

 Don't use in the following environments



High temperature and humidity environment



A bathroom with lots of water



Dusty environment



A smoky environment



Water vapor environment



An environment with strong electromagnetic field interference



An environment with open flames



Smoking



Danger

- This machine must be used by a competent person or under the supervision of a competent person.
- Do not smoke when using the machine, away from fire, heat, toxic and harmful gas environment.
- When transporting or moving the machine, please unplug the power plug and discharge the water in the water tank to avoid damage or accidents to the circuit system caused by overflow of the water tank.
- When multiple people use the machine to absorb hydrogen, do not use the same hydrogen absorption tube to prevent disease caused by bacterial contamination.
- The water tank is added to the secondary distilled water or pure water, it is recommended to use pure water, Please do not add tap water, and other mineral water.



Prohibition

To avoid electric shock, the water tank must be completely unplugged when draining, maintaining, cleaning, and moving.

Hydrogen generator instruction manual

Please read the instruction manual carefully before using the product!

Pay attention to the safety(Please refer to the manual)



Healthy life starts from the hydrogen generator Thank you very much for purchasing the hydrogen generator. In order to use this product properly and expertly, please read this manual carefully before use and keep it together safely with the warranty card.

Parameter and specification Name: hydrogen generator

Implementation standard: GB 4706.1-2005

Rated voltage: AC110~240V, 50Hz/60Hz

Catalogue

- 02 Preface
- 03 Medical principles and properties of hydrogen molecules
- 04 General Introduction / Working Principle / Technical Index
- 05 Electrical control
- 06 Usage Requirements
- 08 Installation and usage
- 20 After-sales service

Preface

Molecule biomedicine of hydrogen - a new way to prevent and treat chronic diseases

More than 1000 papers on hydrogen molecular medicine published in the world's authoritative medical journals

The field of hydrogen biology awarded 58 projects by the National Natural Science Foundation of China

More than 40 clinical research projects on the application of hydrogen molecules to human diseases

Research of more than 170 diseases in animals and humans by various research institutions all over the world

The literature shows that hydrogen can reduce oxidative damage, the most fundamental pathophysiological mechanism for the development of almost all diseases

The medicine revolution of hydrogen molecular

Hydrogen is the most abundant chemical element in nature and is a colorless, odorless, tasteless and deoxidized diatomic gas, which is 63% of the human body and has a profound impact on the human life, and is also the key to growing old and death of life. Without hydrogen ions, there would be no life on the earth. Hydrogen molecules are an important source of fuel and energy for human and can determine the overall health of every single cell in the human body. Clinical medicine studies have also shown that hydrogen is an important physiological regulatory factor of cells and organs, with selective antioxidant, anti-inflammatory and anti-apoptotic effects.

Principle and characteristics of molecular hydrogen medicine

The unique properties of hydrogen determine its biological and therapeutic advantages of the treating diseases.

Hydrogen has powerful penetrability and can very easily approach many parts that other antioxidant substances are difficult to arrive at quickly, such as the nucleus and mitochondria, where cause ROS and DNA damage, and hydrogen can cross the blood-brain barrier, which is good for the treatment of central nervous system diseases.

Hydrogen has the characteristic of selective scavenging of hydroxyl radicals and Nitrite anion and therefore does not affect the active oxygen or free radicals of NO, which is the pharmacological basis of many important drugs.

But these drugs may cause the body to produce Nitrite anion, and hydrogen can reduce the side effects of the drugs without affecting their therapeutic effects.

The endogenous NO signaling pathway regulates pulmonary vascular activity and the interaction of white blood cells and endothelial cells, and hydrogen may have a positive effect on maintaining endogenous NO.

The endogenous NO signaling pathway regulates pulmonary vascular activity and the interaction of white blood cells and endothelial cells, and hydrogen may have a positive effect on maintaining endogenous NO.

Hydrogen has a selective scavenging of hydroxyl radicals and Nitrite anion, and therefore doesn't affect hydrogen peroxide and superoxide anions, which are inflammatory mediators and playing an important role in bacterial killing by immune cells specially, and which means that hydrogen does not affect the positive effects of inflammation.

Hydrogen is an element for human life and health, and current research has successively found that hydrogen is good for many systems in human body, and hydrogen is obtaining more and more attention as a new therapeutic gas in medical field. It is expected to be widely applied for health promotion and treatment and prevention of diseases in the future.

Hydrogen is very safe for human body. There is no risk of explosion when the hydrogen concentration is below 4% or above 75%, and the safety of hydrogen has also been demonstrated in the field of diving, where it can be used to prevent decompression sickness and nitrogen anesthesia during deep diving.

The low reactivity of hydrogen with other gases at therapeutic concentrations allows hydrogen to be combined with other gases for treatment, such as inhaled anesthetic gases.

In conclusion hydrogen is a safe, efficient and potential therapeutic medicinal gas with many advantages over other drugs.

1、General Introduction

The hydrogen generator is a kind of light-weight, high efficiency, energy saving and environmental protection high-tech patented product, which electrolyzes pure water to produce high purity hydrogen.

The core SPE electrode of the machine is a highly active zero polar distance electrode formed by the combination of compound catalyst and ion membrane, with high electrolysis efficiency; it has a perfect electrical control system. The machine has an advanced design, reliable quality, high automation, high purity of hydrogen and a wide range of applications.

2、Working principle

Electrolytic water (resistivity more than $2M\Omega \cdot cm$) is put into the anode of the electrolysis tank, and the water is decomposed at the anode immediately after the device is power on: $H_2O = H^{++} + OH^{-}$, and the hydrogen ion (OH^{-}) is released at the anode to form oxygen (O_2), which is discharged from the anode and carries part of the water into the water tank, and the water can be reused.

Oxygen is given out from the oxygen outlet through a small hole at the upper part of the tank. The hydrogen ion, in the form of hydrated ion ($H^{+} - XH_2O$), passes through the SPE ion membrane with the electric field force and reaches the cathode to absorb electrons to form hydrogen (H_2), and the water is discharged from the cathode and enters the gas-water separator, where most of the water delivered from the electrolytic tank is removed, and the hydrogen containing trace water is put out from the hydrogen outlet.

3、Technical Index

Output flow(ml/min)	900ml/min (600 H ₂ + 300 O ₂)
Output pressure(Mpa)	0-0.2
Hydrogen purity(%)	99.999
Power supply	110-240V, 50/60Hz
Tank volume(L)	1.5
Water quality demand($\Omega \cdot cm$)	Water Resistivity $\geq 2M$

4、Electrical control

The electrical control of the machine mainly consists of three parts: electrolytic power, control board and displays. Pressing the (Battery main switch), the machine circuit will be electrified to enter the standby state, and the pure water tank will be added with pure water above the minimum water level, and the working time of the tank can be controlled by pressing the (Increase) key or (Decrease) key on the touch screen.

After adjusting the time, press the (Start/Pause) key, and the tank starts working. The hydrogen flow meter shows the real-time hydrogen flow, and the hydrogen outlet puts out hydrogen normally.

Besides, to ensure the normal operation of the machine, the machine has water shortage protection, high temperature protection and power limitation protection.

5、Electrical control

5.1 The hydrogen generator cannot be used in a single close room!

5.2 The working conditions of the hydrogen generator are as follows

- a. Temperature 0-40°C;
- b. Humidity <85%;
- c. Power 110-220V 50-60HZ;
- d. Horizontal arranged, with the front panel of the machine facing the operator for operation easily.
- e. No direct sunlight, no light fire;
- f. Good ventilation;
- j. Good grounding of the power;

5.3 The machine must be added water to the tank before usage for the first time, and wait 5 minutes after adding water and then turn on the machine!

5.4 Water quality requirements

Requiring the soft water (deionized water or secondary distilled water), water resistivity greater than $2M\Omega \cdot cm$; ions in the unqualified water will be deposited, blocking the small hole of electrode, resulting in motor scrap. Please remember! Or there'll be some consequences.

5.5 Requirement of water level in the water tank

Requiring the water tank to be filled with over 2/3 of the tank(tank volume 2.0L).

5.6 Water change and tank cleaning requirements

The tank should be kept clean. Even if the water is soft,

microorganism may grow and make the water turbid after using for a long time, which may affect the gas production and service life of the tank. It is required to discharge the water from the tank every 1 month of use, and wash the tank several times (after adding a small amount of new water, slightly shake the machine back and forth, left and right several times) ,so that the discharged water is clean and does not contain floccules.

5.7 During the transportation of the machine, no water should be contained in the water tank to prevent water from overflowing and damaging the electrical components.

5.8 The electrolytic tank shouldn't be short of water during transportation.

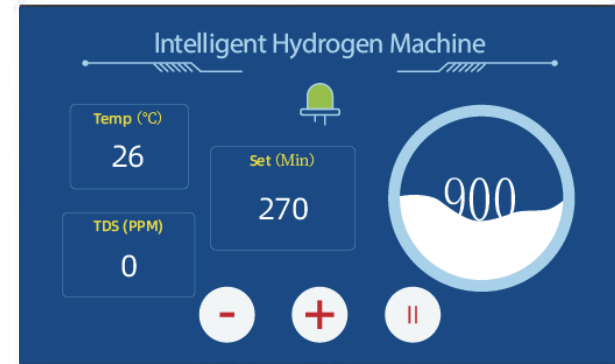
5.9 When repairing the machine, the machine must be closed first. Don't disassemble the machine chassis and other accessories when the machine is on and working to avoid to get an electric shock.

5.10 When replacing the fuse of the fuse, the machine must be turned off first and disconnect the power cord. The fuse model of the machine is F6A L220V, please do not use the wrong model for fear of fire.

6、 Installation and usage



Hydrogen generator front panel



Hydrogen generator touch screen



Hydrogen generator back panel

6.1、 Unpacking and acceptance

First of all, check whether the machine is intact, and check whether the spare parts are complete according to the packing list. If there is any damage to the machine, please contact with the transportation unit and the manufacturer in time to solve the problem.

6. 2 Installation and usage

6. 2. 1 The working environment of the machine should be in accordance with 5. 2 of the manual.

6. 2. 2 Open the top cover of this machine tank and add deionized water or secondary distilled water, and let the liquid level height in the upper till the float floats in the water tank, and then close the top cover.

Attention: You must add water first and then turn on the machine to make sure the electrolytic tank is not short of water!

6. 2.3 Take the power cord in the spare parts to connect the power.

Attention: The power must be well grounded.

6. 2.4 Turn on the power switch on the back panel, while the front panel screen lights up and enters the standby state.

6. 2.5 Take the suction tube from the spare part and plug it to the hydrogen outlet.

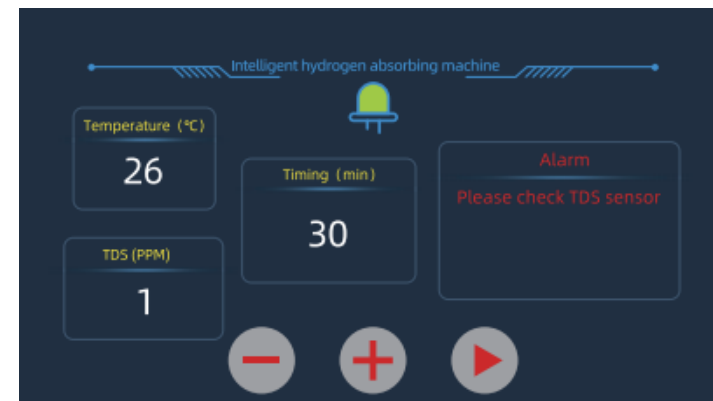
6. 2. 6 Click the Start/Pause switch at the bottom of the middle of the screen, and the hydrogen machine starts to produce hydrogen (the default timer is 30 minutes and the default hydrogen production is the first gear), then the countdown starts, and after the countdown ends, the machine enters the standby state.

6. 2. 7 Click the Start/Pause switch again, and the machine will enter the next timing cycle; the set time can be adjusted by yourself, the time "+" and "-" on the lower right corner of the screen. Each time you click "+", the set time will increase by 30 minutes, up to 999 minutes, each time you click "-", the set time will decrease by 30 minutes. (Attention: The minimum time should not be less than 30 minutes, otherwise the machine will not work properly.

6. 2. 8 The volume of hydrogen is divided into three gears, the first gear is the highest (the power-on default gear), the flow "↑" and "↓" on the right side of the screen; each time you click "↑", the volume of hydrogen will be increased by one gear, and each time you click "↓", the volume of hydrogen will decrease by one gear. The volume of hydrogen is affected by water resistivity and water quality, so the actual hydrogen volume will be based on the machine received.

7、 Alarm

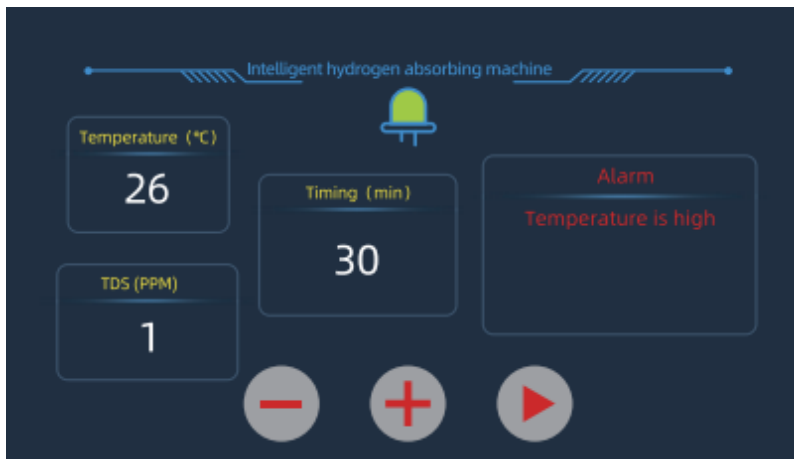
7.1 Display "TDS value is high, please change water and restart the machine"



Alarm reason: adding impure water, or the water containing salt

Solution: Discharge the water from the tank through the drain and add pure water again; it is better to change water several times and turn on the machine after cleaning the tank.

7.2 Display "Temperature is high"



Alarm reason: The temperature inside the chassis reaches up to 60 °C and the display temperature is high.

Solution: Please change the water or allow the chassis to cool down for a period of time before normal use.

7.3 Display "water level is low":



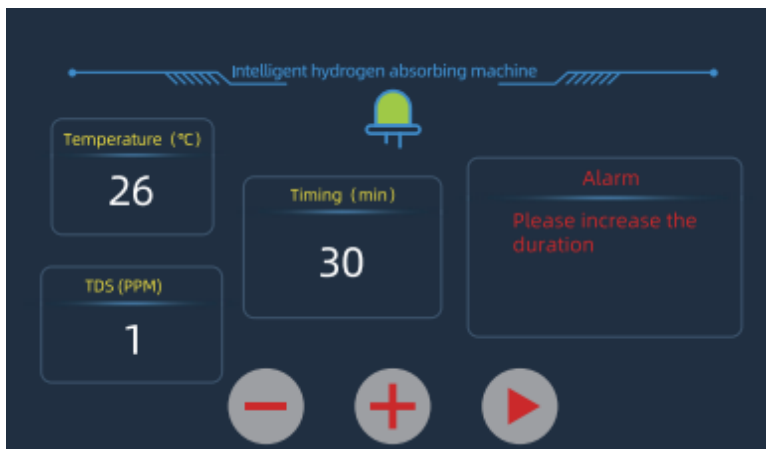
Alarm reason: The water tank is short of water. Add water to more than half of the water tank.

7.4 Display "product tilt"



Alarm reason: The machine is tilted too much and it should be put flat.

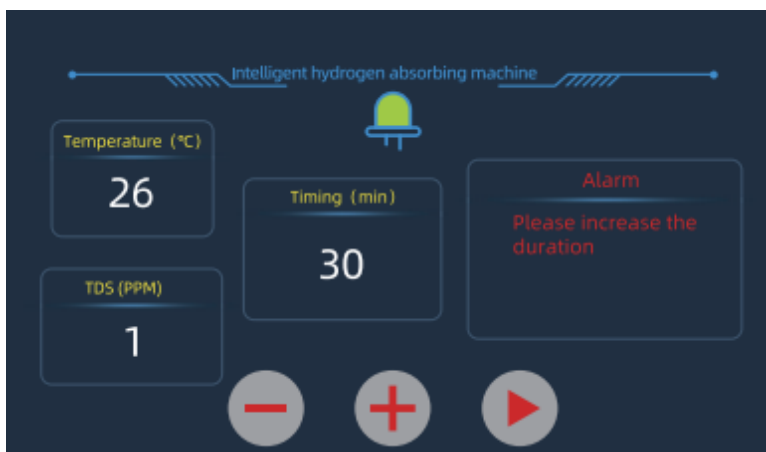
7.5 Display: "Please increase the time"



Alarm reason: The time of hydrogen production is zero,

Solution: Please increase the time before starting.

7.6 Display: "Please check TDS sensor"



Alarm reason: TDS sensor is not recognized. There may be an internal blockage (please drain water from drain outlet 1-2 times, then add water to start the machine again) or the TDS sensor is damaged.

7.7 Plug in the power and turn on the switch. If there is no red light on the switch, it means the fuse is burned out and the fuse needs to be replaced.



How to replace the fuse:

Use a flat-blade screwdriver to pry open the position as shown in the picture.

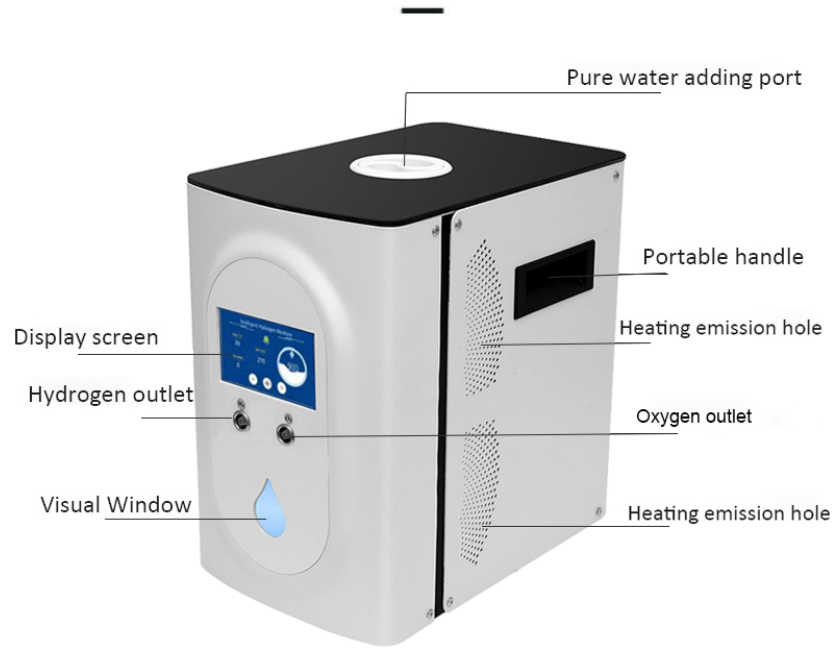
After replacing the fuse (the fuse is installed regardless of direction), install it back to its original position, and the installation is complete.

7.8 Abnormal noise and idling sound of water pump



Solution: Close drain holes one and three, remove the plug of drain hole two to drain, then refill the water tank, and repeat the above operation 2-3 times.

Product display



How to drain water?



Drainage method: Press the blue ring backward with the index finger of your left hand, and at the same time, pull out the white plug with the index finger of your right hand forward, that is, drain the water. After drainage is completed, insert the white plug back into the drainage hole to close it.



Drainage Hole
(normally closed)

Warning:

1. Please remove all air plugs before use, and do not block the air outlet during use.
2. When connecting the oxygen outlet, be sure to tighten the water tank cover and do not block the oxygen outlet when the hydrogen-oxygen mixer is in use.



Please remove all air plugs before use. Do not block the air outlet during use.

Common fault causes and troubleshooting methods

1. After turning on the power and turning on the switch, the power light does not light up and the machine does not work.	1. The power plug has poor contact. 2. The fuse is blown. 3. The power switch is damaged.	1. Recheck the socket cable. 2. Take out the broken fuse from the fuse and replace it. 3. Return to factory for repair or replacement.
2. The oxygen hole does not release oxygen	The water tank cover is not tightened	Tighten the water tank cap
3. Put the hydrogen suction tube into the water without bubbles	1. The trachea is inserted too deep into the water. 2. The water tank cover is not tightened tightly.	1. Pull out some of the trachea and do not insert it too deeply. 2. Tighten the water tank cap.
4. Body heat		The optimal operating temperature of the electrolyzer is 50-60 degrees, please feel free to use it.
5. How often should you change the water?		There is no need to change the water if there is no problem with the product.
6. The fan does not start		The fan starts intelligently when the machine temperature is above 35 degrees.
7. Gas production is small when starting up		The machine's self-protection function allows the gas volume to reach normal value after 1 minute of slow loading.
8. Abnormal noise of water pump	There is gas in the water pump when starting a new machine	vClose drain holes one and three, unplug drain hole two to drain, then refill the water tank, and repeat the above operation 2-3 times.

7.7 Plug in the power and turn on the switch. If there is no red light on the switch, it means the fuse is burned out and the fuse needs to be replaced.



How to replace the fuse:

Use a flat-blade screwdriver to pry open the position as shown in the picture.

After replacing the fuse (the fuse is installed regardless of direction), install it back to its original position, and the installation is complete.

7.8 Abnormal noise and idling sound of water pump



Solution: Close drain holes one and three, remove the plug of drain hole two to drain, then refill the water tank, and repeat the above operation 2-3 times.

8、 After-sales service

The machine comes with a full one-year warranty and has a lifelong maintenance. Within the warranty period, repair and replace parts for free. After the warranty period, only the cost of raw materials will be charged. The following cases are not warranted.

Special note.

- ① Violation of the manual use will not be warranted.
- ② The water's resistivity should be $> 2 \text{ M}$ or electrolytic tank will damage, which is not be warranted (There are unclean materials on ion membrane platinum layer)
- ③ Without the manufacturer's permission, disassembly by yourself will not be warranted.

Packing List

serial number	Name	quantity	Remarks
1	Hydrogen generator	1	
2	Operating manual	1	
3	Certificate	1	
4	Power cable	1	220V/4A
5	Hydrogen suction tube	2	Soft silicone tube (special for large flow)
6	Fuse (7A)	2	

WARNING:

- (1) Keep indoor air circulation and do not use it in a completely closed room!
- (2) When using this instrument, it is strictly prohibited to smoke, keep away from open flames, etc.!