



USER MANUAL

HIGHDROGEN AGE₂ GO

**Hydrogen Water
Generator**

Pimp your drink!

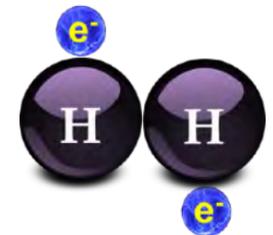
02 Hydrogen Basics

„I run on Hydrogen“. To see **Hydrogen cars**, out of which no emissions are emitted and only clear water drips out, is still seldom in our smog-laden cities. Yet there is no doubt that Hydrogen gas presents the most interesting form of alternative energies of the future. For 1 kg of Hydrogen brings 33,33 kWh/kg onto the road. Neither petrol (12 kWh/kg) nor natural gas (max. 13,1 kWh/kg) can keep up. Hydrogen, with the H symbol that stands for Hydrogenium (“The Water Producer”). In English one could also write “Hydrogen H”. This is how the name was created for a device with a high Hydrogen yield: **HIGHDROGEN AGE₂ GO. Meaning: mobility in the hydrogen age.**

Hydrogen is the most common element in the universe. It makes up 75% of the total mass of our solar system. **Yet on our planet Earth it is more of a scarce good.** Only 0.12% of the total mass consists of Hydrogen. Most of it is H₂O which has bonded as “energy-less” water in our oceans. **Water, H₂O**, is Hydrogen gas H₂ which has been combusted by oxygen. This occurs, for example, with sugar which is converted from food into energy. So Hydrogen doesn’t only provide energy for fuel cells for cars, but also for the cells in the body. **The H Hydrogen atom** is made up of one positively charged nucleus, the proton, which is orbited by a negatively charged electron. The smallest of all atoms is also called “nascent” Hydrogen: That means “hydrogen in its birth phase”, for an H-atom does not stay alone for long, it bonds with a second H-atom to make what we usually call Hydrogen, H₂... A further description for this Hydrogen atom is “Hydrogen radical”.

Often Hydrogen gas H₂ is confused with the **Hydrogen ion H⁺**. This corresponds to an H-atom without an electron, in short it is a single proton. Positively charged Hydrogen ions are the measure of “acidity”. They occur by the splitting off of a hydroxide ion (OH⁻) from water (H₂O). If there are more hydroxide ions in an aqueous solution, it is alkaline, if there are more H⁺ ions (protons), then it is acidic.

Negatively charged Hydrogen ions (Hydride ions) theoretically also exist. Yet they are so unstable that they only occur as compounds.



03 What is a Hydrogen Water Generator?

For many years it was irrefutable that activated water keeps its negative redox potential and therefore its electron abundance for just a few hours or days.

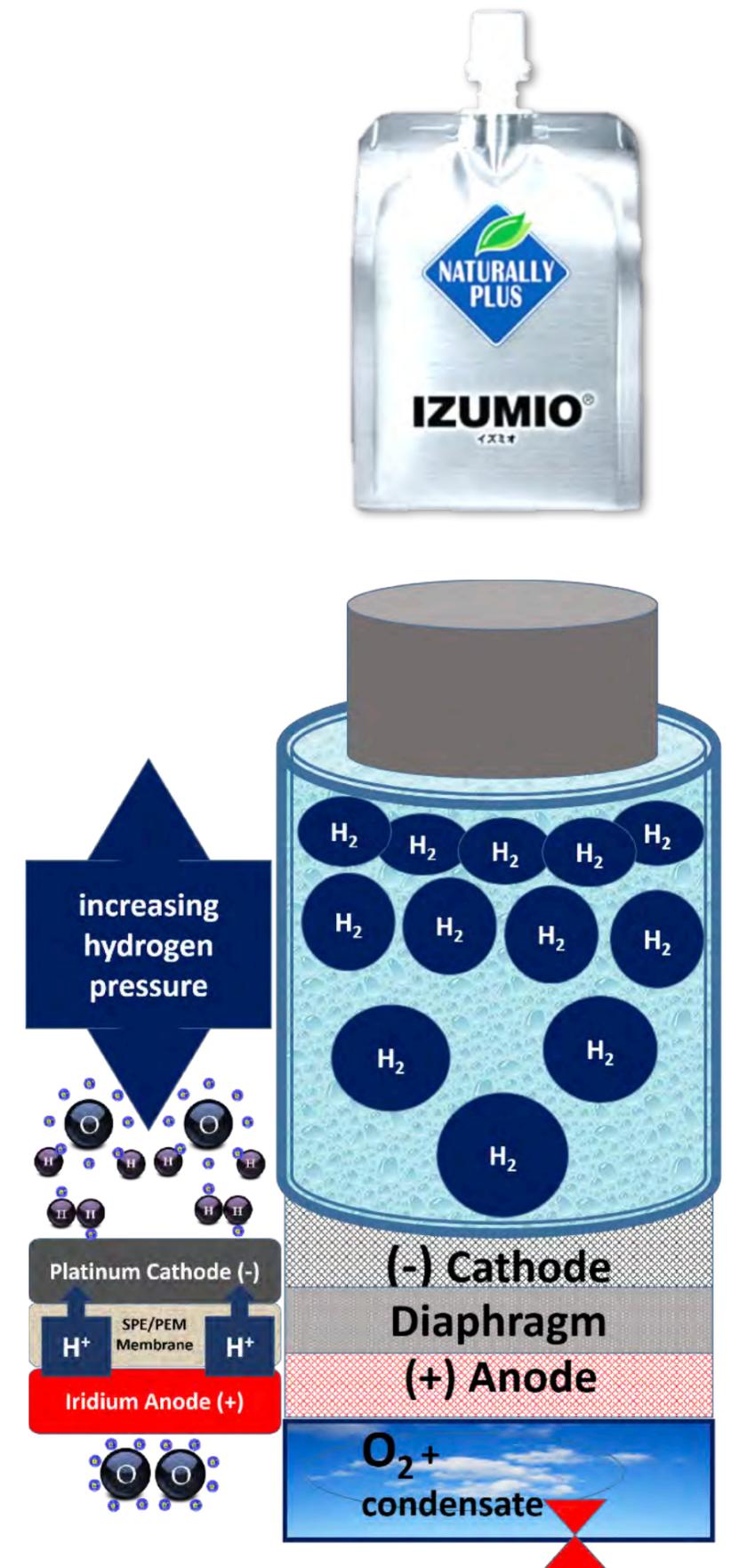
Yet when it was discovered, in the 21c., that dissolved Hydrogen is the deciding factor for the antioxidant effect, an industry was developed that presses hydrogen under high pressure into multilayered water bags, where the positive qualities were able to be kept for some months. Yet this is more expensive than the H₂-producing tablets and also creates big waste problems.

Hydrogen rich water was until now only produced by stationary electric water ionizers. But one does also want to drink fresh activated water when on the go. Initially just small electrolysis devices were converted to battery power. These, however, were not able to store enough because they did not remove the oxygen, instead increased it. Also Hydrogen-Infusion-Machines (HIM) exist that allow H₂-molecules to bubble into the water. Yet these seldom reach more than 1,2 ppm, mostly a lot less.

Hydrogen dissolves very reluctantly in water, unless, it is pressed in with high pressure. That is exactly what a **HIGHDROGEN AGE₂ GO** does. It is a high-pressure-diaphragm-water-ionizer with a PEM cell, that only produces a few drops of waste water as a condensate, and removes the oxidizing water components (especially oxygen).

Result: **Hydrogen rich water without a pH change.**

Whilst the Hydrogen water bag can be filled with 2,8 ppm Hydrogen content, the **HIGHDROGEN AGE₂ GO** can produce almost double if required.



04 Hydrogen water - the new benchmark for drinking

Previously only the **ORP** was measured to determine the antioxidant effect of activated water. Yet this is very inaccurate and a relative value, because the ORP is influenced not only by the dissolved hydrogen, but also from the different ORPs of the different materials dissolved in the water, e.g. minerals and gases.

After the role of Hydrogen was recognized as being important, Japan produced the first pseudo-measuring-device on the market. The Trustlex ENH 1000, which wanted to differentiate a content of dissolved Hydrogen with the measured ORP over an experience based conversion factor of ca. -2,14. This factor was severely criticized by experts and Trustlex admits it doesn't work properly.

There are electronic measuring devices in few University labs. Yet these demand high expertise and are very expensive. Therefore we recommend a chemical titration method with the **H2 Blue Kit®**, something developed by the American Hydrogen researcher Tyler Le Baron.

These drops, since mid-2016, have been customized to ionized water and European water types. Because of their amount of the precious metal platinum are these test drops relatively expensive and therefore available as an optional accessory for the **HIGHDROGEN AGE₂ GO**.



One drop of the H₂ Blue Kit® (per 6 ml) is internationally valid as evidence for 100 ppb (0,1 ppm) dissolved hydrogen in water.

Left (middle) you see a 1 Liter plastic bottle filled with de-ionized water which was stained blue-green by 16 drops

After 7 minutes use the liquid discolored and indicated the dissolved hydrogen.

05 Always fresh hydrogen - free water choice!

With a device for on the move it is clear: It may only be filled with perfect drinking water or mineral water. Therefore, the **HIGHDROGEN AGE₂ GO** is designed so that the user is not dependent on one type of water, which is what happens with a stationary water ionizer. If you do not trust the available tap water, **you can use all trustworthy bottled water and even water from a reverse osmosis device (RO water).**

With the **HIGHDROGEN AGE₂ GO** you can fill the cylinder included in the package or a bottle of your choice. Thanks to various bottle adapters can water be ionized directly in the bottle and be enriched with Hydrogen. In principle we recommend water from bottles to be filled completely into the BPE-free production cylinder, because there more pressure can be built up. General restriction: Only restriction: **The water cannot be carbonated.** The total gas pressure would rise too greatly.



06 Chapter overview



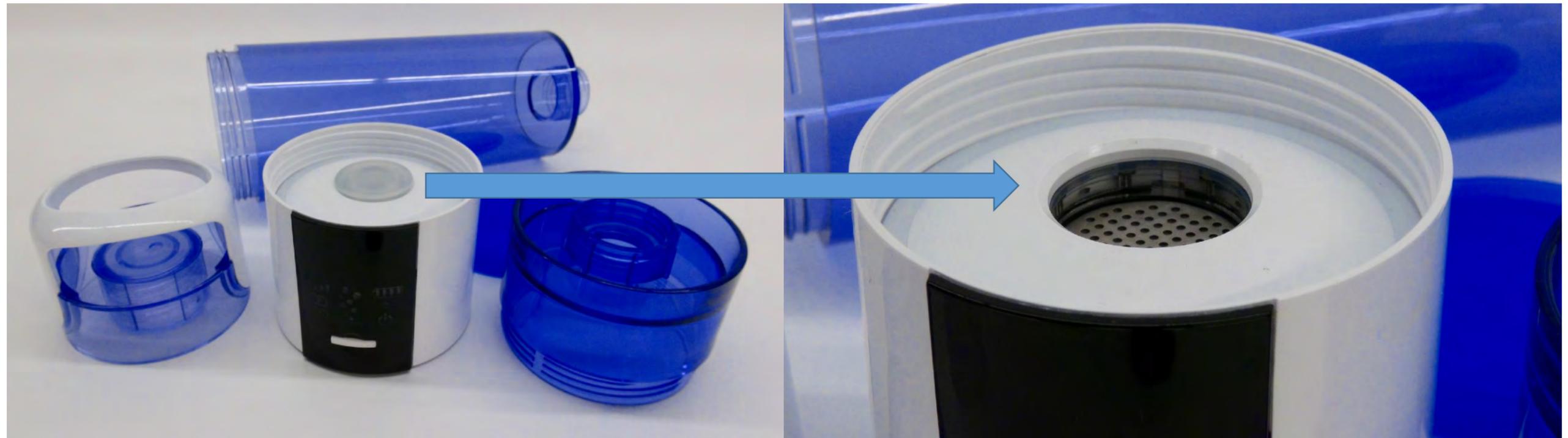
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07 General safety instructions

- ✓ Only use the device once you have read and understood the instruction manual.
- ✓ Before switching the device on, the water container has to be filled with water. Otherwise the electrolysis cell can be damaged and the guarantee claims expire.
- ✓ You cannot fill it with water over 80 Degrees C.
- ✓ Only operate the device with 220 Volt.
- ✓ Please ensure that children do not have access to this device.
- ✓ Never place the device under water. A moist cloth is enough to clean it. Do not use chemical cleaning products.
- ✓ Never drop the device.
- ✓ You should use cold water (under 30° C)
- ✓ Do not place the device in direct sunlight or subject it to temperatures over 50 Degrees.
- ✓ Stop use if water leaks out of the device
- ✓ Do not place the device in moist or polluted rooms.
- ✓ Do not place the device outdoors.
- ✓ Do not use the power charger if it got damaged or the cable is kinked.
- ✓ Do not place heavy or pointed objects on the cable.
- ✓ Do not touch any of the components connected to the power grid with moist fingers.
- ✓ Only use water of the best drinking quality if you want to drink the water afterwards.
- ✓ You cannot use carbonated water (fizzy water, sparkling water). The device could explode.
- ✓ Do not open the charger nor the base unit if defect. Do not try to repair it. Disconnect the device immediately from the power supply and inform your dealer.

09 Removing the protective moisture cap

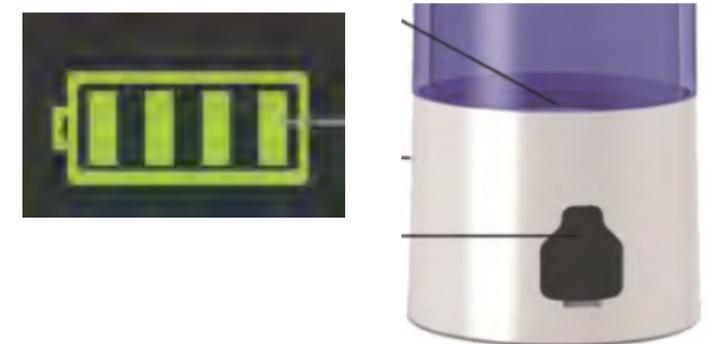
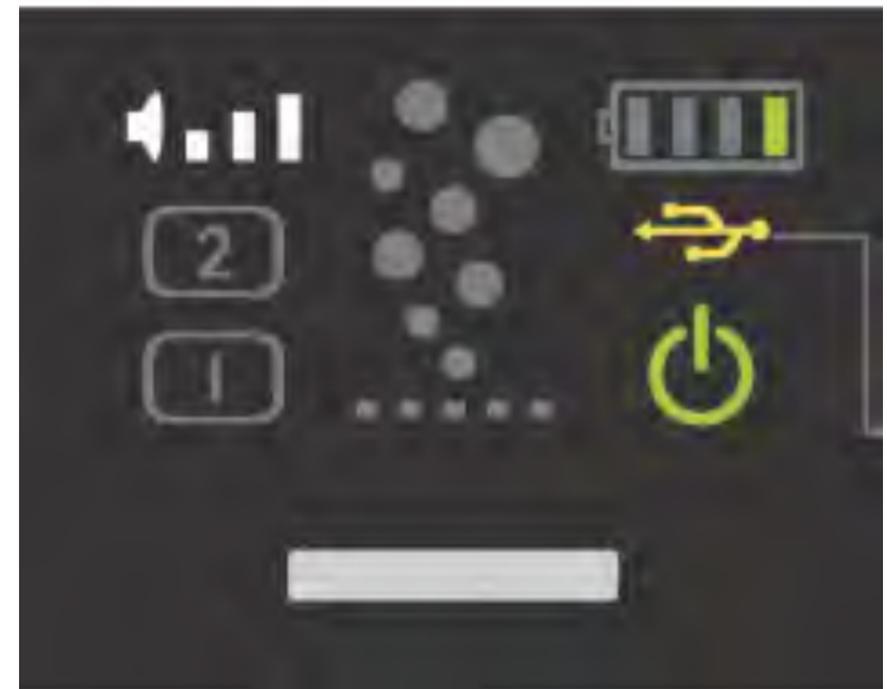
Setting the electrode free, eliminating odor



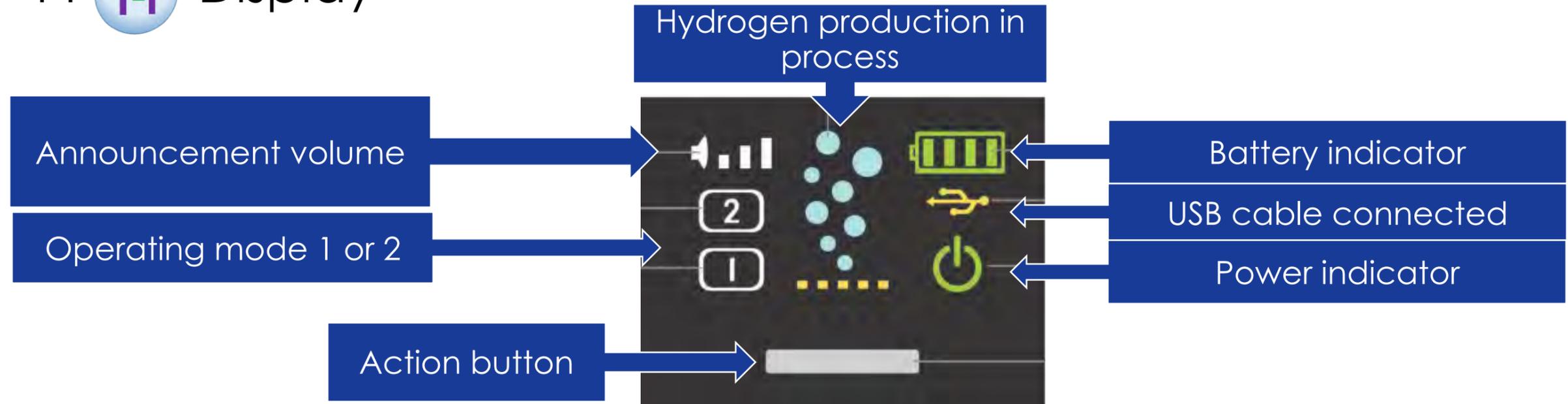
1. Unscrew the pressure container from the production unit
2. Remove the protective cap above the cathode grid and **keep it in case you do not use the device in 2 days. The cathode should always be kept moist with a bit of water.**
3. Remove the protective cap, assemble the device and rinse the interior with water whilst shaking vigorously. With odour problems add 1 teaspoon of the delivered citric acid with $\frac{1}{2}$ Liter of water and repeat the rinsing process. Citric acid is biodegradable and is, for example, present in lemonade.

10 Charging mode

1. Place the device on a dry, flat surface.
2. Open the rubber flap over the charging socket.
3. Plug the USB cable into the charging plug and the other end into the production unit. Then plug the charger into a 220 V plug.
4. During charging the battery icon will light up to indicate how much has been charged. The USB symbol will display the charging operation.
5. Before first use the battery has to be fully charged. Charging time is 90 minutes.
6. Once the battery icon shows 4 bars, remove the cable and close the rubber flap above the charging socket.

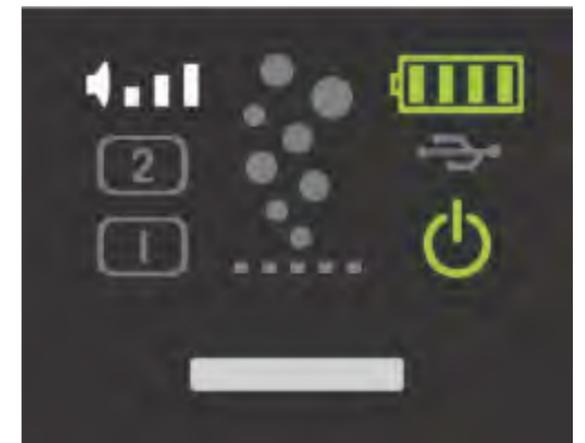


11 Display



When the device is idle the display is not illuminated

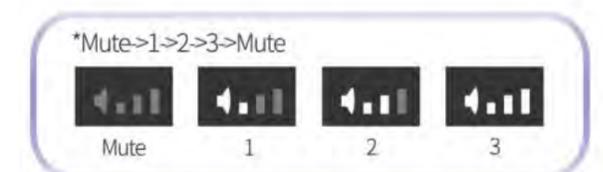
By pressing the action button once the display will turn on.



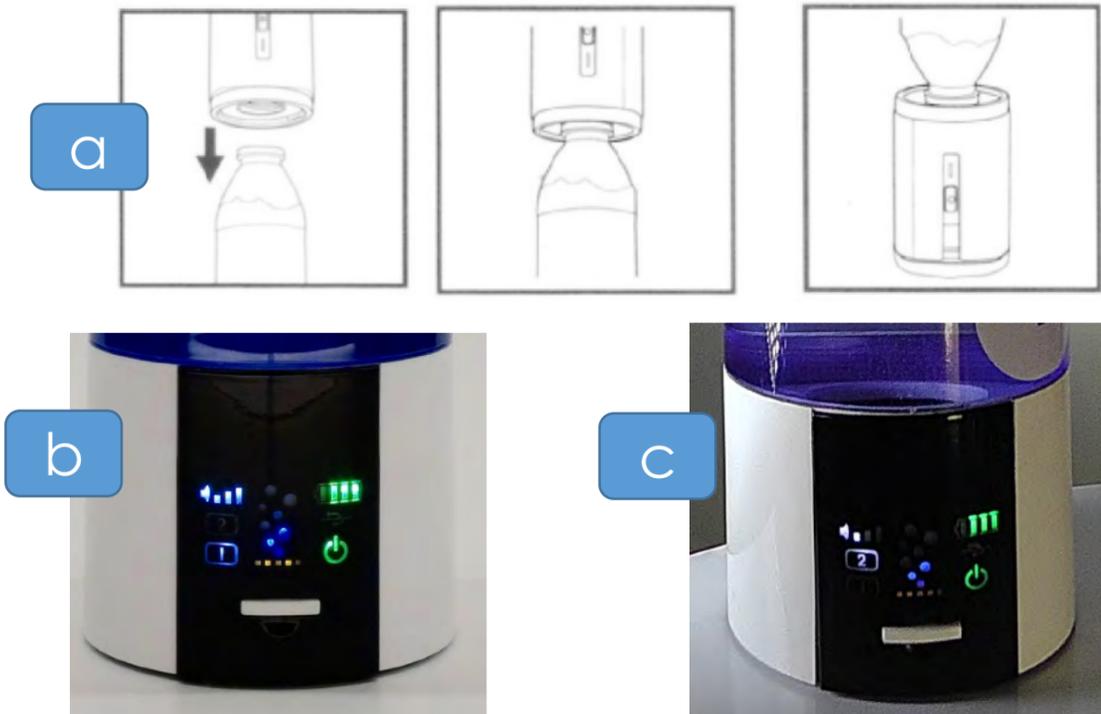
Adjust the **volume** of the English announcement to a comfortable level or switch it off (mute).



Procedure: Turn on by pressing the action button. Press it 3 times until volume blinks. By repeatedly pressing, choose the desired volume. Then wait until blinking stops automatically.



12 Operating mode



Attention: Only use still water!
No carbonic acid in the water.

Whether you fill the pressure container or use a bottle (a) with the bottle adapter with water you would like to electrolyse: Before switching the device on, you should have at least 0,1 Liter of drinking water in the container. Ideally the container is filled to the top, like this greater hydrogen pressure can build up and more hydrogen is pressed and dissolved into the water. Keep an eye on the sealed screw fitting and check or replace the rubber seals, if water leaks, before you start using the device. **Attention: Hydrogen pressure may not be raised by repeating the electrolytic process more than 30 minutes.**

The starting mode requires that the device is operational. The display is illuminated

Pressing the action button once means that operating mode 1 starts (b), which takes 3 minutes.

Pressing the action button twice means that operating mode 2 starts (c), which takes 5 minutes.

When starting an **announcement will commence: "Generating Hydrogen water"** and the blue LED bubbles start to blink. When finished they switch off with the **announcement "Generating completed"**. After a finalising tone the display is off. You are able to stop the procedure during electrolysis by pressing the action button. Also then the announcement and the finalising tone will chime.

13 Optional accessory: Hydrogen measuring drops



Testing the amount of molecular hydrogen is carried out immediately after production with the optional H₂ Blue[®] Kit.

A water sample of 6 ml is filled carefully into the measuring cup and one drop of the blue measuring liquid is added. To obtain the same size of drops it is recommended to keep the bottle vertical. **Each drop that discolours means 0,1 ppm (=100 ppb) dissolved hydrogen gas.**

If a drop does not discolour automatically one can stir gently.

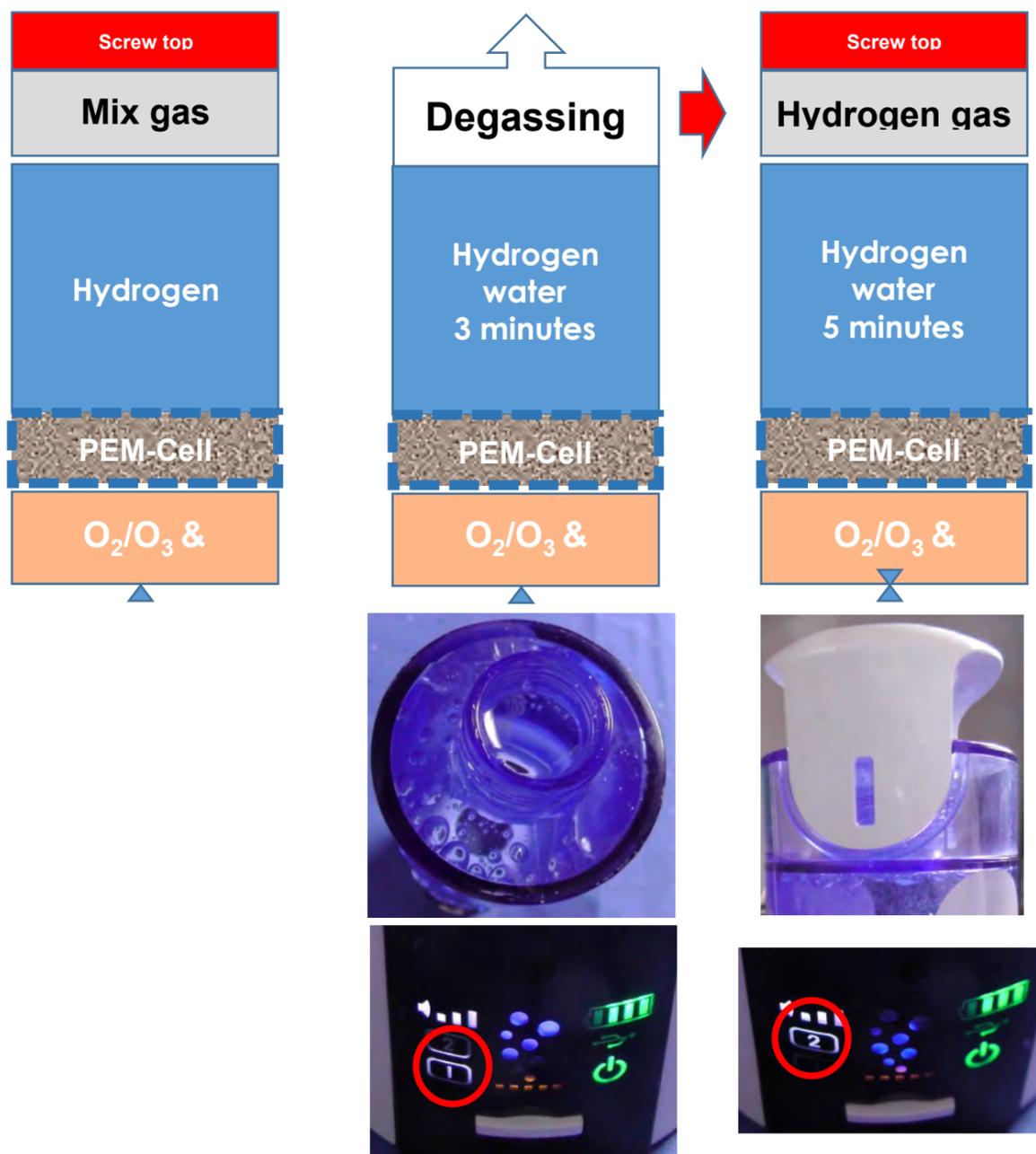
If the liquid still does not discolour, then the last drop does not count. Water under normal air pressure can contain up to 1,6 ppm hydrogen gas (full saturation). From chemicals or with the **HIGHDROGEN AGE₂ GO** Hydrogen Generator you can also produce an **over saturated water with more than 1,6 ppm.**

Yet this falls back to full saturation after a few minutes when this water comes into contact with the normal atmosphere. Whoever wants a lot of hydrogen, has to drink quickly or fill the container to the brim so that it is gas-tight and bubble free.

Do not drink the test liquid and keep it out of reach of children! Use protective gloves, a surface that can be wiped clean and watch out for clothing or dishcloths. The drops contain methylene blue, a very intense dye.

14 Increasing the hydrogen content

Not only through multiple production cycles in a row, (maximum 30 minutes at a time), can the achievable hydrogen content be increased. Namely, what reduces the power of the hydrogen-water generator is the gas content of the water before production. These are mainly the atmospheric gases; oxygen, nitrogen and carbon dioxide, which according to Henry's Law always dissolve in proportion to the composition of the atmosphere in the water. Put simply, these gases must first be expelled from the water so that the hydrogen in it can be more saturated.



1. Fill the water without the inner lid to the rim, but **leave the lid open** so that the air gases expelled by the hydrogen can escape.
2. Press the action button once when the display is lit to activate the 3-minute phase (**operating mode 1**).
3. **After the announcement: "Generating hydrogen water completed", screw the lid tightly shut.**
4. Press the action button twice while the display is lit to activate the 5-minute phase (**operating mode 2**).

As the gas bubble above the water now contains almost pure H₂, more hydrogen in the water dissolves itself.

15 Interior cleaning

The inside of the pressure container and the grid patterned negative electrode, which produces the hydrogen, must be cleaned if you have visible limescale traces with 1 teaspoon of citric acid dissolved in warm water. Allow the citric acid solution to work for 1 hour. Afterwards, rinse the container and the electrode several times with warm water.

This cleaning process should also be carried out if an unpleasant odor is perceived from the device. In this case the water should be 60 - 80 Degrees C.

These cleaning instructions also count for the bottle you use. Watch out for perfect hygiene and remove limescale traces with citric acid.

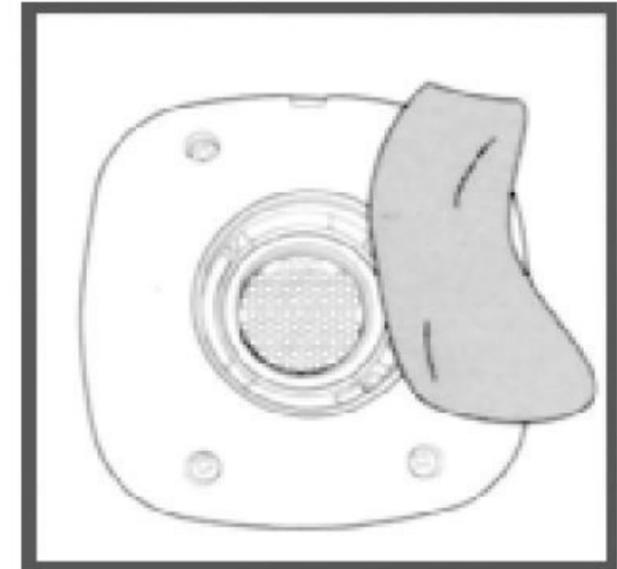


16 Exterior cleaning / storage. Technical details

Wipe the outside of the device **with a moist, soft cloth.**

You can also remove heavy dirt stains from the inside of the pressure container if you half fill it with warm water and shake vigorously. Then pour the water out.

Store the device at room temperature and do not place in direct sunlight.



Dimensions	Diameter 72 mm. Hight 270 mm.
Weight	400 g. (empty) Capacity 0,5 l
Output	10 W (operation) / 8,4 W (charging)
Power reserve	Ca. 10 uses (5 Min.) - fully charged
Charging time	Ca. 1,5 hours. Battery: DC 3,7 V/ 1600 mAh
Charger	100-240 V, 50/60 Hz. Output.: DC 5 V, 1A
Hydrogen output	Depending on time and water: 0,8 - 4,0 ppm
ORP	(-) 300 to (-) 700 mV (CSE)

17 Hydrogen water - not just for drinking!



- As opposed to alkaline activated water from a classic water ionizer, the pH value of the treated water remains the same. Hydrogen water can also be slightly acidic.
- Drink up to 0,3 l of water per 10 kg of bodyweight daily. With high temperatures and / or strenuous physical activity respectively more. Preferably use alkaline water. Optimal would be water from an **Aquavolta® Water Ionizer** that already makes filtered, alkaline water which contains 0,6 to 1,2 ppm of hydrogen. Then the **HIGHDROGEN AGE₂ GO Hydrogen Generator** can store more hydrogen thanks to its high pressure technique and this water is then suitable for laying foods in:
- Lay fruit, salads, cut flowers, raw eggs and vegetables in fresh, hydrogen rich, electrolysis water for 15-30 minutes. These refresh themselves by absorbing hydrogen, which is even absorbed through eggshells. With the absorption of hydrogen does the ORP of the foods sink, something the foods inspector Dr. Manfred Hoffmann regards as a sign of higher quality of nourishment. Mix milk powders, diet powders, fitness powders etc. with hydrogen water. Dissolve mineral and vitamin mixes with this water. Also like this the ORP sinks favorably thanks to the dissolved hydrogen.
- Buy juice concentrates - preferably organic. Like this you put an end to carrying the juice cartons and consequential pollution. No seller on the market can deliver juices with a better ORP.
- Mix alcoholic drinks and cocktails with hydrogen water. They become milder, the taste can be appreciated more. Make ice-cubes out of hydrogen water.
- After alcohol intake drink 2 glasses in the evening as well as 2 glasses the next morning on an empty stomach.
- Give your pets (dogs, cats ...) hydrogen rich electrolysis water to drink and observe how their fur and general health is positively improved.

18 Troubleshooting

Problem	Cause analysis	Solution
Generator not working (no bubble production)	<ul style="list-style-type: none"> Battery charged? Foreign object in the pressure container? 	Connect to the charger Clean interior
LED not shining	<ul style="list-style-type: none"> Battery charged? 	Connect to the charger
Does not charge	Check plug and cable	If the charger is defect inform your dealer. Do not use a different charger.
Notes:		

19 Legal reference - Disclaimer

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Author and copyright: Karl Heinz Asenbaum. Email: aquavolta@web.de

IMPORTANT NOTES

This instruction book contains important information. Read the whole book and if necessary repeatedly. Do not throw it away in case you wish to read it again!

You can and should ask questions and queries. The contact address is shown above. No responsibility is taken for improper handling and/or operation.

Disposal considerations

The device contains batteries and must not be disposed of with household waste. When disposing of the device you are required to return it to the point of sale or directly to the manufacturer. If you wish, you will receive a parcel label from your point of sale or the manufacturer for returning it.

EXCLUSION OF LIABILITY

Molecular hydrogen is a naturally and continually occurring gas in the human body, produced amongst other things in the intestinal flora. Risks and side effects from consuming Hydrogen Rich Water have not been mentioned in scientific literature. Therefore, we do not assume liability for medicinal claims or articles about the effect of ionized water, hydrogen water and/or electrolyte water.

Author, publisher and producer do not bear liability for decisions and practices made by someone because of the statements made in this publication. Never use this publication as the sole source for health related measures. With health related complaints please seek advice from an accredited doctor or therapist.

20 Service and Guarantee



Your responsible contact person for guarantee services is your dealer. This applies, in particular, to commitments which have surpassed the two-year legal warranty. All guarantee assurances will be listed on your dealers purchase receipt (invoice).

Manufacturer (main importer and service center):

Aquacentrum. Owner: Yasin Akgün

Fraunhoferstrasse 13, 80469 Munich, Germany

www.aquacentrum.de

www.aquacentrum.com

