



OPERATION MANUAL



Oxy-Hydrogen Generator



Please read this manual carefully and follow its instruction!

- For your safety, please assemble, maintain, check and repair the equipment by the professionals.
- For your safety, please pay much attention to the safety instructions in the manual, and operate by the professionals.
- Please put it together with Certificate of Quality in certain place to ensure the relevant person can read it at any time.

PREFACE

Thanks for using OH20000 Oxy-hydrogen Generator produced by Okay Energy Equipment Co., LTD.

Please read this manual carefully before installing and using. If you do not follow this manual that result in human hurt, machine damaged or some other losses, we will not be responsible for them. If you have any questions, welcome to contact us at any time.

This manual is suitable for OH20000. Some customized product can also take this manual for reference.

Compared the manual with actual products, if there are some differences in the attached images and other images like menu control panel, it will subject to the actual product during operation.

With constant technology innovation of our company, operation manual will change in correspondence. Data afterwards are subject to change without notice.

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1. Equipment Structure and Main Technical Parameters

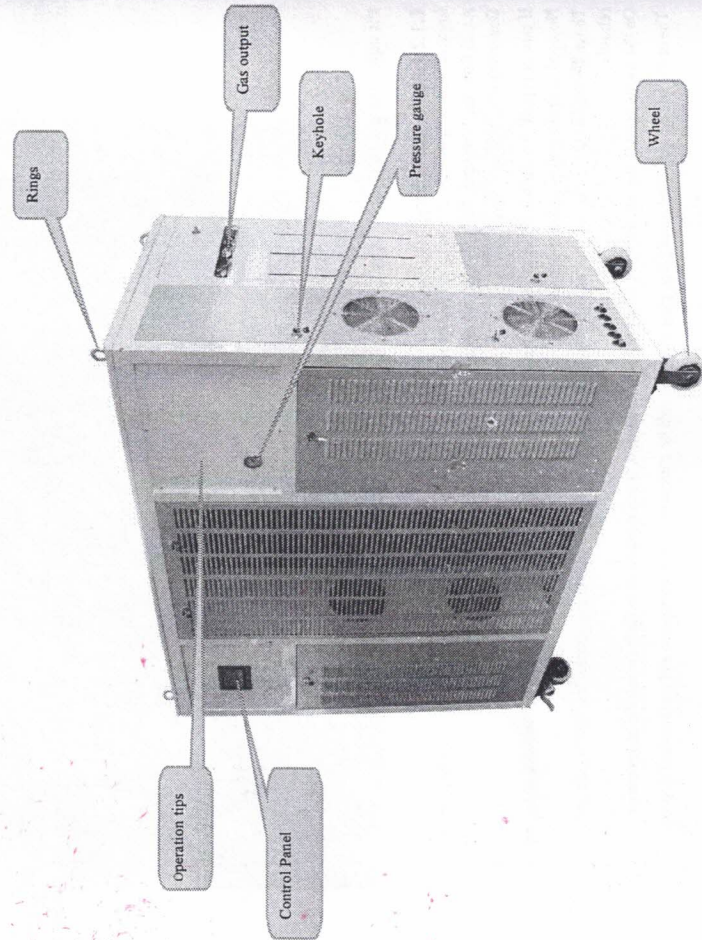
1.1 Main Structure

1.1.1 Exterior Structure

The exterior structure of OH20000 mainly including the main steel frame, power line and power plug, link gas pipe, control panel, dust cover.

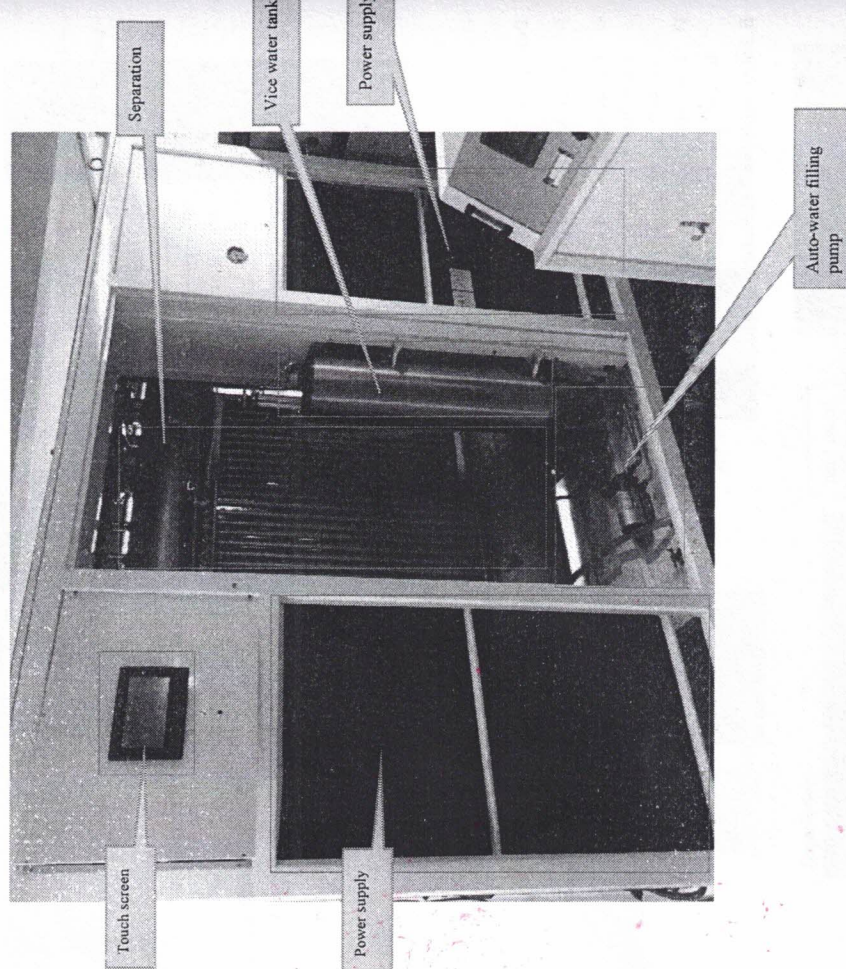
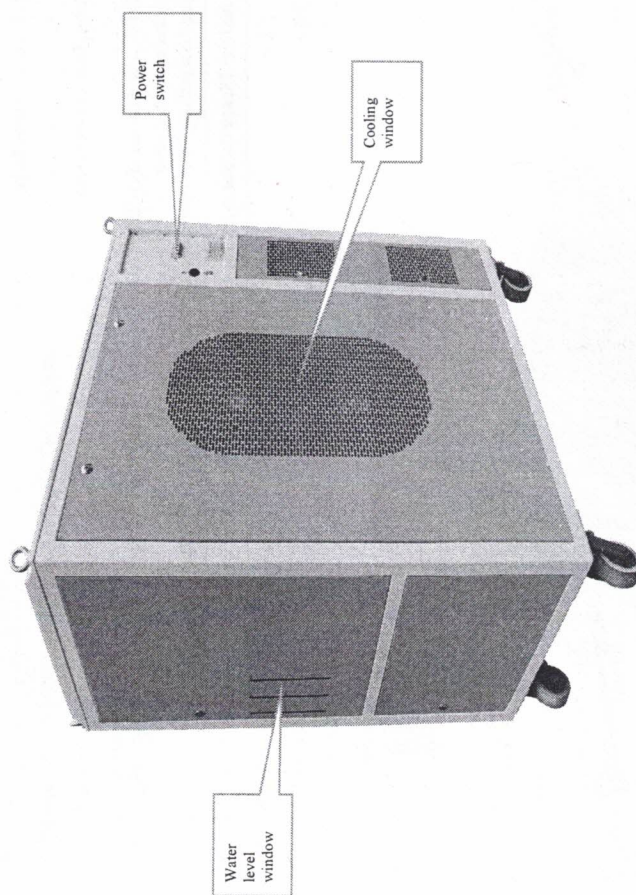
There is a pothook both in the front and back side for the link gas pipe and power line's hanging.

Notice: Please do not open the iron shell, only if the machine needs maintenance.



(Pic 1 Front Side)

Notice: There is a brake pad in the pulley wheel, press it down, the machine will be in a fixed position and no longer slide.



P's note: The actual location of each part may be different from picture, pls be subject to real machine.

1.1.2 Interior Structure

Interior Structure mainly including the Electrolytic Cell, Water Tank, Anti-backfire Sets, Power Supply System, Axial flow fan, Circuit Control System Module. (As pic 5-pic 7 show below)

Description:

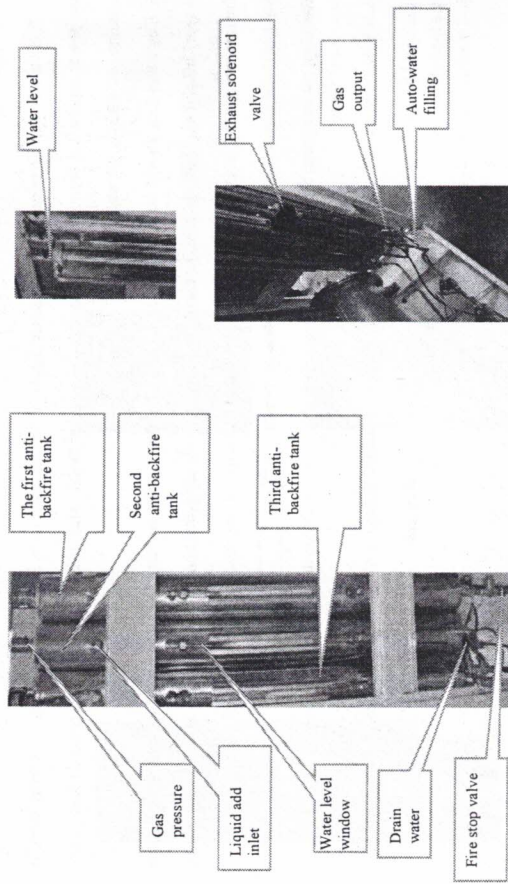
If power supply system has some problem, please send back us the complete Power Supply System for changing. No need to disassembly and maintenance.

The anti-backfire device is our unique wet anti-backfire technology, three level anti-backfires, 100% safe and reliable.

On the circuit control system, there are labels on each line's end. It can quickly solve fault during the maintenance.

The entire wiring plug used quick plug, plug and play, will be convenient for maintenance and replacement of parts.

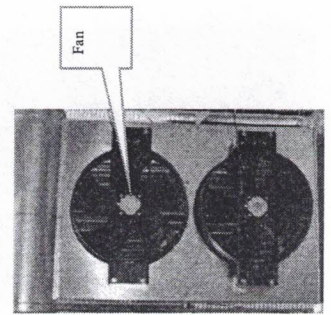
B. Structure of Anti-backfire Tank



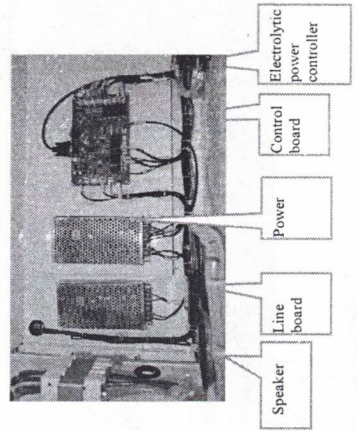
Description:

- There are 3 grades anti-backfire devices, 100% stop backfire.
- The second-grade anti-backfire device is adopted by nano-sized corrugated mesh. Oxy-hydrogen gas is divided into many airflow and flow through the gap of multi-grade corrugated mesh. Every corrugated mesh is full of water and gas must pass the water, so when backfire happened, water can prevent fire. Single airflow is few so fire can die out by water.
- Non-return valve just can pass one way, rely on the water pressure to button up the valve.
- Magnetic valve is used for draining out the excessive water in the anti-backfire tank.

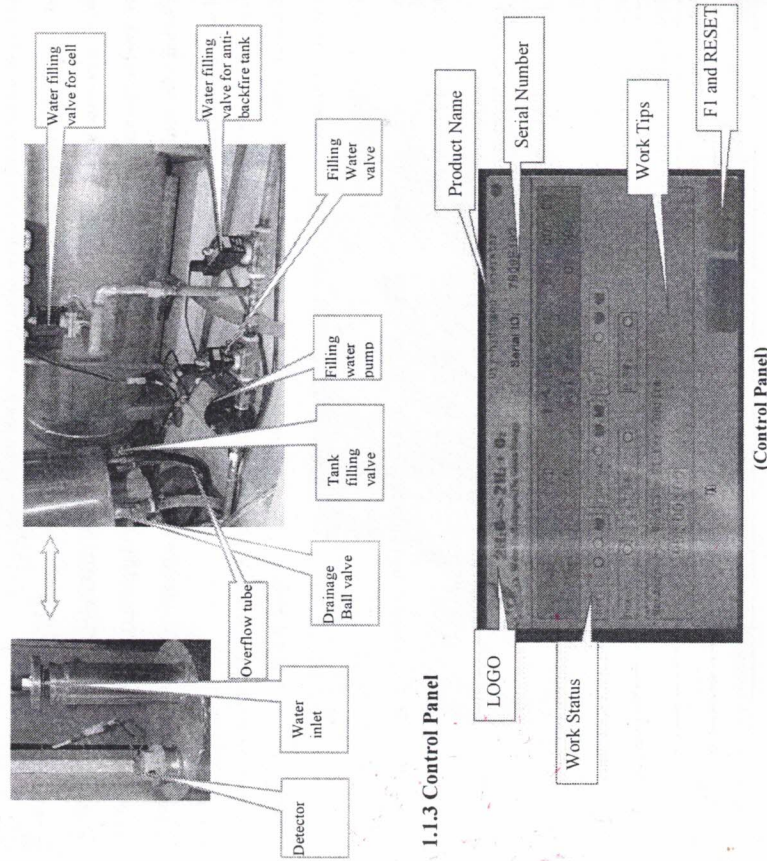
D. Fan



E. Circuit control system



F. Expansion tank and auto-liquid filling device



Description of Control Panel:

There are ten items showing in Work Status, it includes all working data of the machine. It's facility for users to find the possible problems and fault of the machine, which assure the safe operation of the machine. At the same time, it shows the working conditions of the parts inside the machine, which will be convenient for the later maintenance.

6. Machine Logo Area: It could show the logo as customer requirement.

7. Serial Number: Each machine has a unique one serial ID.

8. Work Status:

Gas Out: Shows the gas flow of the machine.

Work time set: 99:00:00 shows the Max. Working time.

Pump#1: pumping water into cell from the water tank.

Ref.: Water level sensor of anti-backfire tank. When there are three red lights, it means there is a higher water level than the water level needed, and then the machine will stop to produce gas and drain water automatically.

Vice box: Water level sensor of Water Storage Tank.

Cell: Water level sensor of electrolysis cell, if the water level is lower than the water level needed, there will be a tip showing on the screen of Work Tip to alarm you should add liquid.

Power: It detects the electricity power supply. Red means producing gas, white means stop producing gas.

P_SW: Over-pressure indicator light, when it turns red, the machine will stop producing gas.

T_SW: Over-temperature indicator light, when it turns red, the machine will stop producing gas.

Run: 00 times, it records the execution times of carbon cleaning services automatically.

Total time: It will record the total time automatically.

4) Work tip:

It will indicate how to operate the machine, and what need to do next.

5) Control button area

F1: Confirm or enter next step.

Reset: When there is something wrong during the process, you could press it to stop producing gas and all work in progress.

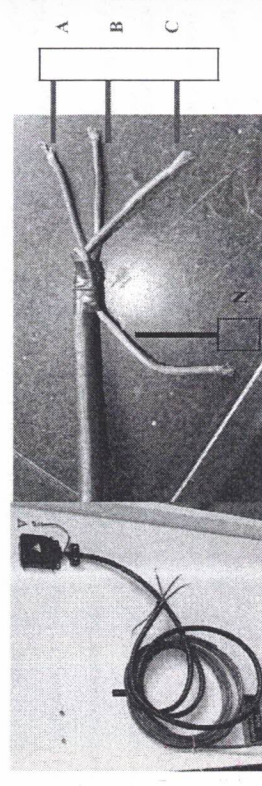
1.2 Main Technical Parameters

Model	OH20000
Input Voltage (V)	440V -15%, three phase, 50/60HZ
Rated Capacity (KVA)	80
Actual Power Consumption (KW/h)	70
Working Pressure (Mpa)	≤0.2
Safe Pressure protect setting (Mpa)	≤0.2
Relative humidity (%)	≤90
Rated Gas Output (L/h)	20000
Max. Water Consumption (L/h)	11.6
Cooling Method	Air cooling by fan
Insulation Grade	F
Protection Grade	IP21S
Requirement for Water	Filtered water or Purified water or Soft water
Working Style	Continuously
Dimensions - L*W*H (mm)	L2300*W1100*H2000
Net Weight (kg)	1400

2.Operation Instructions

Connect the power cord

- 1.Please put Oxy-hydrogen Generator in ground. The ground must be flat, clean.
- 2.Oxy-hydrogen Generator is base on 440V, three phase four Lines. Pls make sure the power is correct voltage.
- 3.Sometimes, Oxy-hydrogen Generator will be interfering by electric product. So it is better to put the machine in a wide space.
- 4.Connect the power cord. Connect to the back of the wiring with suitable plug (corresponding to A, B, C, N). The A, B, C is 440V Line, N is ground Line.



Pic-7

2.1.1 Add electrolyte liquid

Description:

1. The consumable of the equipment use is Electrolyte which is consisting of KOH and purified water. DO NOT uses other liquid.
2. Users are supposed to add electrolyte solution when first time use new machine and change electrolyte liquid for maintaining the cell every 3 months. The time is up to the actual working condition of machine.
3. In daily using, after finish adding liquid first time, pls connect machine with **purified water** source, machine will add water automatically.

Steps:

- Pls take note: First time add KOH solution and each time change solution should add from Water inlet of gas storage tank. Later time just adding water should add from the Water inlet of water storage tank.
4. Open the Electrolytic cell cap, screw tightly the water drainage ball valve. Pour the electrolyte to the machine through the stainless steel funnel slowly.
 5. Open the Water storage tank cap, adding pure water to water tank till machine stop alarm and "Vice Box" 3 lights are red.

6. Open the Anti-backfire Tank cap, adding pure water to tank till "Ref." 3 lights are red. (No sound alarm)



Please do remember to screw the entire Cap tightly for avoid any accident, because the machine will be slightly shaking during working.

2.2.1 Connect external purified water source

The Purified water inlet is in the bottom of back panel.

External purified water source should be in higher location than the Water tank so that water can flow into water tank automatically.

2.3 Operation Procedure

2.3.1 Operation Procedure

1. Connect the customer own gas pipe with the flashback arrestor.
2. Turn on the machine switch.
3. Press F1 to start it. Pres F1 to confirm time.

Press F1 to start working.

4. When user need to end work or equipment appears any abnormal situation, turn off the power switch. Close the Gas out Valve, open Drain gas Valve for **draining the rest gas out** till the pressure gauge down to zero. Then Put the 2 valves back.



If machine use for combustion supporting and work with boiler and etc. device:
When user needs to stop both of machine and boiler working, remember
Turn off Oxy-hydrogen Generator first,
Turn off boiler later.

2.3.2 Pre_work:

These 2 steps are automatic action of machine, happened in front of the Step 1 "Status OK".

- 1) Pre_work#1 Draining Gas...

It means the gas in cell is draining.

- 2) Pre_Work#2 Draining Water...

It means the water in anti-backfire tank is draining. The time is set 30 seconds.

After this step, if the Ref. indicator in screen still has 2 lights are red, operator can press F6 to reset for let Pre_work#2 drain water again.

3 Instructions of Operation

3.1. Matters Need Attention of Operation

- 1) Please fix the pulley of the equipment after selecting the right place to avoid sliding because of unforeseen circumstances. (Every pulley has the function of fixation.)
- 2) The working environment is suggested to keep the good ventilation.

3.2 Matters Need Attention of Liquid-adding

- 1) When adding liquid, it should be added with funnel slowly to avoid the liquid flow to the upside of the machine. If the liquid flows out, it should be wiped up with cleaning rag.
- 2) When the machine stops alarming, it means that liquid is added up to the top, it should stop being added.
- 3) The machine must be on and then be added liquids. DON NOT adds liquids under the situation of power off.

4. Maintenance

4.1 Description

This part is the procedure of preventive maintenance which is for insure the worker and equipment safety and the effective operation.

The maintenance operator should be professional technological personnel or the person who has been accepted the equipment maintenance training.



The power supply must be cut off before opening the cover!

4.2 Instructions of Maintenance

Although the equipment is very easy to operate, users still need to read the operation procedure carefully before using.

- DON NOT touch the inside power supply system with your hands or anything conductive objects before disconnecting power supply.
- When the data or testing state of the control panel shows abnormal, please press F6 to stop producing gas immediately and then turn off the power supply, check and find out the problems according to the abnormal data and testing state.
- 4 Non-professional staff DON NOT take the liberty of disassembling the inside parts and repair the equipment, please contact the manufacturer in time.
- 5 The equipment is needed to be cleaned and maintained regularly. Advised to clean electrolysis cell every 3-6 months.

4.3 Daily maintenance: Before using

8. Check if the power supply and ground lead connects well.
9. Check if gas tubes connect well, ensure no leakage.
10. Exterior daily dust removal: blow away the dust.

4.4 Monthly Maintenance or after 500 hours running

Besides the temporary maintenance, do the following checking every month or after running 500 hours.

6. Interior daily dust removal: blow away the dust and clean the control board and electrolysis power by clean and pressed air.
7. Check the Safety Valve if gas leakage.
8. Check if fan works steady, if overheating or abnormal sound exit.

4.5 Half-year Maintenance or after 2500 hours running

Besides the temporary maintenance, do the following checking every half a year or after running 2500 hours.

9. Change electrolyte and clean the electrolysis cell, drain out all the liquid and clean it by purified water for several times till the drain water is clean.
10. Clean the inside parts: blow away the dirt and clean the control board and electrolysis power by clean and pressed air.
11. Check if fan works steady, if overheating or abnormal sound exit.

4.6 Year maintenance or after running 5000 hours

Besides maintain 1 year, please do following checking every year or after 5000 hours running (the latter is usually smaller than former):

1. Change the anti-backfire safety valve (relief valve).
2. Change the magnetic valve diaphragm

4.7 Maintenance of long-time storage

- 1.2 Cut off power supply, water source and gas tube.
- 1.3 It should be packed in wooden case or others.
- 1.4 It should be stored in indoor place of ventilation, drying, no corrosive medium, and no vibration.
- 1.5 In the condition of regular checking with package and humidity, it can be stored for 2 years.
- 1.6 After long time storage, need to test equipment performance before re-installation or turn on.

5 Carrying and Storage

5.1 Package

Machine should be packed in wooden case or Honeycomb carton. Forbid to turn over and sidelong.

5.2 Transport

Be suitable for delivered by air or sea.

While transportation, turn over and sidelong is not allowed. Be careful to prevent the package damage from wet or shocking.

5.3 Storage

It should be stored in indoor place of ventilation, drying, no corrosive medium, and no vibration.

Certificate of Quality and Warranty

Machine Name: _____
Product Number: _____
Model Type: _____
Power Input: _____
QA Tester: _____
Date of Test: _____
Date of deliver: _____

This Machine tests well! Allow to delivery.

We supply 1 years warranty for the product;Half a year guarantee for the quick-wear parts
from the date of shipment. Physical human damage is not within the scope of warranty.

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