MIATECH SOLUTIONS, A PIECE OF THE PUZZLE

Bio Turbo 100

Bio Turbo 300

Bio Turbo 1000

Bio Turbo 6000

Four Stage Filtration

Step 1:	Air Filter.
Step 2:	Cell Destruct Filter.
Step 3:	Generation Chamber destroys Ethylene and Airborne Pathogens.
Step 4:	The catalytic Converter removes all the ozone.

BIO-TURBO Series

Ethylene Removal & Airborne Pathogen Killer
Specification Sheet

Features

- Smart LED's for easier service
- Remote On and Off control (except Bio Turbo 100)
- Easy service
- Easy changing of ozone plates and filters
- Four models for proper coverage
- Aluminum and Stainless Steel reactor bed
- Easy to install and operate
- Low maintenance

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THE ADVANTAGE COUNTS

9480 SE Lawnfield Road • Clackamas • OR 97015 • USA • Phone (503) 659-5680 • Fax (503) 659-2204 • www.miatech.org

Bio-Turbo Specifications

Model	BIO-TURBO 100	BIO-TURBO 300	BIO-TURBO 1000	BIO-TURBO 6000
Maximum volume	Up to 100 cubic meters (3500 cubic feet) per 24 hours	Up to 300 cubic meters (11500 cubic feet) per 24 hours	Up to 1000 cubic meters (43200 cubic feet) per 24 hours	Up to 6000 cubic meters (200000 cubic feet) per 24 hours
Airflow	3 CFM (0.1 CMM)	8 CFM (0.3 CMM)	30 CFM (1 CMM)	200 CFM (6 CMM)
Location Requirements				
Electrical Source	100/115/230 VAC 50-60 Hz	100/115/230 VAC 50-60 Hz	100/115/230 VAC 50-60 Hz	100/115/230 VAC 50-60 Hz
Electrical				
Power	120 or 220 VAC	120 or 220 VAC	120 or 220 VAC	120 or 220 VAC
Power Consumption in Watts	127 Watts	130 Watts	144 Watts	360 Watts
Amp Draw at 120 Volts at 230 Volts	1.2 Amps 0.550 Amps	1.2 Amps 0.550 Amps	1.2 Amps 0.550 Amps	3.0 Amps 1.25 Amps
Power cord	8 ft (2.5m)	8 ft (2.5m)	8 ft (2.5m)	9 ft (3m)
Operating Voltage	24V	24V	24V	24V
Maintenance				
Air Filter	Change every 12 months	Change every 12 months	Change every 12 months	Change every 12 months
Ozone Plate(s)	Change every 12 months	Change every 12 months	Change every 12 months	Change every 12 months
Number of Ozone Plates	1	1	2	4
Specifications				
Dimensions:				
Generation Chamber	Unit dimensions: 15”x17”x7” (38x43x18cm)	10”x12”x10” (25x30x25cm)	10”x12”x10” (25x30x25cm)	15"x15"x15" (38x38x38cm)
Catalytic Converter/Controller		14”x11”x11” (36x28x28cm)	14”x14”x11” (36x36x28cm)	19"x19"x19" (48x48x48cm)
Reaction Chamber		12"x14"x30" (30x36x76cm)	48"x30"x15" (122x76x38cm)	4’x8’x2’ (122x244x61cm)
Total Weight	30 lbs (14 kg)	41 lbs (18 kg)	90 lbs (34 kg)	160 lbs (60 kg)
Construction				
Materials	Aluminum – unit cabinet, Stainless Steel – Perforated Generator Plate	Aluminum - Generation Chamber, Catalyst Converter/Controller Stainless Steel – Perforated Generator Plate Aluminum–Reaction Chamber	Aluminum - Generation Chamber, Catalyst Converter/Controller Stainless Steel – Perforated Generator Plate Aluminum–Reaction Chamber	Aluminum - Generation Chamber, Catalyst Converter/Controller Stainless Steel – Perforated Generator Plate Aluminum–Reaction Chamber
Controls				
	N/A On/Off switch	Remote control On/Off switch	Remote control On/Off switch	Remote control On/Off switch

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BIO TURBO 300
INSTALLATION GUIDE v. 1.2

Description

The BT-300 was designed to remove ethylene from cold rooms and storage areas where fruits and vegetables are stored, extending the life of the stored produce. **See picture 1**. System will handle 300

Picture 1

cubic meters. It is designed to hang from the ceiling and operate continuously. The BT-300 is also remote controlled for ease of operation.

The air is first pulled into the Generation Chamber where it passes through a particle filter to remove any dust or foreign matter. The air then goes through a microbial filter. This filter will destroy 99.9% of the bacteria, fungi, mold, mildew, algae and other one celled organisms that cause odors, spoilage and rot. The air with ethylene then enters the ozone generation area where it mixes with ozone. The air mixed with ozone and ethylene then enters the Reaction Chamber where the ethylene will have contact time with the ozone. This is necessary to remove the ethylene from the air.

After the ozone has removed the ethylene in the Reaction Chamber, the ozone enters the Catalytic Converter. Here, a special catalyst will deplete the remaining ozone. Clean air is then expelled through the controller.

System Placement

The Bio Turbo 300 was designed to mount as high as possible in the cold room. Ethylene is lighter than air so it will rise toward the ceiling.

Note: Due to the size of the Bio Turbo system, installation is much easier with two technicians.

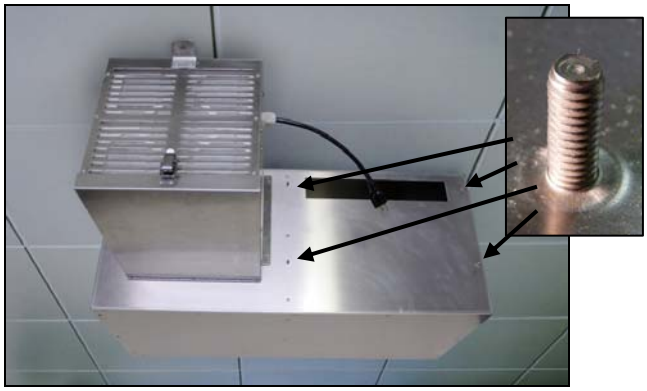
The large Reaction Chamber should be mounted first. Inspect the ceiling for any obstructions, pipes and wiring before drilling any holes. Also consider an electrical receptacle to power the system. Mark the two holes for the Reaction Chamber and drill the two 3/4 inch holes through the ceiling. Use the two 8 inch bolts with wing nuts, self locking nuts and washers to attach the Reaction Chamber to the ceiling. **See picture 2**.

If supplied fasteners will not work for your

Picture 2

installation, you will need to purchase necessary hardware locally.

Next, mount the Generation Chamber to the Reaction Chamber. Ensure the gasket is in place around the opening on the Generation Chamber. Use the four locking nuts that were supplied and attach the two chambers together. Only tighten these nuts SNUG (4 inch pounds). **See picture 3.**

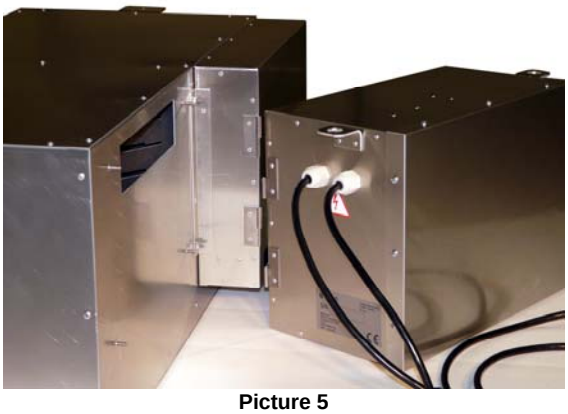


Picture 3

Next, Separate the Catalytic Converter from the Controller by unlatching the two latches and lifting the Catalytic Converter causing the hinges to separate. Lay the Catalytic Converter down so the opening is facing upward. Get the plastic bag of catalyst and carefully pour it into the opening on the Catalytic Converter. **See picture 4**.

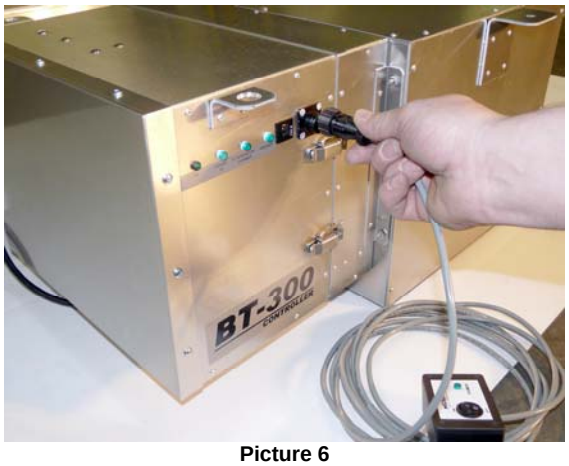
Picture 4

The converter can now be attached to the Reaction Chamber with four small nuts (same setup procedure like with Generation Chamber placing, described above).
Mount the Controller box by sliding the hinges together and latching the two latches. **See picture 5**.



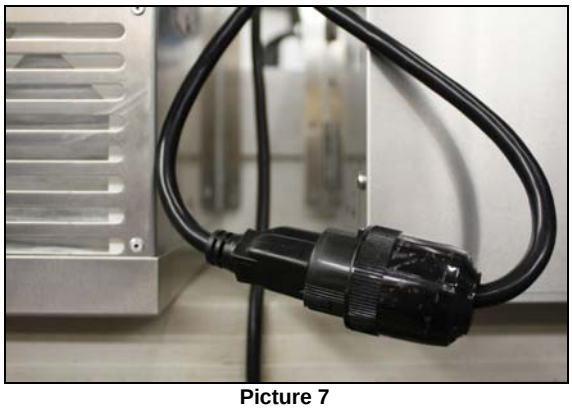
Picture 5

Connect the remote cable by screwing the connector of the remote to the connector on the Controller. **See picture 6.**



Picture 6

Route the remote to the desired location. Plug the two short power cords together and plug the long power cord into the power receptacle. **See picture 7.**

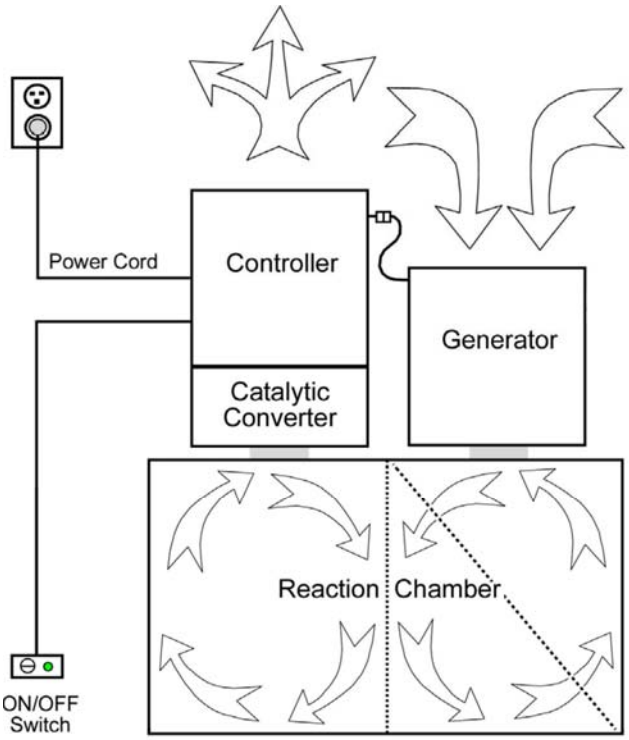


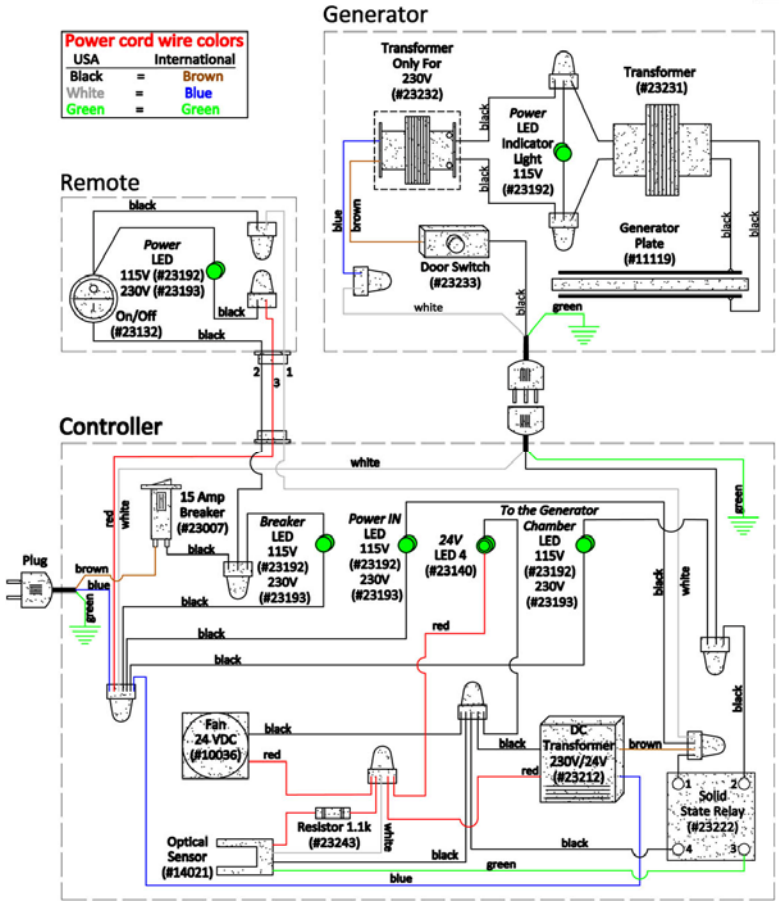
Picture 7

Operation

Upon plugging the power cord into the power receptacle, two LED's should be glowing green on the controller. This tells us that power is to the Controller and the circuit breaker is good.
Turn on the power switch. Two more LED's on the Controller should come "ON". These indicate there is power to the power transformer and there is power to the fan.
There is also an LED on the Generation Chamber which should be "ON" and also a low hum can be detected indicating everything is operational.

BIO TURBO 300
LAYOUT DIAGRAM
v. 1.2





BIO TURBO 300
WIRING DIAGRAM
v. 1.2

BIO TURBO 300

CAUTION - ALWAYS UNPLUG POWER BEFORE SERVICE!

Maintenance Requirements v. 1.2

The Air Filter will need to be replaced once a year or more often, depending on the operational environment. The Ozone Generator Plate should be replaced once a year. To replace the Air filter:

1. Unlatch the bottom cover on the Generation Chamber and remove the filter. The Air filter is the paper filter next to the intake vents.

Caution – Slowly and carefully open the cover to ensure the filter does not fall down, the door helps secure it in place.

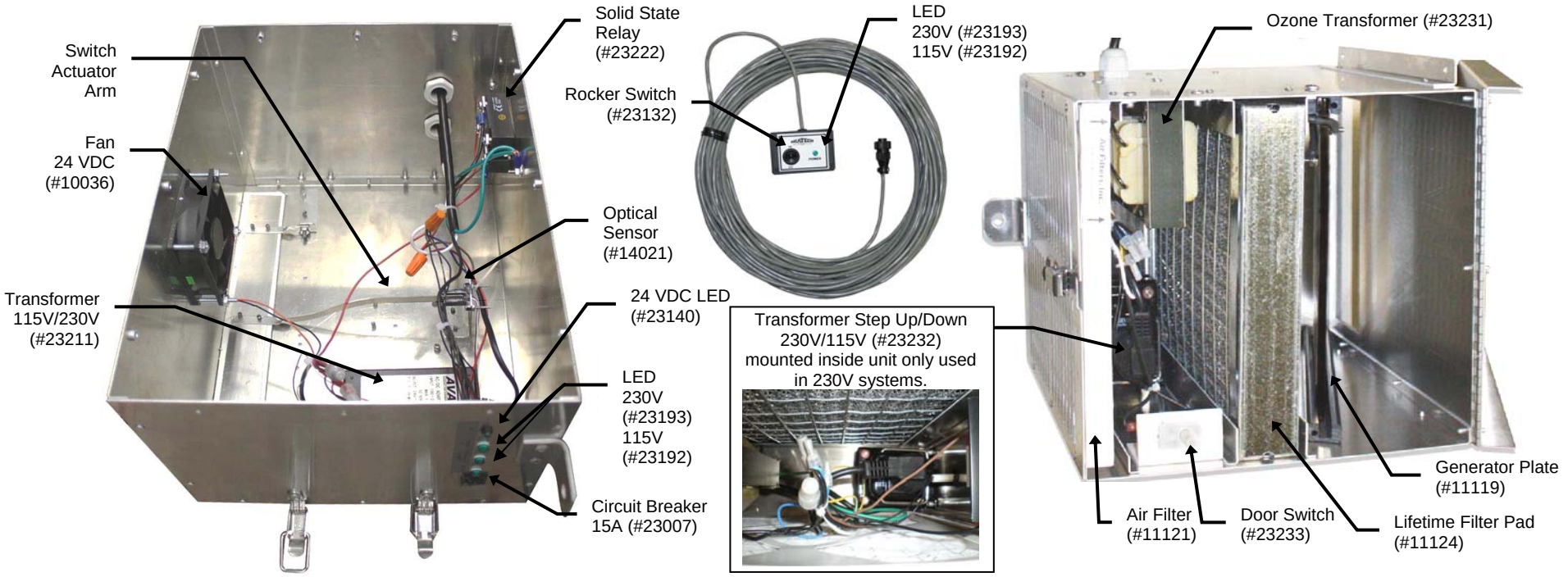
2. Check the Generator Plate and clean or replace as necessary. Clean these plates with a soft cloth and a glass cleaner that leaves no film. Ultra fine steel wool (type 000) can be used but all particles must be removed before reassembly.

Trouble Shooting

Bio Turbo system has 6 informative LED's:

1) LED "Power" (on the Remote Control) indicates "Power to the Main Switch".
2) LED "Breaker" (on the Controller Chamber) indicates "Power to the Unit".
3) LED "Power IN" (on the Controller Chamber) indicates "Power to the Power Supply".
4) LED "24V" (on the Controller Chamber) indicates "Power to the Fan".
5) LED "To the Generation Chamber" (on the Controller Chamber) indicates "Power to Generation Chamber".
6) LED "Power" (on the Generation Chamber) indicates "Power to the Ozone Transformer and Ozone Generator Plates".

The LEDs "Breaker" and "24V" are ON, but LED "To the Generation Chamber" is off.	Check to make sure the unit is level. Ensure optical sensor and contacts are lined up inside the controller, if not adjust switch actuator arm (bending arm a little bit up or down).



For further technical support in North America call 800 933 6478
If outside North America call to the USA at 503 659 5680
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