ENVIRONMENT

MANUAL-CE-CY-600


ENVIRONMENT

Preface

The CE-CY-600 series water-cooled ozone generator adopts international advanced micro-gap discharge technology, microcomputer control main board, scheduled shutdown function, remote control function, flexible operation, built-in temperature detection perfect protection and alarm function, all functional parameters are displayed on the screen, which is convenient for online monitoring and online adjustment can meet the needs of users to the greatest extent.

This series of ozone disinfection machine is suitable for most space disinfection, including food workshops, cosmetics workshops, medical equipment, wards, cold storage, schools, offices, homes, etc; it can quickly kill all kinds of bacteria, viruses, spores, algae, etc. Harmful pathogenic microorganisms, disinfection is complete and thorough, leaving no dead ends, no residue; the killing rate is as high as 99%, which can effectively eliminate the source of infection, block the route of transmission, and reduce and control the occurrence and spread of major diseases.

In order to make good use of this product and ensure user safety, please read this user manual carefully before you use it. After reading it, please keep it in a safe place for future use.

Before installation, debugging, and use, for your personal safety and to help extend the service life of the equipment, please be sure to read the safety rules and warnings in this book, as well as the warning signs affixed to the equipment. When using it, please also pay attention to the condition of the machine or all safety-related precautions.

The company reserves the right to modify this manual without prior notice; if you have any questions or problems, please keep in touch with us or the agent in time, and welcome suggestions for improvement.

Chapter I Safety Precautions

Definition:

In this manual, precautions have 3 types as follows.

Danger
Failure to operate as required may result in serious injury or even death
Warning
Failure to operate according to the requirements and mark the potential danger nearby, which may cause moderate injury
Attention
Failure to operate in accordance with the requirements may result in moderate or minor injury and equipment damage

1.1 Safety matters

1.1.1 Before installation

Attention

1. Check whether the outer packaging of the machine is intact; open the box to check whether the appearance of the machine is intact; whether there are any parts inside the machine damaged; if there is any such situation, please contact us or the dealer in time.
2. Please watch the device installation video or connection diagram before installation. Incorrect connection may cause damage to the machine during use.

1.1.2 In installation

Danger

1. Keep away from combustible materials during installation, otherwise it may cause a fire.
2. The construction should be carried out by professional electrical engineers, otherwise there is a danger of electric shock!
3. The machine installed on the wall should pay attention to whether the bolt is tightened to prevent it from falling and hurting people.
4. Please make sure that the power supply is turned off before wiring, otherwise there is a danger of electric shock.

5. The grounding terminal must be grounded reliably, otherwise there is a danger of electric shock.

1.1.3 Before power

Danger

1. Please confirm whether the power supply voltage level is consistent with the rated voltage of the machine; and pay attention to check whether there is a short circuit in the peripheral circuit; pay attention to whether the wiring is tight; otherwise, it may cause damage to the machine! Poor contact of wires can cause damage to electrical components, and in severe cases, it may cause fire.
2. The machine must be powered on after the cover is closed, otherwise it may cause electric shock.

Attention

1. Whether all peripheral equipment is correctly wired according to the circuit provided in this manual, otherwise it may cause machine malfunction.
2. For machines that require air pressure, the air supply pressure should not exceed the rated value, otherwise it may cause an accident.

1.1.4 After power

Danger

1. Do not open the cover after power on, otherwise there is a danger of electric shock.
2. Do not touch the high-voltage discharge peripheral circuit with wet hands, otherwise there is a danger of electric shock.

Warning

1. If you need to perform parameter identification, please pay attention to the fan rotation and high-voltage discharge parts; long hair and fingers are far away from parts that can easily hurt people, otherwise it may cause an accident.
2. Do not change the manufacturer's parameters of the machine at will, otherwise the equipment may be damaged.

1.1.5 In working

Danger

1. Do not lean on the equipment while the machine is running, otherwise it may cause an accident.
2. The machine will produce high-voltage discharge when it is working. Please do not perform other work nearby, especially welding, electric drill and other flammable work, otherwise it may cause a fire.
3. Do not do cleaning work nearby during operation, and prevent moisture and dust from entering the equipment, otherwise it may cause machine failure.

Warning
4. Non-professionals should not open the cover of the machine during operation, otherwise there is a danger of electric shock.

1.1.6 In maintenance
Danger
1. Do not repair and maintain the equipment with power on, otherwise there is a danger of electric shock.
2. Make sure that the maintenance and repair of the machine can only be carried out after all the indicators on the circuit board are off, otherwise the residual charge on the capacitor will cause injury to people.
3. Personnel without professional training are not allowed to maintain and repair the machine, otherwise it may cause personal injury or damage to the machine.

1.2 Explanation of the toxicity, corrosivity and safety of ozone:

Ozone is a non-toxic substance and safe gas. When it comes to its toxicity, it is mainly due to its strong oxidizing ability. When the concentration is higher than 1.5ppm, personnel must leave the scene. The reason is that ozone stimulates the human respiratory system and causes the stress of the respiratory system. Reaction, serious will cause reversible harm, for this reason, the International Ozone Association

(IOA) Establish health standards: International Ozone Association: 0.1ppm, exposure for 10 hours; the United States: 0.1ppm, exposure for 8 hours; China: 0.15ppm, exposure for 8 hours.
Literature report: When the ozone concentration is 0.02ppm, people with sensitive sense of smell can detect it, which is called the sensory threshold. When the concentration is 0.15ppm, it is the olfactory threshold, which can be smelled by most people, and it is also a health standard point. When the concentration reaches 1-10ppm, it is called the stimulation range. In fact, the safe use of ozone can completely protect human health from harm. Ozone has been used for more than 100 years, and so far there has been no fatal accident due to ozone poisoning in the world.

In use, the ozone disinfection process should be isolated from personnel. The general ozone generating device is automatically controlled. As long as the

relevant parameters are set, it can be unattended. This is different from the spray disinfection of chemical disinfectants and requires specially trained personnel. Compared with on-site operation, the health of personnel is more assured.
Ozone has strong oxidizing properties. Ozone can oxidize metals. Aluminum, zinc, lead and ozone will cause oxidative corrosion, but ferrochrome (stainless steel) containing 25% Cr is basically not corroded by ozone. Ozone has the greatest corrosion effect on ordinary rubber, so corrosion-resistant silicone rubber or rubber products with anticorrosive agents.
Ozone generation generally uses high-voltage power supply, so it should be avoided in an environment where conductive gas or hydrocarbon-containing media exists, and users must follow the operating procedures safely.

The following points should be noted when using ozone:

1. According to the "Industrial Hygiene Standards" formulated by the Ministry of Health in 1979, the safety standard for ozone is 0.15 ppm.
2. American standards stipulate that personnel can work for 8 hours at a concentration of 0.1 ppm. (Generally, the ozone concentration in forest areas can reach 0.1ppm).
3. The International Ozone Association stipulates that professional rooms that use ozone can work for 10 hours at a concentration of 0.1ppm.
4. The concentration that causes a certain reaction of personnel is 0.5-1ppm, and the allowed contact time is 1.5 hours. After a long time, you will feel discomfort such as dry mouth.
5. The concentration of 1-4ppm will cause people to cough, and the allowable contact time is 1 hour.
6. The concentration of 4-10ppm will cause a strong cough, and the allowable contact time is 20 minutes.
7. The half-life of ozone is 20-50 minutes, and the final decomposition product is oxygen, so there will be no residual pollution to food.
8. Practice has proved that using ozone to disinfect and prevent mildew for many years, no damage to equipment and equipment materials has been found.

Personnel safety refer to the indoor air quality standard "GB/T 18883-2002"

No	Parameter	Unit	Index	PS
1	Temperature	℃	24/ 20	Summer/Winter
2	Humidity	%	60/ 50	Summer/Winter
3	Air quantity	M3/h*p	30	//
4	CO	Mg/ m3	10	1h average
5	CO2	%	0.1	Day average
6	O3	Mg/ m3	0.16	
7	Total bacteria	cfu/m3	2500	Measurement

Chapter II application of ozone

2.1 Ozone concentration conversion table

Frequently used ozone concentration units include weight percentage concentration %wt, and mass volume percentage concentration mg/L (g/m3). When the ozone concentration is low, such as the ozone concentration in the air, one part per million by volume will also be used ppm v., due to the large number of ozone concentration units, there are often confusions during use. The following table lists the ozone concentration conversion tables for oxygen and air sources for reference.

Oxygen source			Air source		
% wt	g/ m3	ppm v.	% wt	g/ m3	ppm v
1%	14	6689	1%	13	6066
2%	29	13423	2%	26	12180
3%	43	20202	3%	39	18343
4%	58	27027	4%	53	24555
5%	73	33893	5%	66	30818
6%	87	40816	6%	80	37132
7%	102	47782	7%	93	43497

8%	117	54796	8%	107	49914
9%	133	61856	9%	121	56384
10%	148	68966	10%	135	62907
11%	163	76125	11%	149	69484
12%	179	83333	12%	163	76115
13%	194	90590	13%	177	82803
14%	210	97902	14%	192	89546
15%	226	105263	15%	206	96346
16%	241	112676	16%	221	103203
17%	257	120141	17%	236	110118
18%	274	127660	18%	251	117093

2.2 Legal regulations and standardization

The People's Republic of China's Urban Construction Industry Standard CJ/T3028.1-1994 "Ozone Generator"; State Environmental Protection Administration, China's Environmental Protection Product Certification Technical Requirements HJ/T264-2006 " Oxygen Generator";
The People's Republic of China Urban Construction Industry Standard CJ/T3028.2-1994 "Measurement of Ozone Concentration, Output and Power Consumption of Ozone Generators";

2.3 Equipment usage and working conditions

2.3.1 Usage of ozone equipment

Ozone is widely used in drinking water treatment, reclaimed water treatment, cosmetic container disinfection and sterilization, aquaculture oxygenation disinfection and sterilization, poultry breeding industry, swimming pool water disinfection and sterilization, sterile workshop, pharmaceutical factory and food factory disinfection and sterilization, GMP certification, Food preservation and storage, pesticide degradation of fruits and vegetables, sewage treatment
(Industrial sewage and urban sewage advanced treatment in hospitals, food factories, electroplating plants, etc.), industrial waste gas deodorization

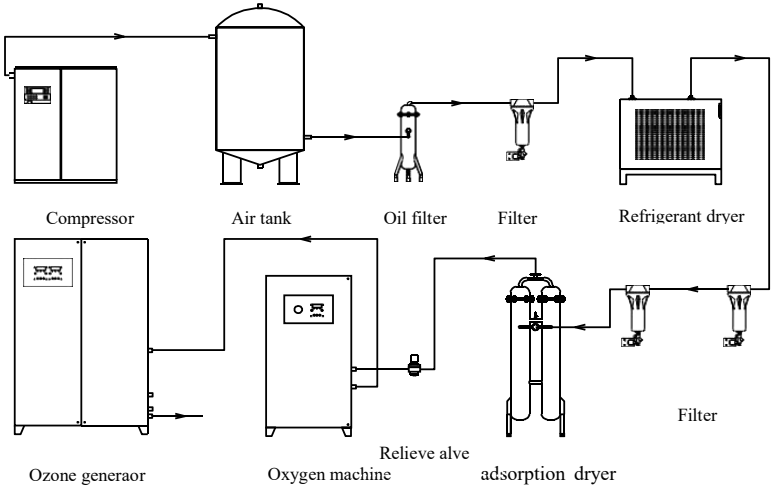
treatment, pulp bleaching, denim decolorization, film composite and other industries;

2.3.2 Working conditions
1. Temperature
The annual average temperature is 24.1℃, the lowest temperature is -20℃, and the highest temperature is +35℃
2. Humidity
The annual average relative humidity is 61.5%, the lowest relative humidity is 35%, and the highest relative humidity is 75%
3. Atmosphere
The annual average pressure is 101.59KPa, the highest pressure is 104.5KPa, and the lowest pressure is 98.6KPa
4. Cooling water
General industrial tap water, water temperature ≤30℃
5. Design requirement
The ozone generator is designed according to the indoor installation requirements, and the user should ensure that the equipment runs within the design conditions

5.1 Temperature
The design ambient temperature range of the ozone generator is -20℃～+40℃
5.2 Humidity
Ozone generator design relative humidity ≤75%
5.3 Cooling water temperature
Ozone generator design cooling water temperature≤30℃
5.4 Atmosphere
The ozone generator is designed according to the standard atmospheric pressure, that is, the atmospheric pressure is 101.3KPa

6. Air resource
The ozone generator is the air source, and the dew point of the air source is less than or equal to -20℃ or -40℃
7. Power resource
AC220V、AC380V/50Hz

2.4 Ozone system



Acomplete ozone disinfection system is composed of 1 ozone generator, 1 oxygen generator, 1 adsorption dryer, 1 freeze dryer, 1 air compressor (air storage tank), and air filter. Processing system composition; see the picture below for the overall system composition

The compressed air passes through the pipeline to the degreasing filter. After ordinary filtration, it is initially dewatered by the refrigerated dryer, drained through the automatic electronic drain valve of the precision filter, and then passed through the adsorption dryer for deep dewatering so that the air source dew point reaches The required 5--40℃, and then pass the dust filter to make the dust particle size less than 1μm, and become a qualified gas source (to meet the requirements of food-grade hygiene license)

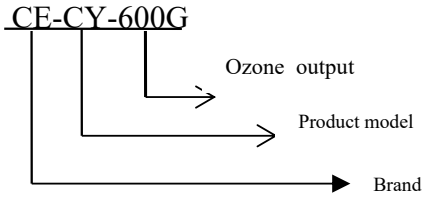
The qualified gas source is decompressed by the pressure reducing valve and enters the oxygen generator to produce 90% pure oxygen. The oxygen enters the ozone generator. In the mid-frequency high-voltage electric field of the ozone
generator, the oxygen generates ozone by electric shock. The product gas is ozonated gas After the flowmeter, pressure transmitter, temperature transmitter detect the flow, pressure, temperature, and the ozone monitor to detect the ozone concentration, the ozone is output to different applications, and different connection methods are used (the following examples are used

to illustrate)

Space disinfection applications are delivered to the space that needs to be disinfected through pipes or central air-conditioning air outlets; when the space reaches a certain ozone concentration, different levels of sterilization effects can be achieved; water treatment applications are ozone entering the contact oxidation tower through aeration. Or through the gas-water powerful mixing chamber, it has an efficient suction function, sucking ozone into the water, and the ozone absorption efficiency is 70%. At present, pure water, natural water, mountain spring water, mineral water, groundwater, etc. are filtered and other processes worldwide. Manufactured, ozone disinfection has been commonly used. In the application of ozone purification in tap water, the international standard is 0.4ppm solubility value is maintained for 4 minutes, that is, the CT value is 1.6. Our company equipped with an ozone generation system can achieve sterility in water

Chapter III Product

3.1 Name



3.2 Label

On the upper side of the machine, there is a nameplate indicating the model and rated value of the machine. Read the rated value carefully before installing and using the machine. The machine must run within the rated value, otherwise the machine may be damaged. Take the CE-CY-200G model as an example.

Ozone generator	
Model	CE-CY-200G
Ozone output	20-40G/H
Current	10A
Power	2500W
Voltage	AC220V50Hz
Air flow	20-30L/min
Temperature	<45℃
Humidity	<85%
Air pressure	<0.2Mpa
Ozone concnttation	100-120mg/L
Weight	120KG
Size(mm)	800*370*1400

3.3 Machine code

On the top of the side of the machine, an aluminum plate is riveted; please provide this code when contacting the manufacturer for maintenance. The code plate is shown in the figure below:

3.4 Mode and technical parameter

Model / Item	CY-200G	CY--300G	CY-400G	CY-500G	CY-600G
Ozone(g/h)	200g	300g	400g	500G	600g
Voltage	AC220V				
Frequency	50Hz				

Current(A)	12	17	22	26	32
Ozone current	10	15	2*10	2*12	2*15
Power(w)	2700	3700	4800	5700	7000
Pressure	<0.2MPa				
Air(L/min)	28	40	55	70	50
Temperature	<40℃				
Humidit	<80%				
Water inlet	1/2G				
Cooling water	10L/min	12L/min	20L/min	22L/min	24L/min
Air inlet	1/2G				
Ozone outlet	1/2G				
Cable(mm2)	3*2.5	3*4		3*6	
Size(mm)	800x300x 1400	900x470x 1400	910x640x 1400	1000x800x1400	
Weight(kg)	120	150	200	280	300

3.5 Function

The core components and peripheral supporting equipment of the ozone generator (drive power module, control transformer, discharge tube, jet, water pump, etc.) directly affect the operating efficiency and reliability of the equipment

3.5.1power of ozone

The CE series ozone generation system adopts a number of micro-gap dielectric barrier discharge design with independent intellectual property patent technology, which not only greatly improves the operating efficiency, but also increases the safety and reliability of the continuous operation of the system; independent research and development of high-performance circuit modules, with stability , High-efficiency, energy-saving and other characteristics, can cooperate and meet the complex use occasions of the owner, can realize the remote viewing and control of the working status of the machine, and can expand a variety of IO and communication interfaces (need to be customized). Compared with the general ozone generator, Performance, functionality and ease of use have been greatly improved. The whole machine adopts modular design,

which greatly facilitates the installation, overhaul and maintenance of the equipment
1. The main components of the circuit are Fairchild products (IGBT, IGBT module);
2. The amount of ozone generated is infinitely adjustable;
3. Self-inspection of necessary operating conditions for energized equipment is safer and more reliable;
4. Optimize over-voltage and under-voltage control and protection, more stable;
5. The fault protection action is optional, and the protection is more accurate;
6. The newly added power supply instantaneous power failure judgment function reduces the probability of false shutdown;
7. Equipped with air pressure overpressure protection, which effectively protects the safety of the machine and prolongs the service life of the machine
8. The box body is made of all stainless steel, which has a longer life. The main body adopts a bolt-locked door structure, which is safer and more convenient for maintenance;
9. Infrared remote control function, easy to control and quick to use;
10.The scheduled shutdown function makes it unnecessary to wait for shutdown for every disinfection!

3.5.2 Fly back transformer
1. Using high-quality A-level magnetic core, high magnetic flux, low heat, thereby reducing the power consumption of the whole machine.
2. The temperature control system can realize the functions of high temperature alarm, tripping, etc., using magnetic core protection paint to coat and encapsulate anticorrosion.
3. The high and low voltage windings are all made of H-class insulating materials, and the coil is made of high-quality oxygen-free copper\double glass copper wire. The vacuum lacquer high-temperature curing process is used, with high insulation level and strong overload capacity.
4. The product voltage level is 10kV and below, the frequency is 2000~5000Hz and other conventional and special transformers;
5. The transformer has the characteristics of explosion-proof, flame-retardant, environmentally friendly, pollution-free, maintenance-free, and strong short-circuit resistance.

3.5.3 High efficiency ozone discharge tube

Adopt a number of micro-gap dielectric barrier discharge design with independent intellectual property patent technology-high temperature resistant HQG non-glass structure discharge unit, this structure is extremely stable in use, long service life, high discharge efficiency, and is not easily damaged when encountering backwater;

The efficiency of operation is greatly improved, and the safety and reliability of the continuous operation of the system are increased. The technical parameters of the ozone system, such as the maximum ozone concentration is 270mg/L, the rated ozone concentration is 150mg/L, and the unit ozone power consumption is 8.5kwh, has reached the advanced level of similar products.

Due to the use of micro-gap discharge technology, the operating voltage of the system is reduced to 4 kV, which is much lower than the withstand voltage level of the insulating medium of the glass tube, which effectively avoids the occurrence of dielectric breakdown short-circuit faults and improves operating reliability. In addition, due to the high frequency discharge technology, the working efficiency of the ozone generator is improved and the size of the generator is significantly reduced.

The equipment is all made of high-quality ozone-resistant materials such as stainless steel SS304L and polytetrafluoroethylene (PTFE) to ensure the long-term reliability of the system.

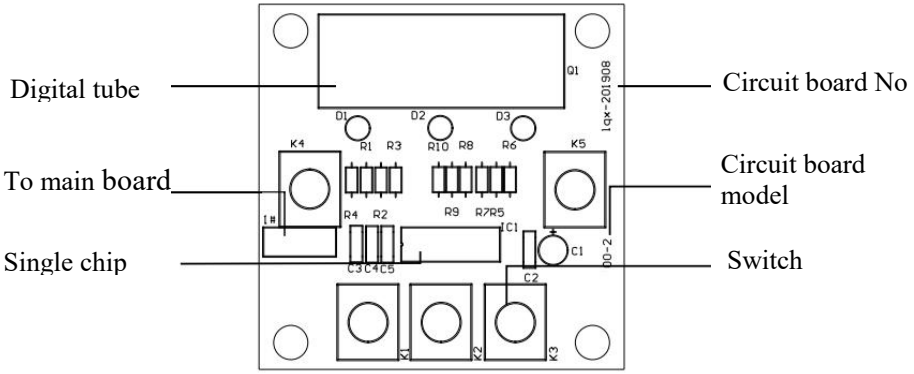
3.6 Structure of machine and main parts

This series of ozone generators are composed of stainless steel case, digital display control circuit board, circuit main board, high voltage transformer, powerful ozone generating tube, air pump, cooling fan, power switch, power socket, power cord, fuse, connecting pipe, etc.

3.6.1Digital display control circuit board

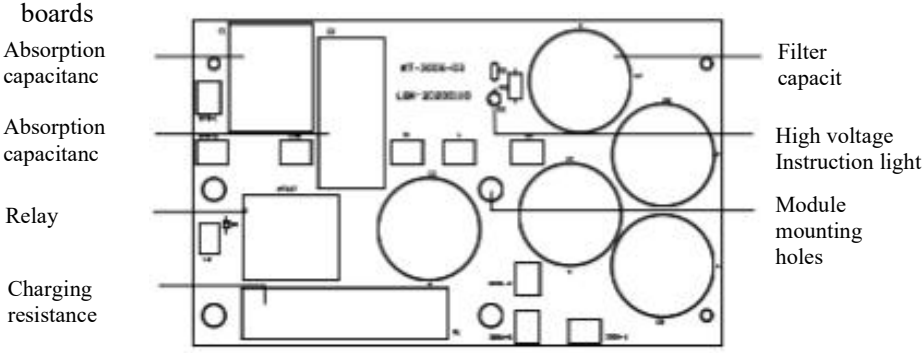
The digital display control circuit board is controlled by a single-chip microcomputer, which has strong anti-interference ability and scheduled shutdown appointment function; four-digit digital tube displays operating status, fault code, functional parameters and other values; Japanese touch switch, service life up to 100,000 times, infrared receiver The head can be remotely

controlled at a short distance. The whole board is sealed with epoxy resin, which has strong moisture resistance and is more durable than unsealed circuit boards in humid and corrosive gas spaces!



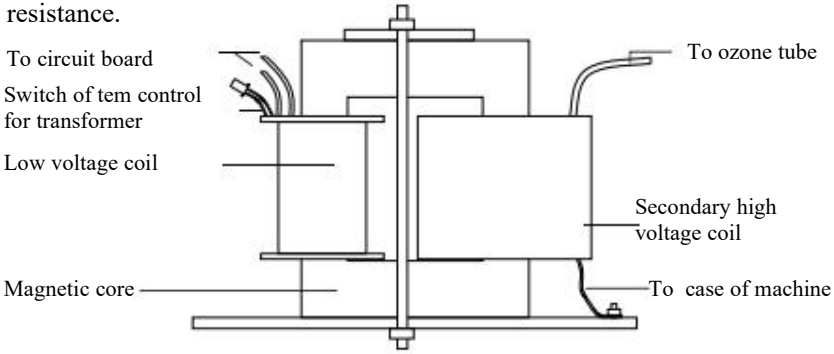
3.6.2 Circuit board

The circuit board adopts Samsung imported chips with adjustable frequency and voltage; German Infineon IGBT integration technology, high module withstand voltage and strong overload capacity; Japanese black diamond attracting capacitors, which can effectively absorb clutter and reduce voltage peaks; for adjustable resistors American brand, high precision adjustment, stepless adjustable; large area aluminum radiator, fast heat dissipation; other electronic components are selected from high-quality manufacturers; the whole board is sealed with epoxy resin, which has strong moisture resistance, and it is resistant to moisture and corrosive gases space is more durable than unsealed circuit boards



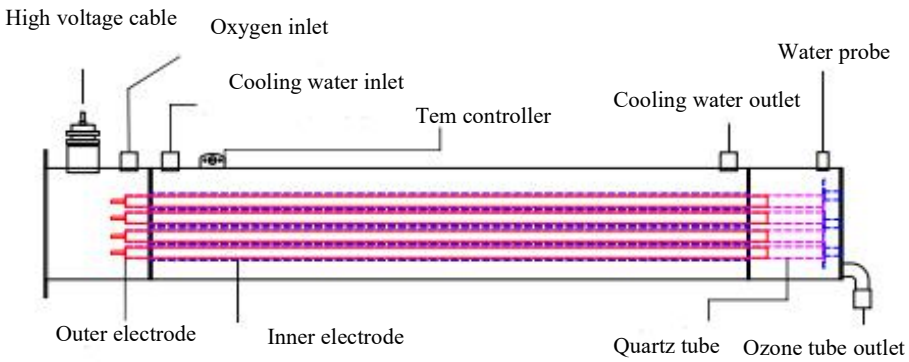
3.6.3 Flyback transformer

The high-voltage package is made of high-temperature resistant and high-voltage resistant material molds; high-quality A-level magnetic core, high magnetic flux, low heat generation, thereby reducing the power consumption of the whole machine; windings are made of H-level insulating materials, and the coil is high-quality oxygen-free copper\ Double glass copper wire winding, using vacuum dipping paint high temperature curing process, high insulation level, strong overload capacity; voltage level is 10kV and below, frequency is 2000~5000Hz; transformer is explosion-proof, flame-retardant, environmentally friendly, pollution-free, maintenance-free, Features such as strong short-circuit resistance.



3.6.4Powerful ozone generating tube

Adopting a number of micro-gap dielectric barrier discharge design with independent intellectual property patent technology-high temperature resistant HQG non-glass structure discharge unit, this structure is extremely stable in use, long service life, high discharge efficiency, and it is not easy to damage when encountering backwater; 304 stainless steel jacket, strong corrosion resistance, no rust; polyester vinyl seal ring, no ozone corrosion, good sealing performance, no tax leakage; high-voltage ceramic wiring column, good insulation, not easy to high-voltage flashover; open-die stretched heat sink, dense heat sink, seamlessly combined with stainless steel tube, good heat dissipation effect, higher ozone production (ozone is affected by temperature and water is stable, the higher the temperature , The faster the decomposition); temperature control protection function, automatic power-off function when the temperature is too high, protect the ozone generating tube!



Chapter IV Installation

4.1Check before installation

4.1.1 When the machine is shipped to your place, please carefully check that the package is not damaged before signing for it;
4.1.2 After unpacking, check the appearance of the whole machine for damage, if there is any damage, please contact our company immediately Or the dealer will repair it or replace it according to the degree of damage;
4.1.3 Check the product list that comes with the box, if any accessories are missing, please contact us!
4.1.4 When opening the package for the first time, please pay attention to maintaining the integrity of the package to avoid unnecessary trouble when changing;
4.15 After confirming that the machine is not damaged, power on according to the rated voltage indicated on the nameplate to test whether the machine is working normally (whether the current is within the normal range). If the machine is not working properly, please turn off the power immediately and promptly notify the company or dealer to report for repair;
4.1.6 Please observe whether the display digits, current, and indicator light are all at normal operating values;
4.1.7 Check whether the cooling fan is working normally, so as not to damage the machine due to excessive temperature!

4.1.8 There is a dehydroxylated quartz tube inside, please handle with care during transportation to avoid damage to the machine;
4.1.9 The cabinet is carefully made of stainless steel. In order to maintain its beauty and damage to various parts, please do not place heavy objects or stand on the cabinet during the construction process.

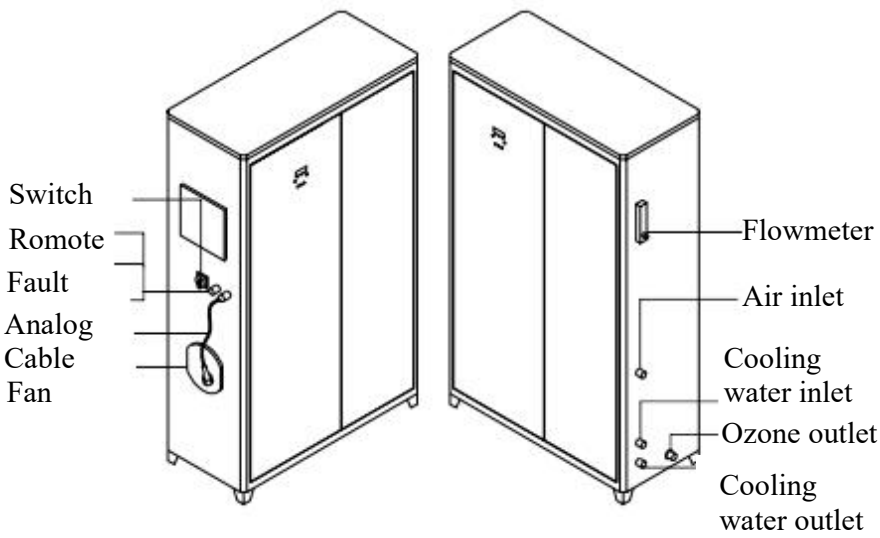
4.2 Installation condition

4.2.1 In indoor places with vents or ventilation devices, air conditioners or dehumidifiers can be installed indoors if conditions permit; try not to install them outdoors. If there are no conditions, they should be installed outdoors, please prevent rain!
4.2.2 The humidity of the installation environment should not be too high, there should be no obvious condensation on the surface of the machine; the environment temperature should not be higher than 50 degrees Celsius;
4.2.3 There should be no flammable, explosive, corrosive gas or liquid in the space;
4.2.4 No dust, floating fiber and metal particles;
4.2.5 The installation plane is firm and free of vibration, and the vibration is not more than 0.6G;
4.2.6 Excessive distance from electromagnetic interference source;
4.2.7 For machines that require an air supply source, be sure to use a clean air or oxygen source with a pressure dew point of 10°C to -50°C;
4.2.8 Please correctly connect the water, electricity and gas according to the label identification (not required for some models);
4.2.9 The power supply voltage is divided into AC220V50Hz and AC380V50Hz. Please be sure to connect the power supply voltage corresponding to the label, and pay attention to the power margin of the power supply to avoid damage to the machine;

Warning: Due to the damage caused by the above items, our company and the dealer will not bear all the maintenance and accessories costs arising therefrom! Please be informed!

4.3 Space and direction for installation

In order not to affect the service life of the product, reduce its performance and facilitate future repairs and maintenance, pay attention to the installation direction and surrounding space, and fix it correctly.(CE-CY-300G)



4.4 Installation way of different application

4.4.1 Space disinfection

Please adjust the gas pressure to ≤0.1MPa (ignored by the built-in gas source), adjust the gas and cooling water flow to appropriate values according to the machine nameplate instructions, and then turn the high current knob;

4.4.2 Water treatment application using aeration metho

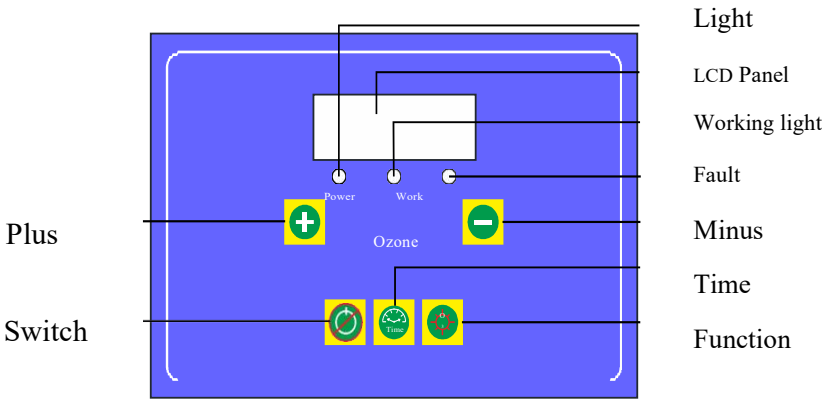
please place the ozone generator or the pipeline between the ozone generator and the aeration device higher than the highest point of the liquid level of the reaction tower, and then adjust the gas pressure to ≤ 0.2MPa, Adjust the flow of gas and cooling water to appropriate values according to the machine nameplate instructions, and then turn the high current knob;

4.4.3 Water treatment application with water ejector (also known as venturi jet)

It is recommended to install our company's anti-return bucket and one-way valve between the ozone output and the water ejector to avoid the moment of the pump working and stopping. The backflow of the ozone generator and oxygen generator will cause damage! Then adjust the gas pressure to ≤ 0.2MPa, adjust the gas and cooling water flow to the appropriate value according to the machine nameplate, and then turn the high current knob. For other special applications, please pay attention to the ozone dosage (please consult me for dosage) Sales staff) to avoid side effects caused by overdosing;

Chapter V Panel and operation

5.1 Panel and operation



5.1.1 On/off button: In off/on state, press this button for more than 2 seconds to turn on/off when the power indicator is on;
5.1.2 Power light: There is a main power switch on the right side panel of the machine, the main power light will be on after it is turned on, please turn off the main power if it is not used for a long time;
5.1.3 Work light: on when the machine is working normally, and off when there is a fault;
5.1.4 Fault light: it lights up when the machine has a fault;
5.1.5 Digital tube display: the working current display of the ozone part of the machine, the numerical display of the function and parameter setting;
5.1.6 Flowmeter: display the size of the inlet gas flow of the ozone machine (3G/D-15G/D models have no flowmeter and built-in air pump);
5.1.7Timing function key: If you want to automatically shut down at a time, press this key to enter the timing function under normal operation; after entering, it will display the number 1-** (the first item, timing minutes value setting, press "plus" at this time "Minus" button to change the timer minute value); press this button again to display 2-** (the second item, the timer hour value setting, at this time press the "plus" and "minus" buttons to change the timer hour value);

press this button again to enter Display 3-** (the third item, press the "plus" and "minus" buttons to determine whether to turn on the timer function, the number 0 means turn off the timer, the number 1 means turn on the timer); press this button again to exit the timer function key setting , Enter the normal operation state, the operation indicator light is on, and A*** is displayed
(The discharge current value is in mA).

5.1.8 Parameter function key: in normal operation, press this key to enter parameter setting; after entering, the number 1-** will be displayed (the first item, ozone discharge current size setting; at this time, press "plus" and "minus" keys to change Discharge current size); press this key again to display 2-** (the second item, power-on operation setting, at this time press "plus" and "minus" to determine whether to turn on the power-on operation function, the number 0 means off, the number 1 means Turn on); press this button again to display 3-**(The third item, set whether the air pump is on or not, press the "plus" and "minus" buttons to determine whether to turn on the air pump, the number 0 means off, the number 1 means on); press this button again to display 4-** (The fourth item is the current coefficient value. When the actual current differs greatly from the current displayed by the digital tube, the current coefficient value can be modified to make the two values consistent. The current display has been calibrated before leaving the factory and it is recommended not to change it); After pressing this key, exit the parameter function key setting and enter the normal operation state, the operation indicator light is on, and A*** (discharge current value, in mA as the unit) is displayed.

5.1.9 Digital "Plus" key: Under normal operating conditions, the discharge current can be increased (maximum 99%); under other conditions, the values of other parameters can be changed (see above for details)

5.1.10 Digital "Plus" key: In normal operation, the discharge current can be increased (maximum 99%); in other states, the values of other parameters can be changed (see above for details).

Digital "minus" key: Under normal operating conditions, the discharge current can be reduced (minimum 0%); under other conditions, other parameter values can be changed (see above for details).

5.1.11 The remote control buttons are the same as the buttons on the machine surface (the corresponding functions are also the same).

5.2 Side of machine

5 2 1.. Power cord: connect to 220V 50Hz power supply; the power supply must have a ground wire, otherwise there will be a risk of electric shock!

5 2 2.. Remote, fault, analog interface: pay attention to distinguish multiple lines on the aviation plug; fault can give a remote signal; remote dry contact can realize remote switch machine; analog-(4 20mA) can automatically Adjust the amount of ozone.
5 2 3: Main power switch. The main power light will be on after it is turned on. Please turn off the main power if it is not used for a long time.
5 2 4: Air source input port: oxygen or air can be input as the air source of the ozone machine.
5 2 5: Ozone output port: ozone machine used in the water treatment industry, a check valve and anti-return bucket (FS-01/02) must be installed between the ozone output port and the jet suction device to ensure that water does not Get inside the machine!
5 2 6: Cooling water inlet: It is recommended to use tap water to cool the cooling water; if water with impurities is used for cooling, the water inlet of the machine must be equipped with a PP cotton water filter, otherwise it will cause poor heat exchange in the ozone tube and eventually cause ozone Concentration drops; it is strictly forbidden to use water containing heavy metal oxides such as turbidity, sewage, seawater, groundwater, etc. to cool the machine, otherwise it will cause the ozone generating tube cooling water channel to scale, corrode and oxidize!
5 2 7: Cooling water outlet: the best outlet water temperature should be around 25℃, high temperature needs to increase the cooling water flow.

5.3 Machine fault code

The machine will detect temperature, pressure, current and other data during operation. If the detected value exceeds the dangerous value, a fault code will appear, and the fault indicator will light up. Please handle the fault according to the corresponding solution of the fault code. After the processing is completed, power on and run again. Yes, the corresponding solutions for the fault code are as follows:

Code	Meaning	Solution
Err1	Ozone tube temperature is high	Check whether the cooling fan is damaged, whether the temperature control is damaged, if the situation persists, please report for repair.

Err2	Air pressure is too high	Check if the inlet pressure is too high and if there is resistance at the outlet, please report for repair if the situation persists.
Err3	High cooling water temperature	Check whether the cooling water is input and the flow is too small.
Err4	High tansformer temperature	Check whether the cooling fan hole is blocked and whether the flyback transformer fan is not working.
Err5	Ozone tube have water	Check whether the water content of the compressed air is too high, and whether the ozone outlet backwater prevention measures are perfect.
Err6	Overcurrent protection	Check whether the actual current indication is higher than the set overcurrent protection value.
Err7	IGBT failure	After checking the voltage and interference, turn off the main power supply and restart every 1 minute. If the situation persists, please report for repair

Chapter VI fault diagnosis and maintenance

6.1Common faults and their solutions

No	Failure phenomenon	Cause Analysis	Exclusion method
1	The machine is not powered	There is no power to the socket/electric cabinet; the fuse of the machine is burned out;	Check the power supply; Replace the fuse and check the voltage;
2	No air output from ozone outlet	The air pump is not turned on; the internal pipeline falls off; the internal pipeline leaks; the internal pipeline is discounted;	Press the function key to enter 3-01 view; check the internal pipeline; Check all joints (soapy water can be used) for air leakage; Reconnect the pipelines;

3	Machine alarm, no working current, No ozone	Whether the fault code is displayed; the main board fuse is damaged; the main board is damaged; The main board to the high-voltage package wire is open; the high-voltage package is damaged;	Solve according to the fault code method on the previous page; Replace the same type insurance; Replace the motherboard; Check the connection line between the main board and the high-voltage package to replace the high-voltage package;
4	Low working current and low ozone output	The amount of ozone is adjusted too small; The resistance of the ozone output port is too large; there is water and backwater in the generating tube; the output voltage of the circuit board is too low; the high-voltage coil is short-circuited; Quartz tube breakdown; High-voltage package high-voltage wire / ground wire open circuit;	Press the "+" button to increase the amount of ozone; Check the air output of the ozone output port; check the humidity of the air source and the reasons for the backwater; replace the circuit board; Replace the high pressure package; Replace the quartz tube inside the ozone tube; reconnect the high-voltage wire or ground wire;
5	Control panel does not display, display few strokes, key failure, remote control failure	The five-pin cable is broken; the digital tube is damaged; There is too much dust in the sticker; the battery of the remote control is dead; the display control board is damaged; the touch switch button is damaged;	Re-plug or replace the flat cable; replace the digital tube and circuit board; Clean up the dust; Replace with new battery; Replace display control board; Replace the touch switch, remote control;

Note: If you still cannot solve the problem or the part involved in repair after the appeal inspection, please contact our sales or after-sales service department directly.
Warning: All maintenance or repairs should be performed in the power-off and pressure relief state to ensure the safety of operators!

6.2 Maintenance items

6.2.1 Cleaning the fan filter:
After the air filter on the fan has been working for a period of time, the dust will block the pores of the filter (some models have no filter), causing poor heat dissipation of the machine, which will damage the machine. It must be cleaned regularly (cleaning once every 15-30 days) , Less dust, clean workshop can be cleaned every 2-3 months.)
6.2.2 Internal dust cleaning:
After the machine has been running for a period of time, dust will enter the inside of the machine. Dust and humid weather can easily cause high-voltage ignition of the high-voltage package, and the circuit board is easy to short-circuit. Please blow the inside of the machine with dry air for 2-3 months; Please use a hot air gun to dry the machine before using it on wet days!
6.2.3 If the remote control is not used for a long time, please remove the battery in the back cover to prevent battery leakage and rust.
6.2.4 Cleaning of ozone generating tube:
Special reminder: Under normal circumstances, do not disassemble the generator tube for cleaning. It is possible that the ozone generator cannot work due to your abnormal operation and installation. The manufacturer will not bear the warranty obligation. Therefore, you must confirm you before disassembling and washing. Can you have enough professional skills? If you don't have enough professional skills, you can directly contact our sellers or after-sales service department.
After inputting an unclean gas source or after normal use for more than 12 months, the discharge tube wall inside the ozone generating tube will have attachments that will block the discharge gap and make the discharge insufficient, which may cause a decrease in ozone production. The ozone generating tube needs to be cleaned.
Cleaning method: Remove the screw rod connecting the ceramic terminal and the flange; gently pull out the quartz tube; directly use the cleaning liquid (such

as all-purpose water or other liquids that can be used for cleaning), and gently wipe the outer wall of the quartz tube with a cloth ; Then pour in water under pressure to rinse the inner wall of the stainless steel, rinse it repeatedly and dry it with dry gas; wipe off the water droplets on the outer wall of the quartz tube with a dry cloth strip; then install the quartz tube back into the stainless steel tube.

6.3 Maintenance schedule：

○: indicates that the item needs to be inspected, adjusted or cleaned on schedule;
●: indicates that the item needs to be replaced on schedule;
This table is the maintenance/replacement cycle recommended by the manufacturer. The user can change the maintenance/replacement cycle appropriately according to the actual operating environment.

Item	Work	Month	1/2 year	1 year	2 year	3 year	PS
Fan filter	Clean /change	○		●			
Blow and dry	Clean	○					
Clean ozone tube	Clean		○				
Quartz tube	Change			●			
Inner electrode	Change				●		
Circuit board	Change					●	
Transformer	Change					●	
Display board	Change					●	

6.4 Periodic table of equipment accessories and spare parts

No	Item	Position	Life-span	PS
1	Maste board	Inner	3-5y	Spare
2	Circuit board	Inner	3-5y	Spare
3	Power Cable		3-5y	Change
4	Power Switch	Side	3-5y	Spare
5	Pump	Side	3-5y	Spare

6	Cooling Fan	Side	1-3y	Spare
7	Transformer	Inner	3-5y	Spare
8	Ozonetube	Inner	3-5y	Spare
9	Inner quartz tube	Inner of tube	1-2y	Change
10	Inner electrode	Inner of tube	1-3y	Change
11	Steel discharge net	Inner of quartz tube	3-5y	Change
12	Ceramic terminal	Top of ozone tube	3-5y	Spare
13	Temperature control probe	Middle of ozone tube	3-5y	Spare
14	Gas delivery pipe	Pump-ozone-outlet	1-3y	Change
15	Ozone tube sealing ring	Quartz tube-ceramic column	3-5y	Spare
16	Flex line	Control Board-Motherboard	1-3y	Change
17	High-voltage cable	Transformer-ozone tube	1-3y	Change
18	Stickers	Front panel	3-5y	Spare
19	Pipe clamp	Outside of air pipe	2-3y	Change

Reminder:

Equipment should be maintained and maintained regularly, and consumable accessories should be replaced regularly so that the equipment can maintain stable operation and prolong the service life of the equipment, because general wearing parts and consumable accessories are more prone to failure. For example, circuit boards, quartz tubes, oxygen molecular sieves, filters, etc., have aging or service life that cause equipment failures. After long-term use and aging, they will not meet the factory parameter standards; for the equipment to run stably and meet the standards, please refer to the above table Replace parts and consumables regularly.
Expired spare parts: When the service life is reached, spare parts should be purchased for stock backup;
Regular replacement of accessories: the accessories of this type are consumables, which cannot reach the factory technical standards after a certain period of use, and then be replaced;
Except for consumables (silica gel dryer, oxygen generator, filter, etc.), the manufacturer promises that all accessories are guaranteed for one year

6.5Description of warranty terms and warranty card

Dear product users:
Thank you very much for choosing our products, and sincerely congratulate you on becoming a user of our high-quality products. In order to ensure that you can fully enjoy the high-quality after-sales service provided by our company, please read this product user service guide carefully after purchasing the product , And keep it properly.

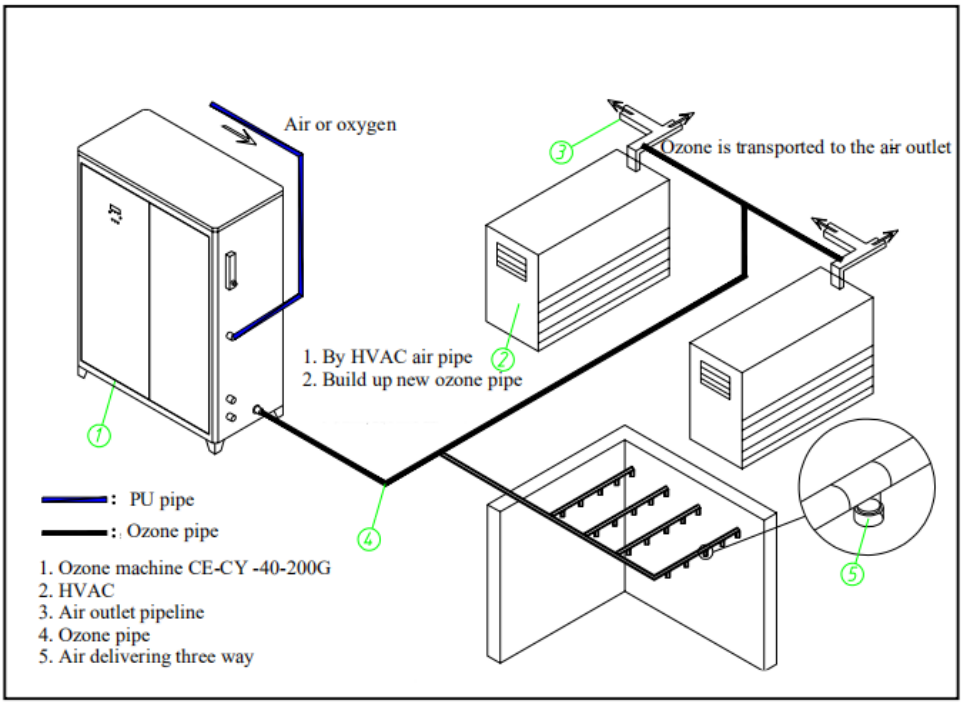
Our company's after-sales service commitment:
1. The company's full range of products (except consumables and accessories) are provided with one-year free warranty and lifetime maintenance from the date of purchase.
2. If the following matters occur, the company will not bear the warranty obligation, but can charge material fees for repairs：

①The environment is too humid or water enters the machine, causing product damage;
②Unauthorized modification of the product structure leads to product damage;
③Product damage caused by natural disasters or other force majeure;
④Unable to provide proof of purchase and warranty card;
3. Need to provide on-site service, the customer must pay the travel expenses, our company or the dealer can determine whether the on-site service is based on the distance.
4. If the sterilization event fails to meet the standards due to improper operation or machine failure, the company shall not be liable for compensation for the content of the event.

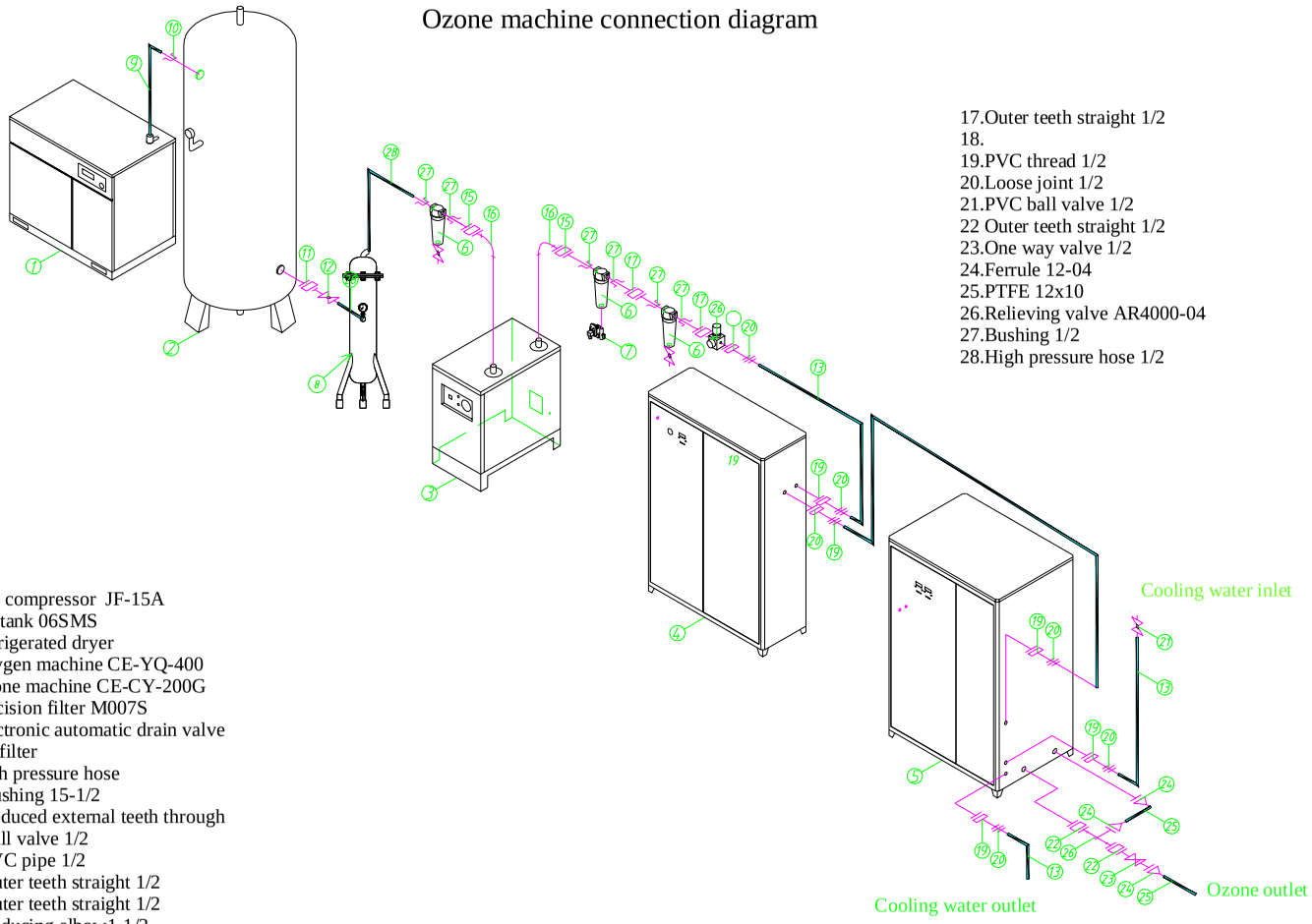
Warranty

Client		Contact	
Tel		Email	
Add			
Product		Model	
Date of order		Machine Code	

Installation illustration

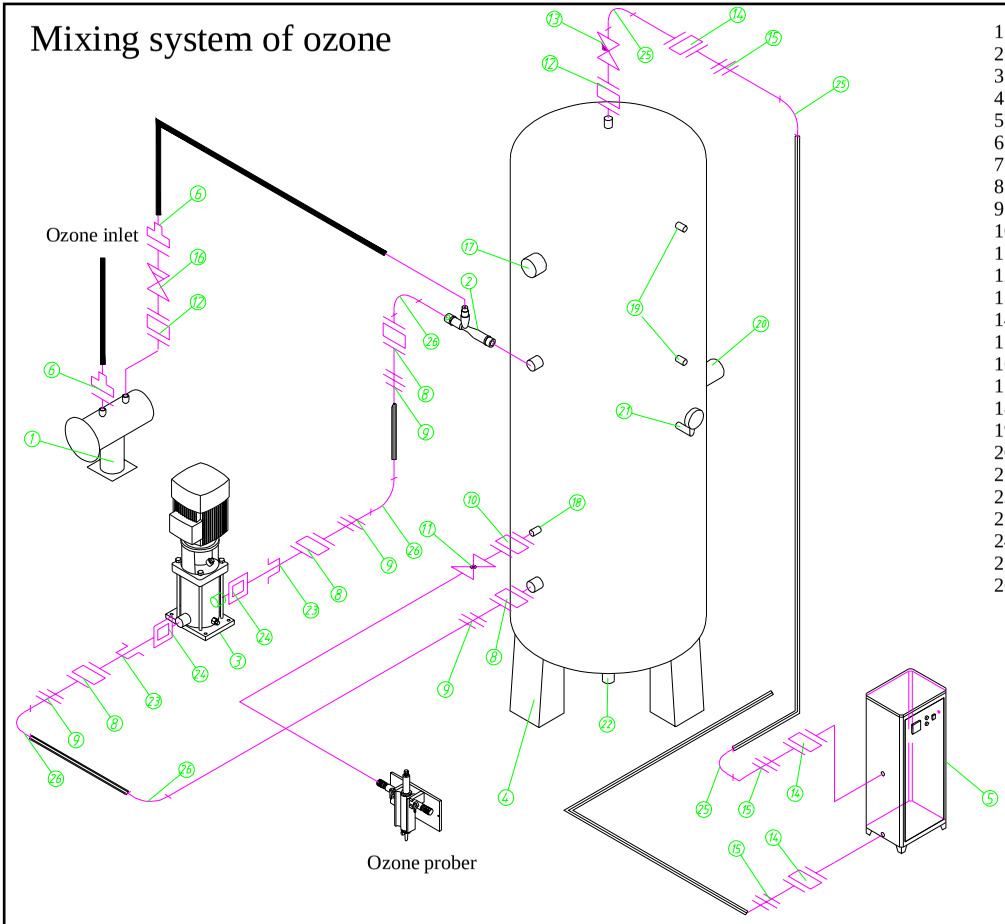


Ozone machine connection diagram



1. Air compressor JF-15A
2.Air tank 06SMS
3.Refrigerated dryer
4.Oxygen machine CE-YQ-400
5.Ozone machine CE-CY-200G
6.Precision filter M007S
7.Electronic automatic drain valve
8.Oil filter
9.High pressure hose
10.Bushing 15-1/2
11.Reduced external teeth through
12.Ball valve 1/2
13.PVC pipe 1/2
14.Outer teeth straight 1/2
15.Outer teeth straight 1/2
16.Reducing elbow1-1/2
17.Outer teeth straight 1/2
18.
19.PVC thread 1/2
20.Loose joint 1/2
21.PVC ball valve 1/2
22 Outer teeth straight 1/2
23.One way valve 1/2
24.Ferrule 12-04
25.PTFE 12x10
26.Relieving valve AR4000-04
27.Bushing 1/2
28.High pressure hose 1/2

Mixing system of ozone

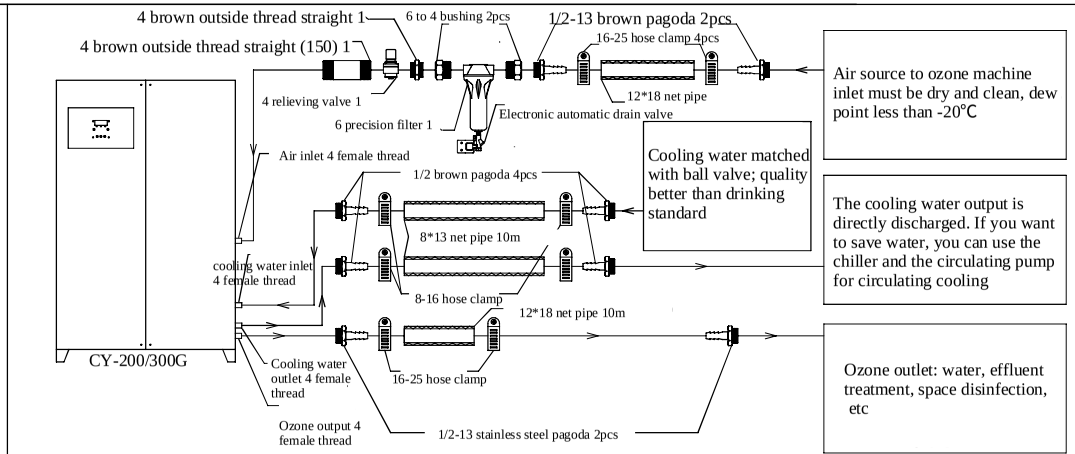


1. Backflow bucket
2. Jet
3. Recycling pump
4. Mixing tower
5. Ozone destroyer
6. Quick screw through 12-04
7. ORP prober
8. Outer teeth straight 32
9. Loose joint 32
10. Outer teeth straight 1/4
11. Ball valve 1/4
12. Outer teeth straight 1/2
13. Needle valve 1/2
14. Outer teeth straight
15. Loose joint 20
16. One way valve 1/2
17. Water inlet 2
18. Sample inlet 1/4
19. Liquid level inlet 1/4
20. Water outlet 2
21. Pressure gauge 1/4
22. Outfall 1
23. Bushing 1.2-1
24. Inside thread through1.2
25. Bend straight 3/4
26. Inside bend straight 1

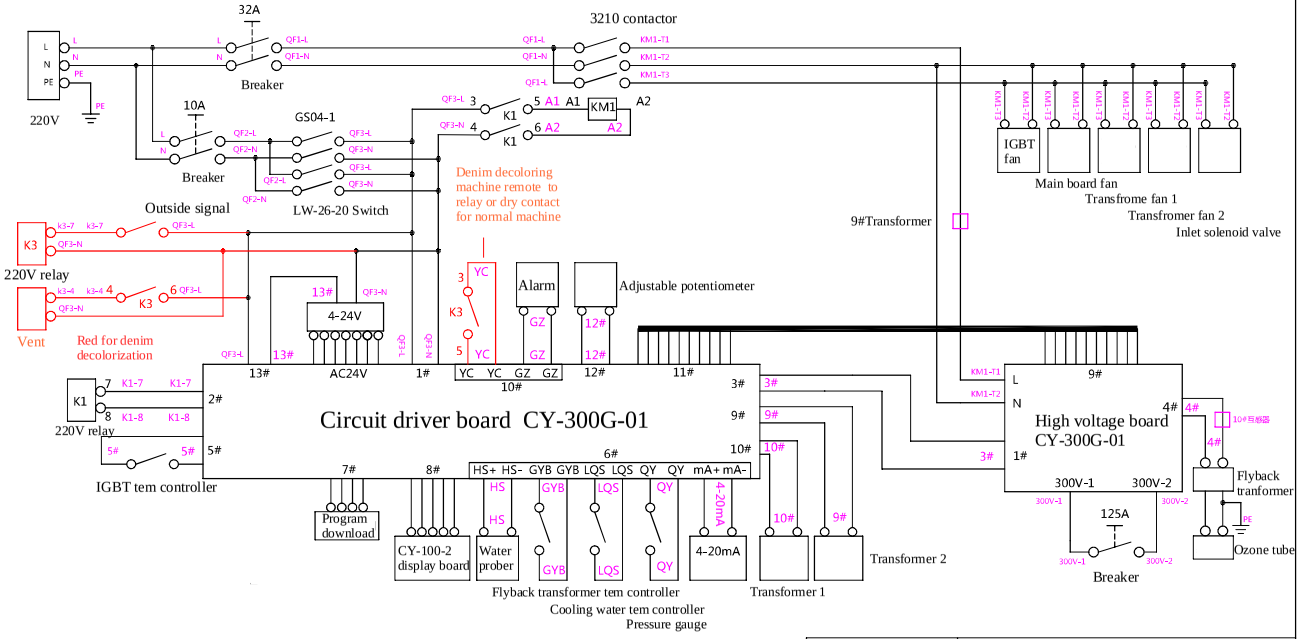
: 12x10 PTFE pipe
: 32 Stainless steel pipe
: 20 Stainless steel pipe

Oxygen ozone generator connection diagram
CE-CY-200-600G

Air ozone generator connection diagram
CE-CY-200-600G



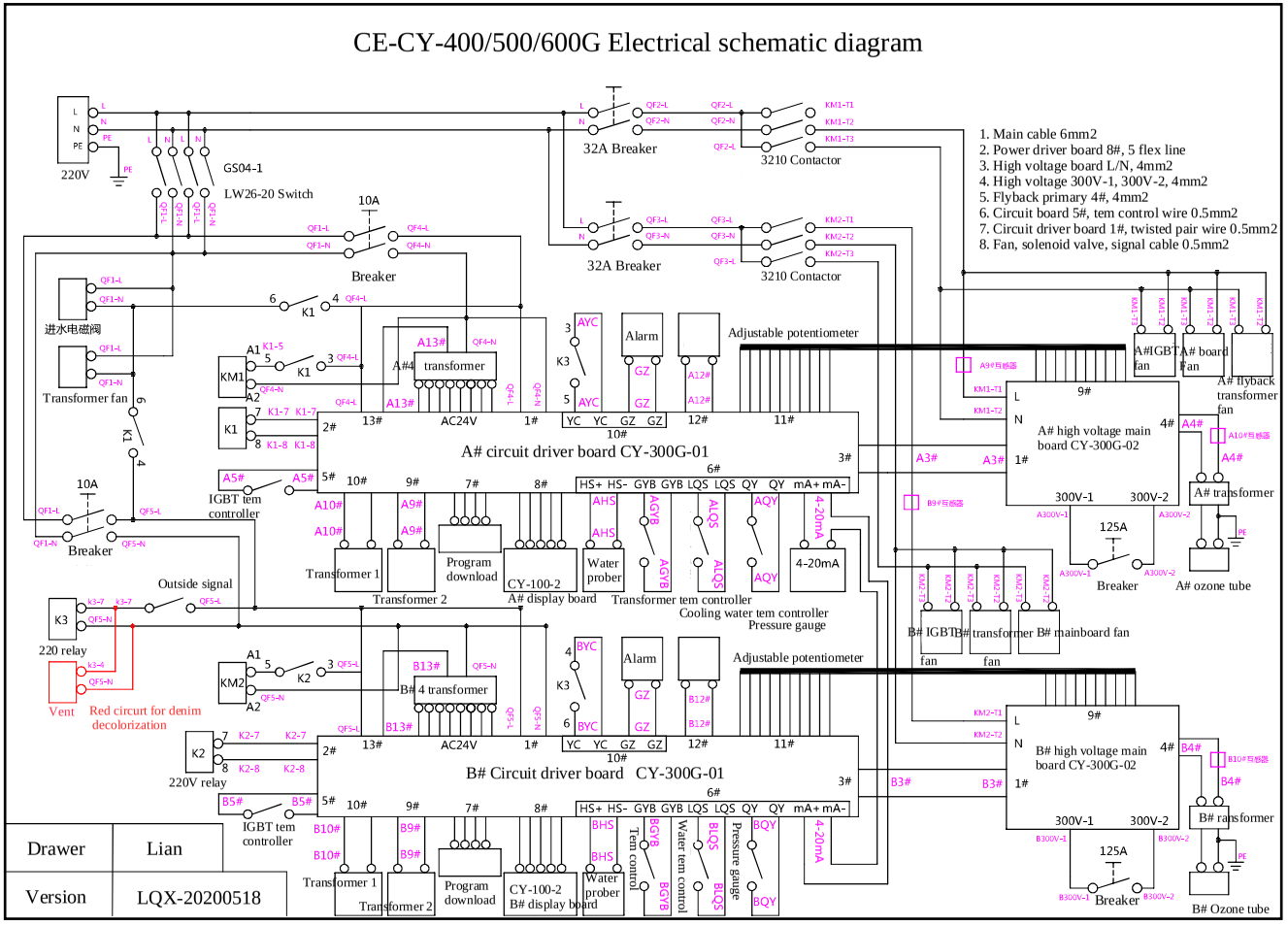
CE-CY-200/300G Electrical schematic diagram



1. Main cable 200G 2.5mm2, 300G 4mm2
2. Power drive board 8#, 5 flex line
3. High voltage mainboard L/N 4mm2
4. High voltage mainboard 300V-1, 300V-2, 4mm2
5. Flyback transformer primary 4#, 4mm2
6. Circuit board 5#, tem controlwire 0.5mm2
7. Circuit driver board 11#, twisted pair wire 0.5mm2
8. Fan, solenoid, signal, control wire 0.5mm2

Version	LQX-20200518
Drawer	Lian
Auditor	Zhao

CE-CY-400/500/600G Electrical schematic diagram




ENVIRONMENT

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