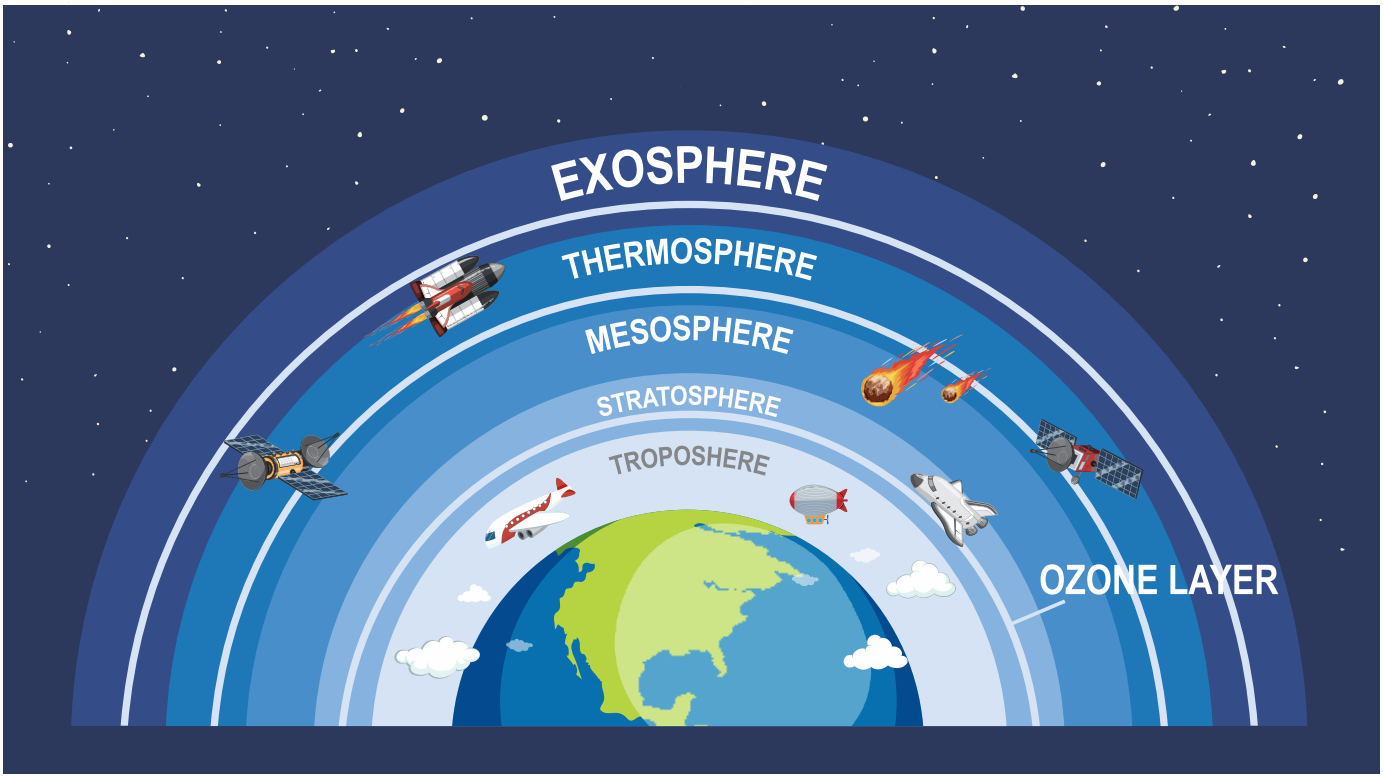
ORAIPL

Ozone Research and Applications (India) Pvt. Ltd.

AN ISO 9001:2008 Company

GLOBAL OXYGEN AND OZONE MANUFACTURER

About Us



Ozone is present in the upper stratosphere of atmosphere. It is both a natural and a man-made product that occurs in the Earth's upper atmosphere. Ozone is also called as trioxygen, is an inorganic molecule with the chemical formula O_3. It is a pale blue gas with a distinctively pungent smell. It is an allotrope of oxygen that is much less stable than the diatomic allotrope of O_2, breaking down in the lower atmosphere to O_2. Ozone is formed from dioxygen by the action of ultraviolet (UV) light and lightning within the Earth's atmosphere. It is present in very low concentrations throughout the latter, with its highest concentration in the ozone layer of the stratosphere, which absorbs most of the Sun's ultraviolet (UV) radiation existing as 3-5 mm thick layer. Ozone layer protects all forms of life on the earth.

In 2002, Ozone Research & Applications (India) Pvt. Ltd. - *ORAIPL* started its journey as a project engineering based private limited company providing environmental solutions through ozone and advanced oxidation processes. *ORAIPL* is an ISO 9001:2008 certified company. We have our manufacturing facility of around 21000 sq. ft. area at Hingna MIDC, Nagpur (Maharashtra) India. We manufacture ozone generators, ozonation systems, ozone destructors, static-mixers, automatic air vent valves, PSA , P-VSA Medical grade oxygen generation system. *ORAIPL* has fullfledge in-house facilities to manufacture electrical panels (LT, HT, PLC, VFD) which are CPRI approved. *ORAIPL* also offers other services such as Laboratory Testing, Treatability Studies, Pilot Testing Process, Testing on Site, Engineering Support for Design and Integration, Application Consulting, Process Selection and Equipment Servicing after sales and services.

Corporate Office

Factory & Research Centre

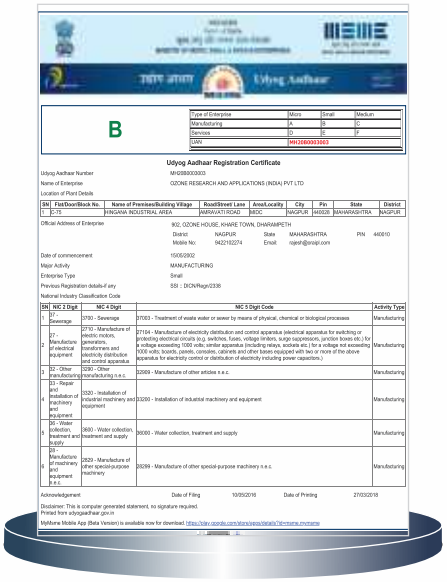
Mission

ORAIPL with its core capability to manufacture world class ozone generators engages itself in upgrading human health and building environmental sustainability through power forging ozone-based solutions for treatment of air, water, waste water and applications in food sector.

Vision

To be globally preferred sustainability partner.

Certifications



Appreciations

Core Technology

Core technology of ozone generator

Dielectric Barrier discharge	Special power control	Special high and middle frequency transformer	Instrumentation safety and control

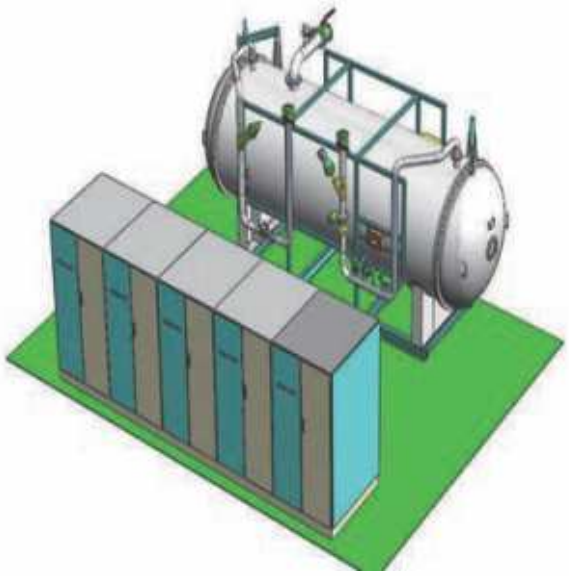
Ozone generator series products development technology			Ozone system accessory products development technology		
Ozone electrode	Special high and middle frequency power	Ozone generator control & instrumentation	Feed gas treatment system	Ozone dosing system	Off gas treatment system

Core technology of integration, online detection and remote control of ozone system

Core Technology

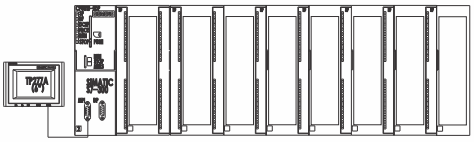
- International leading glass and non-glass dielectric discharge technology
- Capacitive load high power inverter resonant power supply technology
- Capacitive load high power dry type high voltage transformer technology
- Power control technology based on IP core and digital logic circuit
- Embedded on-line detection and remote monitoring technology of ozone system
- Use of ozone compatible material for longer life

Components Of Ozone Generator



Ozone generator

PSU



PLC intelligent control system

Ozone generation chamber

High voltage transformer

Rectifier

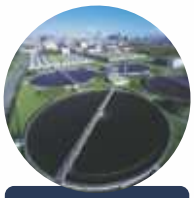
Main circuit

Main control panel

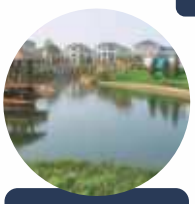
Ozone generation chamber, Instrument & valves

Ozone Technology Application


Flue Gas Denitrification


Effluent Treatment


Drain Treatment


Lake Rejuvenation


Petrochemical Effluent Treatment

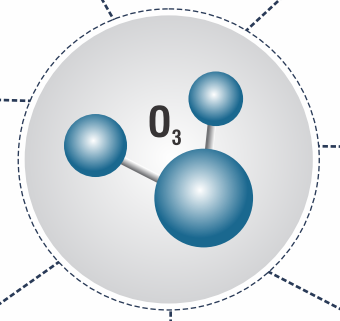

Printing and Dyeing Waste Water


Municipal Water Treatment

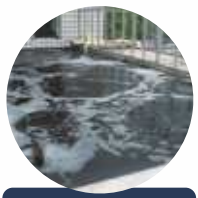
Micro pollutants

Toxic Substances
- Cyanides
- Phenoles
- NO_2 (Nitrite)
- Pesticides

Tenside removal



Disinfection of
- Bacterias
- Viruses

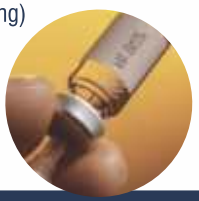

Landfill Leachate

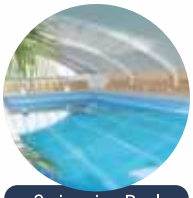

Food & Beverage

Colour Removal dissolved colours

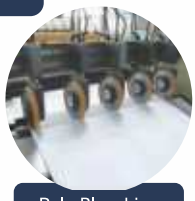
COD-Removal by
- Full oxidation
- Patial oxidation (creacking)

De-odorization H2S -Removal


Pharmaceutical Industry


Swimming Pool Disinfection


Aquaculture


Pulp Bleaching


Research & Development

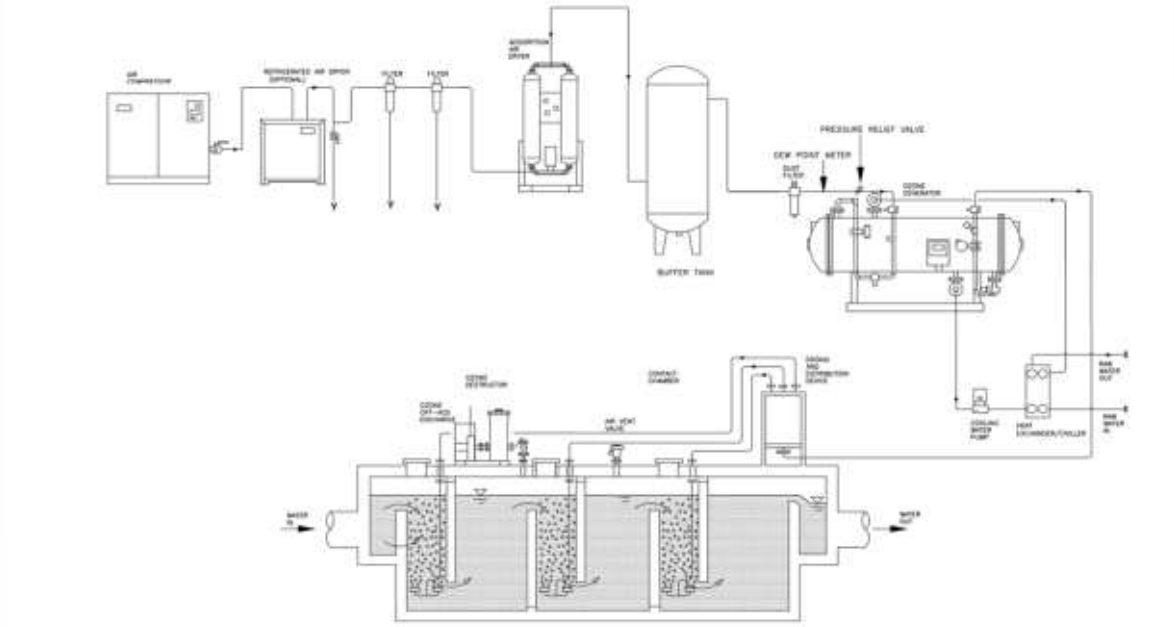

Air treatment disinfection

Media Released

System Technical Process

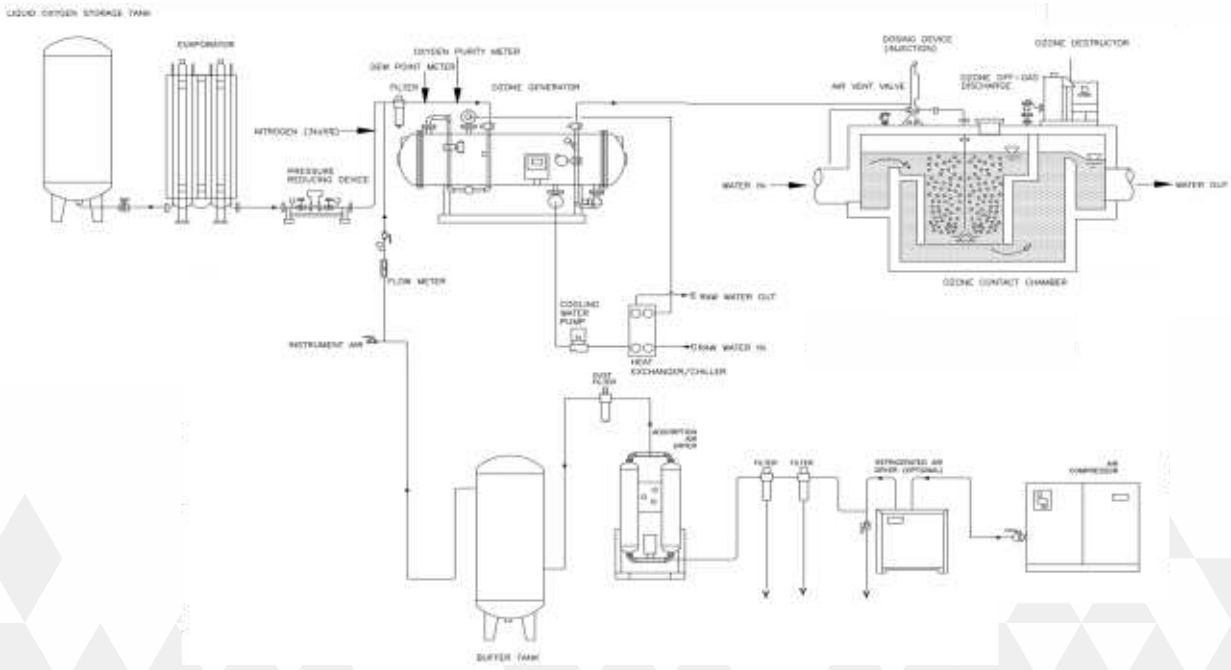
Air Feed Ozone Generator

Air compressor ➡ dust filter ➡ oil filter ➡ micron filter ➡ refrigerated dryer (optional) ➡ adsorption air dryer ➡ ozone generator(cooling water system) ➡ ozone dosing unit ➡ ozone destructor



Oxygen Feed Ozone Generation

Liquid oxygen/PSA storage tank ➡ evaporator ➡ pressure reducing device ➡ dust elimination filter ➡ ozone generator (cooling water system) ➡ ➡ ozone dosing unit ➡ ozone destructor ➡

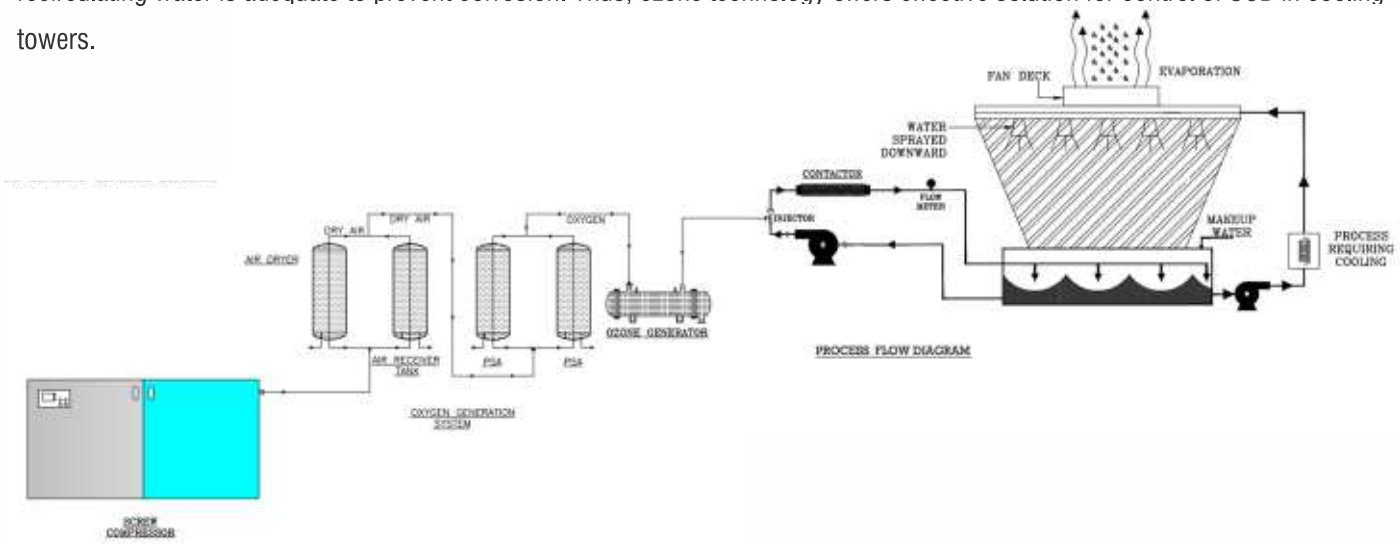


Applications

Ozone In Cooling Tower Operations

Cooling towers (CT) are often deployed for removing heat from industrial operations. Unfortunately, the performance of a CT is only as good as water quality; good quality water ensures high cycles of concentration (COC). Use of contaminated water leads to Scaling, Corrosion & amp; Biofouling (SCB) of cooling tower parts, all of which decrease COC. Therefore, water treatment is crucial. There exist technologies (e.g., water softening, CDI, Scale Ban, etc) which are useful, but they cannot reduce algae,

microbial and organic impurities that often form even harder scales. Ozone quantitatively removes these contaminants thereby emerging as an alternative technology for preventing SCB and lead to increase in COC and reduce CT blowdown. Further, ozone advantageously passivates metal parts thereby preventing corrosion of metals. In practice, about 0.1 g/m^3 of ozone dosed to recirculating water is adequate to prevent corrosion. Thus, ozone technology offers effective solution for control of SCB in cooling towers.



ADVANTAGES

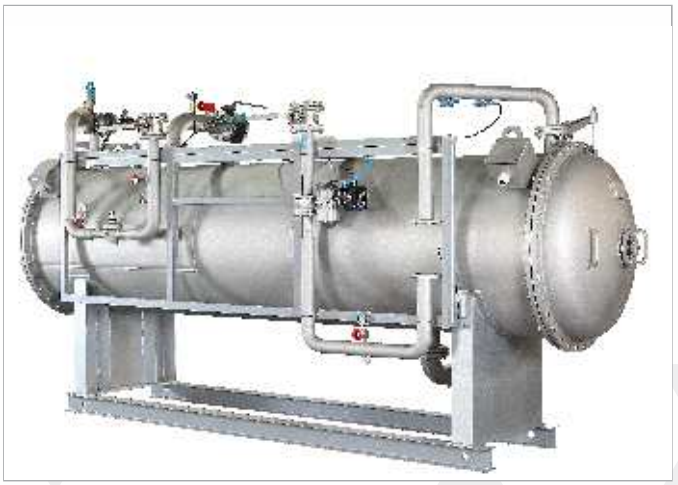
- Ozone technology can diminish scaling, prevent corrosion and biofouling (SCB).
- More importantly, it increases COC and reduces the quantity of blow down thereby accounting for savings.
- As per GOI ministry of water resources, application of Ozone for cooling tower water treatment can result in 5-fold reduction in blow down when compare to other traditional chemical treatment.

MAJOR CLIENTS

- **Koradi Thermal Power Station Nagpur** - 45 kg/hr
- **Parli Thermal Power Station** – 20 kg/hr and 2 No. x 12 kg/hr
- **BHEL (KPCL) Bellari** - 18 kg/hr
- **Khaparkheda Thermal Power Plant** – 13 kg/hr and 6 kg/hr
- **Paras Thermal Power Station** – 2 No. X 8 Kg/hr
- **BHEL (KPCL) Yelahanka** – 10 kg/hr

15 kg glass tube ozone generator

15 kg oxygen source ozone generator

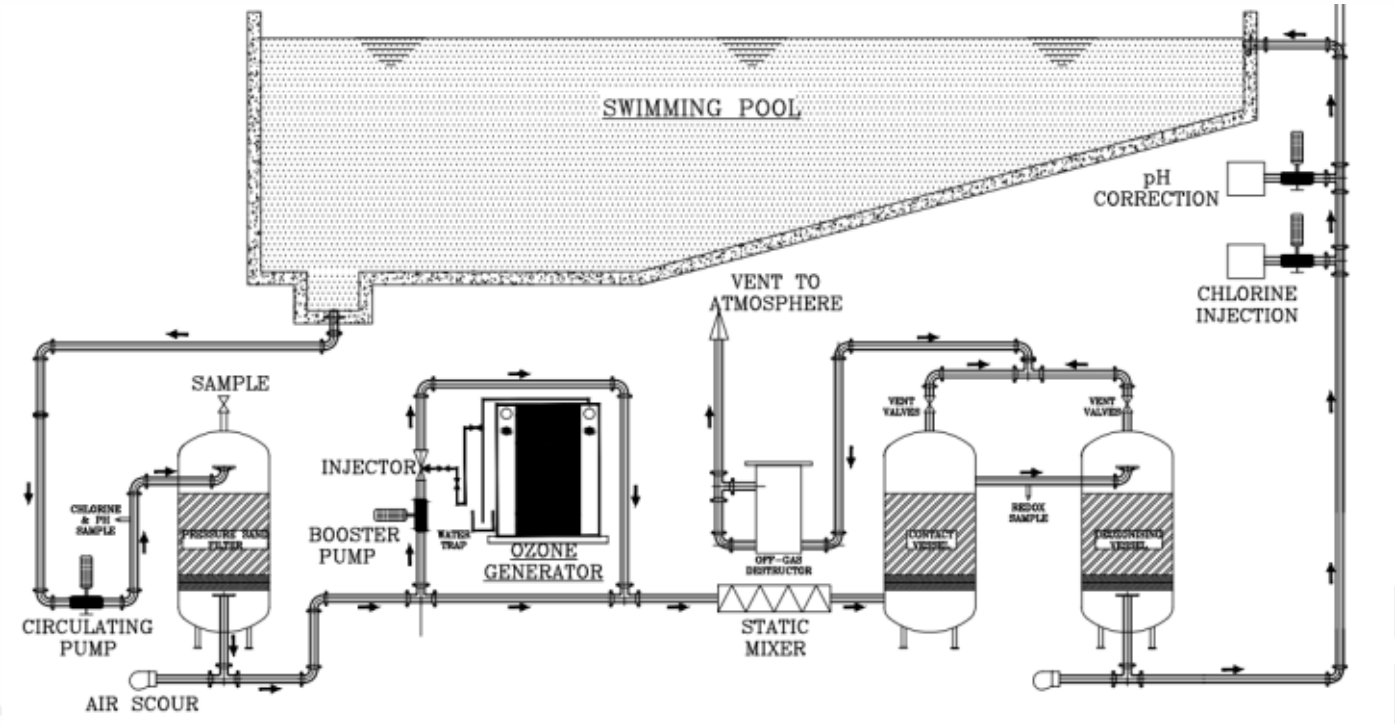


30 kg ceramic tube oxygen source ozone generator

Ozone for Swimming Pool Water Disinfection

Water in swimming pools contains microorganisms and undesirable substances. Users often contribute to this pollution through sweat, mucus discharges from nose and saliva from mouth, cosmetics, and ammonia. Since water is often re-circulated, pollutants concentration increases with time. Maintaining quality of water in swimming pools assumes utmost importance for swimmer's health and experience. As total chlorine based swimming pools often have the problem of Chloramine generation, where the swimmers face problem of darkening of skin /teeth, hair fall, redness and irritation of eyes.

Chlorine and bromine-based compounds are commonly used for disinfecting swimming pool water but Ozone can effectively reduce chlorine and bromine-based disinfectants and improve quality of water and aesthetics of swimming pool thereby safeguarding swimmers health.



PROCESS FLOW DIAGRAM

ADVANTAGES

- Ozone is the most powerful disinfectant.
- Combined use of ozone and chlorine reduces the chlorine dose requirement significantly.
- It does not from carcinogens (haloalkanes) unlike chlorine or bromine-based disinfectants.
- Ozone will even breakdown already formed unwanted DBPs.
- Ozone produces crystal clear water due to its micro flocculant property.
- Besides disinfection ozone can act as micro-flocculant and has potential to increase the performance of the sand- and carbon filter.

MAJOR CLIENTS

- **Common Wealth Games, S.P.M. Stadium, New Delhi -** 650 gm/hr, 550 gm/hr and 450 gm/hr
- **Sports Complex, Balewadi Pune** 1 kg/hr and 400 gm/hr
- **IIT Pawai, Mumbai** 500 gm/hr
- **Cricket club of India, Mumbai** 250 gm/hr
- **TCS , Banyan Park, Mumbai** 150 Gm/hr

100 gms ozone generator system

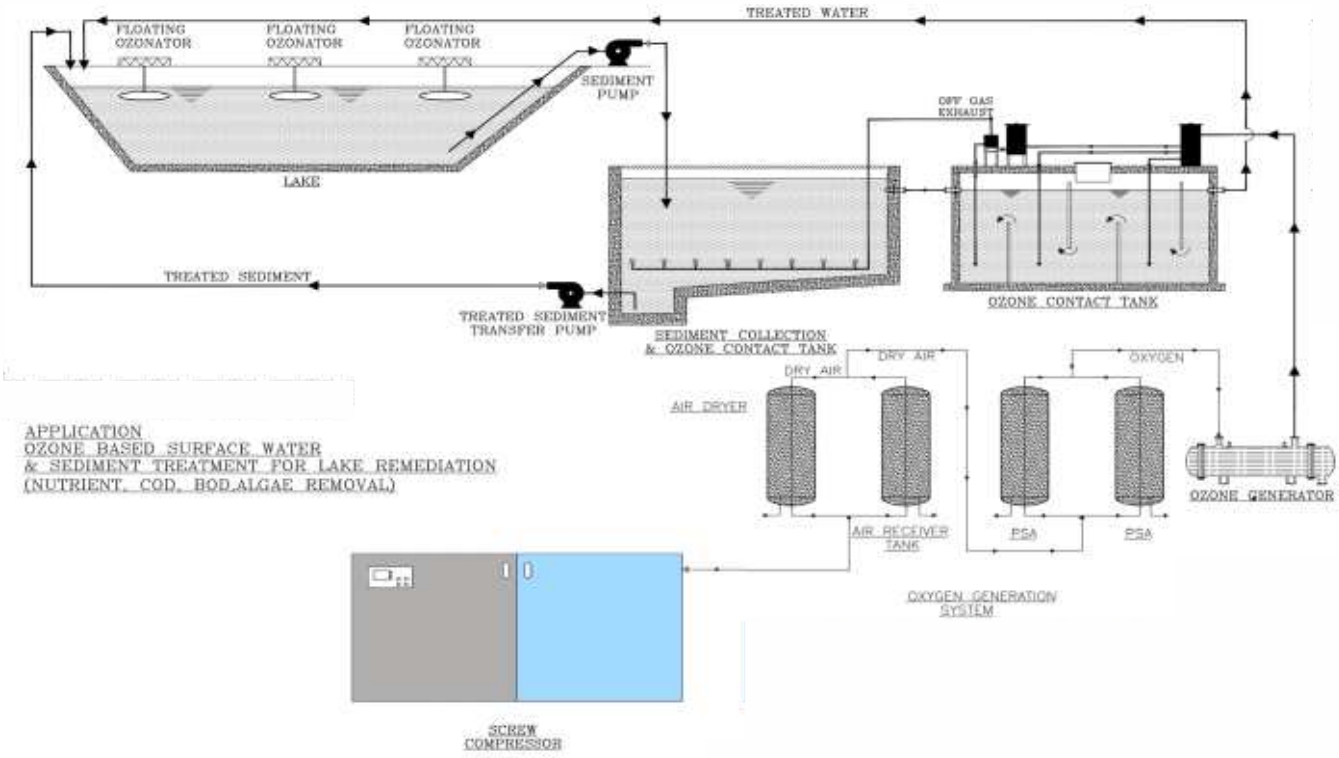
Ozone generator

800g oxygen source ozone generator

Ozone for Lake Rejuvenation

Water quality management of lakes and reservoirs was first oriented to control eutrophication and the factors causing increase of nutrient load. But often high organic loads, acidity, salinity or contamination with hazardous substances also need to be controlled. The amendment of the conditions may be very different, in some cases contrary to the technologies developed to control eutrophication.

In this context ozone technology appears to be well placed because of its ability to reduce organic load, micro-flocculate nutrient ions (Fe, Mn), disinfect water, and increase DO level.



ADVANTAGES

- Eliminates hydrogen sulphide and methane odours due to its strong oxidizing power.
- Precipitate's iron, manganese, and heavy metals from water.
- Decomposes by oxidation.
- Ozone is produced on site and does not require any storage or transportation.

MAJOR CLIENTS

- **Baba Baidyanath Shivganga Pond, Deoghar** - 3 Kg/hr
- **Golden Temple Lake, Amritsar -** 1.6 kg/hr

1.5 kg glass tube ozone generator

1.5 kg glass tube ozone generator

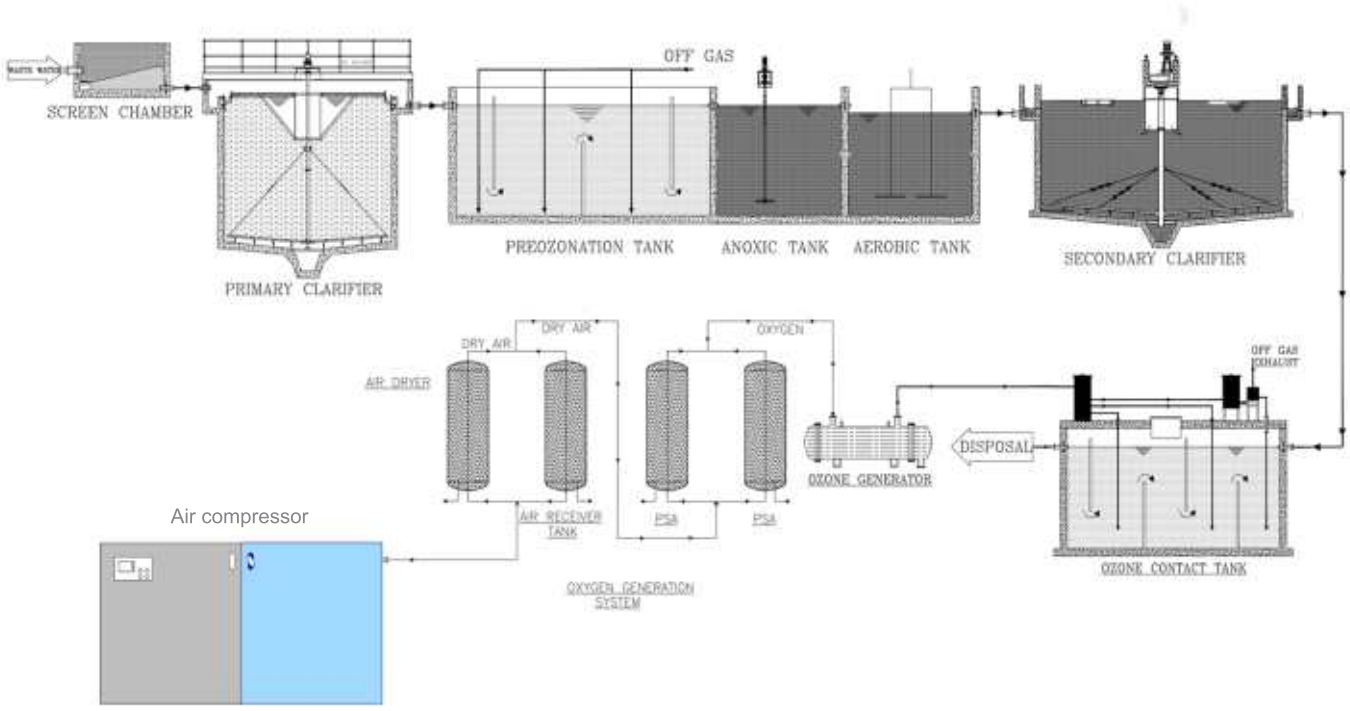
3 kg oxygen source ozone generator

5 kg oxygen source ozone generator

Ozone Technologies for Municipal Wastewater Treatment (Sewage)

Public health reflects sustainability of the society. Protecting public health and environment requires effective collection, treatment and disposal of sewage. Both ground and surface water bodies are contaminated with sewage discharges from urban and semi-urban areas. A total of 61754 MLD sewage is generated in India while treatment capacity exists only for 22963 MLD. More often, the final treated water from STP's does not meet discharge standards.

- At present most of the existing STP's hardly comply with the revised NGT/ CPCB discharge norms.
- Technology limitations seem to be one of the reasons, eg., the current biological treatment units cannot remove recalcitrant COD and nutrients not removed adequately, also the solid/liquid separation needs to be improvised, etc.
- Apart from overcoming above technological limitations, almost all STP's require tertiary/polishing treatments to comply with above norms.
- There is ample scope for pre & post-treatments using advanced oxidation technologies (eg., Ozonation) to augment performance of existing STP's.
- Achieving FC <100 MPN/100 ml requires using strong disinfectants such as Ozone.
- Use of Ozone for sewage treatment to improve DO levels in receiving water bodies.



ADVANTAGES

- Ozonisation in pre or post treatment shall be helpful for disinfection, BOD removal, Oxygen Uptake Ratio improvement in biological system & improve BOD/COD ratio of wastewater, etc.
- Oxygen from O_3+O_2 stream from ozonators can be advantageously used for rejuvenating biological treatment units. In suitable cases by recycling oxygen from off-gas it may be possible to substitute 50-100% air supply requirement, thereby leading to considerable power savings.
- Improves the TN & TP removal by enhancement of pure oxygen replenishment from Ozone system.
- Ozone based processes can help to treat up to 50% more hydraulic flow without the construction of new STP for additional flow.
- Owing to the strong oxidation potential of ozone, the FC (faecal coli forms) can be reduced and NGT norms can be achieved.

MAJOR CLIENTS

- **Koradi Thermal Power Station**
  7 Kg/ hr
- **UP Jalnigam Lucknow (NMCG)**
  2 Kg/hr
- **Ajanta Enterprises Pune**
  2 No. X 160 Gm/hr
- **Vasco Environmental Solutions- Sabrimala Temple**
  1 kg/hr
- **MM Enviro Nagpur**
  2 No. x 150 gm/hr

800g oxygen source ozone generator

1.5kg glass tube ozone generator

30kg oxygen source ozone generator

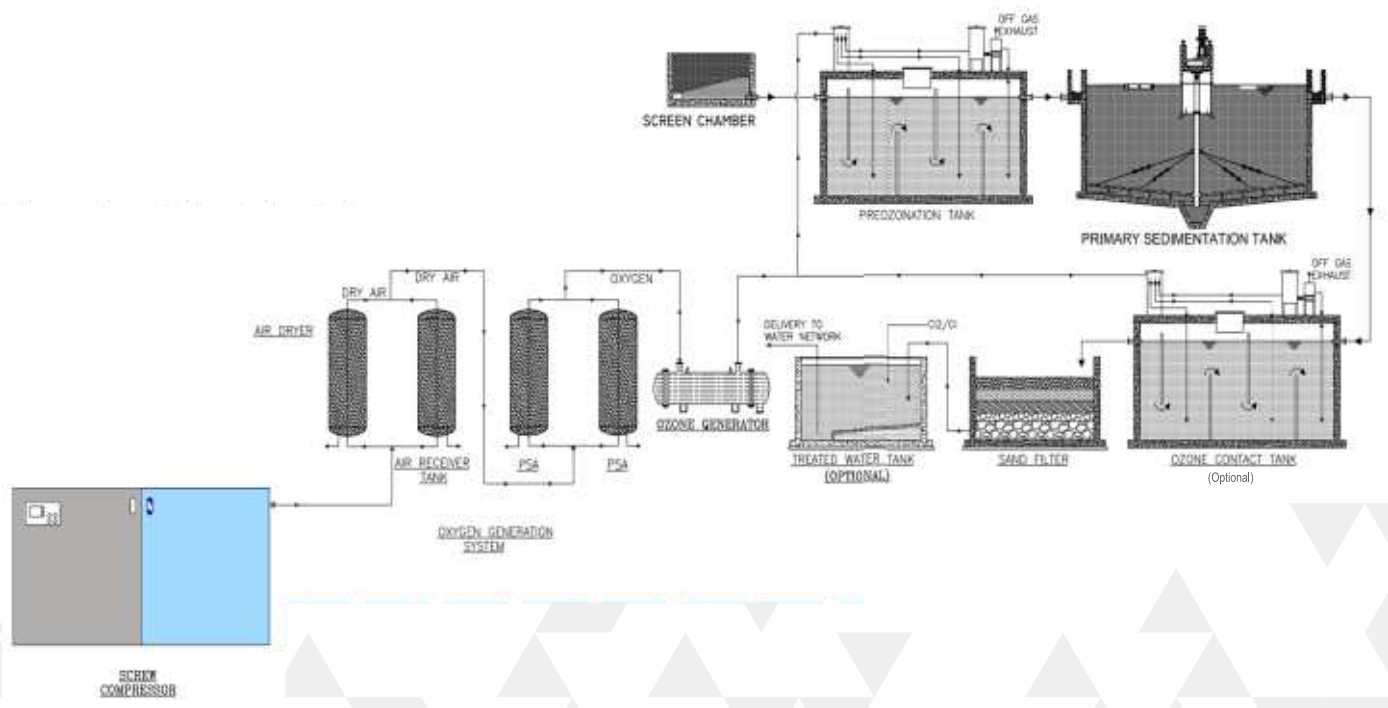
Ozone in Water Treatment Plant

Water is elixir of life. In the current scenario, world is facing threat not only from water scarcity, but also poor quality of available water resources that incenses health risks to human. As per WHO, about 38 million people are affected by waterborne diseases each year. Therefore, WTPs are designed to remove suspended solids, heavy metals, NOM (natural organic material), DOM (dissolve organic material), and pathogenic bacteria. Colour, taste, odour is also addressed partially. However, different sources contain different pollutants, thereby requiring special technological interventions.

Ozone occurs mainly in two types of reaction pathways :

Direct oxidation : Ozone directly attacks substrate (e.g., disinfection, direct attack results in cell wall damage or reactions with unsaturated organic compounds).

Indirect oxidation : This type of oxidation often utilizes in-situ produced hydroxyl radicals (e.g., oxidation of organics).



ADVANTAGES

- Ozone directly decomposes organic pollutant by oxidation.
- Ozone kills Bacteria, Viruses, Fungi & Chlorine resistant bacteria, etc. ~3000 times faster than chlorine.
- Unlike chlorine, ozone oxidizes iron, manganese, and sulfur impurities into insoluble metal oxides or elemental sulfur. These insoluble particles are then removed by filters. This is responsible for elimination of taste and odour.
- Reduce the probability of THM (Trihalomethane) by-product formation by removing precursors to its formation in the initial stage itself.
- Ozone is unstable, and it will degrade over a time frame ranging from a few seconds to 30 minutes. The rate of degradation is a function of water chemistry, pH and water temperature. No formation of toxic residues.
- Dissolved oxygen level in water increases in ozonation, makes it crystal clear and odour free.
- Pre-ozonation of water significantly reduces chlorine demand and accompanying micro flocculation effect reduces consumption of coagulant

1.5kg glass tube ozone generator

5kg glass tube ozone generator

MAJOR CLIENTS

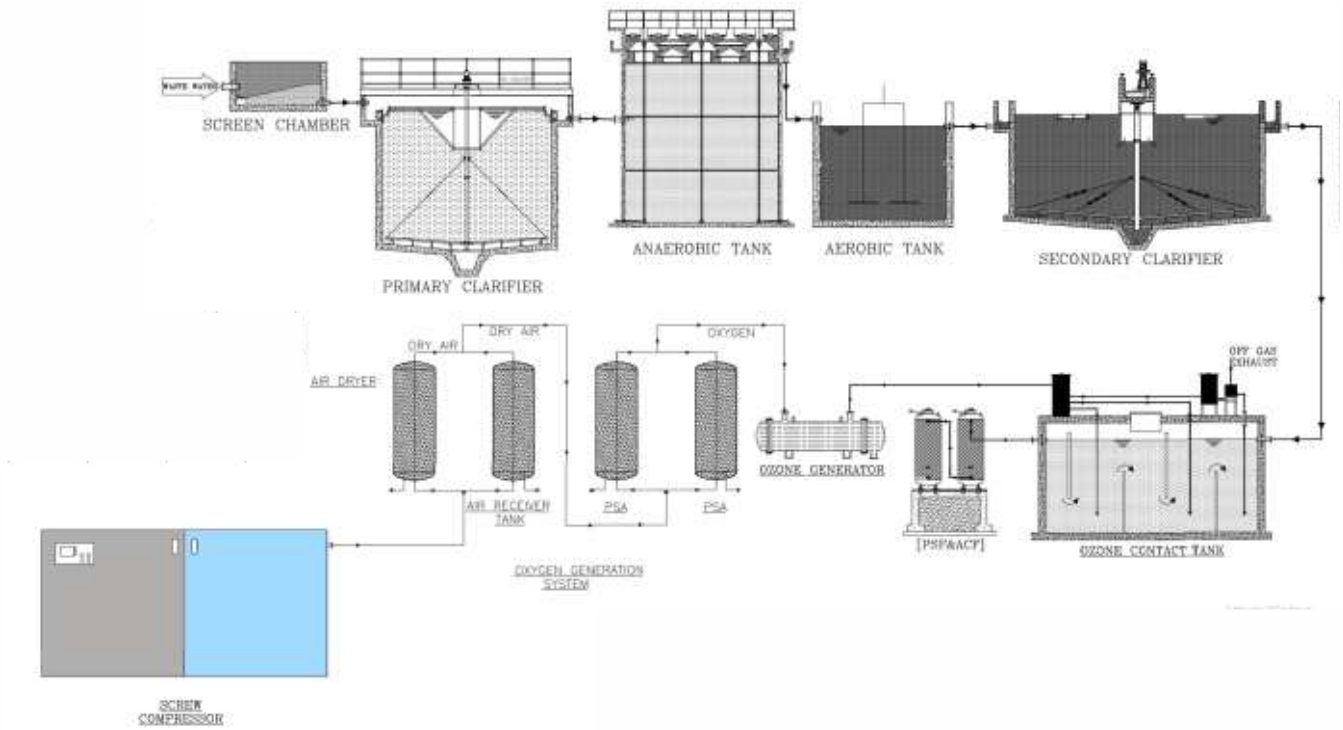
- **Paras Thermal Power Station -** 2 No. x 1.3 Kg/hr
- **Parali Thermal Power Station -** 2 no. x 1.1 kg/hr
- **Khaparkheda Thermal Power plant -** 1.75kg/ hr and 1 Kg/hr
- **MCGM Panjrapur WTP -** 3 Kg/ hr and 1 Kg/hr
- **Ordanance Factory Bhandara** 3 Kg/Hr

6kg oxygen source ozone generator

10kg oxygen source ozone generator

Ozone for Industrial Wastewater Treatment

Some industries generate wastewater having high COD and salinity/total dissolved solids (TDS). These wastewaters constitute a significant proportion of recalcitrant organic chemicals that are either poorly biodegradable or not biodegradable. Often, the presence of recalcitrant COD puts a limit on the efficiency of biological treatment and hence non-compliance. Among the advanced oxidation processes (AOPs) Ozone Technology occupies a prominent place because of its high oxidising power and zero sludge generation.



ADVANTAGES

- Ozone may be combined with H_2O_2 and/or UV and realize better treatment efficiency.
- Off-gas oxygen may be advantageously used to enhance bio-degradation in existing unit operations and results in considerable cost savings.
- O_3 based AOP_s can reduce the concentration of contaminants from several-hundred ppm to < 1 ppm
- Ozone can polish COD & BOD from the treated wastewater and make it suitable for discharge or reuse.

MAJOR CLIENTS

- **Praj Industries Ltd Pune -** 1 Kg/hr
- **Ankleshwar Cleaner Process Technology Centre Ltd. -** 1 Kg/hr
- **Royal Petro -** 1 Kg/hr
- **Coca Cola India Pvt. Ltd -** 600 gm/hr

1.5 kg glass tube ozone generator 1

15 kg glass tube ozone generator

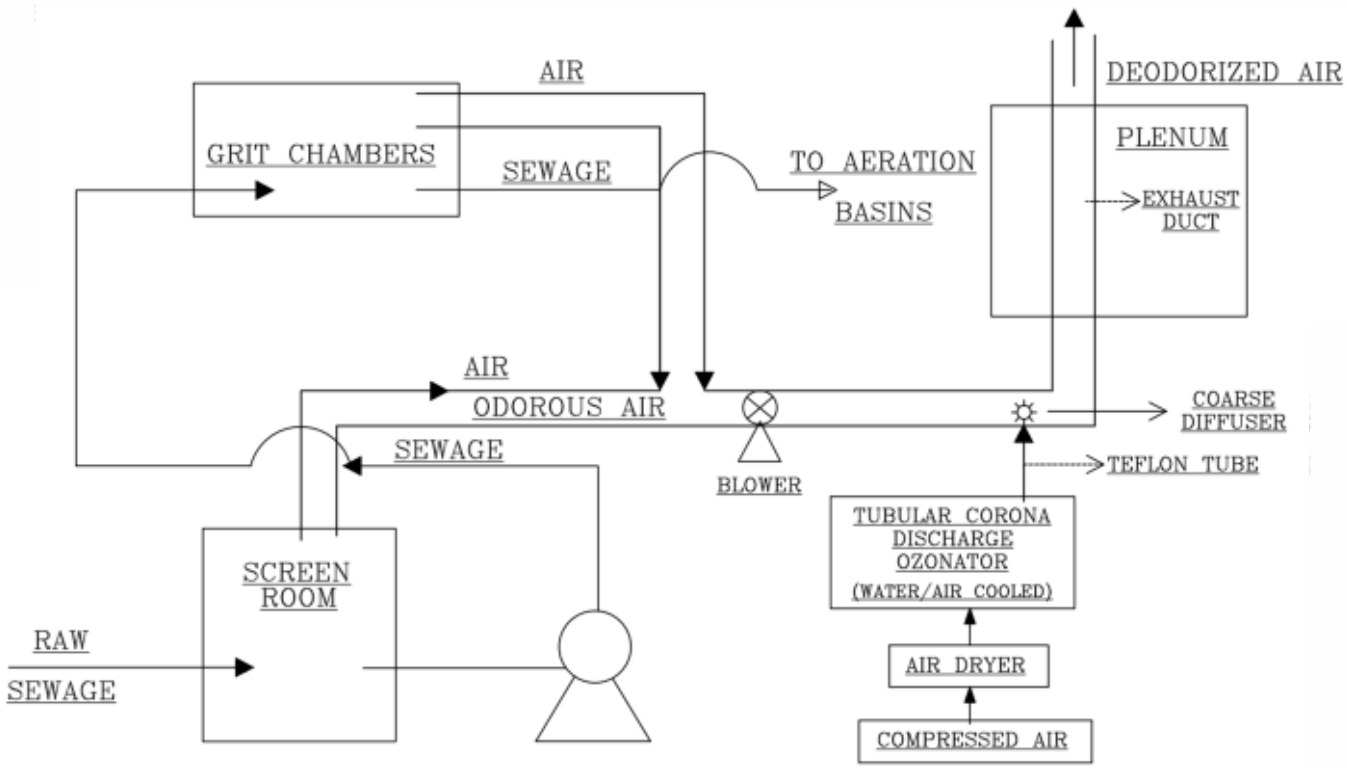
5 kg oxygen source ozone generator

50 kg oxygen source ozone generator

Ozone for STP Exhaust Air Treatment

Centralized & modular STPs have the potential to emanate bad odours due to poor maintenance. The substances responsible for odours into sewage treatment plants are Mercaptans, Skatoles, Indoles, Inorganic acids, Aldehydes, Ketones & Organic compounds containing nitrogen or sulphur atoms. These compounds get converted into ammonia & hydrogen sulphide under anaerobic conditions that may set in due to poor maintenance. Biological sludge digestion may be another reason.

Ozone mixed air (O_3/Air) generators have the potential to deodorise environment by quickly oxidizing H_2S and NH_3 from enclosed STP Exhaust. Air feed ozone generators have the potential to deodorize STP exhaust.



TYPICAL STP EXHAUST SYSTEM

ADVANTAGES

- Ozone technology is customizable for deodorizing areas surrounding bio-methanation/biogas plants, wastewater pumping stations, sludge collection & transportation areas, malfunctioning aerobic biological units.
- Our de-ozonization system sanitizes the exhaust air being vented out from building.
- We also offer ozone technology that suits odour removal from food production process. For example, disinfection and de-odorization of production areas, storage sheds, transportation vehicles.

MAJOR CLIENTS

- **Novatel Pune -**
  2 X40 Gm/hr , 2 X60 Gm/hr , 2 X80 Gm/hr
- **Godrej & Boyes (L&T) -**
  80 gm/hr & 40 gm/hr
- **Coolpack HVAC -**
  80 gm/hr & 60 gm/hr
- **Sterling & Wilson -**
  25 gm/hr
- **Worli Fish Market -**
  30 Gm/hr
- **Unicorn Solutions & Services -**
  80 gm/hr & 60 gm/hr
- **Kelvin Ltd. -**
  30 gm/hr
- **Blue Star Ltd -**
  10 gm/hr

50 gm air cooled Ozone generator system

80 gm/hr Ozone generator system

Ozone Technologies for Flue Gas Denitrification

Coal fired power plants generate flue gases that contain SO_2, NO_x, CO_2 and particulate matter which are major contributors to air pollution. Nitric oxide (NO) is water insoluble and hence it escapes WFGD system leading to incomplete removal of NOx. By pre-oxidation of NO using oxidants such as H_2O_2, $KMnO_4$, NaOCl, and O_3 to higher oxidation states of NOx (NO_2, N_2O_3, N_2O_4, N_2O_5, and NO_3) which are water soluble, the WFGD system can simultaneously remove NO & NOx. Without increasing temperature of flue gas (<150 °C) ozone can be efficiently used in flue gas denitrification (>90%).

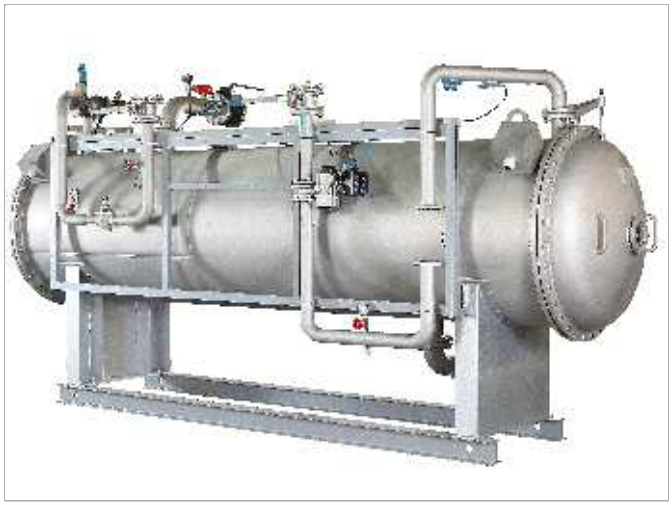
ADVANTAGES

- The potential application temperature range is 50-150 °C; no need for increasing flue gas temperature.
- No need to use ammonia and other reducing agents which will avoid ammonia escape problem.
- Clearance rate is higher than 90% even if the NO_x content and flue gas volume are not stable.
- It is not influenced by dust in the flue gas. It can be combined with desulfurization to do integrated washing while the heavy metal mercury could also be removed.
- Denitrification system lifetime can be designed with 15 years without replacing catalyst.

APPLICATION AREA

- Thermal Power Plant
- Power plant
- Oil Refinery
- Industrial Boiler Plant
- Industrial furnace Plant
- Waste Incineration Plant
- Biomass Power Plant

30 kg glass tube ozone power supply cabinet



30kg ceramic tube oxygen source ozone generator

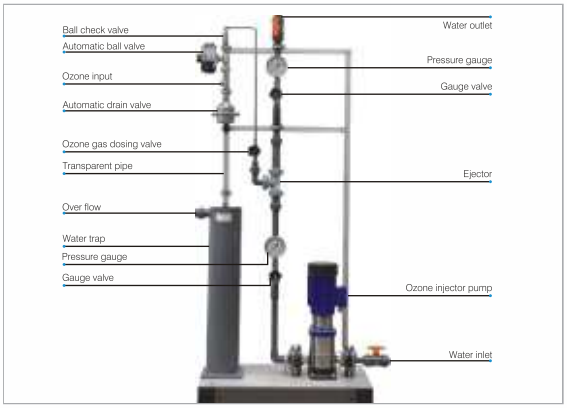
80 kg ozone generator power supply cabinet

80 kg oxygen source ozone generation tank

Accessory Equipment

Porous Diffuser

Porous diffuser used for direct ozone dosing in waste water. This is done by using a diffuser that has very fine pores, so as to create very small bubbles of Ozone that can come in contact with more volume of water, thereby improving the Ozone mixing in water.



Ozone Injection System

Ozone will be inhaled into water by negative pressure caused by high velocity flow of injector based on venture principle, which is a better way to improve ozone and water mixing efficiency.

Static Mixture

It is a inline mixing device for the application of homogeneous distribution of several liquid or gaseous media. It consists of a mixing tube with inside welded mixing elements, which are specially designed for highest mixing degree at an extremely low pressure drop.

Cooling Water System

Includes plate heat exchanger, circulating water pump, expansion tank, pressure switch, etc.

Ozone Destructor

The ozone destructor is for an effective removal of ozone from air or oxygen. It consists of a cylinder of stainless steel filled with highly effective catalytic material and equipped with heater, thermostat, thermometer and electric switch box. The cylinder surface is thermal insulated.

Adsorption Air Dryer/Oxygen Generator

This unit produces high quality feed gas for generation of ozone with greater efficiency and economical benefits.

Main Control System

It controls the ozone operation by taking on-line feedback from sensors, transmitters, controller and perform improvised regulation automatically, inturn resulting into improved operation and safety of the equipment.

Oxygen Recovery System

When pure oxygen is used as feed gas , pressurized ozone off gas could be removed to be used for pure oxygen aeration in aerobic chamber to improve economical benefits.

Small Range Ozonators

Air Feed

MODEL	OZONE CAPACITY	FEED GAS FLOW	OZONE CONCEN TRATION	COOLING SYSTEM	POWER CONSUMPTION	DIMENSIONS
	g/h	Nm3/h	mg/L		Kw	W*D*H mm
INDOZ 1 AF	1	. .. .	22-30	Air Cooled	0.14 – 0.15	500 x 300 x 550
INDOZ 3 AF	3	0.6 – 0.7	22-30	Air Cooled	0.14 – 0.15	500 x 300 x 550
INDOZ 5 AF	5	0.85 -1.0	22-30	Air Cooled	0.14 – 0.15	500 x 300 x 550
INDOZ 10 AF	10	2.4 – 2.5	22-30	Air Cooled	0.15 - 0.16	650x300x650
INDOZ 15 AF	15	2.7 – 3.0	22-30	Air Cooled	0.16 – 0.18	650x300x650
INDOZ 20 AF	20	3.6 – 4.0	22-30	Air Cooled	0.36 – 0.38	650x300x950
INDOZ 30 AF	30	5.4 – 6.0	22-30	Air Cooled	0.52 – 0.60	650x400x1200
INDOZ 50 AF	50	9.0 - 10	22-30	Air Cooled	0.83 - 0.91	(650x400x1200)x 2
INDOZ 60 AF	60	10.5 – 12.5	22-30	Air Cooled	0.98 – 1.1	(650x400x1200)x 2

Oxygen Feed

MODEL	OZONE CAPACITY	FEED GAS FLOW	OZONE CONCENTRATION	COOLING SYSTEM	POWER CONSUMPTION	DIMENSIONS
	g/h	Nm3/h	mg/L		Kw	W*D*H mm
INDOZ 1 OF	1	0.06 – 0.07	22-30	Air Cooled	0.14 – 0.15	500 x 300 x 550
INDOZ 3 OF	3	0.12 – 0.14	22-30	Air Cooled	0.15 – 0.17	500 x 300 x 550
INDOZ 5 OF	5	0.15 -0.17	22-30	Air Cooled	0.2 – 0.22	500 x 300 x 550
INDOZ 10 OF	10	0.18 – 0.20	22-30	Air Cooled	0.25 - 0.30	500 x 300 x 550
INDOZ 15 OF	15	0.24 – 0.27	22-30	Air Cooled	0.3 – 0.33	500 x 300 x 550
INDOZ 20 OF	20	0.36 – 0.4	22-30	Air Cooled	0.31 – 0.34	650x300x650
INDOZ 30 OF	30	0.48 – 0.53	22-30	Air Cooled	0.32 – 0.36	650x300x950
INDOZ 50 OF	50	0.84– 0.93	22-30	Air Cooled	0.61 - 0.70	650x300x950
INDOZ 60 OF	60	1.1 – 1.2	22-30	Air Cooled	0.63 – 0.71	650x300x950

Medium Range Ozonators

Air Feed

MODEL	OZONE CAPACITY	FEED GAS FLOW	OZONE CONCENTRATION	COOLING WATER FLOW	POWER CONSUMPTION	DIMENSIONS
	g/h	Nm3/h	mg/L	m3/h	Kw	W*D*H mm
INDOZ 100 AF	100	3.50-4.50	22-30	0.3-0.4	1.6-1.8	
INDOZ 200 AF	200	7.00-9.00	22-30	0.6-0.8	3.2-3.6	1160x700x1700
INDOZ 300 AF	300	10.5-13.5	22-30	0.9-1.2	4.8-5.4	1160×700×1700
INDOZ 500 AF	500	17.5-22.5	22-30	1.5-2.0	8.0-9.0	1400×800×1700
INDOZ 600 AF	600	21-27	22-30	1.8-2.4	9.6-10.8	1400×800×1700
INDOZ 800 AF	800	28-36	22-30	2.4-3.2	12.8-14.4	1900×900×1700
INDOZ 1K AF	1000	30.9-38.7	2-2.5 (% wt)	3.0 – 4.0	14-16	2100x900x1700

Oxygen Feed

MODEL	OZONE CAPACITY	FEED GAS FLOW	OZONE CONCENTRATION	COOLING WATER FLOW	POWER CONSUMPTION	DIMENSIONS
	g/h	Nm3/h	mg/L	m3/h	Kw	W*D*H mm
INDOZ 100 OF	100	0.9 – 1.3	80-120	0.2-0.3	0.8-1.0	600×700×1700
INDOZ 200 OF	200	1.80-2.60	80-120	0.4-0.6	1.6-2.0	1160x700x1700
INDOZ 300 OF	300	2.70-3.90	80-120	0.6-0.9	2.4-3.0	1160×700×1700
INDOZ 500 OF	500	4.50-6.50	80-120	1.0-1.5	4.0-5.0	1160×700×1700
INDOZ 600 OF	600	5.40-7.80	80-120	1.2-1.8	4.8-6.0	1260×800×1700
INDOZ 800 OF	800	7.20-10.4	80-120	1.6-2.4	6.4-8.0	1260×800×1700
INDOZ 1K OF	1000	6.8-8.5	8-10 (% wt)	1.7-2	6-8	1260x800x1900

Large Range Ozonators

Air Feed

MODEL	OZONE CAPACITY	FEED GAS FLOW	OZONE CONCENTRATION	COOLING WATER FLOW	POWER CONSUMPTION	DIMENSIONS	WEIGHT
	kg/h	Nm3/h	wt %	m3/h	kwh/kgO3	W*D*H mm	T
INDOZ 2K AF	2	61.9-77.4	2-2.5	6-8	14-16	2700x1700x1920	2.15
INDOZ 3K AF	3	92.8-116.1	2-2.5	9-12	14-16	3050x950x1950 / 2400x800x2100	2.9
INDOZ 4K AF	4	123.7-154.8	2-2.5	12-16	14-16	3200x1100x2050 / 2400x800x2100	3.6
INDOZ 5K AF	5	154.7-193.5	2-2.5	15-20	14-16	3300x1150x2100 / 3600x800x2120	4.7
INDOZ 6K AF	6	185.6-232.2	2-2.5	18-24	14-16	3300x1200x2150 / 3600x800x2120	4.8
INDOZ 8K AF	8	247.5-309.6	2-2.5	24-32	14-16	3400x1380x2250 / 3600x800x2120	6.0
INDOZ 10K AF	10	309.4-387	2-2.5	30-40	14-16	4400x1260x2200 / 4800x1000x2120	7.9
INDOZ 15K AF	15	464-580.5	2-2.5	45-60	14-16	4600x1560x2480 / 5400x1200x2200	12.1
INDOZ 20K AF	20	618.7-774	2-2.5	60-80	14-16	4800x3600x2600 / 6000x1400x2400	14.5
INDOZ 30K AF	30	928.1-1161	2-2.5	90-120	14-16	6000x4000x2700 / 6000x1400x2400	21
INDOZ 40K AF	40	1237.4-1548	2-2.5	120-160	14-16	6000x4400x2800 / 7200x1400x2400	24
INDOZ 50K AF	50	1546.8-1935	2-2.5	150-200	14-16	7200x4800x2900 / 7200x1400x2400	28
INDOZ 60K AF	60	1856.1-2322	2-2.5	180-240	14-16	7200x5000x3400 / 7200x1400x2400	35

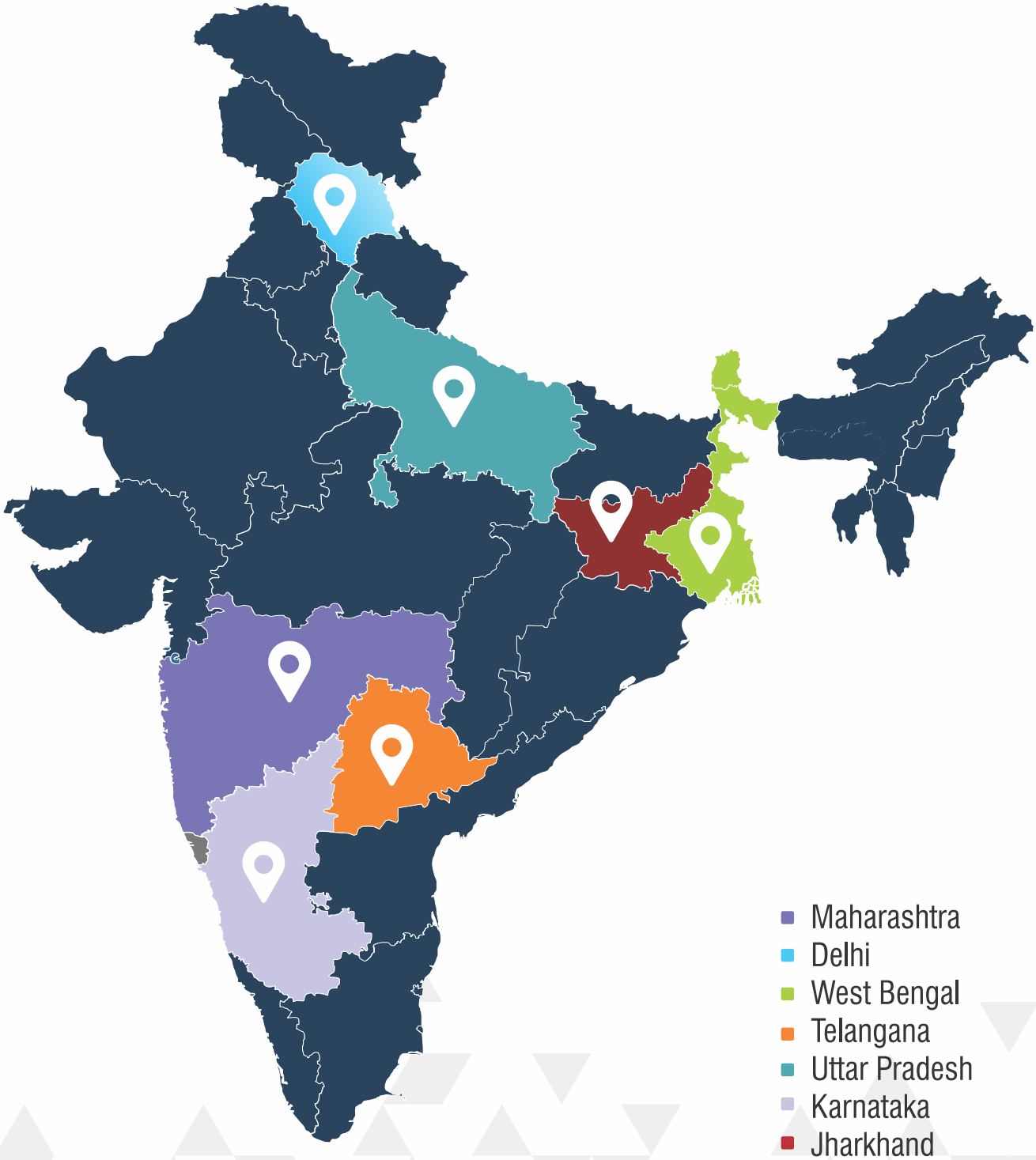
Large Range Ozonators

Oxygen Feed

MODEL	OZONE CAPACITY	FEED GAS FLOW	OZONE CONCENTRATION	COOLING WATER FLOW	POWER CONSUMPTION	DIMENSIONS	WEIGHT
	kg/h	Nm3/h	t %	m3/h	kwh/kgO3	W*D*H mm	T
INDOZ 2K OF	2	13.5-17	8-10	3.4-4	6-8	2000x800x1900	1.5
INDOZ 3K OF	3	20.2-25.5	8-10	5.1-6	6-8	2400x1700x1920	1.7
INDOZ 4K OF	4	27.1-39	8-10	6.8-8	6-8	2400x1700x1920	1.9
INDOZ 5K OF	5	33.8-42.5	8-10	8.5-10	6-8	2400x1700x1920	2.0
INDOZ 6K OF	6	40.6-51.1	8-10	10.2-12	6-8	2500x950x2000 / 2400x800x2100	2.5
INDOZ 8K OF	8	54.1-68.1	8-10	13.6-16	6-8	2600x1000x2000 / 2400x800x2100	2.7
INDOZ 10K OF	10	67.6-85.1	8-10	17-20	6-8	4000x900x1950 / 3600x800x2120	3.9
INDOZ 15K OF	15	101.5-127.7	8-10	25.5-30	6-8	4100x1000x2000 / 3600x1000x2160	5.0
INDOZ 20K OF	20	135.5-170.2	8-10	34-40	6-8	4250x1150x2000 / 4800x1000x2160	6.9
INDOZ 30K OF	30	203.0-255.3	8-10	51-60	6-8	4300x1300x2250 / 5400x1200x2160	9.4
INDOZ 40K OF	40	270.6-340.4	8-10	68-80	6-8	4300x1450x2000 / 5400x1000x2160	10.7
INDOZ 50K OF	50	338.3-425.5	8-10	85-100	6-8	4300x1500x2400 / 6000x1400x2400	13.8
INDOZ 60K OF	60	405.9-510.6	8-10	102-120	6-8	4300x1650x2600 / 6000x1400x2400	15.5
INDOZ 80K OF	80	541.3-680.8	8-10	136-160	6-8	4400x1850x3000 / 7200x1400x2400	20.7
INDOZ 100K OF	100	676.6-851.1	8-10	170-200	6-8	4600x2100x3400 / 7200x1400x2400	24.9
INDOZ 120K OF	120	811.9-1021.3	8-10	204-240	6-8	4800x2200x3500 / 7200x1400x2400	26.6
INDOZ 150K OF	150	1012.5-1276.5	8-10	255-300	6-8	5000x2400x3700 / 8400x1400x2400	34

SERVICES

As the leading ozone generator manufacturer in Asia and global ozone system supplier, ORAIPL has supplied more than 250 sets of ozone generators to over more than hundreds of clients at home and abroad along with seven service centers. ORAIPL brand ozone generators operating sites are spread all over India and exported to other countries. ORAIPL has been supplying durable product and professional pre – sales, sales and after sales service for all clients.



ORAIPL's Honorable Clientele



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