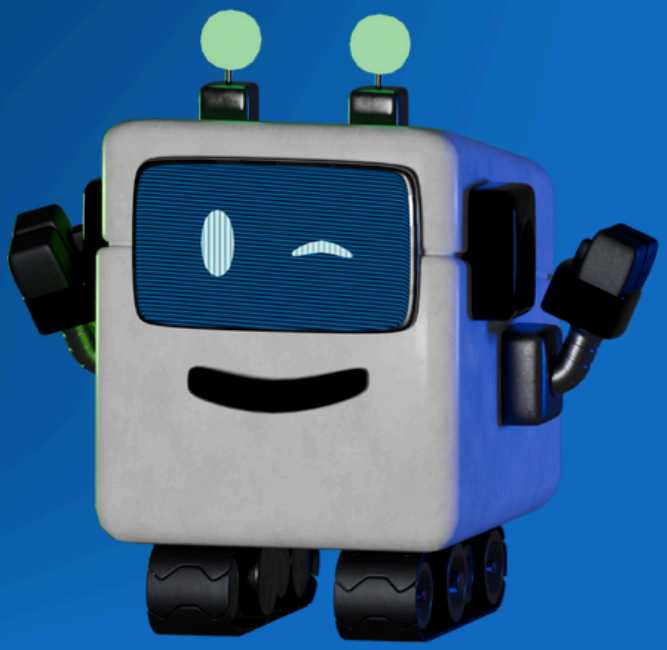
H2·E
vital energy

# Hydrogen Therapy Setting Up & Maintenance

Our Hydrogen & Oxygen Machines are very easy to maintain and use in this pdf we will cover how to set up and maintain your H2=E Machine



## Is the setting up easy?

If you want to get up and running as quickly as possible, the instruction booklet that comes with the machine will allow you to do this. Although this covers all the essentials, we found that a lot of customers were contacting us with questions, so we created our own setting up pdf here with extra notes.

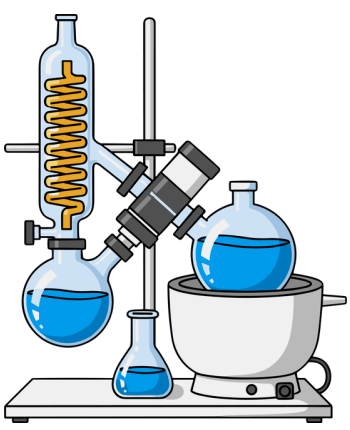
## The Distilled Water That Goes In The Machine!

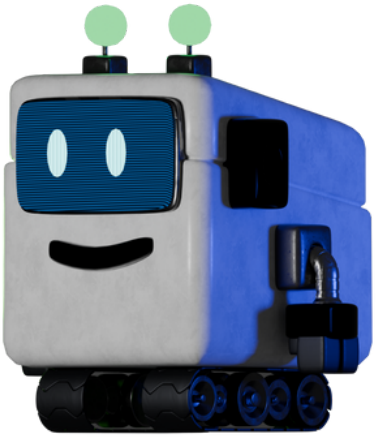
The only water you can put into your machine is distilled water.The water that you put into your machine directly affects its performance and lifespan. At H2=E we make no apologies for taking every opportunity to reinforce this message.

If you put in tap water, mineral water, the minerals and substances in this type of water will cause the following issues.

- Cause scale and deposits that reduce efficiency and shorten the lifespan of the machine
- Increase electrical resistance, forcing the machine to work harder.
- Cause corrosion which further reduces the machines lifespan.
- Contaminate the gas output, lowering purity and safety.

### This is why only distilled water should ever be used





## What Is a TDS Pen ?

TDS stands for Total Dissolved Solids, which refers to the combined content of all inorganic and organic substances present in water in a dissolved form. These substances can include minerals, salts, metals, cations and anions that are either naturally occurring or introduced into the water at some point. TDS is often used as an indicator of water purity. We supply a TDS reader with all of our machines so that customers can check the quality of the water before they add it to their device. The machine also has its own built in TDS reader which allows it to monitor water quality, however, it is not as sensitive as the reader that we supply. Because the machine has its own ability to monitor water quality, it will prevent operation if the water purity drops below the threshold required to prevent damaging the machine.

## Not all distilled water will be pure enough

The ideal water purity that we recommend has a TDS reading of 0 or 1 ppm.
Not all distilled will have a purity good enough to use in your machine, which is why we provide a TDS reader. It is important to always test the water before putting it into your machine in order to ensure that it is of suitable quality. Genuine distilled water could have a TDS reading of up to 10 ppm. We have found several examples where the TDS reading was the same as tap water, indicating that it was not genuine distilled water. The machine will accept water with a TDS reading of up to 3 to 4 ppm, however this does not mean that it is good for your machine. Our hydrogen/oxygen machines will indicate that the water needs to be topped up when the level drops to 1 liter (1000ml) If you were to top up the machine with poor quality water, it would mix with the water already in the tank and could operate for a while before indicating that the purity was not good enough. The problem with this is that by the time the machine indicates that there is a problem, a lot of impurity has already contaminated the hydrolysis cell (where the hydrogen is made) and it can be a time-consuming process to clear it out. The message that we want everyone to remember is that the purity of the water you put into your machine is of paramount importance. It is the most important thing that you can do to ensure trouble free operation as well as extending the lifespan of your machine.

# How to Use a TDS Reader Correctly

## Not all distilled water will be pure enough

A TDS (Total Dissolved Solids) reader is an essential tool for checking water purity before adding it to your hydrogen/oxygen machine. Even though it's straightforward to use, there are a few important details that ensure you get accurate readings:

## 1. Prepare the Glass or Container

- Always use a clean glass or beaker.
- Any residue, soap or mineral deposits can give a falsely high reading.
- Rinse with the same distilled water you are testing before taking a measurement.

## 2. Keep the Reader Clean

- Ensure the probe tip of the TDS reader is free from residue.
- Wipe with a clean tissue and, if needed, rinse with pure water before and after use.
- Avoid touching the sensor with your fingers, as oils or salts from skin can contaminate results.

## 3. Take the Measurement

- Turn the reader on and insert the probe into the water sample.
- Make sure the probe is fully submerged but not touching the sides or bottom of the container.
- Wait a few seconds until the reading stabilizes.
- The ideal reading for machine usage is 0 to 1 ppm

## 4. Store Correctly

- After testing, dry the probe gently and store the reader with the cap on.
- Avoid leaving the probe wet, which can cause mineral build-up or corrosion.

# Do's and Don'ts for Filling Your Machine with Distilled Water

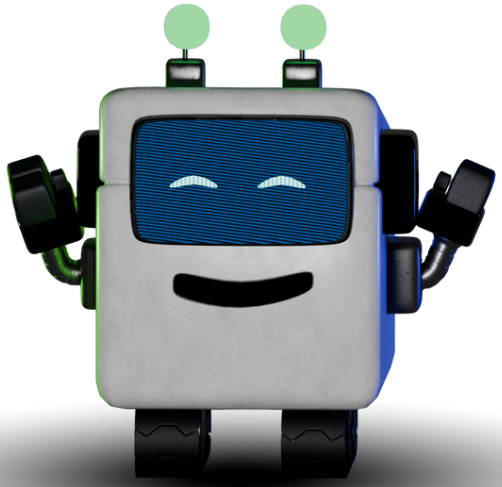
## Avoiding contamination

### Do's

- Wash your hands before handling bottles, funnels or caps.
- Use a clean glass or jug that has only been rinsed with distilled water.
- Keep bottle and machine caps clean, place them face up on a clean surface while pouring.
- Pour slowly and carefully to avoid spills or contact with unclean surfaces.
- Seal the bottle and machine immediately after pouring to prevent dust or airborne contamination.
- Store distilled water bottles in a cool, dry place away from direct sunlight.

### Don'ts

- Don't touch the inside of the cap, jug or funnel with your fingers.
- Don't use kitchen glasses, mugs or jugs that may have soap, limescale or mineral residue – rinse them with distilled water before use
- Don't top up the machine with partially used or water that has been left exposed.
- Don't store distilled water near strong-smelling substances (such as cleaning products), as vapours can transfer.
- Don't pour unused water back into the distilled water bottle/container.



## Why Owning Your Own Distiller is the Best Choice

The quality of water you put into your hydrogen/oxygen machine is essential for performance and longevity. While shop-bought distilled water can sometimes be suitable, the purity can vary depending on storage and handling. By purchasing your own home water distiller, you ensure a consistent supply of fresh, high-purity water.

## The advantages of making your own water include:

- Being able to store the water in glass rather than plastic bottles
- No risk of contamination from transport or storage.
- Consistent quality
- Always having distilled water available when you need it.
- It is cheaper than buying bottled water. With high quality distilled water you know that your hydrogen/oxygen machine is protected from scale, residue and premature wear.

## Choosing a Water Distiller

When selecting a distiller, here are a few points to consider:

- Basic models are usually sufficient. In most cases, a straightforward, no-frills distiller produces water that is just as pure as more expensive models. Paying more doesn't necessarily mean better quality water.
- You can double distill. If for any reason your distiller does not produce 0 or 1 ppm water, you can distill it a second time to produce the desired water purity
- Avoid multi-function units. Some machines combine distilling with other functions (such as filtration or mineral adjustments). In our experience, we have noticed that these machines often don't perform as well as the dedicated distillers.
- Capacity. A standard 4-litre distiller is sufficient for most home users.
- By keeping things simple and choosing a basic, well-made distiller, you'll get reliable results without unnecessary complications.

## Primary Functions of the Water Humidifier

On the front of your machine is either two bottles or a single cartridge that you put distilled water in, the purpose of this is.

- Humidification: The main role is to moisturize the gas before it is inhaled. Dry gas (especially pure hydrogen or hydrogen/oxygen) can irritate the respiratory tract if not humidified.
- Backflow Prevention: The water in the bottle creates a physical barrier that can prevent liquid or gas backflow into the machine.
- Bubbling Visual Indicator: When the machine is running correctly, bubbling in the bottles confirms gas is flowing

## When to top up the Humidifier bottles

We suggest topping up the bottles with distilled water as needed. With long sessions you may need to top the bottles up after each session.

## What is the ideal water level in the Humidifier bottles

The ideal level is the mid-point between maximum and minimum indicators on the bottle.

## Why and when should I replace the water in the humidifier bottles?

Over time dissolved solids can gradually build up in the humidifier bottles, which can be tested with your TDS reader. In order to keep the water, clean, we generally suggest that you completely change the water in the humidifier bottles after every 4 weeks of use. When changing the water, we also suggest that you give them a wash as mineral residues and contaminants can cling to the inside of the humidifier bottles.

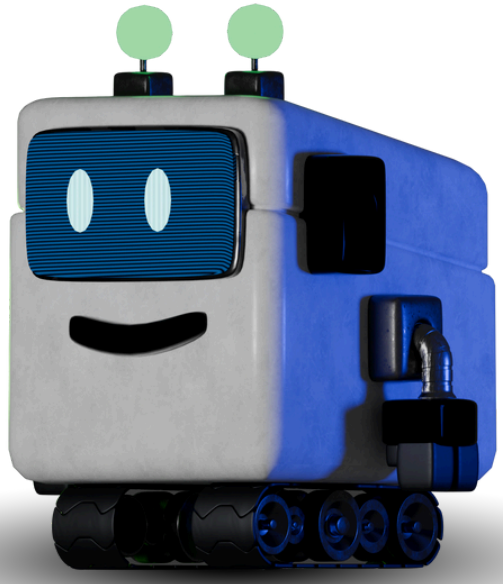
## How should I clean the humidifier bottles /cartridge ?

- Wash with mild soapy water (a gentle, fragrance-free dishwashing liquid works well). Use a soft brush, sponge or cloth to remove any film or residue.
- Avoid using anything that is abrasive in the cleaning of the bottles
- Do not clean in a dish washer
- Rinse thoroughly with clean tap water to remove all soap.
- Finally rinse with distilled water to remove any minerals present in the tap water
- Refill with fresh distilled water and reattach to your machine

## Why won't the machine operate if I've added too much water?

This is a safety feature that protects the equipment and also optimises gas output
Overfilling causes the following problems:

- Disrupted oxygen flow – The main tank needs a small air space where oxygen can accumulate before being channelled out. If the tank is too full, there isn't enough space for this, which reduces oxygen pressure and flow.
- Risk of water carry-over – Excess water can be pushed into the gas lines or humidifier bottles, which affects performance and safety.
- Protection of the electrolysis chamber – Too much water can flood the chamber and interfere with gas production.



## Why to flush the water tank every 4 weeks

Even when using distilled water, the main water tank should be flushed every 4 weeks.

- Maintain water quality and hygiene.
- Protect the electrolysis cell from deposits and scale.

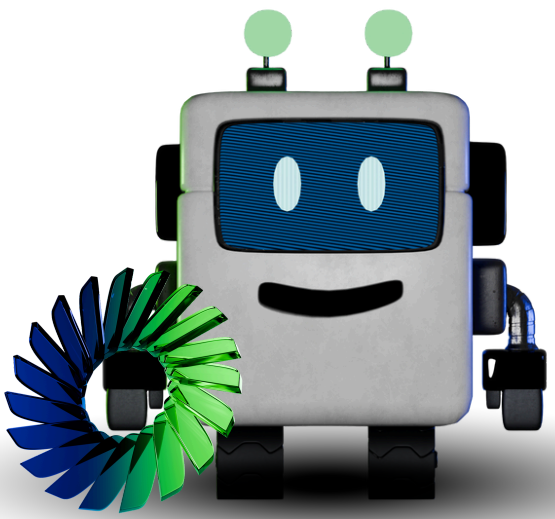
When your machine indicates that it needs topping up with more water, it still has 1 liter still in the tank. Just because you keep topping up the machine with clean water when required will not mean you should neglect to flush the tank. Over time, two things can happen if the water is not refreshed:
Residue buildup – Small amounts of dissolved solids or airborne particles may collect in the tank which can impact the electrolysis chamber where the hydrogen is made, causing reduces performance and shortening the lifespan of the machine.

## When to Flush the tank

As a general guide once every 4 weeks.

## Also flush the tank if:

- If the TDS reader on the machine indicates poor water quality (anything that is not indicated as green)
- If the machine switches off due to overheating and needing to cool down
- The machines ‘Change Water’ icon indicates



## How to flush the main tank?

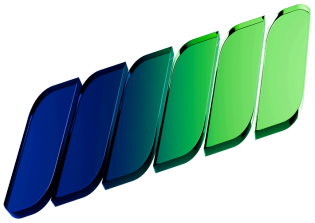
- Turn off and unplug the machine before starting.
- Drain the tank completely
- You can test the water that you have drained with your TDS reader to assess how clean the inside of the tank has been maintained.
- Rinse the tank with clean distilled water – You do not need to fill the tank all the way to the top. Fill the tank to halfway, then gently swish or rock the machine so that the water can wash over the tank walls to loosen any residue.
- Drain the water out of the tank.
- Repeat a second time if required – If when you initially drained the tank the TDS reading of that water was not 0 or 1 ppm then repeat step 3 a second time
- Refill with fresh distilled water to the recommended level for operation

## How do I reset the 'Change Water' icon

Press and hold the 'Mode' or 'Flow' button in the top left-hand corner of the screen to stop the 'Change Water' icon from flashing

## If you don't use your machine for a while

If you use your machine on a regular basis of at least once a week, then you can simply keep the water levels topped up and nothing specific needs to be done. If the machine is going to be sitting idle for an extended period of time, you do not want to leave it with a full tank of water, as this can allow microbial growth to occur inside the machine. You also do not want to leave it empty of water, as this will allow the PEM (Proton Exchange Membrane) to dry out and become damaged. The correct way to store your machine is to empty the tank and then put 1 glass (250ml) of distilled water back into the machine to prevent the membrane from drying out. When you return to using the machine, it is a good idea to drain the tank and replace it with new water before using it again.



# Why The Need for Water Filters ?

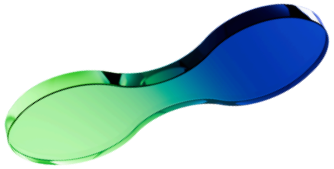
Your hydrogen/oxygen machine is fitted with two different filters, each with its own purpose:

## 1. Resin Filter (in the water tank)

- This is the main working filter.
- It removes dissolved minerals and impurities from the distilled water before it enters the machine.
- By doing this, it protects the electrolysis cell (which makes the hydrogen) from scale, corrosion and mineral buildup.
- This filter gradually becomes saturated and needs replacing every 6 to12 months depending on usage.

## 2. Internal Filter (inside the machine)

- This is a built-in safeguard.
- Its job is to catch any tiny particles, resin beads or contaminants that may slip past the resin filter.
- It ensures only clean water reaches the delicate electrolysis plates, helping to extend the lifespan of the machine.
- Because it is protected by the resin filter, it does not need replacing. The resin filter does the main job of purifying the water, and the internal filter acts as a final protective barrier. Together they ensure your machine runs smoothly and lasts longer. The machine will indicate when to change the resin filter, which will generally be between 6 to 12 months; however, if the machine has not indicated that you need to change the filter after 12 months it is suggested to replace it anyway.



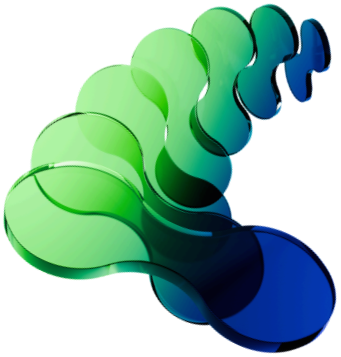
# When you should replace the Resin Filter earlier than indicated

If you have added water that is not pure enough, the TDS indicator on the machine will detect this and prevent the machine from operating. The TDS indicator will show as either amber or red when the water purity is not good enough. When this happens follow the following procedure

- Immediately discard the poor-quality water.
- Flush the tank with clean distilled water.
- Replace the resin filter
- Clean the humidification bottles and replace the water

The reasons for replacing the resin filter:

- The resin filter works like a sponge for minerals. If poor-quality water (with high TDS) is added, the resin will immediately begin soaking up those dissolved solids.
- This can use up a large portion of the filter's capacity in one go, reducing its effective lifespan.
- Even if the water is removed and replaced with proper distilled water, the filter may already have absorbed enough minerals that it will exhaust much sooner than expected.
- In some cases, if the water was very poor, the resin could even become saturated right away — meaning it can no longer protect the electrolysis cell.
- An indicator that the filter is compromised would be seen in a machine that runs for around 5 minutes and then stops operation with an indication that the TDS is too high. Repeatedly changing the water doesn't solve the problem.



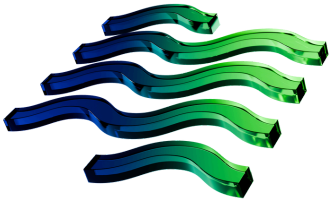
# Water stone

Best practices to prevent damage and blockages

- Avoid touching the stone head: Always handle by the tubing and not the porous surface. Oils from your fingers can block the pores.
- Avoid using tap water: Filtered, mineral or spring water is suggested
- Do not leave the stone in water when not in use
- Rinse after each use with distilled water to clear residues.
- Let it air-dry naturally in a clean environment. We suggest placing in a clean, dry, empty glass and allowing to air dry
- Avoid direct sunlight, kitchens or dusty places.
- Handle carefully and avoid pressing the stone into hard surfaces or dropping.
- Do not clean the stone with dishwashing detergent

## A waterstone that worked correctly in the past may become more restrictive or blocked due to:

- Mineral build-up (limescale) Filtered, mineral and spring water all contain minerals which can leave calcium or magnesium deposits inside the pores.
- Biofilm or residue Leaving the stone in water between uses can allow a thin film of bacteria or organic material to form
- Drying out with residue inside If the stone dries with water trapped in it, minerals can crystallise inside the pores. Rinsing with distilled water after use can help to reduce this.
- Oil or contamination Touching the stone head with fingers, or exposure to lotions, cleaning products, or kitchen grease, can coat the pores with oils that block flow.
- Physical damage or compression Dropping the stone, or pressing it too hard against the bottom of a glass, can crack or compact the pores, reducing flow.



# fix a blockage or poor gas flow in your water stone

Option 1 Quick rinse

- Unscrew the head of the stone from the metal tube using kitchen towel
- Rinse the stone thoroughly under warm distilled water.
- Swirl and shake it under water to help flush out any loose particles.
- Allow to air dry before reattaching to metal tube

Option 2 Vinegar soak (for mineral build-up)

- Unscrew the head of the stone from the metal tube using kitchen towel
- Place the stone in white vinegar for 60 minutes.
- This dissolves calcium and limescale if any tap water was used.
- Helps clear biofilm, bacteria and other organic material that may be blocking the pores.
- Rinse thoroughly with distilled water afterwards to remove all vinegar.
- Allow to air dry before reattaching to metal tube

Option 3 Boiling in distilled water

- Unscrew the head of the stone from the metal tube using kitchen towel
- Place the stone in a small pan of distilled water.
- Boil gently for 20 minutes
- Allow to cool naturally in the water.
- This can loosen stubborn residues and flush them out.
- Also helps to clear biofilm, bacteria and other organic material that may be blocking the pores.
- Allow to air dry before reattaching to metal tube

Extra notes Use kitchen towel when unscrewing and reattaching the stone to minimise touching directly with hands. White vinegar is also known as distilled vinegar or spirit vinegar - it is not white wine vinegar. When to replace your waterstone. With proper care, a waterstone can last a long time. However, over time there will be a gradual buildup of limescale and organic residue that will create resistance and potential blockage in the stone. If cleaning does not restore good gas flow, or if the pores are physically damaged, a replacement may be necessary

# Everything you need to know about the cannula

How to clean It is important to clean your cannula after each use.
Lightly spray or wipe the nasal prongs and exterior tubing with one of the following:

- Colloidal silver spray
- Hypochlorous acid spray (very mild disinfectant / skin-safe) •
- Diluted vodka spray (50:50 vodka and water)
- Allow to air-dry completely before reuse.
- You could use a medical wipe or hand sanitizer spray, these both tend to have various chemicals in them which we believe are best avoided.

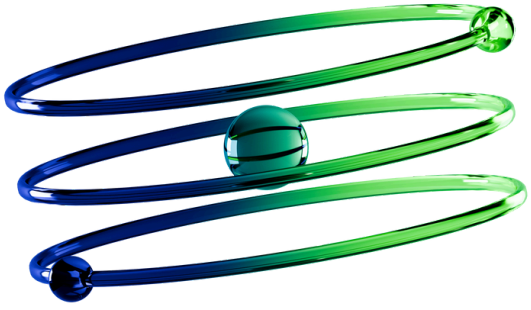
When to replace them How often you replace the cannula depends on usage

- Light Use (up to 7 hours per week) – replace every 3 months
- Moderate Use (up to 14 hours per week) – replace every 2 months
- Heavy Use (over 14 hours per week) – replace every month

If you are using the cannula during a cold or flu, then you may want to replace it when you feel better. It is suggested to wash your hands before using the cannula The main reason for changing the cannula is for hygiene reasons, not because the cannula becomes broken or defective.

Even if you clean the cannula after every use, there will still be the potential for bacteria to develop inside the tubing over time.

If you have a lowered immune system and are at high risk of picking up infection, you may want to replace the cannula every month regardless of the number of hours of use.



## Deeper cleaning

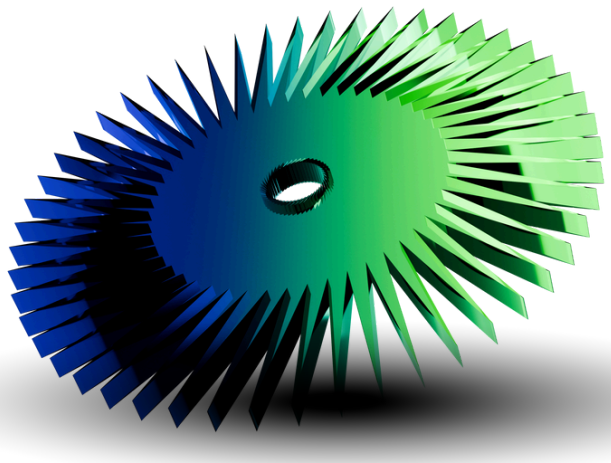
To perform a more thorough cleaning you can soak the cannula in diluted white vinegar for 15 minutes, then rinse thoroughly with water and allow to air dry.

- 3 parts waters to 1 part vinegar in a bowel or mug.
- 150ml of warm water with 50ml of vinegar This will remove mineral scale, residue and light biofilm from the cannula.

Sharing a cannula, It is recommended never to share a cannula, even with close family members, this is for hygiene reasons. It would be better for each person to have their own cannula

Storage of your cannula It is ideal to allow the cannula to be exposed to the air in order to dry out. Once dry it can be stored in a clean, sterile environment where it will not be exposed to dust and other potential contaminants in the environment. If you have not used the cannula for a number of days then it is a good idea to re-sterilise it when you perform your next session. If you haven't used the cannula for a number of months it may be wise to replace it as bacteria may have been developing in the tubing during that time.

How long do they last? If you were to use a cannula every day until it broke, most cannulas would potentially last for years, the main reason for replacing a cannula is hygiene.

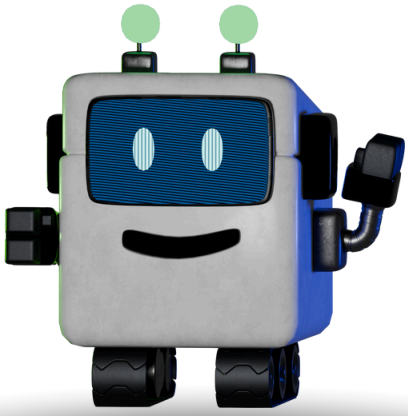


## Considerations for safe use

- Ensure a well-ventilated room – open a window as hydrogen will accumulate in the room
- Make sure that the machine is not in an enclosed space whilst in operation – do not block the cooling fans
- Ensure that the machine is not in direct sunlight whilst in operation • Do not operate the machine close to a heat source
- Keep away from naked flames such as candles and open fires
- Running Costs
- Electricity: The 3000ml has a power consumption of 900W. Estimated cost is around 23p per hour of operation.
- Water: The 3000ml machine uses 120ml of distilled water per hour
- Noise Levels The 3000ml operates at 30-35dB with the fans running, which is similar to the noise level of an electric fan, which is classified as “very quiet.”

## I had Some Water in My Machine !

My machine had a little bit of water inside it – I thought my machine was brand new. All machines are tested by the manufacturer before being shipped to the UK, which requires adding water to them. Once the machines arrive with us in the UK, they are stored with a small amount of water in them, to prevent the membrane from drying out. We further test each machine before we post them out to customers. For these reasons there may be a small amount of water in your machine, when it arrives - this is normal.



## My machine makes a squeaking sound !

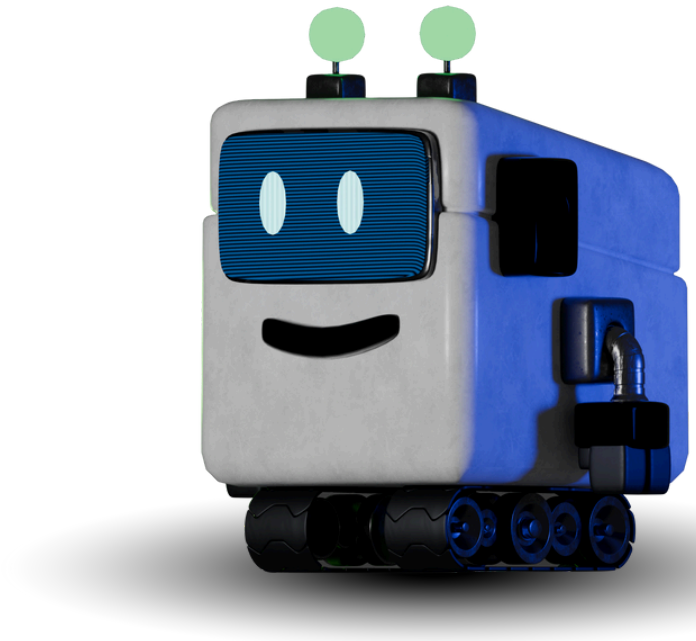
My machine makes a squeaking sound. It is normal for the machine to make a squeaking sound during operation, however if the loudness increases or it becomes more frequent there may be an issue with the humidifier bottle, tubing or Y adapter. The cooling fans don not always switch on the machine straight away as the machine has a built-in cooling system which activates when the internal temperature reaches a certain level.

Just like a computer the machine will switch on internal fans to create a gentle airflow to prevent overheating. This is influenced by how long you use the machine and also the room temperature. You will likely find that in the colder winter months that the fans may not activate at all during use. It is important to keep the machine away from heat sources and ideally operate in a cool environment.

## Humidifier Bottle Troubleshooting

Managing Water Levels in Your Oxygen Humidifier Bottles Occasionally, customers notice that the water level in the oxygen humidifier bottle changes between sessions. This is normal, safe and easy to manage. Below are the two most common scenarios:

- Water level rising during or after use Cause:
- Fine water droplets (mist) or condensation are carried into the bottle with the gas flow. More likely when:
- Room is cool (more condensation forms)
- Sessions are long
- Powerful flow rate (1500ml/min or greater)



## Solutions

Empty excess water as required

- Refill with clean distilled water to the correct level
- Keep tubing upright and avoid overfilling

Water level dropping overnight Cause:

- Natural evaporation, residual gas release after shutdown
- Minor leaks in the humidifier bottle cap or cap not tight enough More likely when:
- Room is warm/hot or dry
- Humidifier bottle cap is not tightly sealed
- Water in the humidifier bottle was warm at end of session

Solution:

- Top up with clean distilled water before each use
- Ensure the cap is on securely (but not overtightened)
- Position the machine away from radiators or fans

Summary. Both rising and falling water levels in the oxygen humidifier bottle are normal effects of how hydrogen/oxygen systems work. Neither issue is harmful to the machine or to therapy. Simply check the bottles before each session, refill with distilled water if needed, and perform regular cleaning and maintenance. The optimum room temperature to minimize evaporation and condensation issues is between 20-22 degrees. Other factors that can cause the water in the humidification bottles to increase or decrease. Other than room temperature the following factors can also cause the water levels to change in the humidification bottles after the session has finished.

- Longer sessions (2-4 hours)
- Lower water level in the main tank Both longer sessions and lower water levels in the tank create a much larger increase in the internal temperature inside the machine, resulting in the water and gas becoming warmer. Keeping the main water tank topped up towards the top, especially when performing longer sessions, can help also help to minimize he effects of evaporation and condensation which can result in rising or falling water levels in the humidification bottles.

# Travelling with Your Hydrogen/Oxygen Machine

These machines are precision-built devices, and it is important they are handled with care to ensure long-term performance and safety. This guide outlines important considerations for travel, especially air travel, and our strong recommendations for protecting your machine General guidelines

- Keep the original packaging: The box your machine arrives in is custom designed to provide optimal protection. If you plan to travel with your machine in the future, we highly recommend using this box - keep it safe.
- Transport only in an upright position: Like many devices that use internal liquids or pressurized systems, the machine should be kept upright to prevent internal disturbance or leakage.
- Avoid unnecessary movement or shaking: The internal components (such as the hydrolysis cell, tubing & electronics) are precisely assembled and can be damaged by vibration or impact.

## HS Code

If you are transporting your machine to a different country, the customs will ask you for a HS code An HS (Harmonized System) code is a standardized, 6-to-12-digit numerical identifier used globally to classify traded products for customs, taxes, and regulation.

For our Hydrogen Oxygen Machines please use the code 8405100000 which is a water gas generator.

## If you Do Have Any Questions

If you have any questions or concerns about your Hydrogen and Oxygen Inhalation machine, please let us know at :-
Email: **hydrogentherapyh2e@gmail.com**
**Your Satisfaction is our top priority**
**Best wishes for every success**

H2·E
vital energy

# Breathe health, breathe molecular hydrogen

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