Ozone Systems

Installation & Maintenance Manual

PRO400

Circulation System

ClearWater Tech, LLC.
Integrated Ozone Systems

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SAFETY WARNINGS

- Read and follow all instructions
- Save these instructions
- Before attempting any electrical connections, be sure all power is off at the main circuit breaker.
- Install electrical equipment at least five feet from any open body of water, using non-metallic plumbing
- Be sure to bond (ground) the system using the copper lug on the bottom of the PRO400. The system should be bonded with solid copper wire conforming to all local, state and national electrical codes.

Two aspects of ClearWater Tech ozone generators represent potential dangers, ozone gas and high voltage electricity.

OZONE GAS - WARNING: Low concentrations of ozone can cause irritation to the eyes, throat and respiratory system.

HIGH VOLTAGE - WARNING: ClearWater Tech ozone generators operate at high voltages. If contact is made with operating high voltage components electric shock will occur.

UNPACKING

Compare the ozone system equipment to packing list provided. Before beginning any installation procedures, thoroughly inspect all components for damage. If damage is noticed, promptly notify the freight carrier and request an on site inspection. Inspect all packing materials for small parts before discarding.

EQUIPMENT

1 - PRO400

2 - 1" Hose clamps (optional or customer supplied)

20' - ¾" I.D. Braided tubing (optional or customer supplied)

THEORY OF OPERATION/PRODUCT DESCRIPTION

The PRO400 ozone circulation system is designed as a compact solution for small ozone applications. The PRO400 incorporates a magnetic drive circulation pump, a Venturi injector to provide a suitable suction port to draw the ozone into the water, a 24-hour programmable timer, and 0.400 grams per hour of Corona Discharge ozone generation. This self-contained system can be used for recirculation of drinking water storage tanks, water features, and residential spas.

RECOMMENDED USE

STORAGE TANKS
- Up to 1500 gallons

WATER FEATURES
- Up to 1000 gallons

RESIDENTIAL SPAS
- Up to 1000 gallons with residual sanitizer

NOTE: Pre-filtration is **STRONGLY** recommended when particulate matter is present. Failure to do so may result in pump failure and will void warranty.

INSTALLATION

1. Securely mount the system upright to a flat vertical surface within 5 feet of the point of use below the normal median water level. **NOTE: The system must not be installed higher than 3 feet above the bottom of the tank or basin**.

2. Use ¾" tubing to fit between the unit and the tank. Install with 1" hose clamps on both ends to secure tubing.

3. To keep the pump from cavitating when the system is "off", create a loop on the outlet side of the pump with a diameter of approximately 9 inches. Connect a primer valve (customer supplied) in line for use when priming. (See Figure 2)

4. Supply main power to unit.
   120VAC 60Hz
   - Plug main power outlet into a standard wall outlet.
   220VAC 50Hz
   - Hard wire the main power to the pigtailed main power cord provided. Wire color code; Brown=L1, Blue=Neutral, Green/Yellow=Ground.

5. Prime the pump by initiating water flow towards the pump. Open the primer valve (See Figure 2) allowing water to flow to drain. Once there is flow across the pump initiate power by setting the timer.

6. FOR OLDER VERSIONS: To initiate operation, set the timer dial clockwise, matching the current time of day to the "TIME" arrow. Pull outwards on tabs to set the "ON" time of the system. Each tab represents 30 minutes. When power is on the light on the right side of the system will illuminate. **FOR NEWER VERSIONS see page 5**

7. Once power is "ON" and the pump is primed, close the primer valve. Be sure that all valves down stream are open.

8. The Standard Cubic Feet per Hour (SCFH) Air Flow Meter should read between 5-8 SCFH, when in normal operation.

FIGURE: 1

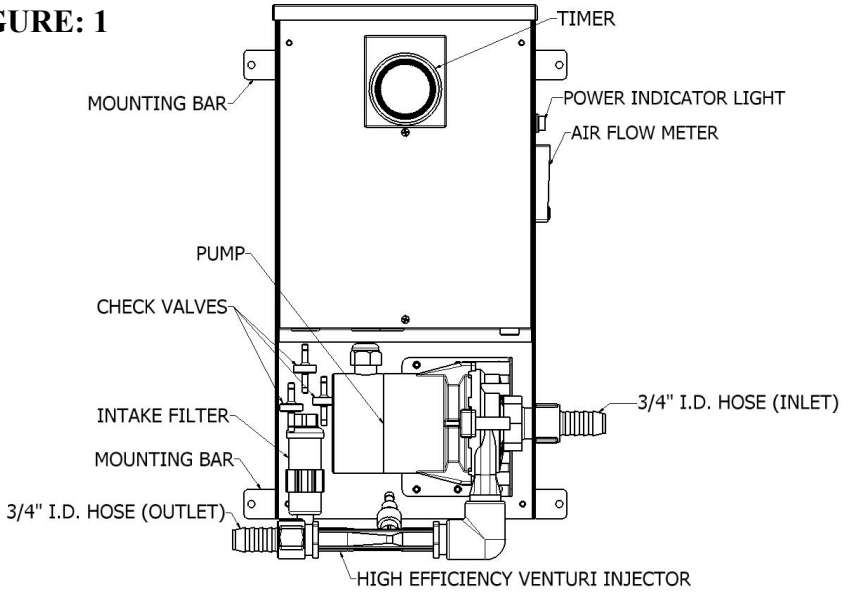
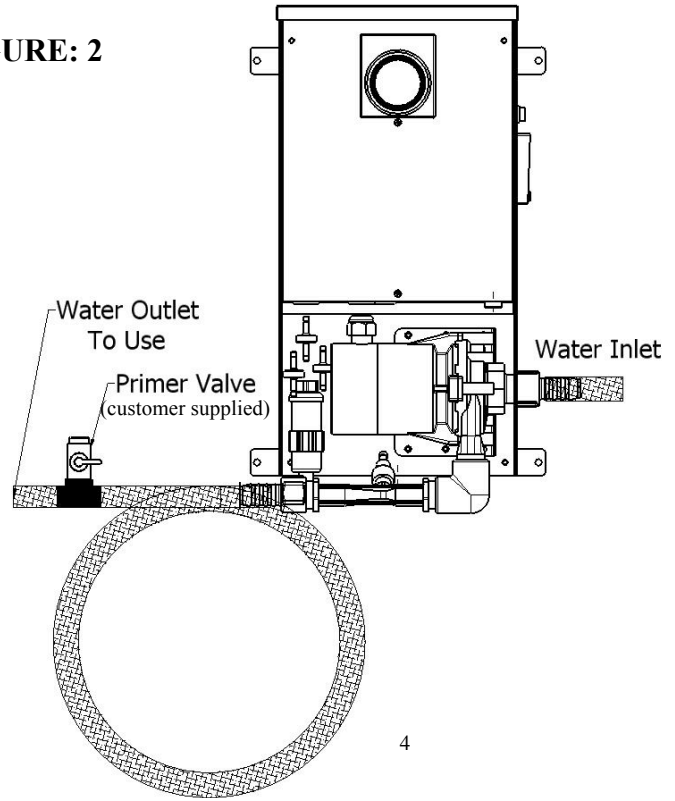


FIGURE: 2



PROGRAMMING INSTRUCTIONS:

To Set or Change the Time: To clear entire memory, press reset key. Hold down the CLOCK key while pressing either the HOUR or MINUTE keys. Continue pressing until the desired number is shown. Then simply lift finger off the CLOCK key to set.

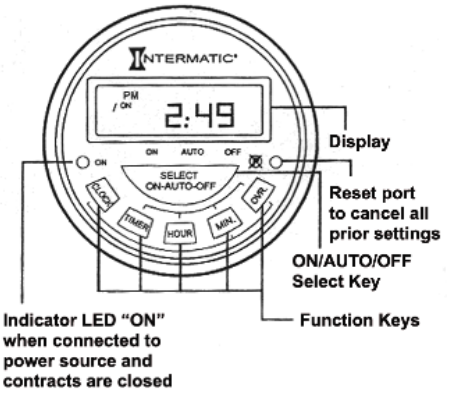
To Set program (On/Off Times): Press TIMER key once to enter into program mode. Display will show "1 ON - - - -". Press the HOUR key and then the MINUTE key to select the desired first ON time. Press TIMER key once. Display will show "1 OFF - - - -". Repeat previous step to select the desired first OFF time. Repeat the entire sequence to complete up to eight ON/OFF times as desired. When programming is done, press the CLOCK key then the SELECT key repeatedly until the indicator bar is above the word "AUTO".

To Review Program: Press TIMER key repeatedly. When done, press the CLOCK key to return to the time of day.

To Cancel/Change Part of the Program: Press TIMER key repeatedly until the particular ON or OFF time appears. Set new ON or OFF time. (See: to set programs)

To Override Automatic Operation: Press the SELECT key to move indicator bar to the desired ON or OFF position. Note: Timer will not resume automatic operation until indicator bar is repositioned above the word AUTO.

To Override Timer Status (On or OFF): Press "OVR", key. Timer will resume automatic operation with the next opposite set point.



MAINTENANCE

- Disconnect power from unit before any maintenance procedures.
- Check valve - replace diaphragm check valves, annually.
- Intake filter - replace intake filter, annually.

PLASTIC TAB

SPECIFICATIONS

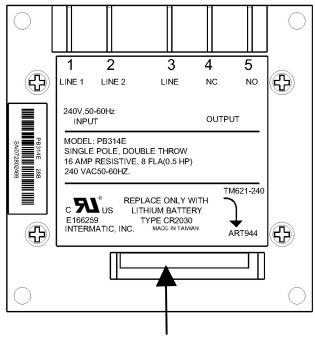
- Electrical - 120 VAC 60 Hz 2.0 Amps
  - 240 VAC 50 Hz 1.6 Amps
- Dimensions - 20" H x 12-3/4" W x 5" D
- Maximum Head - 120VAC 60Hz: 5 gpm @ 22TDH, 9.5 psi
  - 220VAC 50Hz: 5 gpm @ 14TDH, 6.0 psi

BATTERY

Replace only with Lithium battery type CR2032.

REPLACING THE BATTERY

Battery should be available locally should it need to be replaced. Disconnect the power to the unit and remove the front cover, retaining screws and slide front cover off. Than remove 3 screws to remove timer plate (See figure1, page 4). To replace the battery, open the battery compartment on back of timer plate and install new battery. Replace parts in reverse order.



*NOTE: If installing new timer, remove plastic tab before closing unit.

SUMMARY OF THE WARRANTY

ClearWater Tech, LLC ("CWT") makes every effort to assure that its products meet high quality and durability standards and warrants the products it manufactures against defects in materials and workmanship for a period of one (1) year, commencing on the date of original shipment from CWT, with the following exceptions: 1) The warranty period shall begin on the installation date if the installation is performed within 90 days of the original shipment from CWT; 2) The warranty period shall begin on the date of the bill of sale to the end user if the installation date is more 90 days after the original shipment date. To validate the warranty, a warranty card must be returned to CWT and must include the following information:

- End user name
- Complete address, including telephone number
- Date installed
- Complete model and serial number information
- Name of company from which the unit was purchased

Repairs and replacement parts provided under this warranty shall carry only the unexpired portion of this warranty or 90 days, whichever is longer.

ITEMS EXCLUDED FROM THE WARRANTY

This warranty does not extend to any product and/or part from which the factory assigned serial number has been removed or which has been damaged or rendered defective as a result of:

- An accident, misuse, alteration or abuse
- An act of God such as flood, earthquake, hurricane, lightning or other disaster resulting only from the forces of nature
- Normal wear and tear
- Operation outside the usage parameters stated in the product user's manual
- Use of parts not sold by CWT
- Service or unit modification not authorized by CWT
- Failure to meet service requirements as outlined in the I & O manual
- Damage which may occur during shipping
- Check valve/solenoid valve failure

OBTAINING SERVICE UNDER THE WARRANTY

Any product and/or part not performing satisfactorily may be returned to CWT for evaluation. A Return Goods Authorization (RGA) number must first be obtained by either calling or writing your local authorized dealer, distributor or CWT direct, prior to shipping the product. The problem experienced with the product and/or part must be clearly described. The RGA number must appear prominently on the exterior of the shipped box (es). The product and/or part must be packaged either in its original packing material or in comparable and suitable packing material, if the original is not available. You are responsible for paying shipping charges to CWT and for any damages to the product and/or part that may occur during shipment. It is recommended that you insure the shipment for the amount you originally paid for the product and/or part. If, after the product and/or part is returned prepaid and evaluated by CWT, it proves to be defective while under warranty, CWT will, at its election, either repair or replace the defective product and/or part and will return ship at lowest cost transportation prepaid to you **except for shipments going outside the 50 states of the United States of America.** If upon inspection, it is determined that there is no defect or that the damage to the product and/or part resulted from causes not within the scope of this limited warranty, then you must bear the cost of repair or replacement of damaged product and/or part and all return freight charges. Any unauthorized attempt by the end user to repair CWT manufactured products without prior permission shall void any and all warranties. For service, contact your authorized dealer or distributor or CWT direct at (805) 549-9724, extension 23.

EXCLUSIVE WARRANTY

There is no other expressed warranty on CWT products and/or parts. Neither this warranty, nor any other warranty, expressed or implied, including any implied warranties or merchantability of fitness, shall extend beyond the warranty period. Some states do not allow limitations on how long an implied warranty lasts, so that the above limitation or exclusion may not apply to you.

DISCLAIMER OF INCIDENTAL AND CONSEQUENTIAL DAMAGES

No responsibility is assumed for any incidental or consequential damages; this includes any damage to another product or products resulting from such a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so that above limitation or exclusion may not apply to you.

LEGAL REMEDIES OF PURCHASER

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

THIS STATEMENT OF WARRANTY SUPERSEDES ALL OTHERS PROVIDED TO YOU AT ANY PRIOR TIME.