

A small, white, cylindrical device with a black cap and a clear window showing a liquid level, mounted on a larger, clear, cylindrical container. The container is filled with water and has a black base.

# AQUAVOLTA<sup>®</sup>

## Hydrogen Booster

Manual

by Karl Heinz Asenbaum



## 2 - What is AquaVolta®?



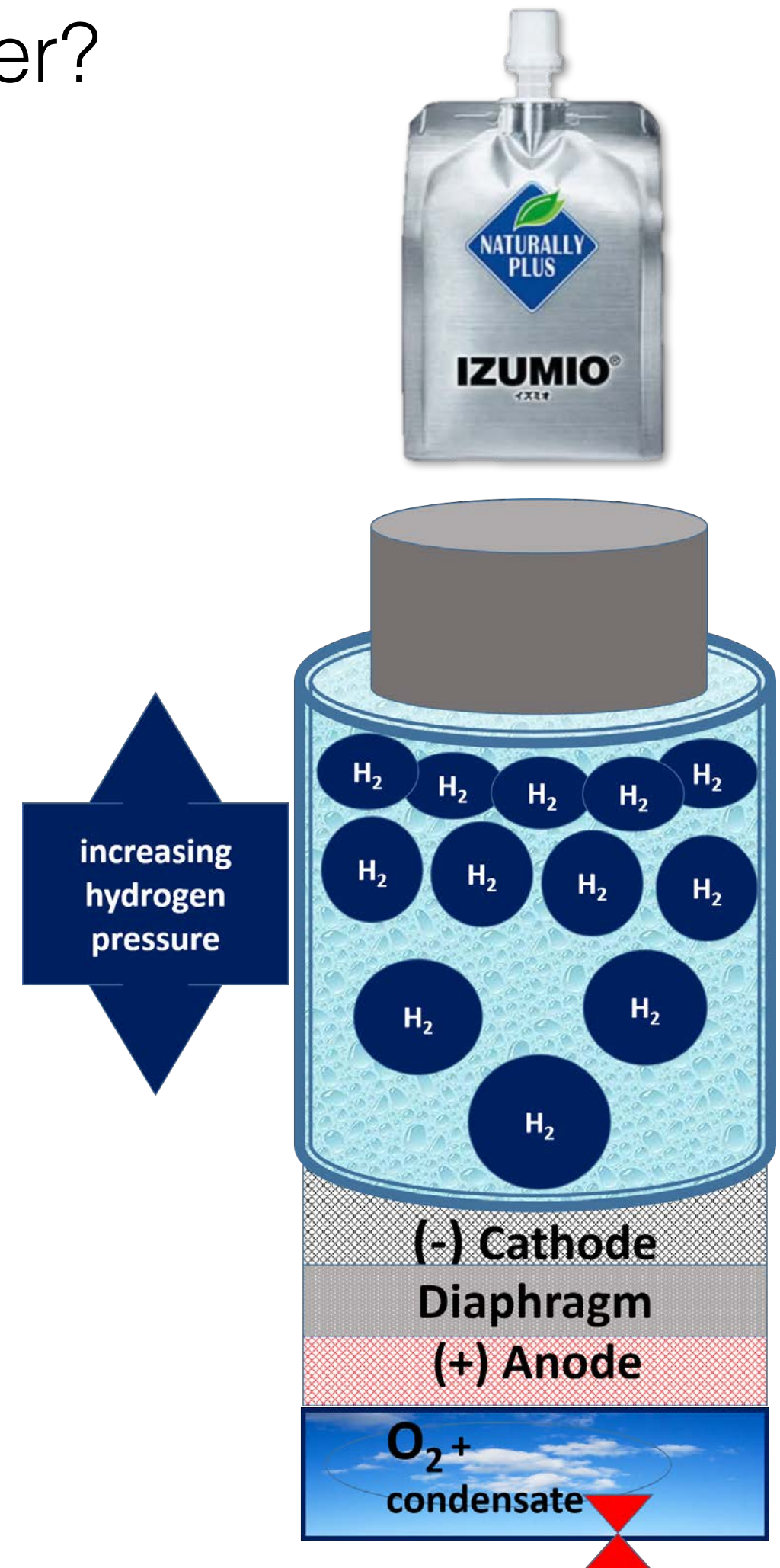
- The brand name AquaVolta® derives from the latin term for water(**aqua**) and the name of the inventor of the battery, Alessandro **Volta**. It stands for electro activated water.
- In Germany one originally spoke of electrolyte-water, afterwards of “activated water”. In english it is often referred to as „reduced“ or „ionized“ water.
- The characteristic of AquaVolta® is that a negative electrical tension with a measurement electrode shows a so-called negative redox potential.
- The lower the redox potential, the higher the willingness water has of giving off electrons. Per 0,018 Volt (18 Millivolt) lower redox potential does the willingness double. AquaVolta® has an about **400 to 800 Millivolt** lower redox potential than tap water or mineral water from a bottle.
- Because of its high willingness to give off electrons, AquaVolta® is also described as **antioxidant water**. It is not only used by doctors for therapy, it has also established itself because of its good taste as a modern day to day drink.
- Responsible for the antioxidant power of AquaVolta® according to the current scientific view is the **content of dissolved hydrogen**, or  $DH_2$ . The **AquaVolta® Hydrogen Booster** was developed to enhance this.





### 3 - What is inside a hydrogen - Booster?

- 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. Such a bag with 0,2 l of hydrogen water costs around 4 € 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.
- Hydrogen dissolves very reluctantly in water, unless, it is pressed in with high pressure. That is exactly what a Hydrogen Booster 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 oxidising water components. Result: hydrogen rich water.
- Whilst the hydrogen water bag can be filled with 2,8 ppm hydrogen content, can the **AquaVolta® Hydrogen Booster** reach up to 6,1 ppm.





## 4 - Oxygen water?

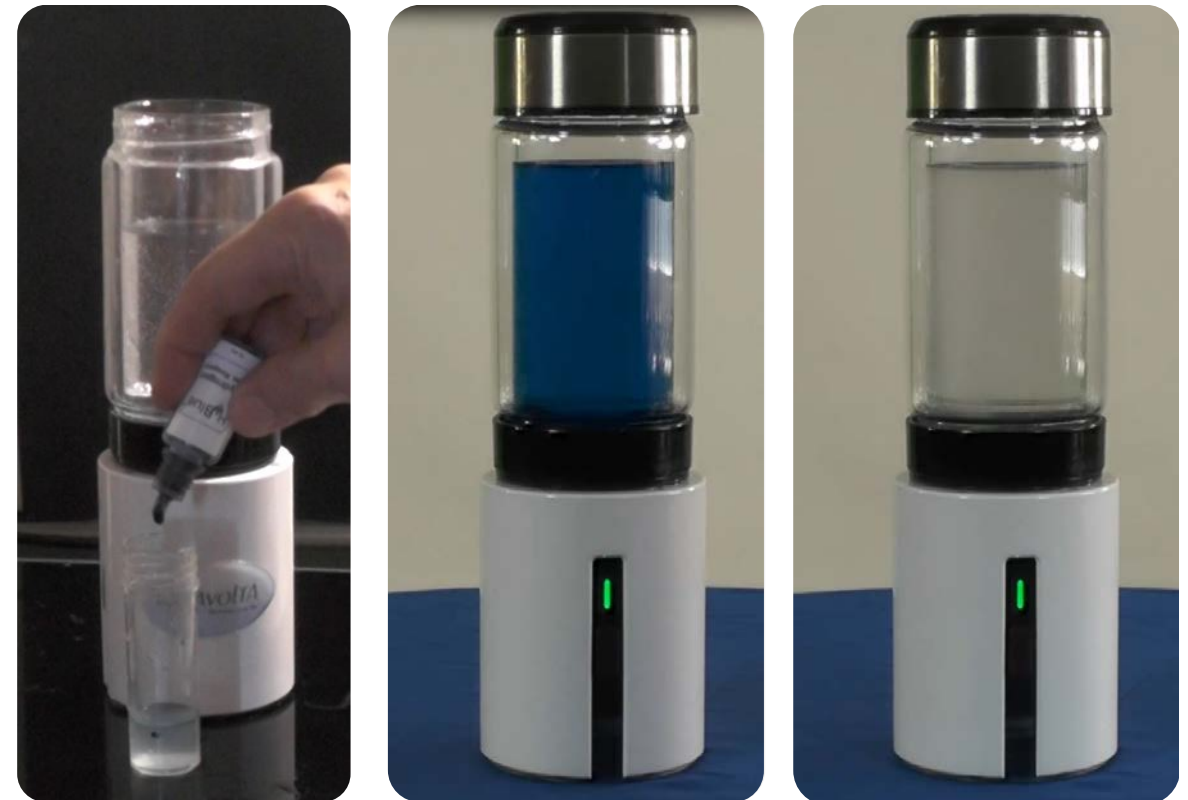
Oxygen rusts everything. It provides an electron gain for that which utilises it, so also for us. It is the weapon with which we squeeze the energy carrier hydrogen out of food for our own energy balance. Why is it nonsense to drink oxygen water and better to remove the dissolved oxygen, something which happens in water ionizers?

- We need a minimum of 20 g oxygen per hour. This is a condition shortly before passing away. By drinking 1 Liter of the best available oxygen water we can certainly reach that. We even reach 13 % more than necessary.
- A performance athlete needs 500 g oxygen/hour. Only 4,52 % can be covered with a Liter of the best oxygen water. Every breath brings much more.
- A high performance fish with our bodyweight would have to press 20 Liters of “hydrogen water” every hour through its gills to have the same combustion efficiency in its cells in order to produce this like a human athlete.
- Humans get as much oxygen as necessary into the body, since the air contains 21 % oxygen. Also dolphins, equally big as sharks, are far superior with their efficiency.
- Source: <https://www.test.de/Sauerstoffangereicherte-Waesser-Luftnummern-1097408-0/>:



## 5 - 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.
- After the role of hydrogen was recognised 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 criticised by experts in Japan and the U.S. and cannot be confirmed by us.
- Laboratory determination of actual dissolved hydrogen in water is really still very complex and still afflicted with unsolved problems. Electronic measuring devices demand high expertise and are very expensive. Therefor we recommend a chemical titration method with the H<sub>2</sub> Blue Kit®, something developed by the Molecular Hydrogen Foundation and further developed in collaboration with us.
- Because of their amount of the precious metal platinum are these test drops relatively expensive and therefor available as an optional accessory of the AquaVolta® Hydrogen Booster for ca. 32 €.



1 drop of the H<sub>2</sub> Blue Kit® is internationally valid as evidence for 100 ppb (0,1 ppm) dissolved hydrogen in water.

Above (centre) you see the normal container of the AquaVolta® Hydrogen Booster, which was filled with 0,2 l tap water (Munich) and 10 drops of the Reagent H<sub>2</sub> Blue Kit® were added.

After operating 25 seconds, the solution discoloured and indicated the amount of dissolved hydrogen. In the operating level, (LED shines green), after 7 minutes the AquaVolta® Hydrogen Booster reached 1,7 ppm with the same tap water. This equates to an over saturation of 0,1 ppm.

## 6 - Always fresh hydrogen - free water choice

With a device for on the move it is clear: There is no point enriching water with hydrogen energy if it does not make challenging demands on drinking water.

Therefor we have designed the **AquaVolta® Hydrogen Booster** in such a way that, unlike a stationary water ionizer, it is not limited to one type of water. 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).

You can fill the normal or the large high pressure, double walled cylinder, included in the package, with mineral water. Thanks to various bottle adapters can the water be ionized directly in the bottle and enriched with hydrogen.

Only restriction:

**The water cannot be carbonated.**

The total gas pressure would rise too greatly.





# 7 - Chapter overview

- 08 - General safety instructions
- 09 - Delivery contents
- 10 - Product contents
- 11 - Charging mode
- 12 - The two operating modes
- 13 - Production of Hydrogen Rich Water
- 14 - Optional accessory: hydrogen measuring drops
- 15 - Measurement results from hydrogen water devices
- 16 - Solco® Tumbler vs. AquaVolta® Booster
- 17 - Fill to the brim. The trick with the pressure
- 18 - Emptying the condensed water tank and cleaning the interior
- 19 - External cleaning / storage. Technical data
- 20 - Hydrogen water - not just for drinking!
- 21 - Troubleshooting
- 22 - Service and guarantee
- 23 - Legal disclosure



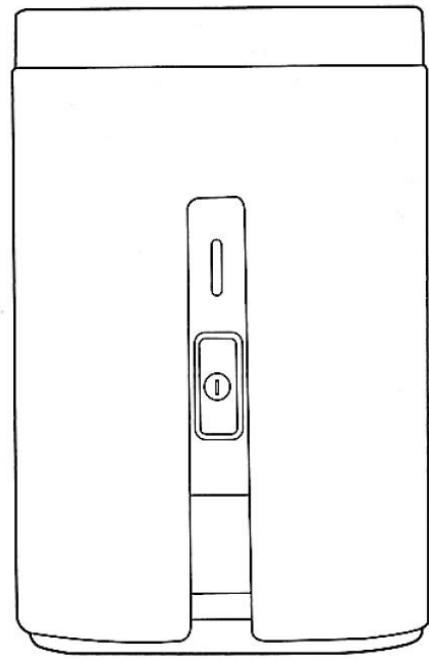
ΚΕΡΜΑΤΙΣΤΕ ΛΟΠΙ ΓΥΓΕ®

# 8 - General safety instructions

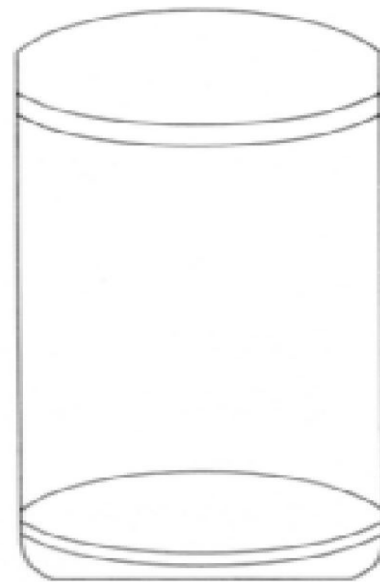
- Only use the device once you have read and understood the instruction manual.
- Before switching the device on, the water container has to be filled with water. Otherwise the electrolysis cell can be damaged and the guarantee claims expire.
- You cannot fill it with water over 80 Degrees C.
- Only 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 usually use cold water (under 30° C)
- Do not place the device in direct sunlight or subject to temperatures over 50 Degrees.
- 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 got 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 power grid nor the base unit if defect. Do not try to repair it. Disconnect the device immediately from the power supply and inform your dealer.



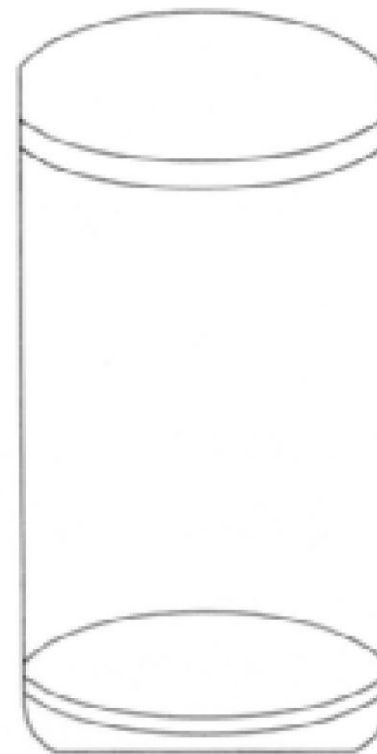
## 9 - Delivery contents



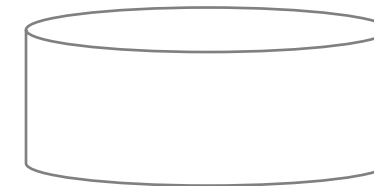
Production unit



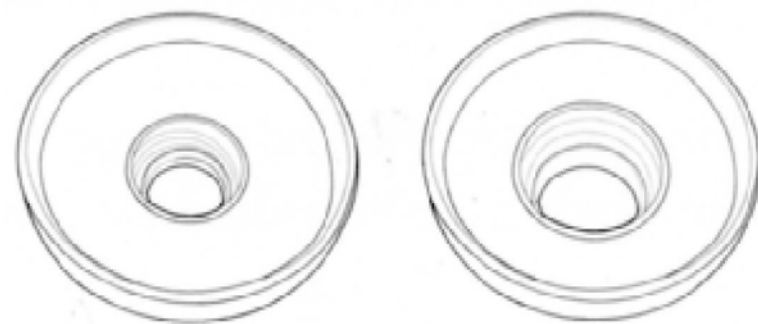
Glass pressure container



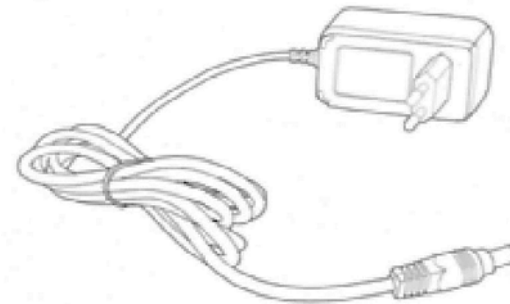
Plastic pressure container



Screw top



Bottle adapters

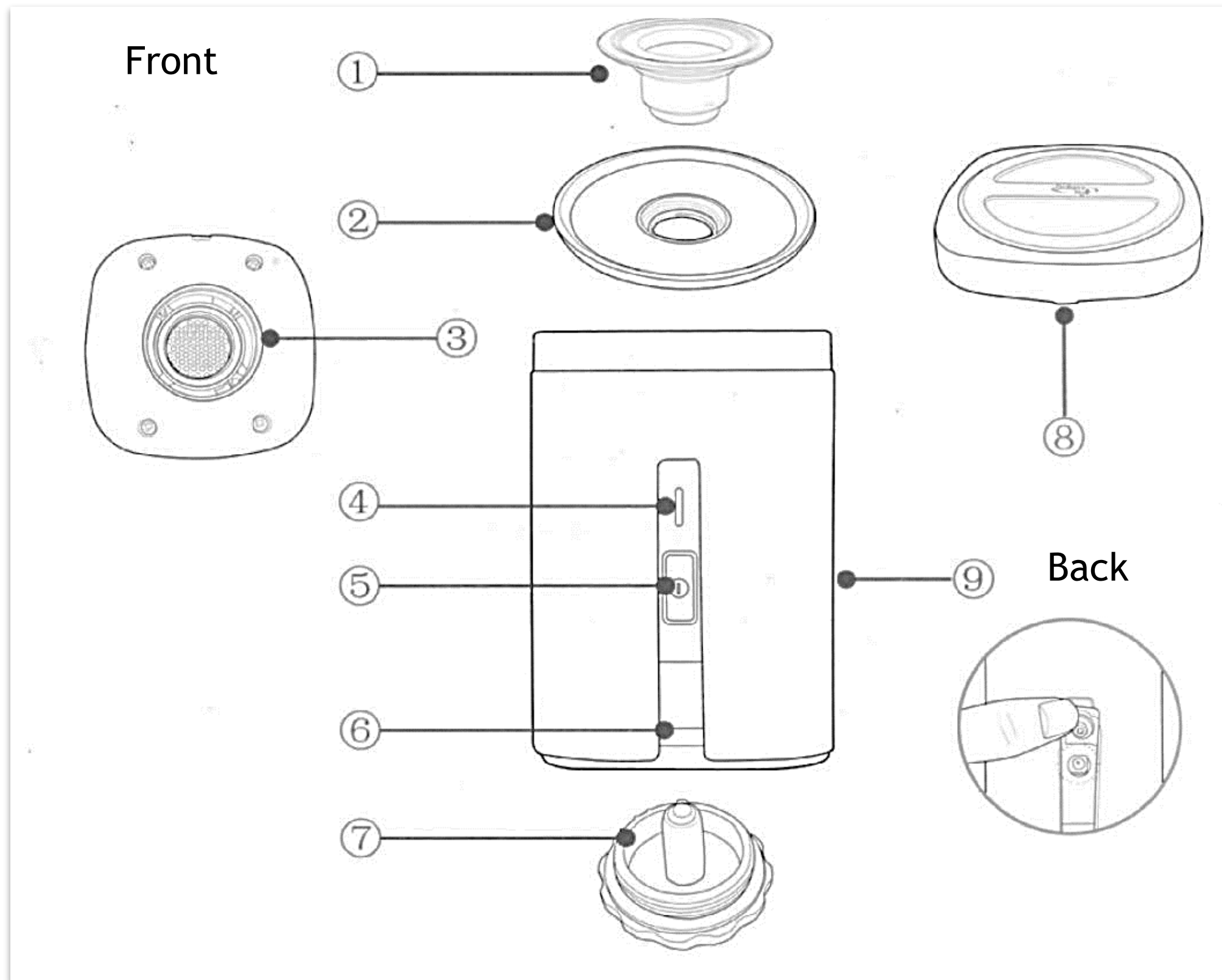


Power supply +  
charger



Cleaning powder

# 10 - Product contents

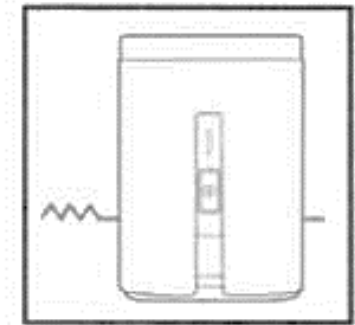


1. Screw thread
2. Adapter for pressure container or bottle
3. Hydrogen generator (view from above)
4. LED display
5. On / Off switch
6. Condensed water tank and oxygen pressure chamber
7. Tank cap with overpressure valve
8. Screw cap for pressure container
9. Charging socket under rubber flap



# 11 - Charging mode

1. Place the device on a dry, flat surface.
2. Open the rubber flap over the charging socket.
3. Place the plug of the charger into the socket. Before first use the device has to be fully charged.
4. The LED starts to blink red.
5. When completely charged it will shine permanently red.
6. Remove the plug from the charger and close the flap.
7. When the LED blinks red during operation, the charger has to be connected again until the battery is fully charged.



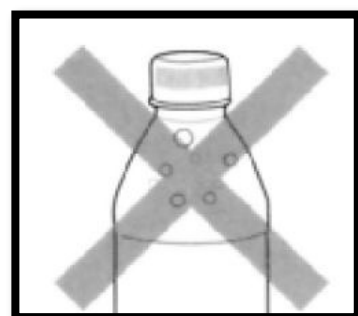
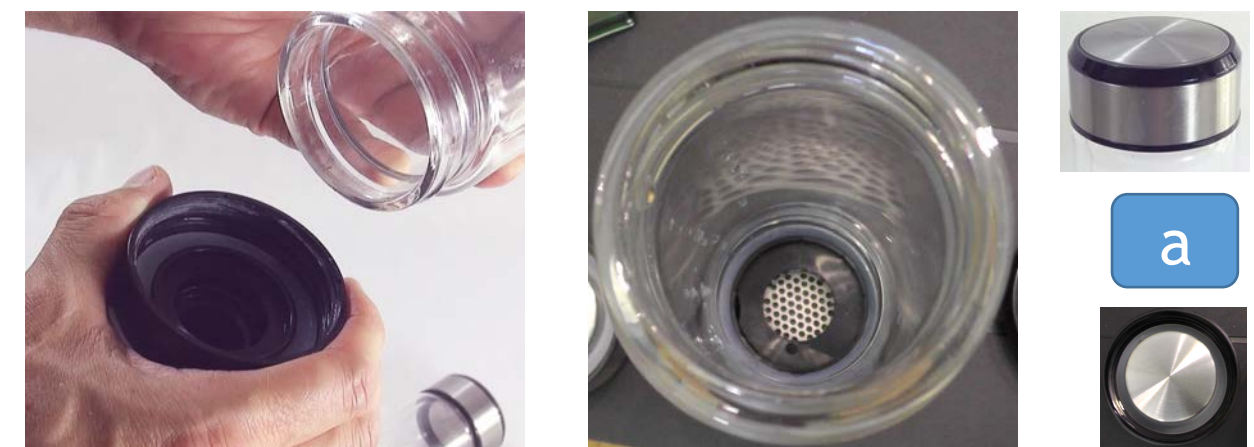
# 12 - The two operating modes

The AquaVolta® Hydrogen Booster offers fundamentally 2 possibilities for producing hydrogen: Either you use one of the two delivered pressure containers with the screw cap (a), or you use a mineral water bottle up to 1,5 Liter as a pressure chamber. (b)

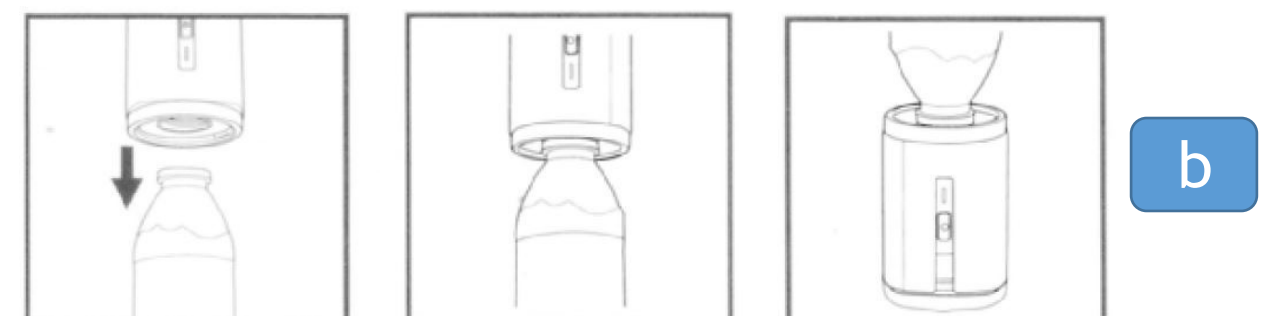
First of all, one of the adapters has to be screwed into the unit, for both operating modes. Its inner thread differs depending on the desired bottle size.

When operating with the pressure container made of glass or plastic, it is screwed tightly to the adapter and filled with water from above. The most efficient hydrogen production results if you have no air bubbles in between the screw cap and water surface.

To connect a water bottle, the device is fitted with the suitable adapter and held upside down. The bottle is screwed in upright and then the device is flipped over.



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





# 13 - Production of Hydrogen Rich Water

During production the **AquaVolta® Hydrogen Booster** has to be placed on a solid, flat ground. If the surface is too soft, the pressure valve on the bottom is not properly closed and the device is not working with enough pressure.

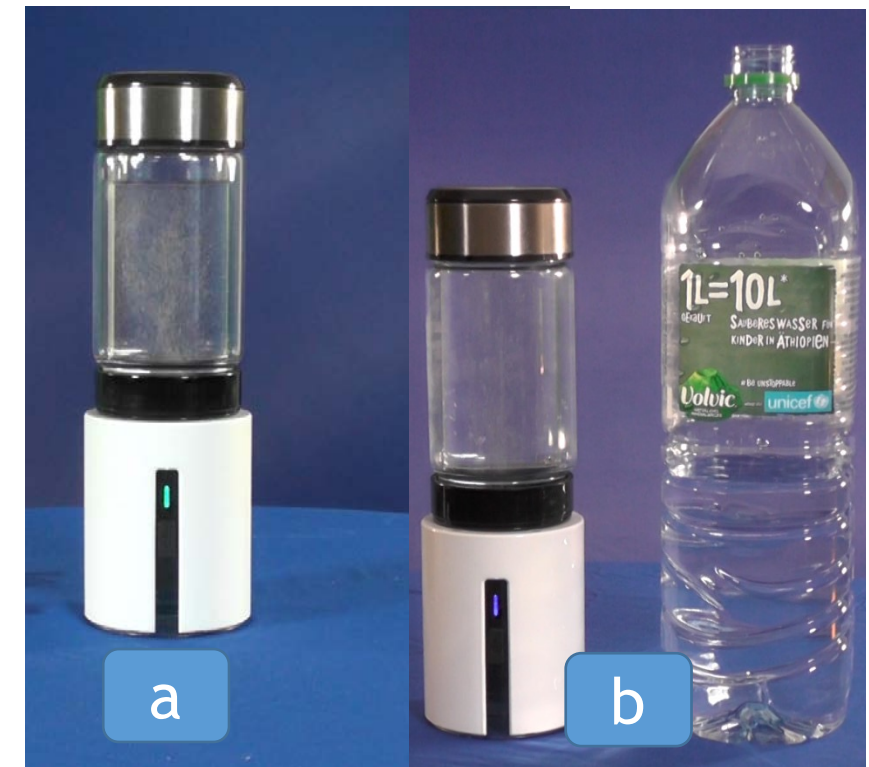
With the On/Off button you start hydrogen production, something you can recognise with the fine, rising bubbles.

By pressing the button once the LED shines blue and the device produces for 5 minutes. By pressing twice the LED shines green (a) and the device produces for 7 minutes.

With accumulating production time an always growing pressure bubble will form on the surface. (c) If you filled the container without any air bubbles, then it is predominantly hydrogen gas, which because of its pressure increases the solubility of the hydrogen in the water.

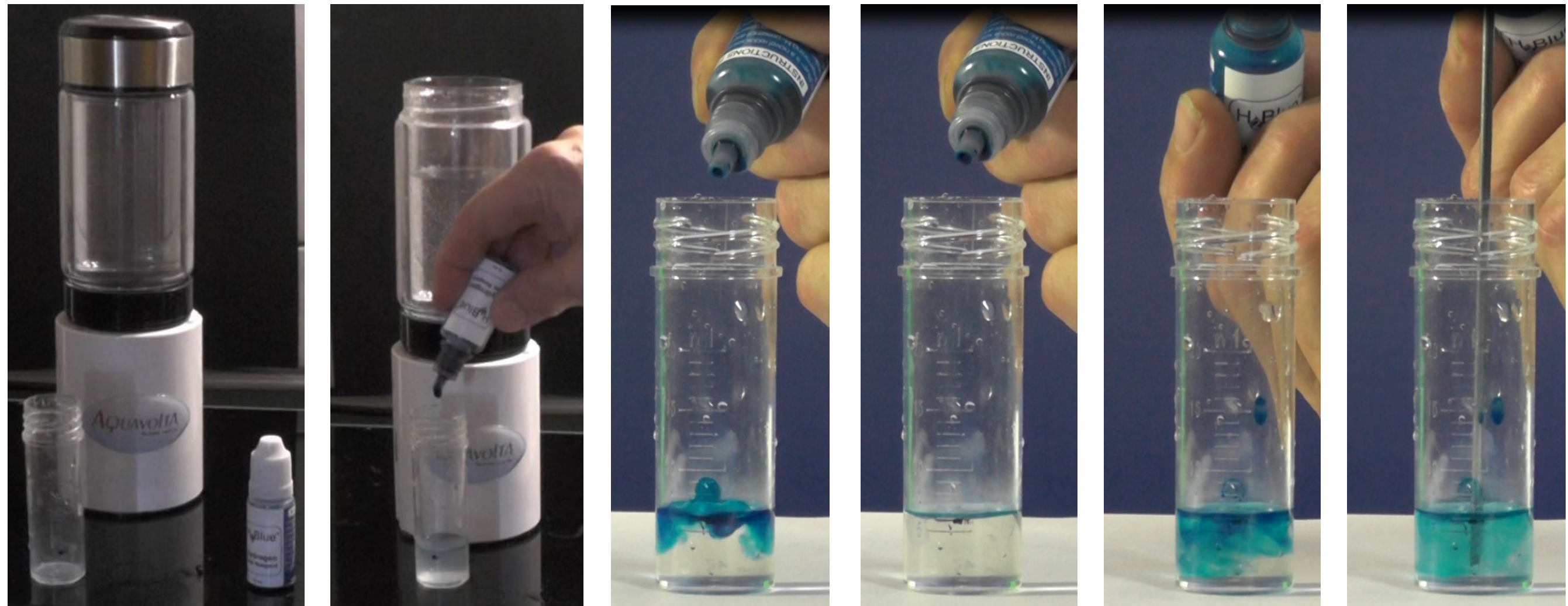
The bigger the water container, the longer the electrolysis time should be. The small pressure container has a capacity of 0,2 Liter and produces in 5 minutes 0,8 ppm hydrogen content with reverse osmosis water (a). With VOLVIC (b) it needs 7 minutes to reach that.

The pictured gas bubbles in a 1,25 l bottle of EVIAN mineral water shows the pressure build up after 7 (c) and 35 minutes (d). This produced a hydrogen content of 1,3 (c) and 5,9 ppm (d).





## 14 - Optional accessory: hydrogen measuring drops



Testing the amount of molecular hydrogen is carried out immediately after production with the optional H<sub>2</sub> 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. 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). With the **AquaVolta® Hydrogen Booster** you can also produce an over saturated water with more than 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. 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.



# 15 - Measurement results from hydrogen water devices

Device	Water used	Measuring with the Trustlex ENH 1000 (ppb)	Measuring with the H 2 Blue Kit (ppb)	
H2fXCell HIM (Hydrogen Infusion Machine) HfXCell HIM	TWM (=Tap Water Munich) TWM (pre filtered)	1291 1136	0700 1100	
GiseAqua HIM (similar to H2fXCell)	TWM	0952	0300	
GiseAqua HIM (the same device)	TWM (pre filtered)	1085	0600	
GiseAqua HIM (different sample device)	TWM (pre filtered)	1221	0500	
KYK H2/O3 Hisha prototype	TWM	1202	0800	
AquaVolta® Hydrogen Booster	ROW (=Reverse Osmosis Water) 5 min.	0969	0800	
	ROW 7 min.	1074	1200	
	ROW 7 min. after 30 minutes standing open	0963	0400	
	TWM 7 min.	1106	1700	
	TWM 5 min.	1094	1300	
	Aqua Panna 7 min.	1050	1900	
	Evian 7 min.	1134	1300	
	Volvic 7 min.	1076	1300	
	Volvic 7 min. prod. + 30 min. open	1040	0800	
	Volvic 5 min.	1018	0600	
	Staatlich Fachingen Healing Water 7 min.	1110	0800	
	Mehrner source „Nothelfer“ healing water since 1267. 7 min.	1078	1400	
	ROW with 235 TDS Punjab Salt Range salt. So called Himalaya salt. 7 min.	1327	0700	
	Nordenauer Stollen water	1033	0500	

# 16 - Solco® Tumbler vs. AquaVolta® Booster



The “Tumbler” from the Korean firm Solco® is available in Germany for just under 400 € and has an apparently similar design to the **AquaVolta® Hydrogen Booster**. Yet the Tumbler is missing a decisive component, the condense water pressure tank. During PEM-electrolysis the dissipating oxygen is carried off. Instead, with the Booster, the oxygen steam escapes from a tiny hole in the base. The results of this cheap design can be seen with the measurements:

Just with the ORP is the “Tumbler” after 2 x 5 minutes production time way behind the **AquaVolta® Hydrogen Booster**, even though the produced amount of hydrogen in the pressure-less 800 ml EVIAN bottle is twice as big as the 400 ml Tumbler. The results show (-) 447 mV to (-) 294 for the **AquaVolta® Hydrogen Booster**.

Also the measurement with the H<sub>2</sub> blue® Kit shows a clear superiority with the AquaVolta® Hydrogen Booster.

**Solco® Tumbler after 10 minutes: 0,8 ppm**  
**AquaVolta® Hydrogen Booster after 10 Minutes: 1,2 ppm**



# 17 - Fill to the brim. The trick with the pressure

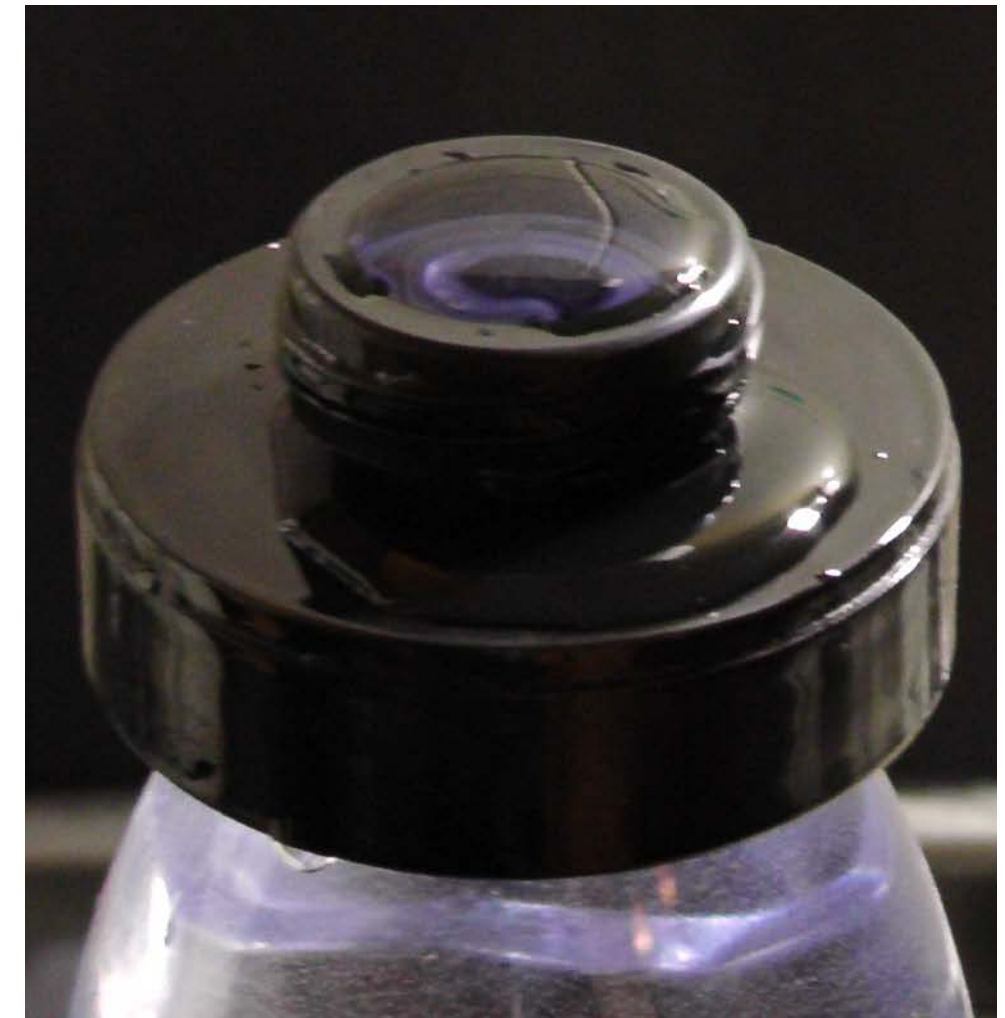
Hydrogen produced will rise to the top and create a bubble. This hydrogen is pushed back into the water from the pressure during PEM electrolysis. This therefore temporarily increases the solubility.

If you want to use the device optimally, then you should only see a small air bubble or no air bubble at all after sealing the pressure container.

When filling plastic bottles you should watch out for the adapter being screwed directly onto the bottle when filling. Then you just screw the production unit upside down onto the adapter and no air bubbles are included.

If you want to use one of the two double walled pressure containers included instead of an external bottle, with help of the metal plug in the screw cap you can squeeze out any remaining water. Like this you avoid having an air bubble inside.

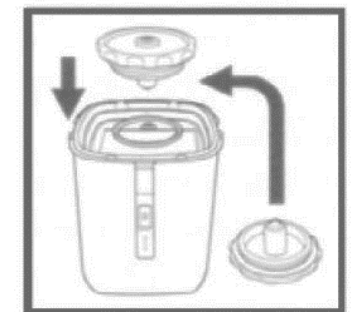
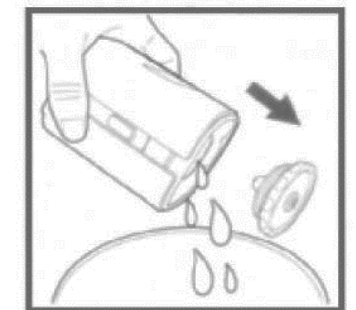
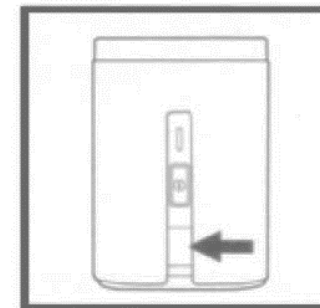
Squeezed out water should be removed with a cloth so that no water comes into contact with the base unit and the electronics.



# 18 - Emptying the condensed water tank and cleaning the interior

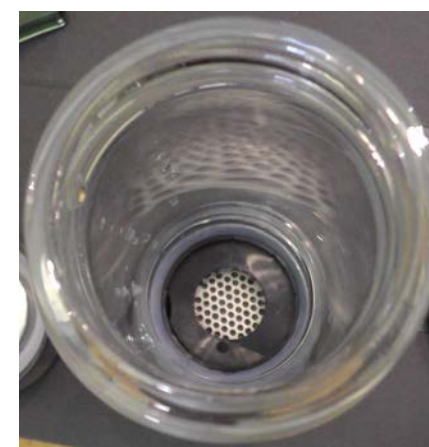
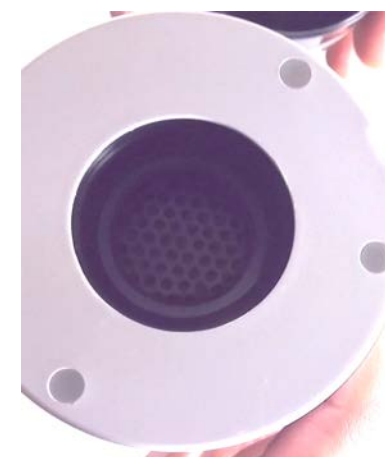
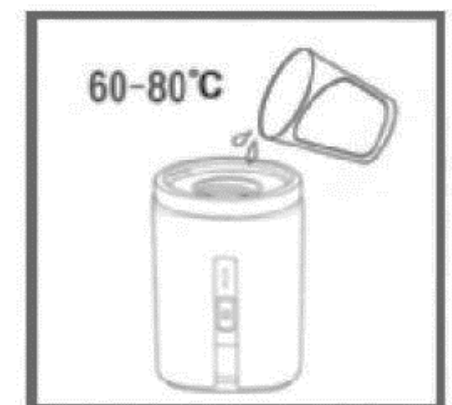
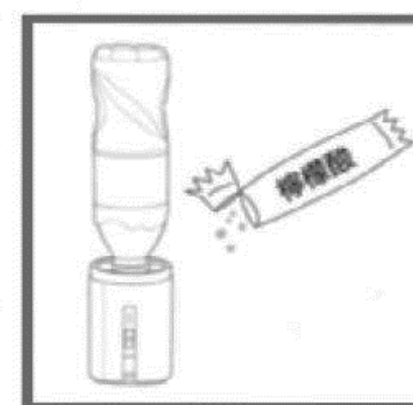
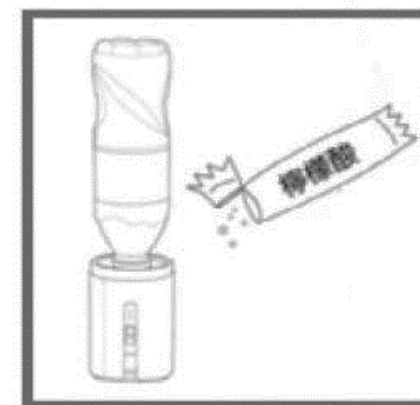
After about 50 minutes operating time has the condensed water tank on the bottom of the device filled up and has to be emptied, when you see in the viewing window, that it is more than half full.

Please unscrew the tank cap with the built in pressure valve and pour/shake the water out. Watch out that the device does not get wet when doing this. Afterwards you screw the tank cap back on.



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.

Place 5 g of citric acid in warm water and when dissolved, pour into the container and let it work for 1 hour. Afterwards, rinse the container and the electrode repeatedly with hot water.



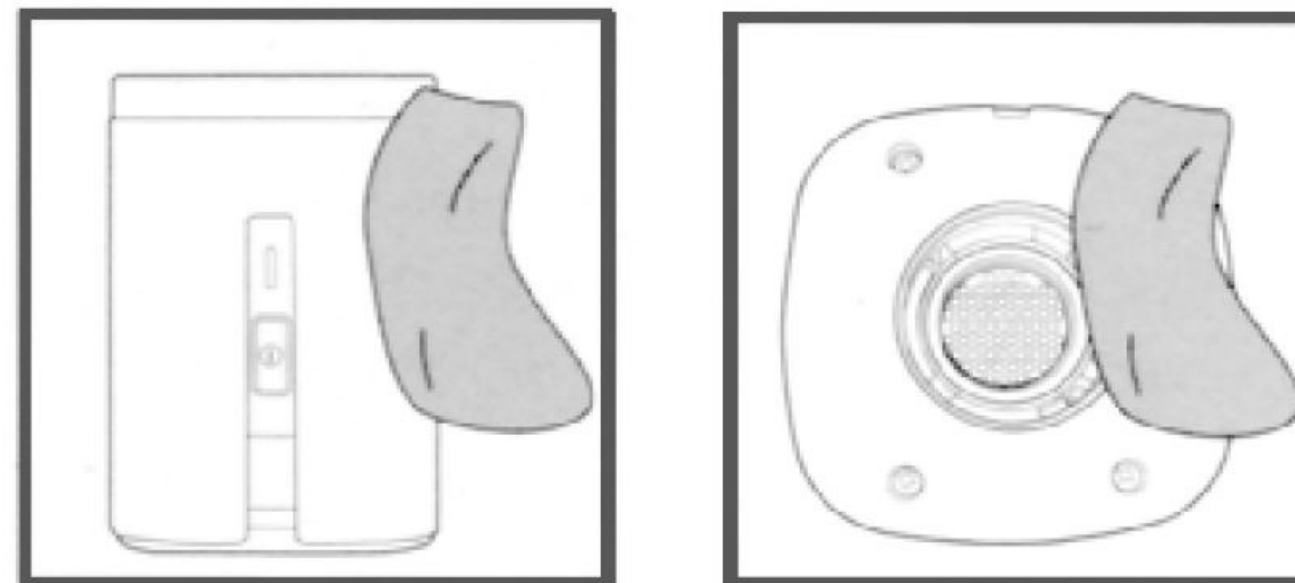


## 19 - External cleaning / storage. Technical data

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.



<b>Dimensions</b>	<b>Diameter 72 mm. Height 103 mm.</b>
Weight	Base unit: 270 g
Output	10 W (operation) / 8,4 W (charging)
Power reserve	Ca. 10 uses (5 min.) - fully charged
Charging time	Ca. 1,5 hours
Charger	100 - 240 V, 50/60 Hz
Hydrogen output	Depending on time and water 1,0 - 6,0 ppm
ORP	(-) 300 to (-) 700 mV (CSE)

## 20 - 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, although not as much hydrogen will be stored like with alkaline water. We have measured, for example, with a slightly acidic, reverse osmosis water a clearly lower hydrogen content to a slightly alkaline mineral water like Aqua Panna: the ratio is 1,2 ppm to 1,9 ppm with the mineral water.
- 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 **AquaVolta® Hydrogen Booster** 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 favourably 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. See: Asenbaum, K. H., Electro Activated Water, Munich 2016, page 42 ff.
- 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.





## 21 - Troubleshooting

Problem	Cause analysis	Solution
Booster not working (no bubble production)	<ul style="list-style-type: none"><li>• Battery charged?</li><li>• Foreign object in the pressure container?</li></ul>	Connect to the charger Clean interior, p. 18
LED not shining	<ul style="list-style-type: none"><li>• Battery charged?</li></ul>	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.
Red LED blinks for 5 seconds and operation stops	The water's conductivity is too high.	Use water with lower conductivity.

## 22 - 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 centre):

Aquacentrum. Owner: Yasin Akgün,

Fraunhoferstrasse 13, 80469 Munich, Germany.

[www.aquacentrum.de](http://www.aquacentrum.de)

[www.aquacentrum.com](http://www.aquacentrum.com)

Aquavolta® is protected with the German Department for Patents and Brand Names under file number: 30 2015 207 850.

Trademark owners: Karl Heinz Asenbaum, Constanze Asenbaum.

<b>EG-Konformitätserklärung</b>		<b>CE</b>
Fa. Aquacentrum Inh. Dipl. Ing. TU München Yasin Akgün Fraunhoferstraße 13 80469 München		
erklärt hiermit, dass folgendes Produkt:		
Produktbezeichnung:	AquaVolta Wasserstoff Booster Mobiler Wasserionisierer zur Herstellung von pH-neutralem Wasserstoffwasser	
Typenbezeichnung:	ab 2016	
Baujahr:		
allen einschlägigen Bestimmungen der Richtlinien <b>Elektrische Betriebsmittel (2006/95/EG)</b> und <b>Elektromagnetische Verträglichkeit (2006/42/EG)</b> entspricht.		
Folgende harmonisierte Normen wurden angewandt:		
DIN EN 55014-1:2000+A1+A2:2002 DIN EN 55014-2:1997+A1:2001 DIN EN 61000-3-2:2006 DIN EN 61000-3-3:1995+A1:2001+A2:2005 DIN EN 61335-1:2002+A1:2004+A11:2004+A12:2006 DIN EN 61000-3-2:2006 DIN EN 50366:2003+ A1:2006		
München,	3	
21.09.2016		Dipl. Ing. (TU München) Yasin Akgün Inhaber Aquacentrum



## 23 - Legal disclosure



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Author and copyright: Karl Heinz Asenbaum. Email: [asenbaum@aquavolta.info](mailto:asenbaum@aquavolta.info)

### 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.

### 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.

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Further literature can be found on the website [www.wasserfakten.com](http://www.wasserfakten.com)

# The AquaVolta® Hydrogen Booster

The currently most effective device for enjoying, mobile and cost effectively, high quality hydrogen water.

Another masterstroke by **AquaVolta®**, in collaboration with Eng. Yasin Akgün from Aquacentrum, the leading engineering office for water treatment.

