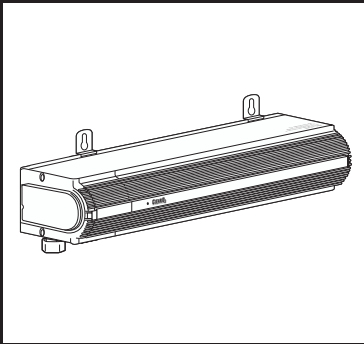


ClearO₃

Water Treatment System

Installation Manual



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Important Safety Instructions



READ AND FOLLOW ALL INSTRUCTIONS

This Owner's Manual contains specific precautions and symbols to identify safety related information as described below. Please read them carefully and follow these precautions as indicated!

⚠ DANGER - Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING - Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION - Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE - Is used to address practices not related to physical injury.

⚠ CAUTION - Read and follow all instructions, including the following:

- Follow all applicable electrical codes.
- A qualified licensed electrician should perform electrical hookup.
- Turn off power at main source before making any electrical connections or servicing.
- Use only liquid-tight flexible nonmetallic conduit for electrical connections.
- A terminal marked G is located inside the supply terminal compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electrical supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment.
- At least one lug marked "BONDING LUG" provided on external surface of unit. To reduce the risk of electric shock, connect local common bond grid in the area of the pool/spa to this terminal with insulated or bare copper conductor no smaller than 6 AWG.

⚠ WARNING - UV & Ozone Exposure.

- ALWAYS wear safety glasses when using power equipment during installation process.
- Install at least 5ft from pool or spa water using nonmetallic plumbing. Mount ozone generator near pool equipment at least one (1) foot above maximum water level to prevent water from contacting electrical equipment. Install in accordance with the installation instructions.
- Short-term inhalation of high concentrations of ozone and long-term inhalation of low concentrations of ozone gas can cause serious harmful physiological affects. Do not inhale gas produced by this unit. If installed in an enclosed space make sure to account for adequate ventilation.
- **UV LIGHT PRODUCED BY THIS UNIT IS HARMFUL TO THE EYES AND MAY CAUSE BLINDNESS. DO NOT LOOK DIRECTLY AT A LIT BULB!**
- Lamp contains mercury. Dispose of in accordance with local and state regulations.



"In accordance with Canadian Standards Association's Standard
No. CAN/CSA - C22.2 No. 218.1 - M89", Ozone Generator
with respect to risks of electric shock, fire, and mechanical injury only
34YZ.

SAVE THESE INSTRUCTIONS

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Installation

Additional Required Items

- (1) Six (6) feet ½" non-metallic conduit outdoor rated.
- (1) ½" conduit compression fitting.

Selecting Location & Mounting Unit

1. Select a location on a wall near the pool equipment or insert posts into the ground, which will be used to hang unit. **The ClearO3 unit should be at least one (1) foot above maximum water level, and for extra safety the unit must be mounted higher than the filter.** The unit should be within five (5) feet of an electrical source, and within nine (9) feet of plumbing connection. Mounting brackets are horizontally adjustable to line up with hard points on the mounting surface. The unit must be mounted horizontally and level on the wall. Electrical connections should be facing downward.
2. Use provided screws and plastic wall inserts or poles and pole mount clamps (not included) depending on installation surface available.
3. Four (4) mounting brackets are included (two for the top slot and two for the bottom slot).
4. Install anchors and screws in desired location for the top hangers. They must be no further apart than twelve (12) inches. Do not tighten screws all the way. (Fig. 1)
5. Hang the ClearO3 from the two top brackets by sliding the keyhole slots over the screws.
6. Mark the location for the two bottom brackets. (Fig. 2)
7. Remove the ClearO3 from the wall and install the wall anchors.
8. Place the ClearO3 unit back on the screws and line up the two lower brackets with the wall anchors. (Fig. 3)
9. Install the bottom two screws and tighten all screws.

Fig. 1

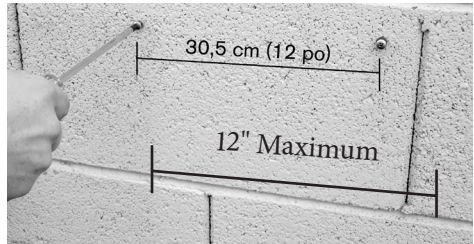


Fig. 2



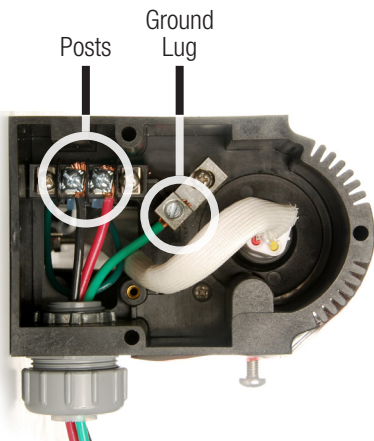
Fig. 3



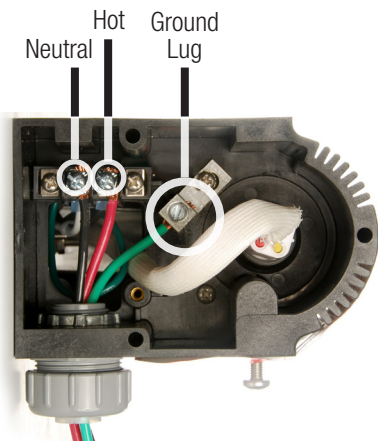
Making Electrical Connections

⚠ DANGER - Turn off power at main source before making any electrical connections or servicing the unit. UV light produced by this unit is harmful to the eyes and may cause blindness! Do not look directly at a lit bulb!

1. A licensed electrician should make all electrical connections. The unit must grounded by connecting to the pool equipments bond wire to comply with local electrical codes.
2. Turn off power to the filtration system pump at the circuit breaker.
3. Install an approved seal tight flex conduit (not included) rated for outdoor use, between the ClearO3 unit and power source.
4. The ClearO3 must be wired to a power source that energizes the bulb when the pump that the air line is connected to is running. This includes suction and mazzie pressure side installations. Power sources can be but not limited to control panels and time clocks. The ClearO3 ballast is voltage sensing. The wiring can be done in 120V or 220V. A second bonding lug for a bond wire is on the outside of the ClearO3 housing. For device power ratings see the main product label.



Wiring for 220V: The two hot wires can be connected to either of the two posts and the green ground wire to the grounding lug.



Wiring for 120V: Connect the neutral wire to the left post, the hot wire to the right post and the green ground wire to the grounding lug.

NOTICE - The ClearO3 must run with the filter pump as the filter pump creates the air draw through the unit needed to create ozone. Do not set the ClearO3 to run when the filter pump is off and not pulling air through the unit.

1. Use external ground lug to connect the ClearO3 to the pool pump ground bond. (Fig. 4)
2. Using your chosen power source, turn on the system to make sure the ClearO3 and the pump responsible for creating the suction through the ClearO3 are coming on together. (Fig. 5)

Fig. 4



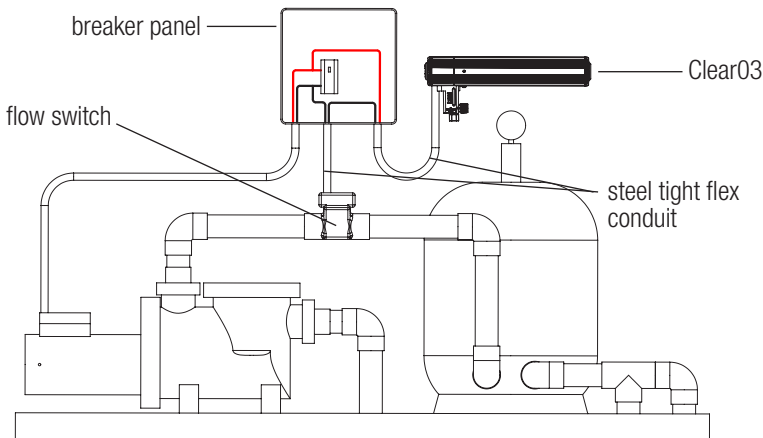
Fig. 5



NOTE: When the ClearO3 starts up, the light will be orange for around 10 seconds before it turns blue. If the light stays orange or red, turn the unit off immediately. Failure to do so will damage the ballast.

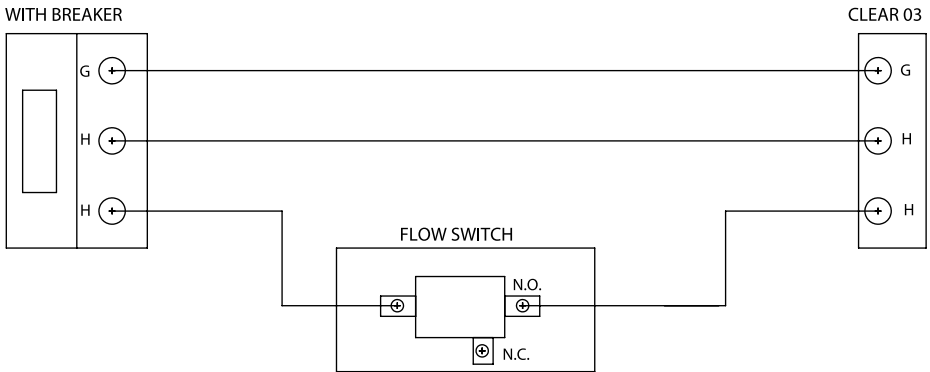
Alternate Electrical Connection for Multi-Speed Pump

Some variable and multi speed pumps have a built in controller. This requires the ClearO3 to have its own controlling device. A common method in this type of installation is to use a flow switch. Paramount has available an add-on paddle flow switch (Paramount part# 004-402-0010-00 or Grid Controls part # 57-F1-225-00W). The power is run through this switch and then to the ClearO3. The flow switch is plumbed in the main line of the pool return. When it senses flow the ClearO3 is turned on.



The ClearO3 should be wired to run with the filter pump which creates the air draw through the unit needed to create ozone. Do not set the ClearO3 to run when the filter pump is off.

AVAILABLE POWER SOURCE
WITH BREAKER



Making Plumbing Connections

⚠ WARNING - Turn off power to the filtration system pump at the main source before making any plumbing connections or changes.

There are 4 options for plumbing a Clear O3 into a pool system:

1. Ozone can be plumbed into the "pump pot" on the suction side of the pump.
2. Ozone can be plumbed to a pre-pump standpipe.
3. Optional configuration for plumbing Ozone to the suction side of a pump installed below the water level.
4. Ozone can be plumbed into the pool system using a "venturi injector" on the discharge side of the pump.

Piping Ozone To The Pump Pot

The Clear O3 unit for a pump installation is part #004-402-3880-00. This unit includes a flow meter, tubing with a .5 lb. check valve and wire ties. This check valve is for installations where the connection for the Ozone at the pump pot is at an elevation of 2 feet below the pool water level to one foot above the water level. If the pump connection is at an elevation outside of the above range a different check valve is needed. Please refer to Chart 1 for the correct check valve selection for your elevation.

1. Pump strainer pot installation: (Fig. 6)
 - a. Check pump elevation above water level. Refer to (Chart 1) for proper check valve selection. The 0.5 lb valve comes standard with Clear O3 and others are available to order separately.
 - b. Remove strainer pot plug. If there is an O-Ring on plug take O-Ring off of pot plug and slide over threaded end of check valve.
 - c. Wrap the check valve four times with teflon tape and install into the strainer pot plug-hole. Add more tape if valve does not seal. (Fig. 7)
 - d. Install the combination needle valve flow meter on the bottom of the Clear O3 unit. (Fig. 8)
 - e. Install 3/8" OD x 1/4" ID tubing to compression end of check valve. (Fig. 9)

Fig. 7

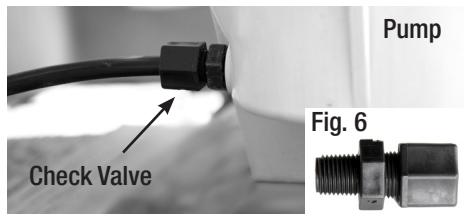


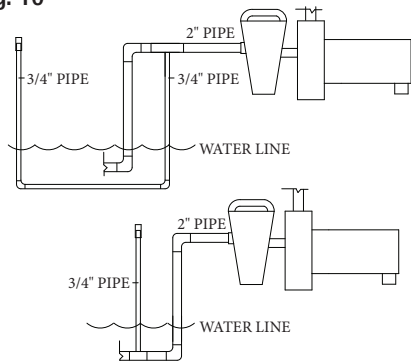
Fig. 8



Fig. 9



Fig. 10



Piping Ozone To A Pre-Pump Standpipe

2. Pre-pump standpipe installation: (Fig. 9, Fig. 10)
 - a. Cut cap off standpipe.
 - b. Glue a 3/4" elbow and a 3/4" x 1/4" NPT reducer bushing on end of standpipe.
 - c. Install the threaded end of the check valve included in the reducer bushing.
 - d. Install 3/8" OD x 1/4" ID tubing to valve using the compression nut. (Fig. 9)

Chart 1 - Check Valve Installation at the Pump Pot

Pump to water level	Check Valve Rating	Part Numbers
-2' to +1' (-60cm to +30cm)	0.5 lb	005-402-1250-00
1' - 2' (30cm - 60cm)	1.0 lb	005-402-2505-00
2' - 3' (60cm - 90cm)	1.5 lb	005-402-2502-00
3' - 4' (90cm - 120cm)	2.0 lb	005-402-2506-00
4' - 8' (120cm - 240cm)	3.0 lb	005-401-2503-00



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Optional Configuration For Piping Ozone To The Suction Side Of A Pump Installed Below Water Level (Fig. 11)

3. To complete this installation option you will need a two way valve not included.
 - a. Install the two way valve on the inlet pipe to the pump suction. (before the standpipe if installed)
 - b. Make all other connections before the two way valve.
 - c. Make tubing connections to the pump pot or standpipe as in standard pump above water level installation.
 - d. Start the pump with the valve fully open.
 - e. Note the filter pressure. Then close the valve slightly until the pressure on the filter drops two or three psi.
 - f. Go to setting the airflow on page 12 to finish setting airflow. The slight restriction this creates on the pump is the same as if it was set at approximately one foot above water level and allows the pump to draw air in at the pump pot or standpipe. (Fig. 11)
4. Lay the 3/8 tubing along desired route to the compression fitting on the combination needle valve flow meter on the ClearO3 unit.
5. Connect the tubing to the compression fitting. (Fig. 12)
6. Use the provided wires ties to tie the loose tubing to the conduit or plumbing. (Fig. 13)

Fig. 11

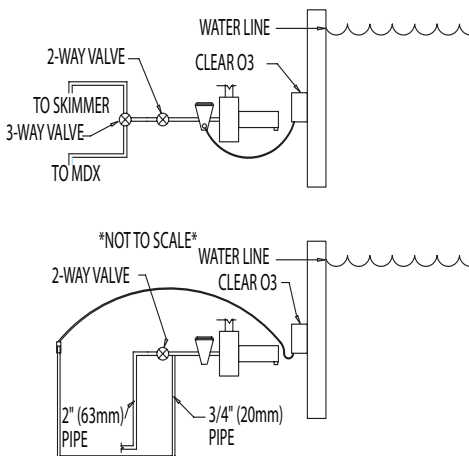


Fig. 12



Fig. 13



Piping Ozone To The Injector Manifold

The ClearO3 unit part #004-402-3977-00 is used for supplying Ozone when using a Venturi Injector part #004-402-3873-00. The Venturi Injector comes with a 0.5 lb. check valve for installing it at a distance of 1' above the water level and lower. The height of the venturi is measured at the center line of the venturi as marked on Fig. 15. If the venturi is at an elevation outside of the above range a different check valve is needed. Please refer to Chart 2 for the correct check valve for your elevation.

The injector manifold must be installed in the pool's main return line after the pool filter, heater, chlorinator and spa return. (Fig. 14) shows the basic installation. Locate the appropriate section of the return line and install the injector manifold using PVC primer and glue on all mating surfaces. Glue in a minimum 2" return line. Water flow arrows on the manifold must be followed and the injector needs to be facing up with the bypass down. See Fig. 14 & 15.

The ClearO3 ozone suction line will hook directly up to the bottom of the ClearO3 and the other end to the injector with the check valve provided with the ClearO3. No flow meter is needed or provided.

NOTE: The ClearO3 unit must be mounted at least 1' above pool water level to prevent water from contacting electrical equipment.

Fig. 14

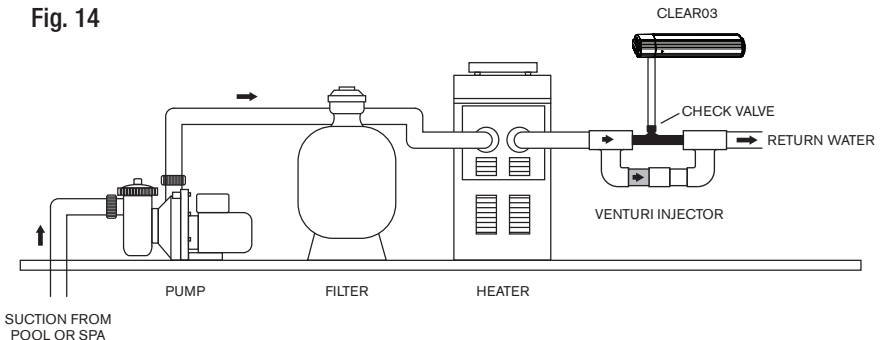


Fig. 15

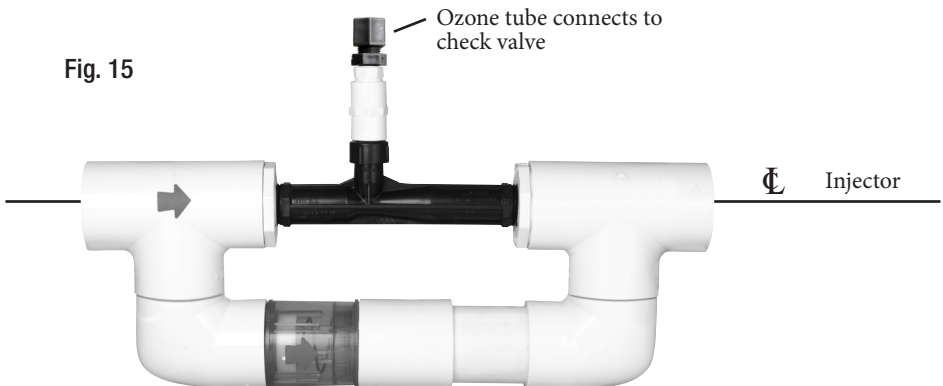


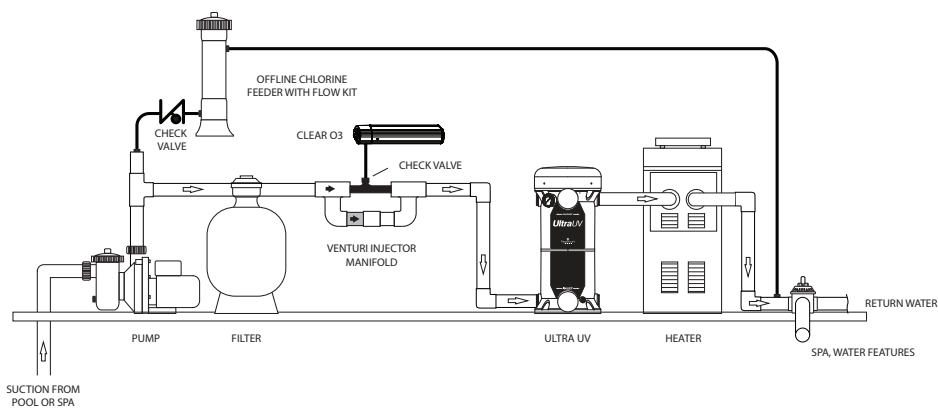
Chart 2 - Check Valves		
Center line of injector manifold to water level	Check Valve Rating	Part Numbers
1' or lower	0.5 lb	005-402-1250-00
1' - 2' (30cm - 60cm)	1.0 lb	005-402-2505-00
2' - 3' (60cm - 90cm)	1.5 lb	005-402-2502-00
3' - 5' (90cm - 150cm)	2.0 lb	005-402-2506-00
5' - 8' (150cm - 240cm)	3.0 lb	005-401-2503-00

Plumbing the ClearO3 with the Ultra UV and Off Line Chlorine Feeder Using the Venturi Injector Method

When installing a Clear O3 and an Ultra UV with a Pressure Side Venturi Injector Manifold in the same pool system it is recommended that the Venturi Manifold be installed after the filter followed by the Ultra UV.

Pool systems that have erosion type chlorine/bromine feeders we recommend installing a feeder designed for off line plumbing installations offered by several pool equipment manufacturers.

The inlet water being supplied to the feeder should be tapped between the pump discharge and the inlet to the filter. The discharge from the feeder should return to the piping to the pool after the heater or after the last component in the system. Follow the feeder manufacturer's instructions for installation of the feeder. Please refer to the plumbing diagram below.



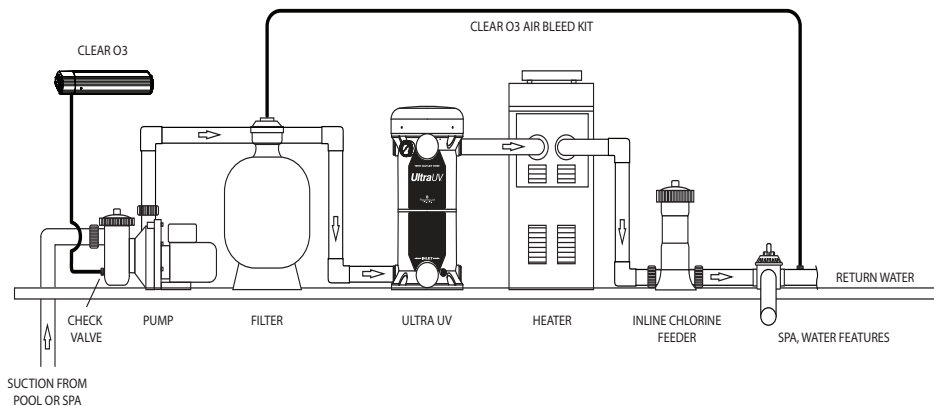
This piping arrangement is required to prevent air and ozone from getting into the chlorine feeder and hampering it's performance, and to prevent chlorine from getting into the Ultra UV or other equipment and causing damage.



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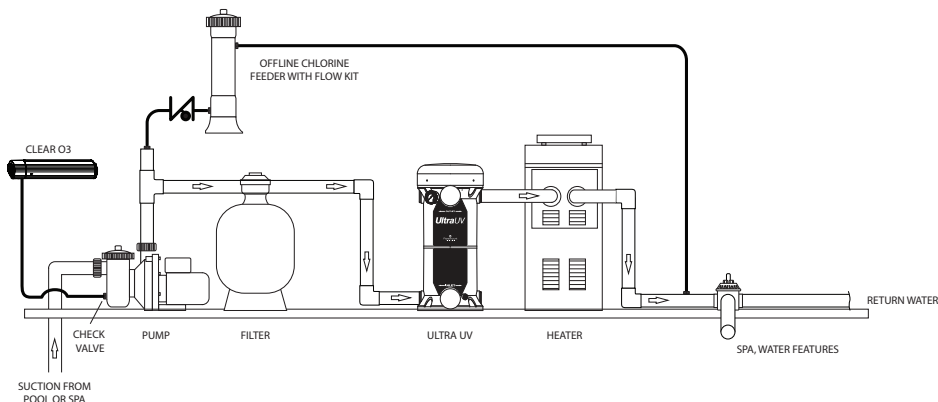
Plumbing the ClearO3 and Ultra UV with Ozone Introduced at the Pump and an Inline Chlorinator

When installing a Clear O3 and an Ultra UV in the same pool system, where the Ozone is piped into the pump strainer pot or into a standpipe before the pump suction, it is recommended that an air bleed be installed to remove excess air from the filter and return it to the pool piping downstream of the inline chlorinator, which should be the last component in the system. The Clear O3 Air Bleed Kit is available from Paramount. Item No: 006-402-3872-00. Please refer to the plumbing diagram below.



Plumbing the ClearO3 and Ultra UV with Ozone Introduced at the Pump and an Offline Chlorinator

When installing a Clear O3 and an Ultra UV on the same pool system, where the Ozone is piped into the pump strainer pot or into a standpipe before the pump suction, it is recommended that an air bleed be installed to remove excess air from the filter and return it to the pool piping downstream of the Heater, or the last component in the system. The Clear O3 Air Bleed Kit is available from Paramount. Item No: 006-402-3872-00. Please refer to the plumbing diagram below.





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Setting Air Flow

1. Clean filter and pump basket before setting airflow.
2. Turn the knob on the needle valve/flow meter clockwise to close valve completely.
3. Turn the power on to the pump.
4. Turn the knob on the needle valve/flow meter counter clockwise until the ball reads in the middle of the two lines on the flow meter. (Fig. 16)

NOTE: From time to time condensation may collect in the flow meter, especially in moist climates or following a rain storm. The moisture may cause the orange ball to become stuck. The flow meter is not broken. The water will eventually dry up and the ball will begin to float again. To check draw to the pump look for air bubbles entering the pump pot.

Fig. 16



Important Notes Regarding The Flow Meter:

1. IF THE PUMP THAT THE CLEAR O3 UNIT IS INSTALLED ON IS A PUMP RUNNING A PARAMOUNT IN-FLOOR SYSTEM, lock the water valve on pause (the pause control is located on top of the Paramount water valve) when the valve is switching ports and therefore at it's maximum flow. Set the flow meter so the ball is on the upper line of the "normal" range.
2. WHEN USING MULTIPLE SPEED PUMPS, SET THE FLOW METER WITH THE PUMP RUNNING ON THE HIGHEST SPEED THAT WILL BE USED.
3. The Clear O3 flow meter is very sensitive and the red ball may drop down below the 'normal' marker after it has been set. If this happens on your unit, please be aware that this is normal. The flow meter will still deliver the proper amount of ozone as long as the blue light is on. You do not need to reset the flow meter until after you clean your filter.

External Safety Air Bleed Kit Instructions (Optional)

Sometimes the internal air bleed on the filter is not sufficient to handle the extra air in the system with an ozonator installed. An External Safety Air Bleed Kit (006-402-3872-00) (Fig. 17) for in-ground swimming pools is available to remove excess air from the filter and send it downstream (up to 15') past all equipment. After installing always test per instructions that air is vented from the filter when the pump is running. You must install an external air bleed if the filter is old, does not have an internal air bleed, there is a solar system on the pool or there is a robotic pressure side cleaner.

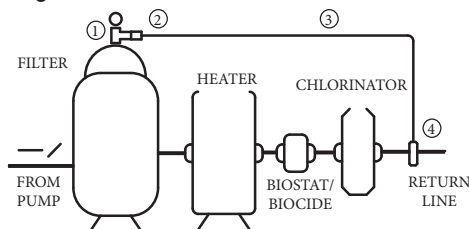
Fig. 17



Mounting Instructions

1. Turn the power off to the pump.
2. Remove the pressure gauge from the filter.
3. Install the nipple into one end of the brass tee.
4. Install the pressure gauge by threading into the other end of the brass tee supplied.
5. Install the tubing compression fitting by threading into the side of the brass tee.
6. Install the tee assembly by threading into the hole where you removed the pressure gauge (Fig. 18).
7. Insert one end of the tubing into the compression fitting (Fig. 18).
8. Turn the power on to the pump and check that air is coming from the other end of the tubing.
9. Turn the power off to the pump.
10. Pick a spot on the return pipe downstream of all other devices (heater, chlorinator, pressure cleaner, etc.)
11. Drill a 7/16" hole through the return pipe at the location selected.
12. Install the saddle clamp with the fitting over the hole. Make sure the gasket is in place between the fitting and the pipe. (Fig. 18)
13. Lay the tubing along the return pipe to the saddle clamp fitting and cut off excess length.
14. Connect the end of the tubing to the compression fitting on the saddle clamp (Fig. 18). The tubing can be secured to the pipe using cable ties (not included).

Fig. 18



Installation of External Safety Air Bleed Kit

Bulb Replacement

NOTE: Ozone production from direct UV light will decline over time. UV bulbs continue to illuminate after they stop producing an effective level of ozone to clean your pool water. To make sure your pool continues to receive all the benefits of ozone, Paramount recommends that you replace your bulb every three (3) years or 13,000 operating hours.

⚠ DANGER - Turn off power at main source before making any electrical connections or servicing the unit. UV light produced by this unit is harmful to the eyes and may cause blindness! Do not look directly at a lit bulb!



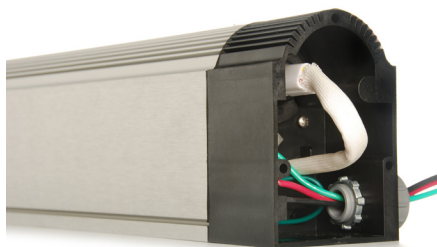
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Replacing UV Bulb

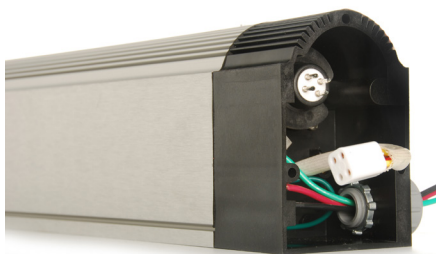
DO NOT TOUCH THE GLASS, HANDLE BY CERAMIC ENDS OF BULB!



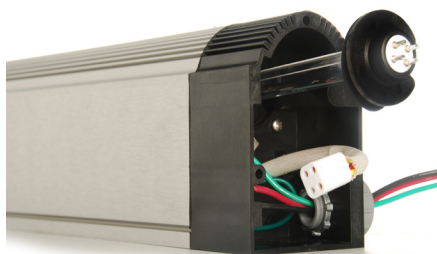
Turn the power off to filtration system pump at circuit breaker. Remove three screws in left end side cap labeled "electrical connections".



Remove side cap. Grasp light bulb plug and pull light out about one inch.



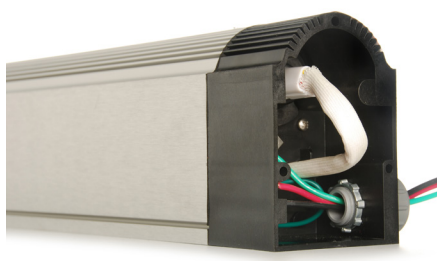
Remove plug from light bulb.



Pull light bulb free from Clear O3 unit.



Remove and throw away the old gasket. Make sure new gasket is in place on replacement bulb. Align with key and slide into hole until bulb is completely into unit.



Press plug onto light bulb. Replace side cap and three screws. Turn on power to filtration system pump.

Check glow tube on the left front of the Clear O3. A light blue light indicates lamp is lit and the unit is producing ozone.

Troubleshooting

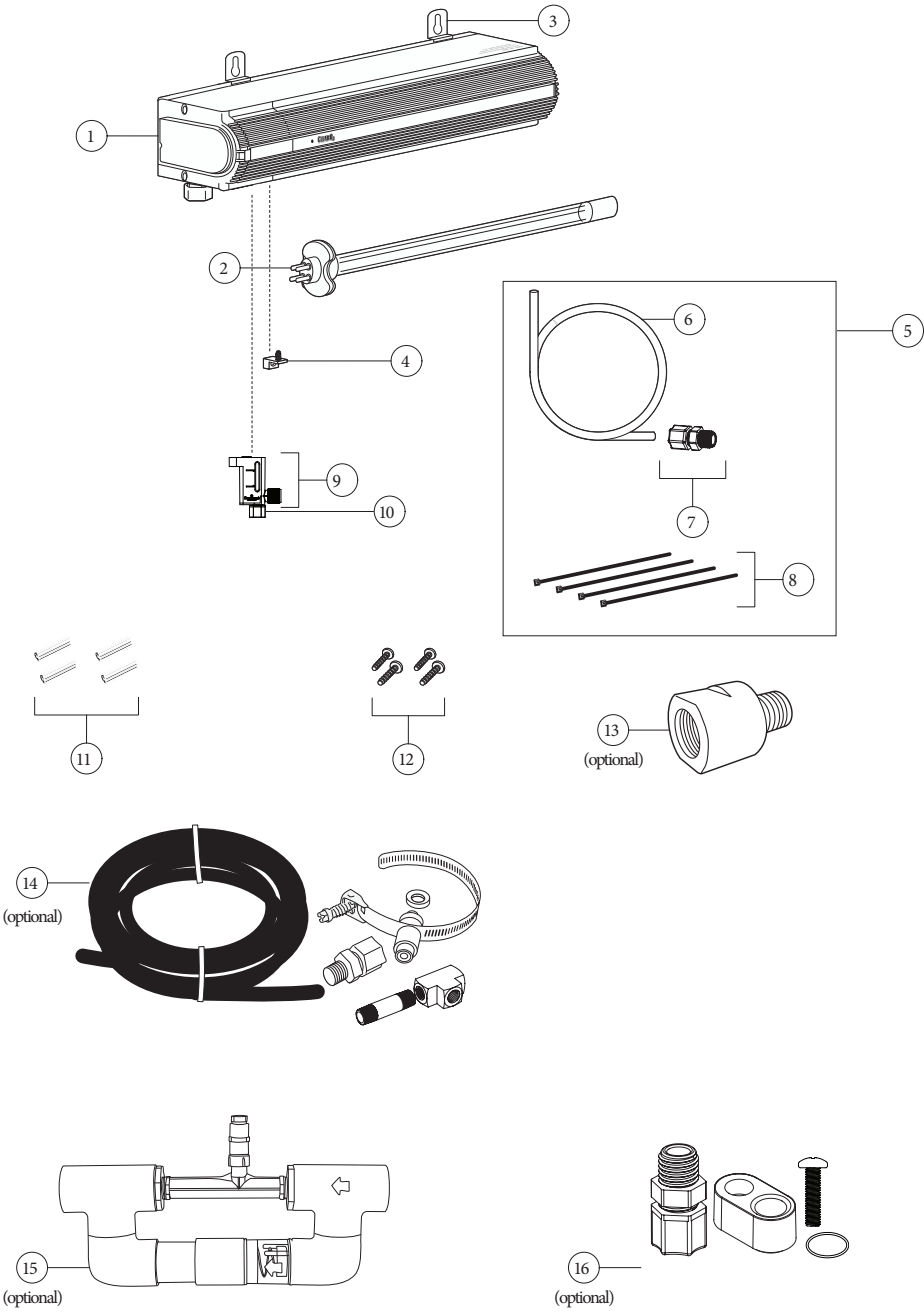
ISSUE	SOLUTION
No air bubbles entering system or pool	Clean filter then adjust airflow needle valve
Filter empties and pump loses prime	Replace check valve fitting at strainer pot
Light bulb does not light	Check power to the ClearO3. If you have power and the bulb still doesn't light up, turn off the power and replace the bulb.

The ballast resets instantly on restoration of power. When the lamp restarts, it will light up orange first then turn blue in about 10 seconds. If the UV bulb still does not illuminate 1-800-621-5886 and ask for customer service for further instructions.

Replacement Parts

ITEM	PART NUMBER	DESCRIPTION
Single Unit		
1	004-402-3880-00	ClearO3® Single Assembly
2	005-402-3834-00	Lamp
3	005-402-3820-00	Mounting Brackets (4Pk)
4	**	Ground Lug
5	005-402-3361-00	Tubing with Check Valve Pump Mount & Wire Ties
6	**	Tubing 3/8" OD x 1/4" ID x 10'
7	**	Pump Mount Check Valve 1/4" NPT x barb
8	**	Wire Ties (4Pk)
9	005-402-3247-00	Flow Meter Kit
10	**	Compression Nut 1/4" x 3/8"
11	**	Anchor #10
12	**	Screw: 10 x 3/4" PHIL PH
13	005-402-1050-00	ClearO3 Adapter Pot Plug (Optional)
Air Bleed		
14	006-402-3872-00	ClearO3 Air Bleed Kit (Optional)
15	004-402-3873-00	Pressure Side Mazzie Injector Manifold
16	005-252-3260-00	ClearO3 Mazzie Conversion Kit

** Not available to purchase individually.



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technical support, visit our website at
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