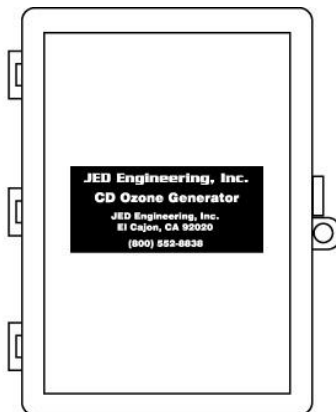


JED 203 INSTALLATION AND OPERATION MANUAL



DESCRIPTION

The JED 203 is designed for water treatment in hot tubs and swim spas up to 800 gallons, water tanks and cisterns up to 2,500 gallons and for fountains and small pools up to 5,000 gallons. Different applications require differing amounts of ozone based on variables such as temperature, contaminant level, intended water usage and other water treatment methods that are employed. The JED 203 is supplied in a plastic rainproof enclosure that can be wall mounted outdoors. The JED 203 has its own air compressor which can pump ozone into a pool, tub or tank up to 24 hours a day independently of water circulation. The JED 203 can be installed with an over the side airstone kit, thru-hull fitting or venturi injector.

IMPORTANT SAFETY INSTRUCTIONS

1. READ AND FOLLOW ALL INSTRUCTIONS
2. **DO NOT** use the JED 203 for any purpose other than water treatment and only according to the instructions.
3. The JED 203 should be used outdoors or in a well ventilated area.
4. **DO NOT** directly breathe the ozone from the discharge tube.
5. Ozone should not be released where water is not present. Inhalation can lead to irritation of lungs. If symptoms develop, move away from exposure and into fresh air. If symptoms persist, seek medical attention.
6. **DO NOT** operate the JED 203 before it has been permanently installed.
7. **DO NOT** touch the JED 203 when wet or with wet hands. Fatal electrical shock could result.
8. **DO NOT** permit children to use this product.
9. Connect to a grounded receptacle or power supply on a 20 ampere or less branch circuit.
10. Do not bury the electrical cord.
11. **WARNING** - To reduce the risk of electrical shock, replace damaged cord immediately.
12. If the unit is connected to a ground fault circuit interrupter (GFI): Before each use of your spa (hot tub) test the GFI. If the interrupter fails to operate in this manner, there is a ground current flowing, indicating the possibility of electrical shock. Disconnect the plug from the receptacle until the source of the breakdown has been identified and corrected.
13. **WARNING**--Nitric acid may accumulate in the air lines of the ozonator and injector. Nitric acid can cause chemical burns if direct skin contact is made, so always wear protective gloves, glasses and clothing when working on the ozonator or injector air lines. To prevent inhaling or ingesting, do not blow into any of the adapters, fittings or tubing.
14. SAVE THESE INSTRUCTIONS

SPECIFICATIONS

Ozone output – 100 milligrams per hour (0.1 grams per hour)
Input voltage – 120 VAC (240 VAC and 12 VDC units are marked accordingly)
Operating current – 0.42 Amperes at 120 VAC
Power consumption – 50 Watts
Dimensions – 9 ½" x 8 ½" x 4 ½"
Air Compressor – 0.67 gallons per minute air

MOUNTING

The JED 203 is housed in a rainproof enclosure that can be wall mounted either indoors or outdoors. It should be placed in close proximity to where the ozone will be introduced to the water.

ELECTRICAL CONNECTION

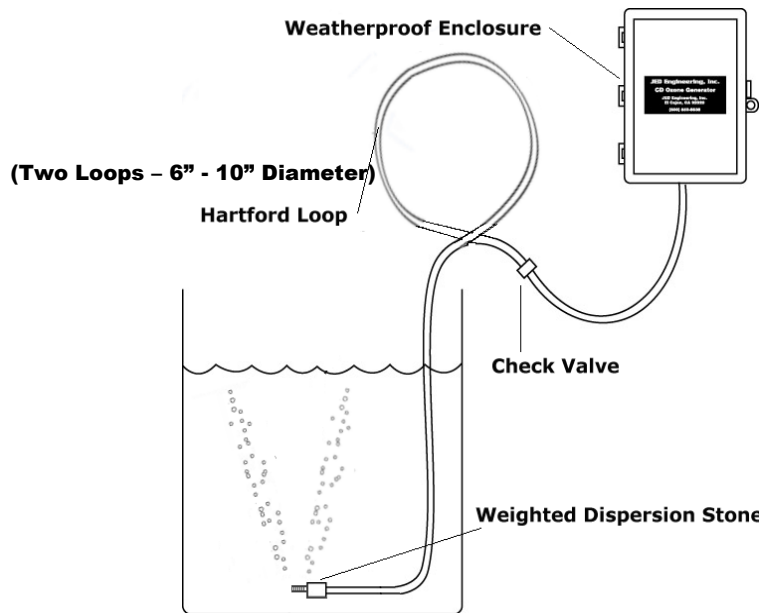
1. Turn off power to the spa before attempting to install. A variety of power cords & plugs are available to fit different spa brands.
2. The electrical installation must be made in accordance with local regulations. Overcurrent protection must be provided by connection to a branch circuit rated at 20 amperes or less. If hard wiring the unit, follow the spa manufacturer's installation instructions. The color codes of the wires from the ozonator to the spa are as follows: Green is ground, black is hot and white is neutral (For 240V both black and white are hot-120V each).

3. A weatherproof, outdoor timer is recommended for setting JED 203 operation times.

OZONE HOSE TO SPA

1. Connect the long 1/4" tube to the black check valve which is protruding from the bottom of the JED 203.
2. Attach the other end of the 1/4" tube to the optional weighted airstone. Lower the weighted stone into the water so it rests at or near the bottom, to a maximum water depth of 4 feet. If the water is deeper than 4 feet, a float should be devised to keep the airstone at a maximum depth of 4 feet. Make 2 loops in the 1/4" tube, above the water line, known as a Hartford Loop. This will help prevent water from back flowing into the ozonator in the event of a check valve failure.
3. Ozone can also be introduced from the JED 203 via an ozone resistant thru-hull fitting or an in-line injector. In deeper applications you may consider creating a plumbing loop that circulates ozonated water back into the tub or tank. Call your dealer for details.

Water Tank Installation with "over the side kit"



Max Depth of airstone in water 4 ft.

INITIAL WATER TREATMENT

1. Because metal compounds can be precipitated out of solution with the use of ozone, there may be initial water discoloration due to oxidation of minerals. The filter will eventually clear this discoloration.
2. Allow filtration pump to run continuously for 2 days without turning on the JED 203 ozone generator.
3. After following step 2, set the filtration pump timer to run according to the spa manufacturer's recommendations, or a minimum of 60 minutes per day.
4. Activate the JED 203 by plugging it in and adjusting the timer on the spa to run at the appropriate times (see customer adjustments section.)
5. Clean the water filter after the first week of operation and again in one week.

CUSTOMER ADJUSTMENTS

Recommended operation times for the JED 203 are as follows:

Spa or Tank Size in Gallons	Hours Per Day
250-500	4
500-1000	8
1000-2500	12
2500-5000	16

MAINTENANCE AND DAILY USE

1. Use of an ozonator requires water filtration to remove oxidized contaminant particles. In order to derive the maximum benefits from the JED 203 ozone generator, the filtration pump should be run a minimum of 60 minutes per day.
2. Ozone use requires checking the filter more frequently. Ozone opens up the cell wall of microorganisms. Once the cell wall is opened (oxidized), the microorganisms die and these impurities clump together. These larger particles are more easily captured by filtration.
3. When using a spa turn off the JED 203. If using an over the side kit, after turning off the ozonator, remove the tubing and airstone from the tub. After use, reinsert the airstone into the water before turning the ozonator back on.
4. The ozone generating, corona discharge (CD) subassembly, has a defined life and degrades in its ability to generate ozone over time.
5. To replace the CD subassembly, see "CD Subassembly" section of these instructions.
6. A residual ring ("bathtub ring") is experienced in all spas. Ozone doesn't remove or prevent this ring. It is best removed with a product specifically designed for this purpose.
7. Ozone is not persistent. It is only present for a short time after the ozonator stops running. Ozone will only treat the water that the ozone bubbles come in contact with. A fine mist of smaller bubbles is more effective than larger bubbles as it increases the surface area of contact between the ozone and water. Ozone bubbles cannot mechanically reach bacteria growing on surface walls beneath the water. This bacteria can be eliminated by wiping down these slippery surfaces followed by using the filtration pump for approximately one hour.

SHOCKING WITH LIQUID CHLORINE

In the event that the spa water has become cloudy, it is necessary to shock the water with chlorine. Cloudy water is caused by excessive use of the spa, which introduces contaminants, particularly bacteria. A guide for shocking for each 100 gallons of water is as follows: Normal shock: 1/4 cup, Heavy shock, 1 cup. The JED 203 can be used in combination with chlorine or ionization.

pH

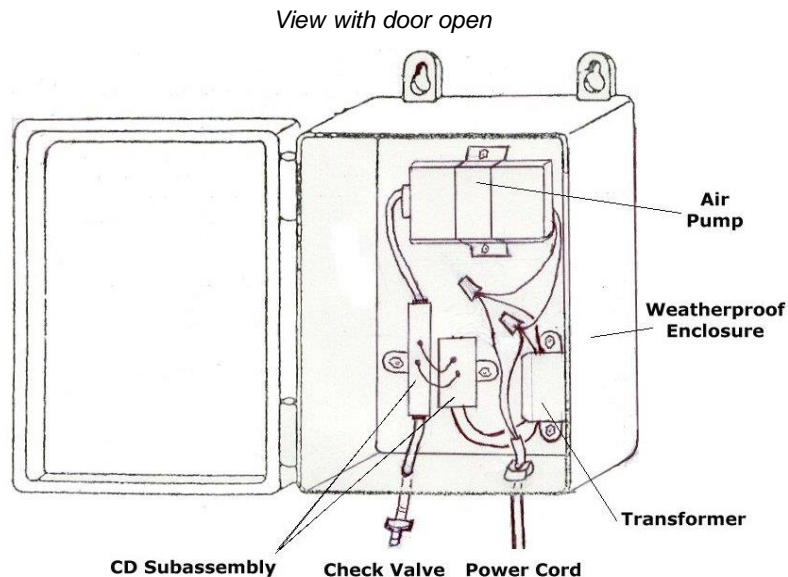
Ozone treatment does not require a specific pH level to be effective.

CD SUBASSEMBLY REPLACEMENT

The anticipated life expectancy of the CD subassembly is approximately 2-3 years, depending on the ozonator run time. After 2 years, we recommend replacing the CD subassembly. When replacing it, specify JED Engineering part number 80-39-70000.

INSTRUCTIONS FOR REPLACEMENT OF CD SUBASSEMBLY

1. Turn off power. Let unit cool.
2. Remove two holding nuts on CD subassembly.
3. Snip both connection wires between the CD subassembly and the transformer.
4. Wire the new CD subassembly to the transformer with the wire nuts supplied.
5. Reattach the ozone resistant tubing and tighten back down with the two holding nuts. Do not over tighten.



For CD subassembly replacement on the JED 203, call your local dealer or contact the factory.

REPLACEMENT OF AIR PUMP

1. Turn off power to unit.
2. Remove two wire nuts (power in connection) and two holding nuts.
3. Replace old air pump and reverse step 2.
4. Insert clear tubing into air intake side of CD cylindrical component.

When replacing the air compressor on the JED 203, specify a JED Engineering part number 90-65-10010.

SERVICE

JED 203 INSTALLATION AND SERVICE PART NUMBERS

Installation and Service Parts	Part Number	Power Cords and Power Accessories	Part Number
Airstone	35-40-65003	Nema Wall Plug	50-50-55001
Check Valve	90-65-10050	Amp 4 pin	50-50-55002
Tubing	35-25-40100	Hot Spring J+J 1995 - 2010	50-50-55011
Barbed Reducer 3/8 x 1/4	35-39-65180	Flag for Hot Spring 2010+	50-50-55006
CD Sub Assembly	80-39-70000	Mini J + J	50-50-55008
Venturi Injector	90-65-10185	Sundance Molex 2004 & Older	50-50-55000
Thru Hull (1 5/8")	90-65-10070	Jacuzzi/Sundance 2005-2016	50-50-55015
Thru Hull (13/16")	90-65-10065	Transformer 120V	30-38-00100
Replacement Pump Kit	90-65-10010	Transformer 240V	30-38-00110

In the event that the JED 203 fails to operate, please contact your dealer for repair or replacement. The JED 203 is covered by a one-year full warranty. It is also designed to be field serviceable. Lack of airflow will prematurely destroy the ozone generator. Make sure not to have airstone deeper than 4 feet in water. Do not kink airhose. Upon installation do not pull air hose out of corona discharge component inside enclosure. Change the airstone if mineral deposits develop. Anything that blocks airflow will shorten the life of the ozone generator.

OZONE INFORMATION AND HELPFUL HINTS

1. Ozone destroys harmful microorganisms in water. Ozone is a naturally occurring gas and converts back into oxygen.
2. The ozone-laden air kills microorganisms upon contact as the bubbles rise in the water. Ozone is only partially soluble in water and consequently the surface area of the bubble is the point of contact between ozone and the contaminants.
3. The ozone is produced in the JED 203 when air passes through a high voltage electrical discharge or "corona."
4. Because ozone is not persistent, ozone residual in water is slight and inexpensive test kits are not accurate enough to readily test for the existence of ozone.
5. Verification that the unit is working is demonstrated by the smell of ozone and by bubbles coming to the water surface from the ozone discharge tube.
6. The JED 203 is more effective when a spa cover is utilized.
7. In the event of a power outage or other event that causes the JED 203 to be off for a duration of time, it is necessary to "shock" the water with chlorine. Use 1/4 cup of chlorine for every 100 gallons and do not use the spa for several days.
8. Even though the unit is performing effectively, there can still be discoloration at the water line caused by human body excretion. Ozone doesn't remove or prevent this discoloration. It is best removed with a product specifically designed for this purpose.
9. Cleaning the filter more often is typically required with ozone treatment.

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