



## **Operation Manual for Eco-Logic Pond & Lake Restoration System**

- 1) Overview of System Operation
- 2) Safety Precautions
- 3) Eco-Logic Unit Specifications / Equipment Installation Recommendations
- 4) Recommended System Maintenance
- 5) Aeration Tubing Installation Guidelines
- 6) Vane Replacement
- 7) Eco-Logic features
- 8) Dimensional Data
- 9) Wiring Diagram
- 10) Plumbing Diagram
- 11) Ozone Cell parts Diagram
- 12) Warranty Card



## **System Overview**

The Eco-Logic Pond and Lake Restoration Systems are designed to aerate a body of water with a controlled combination of air and ozone.

Ozone, a natural occurring form of oxygen, sometimes known as activated oxygen, is a powerful short-lived oxidant, which is primarily used to disinfect drinking water.

Ozone and air are diffused into the lake bottom by means of a patented sinkable hose consisting of hundreds of openings, which release the aeration mixture into the lake bottom. This process begins to circulate stagnant, decaying matter on the bottom of the lakebed and begins breaking up the stratification of the lake's surface water while increasing the lake's concentration of dissolved oxygen.

## **Safety:**

Ultraviolet rays produced inside the ozone cell of this unit are harmful to eyes and skin. Never operate this unit with the ultraviolet lamp exposed or removed from the ozone chamber.

The ozone generator should be installed in a properly ventilated equipment area with accessibility restricted to authorized personnel only.

The ozone gas produced by this system is very corrosive; therefore it is advisable to check for any possible leaks in the hoses, which inject this gas into your pond to insure ozone gas is only exiting under water.



## **Eco-Logic Unit Specifications / Equipment Installation Recommendations:**

### **Model 10:**

a) CFM of Unit:	10 CFM
b) PSI of Unit:	15 PSI
c) Maximum Depth of Pond:	34 Feet Deep
d) Maximum Surface Area Size:	2.5 Acres or 108,900 Square Feet
e) Physical Sizes of Unit:	48 1/4" x 14 1/8" x 20 1/4"
f) Recommended Accessories:	100 ft. of feeder tubing (270008) 500 ft. of 3" aeration tubing (270009) (2) Plug connector (271525) (1) Tee connector (271538) (6) Hose clamps (271542)

### **Equipment Installation Recommendations:**

- 1) Electrical Power Required:  
Model 10: 1300 Watts or 11.0 Amps
- 2) Location Selection:
  - a) Units should be installed in a properly ventilated area.
  - b) The unit's front panel should be accessible as well as the lamp access cover for lamp removal.
  - c) Air intakes on the bottom of unit should be a minimum of 12" off the floor.
  - d) For wall mount select a vertical structure which will support the unit.
  - e) Floor mounts should be bolted to a cement pad.
  - f) For outside installations, if possible, locate the unit out of direct sunlight, keep the unit away from any sprinkler path and away from the green.
- 3) Installer:
  - a) Follow all local and state electrical codes to choose the correct wire size for length of run and wire protection.
  - b) Review Guidelines of Aeration Tubing Installation located in this manual.



### **Recommended System Maintenance:**

Maintenance recommendations listed below are based upon a normal installation. Maintenance requirements may vary from site to site depending upon unit used and installation environment.

#### **1) Compressors:**

We recommend compressor vanes be replaced at least once per year of operation. (See Price Schedule for specific part number and cost for the Compressor Vane Kits).

#### **2) Aeration Tubing:**

Aeration tubing should be cleaned off with a rag if flow ever appears non-uniformed on the Pond's surface. This can be done by removing the tubing from the pond and wiping off the tubing. This task can be performed from either on shore or on board a boat.

#### **3) Ozone Cell Lamp:**

We recommend that the lamp be replaced every 10,000 hours of operation. (See Price Schedule for specific part number and cost for the Ozone Cell Lamp).

#### **4) Electrostatic Air In-Take Filter:**

We recommend the filter be inspected once every 30 days for dirt build-up. The filter can be cleaned using soap and water. Replacement is necessary when cleaning the filter can no longer be achieved or the filter material breaks down. (See Price Schedule for specific part number and cost for the In-Take Air Filter).

INSTALLATION INSTRUCTIONS FOR YOUR AERATION TUBING

Your Eco-Logic Pond Bubbler has been supplied with carefully engineered tubing to provide maximum efficiency and long life. As with all engineered products, **INSTALLATION INSTRUCTIONS** must be carefully followed for proper results.

While the installation instructions for your Aeration Tubing are simple and straight-forward, attention to detail will insure many years of trouble free service and operation.

TUBING PROFILE

The Aeration Tubing and the Feeder Tubing provided with your Eco-Logic Pond Bubbler are specifically designed products that are formed with a lead weight cord inside its dual tube profile to provide a means of preventing it from floating.

The tubing and the lead weight can both kink easily so care must be taken when handling to prevent the tube from being damaged. The tubing is easily crushed as well. **DO NOT** step or walk on these products.

GENERAL INSTRUCTIONS:

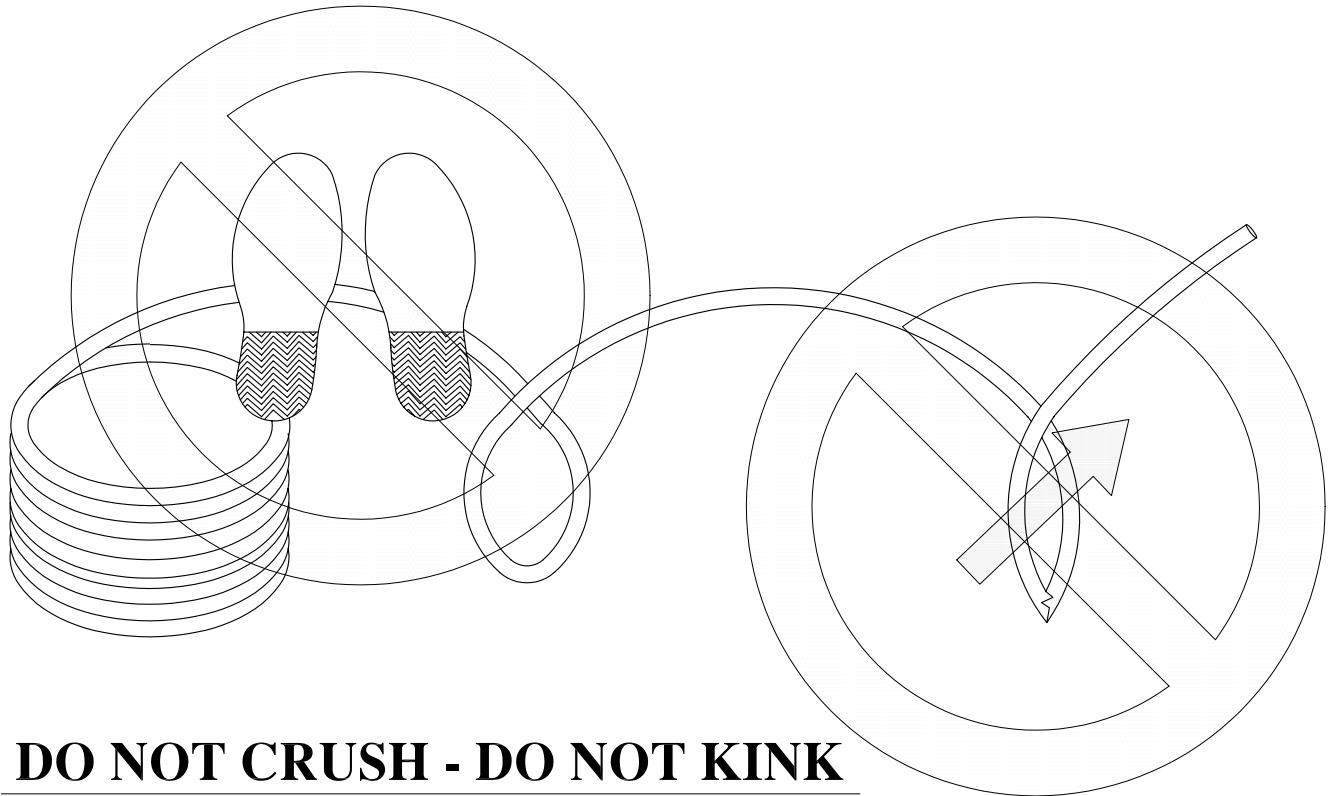
- 1) When handling the tubing **DO NOT PULL** the Aeration or Feeder Tubing from the roll. This will cause twists or kinks in the lead keel. Instead unroll the tubing as if it were wound on a spool having an assistant lead the end away from you as you allow the roll to pay off from the outside of the bundle.
- 2) While assembling the Aeration system avoid allowing dirt or dirty water to enter the tubing or its components.
- 3) The fittings should slip into the aeration tubing with very little effort. If insertion of the fittings is difficult, allow the tubing to sit in a warm area for several hours before starting your assembly.

ASSEMBLY

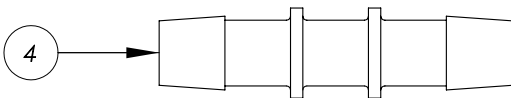
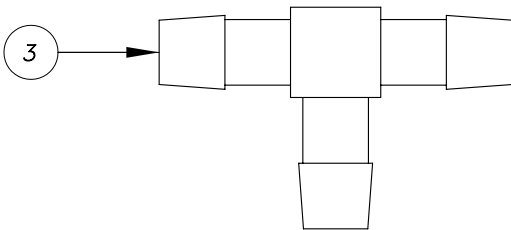
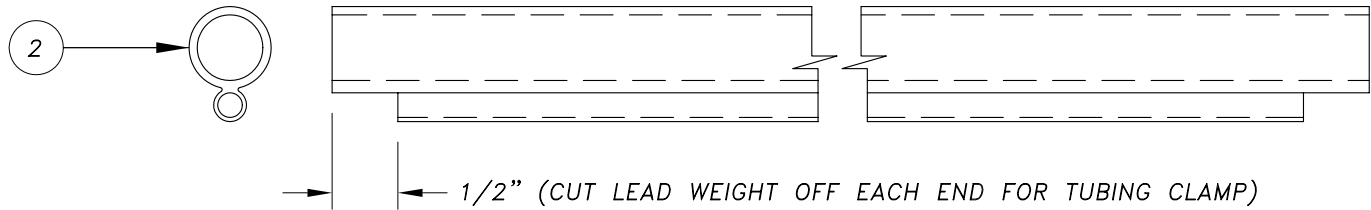
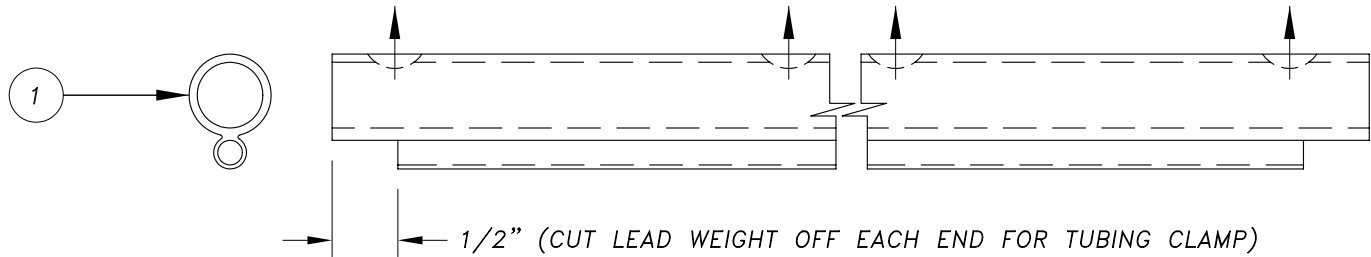
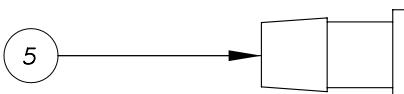
- 1)
  - A. Unroll The Feeder Tubing. Use the method described in the general instructions, DO NOT PULL TUBING FROM THE TOP OF THE COIL. Pulling the tubing from the top of the coil will cause kinking.
  - B. Cut the end of the tubing evenly, so that you have a square end.
  - C. Remove one half an inch of the lead keel section from the square cut end.
  - D. Attach this first end to the output fitting located on the bottom panel of the Eco-Logic enclosure. Secure the tube onto the fitting with the clamp provided.
  - E. Cut the tubing to the desired length for your installation. Factory recommendations are to form a "T", the Feeder Tube being the leg of the "T" and the Aeration tubing creating the top cross of the "T"
  - F. Remember to remove one half an inch of the keel segment at each finished end of these tubes to provide clearance for the tubing clamps.
- 2)
  - A. Unroll the Aeration Tubing following the same procedure as described in item 1 above and in the general instructions.
  - B. When Forming a "T" layout for the Feeder Tube and Aeration tube cut the Aeration Tube in half and prepare each end by removing one half an inch of the lead keel. Remember to cut each end of the tubing evenly, so that you have a flat end.
  - C. Slide a tubing clamp over each finished tube end and insert the tubing ends into the Tee Connector. Tighten each clamp to secure the tubes to the Tee.

ASSEMBLY (continued)

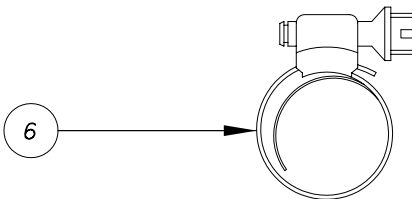
- D. Insert the end plugs into each half of the Aeration Tube to cap the open ends and secure the plug with the tubing clamps provided.
- E. After the assembly of the Feeder Tube and Aeration Tube has been completed it can be laid into your pond or lake.
- F. Carefully stretch out the Tubing assembly across the pond taking precautions not to kink, bend or crush the assembly. The Feeder Tube should be laid out first to bring your Aeration branches nearer to the center of the pond. The Aeration branches can then be laid out to span the greatest distance their lengths will allow.
- G. The use of a small boat is quite helpful when arranging your Aeration assembly in your pond.



**DO NOT CRUSH - DO NOT KINK**

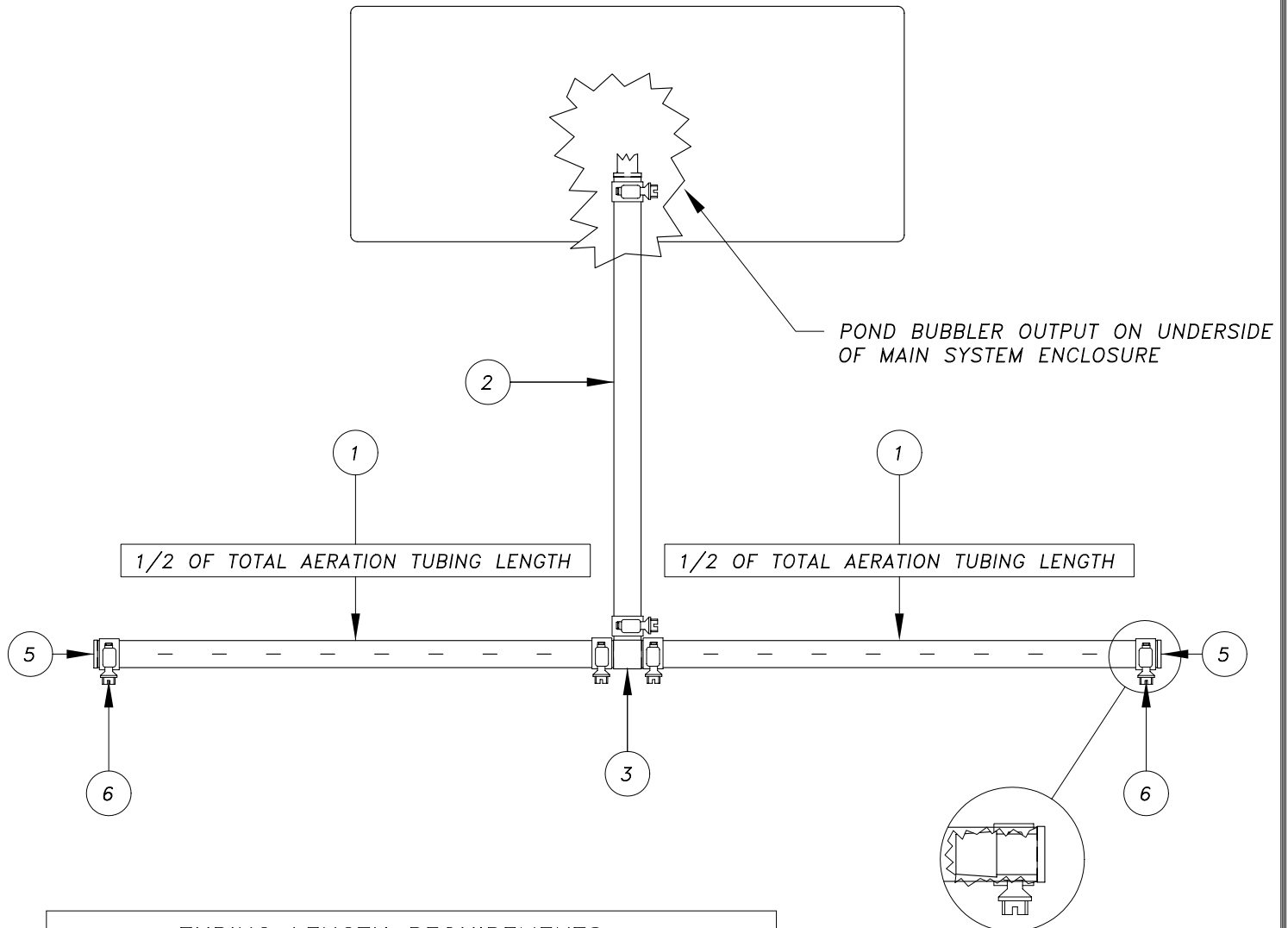
AERATION ASSEMBLY COMPONENTS

ITEM NO.	ITEM DESCRIPTION	PART NUMBER
1	Aeration Tubing	270009
2	Feeder Tubing	270008
3	Tee Connector	271538
4	Straight Connector	271541
5	Tubing End Plug	271525
6	Tubing Clamp	271542





## ECO-LOGIC POND BUBBLER SYSTEM



## TUBING LENGTH REQUIREMENTS

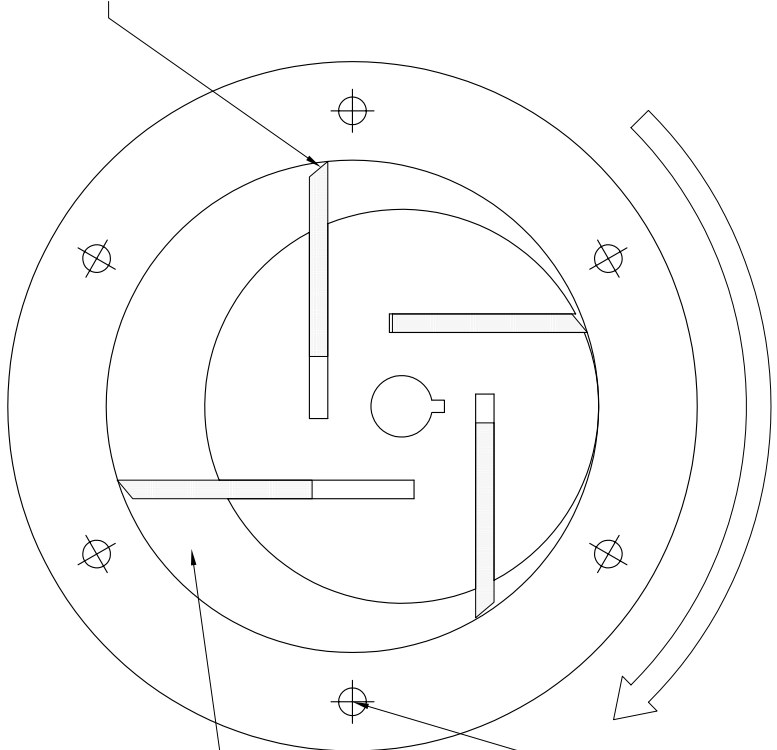
MODEL	FEEDER TUBING (2)	AERATION TUBING (1)
4	100 FT.	250 FT.
10	100 FT.	500 FT.
17	100 FT.	1000 FT.

SUGGESTED TUBING LENGTHS AND ASSEMBLY FOR OPTIMUM EFFICIENCY.  
(REFER TO COMPONENTS LISTING ON PAGE 4 FOR PART DESCRIPTIONS.)

Consult the factory for optional tubing layouts and Eco-Logic accessories or replacement parts.

THIS DRAWING CONTAINS DESIGNS AND OTHER INFORMATION WHICH ARE THE PROPERTY OF ATLANTIC ULTRAVIOLET CORPORATION. EXCEPT FOR RIGHTS EXPRESSLY GRANTED BY CONTRACT TO THE UNITED STATES GOVERNMENT, THIS DRAWING MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED HEREIN, WITHOUT THE PRIOR WRITTEN PERMISSION OF ATLANTIC ULTRAVIOLET CORPORATION.

ROTATION OF VANES



DIRECTION OF SHARP EDGE CORRESPONDING TO THE ROTATION OF THE PUMP

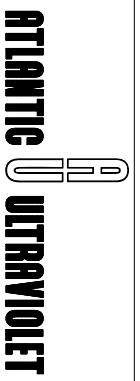
REMOVE ALL BOLTS ON END CAP TO ACCESS PUMP CHAMBER FOR SERVICE.

CLEAN PUMP COMPRESSION CHAMBER BEFORE INSTALLING NEW VANES

ECO-LOGIC MODEL #	PUMP MODEL #	PUMP VOLTAGE (REF)	REPLACEMENT VANE KIT #	QTY REQ'D
4	401172	118 VOLTS, 50/60HZ	400015	1
4	401315	220 VOLTS, 50HZ	400015	1
10	401173	118/230 VOLTS, 60HZ	400016	1
10	401314	220 VOLTS, 50HZ	400016	1

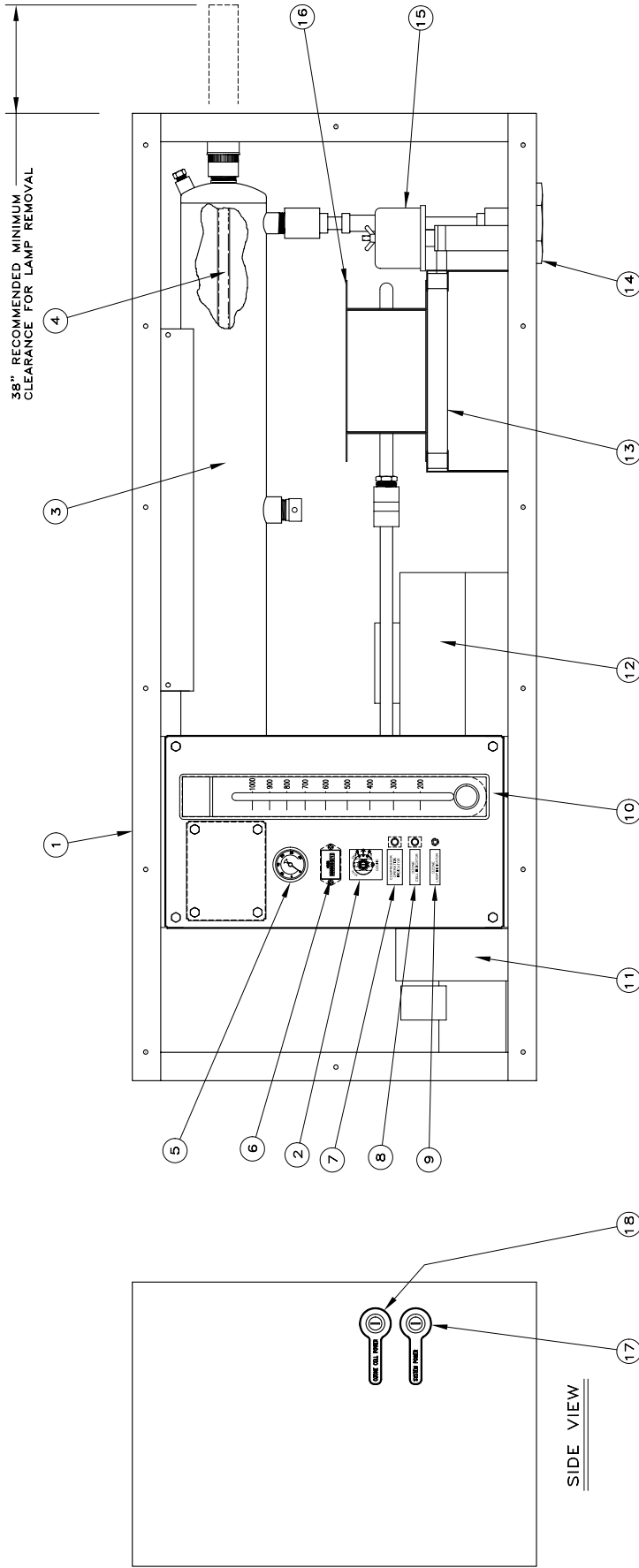
NOTES:

- 1) THE VANES INSTALLED IN THESE PUMPS ARE MADE FROM CARBON, HANDLE WITH CARE AND AVOID CHIPPING OR DAMAGING THE EDGES.
- 2) BE ABSOLUTELY CERTAIN TO INSTALL VANES IN PROPER ORIENTATION RELATED TO MOTOR ROTATION.
- 3) CLEAN ALL PREFILTERS AND THE PUMP CHAMBER WHEN REPLACING THE PUMP VANES.



CORPORATION  
 375 MARCUS BOULEVARD  
 HAUPPAUGE, N.Y. 11788  
 PHONE: (631) 273-0500  
 FAX: (631) 273-0771

THIS DRAWING CONTAINS DESIGNS AND OTHER INFORMATION WHICH ARE THE PROPERTY OF ATLANTIC ULTRAVIOLET CORPORATION. EXCEPT FOR RIGHTS EXPRESSLY GRANTED BY CONTRACT TO THE UNITED STATES GOVERNMENT, THIS DRAWING MAY NOT, IN WHOLE OR IN PART, BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE PRIOR WRITTEN PERMISSION OF ATLANTIC ULTRAVIOLET CORPORATION.



FRONT VIEW  
(SHOWN WITH COVER REMOVED)

SIDE VIEW

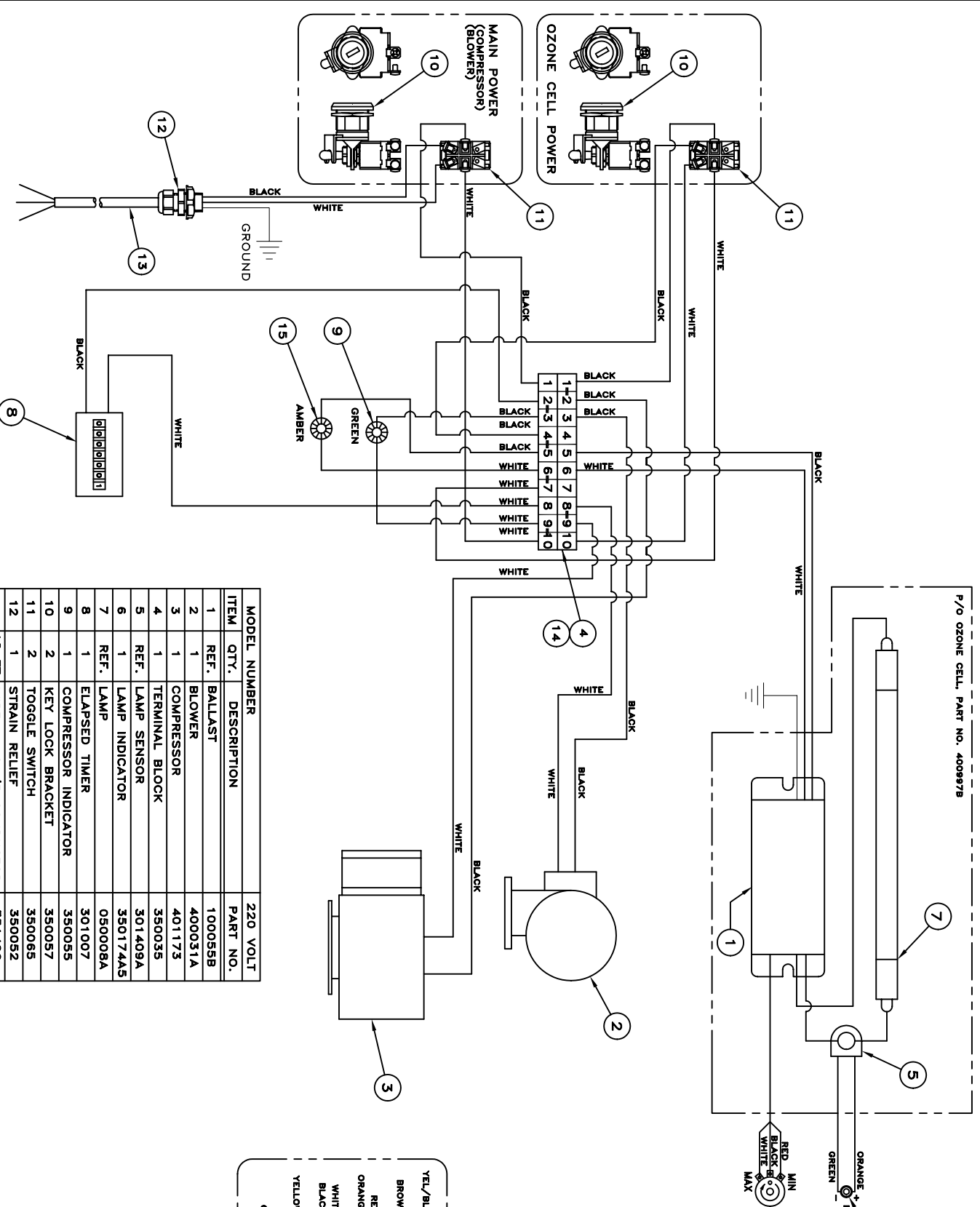
NOTES:

- A) ENCLOSURE AND COVER ARE CONSTRUCTED OF STAINLESS STEEL TYPE 304. COVER IS SECURED TO ENCLOSURE WITH #8-32 SCREWS. TAMPERPROOF SCREWS ARE AVAILABLE AS AN OPTION.
- B) UNIT UTILIZES (1) GERMICIDAL OZONE PRODUCING LAMP, INSTANT START, WITH A RATED EFFECTIVE LIFE OF 10,000 HOURS.
- C) UNIT EMPLOYS KEY LOCK SWITCHES TO INSURE TAMPERPROOF OPERATION FOR EITHER AERATION ALONE OR AERATION WITH OZONE.
- D) ELAPSED TIME INDICATOR PROVIDES A VISUAL INDICATION IN HOURS OF TIME THAT UNIT IS IN SERVICE.
- E) CONTINUOUS DUTY COMPRESSOR PRODUCES UP TO 10 CUBIC FEET PER MINUTE OF AIR FLOW.
- F) A DIMMABLE ELECTRONIC BALLAST IS USED TO CONTROL THE INTENSITY OF THE OZONE LAMP, IF REDUCED OZONE OUTPUT IS REQUIRED.
- G) PERMANENT, WASHABLE ELECTROSTATIC AIR FILTER PREVENTS PARTICULATE MATTER FROM ENTERING INTO INTERIOR OF UNIT.
- H) UNIT IS CONSTRUCTED WITH (4)-5/16" MOUNTING HOLES ON REAR WALL OF ENCLOSURE FOR WALL MOUNTING. AN OPTIONAL FLOOR MOUNTING BRACKET IS ALSO AVAILABLE FROM THE FACTORY. (PN# 401182A)

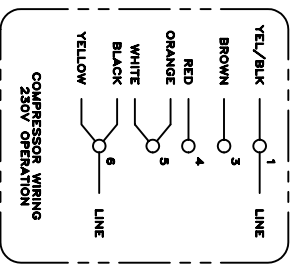
ITEM #	DESCRIPTION	120V PART NO.	220V PART NO.
1	ENCLOSURE (STAINLESS STEEL)	401168A	401168A
2	DIMMABLE BALLAST CONTROL	100056B	100055B
3	OZONE CELL (STAINLESS STEEL)	400999B	400997B
4	OZONE LAMP	050008A	050008A
5	PRESSURE GAUGE	271466	271466
6	ELAPSED TIME INDICATOR	301007	301007
7	COMPRESSOR INDICATOR (GREEN)	350050	350055
8	OZONE CELL INDICATOR (BLUE)	350009	350054
9	OZONE LAMP INDICATOR (RED)	350174A5	350174A5
10	OZONE FLOW METER	271488	271488
11	SYSTEM COOLING BLOWER	401079A	400031A
12	COMPRESSOR	401173	401173
13	PERMANENT WASHABLE AIR FILTER	401264A	401264A
14	3/4" FEMALE NPT OUTLET PORT	271487	271487
15	COMPRESSOR AIR INTAKE FILTER	270030	270030
16	HEAT EXCHANGER	271489	271489
17	SYSTEM POWER KEY LOCK SWITCH	350065	350065
18	OZONE CELL KEY LOCK SWITCH	350065	350065



THIS DRAWING CONTAINS DESIGN AND OTHER INFORMATION WHICH ARE THE PROPERTY OF ATLANTIC ULTRAVIOLET CORPORATION. EXCEPT FOR REPAIRS EXPRESSLY GRANTED BY CONTRACT TO THE USER, THIS INFORMATION IS NOT TO BE REPRODUCED OR USED FOR THE MANUFACTURE OF THE PART DISCLOSED HEREIN WITHOUT THE PRIOR WRITTEN PERMISSION OF ATLANTIC ULTRAVIOLET CORPORATION.



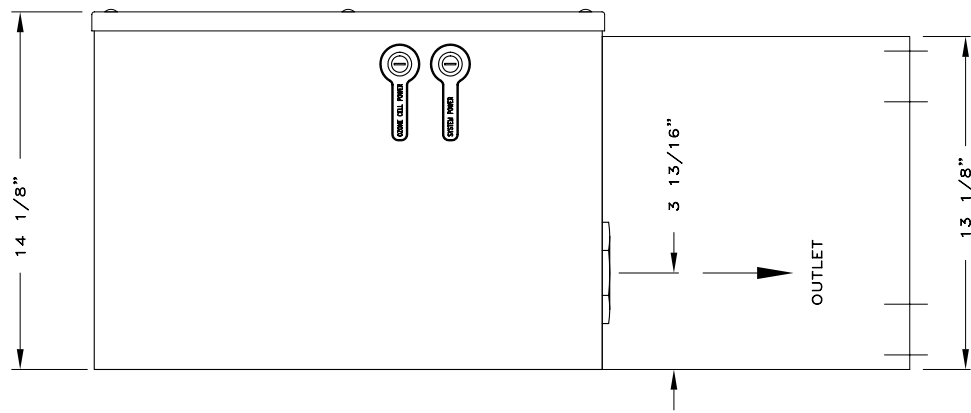
MODEL NUMBER	ITEM	QTY.	DESCRIPTION	PART NO.
220 VOLT	1	REF.	BALLAST	100055B
	2	1	BLOWER	400031A
	3	1	COMPRESSOR	401173
	4	1	TERMINAL BLOCK	350035
	5	REF.	LAMP SENSOR	301409A
	6	1	LAMP INDICATOR	350174A5
	7	REF.	LAMP	050008A
	8	1	ELAPSED TIMER	301007
	9	1	COMPRESSOR INDICATOR	350055
	10	2	KEY LOCK BRACKET	350057
	11	2	TOGGLE SWITCH	350065
	12	1	STRAIN RELIEF	350052
	13	10 FT.	WIRE 14 GA./3 CONDUCTOR	351499
	14	6	TERMINAL JUMPERS	351116
	15	1	CELL POWER INDICATOR	350054



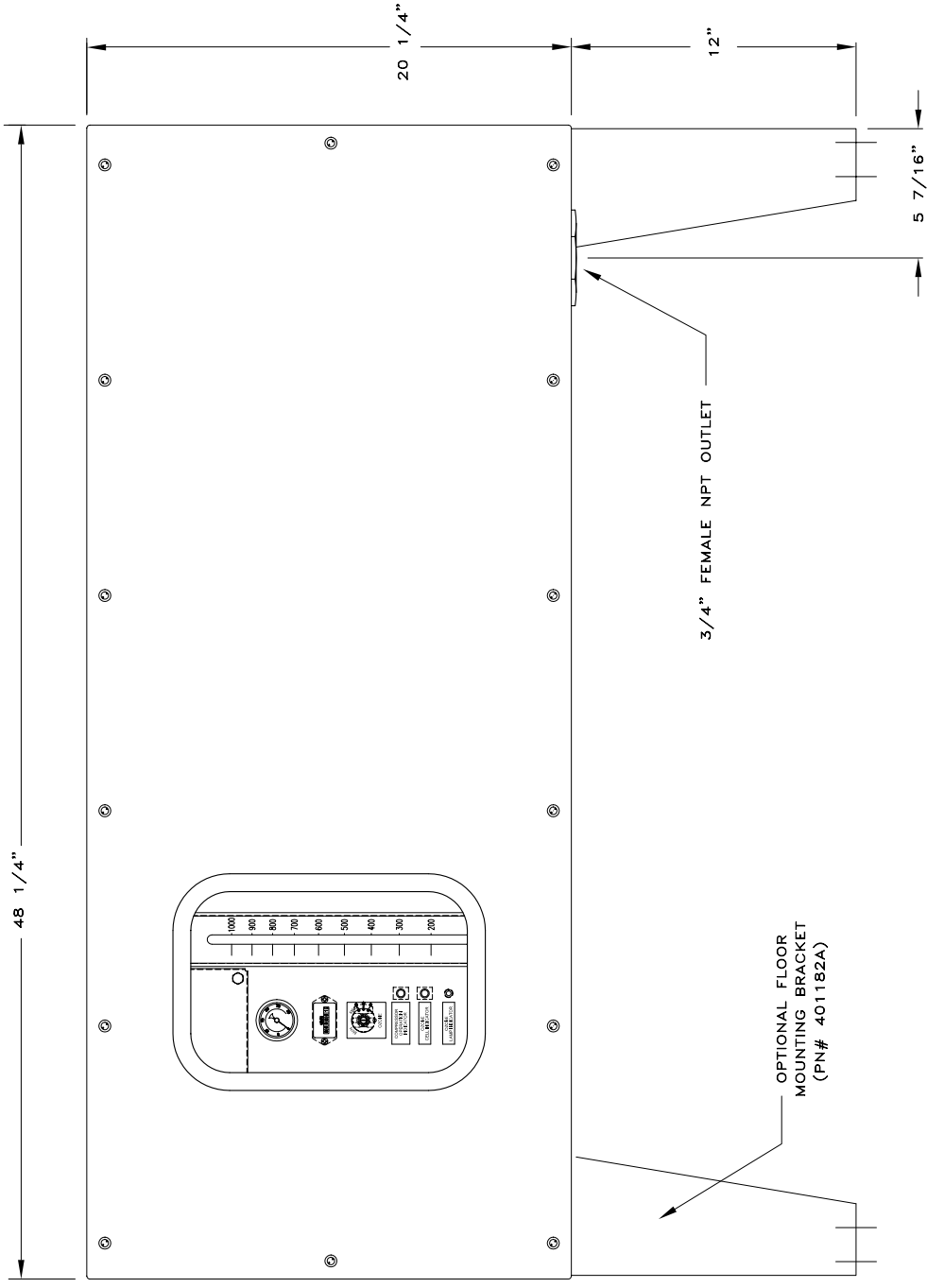
**ATLANTIC ULTRAVIOLET CORPORATION**  
 375 MARCUS BOULEVARD  
 HAUPPAUGE, N.Y. 11788  
 PHONE: (631) 273-0500  
 FAX: (631) 273-0771

DRAWING NO: 401177A TITLE: ECO-LOGIC OZONE GENERATOR MODEL 10 DIMENSIONAL DATA

THIS DRAWING CONTAINS DESIGNS AND OTHER INFORMATION WHICH ARE THE PROPERTY OF ATLANTIC ULTRAVIOLET CORPORATION, EXCEPT FOR RIGHTS EXPRESSLY GRANTED BY CONTRACT TO THE UNITED STATES GOVERNMENT. THIS DRAWING MAY NOT, IN WHOLE OR IN PART, BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE PRIOR WRITTEN PERMISSION OF ATLANTIC ULTRAVIOLET CORPORATION.



SIDE VIEW

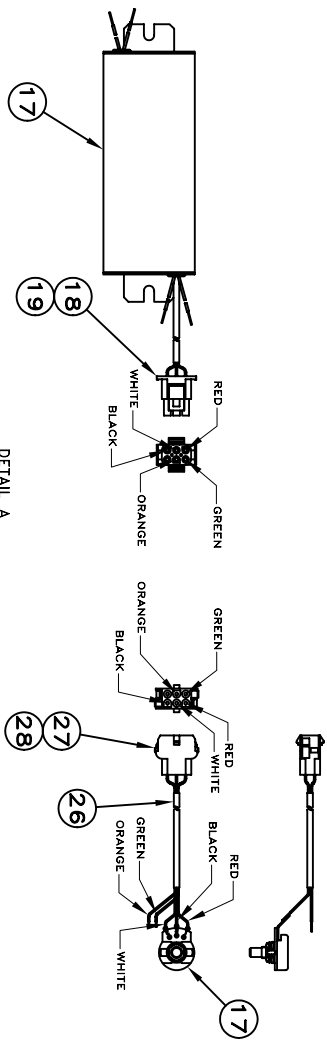
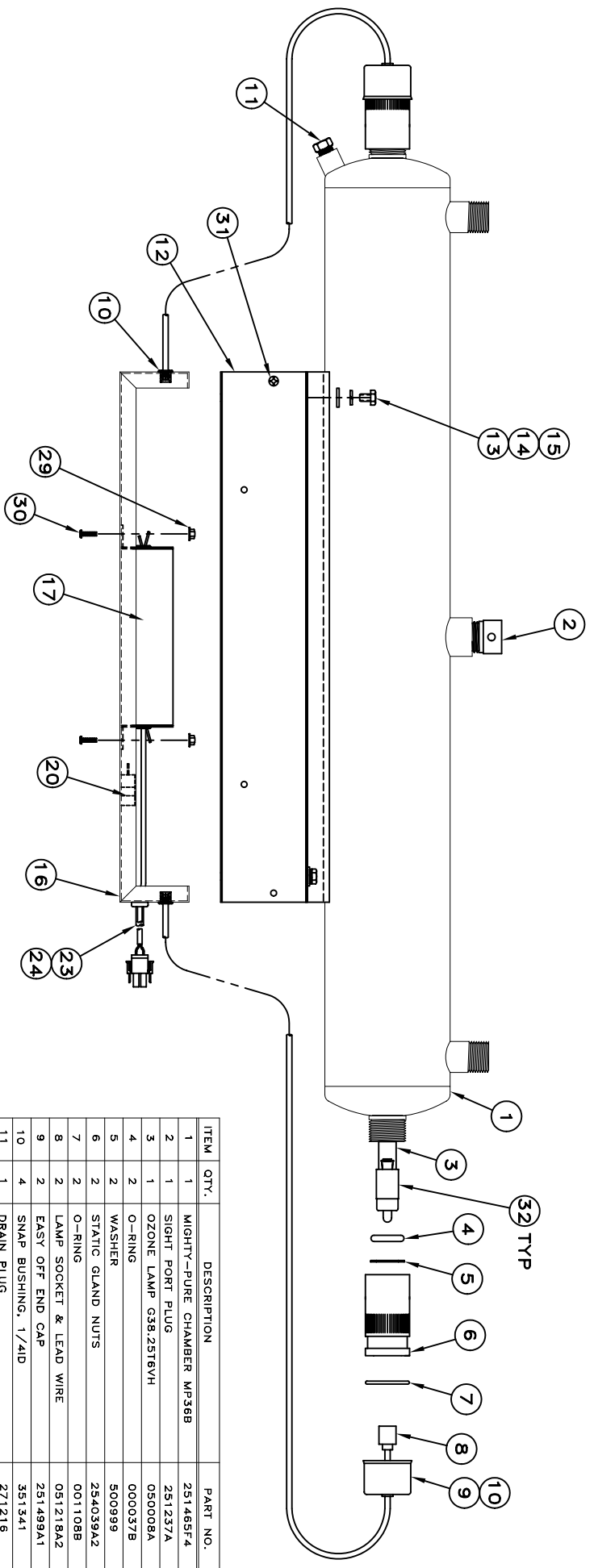


FRONT VIEW

NOTES:  
 1) UNIT IS CONSTRUCTED WITH (4) 5/16" DIA. HOLES ON REAR WALL OF ENCLOSURE FOR WALL MOUNTING. (HOLE PATTERN MEASURES 36" WIDE X 9" HIGH)

**ATLANTIC ULTRAVIOLET CORPORATION**  
 375 MARCUS BOULEVARD  
 HAUPPAUGE, N.Y. 11788  
 PHONE: (831) 273-0500  
 FAX: (831) 273-0771

THIS DRAWING CONTAINS DESIGN AND OTHER INFORMATION WHICH ARE THE PROPERTY OF ATLANTIC ULTRAVIOLET CORPORATION. EXCEPT FOR RIGHTS EXPRESSLY GRANTED BY CONTRACT TO THE UNITED STATES GOVERNMENT, THIS DRAWING MAY NOT IN WHOLE OR IN PART BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF ATLANTIC ULTRAVIOLET CORPORATION.



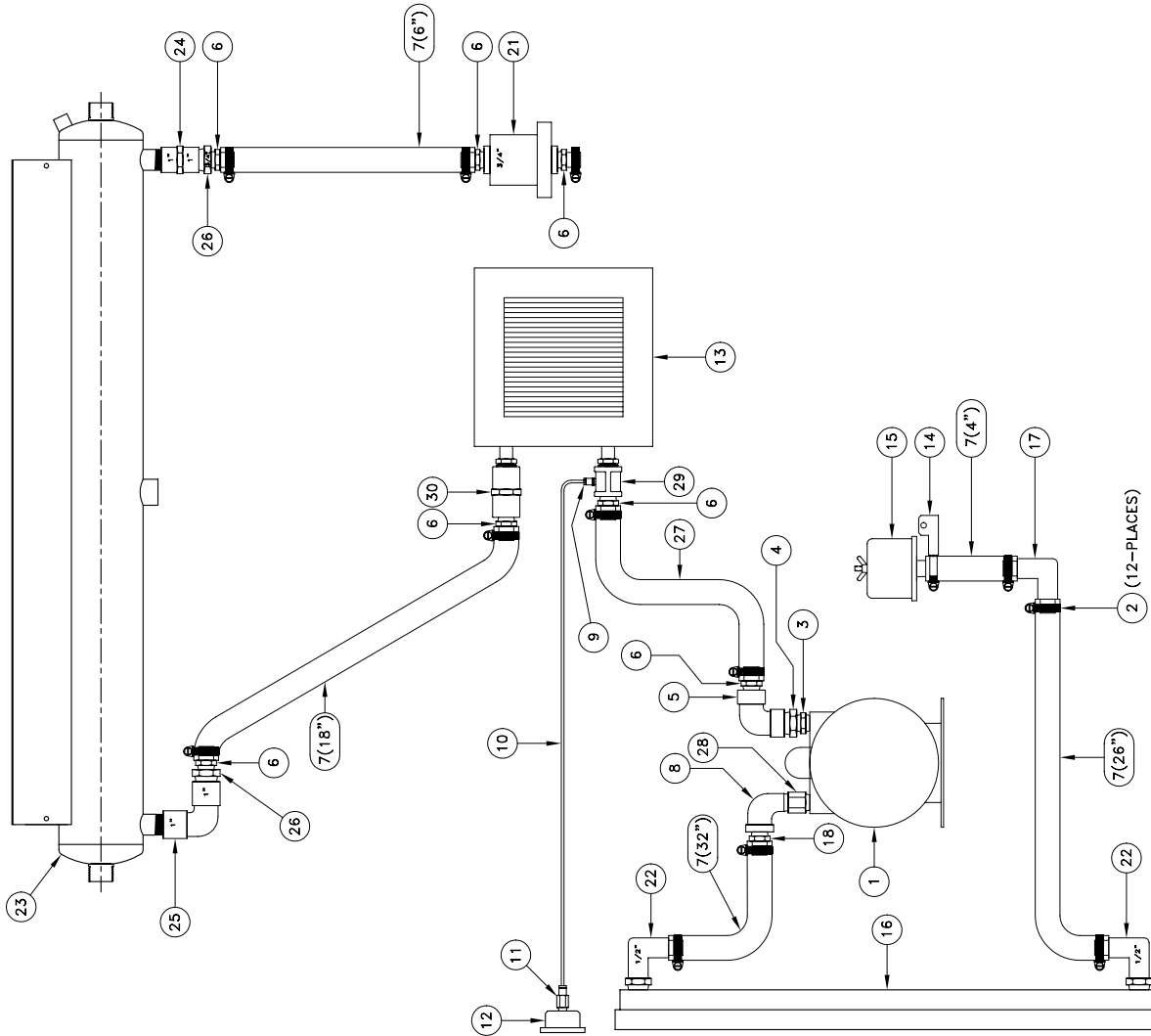
DETAIL A  
MODIFICATIONS TO BALLAST, 1000558

ITEM	QTY.	DESCRIPTION	PART NO.
1	1	MIGHTY-PURE CHAMBER MP36B	251485F4
2	1	SIGHT PORT PLUG	251237A
3	1	OZONE LAMP G38.25TBVH	050008A
4	2	O-RING	000037B
5	2	WASHER	5000999
6	2	STATIC GLAND NUTS	254039A2
7	2	O-RING	001108B
8	2	LAMP SOCKET & LEAD WIRE	051218A2
9	2	EASY OFF END CAP	251499A1
10	4	SNAP BUSHING, 1/4ID	351341
11	1	DRAIN PLUG	271216
12	1	BALLAST HOUSING TOP	250394A
13	4	SCREW: 1/4-20 X 3/8" HEXHEAD	501034
14	4	WASHER: 1/4" LOOKWASHER	501321
15	4	WASHER: 1/4" FLATWASHER	501317
16	1	BALLAST HOUSING BOTTOM	250395A
17	1	BALLAST	1000558
18	1	CONNECTOR, PLUG, 6 PIN	351739
19	5	CONNECTOR, CONTACT, PIN	351741
20	1	LAMP SENSOR	301409A
21	5	WIRE NUT, GRAY	351337
22	1	LINE CORD & PLUG	351100
23	4	STRAIN RELIEF	351043
24	1	WIRE NUT, BLUE	351336
25	4	WIRE, CABLE, 5 COND, 22AWG	350023
26	2	CONNECTOR, SOCKET 6 POS	351740
27	1	CONNECTOR, CONTACT SOCKET	351742
28	2	NUT: SPEED NUT / 6-32 THREAD	501314
29	2	SCREW: 6-32 X 1/2" PANHEAD	501325
30	2	SCREW: NO. 8X3/8" PANHEAD	501323
31	1	TAPE: ALUMINUM FOIL, 1" WIDE	001319

NOTES:  
1. SEE DRAWING 411178AZ FOR UNIT WIRING INFORMATION.

**ATLANTIC ULTRAVIOLET CORPORATION**  
 276 MARQUIS BOULEVARD  
 FARMINGDALE, NY 11735  
 PHONE: (631) 273-0000  
 FAX: (631) 273-0771

THIS DRAWING CONTAINS DESIGNS AND OTHER INFORMATION WHICH ARE THE PROPERTY OF ATLANTIC ULTRAVIOLET CORPORATION. EXCEPT FOR RIGHTS EXPRESSLY GRANTED BY CONTRACT TO THE UNITED STATES GOVERNMENT, THIS DRAWING MAY NOT, IN WHOLE OR IN PART, BE DUPLICATED OR DISCLOSED OR USED FOR MANUFACTURE OF THE PART DISCLOSED HEREIN, WITHOUT THE PRIOR WRITTEN PERMISSION OF ATLANTIC ULTRAVIOLET CORPORATION.



ITEM	QTY.	DESCRIPTION	PN#
1	1	3/4 HP ROTARY VANE COMPRESSOR	401173
2	12	HOSE CLAMP / STAINLESS STEEL (7/8" TO 1 1/4" DIA.)	271530
3	1	3/8" NPT X 1" HEX PIPE NIPPLE	271516
4	1	3/4" NPT TO 3/8" NPT REDUCING BUSHING (BRASS)	271469
5	1	3/4" NPT 90° ELBOW (BRASS)	271512
6	7	3/4" NPT TO 3/4" TUBE BARBED FITTING / KYNAR	271517
7	86'	3/4 I.D. BRAIDED SILICONE TUBING	271534
8	1	1/2" NPT STREET ELBOW	271450
9	1	1/8" NPTM TO 1/8" O.D. TUBE QUICK LOCK FITTING (BRASS)	551214
10	18"	1/8" O.D. TUBING (POLYETHYLENE)	551211
11	1	1/8" NPTF TO 1/8" O.D. TUBE QUICK LOCK FITTING (BRASS)	271479
12	1	0-30 PSI PRESSURE GAUGE	271466
13	1	HEATCOIL / 6" X 6" DOUBLE COOLING AREA / (COPPER)	271489
14	1	INTAKE FILTER BRACKET ASSEMBLY (W/ HOSECLAMP)	401204A
15	1	INTAKE FILTER	270030
16	1	FLOW METER / 0-1000 SCFH / 1/2" NPT PORTS / (SST. & LEXAN)	271488
17	1	3/4" TUBE ELBOW / KYNAR	271519
18	1	1/2" NPT TO 3/4" TUBE ADAPTOR / KYNAR	271520
19	-	-	-
20	-	-	-
21	1	3/4" BULK HEAD FITTING (PVC)	271487
22	2	1/2 NPT TO 3/4" TUBE BARBED 90° ELBOW (KYNAR)	271522
23	1	OZONE CELL, MP36B 120V	400998B
24	1	OZONE CELL, MP36B 220V	400997B
25	1	1" NPT PIPE COUPLING (PVC)	271526
26	2	1" NPT X 3/4" NPT REDUCING BUSHING (PVC)	271527
27	17'	3/4" ID. X 1-1/16" OD. SBR BLACK RUBBER HOSE	271529
28	1	3/8" NPTM TO 1/2" NPTF BRASS HEX COUPLING	271449
29	1	3/4" NPT PIPE COUPLING (BRASS) WITH 1/8" NPT SIDE PORT	271453A
30	1	3/4" NPT PIPE COUPLING (PVC)	271485

- NOTES:
- 1) THE BENDS SHOWN ABOVE IN TUBING (ITEM 7) ARE FOR ILLUSTRATION PURPOSES ONLY.
  - 2) USE PIPE SEALANT PN# 271535 ON THREADED ENDS OF EACH FITTING USED.
  - 3) SEE WIRING DIAGRAM 411178A1 FOR 120V OPERATION, AND 411178A2 FOR 220V OPERATION.

REMOVE ALL BURRS AND SHARP EDGES

TOLERANCES UNLESS OTHERWISE NOTED:

FRACTIONS ± 1/64  
 ANGLE ± 1°  
 DECIMAL .XX IS ± 0.10  
 DECIMAL .XXX IS ± 0.05

**ATLANTIC ULTRAVIOLET CORPORATION**  
 375 MARCUS BOULEVARD  
 HAUPPAUGE, N.Y. 11788  
 PHONE: (631) 273-0500  
 FAX: (631) 273-0771