



**OSMIO H2XAGEN HYDROGEN WATER BOTTLE
USER MANUAL
V0.1 08/02/2024**



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Introduction

The Osmio H2Xagen is a 210ml water bottle with a SPE/PEM electrolysis generator that has a USB-C rechargeable battery. The bottle makes hydrogen-rich water, by introducing h2 gas which saturates into the water through power and pressure. Osmio supplies spare parts, including O-rings, batteries, and more so that you can keep your Osmio H2Xagen going on for many years to come!

Usage Precautions

The following is important to understand about your hydrogen generator:

- Only fill the bottle with potable drinking water not over 60°C temperature.
- Fill the bottle to just below where the screw thread is at the top of the bottle. Do not fill it up completely, as this will force pressure out the lid.
- Don't get the button or the USB charging port wet, and do not submerge it in water.
- Do not run hydrogen while the bottle is on charge, as this will shorten the overall battery life.
- It takes around 4~4.30 hours for a dead battery to fully charge. Remove the lead when it is fully charged.
- Do not let the bottle generator dry out. Always leave some water in there.
- If you accidentally touch the button to start the generation, just press and hold to turn it off right away.
- Using the wrong type of USB port can damage the bottle battery and can invalidate the warranty. Check on the adaptor to make sure it is rated for 5V/2A

What is included

Included in the presentation retail gift box, you will find the Osmio H2Xagen laid out separately. The Osmio H2Xagen Generator will be capped by the see-through water retention lid. You will see water underneath it. This is designed to keep the generator from drying out. Also included is the USB charging lead. You can use this on any USB socket. Also included is a spare set of O rings, which you just need to keep in the box, which may be needed in the future if the O rings get damaged or lost.

A very quick start guide

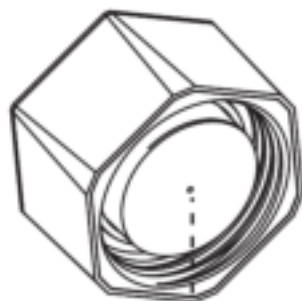
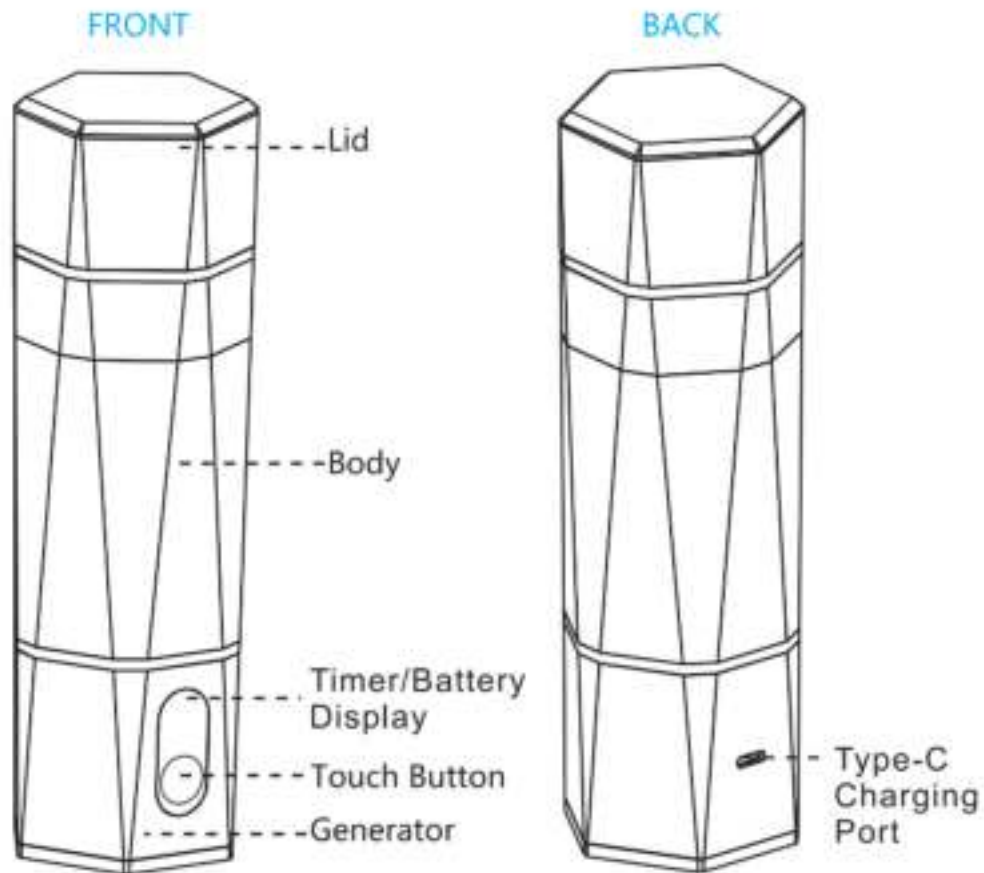
1. Take all the components out of the box.
2. Remove the water retention lid from the generator and the silicon plug from the bottle.
3. Screw them together fully so that the Hexagon shape is formed.
4. Fill the bottle with water just below the screw thread line at the top.
5. Screw the lid on fully. Press and hold for 5 minute cycle. Tap again to make it 10 mins.
6. When finished, unscrew the lid and drink.

Please Read On!

How to set it up

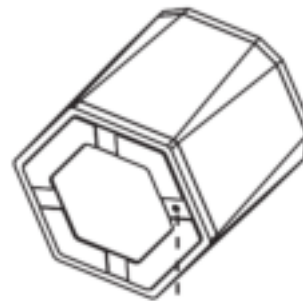
Please get familiar with the parts of your Osmio H2Xagen and their names. The bottle is designed to be taken part as shown below for independent cleaning. Do not throw away the packaging or any parts at all, you will need them later.

Please note: To prevent the PEM membrane in the Generator from drying out, the Generator is shipped with a small amount of sterile water held in there by the water retention lid.



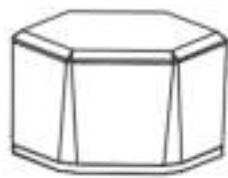
Pressure Relief Valve

1. Do Not Block The Valve. The Water Level Should Not Flood The Valve During Electrolysis

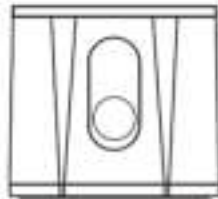


Exhaust Vent

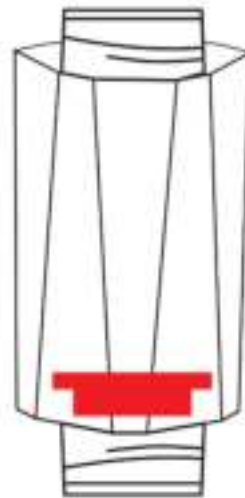
1. Do Not Block The Vent.
2. Occasional Water Drainage Is Normal.



Lid



Generator



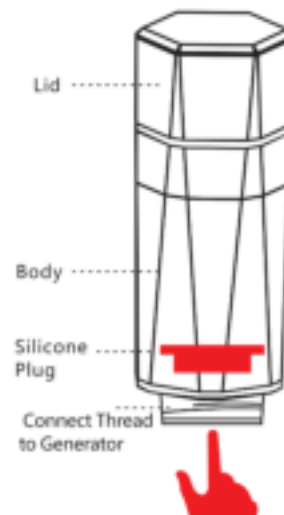
Body

Silicon Plug

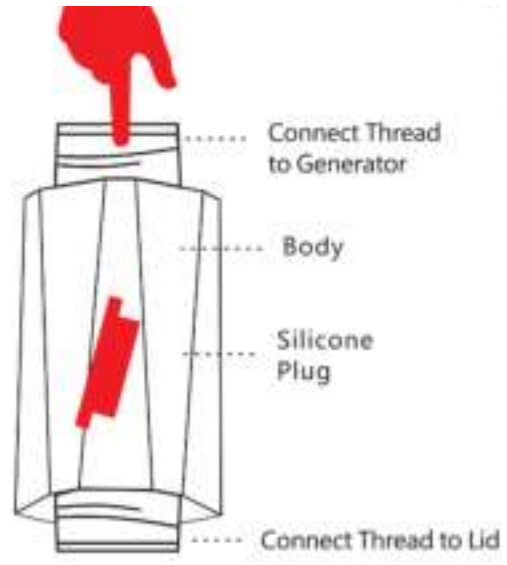
Step 1: Remove the water retention lid from the generator. Tip out the sterile water that is in there.



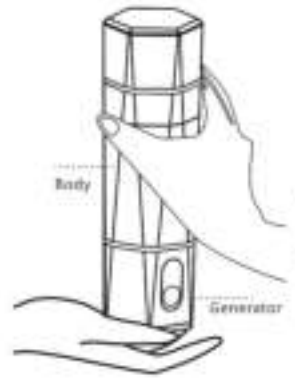
Step 2: Use your finger to poke out the Silicone Plug from the Bottle Body



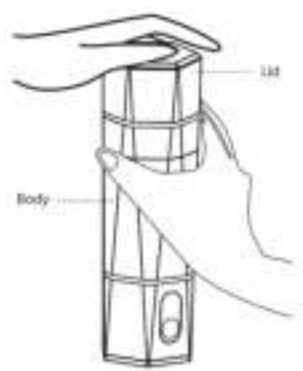
Step 3: Unscrew the lid, turn the bottle upside down, and take the silicone plug out of the bottle



Step 4: Screw the Body to the Generator.



Step 5: Put some water into the bottle and screw the lid on.



Congratulations! You have now set up your Osmio H2Xagen Hydrogen Bottle. Proceed to the next section on how to use it.

How to use it

1. Fill the bottle to just below the start of where the screw thread is. Make sure the water you use is classified as potable, and that is not hotter than **60°C**.



2. Screw the lid on tight, make sure the bottle body and lid hexagon shape match up



3. Press in and hold your finger to the button to start the generator (for about 3 seconds). This will start off the 5-minute cycle.



4. If you want to make it a 10-minute cycle, tap just once (not holding) to make it a 10 minute cycle. To stop the bottle at any time, press and hold the button, This will power off the bottle. To start it again, press and hold the button, which again starts the 5-minute cycle.



5. The timer will show a countdown, so you can see how long is left to wait.



6. Once complete, unscrew the lid. You should expect to feel a bit of a pop of pressure.



7. Drink it as soon as possible. Storing it in another bottle is possible, as the hydrogen will have a 4-hour half-life in an open container. So you can use it say after 4 hours, it should have half as much hydrogen gas in it. It is better to use the bottle every time you want to drink water.



Using it with a single-use water bottle

The generator can be used with regular shop-purchased bottled water. When doing this you must first remove the Body and Lid and just use the Generator itself.

When using it like this, ensure the water bottle is not completely full, but rather you should leave about 2cm from the screw bottle cap level. You can then screw the bottle to the Generator which has a 30mm Female Thread.

Do not exceed more than one 10-minute cycle when using the product this way. More than that can cause damage to the generator.



Charging the Generator



Make sure you use the right USB socket. It needs to be rated to 5V/2A. Using anything higher than that can damage the bottle. Check on the adaptor you are using (see the example circled in red). You will find most phone-type USB sockets will be just fine.

The best time to charge your generator is when the battery is completely dead.

Take the following steps to recharge your bottle.

1. Put the USB-C socket into the Charging Port

2. Put the other end into a 5V/2A USB-rated socket. You will see the battery bars appear and start flashing.
3. Leave for a Maximum of 4.5 hours to charge
4. Please note that the bars will never get to fully complete, as the management software is designed to not overcharge the battery.
5. Remove the USB-C charging cable from the generator after charging is complete.
Leaving the bottle on the lead does cause an overall shorter battery life.

How to clean the Osmio H2Xagen

Your bottle needs to stay clean to work properly and be hygienic. Never cleaning the bottle will cause bacteria build up and mold especially in the lid and the o-rings of the lid. It is especially important to clean your bottle regularly if you drink directly from the bottle, putting it to your mouth, as this will introduce bacteria to the bottle.

We suggest you use your bottle every day. If you cannot for some reason, then it is best left with some water inside in a dark place like a cupboard until you are ready to use it, for example, if you are on holiday and are thinking to leave left it behind, you should consider taking it with you!

Cleaning the bottle and lid

The easiest way to do this is to take apart the lid, the lid O-ring, and the bottle body. All three parts can then be separately cleaned using hot soapy water and a cloth. Make sure that the O rings and clean and you may need to use a cloth to make it so. Once all are clean and dry, you can reseat the O ring into position and reassemble your bottle.

An alternative way to do this would be to use the [Osmio Sanser](#) Sodium Hypochlorite Generator, which enables you to make bleach for less than 3p a litre at home with salt and water and 5V of power! This or Milton Tablets in a bowl of water and submerge the lid itself with the O rings left inside, for 15 minutes and then rinse it out.

Do not use any cleaning agent on the actual generator part. Only use citric acid or vinegar as described in the next section.

Cleaning the generator

Your generator will eventually become like a kettle, with scale and deposits like metals, building up on the generator. As this builds up, you will notice fewer bubbles being produced. This is when you know it is time to give it a clean. Using citric acid or lemon juice will dissolve this away and clean up the generator.

Mix one part of either citric acid or white vinegar with 3 parts of water. Leave in the bottle covering the Generator for 2-3 hours. Remove the mixture, then give the bottle a good rinse and refill it with your water and you are done.

What to do when you won't use it for some time

The best thing to do is pack the product up exactly the way it was when you first received it. So, to do this put some water in the generator and use the Retention screw lid to plug it to keep the membrane wet. You can then put the other parts back in the box and keep it in darkness until you want to use it again. Follow both sections on cleaning the product before using it again.

Frequently asked questions

What kind of water should I use?

You can use any potable water, however, if you use distilled or reverse osmosis level purified water, the level of H₂ will be greater, up to double the amount that can be achieved from tap water, most bottled water, and inline filters where they do not reduce TDS (total dissolved solids).

What happens if the user runs the cycle while the generator is on charging lead? Does it damage the battery?

It's not recommended, it won't be noticeable for a short period, but in the long run, the battery life will be shortened.

What happens if the user leaves the bottle all night on the charging lead?

Nothing happens, the charging part has automatic protection after the battery is fully charged, however, in the long term, it will cause premature battery life.

How long would it usually take from empty to fully charged?

Around 4~4.30 hours

How many cycles of 5 minutes do you expect from the fully charged new battery?

Around 16-24 times in 5min mode after fully charged battery

Around 8~12 times in 10min mode after fully charged battery

What is the expected life of a battery before it will not hold charge?

Around 3 years, but the lifetime is gradually reducing depending the usage frequency, just like mobile.

Can the user run the cycle of the bottle whilst on a USB lead with a dead battery? Is battery replacement essential to keep it working?

You need to replace a new battery to keep it working. The bottle will not work without the battery.

Why is there water coming out of the bottom?

Normally, there are several drops of water coming out from the bottom, especially when the bottle contains water for a long time without the generator being used. This is venting out the oxygen side of the electrolysis

Technical Specification

Body Material: Food Grade Polycarbonate (PC)
Working Cycle Time: 5 mins (single cycle) or 10 mins (double-cycle)
Battery Type: Lithium Polymer Battery
Voltage Inputs: 5V==1A
Electrodes: Platinum Titanium
Interlayer: Proton Exchange Membrane (PEM)
Capacity: 210ml
Bottle Dimension: 65mm Width, 200mm Height

Battery management detailed technical features

The Osmio H2Xagen uses the WB6058B 1.2A Linear Lithium-ion Battery Charger.

How the battery is programmed:

A charge cycle begins when a battery is connected to the charger output with the VDD pin voltage rising above the UVLO threshold voltage and a 1% resistor connected between the PROG pin and ground. If the BAT pin voltage is lower than VTRKL, the charger enters a trickle charge mode. In this mode, WB6058B provides about 1/10 of the set charging current to increase the battery voltage to a safe voltage to achieve full current charging. When the BAT pin voltage rises above VTRKL, the charger enters constant current mode, providing a constant charging current to the battery. When the BAT pin voltage reaches the final float voltage VFLOAT, WB6058B enters constant voltage mode and the charging current begins to decrease. When the charging current drops to 1/10 of the set value, the charging cycle ends.

Charging automatic restart

Once the charge cycle is terminated, the WB6058B uses a comparator with a 1.8ms filter time (TECHARGE) to continuously monitor the voltage on the BAT pin. When the battery voltage drops below 4.05V (roughly corresponding to 80% to 90% of battery capacity), the charging cycle begins again. This ensures that the battery is maintained at (or close to) a full state of charge and eliminates the need for periodic charge cycle initiation.

Warranty

This comes with a two-year warranty for all parts except the battery which is 6 months. If the battery does need replacing after 6 months it can be purchased and changed easily yourself or by returning it to us. Return postage costs may apply. The warranty starts on the day of purchase and is also valid from any authorized Osmio Water reseller.

Warranty is conditional on

1. **Using the right USB adaptor.** Using a high-rated over 5V/2A adaptor will cause generator damage and you may be charged for the repair.
2. **Maintaining the bottle.** As a user you are required to descale the system if it is not producing bubbles. Lack of production of bubbles does not mean the product is faulty but rather needs to be cleaned first to determine if anything else may be wrong.
3. **Not overcharging the battery or using it on the lead.** Your battery is expected to have around 3 years of life and there is a spare part available on the Osmio website. This is easy to change yourself at home or the generator can be sent back to Osmio for changing for you.

Technical support

For any technical problems, the fastest way to get support is to send a short video clip of the issue to info@osmiowater.co.uk.