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SECTION 1 Overview

Warning: Please read the following information. Failure to do so could result in damage to your pool’s plumbing system and/or pool equipment.

Note: The suction side installation can be used with any ultraviolet style of ozone generator, as well as DEL's Eclipse Series.

Refer to ozone generator operations manual for operation, maintenance and trouble shooting of the ozone generator. The following information covers installation of residential pool ozone generators via the pump suction kit. The ozone generator is sold separately and comes complete with its own manual. This kit is not compatible with a Total Eclipse unit, and injector manifold or an MDV.

General Information: Utilizing the pump’s suction is a simple and effective means for the introduction of ozone into water. Incorporating an ozone gas check valve, and flow restrictor the ozone generator is plumbed directly into the drain fitting of the pump’s strainer basket. Ozone produced by the ozone generator is drawn into the water by the pump’s impeller. The impeller further mixes the ozone into the water and propels it on through the system. The liquid/gas mixture then enters the filter housing where the unmixed gas can be bled (via the internal and/or external Bleed Tube) back to the return line and into the pool as a stream of fine bubbles.
Successful installation and operation of a pump suction system requires proper attention to the following key items:

a. **Pump materials:** Ozone is a strong oxidizer. Introducing it directly into the impeller housing of a pump may be harmful to some pump materials. Pump manufacturers will usually supply alternate seal materials, which are ozone resistant.

b. **Filter type:** Sand filters have control valves either on the side or top. Top mounted controls will be exposed to ozone gas and may thus be adversely affected. Coating gaskets and o’rings with Teflon/silicone gasket sealer can help prevent deterioration. Additionally, internal air bleed lines may come loose or kink during backwashing. This can cause the filter to fill with air. By installing the external bleed components contained in the installation kit, this problem can be prevented.

Cartridge and DE filters do not require special consideration. However, external bleed line should be installed in all cases.

c. **Protection from loss of pump prime:** As with any typical pump installation, a check valve should be installed prior to the pump to protect against loss of prime. This is particularly important when ozone is introduced through the pump’s suction side. Without a check valve, it is possible for air to be drawn through the ozone generator and drain water from the pump back to the pool (when the main pump is not running). Installing a check valve in the water line on the suction side (pool side) of the pump, will prevent this from occurring.

**SECTION 2 Installation** (See Figures 1A & 1B)

Follow the electrical connection and mounting instructions for your ozone generator, as detailed in the manual that comes with your ozone generator.

1. **Install the external Bleed Vent Assembly to the Filter** (See Figure 2)
   a. Remove the Pressure Gage from the top of the Filter. Wrap all threaded fittings with Teflon tape. Carefully thread the Pressure Gage and Hose Barb Fitting into the Tee. Then carefully thread the assembly back into the filter.
Figure 1A

Figure 1B
b. Install the Bleed Line Clamp Assembly (See Figure 3). Drill a 7/16”-1/2” diameter hole in the pool’s main return line downstream of any erosion feeders. Wrap the Saddle Clamp around the return pipe, and insert the Fitting in the hole, Gasket side down. Remove the Nut and Cap. You may want to save the Cap for future use, in case you ever wish to close off this connection. Slip the Nut over the end of the Bleed Line. Fit the Bleed Line on to the barb of the Fitting, and tighten the Nut, until it is secure.
c. Run the Bleed Line over to the Bleed Vent Assembly on the Filter. Trim the Bleed Line, and secure it to the Bleed Vent's with the supplied Tube Clamp

2. Install Suction Line
With the pool circulation system off, install the supplied Tube Fitting (See Figure 1A and 1B for installation options).

a. New Pool Installations or Complete Renovations: The preferred plumbing method is with a ¾” standpipe. Since the standpipe originates from below water level, there is no possibility for a loss of prime in the pump, due to the “water-lock” below grade. Install a ¾” x ¼”FPT Reducer Coupling on the standpipe. Apply Teflon tape to the threads on the Tube Fitting. Carefully thread the Tube Fitting into the Reducer Coupling.

b. Retrofit Installations: Remove the drain plug from the pump’s skimmer basket. Apply Teflon tape to the threads of the Tube Fitting. Thread the Tube Fitting into the Skimmer Basket Drain. It is especially recommended in this plumbing configuration to plumb in a light duty check valve (1/4-1psi, not included in this parts bag), on the suction side (pool side) of the pump to protect the pump from loss of prime.

3. Flow Test and Ozone Line Connection
a. Connect the longer end of tubing from the Ozone Line to the Tube Fitting with the Tube Clamp.

![Figure 4: Flow Test](image-url)
b. Connect the longer end of tubing from the Flow Meter Assembly to the Ozone Outlet Barb on the Ozone Generator.
c. Connect the remaining ends of the Ozone Line and the Flow Meter Assembly together.
d. Hold the Flow Meter Assembly so that the clear plastic chamber is vertical with the longer tubing toward the bottom as seen in Figure 4.
e. Turn on the pool’s circulation system to create suction. The metal ball in the Flow Meter Assembly will float between its Max and Min line to verify adequate suction. Under worst-case system conditions the flowmeter ball should indicate at least a small amount of air flow.
i. If the pump is installed a considerable distance below the water level, the flow through the Ozone Line will be decreased. To increase the flow to the desired operating level, a Valve can be installed and throttled on the inlet side of the pump as shown in Figure 1A and 1B. After the valve has been installed verify that it is completely open and perform the Flow Test. Make note of your filter pressure while the Valve is open and slowly close the valve until the Flowmeter ball floats between its Max and Min line or until the filter pressure has dropped by 3 psi. If the filter pressure drops by 3 psi before the Flowmeter ball is between the Max and Min line, call DEL Customer Service at (800) 676-1335.
f. After the suction has been verified, remove the Flow Meter Assembly.
g. Cut the excess length from the Ozone Line so its path to the Tube Fitting is as straight and as free from dips and loops as possible. Connect the cut end of Ozone Line to the Tube Fitting with the Tube Clamp.
h. Start the pump again and check all connections for leaks. After a few minutes check that a bubble stream is entering the pool from one or more of the pool returns. If no bubbles are returning to the pool, ensure that the Ozone Line is installed in the proper direction (see item #6) with the check valve arrow pointing in the direction of the suction.
i. Shut off the pump and check to be sure that the pump does not loose prime.

Installation is now complete.
SECTION 3 Operation and Maintenance

The system should operate automatically, coming on with the filtration pump and mixing ozone with the water. It is normal for the tubing to discolor and become brittle with exposure to ozone, and the elements. Therefore, the only periodic maintenance that should be required for the suction side injection system is to replace the ozone tubing and check valve every 1-2 years. Because the ozone check valve is a part of the Ozone Line, it is advised that you purchase the entire assembly as a replacement part to avoid leaving out the other components of the Ozone Line.

SECTION 4 Trouble Shooting

1. Loss of pump prime or excessive noise while pump is running.
   a. Some amount of noise is to be expected since air is entering the pump and passing through the plumbing.
   b. Check the suction side plumbing for leaks that may be introducing air from outside (other than the ozone system).
   c. Maximize water flow from the pump by enlarging eyeball return fittings.

2. Loss of prime when pump shuts off.
   a. As a result of having an opening to air via the ozone supply tubing, it is possible for water to drain from the pump back into the pool causing the pump to lose prime. Appropriate steps should be taken to prevent water backflow from the suction side of the pump, such as installing a light duty spring check (1/4-1psi, not included in this parts bag), or flapper style check valve before the pump.
   b. If installing a check valve is not an option, it may be possible to plumb an upside down U shaped run of pipe on the suction side, which would create a water column just before the pump. That water column would therefore be higher than the pump’s suction port, maintaining pump prime.

   a. Any condition that restricts flow (such as dirty filters), or reduces flow (such as low voltage or a worn pump), may affect the air suction. Correct the flow reduction in the system.
   b. Maximize water flow from the pump by enlarging eyeball return fittings.
SECTION 5 Replacement Parts List

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-0541</td>
<td>¼” Brass Tee</td>
</tr>
<tr>
<td>4-2162-01</td>
<td>Eclipse Manual, EC-10/20/40 (available on line at <a href="http://www.delozone.com">www.delozone.com</a>)</td>
</tr>
<tr>
<td>4-0448</td>
<td>MANUAL, Suction Side Kit install instruction (available on line at <a href="http://www.delozone.com">www.delozone.com</a>)</td>
</tr>
<tr>
<td>7-0021</td>
<td>Black Nylon Squeeze Clamps for ¼”ID Tubing</td>
</tr>
<tr>
<td>7-0594-10</td>
<td>1/4”IDx3/8”OD Tubing, PVC, Green/Blue, 10FT</td>
</tr>
<tr>
<td>7-0452</td>
<td>Barb Fitting, 1/4”HBx1/4”MPT, Kynar</td>
</tr>
<tr>
<td>9-0001</td>
<td>Saddle Clamp Assembly</td>
</tr>
<tr>
<td>9-0544-01</td>
<td>Flow Restriction Tube Assembly</td>
</tr>
</tbody>
</table>
DEL OZONE
LIMITED ONE YEAR WARRANTY

The limited warranty set forth below applies to products manufactured by DEL OZONE – 3580 Sueldo Street, San Luis Obispo, California 93401, and sold by DEL OZONE or its authorized dealers. This limited warranty is given only to the first retail purchaser of such products and is not transferable to any subsequent owners or purchasers of such products.

DEL Ozone warrants that it or its authorized dealers will repair or replace, at its option, any part of such products proven to be defective in materials or workmanship within ONE (1) year from the date of retail purchase of such products. (All parts) ANY REPAIR OR REPLACEMENT WILL BE WARRANTED ONLY FOR THE BALANCE OF THE ORIGINAL WARRANTY PERIOD OR NINETY (90) DAYS, Whichever is greater.

NOTE: USE ONLY DEL AUTHORIZED DEL REPLACEMENT PARTS. USE OF ANY OTHER PART(S) WILL VOID THIS WARRANTY.

Any replaced parts must be returned to DEL OZONE for warranty evaluation.

THIS LIMITED WARRANTY DOES NOT INCLUDE ANY OF THE FOLLOWING:

(a) Any labor charges for troubleshooting, removal, or installation of such parts.
(b) Any repair or replacement of such parts necessitated by faulty installation, improper maintenance, improper operation, misuse, abuse, negligence, accident, fire, flood, repair materials, and/or unauthorized accessories.
(c) Any such products installed without regard to required local codes and accepted trade practices.
(d) Damage to unit caused by water backflow.
(e) Any implied warranty of merchantability or implied warranty of fitness for particular purpose, and such warranties are hereby disclaimed.
(f) DEL Ozone shall not be liable under any circumstances for loss of use of such product, loss of profits, direct damages, indirect damages, consequential damages, and / or incidental damages.

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

TO OBTAIN WARRANTY SERVICE:

DEL OZONE
3580 Sueldo, San Luis Obispo, CA 93401
Customer Service Number: (800) 676-1335
Fax Number: (805) 541-8459
E mail warrantysupport@delozone.com (residential)
service@delozone.com (commercial)

PROVIDE:

1. Customer name, mailing address, and telephone.
2. Installer/Mechanical Contractor or Dealer name.
3. Unit Part Number, Serial Number or Manufacture Date, and date of purchase.
4. The date of failure.
5. A description of the failure.

After this information is provided, DEL Ozone may release a RETURN GOODS AUTHORIZATION (RGA) NUMBER. After receiving the RGA number the part in question must be returned to DEL Ozone, freight prepaid, with the RGA number clearly marked on the outside of the package. All preauthorized defective parts must be returned to DEL Ozone within thirty (30) days. Under no circumstances may any product be returned to DEL Ozone without prior authorization. Returns without the assigned RGA number on the outside of the package will be refused and shipped back to the sender at their expense. Upon receipt of preauthorized returned goods, DEL Ozone will repair or replace, at DEL Ozone’s option, the defective product(s) and return them (freight prepaid for products under warranty). Buyer’s acceptance of the product and use thereof constitutes acceptance of these terms.

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