ROHS标准认证

CE 安全认证

广州市大环臭氧设备有限公司

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大环科技

BNP ozone technology Co., Ltd

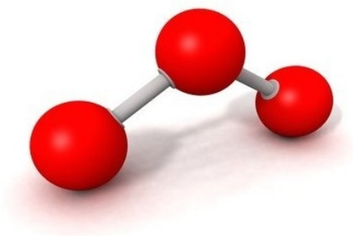
Leading enterprise in ozone disinfection ● Designated brand of hundreds of famous corporations

臭氧消毒领先企业●百家名企指定品牌

广州市大环臭氧设备有限公司

BNP ozone technology Co., Ltd

Welcome to



公司简介 Company profile

BNP 0ZONE(大环臭氧)公司，成立于1998年,是专业从事臭氧技术研究、开发、臭氧系统设计、制造和服务的专业化国际化公司。一直致力于臭氧技术的产业化和技术创新。长期为饮用水处理、中水回用处理、化妆品容器消毒杀菌、水产养殖增氧消毒杀菌、家禽养殖业、游泳池水消毒杀菌、无菌车间、制药厂及食品厂消毒杀菌、GMP认证、食品保鲜储藏、果蔬农药降解、污水处理（医院、食品厂、电镀厂等工业污水及城市污水深度处理）工业废气脱臭处理等客户提供专业化服务。得到众多用户的首肯与赞誉！

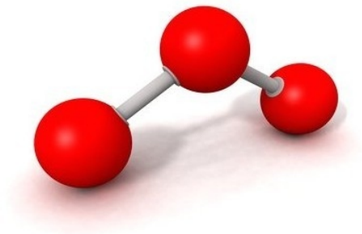
大环非常重视企业的科技进步，汇集了一批高技术水平及丰富经验的研发技术人员，不断的开发研制新型高品质的臭氧设备！

公司紧密结合市场需求，以臭氧技术为核心、精益求精，满足客户需求，致力于臭氧等环保技术的开发与应用。公司多个系列产品在国内外处于领先地位。臭氧设备以技术先进，产业化及规模成本优势在国内国际上处于有力竞争地位。大环公司本着“质量第一、诚信经营”的企业理念，坚持”创新、质量、服务、效率“的企业发展宗旨，竭诚为国内外客户提供优质的产品和高品质的服务。

BNP ozone Co., Ltd (hereafter referred to as BNP), established in 1998, is an international company specializing in R&D, ozone system design, manufacturing and serving. We have been committed ourselves to ozone technology industrialization and innovation, and have been serving for many customers in drinking water, reclaimed-water recycling, cosmetic container surface, aquaculture, poultry, swimming pool, pharmaceutical workshop, food factories, food storage, fruit and vegetable pesticide degradation, wastewater treatment (hospital, food factory, electroplate factory and municipal wastewater) and industrial odor removal.

BNP is a technology-oriented company, attaching great importance to the advanced technology. The R&D engineers have good skills and rich experience in the ozone industry, continuously developing high quality ozone products.

BNP commits to the development of technology and application closely according to the market demand, and the series of the products are in the leading position in domestic market. Advanced technology, industrialization and volume advantage has made our ozone products extremely competitive in both domestic and international market. “QUALITY FIRST, BUSINESS INTEGRITY” is BNP’s company concept, and continuously “INNOVATION, QUALITY, SERVICE, EFFICIENCY” is BNP’s source of development. BNP will make every effort to provide high quality product and excellent service to customers around the world.



大环臭氧，完全杀菌保证

臭氧消毒领先企业
百家名企指定品牌

BNP®

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部分知名用户
Part of the notable clients

水处理 Water treatment

- 可口可乐公司（上海、珠海、哈尔滨等分厂）
  Coca-Cola (factories in Shanghai, Zhuhai, Harbin, etc)
- 顶新集团(康师傅152个厂，多达上千套臭氧设备)
  Ting Hsin International Group (152 factories of Master Kong, supplying more than 1,000 ozone systems)
- 广州王老吉药业股份有限公司
  Guangzhou Wanglaoji Pharmaceutical Co., Ltd.
- 华润（滁州）雪花啤酒有限公司
  Huarun Snow Beer (chuzhou) Co., Ltd.
- 今麦郎食品有限公司
  Jinmailang Foods CO. Ltd
- 华润怡宝食品饮料有限公司
  Céstbon Food & Beverage Co., Ltd.
- 广东乐百氏集团有限公司
  ROBUST CO.LTD
- 北大荒五大连池矿泉水股份有限公司
  Royal Spring Co., Ltd
- 西藏5100水资源控股有限公司
  Tibet 5100 Water Resources Holdings Ltd
- 广东天地壹号饮料有限公司
  Guangdong Tiandi Yihao Beverage Co., Ltd
- 江西润田天然饮料食品有限公司
  Jiangxi Runtian Beverage Co., Ltd
- 福建达利园集团
  Fujian Dali Group
- 广东健力宝集团有限公司
  Jianlibao Group
- 中国汇源果汁集团有限公司
  China Huiyuan Juice Group Limited

国际OEM生产 International OEM cooperation

- 大环臭氧为美国ATOZ OZONE公司OEM生产氧气发生器、臭氧发生器
- 大环臭氧为伊朗KOOHSARAN CO.公司OEM生产氧气发生器、臭氧发生器

空间、化妆品、制药杀菌消毒、GMP认证
Air disinfection, surface disinfection for cosmetic, pharmaceutical , GMP workshop

- 广州王老吉药业股份有限公司
  Guangzhou Wanglaoji Pharmaceutical Co., Ltd.
- 国家粮食储备局成都粮库
  State Grain Administration, Chengdu depot
- 国家粮食储备局重庆粮库
  State Grain Administration, Chongqing depot
- 福建达利园集团
  Fujian Dali Group
- 广东星河生物科技股份有限公司
  Guangdong Starway Bio-technology Co., Ltd
- 韶关市星河生物科技有限公司
  Guangdong Starway Bio-technology Shaoguan branch
- 广州好迪化妆品有限公司
  Guangzhou Houdy Cosmetics Co., Ltd.
- 广州立白企业集团有限公司
  Liby group Co., Ltd
- 浙江蒂斯波斯护理用品科技有限公司
  Zhejiang Teece Persian care products Technology Co. Ltd.
- 广州环亚化妆品科技有限公司
  Guangzhou Huanya Cosmetics Technology Co., Ltd
- 浙江一鸣食品股份有限公司
  Zhejiang Yiming food Co., Ltd

养殖增氧 Aquaculture

- 新加坡国家动物园
  Singapore Zoo
- 菲律宾马尼拉海洋馆
  Manila Ocean park
- 广州长隆集团有限公司
  Guangzhou Chime-Long Group Co.,Ltd
- 珠江口中华白海豚国家级自然保护区管理局
  Pearl River Nature Reserve Administration

分质供水 Different quality water supply

（涵盖了广州80%的分质供水，100余家）
Served for 80% of different quality water supply in Guangzhou, more than 100 projects

- 广东省政府机关大院
  Guangdong provincial government office building
- 广东省政府办公大楼
  Guangdong provincial government office building
- 中国第九届全国运动会运动员村
  Athletes' village of the 9th national games
- 广州体育馆体育花园
  Guangzhou gymnasium sports garden
- 广州奥林匹克体育馆旁中海康城
  Guangzhou Olympic stadium
- 广州元邦航空家园
  Guangzhou State Aviation
- 广州市本田汽车
  Guangzhou Honda automobile
- 广州空军部队广空花园
  Guangzhou air force Guangkong garden

臭氧泳池处理 Swimming pool water treatment

- 戴丝乐（法国）泳池设备
  Desjoyaux pools
- 北京西城区老干部局游泳馆
  Beijing Xicheng District cadre bureau
- 恒大地产
  Evergrande Real Estate Group
- 国务院机关事务管理局达园宾馆游泳馆
  Garden Hotel of the Government Offices Administration of the State Council
- 北京丽都假日酒店
  Beijing Lidu Holiday hotel
- 解放军总参防化研究院
  The people's Liberation Army, research institute of chemical defense
- 北京水晶宫洗浴城
  Beijing Crystal Palace Bath Club

污水、废气处理 Wastewater & odor treatment

- 石家庄市良村南污水处理厂
  Shijiazhuang Liang Village wastewater treatment plant
- 中山统一企业有限公司
  Zhongshan Tongyi Enterprise Co., Ltd.
- 石家庄市良村南污水处理厂
  Shijiazhuang Liang Village wastewater treatment plant
- 湖北宜昌九天环保科技有限公司
  Jiutian Environment technology Co., Ltd
- 香港华润集团总务部
  China Resources (Holdings) Company Limited
- 河北盛华化工有限公司
  Hebei Shenghua Chemical Co., Ltd.
- 广州市第八人民医院
  Guangzhou No.8 hospital
- 湖北宜昌九天环保科技有限公司
  Jiutian Environment technology Co., Ltd

塑料薄膜 Extrusion Coating & Laminating

- 江门市辉隆塑料机械有限公司
  Huilong plastics machinery Co., Ltd
- 浙江省瑞安康宏机械有限公司
  Zhejiang Kanghong Machine Co.,Ltd
- 温州好士旺纸塑包装材料有限公司
  Wenzhou Haoshiwang Plastic Co., Ltd
- 太仓亿乐包装材料有限公司
  Taicang Yile packing material Co., Ltd.

布料牛仔褪色 Textile decoloration

- 实力成衣加工（柬埔寨）有限公司
  SL Garment Processing (Cambodia)
- 江门市宝发纺织服饰织造有限公司
  Perfect Textile & Garment Manufacturer Co., Ltd
- 利达莱洗水厂
  Lida Lai washing plant

项目流程

Project processing

大环产品中心
BNP products center

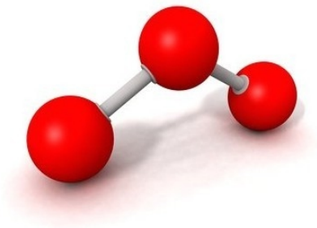
走进大环：

踏过了漫漫征途
我们的汗水汇聚如江
多少的风雨历程
换得今日的辉煌
品牌让我们立业
创新的理念让我们不断成长
智慧使我们在行业中绽放
精品促进我们翱翔

OZ系列臭氧发生器 *OZ series ozone generator*

该系列臭氧发生器应用IGBT集成技术（已申请国家专利），由电晕放电产生臭氧，放电室由脱羟石英结构管状发生器组成，独特的防回水设计（回水不易损坏机器），寿命远大于一般厂家，电路采用模块设计，介电元件、连接件和管道均采用抗氧化器件，不易氧化，工作寿命长，电晕面积大，温度低，使臭氧浓度大幅提高。其性能指标和实际使用效果优于目前的多数同类产品。

The OZ series products are corona discharge type ozone generators, with advanced IGBT power supply and ozone generation chambers utilizing dehydroxylation quartz glass structure dielectric. The special back flow water prevention design, modular circuit, anti-oxidant dielectric components, connection and pipelines have ensured the products have longer lifespan, bigger corona discharge area, lower temperature and higher ozone concentration. The specification and actual performance exceeds most of the similar products.



产品特点 *Product features*

1、采用风冷，臭氧量可调节
2、独特的结构设计，使回水不易损坏臭氧发生器
3、发生器单元工作寿命长，可连续工作
4、外壳为不锈钢外壳
5、两用型，空气源和氧气源根据需要选择使用

1. Air-cooling, continuous ozone output adjustable
2. Special design, and back flow water does damage product easily
3. Long lifespan of the ozone module
4. Stainless steel enclosure
5. Compatible with air or oxygen source

产品系列 *Product series*

- OZ-3G-15G

组成 *Parts*

- 发生器单元 Ozone module
- 不锈钢外壳 Stainless steel enclosure
- 60L空压机 60L/min air pump
- 电流表 Ammeter
- 台湾产150风扇 Taiwan 150 fan

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

OZ-3G-15G产品参数 OZ-3G-15G product parameters

参数 Parameter / 型号 Model	OZ-3G	OZ-5G	OZ-7G	OZ-10G	OZ-15G
臭氧产量（g/h） Ozone production	3	5	7	10	15
冷却方式 Cooling method	风冷 air-cooled				
最大臭氧浓度 Max. output concentration（g/m3）	氧气源Oxygen source：25～45　空气源Air source：5～15				
长x宽x高 L*W*H(mm)	350x250x520	350x250x580		350x250x630	
重量 Weight(kg)	11	12	12	13	13
功率 Power (W)	140	160	160	180	180
使用电源 Electrical power supply	220V 50HZ (中国销售)　110V 50～60HZ（国外部分地区销售）				
使用气源 Gas source	使用氧气（瓶装气或氧气发生器）气源;或使用洁净干燥空气源 oxygen or dry clean air				

配置硅胶干燥筒连接示意图
(Equipped with silica dryer connection diagram)

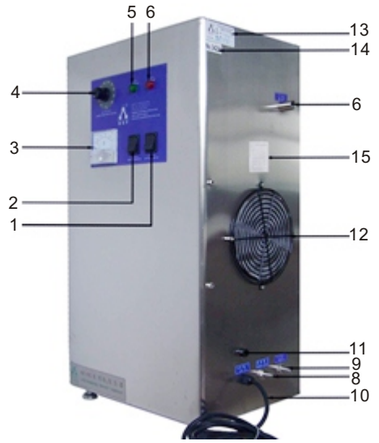
配置硅胶干燥筒连接示意图2
(Equipped with silica dryer connection diagram 2)

OZ-3G-15G 产品图 OZ-3G-15G product photos

OZ-3G

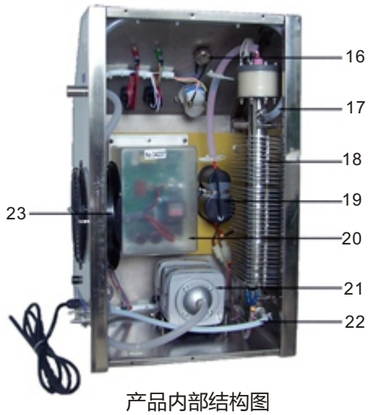
OZ-5G、7G

OZ-10G、15G



产品外部图
(Product external view)

1.空气泵开关	1.Air pump switch
2.整机电源开关	2.Power switch
3.电流表	3.Ammeter
4.臭氧调节旋钮	4.Ozone adjustment knob
5.臭氧工作指示灯	5.Ozone working indicator
6.气泵工作指示灯	6.Air pump working indicator
7.空气输出口	7.Air outlet
8.臭氧输出口	8.Ozone outlet
9.臭氧输入口	9.Oxygen inlet
10.电源线	10.Power cable
11.保险座5A保险丝	11.Fuse tray 5A fuse
12.风扇网	12.Fan nets
13.产品合格证	13.Manufacturer’s certificate
14.机器编号	14.Serial number
15.机器技术参数表	15.Specification



产品内部结构图
(Product internal structure)

16.电流调节电位器	16.Current regulating potentiometer
17.臭氧发生管进气管	17.Ozone module inlet pipe
18.臭氧生发管	18.Ozone module
19.高压包	19.High voltage unit (transformer)
20.电路板	20.Circuit board
21.65L空压机	21.65L air compressor
22.臭氧发生管出气管	22.Outlet piping of the ozone module
23.150风扇	23.150 type fan

SOZ-小型系列臭氧发生器

SOZ small series ozone generator

强力臭氧发生器SOZ-YW-G小型系列采用耐高温HQG非玻璃结构放电单元（大环专利产品），该结构使用极其稳定、使用寿命长，具有放电效率高、遇回水不易损坏等特点；现已被国内外众多知名品牌饮料、食品行业为消毒杀菌指定使用的产品。

The SOZ-YW-G small series products use heat-resistant HQG non- glass structure dielectric (BNP patent) , the structure is extremely stable, long lifespan , high disc harge efficiency , and not easy to damage in the case of back flow water. The prod ucts have been the designated product of many domestically and interna tionally well-known beverage and food companies.

产品系列 Product series

- SOZ-6G、10G、16G、20G、25G、32G 40G、50G、60G、80G、100G、120G、150G、200G

组成 Parts

发生器单元	Ozone module
不锈钢外壳	Stainless steel enclosure
电流表	Ammeter
台湾产150风扇	Taiwan 150 type fan
气体流量计	Gas flow meter
臭氧调节旋钮等	Ozone regulation knob etc.

产品特点 Product features

- 多个故障点监测功能，主板温度检测、高压包温度检测、冷却水温度检测、臭氧发生管回水检测等，系统检测到故障后，设备停止运行，控制面板上相应的故障灯亮。
- 臭氧发生量无极可调。
- 标准4~20mA模拟量信号接入口，设备的臭氧发生量可由外部各类检测仪自动精确控制，该技术为臭氧行业率先采用，世界领先。
- 电路主部件为西门子产品（IGBT、IGBT模块）。

- Multi-point malfunction monitoring, main board temperature detection, high voltage transformer temperature detection, cooling water temperature detection, backflow water of the co rona discharge tube detection. The equipment stops operation and the corresponding fault indicator on the control panel ligh ts up when a fault is detected.
- Ozone amount continuous adjustable
- Standard 4 ~ 20mA signal control. The equipment can be preci sely controlled by different types of ozone measuring device a nd has met the requirement of many world leading beverage a nd bottled water companies.
- Main components from Siemens (IGBT, IGBT module) ;

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) related data and charts (note: the following parameters and machine picture might be appropriate changes)

SOZ-6G-32G产品参数 SOZ-6G-32G specification

参数 Parameter / 型号 Model	SOZ-YB-6G	SOZ-YB-10G	SOZ-YB-16G	SOZ-YB-20G	SOZ-YB-25G	SOZ-YB-32G
臭氧产量（g/h） Ozone production	6	10	16	20	25	32
冷却方式 Cooling method	风冷 air-cooled					
最大臭氧浓度 Max. output concentration（g/m3）	氧气源Oxygen source：30~50　空气源Air source：10~25					
长x宽x高 L*W*H(mm)	350x230x530	350x230x600		470x230x730		
重量 Weight(kg)	11	12	12	18	19	19
功率 Power (W)	120	150	180	300	350	380
使用电源 Electrical power supply	220V 50HZ (中国销售)　110V 50~60HZ（国外部分地区销售）					
使用气源 Gas source	使用氧气（瓶装气或氧气发生器）气源;或使用洁净干燥空气源 oxygen or dry clean air					

SOZ-6G-32G 产品图 SOZ-6G-32G picture

SOZ-YB-6G

SOZ-YB-10G、16G

SOZ-YB-20G、25G、32G

SOZ-6G-32G产品参数 SOZ-6G-32G specification

参数 Parameter / 型号 Model	SOZ-YW-40G	SOZ-YW-50G	SOZ-YW-60G	SOZ-YW-80G	SOZ-YW-100G	SOZ-YW-150G	SOZ-YW-200G
臭氧产量（g/h） Ozone production	40	50	60	80	100	150	200
冷却方式 Cooling method	水冷Water cooling 0.2~0.5m3/h		水冷Water cooling 0.3~1.0m3/h			水冷Water cooling 0.5~1.5m3/h	
最大臭氧浓度 Max. output concentration（g/m3）	氧气源Oxygen source：50~100　空气源Air source：16~30						
长x宽x高 L*W*H(mm)	400x300x950		520x370x1150		770x500x1200		
重量 Weight(kg)	26		50		85	90	95
功率 Power (W)	600	660	1000	1200	1300	1800	2500
使用电源 Electrical power supply	220V 50HZ（中国销售）　110V 50~60HZ（国外部分地区销售）						
使用气源 Gas source	使用氧气（瓶装气或氧气发生器）气源;或使用洁净干燥空气源 oxygen or dry clean air						

SOZ-40G-200G 产品图 SOZ-40G-200G picture

SOZ-YW-40G、50G、60G、80G

SOZ-YW-60G(II)、80G（II）

SOZ-YW-100G、150G、200G

SOZ-中型系列臭氧发生器

SOZ - medium series ozone generator

强力臭氧发生器SOZ-YW-G中型系列采用耐高温HQG非玻璃结构放电单元（大环专利产品），该结构使用极其稳定、使用寿命长，具有放电效率高、遇回水不易损坏等特点；现已被国内外众多水处理公司指定使用产品。

The SOZ-YW-G medium series products use heat-resistant HQG non-glass structure dielectric(BNP patent) , the structure is extremely stable, long lifespan ,high discharge efficiency , and not easy to damage in the case of back flow water.The products have been the designated product of many domestically and internationally famous water treatment companies.

产品系列 Product series

- SOZ-300G、400G、500G、600G、1000G 1500G、2000G

组成 Parts

- 发生器单元 / Ozone module
- 不锈钢外壳 / Stainless steel enclosure
- 电流表 / Ammeter
- 台湾产150风扇 / Taiwan 150 type fan
- 气体流量计 / Gas flow meter
- 臭氧调节旋钮等 / Ozone regulation knob etc.

产品特点 Product features

- 多个故障点监测功能，主板温度检测、高压包温度检测、冷却水温度检测、臭氧发生管回水检测等，系统检测到故障后，设备停止运行，控制面板上相应的故障灯亮。
- 臭氧发生量无极可调。
- 标准4~20mA模拟量信号接入口，设备的臭氧发生量可由外部各类检测仪自动精确控制，该技术为臭氧行业率先采用，世界领先。
- 电路主部件为西门子产品（IGBT、IGBT模块）。

- Multi-point malfunction monitoring, main board temperature detection, high voltage transformer temperature detection, cooling water temperature detection, backflow water of the corona discharge tube detection. The equipment stops operation and the corresponding fault indicator on the control panel lights up when a fault is detected.
- Ozone amount continuous adjustable
- Standard 4 ~ 20mA signal control. The equipment can be precisely controlled by different types of ozone measuring device and has met the requirement of many world leading beverage and bottled water companies.
- Main components from Siemens (IGBT, IGBT module) ;

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) related data and charts (note: the following parameters and machine picture might be appropriate changes)

SOZ-300G-2000G产品参数 SOZ-300G-2000G product parameters

参数 Parameter / 型号 Model	SOZ-YW-300G	SOZ-YW-400G	SOZ-YW-500G	SOZ-YW-600G	SOZ-YW-1000G	SOZ-YW-1500G	SOZ-YW-2000G
臭氧产量（g/h） Ozone production	300	400	500	600	1000	1500	2000
冷却方式 Cooling method	水冷Water cooling 1～2m3/h		水冷Water cooling 1～3m3/h		水冷Water cooling 1.5～4m3/h	水冷Water cooling 2～6m3/h	水冷Water cooling 3～8m3/h
最大臭氧浓度 Max. output concentration (g/m3)	氧气源Oxygen source : 50～120　空气源Air source : 16～35						
长x宽x高 L*W*H(mm)	800x600x1450		1200x600x1450		2000x600x1450	2600x600x1450	3500x600x1450
重量 Weight(kg)	120	150	200	250	350	500	700
功率 Power (W)	3. 2	4. 5	5. 5	6. 5	10. 2	15. 5	22
使用电源 Electrical power supply	220V 50HZ (中国销售)　110V 50～60HZ（国外部分地区销售）						
使用气源 Gas source	使用氧气（瓶装气或氧气发生器）气源;或使用洁净干燥空气源 oxygen or dry clean air						

大环臭氧完全杀菌保证 BNP, the promise of complete sterilization
BNP 产品介绍 Product introduction

SOZ-300G-2000G 产品图 SOZ-300G-2000G picture

SOZ-YW-1000G、1500G、2000G

SOZ-YW-300G、400G、500G、600G

部分项目现场 Project site reference

SOZ-大型系列臭氧发生器 SOZ - large series ozone generator

SOZ-YW-G大型系列强力臭氧发生器采用自动化控制系统，人机界面控制，中英文液晶菜单显示，可实时监测系统状态及运行参数，自控系统可根据用户现场对自控系统的要求进行设计和配置，PLC操作系统为德国西门子。每个臭氧发生单元带有独立的高压熔断器，保证了放电室整体正常、可靠、有效的工作且可定期拆卸清洗和更换维护费用低。稳定运行时间长，发生器的外电极系316L不锈钢制造，臭氧发生单元有多种排布方式，并使用水冷却不蓄热有利于稳定臭氧产量，使用寿命长，给用户节省了可观的维护费用。臭氧浓度高，结构紧凑，结实耐用！设备的开关机实现就地和远程控制，并能显示设备的工作或待机、报警状态，能对臭氧泄漏报警反应，并自动关机，能对系统产生的尾气中的剩余臭氧进行自动破坏，能根据要求控制臭氧发生器冷却水系统能根据要求控制空气源系统，自动调节臭氧产量。为了保证多组臭氧放电体组成的放电室系统的正常工作。当放电体出现击穿故障时，高压保险能在设定的时间内熔断，以保证不因电流过大而影响系统正常工作，使整个系统安全可靠运行。

SOZ-YW-G large series ozone generators utilize automatic control system, HMI control, Chinese-English LCD display, and real-time monitoring of system status and operation parameters. The automatic control system can be designed and configured according to the site requirement, and the PLC operation system is from Siemens. Each of the ozone module unit is equipped with independent high voltage fuse, ensuring the normal, reliable, effective working of the discharge chamber. The discharge chamber can be dismantled for cleaning, replacement, and the maintenance cost is low. The external electrode is made of 316L stainless steel which makes the product reliable and long operation hours. The ozone module units have several arrangement modes, and the cooling water ensures no accumulation of heat which is good for the stable ozone production. The product has long service life, saving the customer a lot of maintenance cost. The product has high ozone concentration, compact design and is extremely durable! The start/shutdown of the equipment can be controlled locally and remotely. The display screen shows the working, standby or alarm status of the equipment. The equipment can be shutdown automatically in case of ozone leakage. The residual ozone can be destructed automatically. The cooling water system and air source can be controlled as request, and the ozone production will be regulated automatically. To ensure the normal working of the discharge chamber composed of several group of discharge electrodes, the high voltage fuse will be blown within the setting time limit when there is breakdown failure of the discharge electrode, which ensures the reliability and safety of the system.

产品特点 Product features

- 温升低，适合连续稳定运行。
- 内置单循环水冷系统进行高效冷却；
- 臭氧出口浓度高,产量可调，无臭氧报警，回水报警，过温报警；
- 高端触摸屏控制系统，智能化设计操作简单（为降低成本可选低配非智能模拟控制系统）。
- 先进的IGBT供电单元；
- Low temperature rise, suitable for continuous operation
- Integrated single loop water cooling system for high efficiency cooling
- Ozone output concentration adjustable, and alarm when there is no ozone, backflow water or overheated
- Touch screen control system, intelligent design makes the operation simple (optional for lower configuration non intelligent control system with lower price)
- Advanced IGBT power supply unit

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) related data and charts (note: the following parameters and machine picture might be appropriate changes)

SOZ-5KG-50KG产品参数 SOZ-5KG-50KG product parameters

参数 Parameter / 型号 Model	SOZ-YW-5KG	SOZ-YW-8KG	SOZ-YW-10KG	SOZ-YW-15KG	SOZ-YW-20KG	SOZ-YW-30KG	SOZ-YW-50KG
臭氧产量（kg/h） Ozone production	5	8	10	15	20	30	50
冷却方式 Cooling method	8-20m3/h		20-30m3/h		30-40m3/h	50-65m3/h	90-100m3/h
最大臭氧浓度 Max. output concentration (wt%)	氧气源Oxygen source:6～10 空气源Air source:2～3						
长X宽X高 L*W*H(mm)	3000x2200x2000		3200*2500*2200		3600x2800x2200	5000x3000x2600	6000x3600x2900
重量 Weight(T)	4.5	5	8	8	10.5	13	20
使用气源 Gas source	使用氧气（瓶装气或氧气发生器）气源;或使用洁净干燥空气源 oxygen or dry clean air						

大型系列臭氧发生器部分项目现场 Large series ozone generator project reference

臭氧、氧气一体机(风冷)

Ozone & oxygen integrated series (air-cooling)

该系列产品以内置氧气发生器产生的氧气为气源，采用臭氧发生技术产生高浓度臭氧。本机内置无油空气压缩机、过滤装置，通电即可产生臭氧。

The series of product utilize oxygen from the internal oxygen generator as gas source, and high concentration ozone is generated by the ozone generation technology. The product has integrated oil-free air compressor, filtering system, and ozone is produced by just power on it.

产品系列 *Product series*

- SOZ-YOB-10G
- SOZ-YOB-15G
- SOZ-YOB-20G
- SOZ-YOB-30G

组成 *Parts*

- 两组氧气发生器单元(美国UOP制氧分子)
- 电磁阀(日本CKD、SMC,台湾产AIRTAC、SNS)
- 切换板
- 气水分离器
- 无油空气压缩机
- 臭氧发生器单元
- 不锈钢外壳
- 电流表
- 台湾产150风扇
- 气体流量计
- 臭氧调节旋钮等
- Two sets of oxygen generation units (American UOP modular sieve)
- Solenoid valve (CKD and SMC from Japan, AIRTAC and SNS from Taiwan)
- Switching board
- Gas water separator
- Oil-free air compressor
- Ozone generation unit
- Stainless steel enclosure
- Gas flow meter
- Taiwan 150 type fan
- Ammeter
- Ozone regulation knob etc

产品特点 *Product features*

1、本机内的氧气发生器以世界著名生产厂家美国UOP公司的制氧分子为吸附剂，用变压吸附法（PSA）将空气中的氧气与氮气分离,并滤除空气中的有害物质，从而获取符合医用标准的高浓度氧。

2、本机内的强力臭氧发生器应用大规模IGBT集成技术,采用极其稳定、效率极高、超长寿命的钛金脱羟石英结构或脱羟石英结构放电单元（大环专利），空气冷却，生产部件为国际名厂产品。发生器智能型设计为世界领先技术。

3、臭氧量可调，噪单低。

4、操作简便，随用随制，持续产生臭氧。

1.The product utilize molecular sieve as adsorbent from the American UOP company, and pressure swing adsorption (PSA) process to separate oxygen and nitrogen and filters harmful substance from the air. Then high level oxygen is created which meets the standard of medical oxygen.

2.The products utilize large power IGBT modules, extremely stable, high efficiency, long lifespan dehydroxylation quartz glass structure (Patented by BNP), air cooling parts, world-class essential components and world-leading intelligent design.

3.Ozone amount continuous adjustable, low noise level

4. Easy operation and constant flow of oxygen is created on-site

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

SOZ-3G-30G产品参数 SOZ-3G-30G product parameters

型号 Model / 参数 Parameter	臭氧产量（g/h）Ozone production	输出压力Output pressure (kg/cm2)	制氧产量Oxygen flow(L/min)	氧气纯度Oxygen concentration	功率 Power(W)	电源lectrical power supply (V/Hz)		尺寸 Dimension(mm)
SOZ-YOB-10G	10	0.8±0.2	3	85%±5	520	220/50	110/50-60 (国外部分地区销售)	500x390x1200 LxWxH
SOZ-YOB-15G	15	0.8±0.3	3		600			
SOZ-YOB-20G	20	1.5±0.3	5		840			
SOZ-YOB-30G	30	1.5±0.3	5		960			

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BNP 产品介绍 Product introduction

一体机产品图片 Integrated series product picture

电子进气阀
(Electronic intake valve)

空压泵
(Air compressor pump)

臭氧、氧气一体机（水冷）

Ozone & oxygen integrated series (water-cooling)

该系列产品以内置氧气发生器产生的氧气为气源，采用臭氧发生技术产生高浓度臭氧。本机内置无油空气压缩机、过滤装置，通电即可产生臭氧。采用耐高温钛HQG非玻璃结构放电单元（大环专利产品），该结构使用极其稳定、使用寿命长，具有放电效率高、遇回水不易损坏等特点；

The series of product utilize oxygen from the internal oxygen generator as gas source, and high concentration ozone is generated by the ozone generation technology. The product has integrated oil-free air compressor, filtering system, and ozone is produced by just power on it.The products use heat-resistant HQG non- glass structure discharge unit(BNP patent), the structure is extremely stable, long lifespan, high discharge efficiency, and not easy to damage in the case of back flow water.

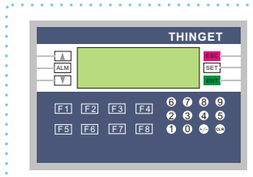
组成 *Parts*

- PSA氧气发生器单元(美国UOP制氧分子)
- 电磁阀(日本CKD、SMC,台湾产AIRTAC、SNS)
- 热交换器
- 气水分离器
- 强力臭氧发生器单元
- 智能控制系统
- 电流表
- 台湾产150风扇
- 温度控制器
- 臭氧调节旋钮等
- 气体流量计
- 无油空气压缩机

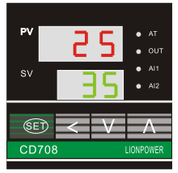
- PSA oxygen generation units (American UOP modular sieve)
- Solenoid valve (CKD and SMC from Japan, AIRTAC and SNS from Taiwan)
- Heat exchanger
- Ozone generation unit
- Intelligent control system
- Strong ozone generator unit
- Ozone regulation knob etc
- Oil-free air compressor
- Ammeter
- Taiwan 150 type fan
- Gas flow meter
- Temperature controller

产品系列 *Product series*

- SOZ-YOW-40G
- SOZ-YOW-50G
- SOZ-YOW-60G
- SOZ-YOW-80G
- SOZ-YOW-100G
- SOZ-YOW-150G



显示操作屏
Display & operation screen



温度控制器
Temperature controller

产品特点 *Product features*

1、该系列产品以美国进口沸石分子筛为吸附剂，用变压吸附法（PSA）将空气中的氧气与氮气分离，并滤除空气中的有害物质，从而获取符合医用氧标准的高浓度氧。PSA氧气产生设备为您提供纯度85%±5的氧气满足各方需求，安装和运行费用远低于瓶装或液化氧气；

2、多个故障点监测功能，主板温度检测、高压包温度检测、冷却水温度检测、PSA系统气源温度检测、臭氧发生管回水检测等，系统检测到故障后，设备停止运行，控制面板上相应的故障灯亮；

3、标准4~20mA信号接入口（臭氧行业首创），设备的臭氧发生量可由外部各类检测仪自动精确控制，该技术为臭氧行业首创，世界领先；

4、性能稳定，全套气路均为低压系统，运行安全可靠；

5、以空气为原料，不需任何辅料，耗电小，制氧成本低；

6、内有二组制氧发生器单元自动循环工作；操作简便，随用随制，持续产生臭氧。

1,This series of products use American zeolite molecular sieve adsorbent , separating oxygen from nitrogen in the air using pressure swing adsorption (PSA) principle, and filter harmful substances in the air , so as to obtain a high concentration oxygen in line with medical oxygen standards. PSA oxygen generating equipment provide you with the purity of 85% ± 5 oxygen to meet all requirements; Installation and operating costs far less than cylinder or liquefied oxygen ;

2, Multi-point malfunction monitoring, main board temperature detection , high voltage transformer temperature detection, cooling water temperature detection, PSA input air temperature detection, backflow water of the corona discharge tube detection. The equipment stops operation and the corresponding fault indicator on the control panel lights up when a fault is detected.

3, Standard 4 ~ 20mA signal control.

4, The whole gas circuits work in low pressure which makes it safe and reliable

5,Air source input with no additive required and lower power consumption which ensures lower total cost;

6,Two sets of oxygen generation unit work alternately automatically.

相关数据、图表（注：以下参数和机器图片可能有适当的变动） *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

SOZ-40G-150G产品参数 SOZ-40G-150G specification

参数 Parameter / 型号 Model	SOZ-YOW-40G	SOZ-YOW-50G	SOZ-YOW-60G	SOZ-YOW-80G	SOZ-YOW-100G	SOZ-YOW-150G
臭氧产量（g/h） Ozone production	40	50	60	80	100	150
使用电源 Electrical power supply	220V					
频率 Frequency	50/60Hz					
额定工作电流 Rated current(A)	2.2	2.5	3.0	3.5	4.5	4.5
功率 Power（W）	1800	1900	2000	2100	2300	2500
冷却水流量 Cooling water flow	5L/min（25℃）					
氧气流量 Oxygen flow (L/min)	8					12
氧气纯度 Oxygen concentration	90%±5					
输出压力 Output pressure	2.0±0.5kg/cm2					
工作环境温度 Ambient temperature	<40℃					
工作环境湿度 Ambient humidity	<70%					
连接电缆线 Connecting cable (mm2)	3*1.5					
外形尺寸 Dimension (mm)	500*600*1400					
重量 Weight(kg)	90		95		100	

SOZ-YOW产品图片 SOZ-YOW series picture

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PSA氧气发生器系列 *PSA oxygen generator series*

OW-TB系列产品以美国进口沸石分子筛为吸附剂，用变压吸附法(PSA)将空气中的氧气与氮气分离，并滤除空气中的有害物质，从而获取符合医用氧标准的高浓度氧。PSA氧气产生设备为您提供纯度90%±5的氧气满足各方需求，安装和运行费用远低于瓶装或液化氧气。

This series of products use American zeolite molecular sieve adsorbent, separating oxygen from nitrogen in the air using pres sure swing adsorption (PSA) principle, and filter harmful substan ces in the air , so as to obtain a high concentration oxygen in line with medical oxygen standards. PSA oxygen generating equipm ent provide you with the purity of 90% ± 5 oxygen to meet all re quirements; Installation and operating costs far less than bottle d or liquid oxygen

产品系列 *Product series*

- OW-2TB
- OW-4TB
- OW-10TB
- OW-20TB
- OW-50TB
- OW-100TB

组成 *Parts*

- 两组氧气发生器单元(美国UOP制氧分子)
- 切换板
- 电磁阀(日本CKD、SMC,台湾产AIRTAC、SNS)
- 气水分离器
- 无油空气压缩机 (根据系统大小选择)
- Two sets of oxygen generation units (American UOP modular sieve)
- Solenoid valve (CKD and SMC from Japan, AIRTAC and SNS from Taiwan)
- ozone generator unit (based on the system size selection)
- Gas water separator
- Switching board
- Oil free air compressor

产品特点 *Product features*

1、工艺流程简单，结构外形小，节省占地面积。
2、自动化程度高，产气快，启动、关机只需按一下开关，开机2分钟内即可产气。
3、以空气为原料，不需任何辅料，耗电小，制氧成本低。
4、纯度高使用方便，产品纯度只受氧气排出量的影响，可在80% --95%之间任意调节。
5、PSA五通阀为日本SMC原装进口。
6、性能稳定，全套气路均为低压系统，运行安全可靠。

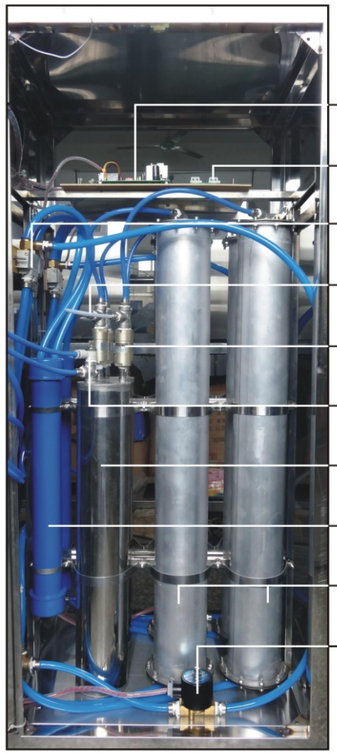
1, Simple process, small volume.
2, Highly automated, fast generation of oxygen, a single press on the switch can start or stop the equipment, and oxygen can be generated in 2 minutes.
3,Air source input with no additive required and lower power consumption which ensures lower total cost;
4, Highly purified and convenient, output oxygen purity is only influenced by ou tput flow and can be adjusted in the range of 80%-95%.
5、PSA five-way valve from SMC (Japanese brand);
6,The whole gas circuits work in low pressure which makes it safe and reliable;

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

OW-2TB~200TB产品参数 OZ-2TB-200TB product parameters

参数 Parameter / 型号 Model	OW-2TB	OW-4TB	OW-10TB	OW-20TB	OW-50TB	OW-100TB	OW-200TB
氧气输出气量 Oxygen output (L/min)	3~4	4~5	5~8	8~13	20~30	40~60	80~120
长x宽x高 L*W*H(mm)	300x28 5x590		380x28 5x590	350x50 0x850	520x37 0x1100	770x50 0x1200	1000x6 00x120 0
重量 Weigh t(kg)	26	27	20	25	42	85	150
功率 Power (W)	400	500	100	100	100	200	200
	内置无油空压机 Inbuilt oil-free air compressor		需要输入洁净干燥的空气，要外配无油压缩空压机和过滤干燥装置。 Need external oil-free air compressor, filtering and drying system to provide clean and dry air source				
使用电源 power supply	220V 50HZ (中国销售) 110V 50~60HZ (国外部分地区销售)						

氧气发生器产品图片 Oxygen generator pictures



OW-100TB、200TB

OW-50TB

OW-20TB

OW-2TB、4TB、10TB

氧气机150L

高浓度臭氧水生成机 *High concentration ozone-enriched water generator*

高浓度臭氧水机循环臭氧水浓度可高达10Ppm.以上一般在5ppm时，臭氧水具有超强的杀菌能力。The product can supply ozonated water concentration up to 10ppm. Actually, the ozonated water will be strong disinfectant when the concentration is higher than 5ppm.

功能与用途 *Application*

杀菌消毒 *sterilization*

食品厂、制药厂：需要对原材料等物体表面进行过流式浸没杀菌，而形成无菌的原材料表面（对包装容器可以高浓度臭氧气体接触完成消毒杀菌）。如水果等经过清洗后可达到无菌而可以制成浓缩果汁。
Food factories, pharmaceutical factories: raw material surface is required to be disinfected with submersed disinfectants, in order to make it bacteria-free. For example, fruits can be bacteria-free after the rinsing, and then made into fruit juice.

在水产品加工中：冷冻包装之前，通过高浓度臭氧水喷淋杀菌或过流式浸没杀菌，对水产制品的卫生指标达到了完美的控制，避免了使用氯化物带来余氯超标的问题
Seafood processing: before refrigerated packaging, the high concentration ozone-enriched water rinse or submersed disinfection can make the seafood products meet the hygienic standard, which avoids the excess residual chloride.

在液体食品加工：（如饮料、果汁等）和制药厂的生产过程中，高浓度臭氧水可用于管路、生产设备及盛装容器的浸泡和冲洗，从而达到高效灭菌。管路、设备及容器表面上的细菌病毒被冲淋及杀死，非常简单省事。即不产生死角，还避免了使用其它化学消毒剂带来的有害物质排放及残留，而臭氧无任何残留和二次污染。
Fluid processing: during (for example: beverage, fruit juice, etc) and pharmaceutical production, high concentration ozone-enriched water can be used to the rinse or submersed disinfection of the piping, manufacturing equipment and containers. The bacteria in the piping, equipment and surface of containers can be easily killed by rinsing the ozone-enrich water. It avoids the disinfection blind spots and the usage of other chemical disinfectant.

可广泛应用于宾馆、酒店、机关食堂：为餐饮具、瓜果蔬菜杀菌消毒；以及儿童玩具、物体表面的杀菌消毒。
Hotel, canteen: Disinfection for tableware, vegetable and other surface disinfection.

农药降解 *Pesticide degradation*

农药降解：可广泛应用于公共饮食食堂、果蔬加工厂、食品加工厂等处，用来去除农药、化肥、食品添加剂等有害物质。
Pesticide degradation: Widely used in public canteens, vegetable processing factories, food processing factories to get rid of harmful substance, such as the pesticide, chemical fertilizer, food additives.

水处理 *Water treatment*

水处理：可广泛应用于工业用水的防藻、杀菌，养殖用水的杀菌防病，污水处理过程中的除臭、脱色、灭菌等工艺。
Water treatment: industrial water algae prevention, disinfection, aquaculture water disinfection, wastewater odor removal, decoloration, disinfection.

大环臭氧完全杀菌保证 BNP, the promise of complete sterilization
BNP 产品介绍 Product introduction

食品保鲜 *Food storage:*

食品保鲜：可广泛应用于冷冻厂、食品加工厂、牲畜屠宰厂等单位生产加工过程中的原料及成品贮存、保鲜、消毒的工艺过程。
Food storage: Widely used in refrigerated food processing, butcher, etc for disinfection.

净化清洁 *Laundry & cleaning*

净化清洁：1.臭氧发生器宾馆、酒店、桑拿浴室、医院、制药、食品等行业洗涤衣物的理想选择机器。2.可广泛应用于公共场合、厕所、生产场地的净化清洁。
Laundry & cleaning: 1. widely used for commercial laundry. 2. Widely used in public places, toilet and factories surface cleaning.

工作原理 *working principle*

- 设备由氧气发生器、臭氧发生器、高压电源、气液混合泵加静态混合器、气水分离器、控制系统等部分组成。
- 设备用氧气发生器产生的高浓度氧气为气源、通过变频放电产生臭氧，并利用臭氧的强氧化性进行杀菌消毒和除解农药。
- 设备内制氧机以美国进口沸石分子筛为吸附剂，用变压吸附法（PSA)将空气中的氧气与氮气分离，并滤除空气中的有害物质，从而获取高纯度的氧气，并大大提高臭氧产量、纯度和效率。然后，通过气液混合泵加静态混合器的气水强力混合把高浓度的臭氧充分溶解在水中，形成具有杀菌能力和降解农药功能的高浓度臭氧水。

- The equipment consists of oxygen generator, ozone generator, high voltage power, gas-water mixing pump, static mixer, gas water separator and controlling system.
- The gas source is from high concentration oxygen source provided by the oxygen generator, and ozone is generated by corona discharge. Then the strong oxidant, ozone, can be used to disinfection and pesticides degradation.
- The products utilize zeolite molecular sieve as adsorbent from the US, and pressure swing adsorption (PSA) process to separate oxygen and nitrogen and filters harmful substance from the air. Then high level oxygen is created which greatly improves the ozone production. Finally, the gas liquid mixing pump and static mixer fully dissolve the ozone into the water.

技术参数及产品图 *Technical parameters and product figure*

名称Name	高浓度臭氧水生成机High concentration ozone-enriched water generator
型 号Model	SOZ-YWS
循环水臭氧浓度 ozone-enriched water concentration	10-12mg/L
气量Gas flow	3-5L/min
循环水量Water flow	1-1.5T/H
额定电压rated voltage	220V
额定频率Rated frequency	50HZ
功率Power	1.6KW
外形尺寸Dimension (L*W*H)	650X350X1380
重量Weight(kg)	72kg

说明：
需要1.5T/H以上的高浓度臭氧水，可选用我公司高效混合接触塔方案，可生产0—200T/H)
Info: If more than 1.5T/H high concentration ozone-enriched water flow is required, we will have solution of supplying up to 200T/H system

空气杀菌消毒净化机
Air purification sterilization machine

SOZ-KQ G系列空气杀菌消毒净化机——具有净化空气、杀菌、消毒、除霉味、烟味、臭味等各种异味功能。
SOZ-KQ G series air purification machine can be used in air purification, disinfection and removal of mould, smoke, odor.

产品说明 *product description*

现代公共场所——如酒店、宾馆、卡拉OK、夜总会、俱乐部、酒吧、网吧游戏室等娱乐场所，车站、商场等公共场所，写字楼等办公场所，装修时大量使用含有苯、甲醛等有毒有害挥发性物质的装饰材料；空调的使用又使门窗紧团，人员较多噪杂，室内空气不易流通，各种细菌和微生物的数量急剧上升。室内空气的污染严重危害着人们的身体健康。SOZ-KQ G空气杀菌消毒净化机具有净化空气、杀菌、消毒、除霉味、烟味、臭味等各种异味等功能，对各种细菌、病毒及微生物等致病原有明显的抑制作用，可有效预防疾病的发生，创造清新怡人的室内空气。有手自动时间控制器可供选择。豪华的不锈钢的外观。

Public places, for example: hotel, motel, karaoke bar, night club, internetbar, bus station, shopping mall and office, have a lot of harmful volatile substance during decoration. Doors and windows are closed when using air conditioners, which makes the air circulation slow and lead to the drastic increase of the bacteria and microbe. Hence, the above mentioned polluted air is harmful to people. SOZ-KQ G series air purification machine has the function of air purification, disinfection, removal of odor and smoke.The product creates fresh indoor air and can prevent disease.

相关数据、图表（注：以下参数和机器图片可能有适当的变动） *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

空气净化机参数 Air purification machine parameters

型号 Model	SOZ-KQ1.5G	SOZ-KQ3G	SOZ-KQ5G	SOZ-KQ10G	SOZ-KQ15G
产量Production (mg/h)	1500	3000	5000	10000	15000
控制control	手动开关或自动时间控制器 Manual switch or automatic time controller				
功率Power (W)	30W	50W	100W	180W	250W
使用电源 Electrical power supply	220V 50HZ 110V 50～60HZ（国外部分地区销售）				
长x宽x高L*W*H(mm)	350*200*150	500*200*150		550x220x180	
重量Weight(kg)	3.5	4.2	4.5	5	5.5
建议使用空间 recommended to use space (m3)	60-150	100-300	300-500	500-1000	800-1500

小型系列臭氧发生器 *Small series of ozone generator*

L-450-1000型产品参数 L-450-1000 type product parameters

（注：以下参数可能有适当变动）*(Note: the following parameters may be appropriate changes)*

型号Model	L—450型	L—1000型
外型尺寸Dimension	200x95x45	210x116x55
使用电源Power supply	220V 50HZ	
臭氧发生量 Ozone production(mg/h)	450	1000
工作方式 Working method	臭氧气可输送Ozone transportable	臭氧气可输送Ozone transportable
结构Structure	带气源一体化防噪声设计 Inbuilt gas source, low level of noise	带气源一体化防噪声设计 Inbuilt gas source, low level of noise
外壳材料 Enclosure material	塑料Plastic	
适用于 Application	广泛适用于小、中、大型消毒柜。饮水机上纯净水设备的二次消毒。桑拿房、按摩浴缸消毒。 Widely used in small, medium, large disinfection cabinet, secondary sterilization of water dispenser and sauna room	
	均可用于空气净化消毒杀菌，根据空间大小，循环大小要求等选择使用，如医院，无菌车间，桑拿浴场消毒，公共场所等，L—450型被许多家庭桑拿房设备生产厂家选为消毒配件。 Suitable for air purification of hospital, bacteri al-free workshop, public location. The L-450 has been selected by the sauna equipment manufacturer as disinfection accessories.	
说明 Description	上述臭氧发生器采用国际先进的晶闸逆变技术，采用非真空放电管由陡变电场放电产生氧气，工作寿命长，防潮性能好，省电，电耗小于18kwh/kgO3，（陶瓷片为40kwh/kgO3） The ozone generator has utilized the leading thyristor inverting technology, non-vacuum discharge tube and abrupt change electric to generate ozone. It has the feature of long lifespan, good moisture proof, low power consumption with less than 18kwh/kgO3	

L-450-1000型产品图片 L-450-1000 type product photos

L—1000型产品图片

L—450型产品图片

大环臭氧完全杀菌保证 BNP, the promise of complete sterilization
BNP 产品介绍 Product introduction

饮水机快速杀菌消毒器 *Water dispenser sterilizer*

该产品采用先进臭氧产生技术对饮水机内的细菌进行快速杀菌消毒。The products utilize ozone technology for water dispenser disinfection

使用方法 *Method of use*

1.准备工作：取下饮水机水瓶，排干机内余水，清洗进水口，用毛巾擦干饮水机外表，装上干净空瓶。

2.将消毒器两硅胶接口与饮水机出水口对接上，打开饮水机龙头，选择继电器时间，一个月清洗一次5分钟，二个月消毒一次选择10分钟，三个月清洗一次则15分钟，此数据公作参考依据。

3.接通电源，打开开关，则水消毒器开始工作。

4.消毒完毕则该仪器会自动停止，拔掉电源和硅胶接口，收好电线，关上仪器箱上锁，并关上饮水机笼头。

5.拔掉饮水机空瓶，装上纯净水，从两个出水口各放出约300毫升水倒掉，则机内纯净水可饮用。

1.Preparation: take down the water bottle, drain out residual water, clean the water inlet, dry water dispenser surface with towel and install a clean empty bottle.

2.Connect the sterilizer’s two silica connectors with the water dispenser outlets, turn on the outlet, and select sterilizer operation time. Reference operation time: 5 minutes when clean every month, 10 minutes when clean every two months, 15 minutes when clean every three months.

3.Connect the power supply; turn on the switch and the disinfection starts.

4.The machine will stop automatically after the disinfection. Just disconnect the power plug, silica connector, put away the cables and close the dispenser outlets.

5.Replace the empty water bottle with one filled with purified water and discharge 300ML from each outlet. Then the water of dispenser can be used.

相关数据、图表（注：以下参数和机器图片可能有适当的变动） *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

产品参数 Product parameters

参数 Parameter / 型号 Model	YX-1000	YX-2000
臭氧产量（g/h） Ozone production	1000	2000
长x宽x高 L*W*H(mm)	365X210X230	365X210X230
重量 Weight(kg)	4.5	5.5
功率 Power (W)	20	35
使用电源 Electrical power supply	220V 50HZ（国内销售） 110V 50HZ(国外部分地区销售)	

产品图 Product figure

操作步骤 Operation steps

① 排干余水、清洗进水口
Drain out residual water, clean the water inlet.

② 将两硅胶口与饮水机出水口对接
Connect the sterilizer’s two silica connectors with the water dispenser outlets

③ 接通电源、启动开关
Connect the sterilizer power supply and turn on the switch.

④ 消毒完毕，拔掉电源和硅胶接口
Disconnect the power plug and connectors after disinfection

⑤ 拔掉饮水机空瓶
Dismount the empty bottle

⑥ 装上纯净水桶，放心饮用
Replace it with a new bottle

饮水机细菌主要来源 main source of drinking water machine bacteria

无热再生变压吸附式干燥机

Heatless-regenerated Pressure Swing Adsorption (PSA) Dryer

无热再生变压吸附式干燥机是利用变压吸附、再生循环的原理，使干燥剂在管网压力下得用自热（无需外部热源）进行干燥吸附，然后再切换到大气压下脱附，并从干燥机出口引回约10—15%的干燥气体对干燥剂进一步净化再生。压缩空气交替流经两个吸附塔，当其中一个吸附塔在高分压的状态下，干燥剂吸收大量的水分，而另一吸附塔则由再生气管道通入干燥的低压气体，解析干燥剂吸收的水分，向用气点提供干燥的压缩空气

The products utilize the principle of pressure swing adsorption and regeneration. There are two towers working in parallel. In the one tower, desiccant absorbs moisture under pressure. In the meantime, in the other tower, the saturated desiccant is blown with 10~15% dry air from the outlet in atmospheric pressure to remove the moisture.

主要特点 *main features*

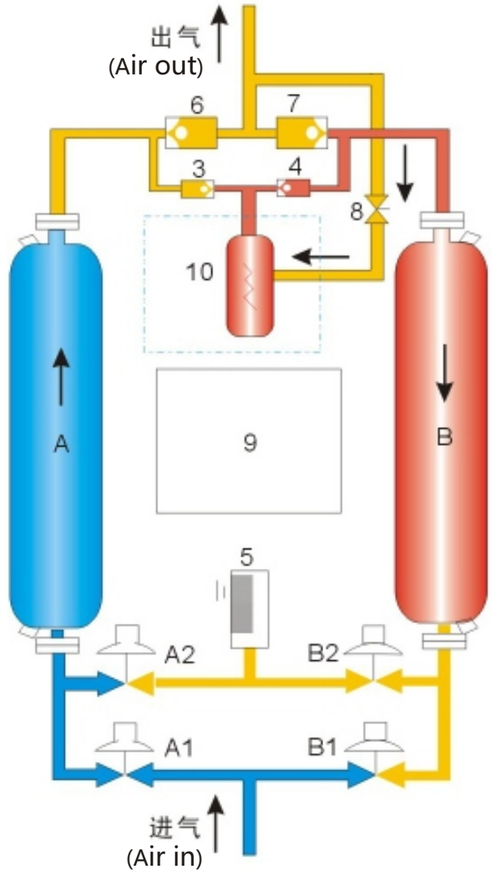
1.合理的筒体设计，保证了压缩空气与大容量的干 燥剂床的接触时间，满足成品气的露点要求。
2.30%的干燥剂余量，用于补偿干燥剂的自然老化，确保干燥剂延长使用寿命。
3.独特设计的扩散器，确保气流均匀通过干燥剂层，避免沟流现象。
4.独特的机筒设计，保存95%的吸附热量，储存的热量用于增加再生阶段的再生气温度，提高设备的解吸附能力，使得再生更彻底。
5.干燥和再生采用反向对流，湿空气流过干的吸附剂时效果最佳。
6.合适的机筒尺寸，使气体通过干燥剂层的流速和时间保持最佳状态，充分发挥干燥剂的性能。
7.合理的系统配置，在气流进入机筒前，经高效除油处理即时清除气流中内含油份与重污染物，避免干燥剂层受污染。
8.科学合理的切换时间设计保证出口气压稳定无波动。

1.Optimal contact vessel design, ensuring sufficient contact time.
2.30% desiccant residual, ensuring desiccant long lifespan and consis tent outlet dew points.
3.Unique diffuser design ensuring uniform flow distribution.
4.Unique vessels design to conserve 95% heat during adsorption. And the heat will be used to increase regeneration air temperature, enha ncing the regeneration efficiency.
5.Processing and regeneration air in counter flow design improves the adsorption efficiency.
6.Optimal contact vessel size design ensures the processing air flow a nd contact time in the best condition.
7.Reasonable system design. Oil and contaminants in the processing air was filtered before entering the vessel, preventing desiccant fro m being polluted.
8.Reasonable switching time ensures stable outlet pressure.

相关数据、图表（注：以下参数和机器图片可能有适当的变动） *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

型号Model	ADW-100	ADW-500	ADW-1000
干燥空气量 Dry air flow(L/min)	80 ~ 120	300 ~ 600	800 ~ 1200
成品气压力露点 Output dew point (°C)	20 ~ -40	20 ~ -40	20 ~ -40
工作压力 (kgf/c m2) Worki ng pressure	0.1 ~ 0.8	0.1 ~ 0.8	0.1 ~ 0.8
进气温度Input air temp (°C)	0 ~ -45	0 ~ -45	0 ~ -45
耗电量Power consumption (W)	100	200	200
电源Power supp ly (V HZ)	220V 50HZ		
外形尺寸Dimensi on (mm)	350X270X580	350X500X850	520X370X1150
净重Weight (kg)	15	30	60

工艺流程图及产品图片 Process & product picture



吸附塔：A、B
切换阀：A1、B1、A2、B2
止回阀：3、4、6、7
节流阀：8
消音器:5
PLC:9
电加热器：10

Adsorption tower : A、B
Switch valve : A1、B1、A2、B2
check valve : 3、4、6、7
Throttle valve : 8
muffler:5
PLC:9
Electric heater : 10

DH-A系列无油空气压缩机 *Oil-free air compressor*

本公司生产的DH-A系列无油空气压缩机采用高品质，大流量无油摇摆活塞式的压缩机作为动力源，能提供稳定的无油气源,避免油污进入人体，又能避免终端机器的非耐油管因有油而引发故障；其部件均选用优质元器件，整机按照氧气发生器的特点制造，流量大，噪音低，气源洁净干燥，运行平稳，全自动控制，在运行过程中，当气罐内压力达到设定的最小值或最大值时，压缩机将自动开机或停机；本机特别适合作为氧气发生器及空气型臭氧系统的气源，是中、小型企业的理想选择。

The product utilize high quality, high flow swinging piston compressor as power source, providing stable oil-free air source which avoids contaminated oil getting into human body, or damaging the machine. The components are all of high quality, and the complete air compressor is designed to match the oxygen generator: high air flow, low noise level, dry and clean gas source, stable operation and automatic control. When the internal pressure of the air cylinder reach the lower limit or upper limit, the air compressor will start or shutdown automatically. The product is suitable for the air source of oxygen generator or air feed ozone generator.

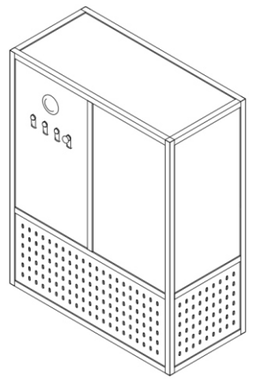
DH-A系列产品特点 *DH - A series product features*

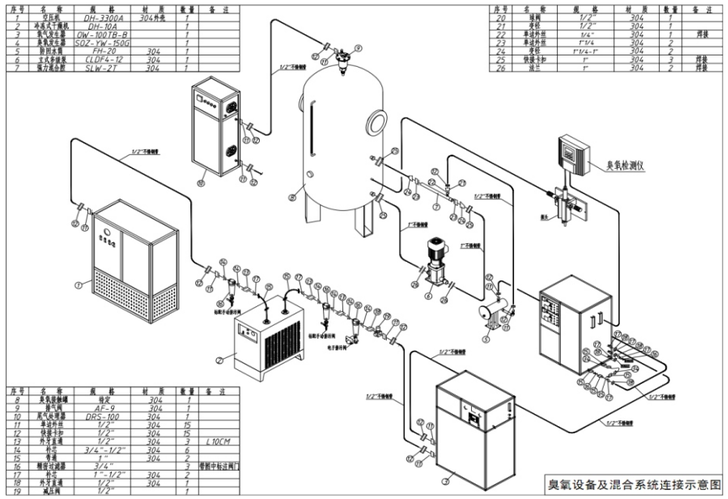
- 输出气体无油、洁净干燥，后续的气源处理无需除油，气源可用于食品、制药、医疗等领域。
- 噪音低，噪音只有传统活塞机的一半左右。
- 风冷强制散热，每个机头的缸体都配备了风扇冷却，从而保证机器可以连续运行。
- 输出压力自动控制，储气罐压力上升达到上限值时，机头停止工作；低于下限值时，机头启动工作；
- 不锈钢储气罐自动排水，机箱内部储气罐为不锈钢材质，避免了碳钢类储气罐内部生锈产生锈水，储气罐底部装有自动排水阀，每间隔一段时间自动排水一次。

- Output gas is oil-free, dry and clean, so oil removal processing is not required. The output gas can be used in food, pharmaceutical, medical, etc.
- Low noise level, the noise level is about half of the one from traditional piston compressor.
- Every compressor is equipped with cooling fan, ensuring the continuous operation of the equipment.
- With automatic water drainage valve, the air receiver is made of stainless steel avoiding the rusted water from carbon steel receiver.

相关数据、图表 (注：以下参数和机器图片可能有适当的变动) *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

产品图 Product picture





产品性能参数表 Product performance parameter

项目Item \ 型号Model	DH-1100A	DH-1500A	DH-2200A	DH-3300A
排气量Capacity	0.2m3/min	0.28m3/min	0.4m3/min	0.6m3/min
排气压力Output pressure	0.5Mpa			
排气温度Output temp	< 50℃			
使用电源Power supply	220V/50Hz	220V/50Hz	220V/50Hz	3*380V/50Hz
功率Power	1.5KW	2.0KW	3.0KW	4.5KW
排气口尺寸Outlet size	1/2 “内丝			
自动排水口尺寸 Auto-drainage outlet size	1/2 “内丝			
工作环境温度Ambient temp	< 40℃			
工作环境湿度 Ambient humidity	< 70%			
连接电缆线Cable size (mm2)	3*1.0	3*1.5	3*2.5	5*1.5
外型尺寸Dimension (mm)	830*450*1200		950*450*1200	
重量Weight (kg)	55	72	84	108
配氧气机Oxygen source	OW-10TB	OW-20TB		OW-50TB
空间消毒Air source	< 80g/h	80-100g/h	100-200g/h	200-300g/h

气液强力混合腔、高效混合接触塔

Enhanced injector & high efficiency gas-water mixing system

对于目前世界的臭氧技术产业而言，以水处理的杀菌净化为主要市场，而水净化臭氧装置包括臭氧源与气水混合装置两部分。臭氧发生器应提供足够浓度与产量的臭氧，混合装置以高效率使臭氧溶解在水中，即达到一定的臭氧溶解度。因此，一台好的臭氧发生器必须要有优良的气水混合装置，使臭氧能高效的与水混合，使水中的臭氧溶解度能满足完全杀菌。

Water treatment has been the main market for the ozone industry, and the ozone system for water treatment consists of two parts: ozone source and gas-water mixing. The ozone generator should supply sufficient concentration and production of ozone and the gas-water mixing system have high transfer efficiency, in order to meet the required dissolved ozone concentration. Hence, the high quality ozone generator should also equip with excellent gas-water mixing system, in order to have the complete sterilization.

几种常见的混合装置比较 *Comparison of several mixing system*

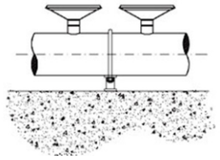
传统爆气法 Traditional bubble diffusion

历史悠久的传统混合方法。（布气板法、鼓泡塔法同理）。

运行方式——气水顺流、逆流或多级串联交迭逆顺流，连续运行或间断批量运行。优点：能耗较低。缺点：喷头堵塞时布气不均匀，混合差，需要大型空压机和昂贵的氧化反应塔。

The mixing method has long history.

Operation method: cocurrent, countercurrent or counter and cocurrent. Advantage: Low power consumption. Disadvantage: uneven ozone distribution and low transfer rate when the diffuser is blocked; big air compressor and expensive contact chamber are required.



著名的文丘里射流混合法 Venturi injection

安全、高效的混合方法。

运行方式——气水强制混合。优点：投资少，混合好，接触时间短，经射流混合器后臭氧在水中的臭氧浓度可为曝气法的数倍。本公司生产的气水射流混合器采用坚固的耐臭氧PVDF材料加工成形，体积小，使用方便，而且配有单向阀。

It is both safe and high efficient.

Operation method: gas-water forced mixing. Advantage: low cost, high efficiency, shorter contact time and the dissolved rate can be several times higher than the bubble diffusion method. BNP venturi injector is made of tough ozone-resistant PVDF material, with built-in check valve.

型号Model	过水量Water flow	进出水口尺寸Inlet & outlet(mm)
LW—0.3T	0.1～0.3T/H	DN20(2/8inch)
LW—0.5T	0.3～0.8T/H	DN20(4/8inch)
LW—1T	1～2T/H	DN20(6/8inch)
LW—2T	2～5T/H	DN25(1inch)
LW—5T	5～15T/H	DN40(1.5inch)
LW—10T	20～30T/H	DN50(2inch)

气液强力混合腔 Enhanced injector

安全、节能、效率极高的混合方法，为本公司研制的最新产品。

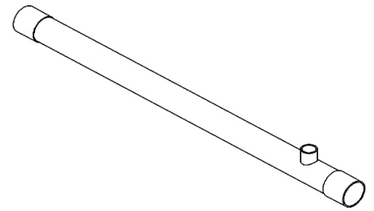
运行方式——充分利用水的紊流产生较大的负压，将臭氧吸入，在混合腔内产生涡流、旋转并相互碰撞。经实际使用证明，一级臭氧吸收率达90%以上，在相同臭氧发生系统的情况下，水中的臭氧溶解度为文丘里射流混合器的2倍左右。如利用本公司的S0Z-6G臭氧发生系统处理2T水，水中的臭氧溶解度可达0.8—1.0mg/L以上。

气液强力混凝土合腔外体采用304不锈钢制作，内腔采用316不锈钢和部分耐臭氧ABS材料制作，SSLW系列内腔采用不锈钢和耐臭氧PVDF材料制作，产品坚固耐用，无机械故障免维修，运行安装方便宜，为目前投资最少，混合效果最好的设备。

The high efficiency enhanced injectors with built-in static mixer, have made full use of the negative pressure caused by the water turbulence to draw in the ozone gas, mixing it by the vortex flow.

Practical evidence shows the ozone dissolution efficiency in a single step reaches more than 90% by utilizing the enhanced injectors.

The enhanced injectors utilize 304 stainless steel for outer chamber, and 316 stainless steel and ozone-resistant ABS materials for inner chamber, which makes it durable, low maintenance, and easy operation, being the most efficient mixer in low investment.



型号Model	过水量Water flow	处理水量 Process water flow	长度Length(mm)	外径(mm) Outer diameter	进出水口尺寸 Inlet & outlet
SLW-2T	2～2T/H	1～10T/H	900	40	Dn32 1.2(inch)
SLW-3T	3～5T/H	3～15T/H	900		
SLW-5T	5～7T/H	5～20T/H	900		
SLW-10T	10～15T/H	10～30T/H	900		
SLW-2TF		8～100T/H	900		

气液混合泵 Gas liquid mixing pump

安全、效率极高的混合方法

气液混合泵的吸入口可以利用负压作用吸入气体，高速旋转的泵叶轮将液体与气体混合搅拌，由于泵内的加压混合，气体与液体充分溶解，溶解效率高。一台气液混合泵即可进行气液吸引、混合、溶解并直接将高度溶解液送到至使用点。但需要气液混合罐、出水压力节等才能达到最佳效果，我公司的高浓度臭氧水机采用气液混合泵。

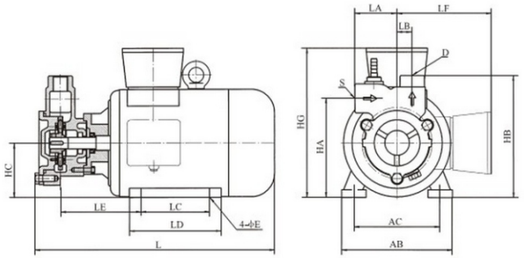
BNP

>> 新产品介绍
New Product introduction

大环臭氧完全杀菌保证

BNP, the promise of complete sterilization

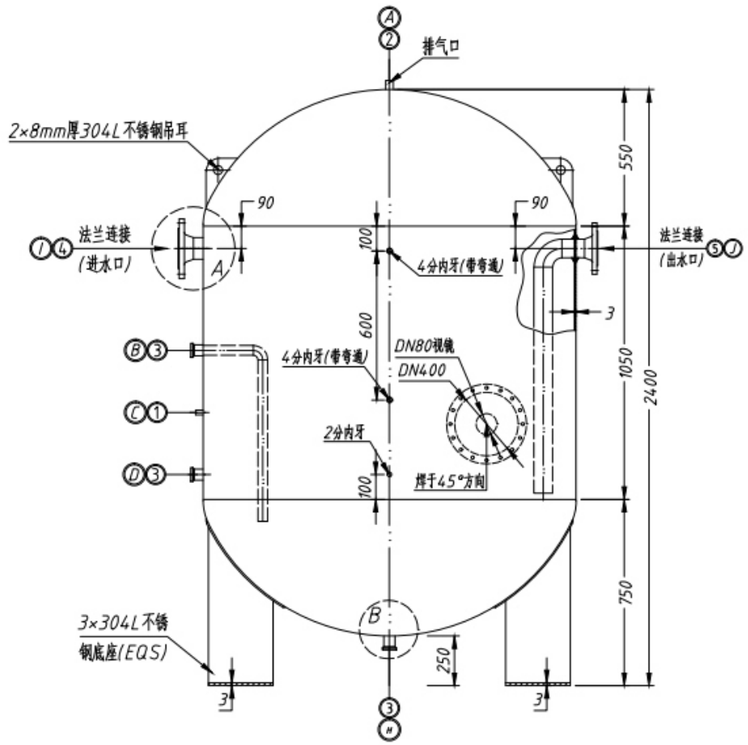
Gas liquid mixing pump suction port utilizes the negative pressure to suck the ozone gas, and the high speed impeller mixing the gas with water. Because there is high internal pressure inside the pump, the ozone gas will fully dissolve in the water, having high diss olved rate. The gas liquid mixing pump completes all jobs including: gas and water intake, mixing, dissolving. However, to have the op timal effect, contact tank is required.



高效混合接触塔 High efficiency contact tank

目前为止几乎为完美的混合方案，在国际上为可口可乐，康师傅等大型饮料企业广泛采用。在臭氧设备不变的情况下，使混合效率得到大幅度的提高跟传统的曝气混合塔相比，至少提高80%以上，水中臭氧浓度可以达到10mg/L以上。

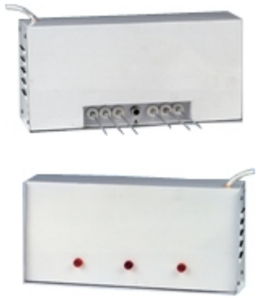
The product is perfect for the mixing system, and has been widely used in international famous bottled water companies, such as: Coco-Cola, Master Kong. With the same ozone generation equipments, the ozone transfer efficiency can at least increase 80% compared with the traditional bubble diffusion method, and the dissolved ozone concentration can be higher than 10 mg/L.



其它配套产品

Other products

臭氧分析仪(Ozone analyzer)



等离子发生器(Plasma generator)

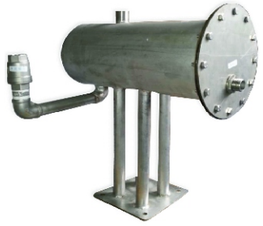
普罗名特臭氧检测仪
(Prominent ozone measuring and control)

美国哈希公司臭氧测试盒
(American HACH ozone test kit)

DPD臭氧测试盒（每盒测150次）
(DPD ozone test kit)

J F螺杆无油空压机
(JF screw oil-free air compressor)

泳池专用防回水筒
(Back flow water protection device for swimming pool)



防回水筒
(Back flow water protection device)

大环臭氧毁灭器
(BNP Ozone destruction device)

部份安装配件

Installation accessories

过滤器
(Filter)

电子排污阀
(Electronic drain valve)

减压阀
(Pressure reducing valve)

活接
(Union connector)

快拧直通
(Quick screw straight connector)

宝塔
(Pagoda-shape connector)

补芯
(Busing)

排气阀
(Exhaust valve)

PVC-U管接头
(PVC-U tubing)

臭氧功能与应用

Ozone function and application

臭氧的应用与功能介绍 *application of ozone and function is introduced*

臭氧作为一种强氧化剂、消毒剂、精制剂、催化剂等被广泛应用于石油、化工纺织、食品、制药、香料、环保等部门。1905年起臭氧开始用于水处理，它可以解决饮用水的质量问题。目前，日本及欧美等大部分国家已把臭氧技术应用于于医疗器械、餐具杀菌等。臭氧作为氧化剂在纺织、印染、造纸、除臭脱色、漂白、老化技术处理、生物工程等领域中亦在逐步得到应用。臭氧的最大特点是气体（由三个氧原子组成），并且具有极强的氧化能力。它的氧化能力仅次于氟而高于氯，效率高而无害残留物，因而具有广泛的应用领域。

Ozone, as a strong oxidation agent, disinfectant, refining agent and catalytic agent, has been widely used in the industries of petroleum, textile chemicals, food, pharmaceutical, perfume, environment protection. Ozone was first used in water treatment in 1905, solving the drinking water quality problem. At present, in Japan, America and most of the European countries, ozone technology has been widely used in medical devices and tableware disinfection. As a strong oxidation agent, ozone is having more and more application in textile, printing, dyeing, paper making, odor removal, decoloration, aging treatment and bioengineering. The main feature of ozone is its gas status (compose of three oxygen atom) and strong oxidability. The oxidability is slightly lower than fluorine, but much higher than chlorine, having high oxidation efficiency and no harmful byproduct. Hence, it has extensive application in different industries.

臭氧的五大主要功能是什么 *Main functions of ozone*

臭氧功能举不胜举，其主要有：

杀菌：可以迅速而彻底的消减消除空气中、水中的病毒及细菌。据学术单位试验报告指出：水中臭氧浓度在0.05ppm时，经处理十至二十分钟，细菌杀灭率在99%以上。可应用于上、下水，游泳池水，饮料水等需杀菌消毒的食品储藏室内杀菌消毒；医院、学校、幼儿园、办公室、食品加工厂、制药厂等空气净化；器具类杀菌消毒，医院污水、生活污水的杀菌消毒等等。

解毒：由于工商业的发展与高度物质文明，在生活中到处充满各种对人体有害的物质，例如：一氧化碳、农药、重金属、化肥、有机物、臭味、色素等等，经臭氧处理后，都会分解成对人体无害的安全物质。

保鲜：美、日及欧洲等国家，已大量将臭氧应用在各种食品的储存上，可以延长食品的贮藏期及降低腐坏率，以降低损失、提高利润。

漂白：因臭氧有很强的氧化作用，所以本身就是很强的漂白剂，可应用于洗衣、食品、废水处理。

除臭：因臭氧有很强的氧化分解能力，可以迅速而彻底的消除空气中、水中的各种异味。可应用于粪便处理、给排水的脱色除味、养殖场除臭等，下水道具的净化脱臭等。

Ozone has a lot of functions, and they are mainly as follows:

Disinfection: Eliminate virus and bacteria in the air and water quickly and completely. According to the test report, more than 99% of the bacteria and virus in water will be eliminated in ten to twenty minutes when there is 0.05ppm residual ozone concentration. Hence, ozone can be used in tap water, waste water, swimming pool water, and drinking water disinfection; Food storage room disinfection; Hospital, school, kindergarten, office, food processing factory, pharmaceutical factory air purification; surface disinfection, hospital and domestic wastewater disinfection.

Detoxification: with the development of industry and commerce, there is a lot of harmful substance around us, for example: carbon monoxide (CO), pesticide, heavy metal, chemical fertilizer, organism, and odor. They will be decomposed into harmless substance after treated by ozone.

Food storage: in Japan, America and European countries, the application of using ozone for food storage to prevent food from rot and extend the storage period, have been quite common.

Color removal: ozone is a strong oxidation agent, so it can be used for textile, food and wastewater color removal.

Odor removal: ozone is a strong oxidation agent, and it can quickly eliminate odor from the air or water completely. So it can be used in waste, sewage, farming odor treatment, etc.

相关数据、图表（注：以下参数和机器图片可能有适当的变动） *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

水产养殖臭氧消毒杀菌
(Aquaculture)

果蔬臭氧浓药降解
(Vegetable and fruit pesticides degradation)

游泳池臭氧消毒杀菌
(Swimming pool)

饮用水臭氧处理
(Bottled water)

家禽养殖业臭氧杀菌
(Poultry farming)

生活污水臭氧处理
(Domestic wastewater)

医院臭氧污水处理
(Hospital wastewater)

工业废气臭氧处理
(Industrial exhaust gas)

其 它
(Others)

纯水处理 *Pure water processing*

目前在世界范围内,纯净水、天然水（山泉水、矿泉水、地下水等经过过滤等工序制成），已普遍采用臭氧消毒。在自来水臭氧净化应用时,国际常规标准为0.4mg/L的溶解度值保持4分钟,即CT值为1.6。下表为参考值:

At present, ozone is commonly used in purified water, spring water, mineral water and underground water processing. And CT=1.6 is often applied to tap water treatment (C means dissolved ozone concentration 0.4mg/L, T means ozone retention time 4 minutes).

指标 \ 类别	分质供水	纯净水	天然水	自来水	泳池水
水中臭氧浓度	0.1～0.3mg/L	0.2～0.4mg/L	0.4～0.6mg/L	0.4mg/L	0.2mg/L
臭氧添加量	1～2g/T	2～3g/T	3～5g/T	2～3g/T	1～2g/T

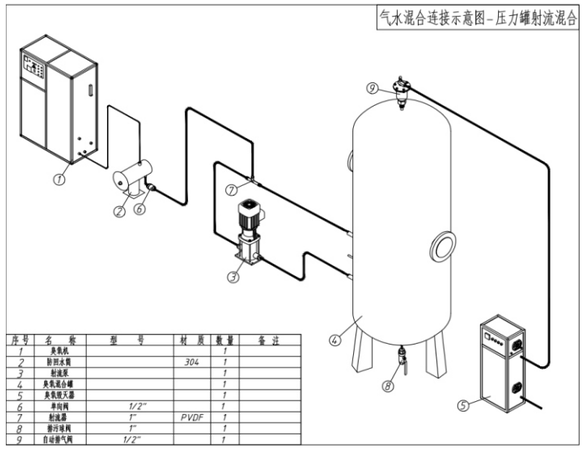
相关数据、图表（注：以下参数和机器图片可能有适当的变动） *related data and charts (note: the following parameters and machine picture might be appropriate changes)*

设备选型配置表 Equipment selection and configuration table（氧气发生器自带无油空压机，8T水以上时要另配套无油空压机或DH-A空压机和冷干机）

(oxygen generator with oil free compressor, 8T water than to other supporting oil free compressor or DH-A air compressor and cold and dry machine)

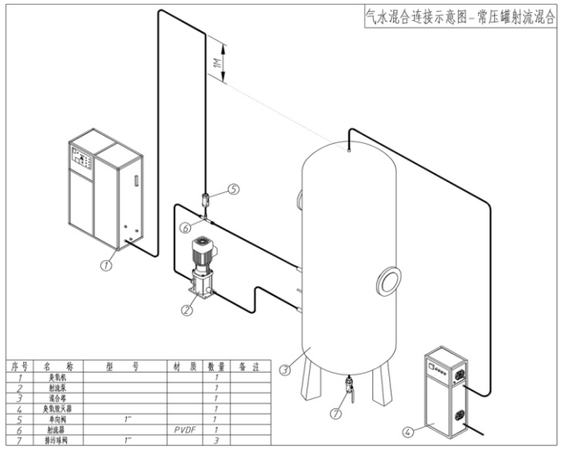
指标 \ 类别	臭氧发生器	氧气发生器	气水射流混合器	气液强力混合腔	混合塔直径x高m	不锈钢加压泵	空气冷干机m3/min	无油空压机MPa	备注
1~2 m3/h水	OZ-3G,5G	OW-2TB	LW-1T			375W			均可选择瓶装氧气源
	OZ-3G,5G SOZ-6G	OW-2TB		SLW-2T		375W,550W			
3~4 m3/h水	OZ-10G,15G	OW-2TB	LW-2T	SLW-3T		550W			
	SOZ-10G,16G、20G	OW-4TB		SLW-3T	0.3x4-5m		可选	可选	
5~6 m3/h水	SOZ-20G,25G、32G	OW-4TB		SLW-5T		750W			
		OW-10TB			0.3x5-6m		可选	可选	
7~8 m3/h水	SOZ-25G,32G、40G	OW-10TB		SLW-5T		750W			
		OW-10TB			0.8x6m		可选	可选	
10m3/h水	SOZ-32G,40G、50G	OW-10TB		SLW-5T		750W	1.0	0.7	
		OW-20TB			0.8x6m	1.1KW	1.0	0.7	
12m3/h水	SOZ-40G,50G、60G	OW-10TB		SSLW-2TF		750W	1.0	0.7	
		OW-20TB			0.8x6m	1.1KW	1.0	1.0	
15m3/h水	SOZ-60G,80G、100G	OW-20TB OW-50TB		SSLW-2TF		1.1KW	1.0	1.0	
20m3/h水	SOZ-80G, 100G、150G	OW-50TB		SSLW-2TF		1.1KW	1.0	1.0	
30m3/h水	SOZ-100G	OW-50TB		SSLW-2TF		1.1KW	1.0	1.0	
50m3/h水	SOZ-150G	OW-50TB、100TB		SSLW-2TF		1.5KW	1.5	1.0	
100m3/h水	SOZ-300G、500G	OW-200TB、300TB		2只 SSLW-2TF		2个 1.5KW	2.5	1.0	
100T水以上时，根据需要选择配置									

气水混合连接示意图—压力罐射流混合 Pressurized tank gas-water mixing



序号	名称	型号	材质	数量	备注
1	臭氧机			1	
2	射流泵		304	1	
3	射流泵			1	
4	臭氧混合罐			1	
5	臭氧除天源			1	
6	单向阀	1/2"		1	
7	射流器	1"	PVDF	1	
8	排污球阀	1"		1	
9	自动排气阀	1/2"		1	

气水混合连接示意图—常压罐射流混合 Atmospheric tank mixing



序号	名称	型号	材质	数量	备注
1	臭氧机			1	
2	射流泵			1	
3	混合罐			1	
4	臭氧除天源			1	
5	单向阀	1"		1	
6	射流器		PVDF	1	
7	排污球阀	1"		3	

气水混合连接示意图—曝气混合 Gas-water mixing by diffuser

序号	名称	型号	材质	数量	备注
1	臭氧机			1	
2	单向阀	1"		1	
3	爆气混合器		PVDF	1	
4	臭氧吸灭器			1	
5	排污球阀	1"		1	

污水处理 *Wastewater treatment*

工业废水处理——臭氧系统，能够处理几乎所有类型的废水。废水臭氧氧化的运行条件取决于行业种类的废水种类。这些运行过程可以按下列方式分类：

整个处理流程：（单纯化学工艺，化学/生物和化学/生物/物理的组合工艺）

应用：（用于水循环使用的室内预处理，或用于间接排放到公共水设施的水及用于直接排放至河流和海湾的管网末端的水处理）

去除化合物：（有毒或有色物质的氧化转化，降低综合参数（DOC或COD），消毒或去除颗粒物）通常采用臭氧氧化可生物降解过程相组合工艺，可降低臭氧用量和运行费用。（即O3-生物处理-O3系统）。

Industrial wastewater treatment: ozone system can be almost used in all kinds of wastewater. The process of wastewater oxidation depends on the types of wastewater from different industries.

Treatment process categories: chemical process, chemical/biological process and chemical/biological /physical process.

Ozone application: indoor pre-treatment for cycling water, water to be indirectly discharged to public water facilities, or post-treatment for water to be directly discharged to river and bay.

compound removal: Oxidation of harmful or colored substance, reduce comprehensive parameters (COD or DOC). Normally, the process combines ozone oxidation and biodegradation, namely O3- biological treatment -O3, to lower the ozone dosage and operation cost.

消毒 *Disinfection*

在废水排入受纳水体之前，需要对废水进行消毒以达到一定的水质标准，如希望将处理过的水直接作为灌溉用水或工艺用水时更应进行消毒，且要比饮用水的臭氧投加量更多。最常用的消毒剂是用氯和二氧化氯用于消毒，而氯可形成众所周知的卤化消毒副产物（龙其是三卤甲烷，THMS）,由于生成潜在的消毒副产物，因此人们对臭氧的用途越来越感兴趣。在进行化学消毒的设计时，经常使用Chick-Watson定律中的ct值的概念（游离消毒剂浓度c乘以有效接触时间t）。大量过去和最近的研究证实，分子态的臭氧是一种十分有效而且在未来将受到广泛应用的消毒剂，效果优于游离氯、二氧化氯。

Before discharging to the receiving water, wastewater requires disinfection treatment to meet the water quality standard. For example, if the wastewater is to be used for irrigation, it will require disinfection with ozone dosage even more than the one in drinking water. The most common disinfectant is chlorine and chlorine dioxide, however, as it is well known that chlorine disinfection can cause halide, especially the trihalomethanes (THMS). Because of the undesired by product from chlorine, the ozone application is becoming more and more popular. When making the chemical disinfection design, the CT concept (concentration of free disinfectant: C multiply contact time: T) in Chick-Watson law is often used. Substantial past and recent researches have proved that molecular ozone is very effective disinfectant, having better effect than the free chlorine and chlorine dioxide, and it will be widely used in the future.

无机化合物的氧化 *Inorganic compound oxidation*

为了破坏废水中的有毒物质而对无机化合物进行臭氧氧化，主要局限于氰化物的去除。在金属加工和电子工业的电解处理工艺中，氰化物使用频繁，它可以以游离态CN-的形成存在，但是更多的情况下是与铁或铜结合，以硌合物形态存在。在氰离子浓度高于5mg/L时，臭氧与游离氰离子反应速度很快，表明反应可能由传质过程控制，而络合的氰化物对于分子态臭氧的攻击作用非常稳定。通过臭氧氧化可以去除亚硝酸盐（NO2-）和硫化物（H2S/2-）。这两类物质与臭氧反应速度都很快。

Ozone can be used to oxide inorganic compound, destroying the harmful substance in wastewater. This is mainly limited to cyanide removal. Cyanide is often used in metal processing and electrolytic treatment. It can be in the form of free state CN-, but most of the time, it combines iron, copper or chromium. Ozone has fast reaction with cyanide ion when cyanide ion concentration is higher than 5mg/L. Ozone can also be used in nitrite (NO2-) and sulfide (H2S2-) oxidation, as they also have quick reaction with ozone.

有机化合物的氧化 *Organic compound oxidation*

工业废水中带来问题的物质大部分是有机物。通常，要处理所含物质不同、浓度各异的混合液（浓度可以从mg/L到g/L）。废水臭氧处理的主要任务是：

- 转化有毒化合物
- 对溶解有机碳(DOC)中生物难降解的成分进行部分氧化，目的在于提高后续的生物降解性能
- 去除色度

与饮用水处理相似，很难用经济的方法将DOC完全矿化，建议采用臭氧氧化与其他工艺组合的方法。处理过程的成功与否是用总体DOC去除来衡量。臭氧氧化系统已经用于处理废水，如垃圾渗滤液、纺织、制药和化学工业的废水。这些水中的主要污染物是难降解有机物，可分类如下：

- 垃圾渗滤液中的腐殖质（褐色或黄色）和可吸附的有机卤化物（AOX）
- 纺织废水中的有色（聚）芳香簇化合物（这类物质常常与大量金属离子cu,Ni,Zn,cr）混合在一起
- 制药和化学工业产生的有毒或杀生性物质（例如农药）
- 化妆品和其它工业产生的表面活性剂
- 纸浆和造纸废液中的COD及有色物质在废水臭氧氧化系统中，最常见的运行问题是产生泡沫，形成草酸钙、碳酸和氢氧化铁（Fe(OH)3）淀物，他们很容易阻塞反应器、管道或阀门，和会对泵造成损坏。

Most of the substances in wastewater are organic.

- Transformation of poisonous compound
- Oxidation of the non-biodegradable dissolved organic carbon (DOC), improving the effect of the following biodegradation process.
- Color removal

Similar to drinking water, it is difficult to use economic method to mineralize the wastewater, and it is advised to use ozone for oxidation and combine with other processing. The effect of the treatment is measured by the total DOC removal. The main pollutants of the trash penetrating fluid, textile, pharmaceutical and chemical industry wastewater are difficult to degrade. Hence, ozone system has been used for oxidation in this field. The pollutants can be categorized as below:

- Humus from trash penetrating fluid (in brown or yellow) and absorbable organic halide (AOX)
- Aromatic compounds from textile wastewater which are often combined with metal ions: Cu, Ni, Zn, Cr.
- Pharmaceutical and chemical industries often generate poisonous substance (for example, pesticide).
- Surfactants (surface active agent) from cosmetic or other industries
- Effluent in Pulp and papermaking

污水氧化水质、水量分析 *Wastewater quality analysis*

根据居民生活小区所排放的污水，重点超标项目是COD、BOD、悬浮物、各类胶体、各种细菌进行取样分析，做出报告。Since the COD, BOD, SS, colloid, and bacteria from residential wastewater, are the main items which may exceed the standard, a sampling analysis and report of these items should be made accordingly.

设计标准 Design standard

污水处理后，COD、BOD、悬浮物SS、各类细菌溶解性总固体的浓度与含量符合中华人民共和国建设部生活杂 用水标准CJ25.1-89，回水回用水质标准如下：

After the water treatment, the COD, BOD, SS, bacteria, dissolved solids should meet the following standard of water recycling according to CJ25.1-89 (Chinese standard):

项目Item	出水水质指标 Water quality index
浊度，度Turbidity	10
溶解性固体Dissolved solids(mg/L)	1200
悬浮性固体SS(mg/L)	10
色度，度Chroma	30
臭Smell	无不快感觉
Ph值	6～9
BOD5,mg/L	<30
COD,mg/L	<100
氨氮（以N计）,mg/L Ammonia nitrogen (calculated by N)	20
总硬度（CaCO3计） Total hardness (calculated by CaCO3)	450
氯化物Chloride(mg/L)	350
阴离子合成洗涤剂 Anionic Detergent(mg/L)	1
铁Fe(mg/L)	0.4
锰Mn(mg/L)	0.1
总大肠菌群，个/L Total coliform, num/L	3

设计依据 Design basis

(1)、国家环境保护“九五”计划和2010年远景目标规划。
(2)、污水取样报告本。
(3)、<室外排水设计规范>（GBJ14-87）。
(4)、中华人民共和国建设部生活杂用水标准CJ25.1-89。

(1)、China environment protection 1995 and 2010 (Applicable in China)
(2)、Wastewater sampling report
(3)、Outdoors drainage criterion
(4)、China residential reclaim water criterion Cj25.1-89 (Applicable in China)

设计原则 Design principles

(1)、认真执行国家有关法规、标准及规定，根据小区污水的实际情况，采取切实可行的治理方案，符合处理效果好、建设投资少、运行费用低、管理操作简便的要求。
(2)、废水处理后应符合中华人民共和国建设部生活杂用水标准CJ25.1-89。

(1)、Design according to the country’s relevant regulation, according to the actual condition of the residential wastewater, meeting the requirement of low investigation with good effect, low operation & maintenance cost.
(2)、The wastewater after treatment will meet the China residential reclaim water criterion CJ25.1-89 (Applicable in China)

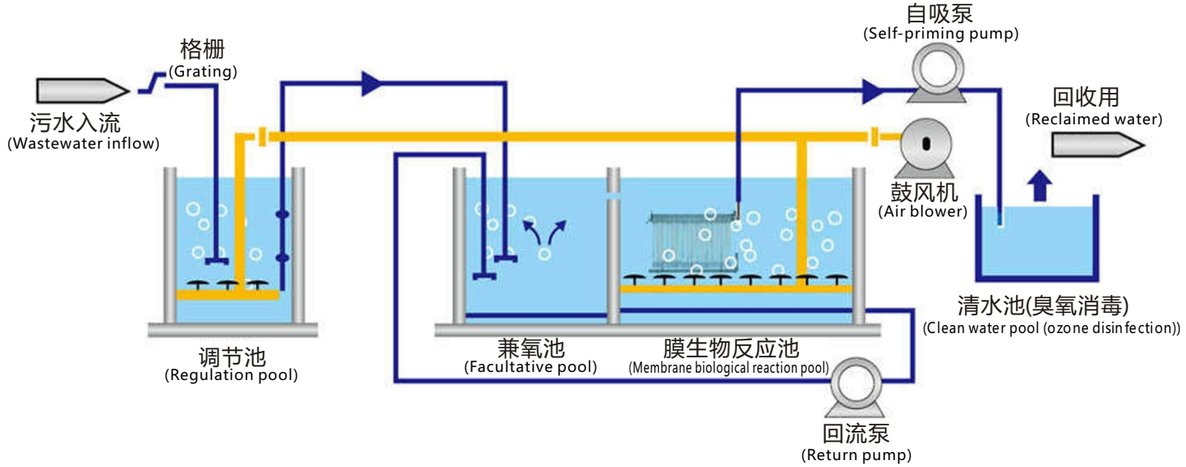
技术工艺流程简述 Process description

(1)、密闭安全型膜，生物反应垃圾渗滤液处理工艺。关键：膜生物反应技术+O3。
(2)、密闭安全型生物接氧化法垃圾渗滤液处理工艺。关键：生物接接触氧化技术与高效斜板沉淀相结合+O3。
(3)、SBR垃圾渗滤液处理工艺。关键：SBR氧化工艺+O3。

(1)、Seal membrane, biological reaction process for trash penetrating fluid treatment. Main process: membrane biological reaction + O3;
(2)、Biological contact oxidation process for trash penetrating fluid treatment. Main process: Biological contact oxidation technology + inclined-plate sedimentation + O3.
(3)、SBR process for trash penetrating fluid treatment. Main process: SBR oxidation + O3.

中水回用处理工艺 Water recycling processing

接触氧化——过滤工艺 Contact oxidation- filtration process :



>>>>>>> 大环臭氧完全杀菌保证
BNP, the promise of complete sterilization
BNP
臭氧功能与应用 <<
Ozone function and application

空间消毒 *Space disinfection*

功能特点 *Functional features*

消毒杀菌 Disinfection

臭氧对细菌、霉菌、病菌等微生物具有极强的杀灭力，它杀灭病毒是通过直接破坏其RNA和DNA物质完成的，而杀细菌，病毒类微生物的过程则是臭氧先作用细胞膜，继而破坏膜内组织直至溶解死亡。

Ozone is effective disinfectant for microorganism, for example bacteria and mould. It kills virus by destroying the RNA and DNA and killing bacteria by destroying the cell membrane.

除异臭味 Odor removal

臭氧去除霉、腥、臭等异味效果极好，它可以快速氧化分解异味的化学物质。Ozone is effective for odor removal by decomposing the chemical substance of the odor.

防霉保鲜 Food storage

臭氧为弥漫性气体，消毒无死角，可实现机器自行运行而杀菌防霉。对水果菜类不但能杀菌防霉、延长保鲜期，而且可快速分解果菜呼吸排除的乙烯气体和令其快速成熟。

Ozone gas has the advantage of preventing disinfection blind spot. It has the function of killing bacteria and mould, extending food preservation period and decomposes ethylene gas generated by vegetable and fruits.

物体表面消毒杀菌 *Surface disinfection*

在药品生产过程中经常要对原材料，工具，包装物等进行表面消毒，经常使消毒柜，传递窗等，传统的方法是用紫外线消毒，问题主要是消毒不彻底，所以若使用在诸如传递窗等要求不高的场合是可以的，但远不如臭氧的效果好。《消毒技术规范》中详细讲述，对于浸没在臭氧气体中的物体表面，接触一段时间，可将表面细菌杀死。

During pharmaceutical production, surface of the raw material, tools, packages require disinfection. The traditional disinfection method is using UV. However, it has the drawback of incomplete disinfection, and can be only used in the low requirement occasions. Using ozone will have a much better effect. The /Disinfection Technology Criterion/ has described in detailed that the bacteria on the surface will be killed by ozone gas for a certain contact time.

臭氧在医药工业中应用 *Ozone application in pharmaceutical industry*

医药工业洁净室与其它工业洁净室有所不同，特别是无菌生产制剂及原料药品生产，不仅要控制空气中一般悬浮状态的气溶胶粒子，还要控制或微生物数，既提供“无菌药品”生产所必须的相应空气洁净度环境（无菌室）。

Pharmaceutical workshop is different from other workshop, especially the one for bacteria-free pharmaceutical preparations production. The microorganism has to be control, providing the bacteria-free environment for the production.

高效彻底：工作时产生一定量的臭氧，在相对密闭的环境下，扩散均匀，包容性好，克服了紫外线杀菌存在诸多死角的固有缺点，可达到全方位、快速、高效的消毒灭菌目的。

High efficient & complete disinfection: Using ozone for disinfection in the closed environment has avoided the drawback of using UV which has a lot of blind spots in disinfection. Ozone disinfection has the advantages of being comprehensive, fast, high efficient.

操作方便：根据消毒灭菌的要求和空间体积，确定臭氧发生器的型号和臭氧发生量，并通过验证检查细菌数来确定灭菌时间。灭菌时，直接将臭氧输出口置于无菌室内或HVAC系统中，可选用24小时时间控制器设置开机关机时间即可。

Simple operation: Choose the ozone generator model and capacity according to the disinfection requirement and space, and set the disinfection time by making inspection of the number of bacteria. When making the disinfection, connect the ozone outlet to the room or to the HVAC system and set the time controller for operation time.

高洁净性：应用臭氧作消毒灭菌剂，停机30分钟后，剩余臭氧即可渐渐自行分解还原为氧，同时还可以改善空气的质量，优化工作环境。所以臭氧被誉为“绿色消毒剂”

No undesired by product: After using ozone for disinfection, the residual ozone will be easily converted back to oxygen, which, at the mean time, improves the air quality. Hence, ozone is recognized as “green disinfectant”.

对机器设备无不良影响：臭氧对空气中的浮游菌灭杀所需臭氧的浓度很低，一般只需要2~4ppm,对物体表面沉降菌落（代替传统的化学熏蒸大消毒）只需要10~15ppm左右。空气中臭氧浓度只有10-15百万分之一，是化学熏蒸浓度的500分之一。由于灭菌过程时间短，正确使用不足以构成物体腐蚀的条件，这也是大家特别关心的。使用经济：以空气为原料，工作能耗低，运行费用低，经济效益好。

No damage to the equipments: It requires a low concentration of ozone to kill bacteria in the air, normally in 2-4ppm, and 10-15 ppm for bacteria on the surface (a substitution of chemical fumigation disinfection). The ozone concentration of 10 to 15ppm is 1/500 of the chemical fumigation concentration. Due to the short disinfection time, the materials will not be corroded when it is used correctly. Using ozone for disinfection is also very economic: using air as raw material, low power consumption, low operation and maintenance cost.

臭氧在药厂的应用场合 *Ozone application in pharmaceutical factories*

臭氧在医药行业的应用主要有几个方面：一是GMP车间及设备、器具表面的杀菌消毒；二是中央空调系统杀菌消毒；三是更衣室和工作服杀菌消毒；四是生产加工用水的杀菌净化；五是制备高浓度的臭氧消毒液。

Ozone is mainly used in the pharmaceutical industry in the following ways: 1. GMP workshop, surface of equipments and instruments. 2. Central air conditioning system disinfection 3. Dressing room and labor suit disinfection. 4. Processing water disinfection 5. High concentration ozone-enriched water production.

生产GMP车间的空气杀菌消毒 GMP workshop air disinfection

根据GMP车间级别不同，对应选择合适的机型		
车间洁净度级别 Workshop purification class	微生物最大允许数浮菌/立方米 Maximum allowable bacteria/m3	适用场合Applicable occasion
30万级	1000	丸剂、颗粒包装车间 Pills and particle package workshop
10万级	500	注射剂浓配车间 Injection preparation workshop
1万级	100	小容量注射剂灌装车间，直接接触药品的包装材料最终处理车间small volume injection filling workshop & the final processing of the package material with direct contact to medicine
100级	5	大容量注射剂的灌装车间 large volume injection filling room

大环臭氧完全杀菌保证
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GMP车间或食品净化级别选择 GMP workshop or food purification level

种类	浓度ppm	每m3每小时臭氧量mg/h
家庭办公室	1～2	2. 5～5
一般场所	2～5	5～10
冷库（30万级）	6～10	5～10
食品医药车间（十万级）	15～20	10～20
医院无菌病房（一万级）	30～40	30～50
食品医药实验室（100级）	60～80	40～60

大环臭氧机型选择建议 OZ-G series model selection

型号 \ 级别	OZ-3G	OZ-5G	OZ-7G	OZ-10G	OZ-15G
30万级	80–120m3	120–250m3	180–350m3	300–500m3	400–750m3
10万级	50–70m3	80–120m3	100–175m3	130–250m3	200–370m3
1万级	20–35m3	40–60m3	40–90m3	70–125m3	80–190m3
100级	6–12m3	15–30m3	18–45m3	40–60m3	60–100m3

强力臭氧发生器SOZ-G 系列采用先进的高耐温石英玻璃放电单元，下表： SOZ-G series high performance model selection

型号 \ 级别	30万级	10万级	1万级	100级
SOZ-20G	600–1000m3	300–500m3	130–250m3	80–125m3
SOZ-25G	700–1250m3	400–625m3	160–310m3	100–155m3
SOZ-32G	900–1600m3	500–800m3	250–400m3	150–200m3
SOZ-50G	1500–2500m3	800–1250m3	300–625m3	200–310m3
SOZ-80G	2200–4000m3	1200–2000m3	600–1000m3	300–500m3
SOZ-100G	2800–5000m3	1600–2500m3	700–1250m3	400–625m3
SOZ-150G	5000–7500m3	2500–3750m3	1200–1880m3	600–940m3
SOZ-500G	16000–25000m3	8000–12500m3	4000–6250m3	1600–3130m3

臭氧应用于食品空间杀菌、消毒
Ozone used in food sterilization, disinfection, space

臭氧应用于GMP空间杀菌、消毒
Ozone disinfection in GMP workshop

臭氧应用于洁净室空间杀菌、消毒
Ozone is applied to sterilization, disinfection, clean room space

水产养殖中的应用 *application of aquaculture*

随着水产养殖业的发展，养殖业因病原微生物引起疾病时有发生，对养殖业危害极大。各养殖设施除加强管理外，在饲育水及使用的各类器具上消除病原微生物已成为一个重要课题。臭氧作为一种强氧化剂、消毒剂、催化剂不仅在工业上得到广泛的应用，实践证明臭氧亦在水消毒、改善水质、防止水产养殖系统内的疾病及赤潮解毒等领域得到了成功的应用。通过臭氧杀菌装置可对生物卵消毒、养殖水杀菌、设施消毒，可以防止病原体的侵入。臭氧具有强烈的杀菌消毒和水质净化作用，而且无毒无害，是水产养殖和育苗生产中最理想的杀菌净化剂，对防治鱼、虾、海胆、河蟹、甲鱼等生物病害，改善水产养殖的生态环境，有着重要的意义。总之水产养殖中使用臭氧育苗，现在成套的设备价格并不高，一次性投资也不大，而且可节约各种消毒剂，抗菌素，还可以减少换少量，应用臭氧育苗，其成活率至少可提高一倍以上而且一套设备可使用数年，从而既可大大节省养殖成本，又可培育出绿色环保食品，从各个方面讲是比较经济的。目前日本及欧美等大部分国家已广泛采用臭氧进行养殖，并禁止采用氯化物等化学消毒剂进行养殖而造成含氯素过高的产品进入其市场，各大报刊时有报道。

With the development of aquaculture, the disease caused by the pathogenic microorganism happen occasionally, which do h arm to the aquaculture industry. Except for enhancing the management of the facilities, it has been an important subject to elimi nate the pathogenic microorganism in the feeding water and instruments. Ozone, as it is strong oxidant, disinfectant and catalys t has been widely used not only in the industry, but also in water disinfection, water quality improvement and preventing the pat hogenic microorganism in aquaculture and red tide. The pathogenic microorganism can be prevented by using ozone system to disinfect aquaculture water and facilities. As ozone has high efficiency in disinfection, water purification and do not cause unde sired by-product, it is the ideal disinfectant for aquaculture. The investment of using ozone system in aquaculture breeding is no t high, and it saves various disinfectants, antibiotics, decreases exchanged water, increases the breeding survive rate to at least two times, produces the green & organic food. Hence, it is quite economic. At present, using ozone in aquaculture is quite comm on in Japan, America and European countries, since it is forbidden to use the chloride in aquaculture.

淡水养殖中的臭氧杀菌饲育用水的处理模式图 *Ozone disinfection in freshwater aquaculture*

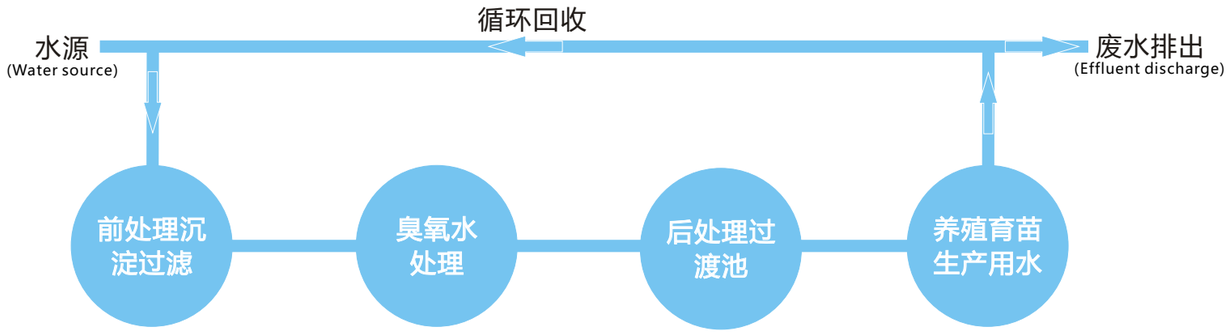
臭氧设加量：每立方水投加1~2克（图中所示先以0.1~0.3mg/L浓度处理5~10分钟，再曝气到臭氧浓度0.003mg/L以下方可用作饲育水）
Process: in the ozone processing stage, the dissolved ozone concentration is 0.1-0.3mg/L with 5-10 minutes processing time. Then it goes to the natural de-ozonation (lower the residual dissolved ozone concentration in the water). Finally, the breeding water can be used with the residual dissolved ozone concentration to be lower than 0.003mg/L.

海水养殖中的臭氧杀菌饲育用水的处理模式图 *Ozone disinfection in seawater aquaculture*

臭氧设加量：每立方水投加1~3克（图中所示先以0.1~0.5mg/L浓度处理5~10分钟，再经活性炭槽到臭氧浓度0.003mg/L以下方可用作饲育水）
Process: in the ozone processing stage, the dissolved ozone concentration is 0.1-0.5mg/L with 5-10 minutes processing time. Then it goes to the activated carbon processing. Finally, the breeding water can be used with the residual dissolved ozone con centration to be lower than 0.003mg/L.

！注意：海水养殖需经活性炭槽等将臭氧气体及所生成的强氧化剂去除，不能等同于淡水养殖工系。
Note: seawater aquaculture requires activated carbon processing to eliminate residual ozone and the strong oxidant oxidized by ozone, which is different from the freshwater aquaculture system.

养殖中臭氧水处理系统应用流程图 *Ozone disinfection in aquaculture breeding water flow chart*



臭氧水产养殖项目 *Project reference*

泳池消毒 *Swimming pool disinfection*

按国家规定或规范根据游泳池和水上游乐池给水排水设计规程。《CECS14：2002》设置臭氧处理装置。此外，一些公众性泳池、高档宾馆、小区的游泳也采用臭氧技术。人们对于个人卫生的保护意识在“非典”危害中得到了进一步加强。可以预见，臭氧处理泳池水技术今后必将加速发展。

In Europe, using ozone for swimming pool disinfection has been quite common. During the last years, more and more people in the world have realized the advantages of using ozone in swimming pool water treatment. The application of ozone in swimming pool will certainly increase rapidly in the future.

游泳池使用臭氧 *Ozone application in swimming pool*

臭氧及其二次产物羟基氧具有最强的杀菌性及消灭病毒的作用，可有效防止细菌和病毒的蔓延，实验证明，同样浓度的臭氧杀灭细菌和病毒的效果是氯的600-3000倍。臭氧是国际公认的环保型绿色杀菌剂，不会对环境造成任何二次污染，而氯制剂会与水中的有机物反应生成三氯甲烷、氯仿等，这些物质均为公认的致癌致突变物。当人游泳时，这些有毒物质会被人体所吸收（在水中人体每小时可吸收500毫升水）。水中的氯代有机化合物还会刺激人的眼睛及皮肤，从而引发红眼及皮疹。

臭氧是最强的氧化剂，可有效分解水中的腐蚀质，氧化水中的铁、猛离子，分解水中散射光线的微小有机体，从而大大提高水的清澈度，使水呈现出美丽的蓝色，而氯制剂则无此效果。为使水呈现蓝色，使用氯制剂的游泳池往往需加入铜盐，对人极为有害。

加入氯制剂后，会导致水的PH值的改变，使人感到不适，需要加入碱性或酸性物质予以中和。而臭氧是中性物质，不会产生此种问题。

Because of its strong oxidation and disinfection mechanism, ozone is very suitable for swimming pool water treatment. Experimental result shows, ozone is 3000 times faster to treat water than chlorine. Ozone is also recognized as “green disinfectant”, since it does not cause undesired byproduct. However, chlorine reacts with organic waste and forms a large number of highly toxic chloro-organic compounds, also referred to as "combined chlorine". These are well known carcinogens, and are also very poisonous to marine life. In swimming pools they accumulate in very high concentrations. Red eyes and rashes are the most instant and obvious effects, and should be considered signals of a much more serious risk to human health.There are many advantages of using ozone in swimming pool. Ozone assists flocculation of organic waste materials, thus enhancing the effectiveness of sand filters. Ozone directly decomposes organic waste, oxidizes Fe, Mn ions which makes the water clean and presents the appealing blue. Ozone is an effective disinfectant killing bacteria, viruses, spores, mold and algae, leaving no toxic residues in the treated water.

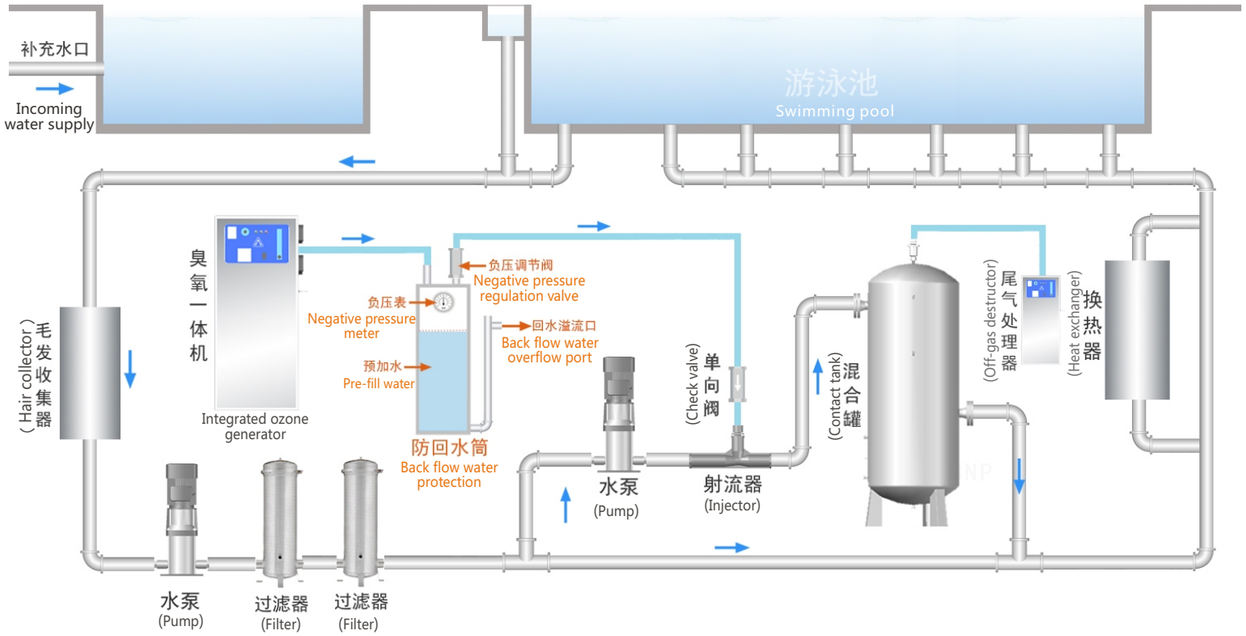
臭氧技术 *Ozone technology*

循环水量用臭氧消毒。投加浓度为：0.5--1.0mg/L，一般采用的方法：通过水流压力，由射流器中产生的负压混合成的臭氧水与主管水流合并，并在接触罐中反应不低于二分钟方能达到杀菌的目的。为了保障空气中臭氧低于0.1ppm，安装活性炭分解器。

Ozone is normally added to water via venturi injector in swimming pool water treatment. Venturi injectors work by forcing water through a conical body. This action creates a pressure differential between the fluid inlet and outlet ports, which in turn creates a vacuum inside the injector body. This vacuum allows the ozone gas to be added into the flowing water stream via the suction port on the injector.

大环臭氧完全杀菌保证 BNP, the promise of complete sterilization
臭氧功能与应用 Ozone function and application <<

产品运用示意图 *System schematic diagram*



臭氧泳池消毒项目 *Swimming pool picture*