INTELLIZONE™ COMMERCIAL OZONE SYSTEM

OZONE GENERATION

Ozone is the safest, most powerful oxidizer and disinfectant for use in multiple industrial and commercial applications. Combining ozone's proven oxidation and sanitation power with traditional chlorine systems produces the clearest pool water possible.

With the Pentair® IntelliZone™ Commercial Ozone System, chlorine consumption is reduced by as much as 50%, resulting in significantly less operating costs for your aquatic facility. Plus, swimmers experience water that is cleaner, clearer and more refreshing than chlorine use alone.

STANDARD FEATURES

- Integrated Ozone Safety Management System.
- Powder-coated steel enclosure designed to NEMA-3R specifications for corrosion-free life.
- Operator interface for ease-of-use.
- Systems from 2-130 grams per hour.
- Significantly reduces chemical odors within enclosed pool area.
- Decreases operational cost by reducing chlorine consumption up to 50%.
- No harmful by-products left behind.
- NSF standard 50 approved.
- UL listed.

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A QUICK SIZING GUIDE

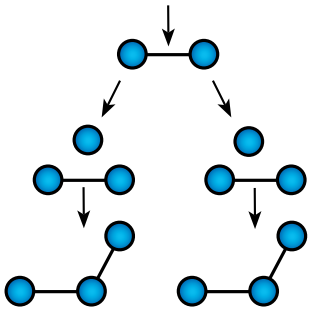
An ozone system for a commercial pool requires 1) an Ozone Generator and, 2) an Ozone Management System.

The Ozone Generator

Ozone gas (O_3) is a very powerful antimicrobial oxidizer (stronger than chlorine which is an oxidizer) and provides extraordinary sanitation and unparalleled water quality when used to support chlorine. Ozone is made from oxygen and is environmentally safe and nontoxic.

IntelliZone™ Commercial Ozone Systems produce ozone gas which is measured in grams per hour. Pentair® commercial Corona Discharge (CD) generators are available in 2, 5, 7, 15, 25, 45, 65 and 130 grams per hour and customizable output levels. The number in the name of the generator after the "CD" represents the grams per hour output or size of the generator.

Electric energy added to oxygen produces ozone!



The Ozone Management System

In addition to the production of ozone, a commercial ozone "system" requires that the ozone be handled safely and delivered into the pool water; we call this the Management System. The "Management" System has several parts. For ease of ordering, there are several kits available to accommodate a variety of pools that include all of the parts necessary for a complete Management System.

The Management System consists of the following components:

Mixing Tower or Contact Tank – these vessels provide greater mixing of the ozone gas and remove any undissolved ozone from the water.

Injector Assembly – the injector pulls the ozone gas into the water and dissolves it; this assembly includes the ozone gas injector and by-pass valve (see diagram below).

Degas Valve – removes the unwanted, undissolved ozone gas from the contact vessel, and moves it to the destruct unit.

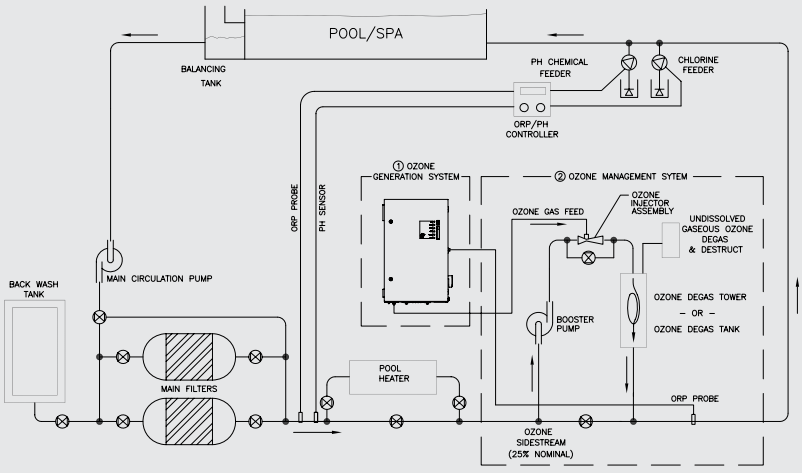
Ozone Destruct – destroys any excess ozone off – gas.

ORP Controller – automatically cycles the ozone generator on and off by a set point to assure the proper amount of ozone is produced and in the water.

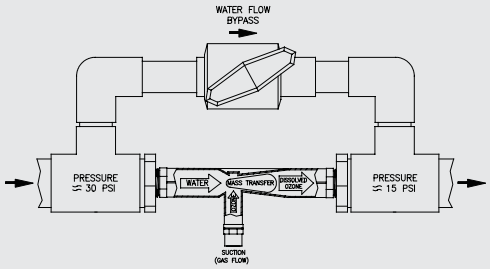
Ambient Air Monitor (required under some codes) – monitors gaseous ozone in the equipment room and shuts down the ozone system in the unlikely event of a leak.

COMMERCIAL POOL OZONE SYSTEM DIAGRAMS:

Complete Ozone System Schematic: 1 – Ozone Generator, 2 – Ozone Management System



Injector Assembly Diagram



2 EASY STEPS To Sizing the Ozone Generator and Selecting the Management System

1. Select the proper sized Ozone Generator, Management System and Booster Pump. From one of the four sizing tables below select the table corresponding to the proper pool venue: 1. Recreational/Lap Pool, 2. Therapy/Swim School Pool, 3. Wading Pool or 4. Spa/Hot Tub. Cross referencing the Gallons of the Pool with the Turnover Rate will indicate the required Ozone Generator, Management System and the GPM of the Booster Pump (if necessary).

2. Management System parts list selection. Using the selected Management System number from the sizing table, refer to the Management System table to determine the parts required. Your entire Ozone System is now ready to order.

Booster Pump Note—When the sizing table indicates the need for a booster pump the required minimum GPM @ 75' TDH directly prior to injector is listed for each Ozone Generator. Injector requires an incoming pressure of ~30 psi and an outgoing pressure of ~15 psi to provide adequate mass transfer of ozone gas into solution.

SIZING TABLES

1. Recreation/Lap Pool

Pool Size in Gallons†	Part Number	3 Hour Turnover			4 Hour Turnover			6 Hour Turnover		
		Generator	Management System	Booster Pump	Generator	Management System	Booster Pump	Generator	Management System	Booster Pump
0 - 4,999	521655	CD-2G	MS-040-01	†††	CD-2G	MS-040-01	†††	CD-2G	MS-040-01	†††
5,000 - 7,499	521655	CD-2G	MS-040-01	†††	CD-5G	MS-040-01	†††	CD-5G	MS-040-01	†††
7,500 - 14,999	521656	CD-5G	MS-040-01	n/a	CD-5G	MS-040-01	n/a	CD-5G	MS-040-01	†††
15,000 - 24,999	521658	CD-7GV	MS-040-02	20 GPM	CD-7GV	MS-040-02	20 GPM	CD-7GV	MS-040-02	20 GPM
25,000 - 34,999	521658	CD-7GV	MS-040-02	25 GPM	CD-7GV	MS-040-02	25 GPM	CD-15GV	MS-040-03	25 GPM
35,000 - 57,999	521659	CD-15GV	MS-040-03	40 GPM	CD-15GV	MS-040-03	40 GPM	CD-15GV	MS-040-03	40 GPM
58,000 - 74,999	521659	CD-15GV	MS-042-02	55 GPM	CD-15GV	MS-042-02	55 GPM	CD-25GV	MS-042-02	55 GPM
75,000 - 99,999	521660	CD-25GV	MS-042-02	70 GPM	CD-25GV	MS-042-02	70 GPM	CD-25GV	MS-042-02	70 GPM
100,000 - 114,999	521660	CD-25GV	MS-042-02	80 GPM	CD-25GV	MS-042-02	80 GPM	CD-45GV	MS-042-02	80 GPM
115,000 - 119,999	521660	CD-25GV	MS-200-01	85 GPM	CD-45GV	MS-200-01	85 GPM	CD-45GV	MS-200-01	85 GPM
120,000 - 150,000	521661	CD-45GV	MS-200-01	105 GPM	CD-45GV	MS-200-01	105 GPM	CD-45GV	MS-200-01	105 GPM

2. Therapy/Swim School Pool

Pool Size in Gallons†	Part Number	3 Hour Turnover			4 Hour Turnover			6 Hour Turnover		
		Generator	Management System	Booster Pump	Generator	Management System	Booster Pump	Generator	Management System	Booster Pump
0 - 4,999	521655	CD-2G	MS-040-01	†††	CD-2G	MS-040-01	†††	CD-2G	MS-040-01	†††
5,000 - 9,999	521655	CD-2G	MS-040-01	†††	CD-5G	MS-040-01	†††	CD-5G	MS-040-01	†††
10,000 - 14,999	521656	CD-5G	MS-040-01	n/a	CD-7GV	MS-040-01	n/a	CD-7GV	MS-040-01	n/a
15,000 - 19,999	521659	CD-15GV	MS-040-03	30 GPM	CD-15GV	MS-040-03	30 GPM	CD-15GV	MS-040-03	30 GPM
20,000 - 29,999	521659	CD-15GV	MS-040-03	40 GPM	CD-15GV	MS-040-03	40 GPM	CD-15GV	MS-040-03	40 GPM
30,000 - 34,999	521660	CD-25GV	MS-042-02	50 GPM	CD-25GV	MS-042-02	50 GPM	CD-25GV	MS-042-02	50 GPM
35,000 - 50,000	521660	CD-25GV	MS-042-02	70 GPM	CD-25GV	MS-042-02	70 GPM	CD-25GV	MS-042-02	70 GPM

3. Wading Pools

Pool Size in Gallons†	Part Number	1/2 Hour Turnover			1 Hour Turnover			1 1/2 Hour Turnover		
		Generator	Management System	Booster Pump	Generator	Management System	Booster Pump	Generator	Management System	Booster Pump
0 - 999	521655	CD-2G	MS-040-01	n/a	CD-2G	MS-040-01	n/a	CD-2G	MS-040-01	n/a
1,000 - 1,499	521655	CD-2G	MS-040-01	n/a	CD-2G	MS-040-01	n/a	CD-5G	MS-040-01	n/a
1,500 - 2,999	521656	CD-5G	MS-040-01	n/a	CD-5G	MS-040-01	n/a	CD-5G	MS-040-01	n/a
3,000 - 3,499	521656	CD-5G	MS-040-01	n/a	CD-7GV	MS-040-01	n/a	CD-7GV	MS-040-01	n/a
3,500 - 4,500	521658	CD-7GV	MS-040-02	20 GPM	CD-7GV	MS-040-02	20 GPM	CD-7GV	MS-040-02	20 GPM

4. Spa/Hot Tubs

Pool Size in Gallons†	Part Number	1/4 Hour Turnover			1/2 Hour Turnover		
		Generator	Management System	Booster Pump	Generator	Management System	Booster Pump
501 - 999	521656	CD-5G	MS-040-01	†††	CD-5G	MS-040-01	†††
1,000 - 2,999	521658	CD-7GV	MS-040-01	n/a	CD-7GV	MS-040-01	n/a
2,500 - 2,999	521658	CD-7GV	MS-040-01	n/a	CD-15GV	MS-040-00	n/a
3,000 - 5,000	521659	CD-15GV	MS-040-03	40 GPM	CD-15GV	MS-040-03	40 GPM

MANAGEMENT SYSTEM TABLE

Management System	Part Number	5 Parts Included in Management System				
		Contact Vessel or Kit	Injector Assembly	De-Gas Valve	Ozone Destruct	ORP Controller
MS-040-00	521865	1-40 Gallon Tank	7-0515	8-0272	DD-0100	521711
MS-040-01	521866	1-40 Gallon Tank	7-0515	8-0272	DD-0100	521709
MS-040-02	521867	1-40 Gallon Tank	IU-306	8-0272	DD-0100	521709
MS-040-03	521868	1-40 Gallon Tank	IU-306	8-0272	DD-0100	521711
MS-042-02	521869	2-40 Gallon Tank	IU-316	2-8-0272	DD-0100	521711
MS-200-01* 7-CT-200*	521870 521871	1-200 Gallon Tank	IA-1584-4	8-0272	DD-0100	521711

†For larger pools call for engineering assistance – 800-831-7133, ext. 8465. ††† Consult factory for sizing assistance.
Management Systems are a complete system less piping between main filtration lines, venturi and contact tank.
*The MS-200-01 requires the 7-CT-200 tank to be ordered separately.
Ambient Air Monitor may be required when the ozone equipment is located indoors–order part number 5-0876.

Special Ordering Notes:

1. Consider ordering 100' of ozone gas tubing: Part number 521737.

System Design and Specifications:

1. Ozone Anti-Microbial Validation under ANSI/NSF Standard 50, Annex H — All Systems sized to NSF third-party validated secondary form of disinfection providing a 30 second 3 log (99.9%) inactivation of Cryptosporidium parvum in the full flow and 6 minute anti-microbial reduction of Pseudomonas aeruginosa 6.6 log (>99.9%) Enterococcus faecium 6.7 log (>99.9999%).
2. All IntelliZone systems are UL and NSF listed.
3. Bather load can have an impact on Ozone Generator sizing. The tables above consider average commercial bather load for the respective pool categories. For extreme bather loads and/or unusual features call for engineering assistance. 800-831-7133, ext. 8465.
4. Splash Pad—Because of the unique designs typically seen with splash pads call for engineering assistance. 800-831-7133, ext. 8465.

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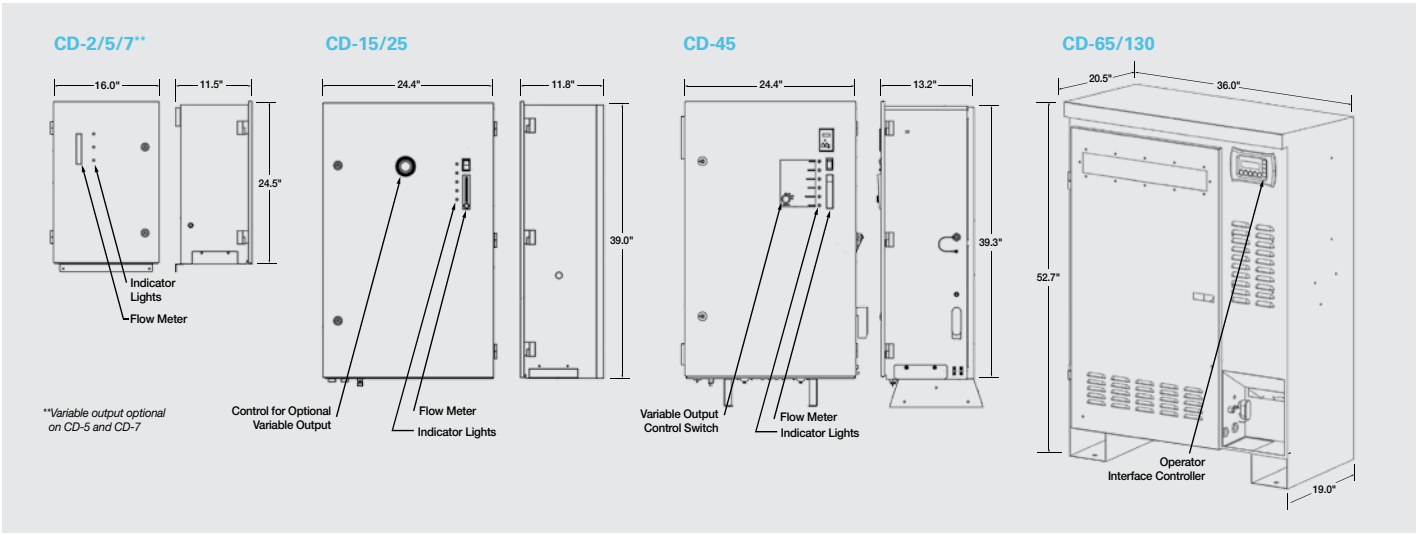
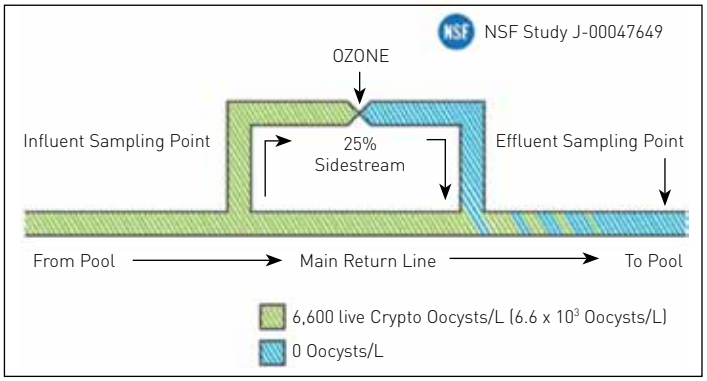


Specifications	CD-2	CD-5	CD-7	CD-15	CD-25	CD-45	CD-65	CD-130
Ozone Output g/hr	2 g/hr	5 g/hr	7 g/hr	15 g/hr	25 g/hr	45 g/hr	65 g/hr	130 g/hr
Ozone Concentration	2.0% by weight	2.0% by weight	2.5-3.0% by weight	2.5-3.0% by weight	3.5-4.0% by weight	3.5-4.0% by weight	5.0-6.0% by weight	5.0-6.0% by weight
Voltage Requirement	115 V - 60 Hz or 230 V - 50 Hz						240 V - 50/60 Hz	
Required Current at 115 V	5.5 A	5.5 A	6.0 A	8.0 A	10.0 A	17.0 A	N/A	N/A
Required Current at 230 V	3.0 A	3.0 A	3.5 A	3.5 A	5.0 A	8.0 A	13.0 A	26.0 A
Ambient Operating Temperature	40 -100° F (5 - 38° C)	40 -100° F (5 - 38° C)	40 -100° F (5 - 38° C)	40 - 100°F (5 - 38° C)	40 - 100° F (5 - 38° C)	40 -100° F (5 - 38° C)	40 -100° F (5 - 38° C)	40 -100° F (5 - 38° C)
Oxygen Feed Flow	2.5 scfh	6 scfh	7 scfh	13 scfh	17 scfh	30 scfh	30 scfh	60 scfh
Cooling Water	N/A (Air Cooled)	N/A (Air Cooled)	N/A (Air Cooled)	0.10 gpm (.4 lpm)	0.10 gpm (.4 lpm)	0.20 gpm (.8 lpm)	1.0 gpm (4.0 lpm)	1.5 gpm (6.0 lpm)
Inlet Temperature**	N/A	N/A	N/A	50 - 90° F (10 - 32° C)	50 - 90° F (10 - 32° C)	50 - 90° F (10 - 32° C)	50 - 90° F (10 - 32° C)	50 - 90° F (10 - 32° C)
Inlet Pressure	N/A	N/A	N/A	15 - 40 psi (103 - 275 kPa)	15 - 40 psi (103 - 275 kPa)	15 - 40 psi (103 - 275 kPa)	15 - 40 psi (103 - 275 kPa)	15 - 40 psi (103 - 275 kPa)
System Control	N/A	N/A	N/A	N/A	N/A	N/A	PLC	PLC
Enclosure Material/Finish	Steel, 16 gauge / Grey (powder coat)						Steel, 14 gauge / White (powder coat)	

**70° F (21° C) max recommended

Representation of Crypto Destruction



PENTAIR

WATER SOLUTIONS, 1620 HAWKINS AVE, SANFORD, NC 27330 800.831.7133 WWW.PENTAIRCOMMERCIAL.COM

8/12 Part # P1-154