Contents

Setting up + Maintenance + Trouble Shooting

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. We also have a PDF version of this on our website.

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 video

The video is conversational in style and designed to gently talk you through the setting up process, whilst passing on important information that answers most people’s questions.

If you want to have a more thorough setting up process that goes into a bit more detail, then the video is the way to go

The video is around 55 minutes long, which might seem a lot but many people have commented that it has been very helpful in making the setting up process simple and understandable, whilst also addressing most of the questions likely to be asked

Everything you need to know about Water

What type of water

The water that needs to be used in our machines is **distilled** or **de-ionised** water

Why water purity is so important

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.

The ideal water for use in a hydrogen/oxygen machine is one in which there are no **minerals**, **impurities** or **additives** such as chlorine and fluoride.

These substances can:

- 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 or de-ionised water should ever be used.

What is TDS

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 <u>water purity</u>.

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 or de-ionised water will be pure enough

The ideal water purity that we recommend has a **TDS** reading of **0** or **1 ppm**

Not all distilled or de-ionised water 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 litre** (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

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 stabilises.
- Distilled water should read very low (typically under 10 ppm).
- The ideal reading for machine usage is 0 to 1 ppm

5. 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 Humidifier Bottles

- **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.
- **Safety Pressure Buffer** (minor role): The water provides a modest buffer against pressure spikes

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?

- 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 it’s a good idea to periodically flush the water tank

Even when using distilled water, the main water tank should be flushed from time to time, which will help to

- Maintain water quality and hygiene.
- Protect the electrolysis cell from deposits and scale.
- Ensure stable hydrogen and oxygen output.

When your machine indicates that it needs topping up with more water, it still has 1 litre still in the tank.

Just because you keep topping up the machine with clean water when required will not mean you should neglect to periodically 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
- **Microbial growth** – If water sits for too long, it may allow bacteria or other microorganisms to begin growing, especially in warmer environments.

When to Flush the tank

As a general guide once every **3 months**, but could be sooner if the machine is being used intensely – for example 2 to 4 hours every day

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?

1. **Turn off** and unplug the machine before starting.
2. **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.
3. **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 half way, then gently swish or rock the machine so that the water can wash over the tank walls to loosen any residue.
4. **Drain the water out of the tank**
5. **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
6. **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.

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:

1. **Mineral build-up** (limescale)
   Filtered, mineral and spring water all contain minerals which can leave calcium or magnesium deposits inside the pores.
2. **Biofilm or residue**
   Leaving the stone in water between uses can allow a thin film of bacteria or organic material to form
3. **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.
4. **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.
5. **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.

Try the following to fix a blockage or poor gas flow

Step 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

Step 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

Step 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 build up 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 through 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 water 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.

Choosing the Best Cannula for Hydrogen/Oxygen Inhalation

When using a hydrogen/oxygen inhalation machine, the quality and design of your nasal cannula can directly affect comfort, safety and therapeutic outcomes.

Whether you are new to the therapy or upgrading your setup, this guide will help you choose the best cannula

Should You Use a Longer Cannula or an Extension?

If you need extra reach to sit or lie further from your machine, you might consider extending the cannula tubing.

However, we strongly recommend using a single cannula with longer tubing rather than attaching an extension. Here's why:

Benefits of a Longer Cannula

- **Reduced leak risk** – Fewer joints means fewer places for gas to escape.
- **Consistent flow** – One continuous tube maintains optimal flow and pressure.
- **Easier cleaning** – Fewer connectors mean less risk of bacteria buildup.
- **Better comfort** – Extensions can tug at the cannula and cause discomfort.

Downsides of Using an Extension Attachment

- Higher risk of **disconnection** during use
- Potential **back-pressure** from added tubing resistance
- Increased **condensation** risk inside longer tubing runs
- More complex to manage and less **hygienic** over time

Best practice: Rather than using an extension, choose a single-piece cannula with tubing lengths of up to 2m

Although longer cannulas can be used, we suggest limiting to no more than 2m

H2=E cannulas are approximately 2m long

Performance Limitations with Long Tubing

Pressure Drop and Flow Resistance

- Longer tubing increases resistance to gas flow, especially if the internal diameter is small.
- This can reduce the effective flow rate delivered to the user - particularly noticeable with low-output machines (e.g., 600–1500 ml/min).
- For high-output machines (e.g., 3000 ml/min), the drop is usually less noticeable unless tubing exceeds 3 to 4m or is too narrow.

Gas Dilution or Stagnation

- Longer tubing allows more time for hydrogen and oxygen to mix with ambient air if there is any leakage or open ends.
- In still environments, gas might linger in the tubing, creating residual buildup that can pose a minor ignition risk near open flame (rare but possible).

Condensation and Water Blockage

- Water vapor condenses more easily in long tubing, especially if the room is cool.
- This can create water pooling, which blocks or disrupts flow and may introduce bacterial risk if not cleaned properly.
- A water trap becomes increasingly essential with tubing over 2 m.

Guidelines

Machine Flow Rate	Maximum recommended tubing length	Notes
600-1000ml/min	2m	Use wide tubing Avoid extensions
1500ml/min	2 to 3m	Use a water trap Monitor condensation Ensure good ventilation
3000ml/min	3 to 4m	Use a water trap Monitor condensation Ensure good ventilation

What Is the Best Material for a Cannula?

Not all cannulas are created equal, especially when used for hydrogen and oxygen gas therapy, where chemical off-gassing and reactivity are critical concerns.

Recommended Materials

Silicone (Medical-Grade or Food-Grade)

- Non-reactive with hydrogen and oxygen
- Very soft and comfortable
- Biocompatible and hypoallergenic
- Low off-gassing of chemicals - best choice for sensitive users

Thermoplastic Elastomer (TPE)

- Softer and more flexible than standard plastics
- Latex-free, BPA-free
- Lower off-gassing than PVC
- Provides a good balance between safety and comfort

Materials to Use with Caution

DEHP-Free PVC (Polyvinyl Chloride)

- Common and inexpensive
- Must be explicitly labeled “DEHP-free” (a harmful plasticizer often found in standard PVC)
- Acceptable for short-term or general use
- Only use if labeled for medical oxygen therapy and DEHP-free

Materials to Avoid

- **Latex or rubber**: Can degrade with gas exposure and trigger allergic reactions
- **Cheap vinyl or unknown plastics**: Risk of toxic off-gassing and poor gas compatibility

H2=E cannulas are made from **Food-Grade Silicone**

Our recommendations

- Do not use cannula extensions
- We generally suggest not using a cannula longer than approximately 2m
- If your machine is 1000ml/min or stronger ensure the cannula has a water trap
- Use cannulas made from Silicone

H2=E cannulas meet all these recommendations

Safety Features in our machines

Water too high

- Machine will not operate if there is too much water
- Impacts oxygen accumulation in the water tank
- Use the drainage outlet at the back of the machine to **empty out some water**

Water too low

- Automatic shut off and alarm
- Low water could damage the hydrolysis cell
- **Add more water** to the tank

TDS water purity monitoring

- Will not allow the machine to operate if water **quality** is not sufficient
- What to do if indicated:
  Empty the tank
  Flush the tank
  Replace the filter
  Clean the humidification bottles & replace the water

Water Filter

- Replace when indicated
- Usually **6 to 12 months** depending on usage
- If the machine hasn't indicated after **12 months** replace anyway

Change water indicator

- Replace water in the tank
- It is suggested that you do this **every 3 months** as a general maintenance, even if the machine hasn't indicated to do so
- Use your TDS reader to **test the water** drained out of the tank
- If the TDS reading is **greater that 1 ppm** perform a flush of the tank

Unbalance / tilt

- Automatic alarm and shut down if machine is not on a **flat** enough surface

Over heat

- Automatic alarm and shut down if machine gets too hot
- **Replace** the water
- Use your TDS reader to **test the water drained** out of the tank
- If the TDS reading is **greater that 1 ppm** perform a flush of the tank

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 Immortal 3000 has a power consumption of 900W. Estimated cost is around 23p per hour of operation.
- **Water**: The Immortal machine uses 120ml of distilled water per hour.

Noise Levels

- The Immortal 3000 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**.”

Regular Maintenance

Light Use

Up to 7 hours use per week

Top up the water tank as required
Top up the humidification bottles as required
Change the nasal cannula every **3 months**
Clean the humidification bottles every **3 months**
Fully replace the water in the main tank every **3 months**
Change the filter every **12 months**

Moderate Use

Up to 14 hours use per week

Top up the water tank as required
Top up the humidification bottles as required
Change the nasal cannula every **2 months**
Clean the humidification bottles every **2 months**
Fully replace the water in the main tank every **2 months**
Change the filter every **9 months**

Heavy Use

More than 14 hours use per week

Top up the water tank as required
Top up the humidification bottles as required
Change the nasal cannula every **month**
Clean the humidification bottles every **month**
Fully replace the water in the main tank every **month**
Change the filter every **6 months**

Carbon Monoxide detectors

Hydrogen can set off some of the cheaper carbon monoxide detectors that use a Metal Oxide Semiconductor (MOS) sensor.

These sensors can respond to a number of oxidizing/reducing gases including hydrogen.

We can reassure customers that our machines do not emit any carbon monoxide.

Do the machines produce Ozone?

Our machines do **not** produce **ozone** and we have produced a video where we show the testing of this.

Our machines produce hydrogen/oxygen using **PEM** (Proton Exchange Membrane) technology, a method that creates a very **pure** gas which is considered by many to be the ideal for **clinical** use.

Some machines on the market use different technology that requires the addition of **chemicals** such as **sodium hydroxide**, which is added to the water.

These machines can have the potential to create small amounts of **contamination** which includes **ozone** and **chlorine**.

Some **cheap** ozone detectors that use a **Metal Oxide Semiconductor** (MOS) sensor may provide false positive readings when testing hydrogen.

If you are looking to test for ozone from a hydrogen device we suggest using a detector that uses an **electrochemical sensor**.

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

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’t always switch on

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 BottleTroubleshooting:

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:

1. 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)

Solution:

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

2. 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

Problem	Likely Cause	More Common In	What to Do
Water level rises	Mist/condensation carried into bottle	**Cooler** rooms, longer sessions, more powerful machines	Empty excess water to ideal level
Water level drops	Evaporation, residual gas release	**Warmer/dry** rooms	Refill before each use to ideal level

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 C**

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.

Oxygen Humidifier Bottle Stops Bubbling When I Use the Waterstone

Waterstones are not designed to work with oxygen

Oxygen is a **larger** molecule than hydrogen, so it meets more **resistance** when pushed through the fine pores of a water stone.

In some machines this can create a **back pressure** that causes the bubbling in the oxygen humidifier bottle to **stop**.

Should I bubble oxygen into water?

No, bubbling **oxygen** into water is **not** therapeutic.

Oxygen has very low solubility in water, meaning only a tiny amount can dissolve.

Drinking “oxygenated” water does **not** provide meaningful benefits to the body.

For oxygen, the **effective** route is **inhalation** via cannula.

Is my machine working correctly if this happens?

Yes. Your machine is functioning as intended. The waterstone is designed for hydrogen only.

Use the cannula for hydrogen/oxygen inhalation and the water stone to make hydrogen water.

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 pressurised 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.

Dimensions And Weight Of Our Larger Machines

Our two most powerful models, **Super Power** and **Immortal**, are identical in weight and size when boxed:

- Weight: **17kg**
- Length: **60cm**
- Width: **35cm**
- Height: **50cm**

Air Travel

We Strongly Recommended That You Do Not Place Your Machine In Checked Baggage

Why?

- **Rough handling**: Airline baggage systems are automated and often involve throwing, dropping and stacking luggage under tight time constraints.
- **High damage risk**: Fragile components inside the machine may be damaged, even if the exterior appears fine.
- **Warranty issues**:
  Damage sustained during personal transport in luggage is not covered by your warranty

Can I carry it as hand luggage?

The size of our machines when boxed is too large for most airlines to allow as hand luggage

Safer Alternative

Use a Courier Service

For travel between locations (domestic or international), the safest way to move your machine is via a reputable courier company, such as: DHL, UPS or FedEx.

These companies typically:

- Offer tracking and insurance options.
- Handle parcels with more care than airline baggage systems.
- Allow fragile item designation, improving transport safety.

Summary

If you are travelling by car, this is possibly the safest way to transport your device as it is always in your possession.

If you are travelling via plane, train or coach, our recommendation would be to send the machine to the destination location via a courier service.