Operating instructions for the Bühlmann Decompression 01

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Unfortunately, the manufacturer sends this watch without an instruction manual. I'm not a diver and can't do anything with the values of decompression, no-decompression time, basic value, repetition groups and Co.

This will probably not only happen to me, but also to many other collectors who have bought this watch. There is a video on how to operate the diving watch, but it is very superficial and can only be seen in English.

So I've trawled through numerous dive forums, contacted dive schools, and learned how this watch works.

I would now like to share this knowledge with all owners of the Bühlmann diving watch.

Structure of the dial:

On the main dial there is a large hand (1), which shows the minutes. The indices (2) on the dial indicate the minutes and are each divided into 5 minutes.

3 hours = 15 minutes 6 hours = 30 min 9 hours = 45 mins 12 hours = 60 min



On the right side of the dial, at 3 o'clock (15 o'clock) is a seconds scale (1). It serves as a seconds display and as a climbing aid. Description in seconds scale English: Ascent rate max. 10M/MIN Translation in English: Ascent rate max. 10 meters per 1 minute



Englisch: Ascent rate max. 10M/MIN Ascent rate max. 10 meters per 1 minute

This means the diver must not surface faster than 10 meters per minute. But why?

The blood in the human body and the tissues become saturated with gases when diving, which the diver absorbs when breathing through your compressed air cylinder. Nitrogen is the big problem. Nitrogen settles in the tissues and is released into the blood very slowly upon surfacing. If you surface too fast while diving, these nitrogen gases will bubble out and clog parts & arteries of the body.



The small colored scale is the flight indicator (2). This indicator shows when the diver can fly the aircraft again after the dive.

Setting the 3 crowns/safety lock:



Before you can make the settings on the Bühlmann clock, you must first unlock the safety lock. This is to prevent the crowns from being unscrewed during the dive. The crowns cannot be unscrewed and adjusted without unlocking this protective mechanism.



The white luminous dot (1) on the bezel must be at 12 o'clock. Rotate the bezel to the right while applying slight downward pressure. At 1 o'clock (2) the bezel jumps down, then the bezel should be turned a little bit to the right into the end position. Only now are all 3 crowns unlocked and can be opened and adjusted.

After completing the settings of the 3 crowns, they are screwed back in (counterclockwise). Now the bezel is turned slightly to the left towards 12 o'clock. At 1 o'clock the bezel jumps up again, the 3 crowns are now locked against opening again. You can now turn the luminous dot back to 12 o'clock or to another position.

The watch has 3 crowns, all three crowns are screw-in crowns.

Turn left = open crown Turn clockwise = close the crown



Medium crown (1):

If you unscrew the crown in the middle, it jumps into the first position. The position winds the clockwork. A slight pull on the crown moves it to the second position. By turning the crown to the right, you can set the flight indicator in three positions (red, orange, green). Pull the crown slightly again and it jumps to the third position, which sets the time.

Left crown (2):

The left crown is the helium valve. Unscrew the crown (turn clockwise) to open the valve and allow the helium to escape from the watch.

Right crown (3):

Unscrew the right crown (turn clockwise). The inner bezel can be adjusted by turning the crown in either direction.

Flight indicator setting:

The middle crown must be in the second position. Turning the crown to the right changes the color of the indicator from red to orange to green. After the dive, set the indicator to red and screw and lock the crown again. After 24 hours the indicator will turn orange. After a further 24 hours, the indicator turns green and the diver can now board a plane again.



The so-called surface interval allows the body to break down the gases that are produced in the body during the dive.

Task of the bezel:

The decompression stops can be set with the outer bezel of the Bühlmann diving watch. There are three different bezels

Bezel 1 (diving depth 20 meters)

Dekompressions Stops	Dekompressions Stops depth	Dekompressionstime
1	6 minutes	3 minutes
2	3 minutes	31 minutes

Bezel 2 (diving depth 30 meters)

Dekompressions Stops	Dekompressions Stops depth	Dekompressionstime
1	9 minutes	7 minutes
2	6 minutes	15 minutes
3	3 minutes	42 minutes

Bezel 3 (diving depth 40 meters)

Dekompressions Stops	Dekompressions Stops Tiefe	Dekompressionstime
1	9 minutes	5 minutes
2	6 minutes	15 minutes
3	3 minutes	35 minutes

The bezels indicate how many decompression stops, at what depth and for how long the diver must make before surfacing.

To do this, turn the bezel.

The first decompression stop (Security Stop 1) (1) must be in the middle of the minute hand (2). When the minute hand has reached the luminous dot (3) on the bezel, the diver can continue to ascend to the next stop.





When you reach the second depth, turn the bezel so that the second decompression stop (Security Stop 2) (1) is in the middle of the minute hand (2). At depth, too, one waits until the minute hand has reached the luminous dot (3) on the bezel.

If only two decompressions (security stops) are necessary, the diver can surface. If more decompression stops (security stops) are necessary, ascend to the next depth and set the bezel again.



When you reach the third depth, turn the bezel so that the third decompression stop (Security Stop 3) (1) is in the middle of the minute hand (2). At depth, too, one waits until the minute hand has reached the luminous dot (3) on the bezel. The duration of the entire decompression stop (security stops) is added together and added to the planned dive time. This is important for the calculated amount of oxygen per dive.



Example: Bezel 1 depth 40 meters (1), planned dive time 40 minutes

3 decompression stops (security stops) are required



Stop 1 05 min Stop 2 15 min Stop 3 35 min

Total time of decompression stop (security stops) 55 min, planned dive time 40 min, total dive time 95 min. The diver should have oxygen in the oxygen tanks for at least 95 min.

Is a decompression time always required with different decompression stops?

No!

According to Bühlmann's decompression table, there is a so-called zero time. The zero time is referred to as the one that the diver can resurface without decompression stop.

Then there are a few other values on the bezels

- (1) Depth 40m
- (2) BT 40 min
- (3) RG K
- (4) 0-700m ASL



(1) Debth 40 m = the planned diving depth. Bie Bühlmann has 3 bezels to change for the depths 20 meters, 30 meters & 40 meters.

(2) BT 40 min (bottom time) = the planned length of stay at 40 m depth

(3) RG K = repeat group category K. An indication of which category of repeated dives you are in before the start of the dive. With repeated dives, the values of the safety stops increase. K is the highest category

The repeat groups indicate the degree of saturation. The information is important if the diver intends to perform another dive.

The more saturated you are, the larger the repetition group. The longer the surface pause, the further the saturation decreases and the smaller the repetition group becomes.

The surface breaks (break between dives) is therefore calculated according to the repetition groups and can be read from a dive table.

(4) 0-700m ASL (Above Sea Level) = Above sea level. The values on the bezel are calculated for dives between 0-700 m above sea level. For diving in higher lakes (e.g. in the Alps) other values apply, then the values on the bezel do not apply.

All information is subject to change.