

# HG Series Hydrogen Machine



## Instruction manual

Before using the hydrogen machine, please read the instruction manual carefully

# 1 Product description

## 1.1 Product model introduction

Model	Input Power	Power Supply	Hydrogen Flow	Oxygen Flow	Hydrogen Concentration	Oxygen Concentration	Water Consumption
HG-600A	210W	AC100-240V 50/60Hz	600mL/min		99.99%		18mL/h
HG-600B	210W	AC100-240V 50/60Hz	600 mL/min	300 mL/min	99.99%	99.99%	18mL/h

## 1.2 Product Size

Length x width x height: 283 x 195 x 273mm

## 1.3 Product net weight: 4.7kg

## 1.4 Environmental conditions for use:

Ambient temperature: 5-40°C

Relative humidity: 30-90%

Atmospheric pressure: 45-106kPa

Note: When the storage and transportation temperature is lower than 5°C, the machine should be placed in the normal working temperature environment for more than four hours before use

## 1.5 Schematic diagram of the whole machine



1	Handle	2	Display	3	Cooling Fan
4	Housing case	5	Switch	6	Power Socket
7	Water Inlet	8	H2 Outlet	9	O2 Outlet
10	Maximum Waterline	11	Water Tank	12	Minimum Waterline
13	Ventilation	14	Drainage	15	Spring clip

## 2. Operation and use

### 2.1 Preparation before use

2.1.1 First check whether the appearance of the machine is damaged, whether the power cord, plug, switch and power socket are in good condition, and check whether the silicone plug of the drain port has fallen off. Check that the oxygen and hydrogen outlets are intact.

2.1.2 Place the machine on a horizontal table, remove the silicone plug of the water inlet, and slowly add purified water or distilled water into the water tank of the machine through the water inlet. The amount of water added is between the maximum water level line and the minimum water level line. Cover the water filler with the silicone plug and check the water tank for leaks.

⚠Warning: The water added must be pure water or distilled water, and the TDS value must be  $\leq 5$

### 2.2 Power-on operation

2.2.1 After the machine is connected to the power cord, turn the switch to the "I" position. At this time, the machine enters the self-test state, and enters the standby state after the self-test is completed.

2.2.2 Press the "HYDROGEN" button at the bottom of the screen, and the machine starts to operate in the hydrogen production mode. At this time, the cooling fan and the circulating water pump run first, and after about 10 seconds, it starts to output hydrogen and then oxygen.

2.2.3 The hydrogen outlet can be connected to the nasal cannula for direct hydrogen inhalation or the hydrogen SS 316 Bubble diffuser to make hydrogen-rich water; the oxygen outlet can be connected to the nasal cannula for direct oxygen inhalation.

⚠Warning: Oxygen is a combustion-supporting gas, hydrogen is a flammable gas, no smoking when using, and keep away from other flammable sources such as matches and burned cigarettes

⚠Warning: When the machine is running, it is forbidden to block the hydrogen and oxygen outlets

⚠Warning: It is forbidden to move the machine when the machine is running, and it is forbidden to turn the machine upside down or lie down when there is water in the water tank

### 2.3 Key function description

2.3.1 The "HYDROGEN" button is used to control the running and stopping of the machine. In the standby state, press it once, and the machine will run and produce hydrogen. Press it in the running state, and the machine will stop running and enter the standby state.

2.3.2 "TDS" button, when the machine is running, press it once to display the current water quality TDS value, which will be displayed alternately with the running time, and press it again to cancel the TDS value display.

2.3.3 "TIMER +" and "TIMER -" buttons, when the machine is running, you can set the timing time through these two buttons.

## 2.3 Shutdown

When shutting down the machine, first press the button "HYDROGEN" to stop the machine and enter the standby state, then turn the switch to the "0" position to turn off the power, and finally unplug the power plug to completely cut off the power.

Note: After the machine stops running, the cooling fan and circulating water pump will continue to run for 10 seconds, please turn off the power after the cooling fan and circulating water pump stop working.

## 3 Maintenance

⚠Warning: Before maintaining the hydrogen machine, the power must be cut off and all the water in the water tank must be drained

### 3.1 Clean the house case

Stop the machine and cut off the power supply, wipe it with a clean and soft cotton cloth or sponge, and do not let the liquid seep into the gap of the chassis

### 3.2 Replacing the filter

The filter screen is at the bottom of the machine. Lay the machine face up on a horizontal table, remove the plastic screen cover of the filter screen from the bracket, take out the filter screen from the screen cover, and install a new filter screen. Plastic grille snaps into bracket

If the filter screen is not damaged, you can rinse the filter screen with clean water, and wait for the filter screen to dry completely before installing it.



### 3.3 Water tank cleaning and maintenance

3.3.1 Rinse the water tank, remove the silicone plugs of the water filling port and the drain port. When there is no water flowing out of the water tank, tilt the machine to the left about 45 degrees, drain the water in the water tank completely, then add 300mL of pure water or distilled water, and repeat the above actions After draining the water, install the silicone stopper.

### 3.3.2 Deep cleaning

- a. Place the machine horizontally on the desktop. After the water tank is filled with water, press the spring buckle at the bottom of the water tank, first pull out the bottom of the water tank for about 2cm, then pull out the cover on the top of the water tank for about 2cm, and unplug the connecting pipe on the water tank, remove the water tank.
- b Open the lid of the water tank, and clean the inside of the water tank and the lid with detergent.
- c Rinse the water tank and cover thoroughly with clean water, and then rinse the inside of the water tank and the cover with purified or distilled water.
- d Connect the water tank pipeline and put the water tank back into the machine.

### 3.4 Recommended maintenance interval

Clean the house case	once a month Dispose of as soon as possible after the exterior is dirty
cleaning filter	Clean once a month The filter is covered with dust and cleaned immediately
replace the filter	Replace every 6 months If the filter is damaged, replace it immediately
Replace the external power cord	once every 18 months If the insulation layer of the external power cord is damaged, replace it immediately

## 4 Performance indicators

4.1 Hydrogen concentration 99.99% (V/V), oxygen concentration 99.99% (V/V).

### 4.2 Appearance

- a) The graphical symbols and letters on the panel of the hydrogen enrichment machine are accurate, clear and uniform, without scratches;
- b) The outer surface of the hydrogen enrichment machine and the water tank must not be damaged, cracked or scratched;
- c) All control key adjustment mechanisms should be flexible, accurate and reliable

### 4.3 Air tightness

All pipeline connections should be firm, and there should be no air or water leakage in the pipelines, valves and joints.

### 4.4 High temperature alarm:

When the temperature of the electrolytic tank exceeds 60°C, the yellow light on the screen is on; if the temperature exceeds 70°C, the red light on the screen is on, the machine stops running, and the display shows "E-1".

### 4.5 TDS alarm

When the TDS value of the water quality in the water tank exceeds 10, the red light on the screen of the machine is on, the machine stops running, and the display shows "E-2".

#### 4.6 Water shortage alarm

When the machine is running, the water in the water tank is lower than the minimum water level or the electrolytic tank is short of water, the red light on the screen of the machine is on, the machine stops running, and the display shows "E-3".

#### 5 Common Faults and Troubleshooting

No	Symptoms	possible reason	Method of exclusion
1	After pressing the switch, the switch power indicator light and the display screen are not lit	1) The power cord plug is not in good contact with the socket.	1) Insert the plug of the power cord firmly into the socket.
		2) The socket has no power output.	2) Move to a socket with power output.
		3) The power outlet of the socket power outlet is insufficient.	3) Do not use extension cords to move the machine to another power outlet or circuit.
		4) The fuse is blown.	4) Replace the fuse.
		5) The machine still does not work, please contact the supplier.	
2	After power on, the machine runs normally, but there is no hydrogen output or the output pressure is very low	1) Leakage from the hydrogen outlet connector.	1) Reinstall the compressed hydrogen outlet connector.
		2) The buoy of the air-water separator is stuck.	2) Gently tap the lid of the water tank to reset the buoy.
		3) The machine still does not work, please contact the supplier.	
3	After power on, the machine runs normally, but there is no oxygen output	1) The buoy of the air-water separator is stuck.	1) Gently tap the lid of the water tank to reset the buoy.
		2) If this state persists, stop using the machine and contact the supplier immediately.	
	After power on, the machine runs normally, and the yellow light is on	1) The temperature of the electrolytic cell is too high.	1) Clean or replace the filter.
		2) If this state persists, you can continue to use it, but you need to contact the supplier	
4	The machine does not work, the red light is on, and the display shows "E-1".	1) The temperature of the electrolytic cell is too high.	1) Clean or replace the filter.
		2) If this state persists, stop using the machine and contact the supplier immediately.	
5	The machine does not work, the red light is on, and the display shows "E-2".	1) The water quality TDS value of the water tank exceeds 10.	1) Rinse the water tank and refill with purified or distilled water.
		2) If this state persists, stop using the machine and contact the supplier immediately.	
6	The machine does not work, the red light is on, and the display shows "E-3".	1) The water in the tank is below the minimum water level.	1) Clean immediately add purified water or distilled water.
		2) The electrolyzer is short of water.	2) Please tilt the machine 45 degrees to the left (the position of the water tank) before laying it flat and starting it up.
		3) If this state persists, stop using the machine and contact the supplier immediately.	

## 6 Packing List

1	Hydrogen machine	1 set
2	Nasal cannula	2 sticks
3	Water bottle	2
4	SS 316 Bubble diffuser	1
5	Hydrogen connecting pipe ( $\phi 5 \times \phi 12 \times 350 \text{mm}$ )	1
6	Oxygen connecting tube ( $\phi 5 \times \phi 8 \times 200 \text{mm}$ ) (HG-600B)	1
7	Filter	1 block
8	Hydrogen glasses	1 set
9	power cable	1
10	Y joint ( $\phi 5.6 \text{mm}$ )	1
11	Fuse (5×20mm, 3A)	1
12	Silicone plug for water inlet ( $\phi 20 \text{mm}$ )	1
13	Drain port silicone plug ( $\phi 5 \text{mm}$ )	1
14	Hydrogen outlet fitting	1