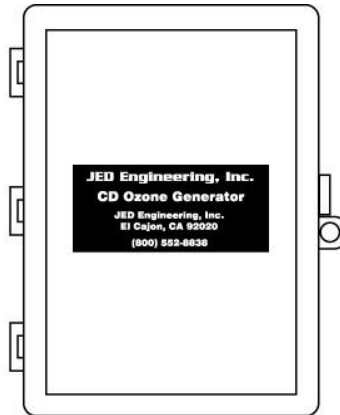


# JED 603 INSTALLATION AND OPERATION MANUAL



## DESCRIPTION

The JED 603 is designed for water treatment in residential and commercial hot tubs, cisterns, water tanks, pools, and fountains up to 10,000 gallons. Different applications require differing amounts of ozone based on variables such as temperature, contaminant level, intended water usage and other water treatment methods employed. For example, the JED 603 can treat up to a 20,000 gallon pool if it is used as the backup (or secondary) sanitation method and ozone is introduced in the pool plumbing. The JED 603 is supplied in a plastic rainproof enclosure to be wall mounted outdoors. The JED 603 has its own air compressor which can pump ozone into a pool, tub or tank down to a depth of 4 feet. The JED 603 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 603 for any purpose other than water treatment and only according to the instructions.
3. **DO NOT USE THE JED 603 FOR AIR PURIFICATION.**
4. The JED 603 should be used outdoors or in a well ventilated area.
5. **DO NOT** directly breathe the ozone from the discharge tube.
6. 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.
7. DO NOT operate the JED 603 before it has been permanently installed.
8. **DO NOT** touch the JED 603 when wet or with wet hands. Fatal electrical shock could result.
9. Connect to a grounded receptacle or power supply on a 20 ampere or less branch circuit with a ground fault circuit interrupter (GFI)
10. Do not bury the electrical cord.
11. **WARNING** - To reduce the risk of electrical shock, replace damaged cord immediately.
12. **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.
13. SAVE THESE INSTRUCTIONS.

## SPECIFICATIONS

Ozone output – 200 milligrams per hour (0.2 grams per hour)  
Input voltage – 120 VAC (240 VAC and 12 VDC units are marked accordingly)  
Operating current – 0.67 Amperes at 120 VAC  
Power consumption – 80 Watts  
Dimensions – 9 ½" x 8 ½" x 4 ½"  
Air Pump – 0.67 gallons per minute air

## MOUNTING

The JED 603 is housed in a rainproof enclosure to be wall mounted outdoors. It should be placed above the water line and in close proximity to where the ozone will be introduced to the water. It should only be used outdoors or in a very well ventilated area.

## ELECTRICAL CONNECTION

1. Turn off the power supply before attempting to install.
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 you are 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 603 operation times.

## CUSTOMER ADJUSTMENTS

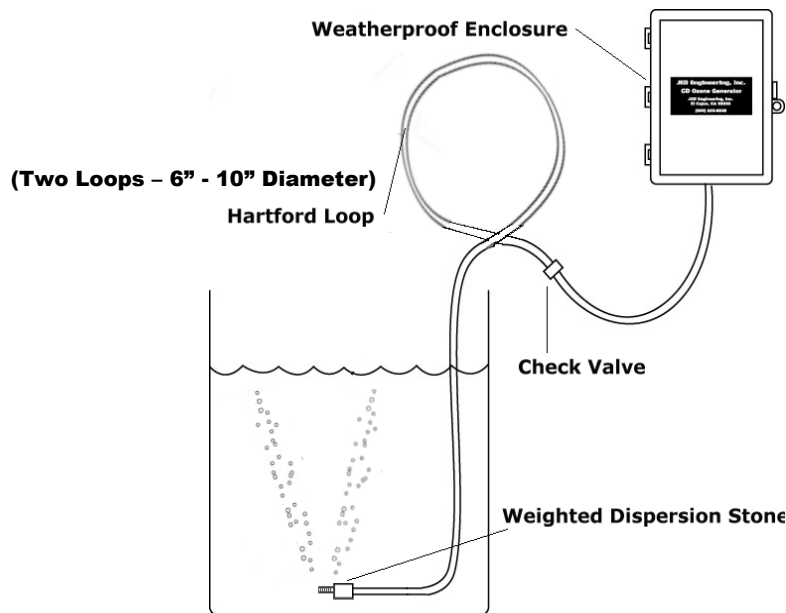
Recommended operation times for the JED 603 are as follows:

Spa or Tank Size in Gallons	Hours Per Day
500-1000	4
1000-2500	6
2500-5000	8
5000-10,000	12

## OZONE HOSE TO SPA

1. Connect the long ¼" tube to the black check valve, which is protruding from the bottom of the JED 603.
2. Attach the other end of the ¼" tube to the optional weighted airstone. Lower the weighted stone into the water so it rests at or near the bottom to a maximum depth of 4 feet. If the water is deeper than 4 feet, then a float should be used to keep the airstone at a maximum depth of 4 feet. Make 2 loops in the ¼" 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 603 via an ozone resistant thru-hull fitting or an in-line injector. In deeper applications, consider creating a plumbing loop that circulates ozonated water back into the tub or tank. Call your dealer for details.
4. It is not recommended to use more than 30 feet of tubing.
5. When using the JED 603 in a tub, the airstone and tubing should be removed before bathing. Turn off the power to the JED 603 before removing the tube. Make sure to reinsert the tubing and airstone back in the water before powering up the ozonator again. Ozone should not be released where water is not present.

### *Water Tank Installation with "over the side kit"*



**Max Depth of airstone in water 4 feet**

## 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. Use of a filter will eventually clear this discoloration.
2. Activate the JED 603 by plugging it in and adjusting the timer on the spa to run at the appropriate times (see customer adjustments section.)
3. Clean the water filter and replace the airstone as necessary.

## MAINTENANCE AND DAILY USE

1. Use of an ozonator requires water filtration to remove oxidized contaminant particles. 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.
2. When using a spa, turn off the JED 603. 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.
3. The ozone corona discharge (CD) subassembly has a defined life and eventually will need to be replaced.
4. To replace the CD subassembly, see "CD Subassembly" section of these instructions.
5. 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.
6. 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 physically 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 603 can be used in combination with chlorine.

### pH

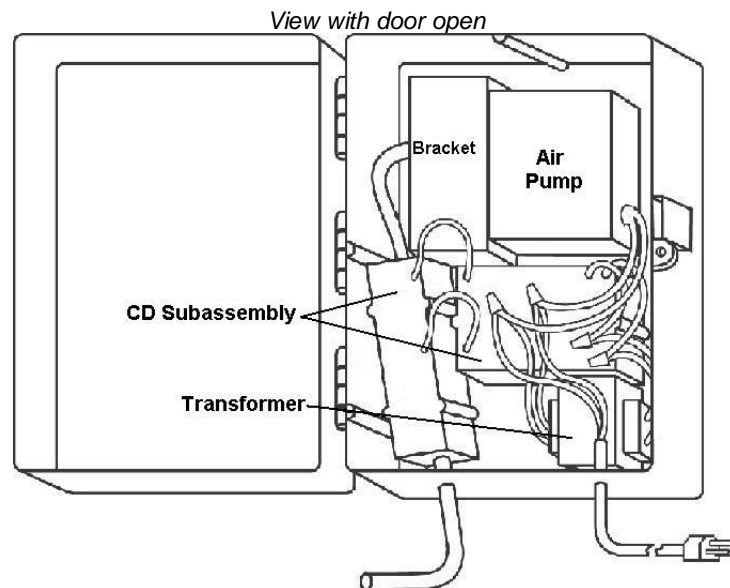
Ozone treatment does not require a specific pH level to be effective.

### 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 80-39-70200.

### INSTRUCTIONS FOR REPLACEMENT OF CD SUBASSEMBLY

1. Turn off power. Let unit cool.
2. Remove six 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 six holding nuts. Do not over tighten.



For CD subassembly replacement on the JED 603, 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 pump on the JED 603, specify JED Engineering part number 90-65-10010.

## SERVICE

### JED 603 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	80-39-70200	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	30-38-00200
Replacement Pump Kit	90-65-10010	Transformer 240V	30-38-00210

In the event that the JED 603 fails to operate, please contact your dealer for repair or replacement. The JED 603 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 air hose. Upon installation make sure not to 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. Please refer to an ozone compatibility chart to ensure any materials in your tub or tank have a good or excellent ozone resistance rating.
2. Ozone generators are not intended to be a stand-alone water treatment method for water purification. They are only one component in a multi-component system including filtration, chemical treatments, reverse osmosis, etc. Please consult with a water treatment professional for your individual requirements and application.
3. Ozone destroys harmful microorganisms in water. Ozone is a naturally occurring gas and converts back into oxygen.
4. 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.
5. The ozone is produced in the JED 603 when air passes through a high voltage electrical discharge or "corona."
6. 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.
7. 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. A noticeable deterioration in water quality may indicate that the ozone generator is no longer functioning properly.
8. The JED 603 is more effective when a spa cover is utilized.
9. 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.
10. Cleaning the filter more often is typically required with ozone treatment.

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