After this, the instrument will continue to provide subsequent interval and repetitive dive information.

Rather than requiring you to make stops at fixed depths, the dive computer lets you decompress within a range of depths (continuous decompression).

The ascent time (ASC TIME) is the minimum amount of time needed to reach the surface in a decompression dive. It includes:

- the time needed at the deep stop
- the time needed to ascend to the ceiling at an ascent rate of 10 m/33 ft per minute. The ceiling is the shallowest depth to which you should ascend.
- the time needed at the ceiling

- the time needed at the Mandatory Safety Stop (if any)
- the time needed to reach the surface after the ceiling and Safety Stops have been completed

 **WARNING**

*YOUR ACTUAL ASCENT TIME MAY BE LONGER THAN DISPLAYED BY THE INSTRUMENT! The ascent time will increase if you:*

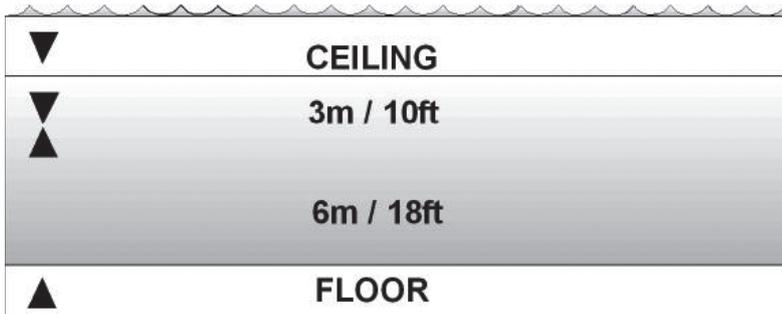
- *remain at depth*
- *ascend slower than 10 m/33 ft per minute or*
- *make your decompression stop deeper than at the ceiling*

*These factors will also increase the amount of breathing gas required to reach the surface.*

### **Ceiling, ceiling zone, 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 all stops.
- The ceiling zone is the optimum decompression stop zone. It is the zone between the minimum ceiling and 1.2 m/4 ft below the minimum ceiling.
- The floor is the deepest depth at which the decompression stop time will not increase. 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 depends on your dive profile. The ceiling depth will be fairly shallow when you enter the decompression mode, but if you remain at depth, it will move downward and the ascent time will increase. Likewise, the floor and ceiling may change upwards while you are decompressing.

When conditions are rough, it may be difficult to maintain a constant depth near the surface. In such cases, it is more manageable to maintain an additional distance below the ceiling, to ensure 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.

**NOTE** *It will take more time and more breathing gas to decompress below the ceiling than at the ceiling.*

**WARNING** *NEVER ASCEND ABOVE THE CEILING! You must not ascend above the ceiling during your decompression. In order to avoid doing so by accident, you should stay somewhat below the ceiling.*

## Display below the floor

The blinking ASC TIME sign and an upward pointing arrow indicate that you are below the floor. You should start your ascent immediately. The ceiling depth is shown on the left side, and the minimum total ascent time on the right side of the center window. Below is an example of a decompression dive without Deep Stops, below the floor.



UPWARD POINTING ARROW, BLINKING ASC TIME AND AN ALARM TELL YOU TO ASCEND. MINIMUM TOTAL ASCENT TIME INCLUDING SAFETY STOP IS 9 MINUTES. CEILING IS AT 3 M.

## Display above the floor

When you ascend above the floor, the ASC TIME sign stops blinking and the upward pointing arrow disappears. Below is an example of a decompression dive above the floor.



UPWARD POINTING ARROW HAS DISAPPEARED AND ASC TIME LABEL HAS STOPPED BLINKING, MEANING YOU ARE IN THE DECOMPRESSION RANGE.

Decompression will now begin, but is very slow. Therefore, you should continue your ascent.

## Display at the ceiling zone

When you reach the ceiling zone, the display will show you two arrows pointing at each other (the “hour glass” icon). Below is an example of a decompression dive at the ceiling zone.



TWO ARROWS POINT AT EACH OTHER  
“HOUR GLASS”: YOU ARE IN THE OPTIMUM CEILING  
ZONE AT 3 M AND YOUR MINIMUM ASCENT TIME IS  
9 MINUTES.

During the decompression stop, ASC TIME will count down towards zero. When the ceiling moves upwards, you can ascend to the new ceiling. You may surface only after the ASC TIME and CEILING labels have disappeared, which means that the decompression stop and any Mandatory Safety Stop have been completed. You are advised, however, to stay until the STOP sign has also disappeared. This indicates that the three (3) minute Recommended Safety Stop has also been completed.

## Display above the ceiling

If you ascend above the ceiling during a decompression stop, a downward pointing arrow will appear and a continuous beeping starts.



DECOMPRESSION DIVE, ABOVE CEILING.  
NOTE DOWNWARD POINTING ARROW, ER WARNING  
AND ALARM. YOU SHOULD IMMEDIATELY (WITHIN  
3 MINUTES) DESCEND TO OR BELOW CEILING.

In addition, an Error warning (Er) reminds you that you have only three (3) minutes to correct the situation. You must immediately descend to, or below, the ceiling.

If you continue to violate the decompression, the dive computer will go into a permanent Error Mode. In this mode, the instrument can only be used as a depth gauge and timer. You must not dive again for at least 48 hours (refer to *Section 5.5. Error conditions*).

## 6.2. Diving in MIXED or CCR mode

The MIXED mode is used when diving with open-circuit air or with oxygen- or helium-enriched gas mixes and it allows setting up to eight different gas mixes. The CCR mode is used when diving with a rebreather and it allows setting up to three diluent gases and up to eight different gas mixes. Refer to *Section 5.9. Before diving in the MIXED or CCR mode*

### 6.2.1. Oxygen and helium displays

When the DIVE MIXED or CCR mode is activated, the display will show the information in the figure below. In the MIXED mode, the maximum operational depth is calculated based on set O<sub>2</sub>%, He% and PO<sub>2</sub> values. In CCR mode, the PO<sub>2</sub> value denotes the currently selected set point.