

hydrogen oxygen machine

Models Available		
105T	205T	305T
405T	505T	605T

USER’S MANUAL

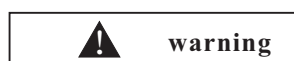
for Installation, Operation and Maintainance

ATTENTIONS

- We are engaged in product improvement.Changes may occur.
- We are not responsible for occasional damage accidents under abnormal or specific working environment.
- We are not responsible for damages or losts caused by misoperation.
- No copy is allowed without permission.
- Striking words (danger,warning,notice) shows danger degree.



: can cause human injury



: may cause human injury



: may cause product damage or property losses

note : means hint to operatation and maintainance

Goods Inspection after Arriving

●Inspect whether there is any damage, such as shell damage or inside damage.If so, please take a photo, and declare losses to the transportation company.

●Check product model, tech data (powersupply, voltage,frequency) and accessories to judge whether the machine meets your requirements.

Please operate the machine according to this manual book.

Don' t use the machine under abnormal working environment.

Any questions or any problems, please contact us

We are not responsible for the machine changed by others without our company's paper approval.

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1. security



danger

● No water into the inside of machine, or water will cause short circuit.

● Don't open the shell without power off.

● Don't open water inlet nut if there is pressure inside.



warning

● The electrolytic solution is highly corrosive.

● The flame temperature is about 3000 °C. Don't misplace messily when burning.

● Please use plug with the earth wire.

● Ignition is forbidden when there is no pressure inside the machine.



notice

● Clean the electrolytic cells every two months.

● Release the left gas after you shut down the machine.

2. warranty

2.1 warranty terms

warranty period:

We offer 12 months free maintenance from the purchasing day, and lifetime paid maintenance.

Following terms have no free maintenance:

● Surpass warranty period-12months.

● Change warranty period without authorization

● Operate or maintain the machine wrongly without manual book instruction.

● Disassemble the machine or accessories privately

● Damages caused by human irresistible force

2.2 warranty range

accessories	12-months	lifetime paid	no warranty
cells	✓	✓	
power supply	✓	✓	
control panel	✓	✓	
pressure	✓	✓	
	✓	✓	
filter cup	✓	✓	
manometer	✓	✓	
display panel	✓	✓	
fan	✓	✓	
flame torch			✓
T-junction			✓
hose			✓
power cord			✓
funnel			✓

note: warranty period of main set is 12 months

3 equipment data

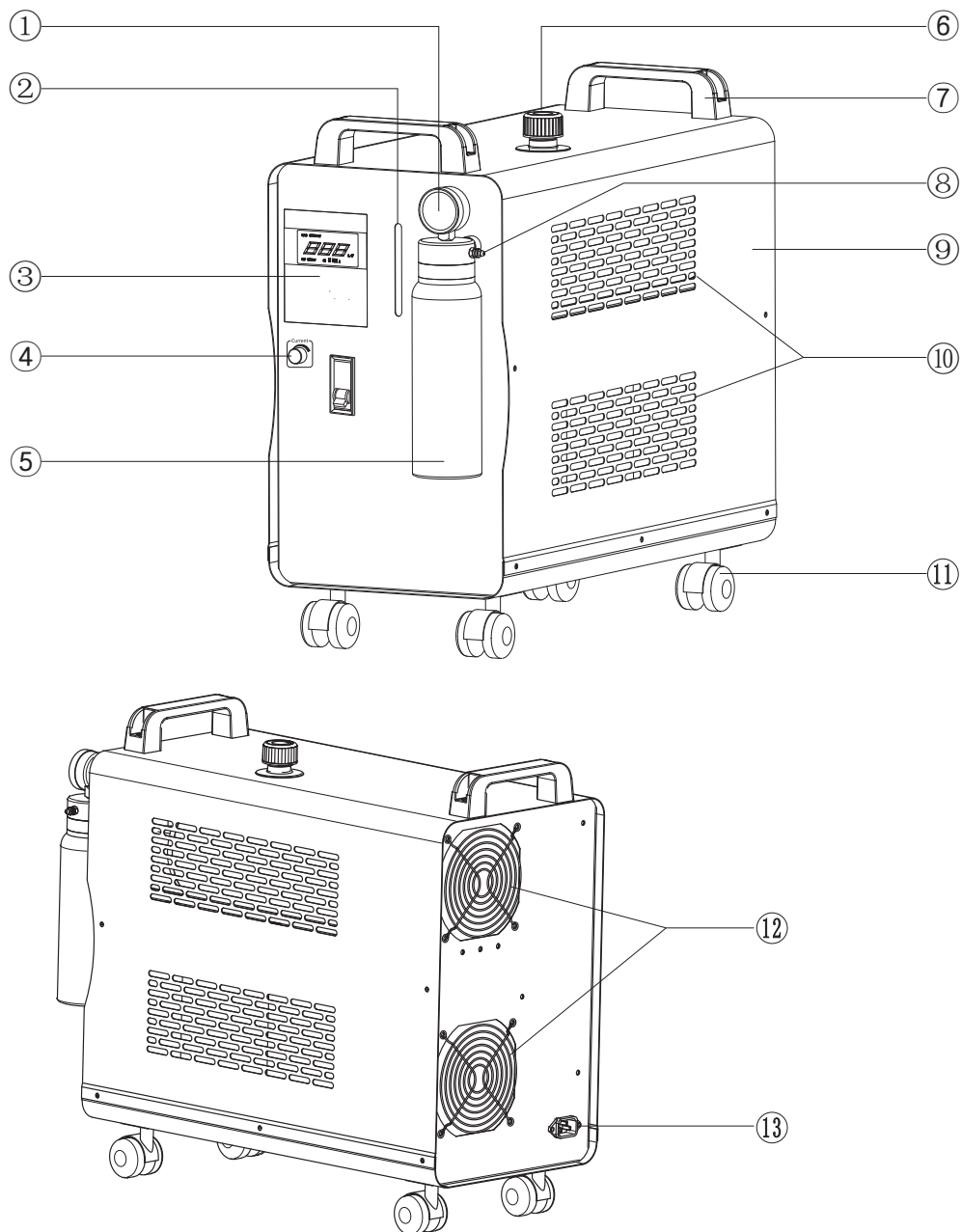
model	105T	205T	305T	405T	505T	605T
max. gas produce	100 L/H	200 L/H	300 L/H	400 L/H	500 L/H	600 L/H
voltage(a)	AC220V 1.5A	AC220V 3A	AC220V 4.5A	Ac220V 6A	AC220V 7.5A	AC220V 9A
voltage(b)	AC110V 3.1A	AC110V 6.2A	AC110V 9.3A	AC110V 12.4A	AC110V 15.5A	AC110V 18.6A
water consumes	0.03 L/H	0.06L/H	0.09L/H	0.12L/H	0.15L/H	0.18L/H
max. water adding	2.4 L	4.2L	6.3L	8.4L	10.5L	12.6L
solution density	15%	15%	15%	15%	15%	15%
pressure range	0.13-0.15Mpa	0.13-0.15Mpa	0.13-0.15Mpa	0.13-0.15Mpa	0.13-0.15Mpa	0.13-0.15Mpa
weight	11 Kg	17Kg	22Kg	26Kg	30Kg	34Kg
size	440*300*540mm	530*300*540mm	650*300*540mm	770*300*540mm	890*300*540mm	1020*300*540mm

model	105T	205T	305T	405T	505T	605T
current adjust	—	●	●	●	●	●
water lacking alarm	—	●	●	●	●	●
LCD screen	●	●	●	●	●	●
water feeding cell	●	●	●	●	●	●
separated cell	●	●	●	●	●	●
foot pad	●	—	—	—	—	—
castor	—	●	●	●	●	●
flashback arrestor	●	●	●	●	●	●
T-junction	—	●	●	●	●	●
cell quantity	1	2	3	4	5	6
flame torches	1	2	2	2	2	2
hoses	2	4	4	4	4	4

Note: “●”equipped accessories, “—”none equipped accessories

4 graphic illustration

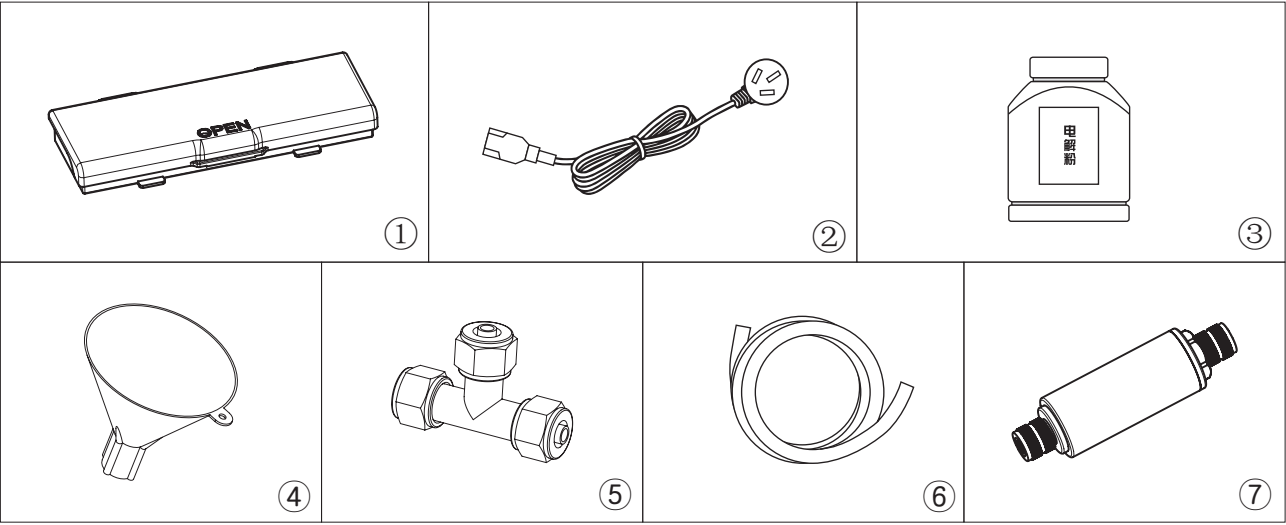
4.1 main set



No	name	No	name
1	pressure gauge	8	gas output
2	waterline	9	outer shell
3	control panel	10	air window
4	current adjusting valve	11	castor
5	filter cup	12	fans
6	water feeding inlet	13	plug
7	lifting		

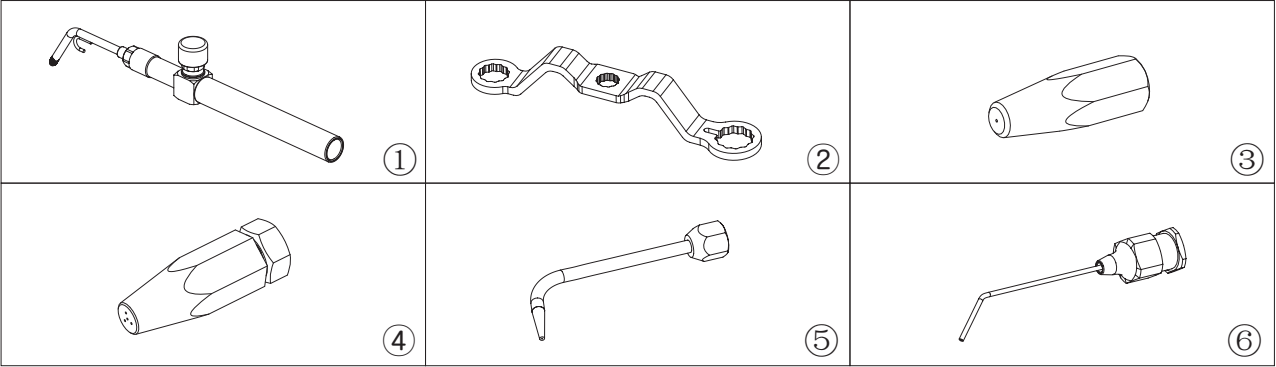
Notice: Model 105T has no current adjusting valve and no castors.

4.2 accessories



No	name	No	name
1	flame torch	5	T-junctin
2	power cord	6	hose
3	powder	7	flashback arrestor
4	funnel		

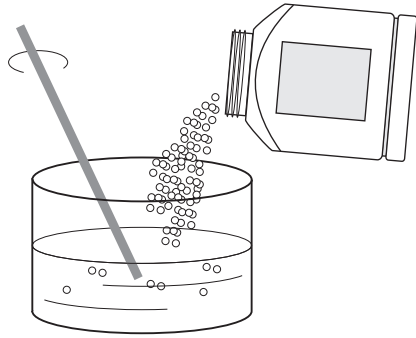
4.3 flame torch with accessories



No	name	No	name
1	flame torch	4	copper tip with four orifices
2	wrench		copper tip with six orifices
3	copper tip(0.35mm)	5	elbowed copper tip
	copper tip(0.5mm)	6	needle copper tip

5. installatin operation

5.1 making electrolytic solution



Add electrolytic powder (potassium hydroxide) and water in a plastic basin or glass and ceramic basin, stir them, and then cool for 10 minutes.
electrolytic solution ratio:15%



notice

:Metal basin is forbidden.

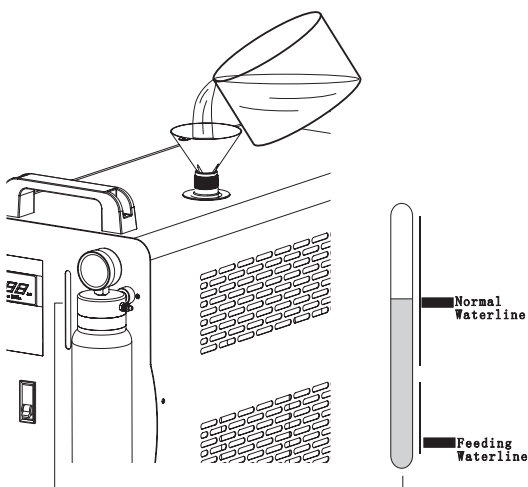


warning

: Potassium hydroxide belongs to strong alkali, so its solution is very corrosive. Once the solution touches clothes or skin, please clean it using water repeatedly.

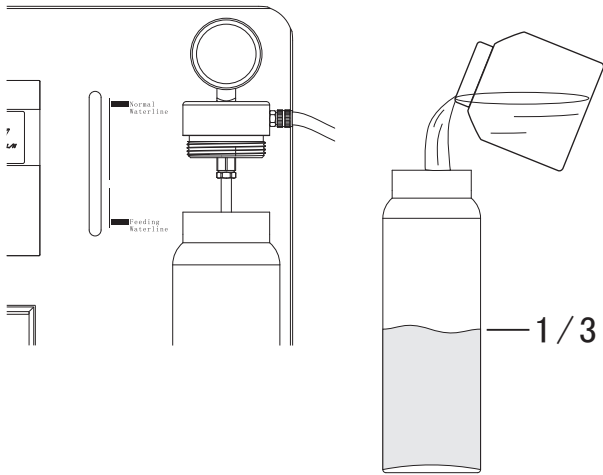
model	105T	205T	305T	405T	505T	605T
electrolytic sollution ratio	2.4L	4.2L	6.3L	8.4L	10.5L	12.6L

5.2 add electrolytic solution



1. unscrew the inlet nut
2. put the funnel to avoid spattering
3. add electrolytic solution into the electrolytic cells.
4. electrolytic solution must be lower than "Normal Waterline", and must be higher than "Feeding Waterline"
5. tighten the inlet nut

5.3 add filter solution

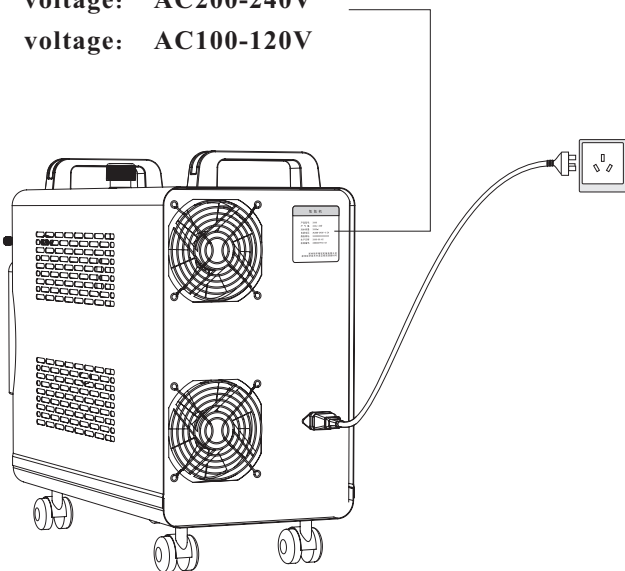


1. Disassemble the filter cup anticlockwisely.
2. Add alcohol to the cup lower than 1/3 of the cup.
3. Assemble the filter cup to the machine and tighten it.

Notice: The filter solution is distilled water or alcohol which ajusts flame pureness and temperature.

5.4 power on test

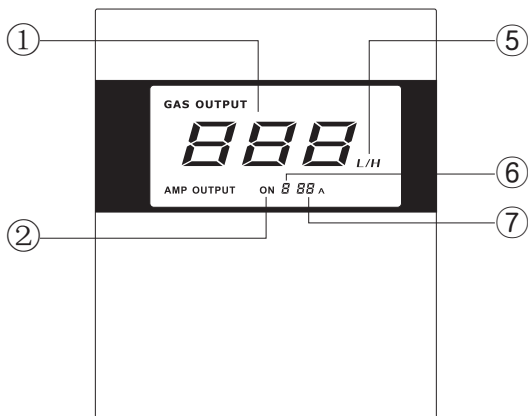
voltage: AC200-240V
voltage: AC100-120V



1. Check the tech data label on machine's back shell. We produce micro flame welder with 110V and 220V power supply voltage .Power supply voltage and voltage machine needed must be corresponding to avoid damage to the machine.

2. The plug must have the earth wire to avoid electric shock.

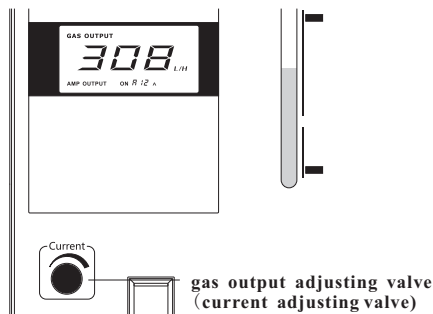
5.5 check circuit control system



No	name	No	name
1	gas output	5	gas unit
2	power situation	6	power supply no.
		7	power supply current

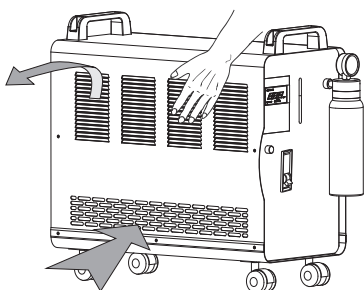
1. Power on, press "ON", check the LCD and look at the numerical value.
2. ①displays the max. gas production.
3. ⑥displays number of power supplies.⑦shows the power supply's working current, Max. current range is 12A-14A (The current is about 10A under working environment temperature lower than 10 degree celsius).

Note: If the power supply is shut off, LCD doesn't show its working situation.



4. gas output adjusting valve (current adjusting valve):Turning leftwords,the gas output value and current value become smaller,while turing right, they become bigger.

Note:Factory setting for the valve is the biggest.



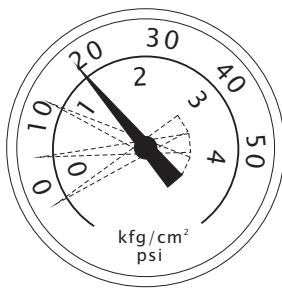
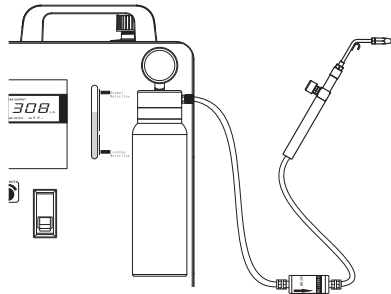
5. When the machine works, the fans also work.You can feel it using your hand.
6. Press "OFF", LCD will shut off, and machine also shut off.



Notice

: When the machine works,any other naked fire is forbidden.

5.6 check pressure



1. Connect the hose to the output valve, press "ON", and start the machine.

Notice: There must be a flashback arrestor between the output valve and flame torch to avoid flashback.

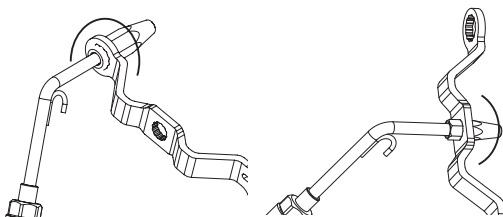
2. Close the flame torch, and pressure needle will become higher and higher till 1.5 kfg/cm² (20psi), then machine stop automatically, and gas output value, current value become zero, but fan will continue to work for 1 minute. After fan stops, open the flame torch, the pressure needle will be down to 0.9 kfg/cm², at that time machine will work again automatically. When the gas output value and current value become normal, the fans start again.

5.7 power off

Press "OFF" to shut off the machine. LCD screen also is shut off and the fans stop. After releasing the left gases inside, turn off the flame torch to keep safe.

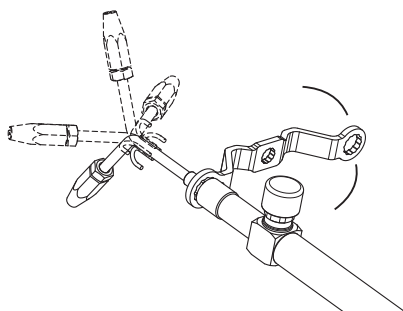
6 application operation

6.1 change copper tips



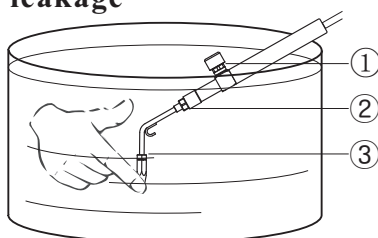
Choose the suitable copper tips according to the working requirements. The multi-functional wrench can be used for changing copper tips and setting flame torch.

6.2 adjust tip direction



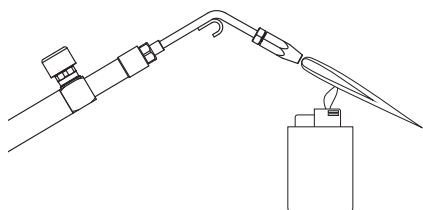
Operator can change the torch tip direction according to the working requirement or personal habits (First loosen holding screw, choose the suitable direction, and then tighten the holding screw.).

6.3 check leakage



Put the flame torch into the clean water, block off the tip, and open the torch to check ① ② ③ to confirm no leakage.

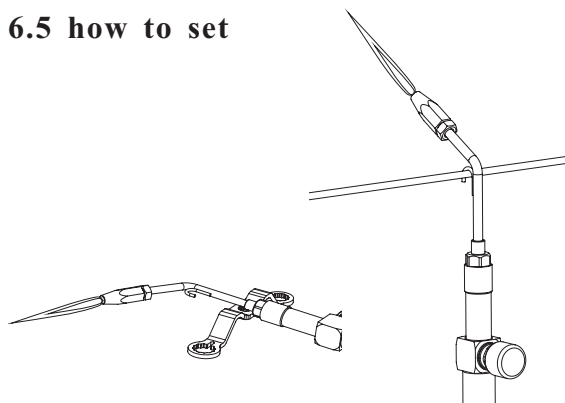
6.4 ignite



When use for the first time, open the flame torch for 20 seconds to release the left gases inside the machine, then ignite at the copper tip. Then test the flexibility of the adjusting valve on the flame torch through turning left and turning right to change the flame size.

Notice: Ignition is forbidden when no gas pressure inside the machine.

6.5 how to set



Please put the flame torch with flame burning on the holder or in a safe place far away from person or goods because the flame temperature reaches about 3000 degree celsius.

6.6 gas production adjustment (constant voltage)

Adjust the working current to make the balance between the gas production and gas output, and in such situation, the flame will be very stable.

The ratio between gas output and working current is direct. Based on operator's requirements to adjust "gas output adjustment valve", Turning clockwise, gas output becomes larger, turning anticlockwise, gas output becomes smaller. Factory setting is largest.

Figure 1

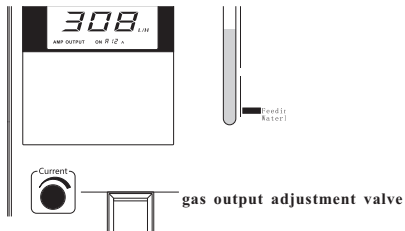
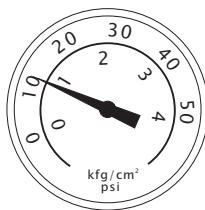


Figure 2



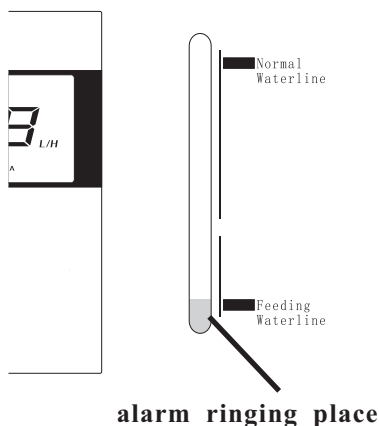
1. Start the machine, ignite the copper tig when the pressure gauge is rising for a while.
 2. Rotate the valve on the flame torch to adjust the flame size
 3. Rotate the "gas output adjustment valve", and observe the pressure needle to keep it in a specific place.
- note: Keep the needle in the place of Figure 2. And the gas pressure rang is from 0.12 to 0.17. When the pressure reaches 0.17, the machine will stop working by itself. But once the pressure becomes near 0.12, the machine will come back to work by itself.

gas production range for all models: (Not suitable for 105T)

205T: 75L/H—200L/H 305T: 120L/H—300L/H

405T: 150L/H—400L/H 605T: 300L/H—600L/H

6.7 water leakage alarm



The water leakage alarm is to avoid damage to the electrolytic cells. When the waterline reaches or becomes lower than "Feeding Waterline", add water inside the machine is a must. Make the waterline reach to "Normal Waterline". When the electrolytic solution reaches the line where the alarm is set, the alarm will ring to warn the operator of adding water to the machine.

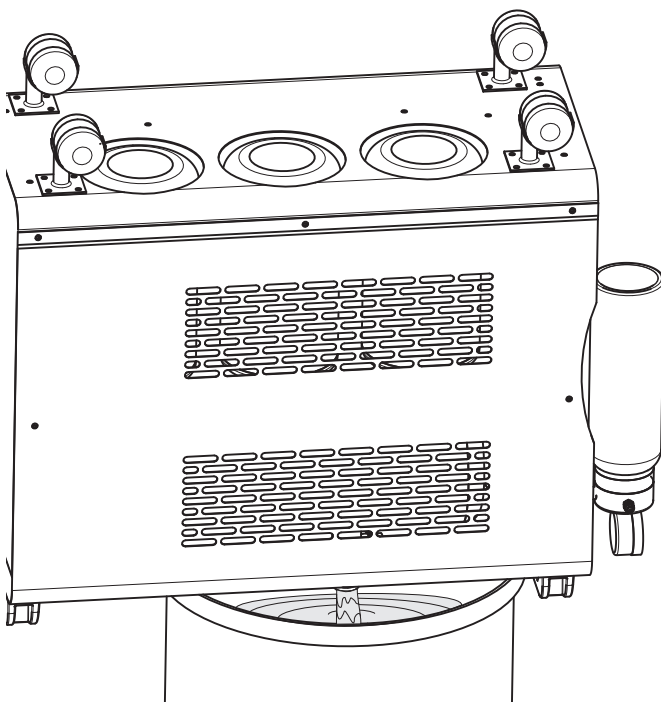
Notice: Operators must observe the waterline, and not always depend on the alarm.

7 equipment maintainance

7.1 change electrolytic solution and clean the electrolytic cells

Change the electrolytic solution in the following situations :

1. Clean the electrolytic cells every two months, and add new electrolytic solution
2. When the electrolytic solution in the waterline become dark and brown, clean the cells and add new solution is a must.
3. When the gas production in the LCD screen becomes smaller, or some cells' current becomes lower, please clean the electrolytic cells and add new solution.



How to clean the electrolytic cells:

1. Open the water inlet nut, and put the machine upside-down to pour out the dirty electrolytic solution, and add clean water into the cells, shake the machine to clean the cells, then pour out the dirty water.
2. Repeat the above step for several times until the water is clean.
3. Clean the incrustation on the shell and add new electrolytic solution.

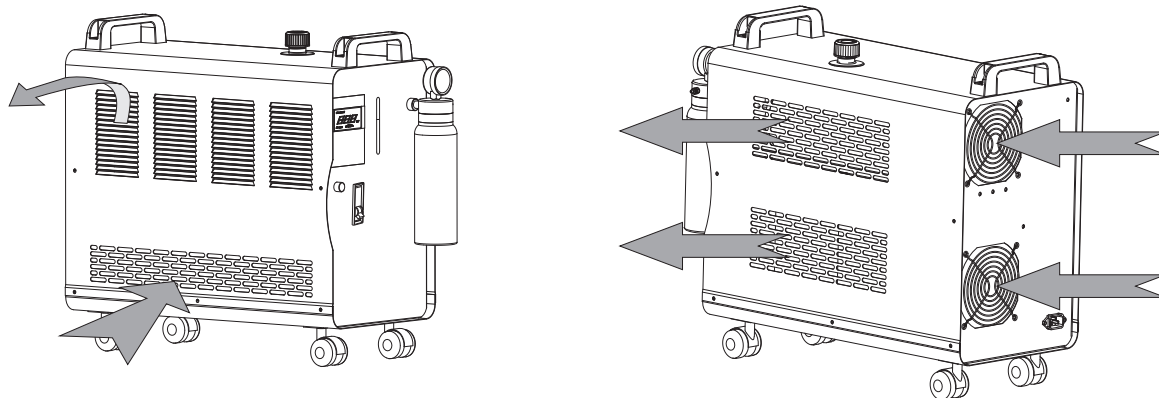
notice: The electrolytic solution is highly corrosive. Once the solution touches skin or clothes, please clean it using water.

7.2 clean air window and main set

Keep the air window flow all the time without any blocked to lengthen power supply's lifetime and decrease water vapor in the electrolytic cells.

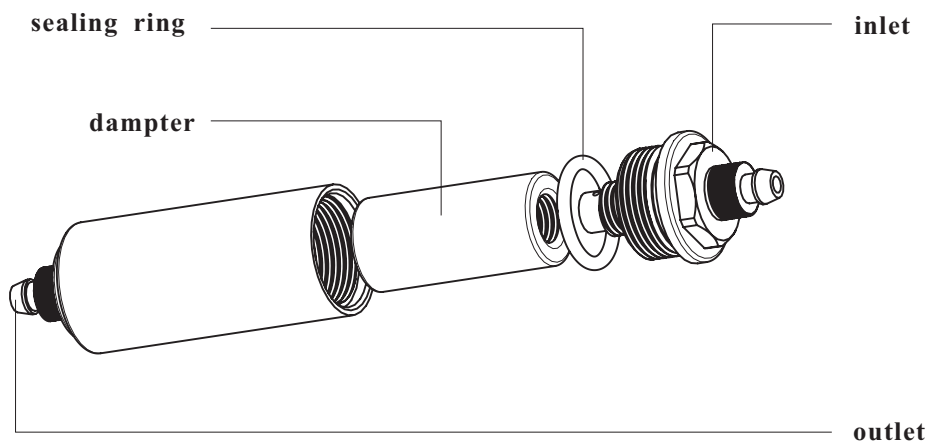
Clean out the dirty inside the main unit regularly. Dirty things can cause damage to the components or electricity short-cut.

air flow direction of the air window

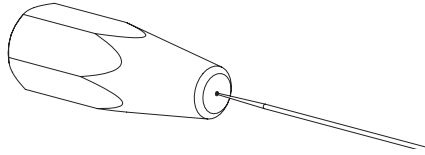


7.3 flashback arrestor's maintainance

1. Unscrew the flashback arrestor using the wrench anticlockly.
2. Disassemble the dampter and put it in the hot water or boil it for 20 minutes, then take it out.
Notice: Change the dampter if the dampter is too dirty.
3. Check the sealing ring, if it is damaged, replace it with the new one.
4. Check gas permeability in the inlet and outlet. If something blocked in the inlet or outlet, put the flashback arrestor in the hot water or boil it for 20 minutes.

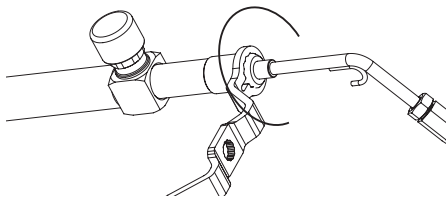


7.4 clean torch tips and flame torch's maintainance

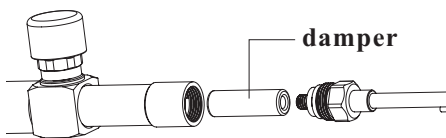


1. How to clean torch tips: use needle to stab the orifice and clean tip using clean water

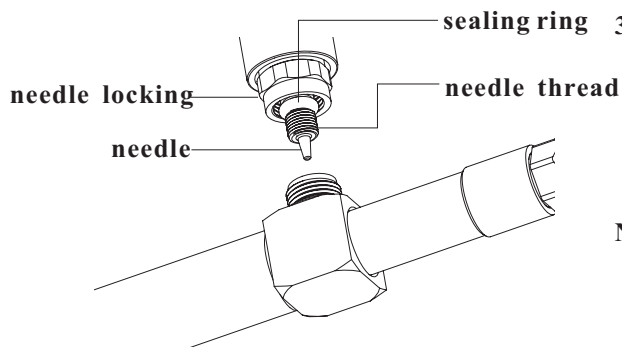
Notice: Dirty torch tip makes the flame turns red with lower temperature.



2. How to clean or change the damper: Losen the holding screw with wrench, and disassemble the flashback arrestor device. Put the damper in the hot water or boil it for 20 minutes. If it ventilates, assemble it, but if it still doesn't ventilate, assemble the damper to the flame torch.

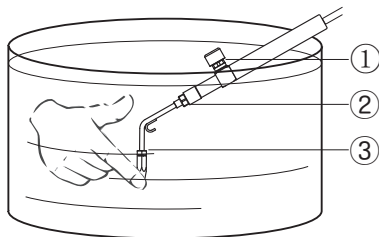


Notice: If add more electrolytic solution, flame torch will splash water. And then the damper will be jammed, gas flow will become stammer, which make the flame small and weak, even not be ignited.



3. Check the valve's parts: loosen the valve anticlockwise and check the sealing rings, valve's needle and needle's thread. If any of them are damaged, please replace them with new.

Notice: Damaged sealing ring causes gas leakage, and damaged needle causes that the flame torch can't be closed tightly.



4. gas leakage check: Put flame torch into the clean water, block the torch tip, open the flame torch's valve, and check ①②③ where should not be leaked.

7.5 frequent questions and answers

A. Why red or yellow flame occurs

1. reason: add more electrolytic solution or more filter solution

How to solve it: pour out the extra solution

2. reason: water vapor in the hose

How to solve it: change new hose or clean water vapor inside the machine

3. reason: dirty torch tips

How to solve it: use needle to stab the orifice and clean out the dirty things

4. reason: dirty electrolytic cells

How to solve it: clean the electrolytic cells and add new electrolytic solution

B. Why only produce little gases

1. reason: lower ampere value

How to solve it: clean the electrolytic cells, and replace new electrolytic solution, and confirm every cell's ampere value(normal is 12A)

2. reason: gas leakage

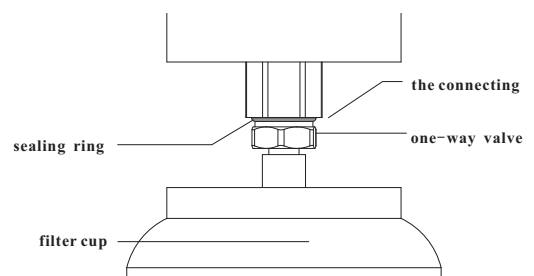
How to solve it: turn off the flame torch, start the machine, and smear the connecting parts using the soap water to find the leakage place and solve it.

3. reason: jammed gas flow

How to solve it:

① maintain or change the damper inside the flashback arrestor and flame torch

② turn off the filter cup and loosen the one-way valve anticlockwisely(keep 1-1.5mm), but confirm that the sealing ring does not leak.



C. flashback

1. reason: gas leakage

How to solve it: turn off the flame torch, start the machine, and smear the connecting using the soap water, check the leakage place and maintain them.

2. reason: breakdown of flashback arrestor

How to solve it: change the damper inside the flashback arrestor and the flame torch