

TRION[®]

Air Purification Systems



**Installation
Operation
Maintenance
Manual**

READ AND SAVE THESE INSTRUCTIONS

Air Boss[®] VOMP 600
Vertical Oil Mist Precipitator

VOMP 600 VERTICAL OIL MIST PRECIPITATOR

TABLE OF CONTENTS

I. Warranty	3
II. Safety Information	3
III. Introduction and Operation	4
IV. Pre-Installation Considerations	4
V. Unit Location	4
VI. Inspection and Installation.....	5
Location and Mounting	5
Ductwork.....	5
Piping.....	5
Wiring	5
VII. Operation	5
VIII. Care and Maintenance.....	6
IX. Troubleshooting.....	7
X. Figures	8
1. VOMP 600 Outline.....	8
2. System Performance Curve	9
3. Wiring Schematic 120V	10
4. Wiring Schematic 240V	11
5. Parts Listing.....	12
6. Exploded Parts View	13

I. WARRANTY

Limited 3-Year Warranty

Seller warrants the equipment of its manufacturing to be free from defects in workmanship and material for a period of 36 months after shipment or 36 months after initial commissioning, whichever occurs first. This warranty is limited, however, to the repair or replacement of defective equipment, which is returned, freight prepaid, to Seller's factory.

This limited warranty does not apply to any part or component that is damaged in transit or when handling, has been subject to misuse, negligence or accident, has not been installed, operated or serviced according to Seller's instructions, or has been operated beyond the factory-rated capacity or has been altered in any way.

Seller's liability is limited to replacement of defective parts or components and does not include any cost of labor (including, but not limited to, labor required to remove and/or reinstall any defective part) other than Trion/Herrmidifier factory labor.

Trion/Herrmidifier shall not be responsible for loss of use of any product, loss of time, inconvenience, or damage to other equipment, or any other indirect or consequential damage with respect to property whether as a result of breach of warranty, neglect, or otherwise.

THE WARRANTIES AND LIABILITIES SET FORTH ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE.

The foregoing shall constitute the total liability of seller in the case of defective performance of all or any of the equipment or services provided to Buyer. Buyer agrees to accept and hereby accepts the foregoing as the sole and exclusive remedy for any breach or alleged breach of warranty by Seller.

II. SAFETY INFORMATION

1. Read and understand this manual before installing and operating the equipment.
2. The equipment location, installation and operation should comply with the National Electrical Code and local building and fire codes. When in doubt, consult the proper authorities.
3. Do not install this equipment in any area where combustible vapors or gases exist. Do not use this equipment for the collection of any materials where there is a risk of fire or explosion.
4. Turn "Off," lockout and tag the electrical power while performing service work within the unit cabinet.
5. All mounting arrangements used in the installation must be able to support the weight of the unit plus the weight of added accessories, options, dusting, and collected contaminant.
6. The Trion VOMP 600 weighs 120 lbs. (54 kg.).

III. INTRODUCTION AND OPERATION EXPLANATION

The TRION VOMP 600 is designed primarily for the filtration of mists from ventilation air as found in the metal working industries. The mists and smokes may be created from either oil-based, synthetic, semisynthetic, or water-based coolants like those used in cutting and grinding operations.

The unit, arranged vertical for upward airflow, is in the collecting efficiency range of 95% and consists of an air inlet chamber, a series of two or three filtration stages and a blower.

Normally, a self-draining impingement baffle is used as a pre-filter in the first stage of filtration. As the larger particles of mist impinge on the baffle, they coalesce into droplets that drain into the bottom of the unit to be drained away. In lieu of the impinger, a metal mesh filter may be specified.

The second stage, if used, consists of an aluminum mesh filter to remove larger coalesced droplets of liquid.

The third stage, electrostatic precipitator, is the primary filtration method and consist of an ionizing/collecting cell to remove up to 95% of particulate.

In application, the contaminated air is captured at its source and transported to the unit through ducting furnished by others. Upon entering the unit, the incoming air is diffused by a baffle located inside the cabinet behind the inlet collar. One inlet collar is factory installed. The contaminated air is then pulled upward through the various stages of filtration and the cleaned air is exhausted from the top of the cabinet through a discharge grille. The unit should be located in the vertical position and as close to the source of contaminant as practical to minimize the length of ducting.

*** Although the VOMP 600 is designed primarily for mist or liquid particulate filtration, it may also be used for the filtration of dry particulate.**

IV. INTRODUCTION AND OPERATION EXPLANATION

HOOD AND DUCT DESIGN

The effectiveness of the installation is first dependent upon the efficient capture of the contaminant at its source and transporting it to the unit for collection.

In cases where adequate hooding is not provided by the basic machine or the process creating the contaminant, the design of the pick-up hood and the transport ducting should not be over simplified. Due to the wide variety of applications, this subject warrants a great deal more consideration than can be given here. It is recommended that a recognized text be consulted, such as Industrial Ventilation - A Manual of Recommended Practice, available from:

American Conference of Governmental Industrial Hygienist
6500 Glenway Avenue, Building D-7
Cincinnati, OH 45211-4438
(Library of Congress Catalog Card #62-12929)

The duct between the pick-up hood and the unit should be as short as possible and of adequate cross sectional area to provide a transport velocity of 2000 feet per minute (1 0.2 m/sec.). One air inlet collar is provided on the right side of the unit cabinet at the bottom. The ductwork should be sloped to prevent the pooling of liquids and sealed to prevent leakage.

When ducting is utilized, the static pressure created by the ductwork must be considered in conjunction with the pressure that will be created by the build-up of contaminant on the filters. Refer to the System Performance Curve in Figure 2.

V. UNIT LOCATION

The unit should be mounted vertically with ample space above the discharge grille (18" minimum, 457mm). Also, provide ample service access, see Figure 1. If one unit is to collect the contaminant from two sources, the unit should be located so that the ducting from each source is identical in length and configuration. If this is not practical, the ducting should be designed and sized so that the static pressure created by each duct run is identical or so that adequate capture and transport velocities from each source is assured.

VI. INSPECTION AND INSTALLATION

INSPECTION

Upon receipt, the unit(s) should be inspected for any damage incurred in shipping. Damage should be noted and a claim immediately filed with the carrier at the receiving end. Contact your TRION Representative or the factory for authorization and instructions prior to the return of any equipment.

INSTALLATION

LOCATION AND MOUNTING

Review the Unit Location Guidelines on page 4 and prepare the unit for installation in the planned location as follows:

1. To reduce weight for ease in handling and to gain work space inside the cabinet, open the access door, remove the ionizing/collecting cell and place it safely aside.
2. Locate, level and secure the unit in the desired location ensuring that the weight of the unit plus the weight of any accessories, collected contaminant and any ducting are adequately supported. See Safety Information, for unit weight.
3. Replace the ionizing/collecting cell.

DUCTWORK

Connect the ductwork as discussed under Hood and Duct Design, being sure it is sloped to prevent the pooling of liquids and sealed to prevent leakage.

PIPING

The bottom of the unit is provided with a $\frac{3}{4}$ " NPT (19.0mm NPT) male connection. If the collected liquid drain-off is to be piped to a machine sump or an oil recovery reservoir, the piping must be adequately trapped to overcome the negative pressure inside the unit cabinet and thereby prevent air being drawn through the drain.

WIRING

Refer to the applicable wiring diagram in Figure 3 or Figure 4 and complete the wiring as shown.

VII. OPERATION

WARNING

The VOMP 600 must be electrically grounded to operate correctly.

INITIAL START-UP

1. Double check the unit for proper mounting securement, ductwork, piping, and wiring connections.
2. Turn "Off", lockout and tag the external electrical power to the unit and turn the control switch "Off."
3. Open the access door and check the bottom of unit (drain pan) for cleanliness and that all of the filtration stages are in place.
4. Close the access door and turn "On" the external electrical power to the unit.
5. Momentarily turn the unit control switch "On". Then turn "Off". Air should blow out of the discharge grille located on top of the unit.
6. The unit is now ready and can be placed into operation by turning the unit control switch "On."

INDICATING LIGHTS

The lights on the front panel give an indication of the electrical operation of the electronic air cleaner.

1. The VOMP 600 is supplied with a lighted "On/Off" rocker switch which indicates supply power to the power supply and fan.
2. Next to the "On/Off" rocker switch is the Power Supply red LED. A steady red light indicates correct operation of the power supply and power to the ionizing/collecting cell. If the LED is continuously flickering, or fails to glow, it is an indicator of potential problems. Refer to the Troubleshooting diagram to correct the problem.

VIII. CARE AND MAINTENANCE

GENERAL

Care and maintenance includes the periodic cleaning and replacement of the various filtration components and servicing the blower/motor assembly. After initial startup, the frequency for a routine cleaning and/or replacement of the filters is dependent upon the nature and amount of contaminant being collected. Relatively clean mist particles, that coalesce into liquid droplets when collected tend to drain from the collecting surfaces are to a large degree "self-cleaning." Mists mixed with semi-solids, smoke, dust, and other solids do not drain as readily and are therefore not as "self-cleaning." As the make-up and quantity of contaminants vary from application to application, practical maintenance time schedules are best established by several visual examinations of the filtration components after the unit is placed into operation. Also, observing the contaminant pick-up at the hood is a good indicator of the filter condition. Any depreciation in the effectiveness of pickup indicates a drop off in capture velocity which is usually attributed to clogging filters.

Guide for Recommended Cleaning Frequency

Light Loading	4-6 months
Medium Loading	2-4 months
Heavy Loading	1-2 months
Very heavy Loading	2 weeks - 1 month

CLEANING

The ionizing-collecting cell, impinger, and the metal mesh filter, require periodic cleaning. Hot water, 140-160° F (60-71° C), and a good detergent, safe for use on aluminum, should be used. TRION's TriDex liquid detergent, formulated specifically for this purpose, is available through your TRION Representative or direct from the factory.

The filter components should be rinsed first in warm water, then soaked in a detergent water solution. When the contaminant loosens or dissolves, the filters should then be thoroughly rinsed and dried prior to placing them back into service. When cleaning the components, it is not necessary to "make them shine." Cleaning is to remove the accumulated dirt build-up. Dirt stains do not impair efficiency.

WARNING

Do not allow debris or foreign objects to become lodged between the cell plates. This will cause shorting and damage the cells and/or the power supply.

CAUTION

Do not use steam cleaners to wash the cells. The high temperatures may cause the cell plates to warp or create other damage to the cell.

If a scheduled maintenance time for filter component cleaning is at a premium, it may be advantageous to maintain a clean, spare set of filter components so that service to the dirty components can be completed within a few minutes.

BLOWER / MOTOR ASSEMBLY

After 1,000 hours of operation, remove the blower section access panel. Check and correct the following, if necessary:

1. Securement of fasteners.
2. Blower wheel and compartment for excess dirt buildup.

NOTE: Blower and motor bearings are sealed and require no lubrication.

All TRION Air Cleaners are manufactured to give the user continued, trouble-free service. However, as with all mechanical equipment, breakdowns can occur.

Before troubleshooting the unit, review the safety information on page 3, refer to the Wiring Diagram, check for proper wiring connections, and the correct input line voltage.

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graph TD
    Start([TURN UNIT ON]) --> Q1{MOTOR OPERATES PROPERLY. SUPPLY VOLTAGE PRESENT AT UNIT.}
    Q1 -- YES --> End1([UNIT OPERATES PROPERLY])
    Q1 -- NO --> Q2{MOTOR DOES NOT OPERATE. SUPPLY VOLTAGE PRESENT AT UNIT.}
    Q2 -- YES --> Q3{MOTOR OPERATES INTERMITTENTLY. SUPPLY VOLTAGE PRESENT AT UNIT.}
    Q2 -- NO --> Q4{CHECK FOR:  
1. FAULTY CONTROL SWITCH  
2. MOTOR TURNS FREELY  
3. FAULTY MOTOR CAPACITOR-IF USED  
4. FAULTY MOTOR  
5. WIRE DISCONNECTED}
    Q4 --> RepComp([REPAIR COMPLETED])
    RepComp -- YES --> Q5{MOTOR OPERATES PROPERLY}
    Q5 -- NO --> Contact([CONTACT YOUR LOCAL TRION DISTRIBUTOR])
    Q5 -- YES --> End1
    Q3 -- YES --> Q6{CHECK FOR:  
1. AIR PASSING BY FILTERS  
2. HOLES IN FILTERS  
3. DIRT IN MOTOR CAUSING OVERHEATING  
4. IMPROPER WIRING  
5. MAIN FILTER MISSING  
6. ACCESS DOOR NOT CLOSED COMPLETELY}
    Q6 --> RepComp
    Q3 -- NO --> Q7{MOTOR OPERATES WITH LITTLE OR NO AIR VOLUME FROM THE UNIT.}
    Q7 -- YES --> Q8{CHECK FOR:  
1. DIRTY OR CLOGGED FILTERS  
2. REGISTER LOUVERS BLOCKED  
3. BLOWER WHEEL BLADES DIRTY  
4. BLOWER WHEEL LOOSE  
5. INCORRECT LINE VOLTAGE}
    Q8 --> RepComp
    Q7 -- NO --> End1
  
```

Figure 1 - VOMP600 Outline

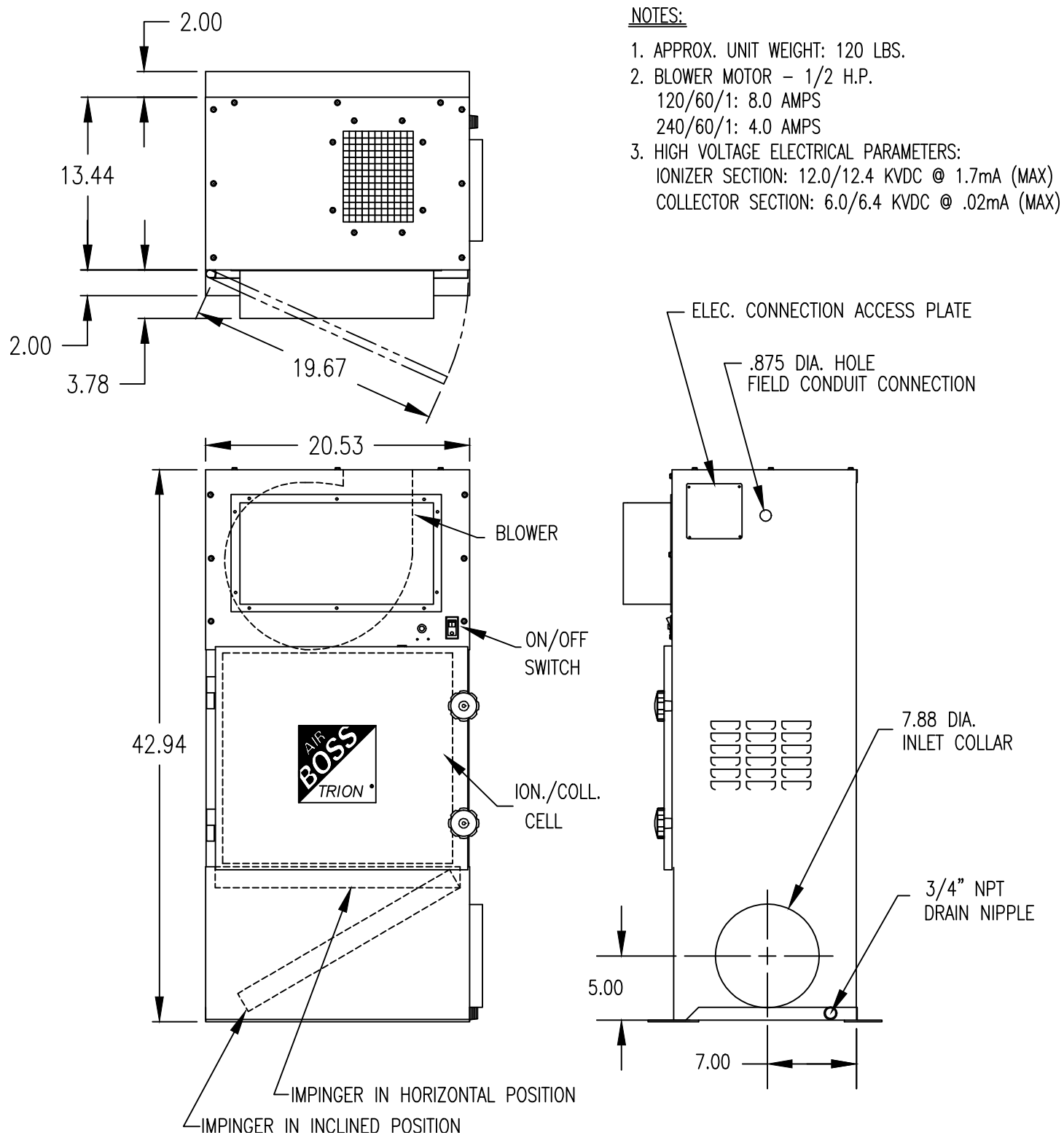


Figure 2 - System Performance Curve

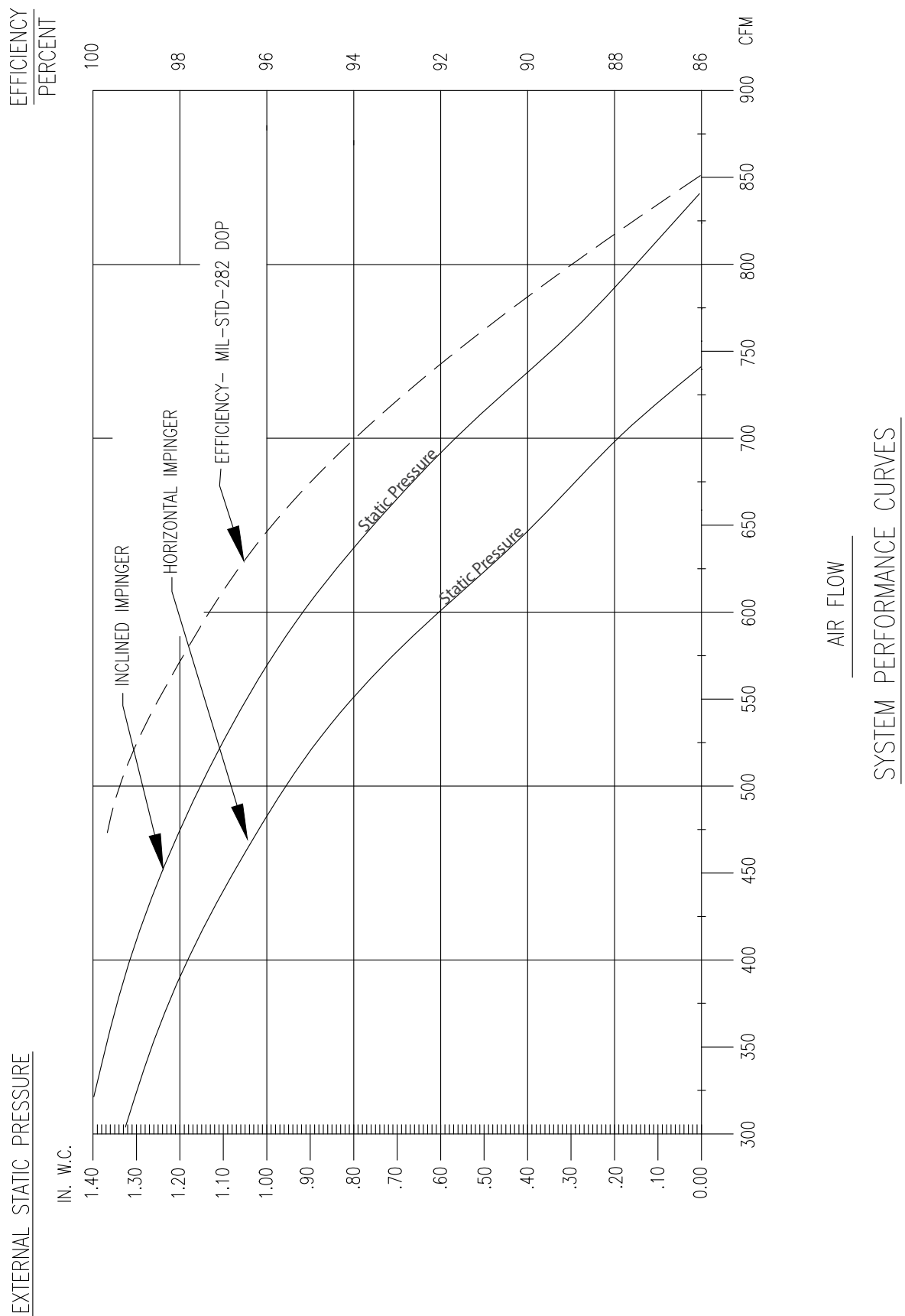


Figure 3 - Wiring Schematic 120V / 60Hz

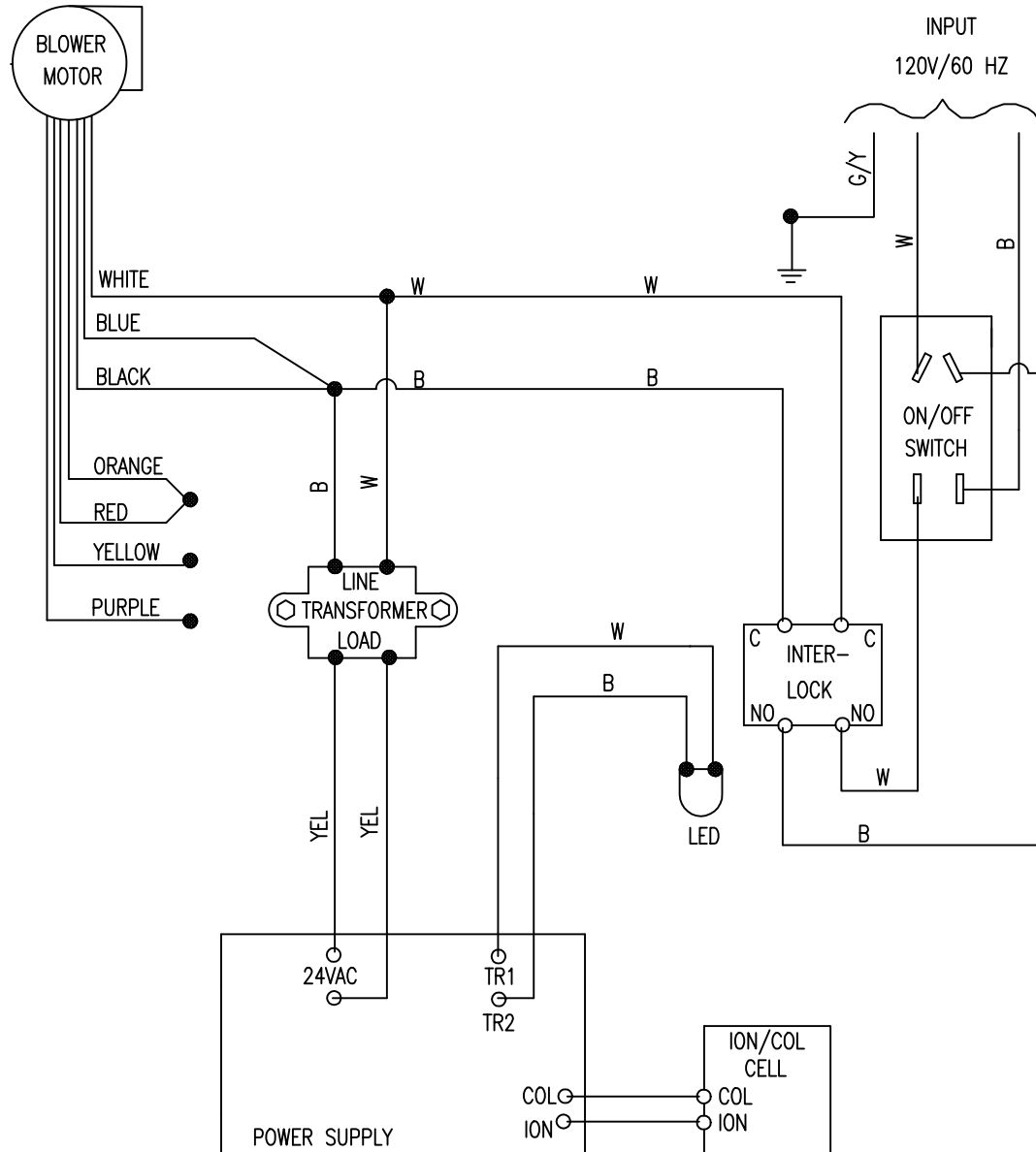


Figure 4 - Wiring Schematic 240V / 60Hz

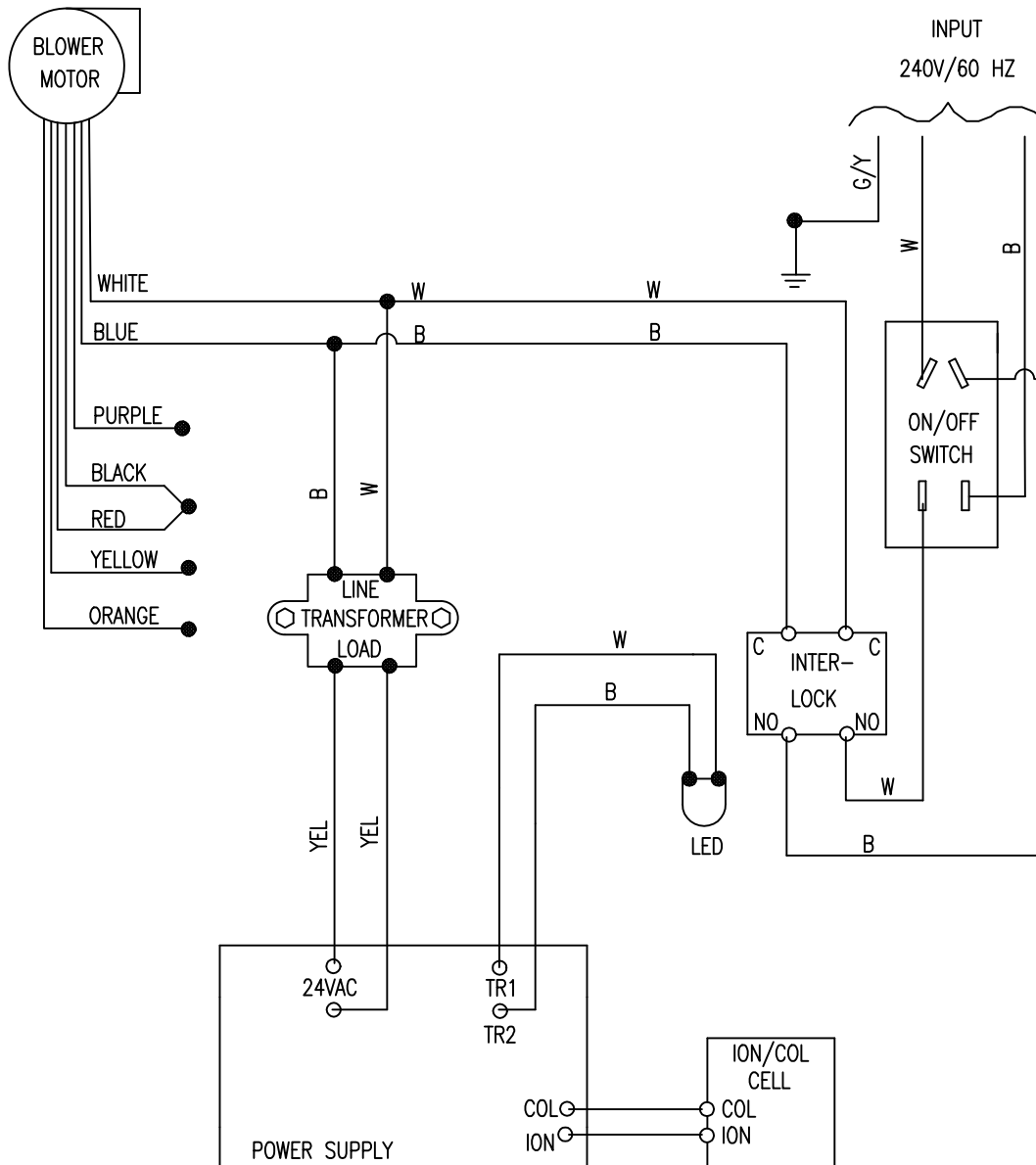


Figure 5 - Parts Listing

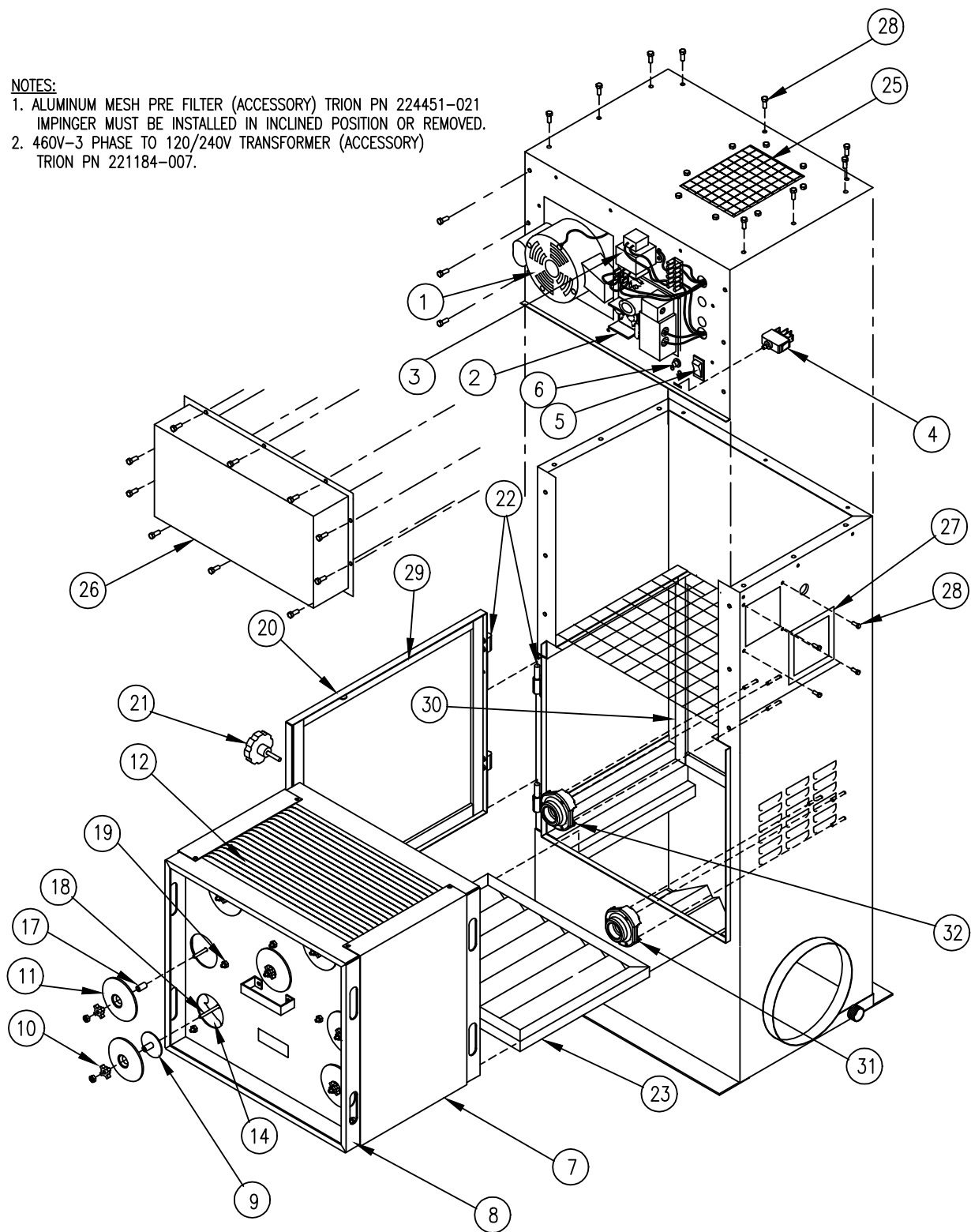
Item	Part #	Description	P/N 347330	
			-103 240 V	-104 120 V
1	247350-101	Motor/Blower Assembly	1	1
2	347891-026C	Power Supply Assembly	1	1
3	239476-002	Step-Down Transformer 240V	1	--
	239476-001	Step-Down Transformer 120V	--	1
4	235893-002	Safety Switch	1	1
5	243847-001	On/Off Switch	1	--
	245844-001	On/Off Switch	--	1
6	241101-010	LED Assembly	1	1
7	247328-001	Ionizing/Collecting Cell	1	1
8	247329-001	End Plate	2	2
9	244287-002	Air Stream Deflector	4	4
10	143589-001	Venturi Spacer	14	14
11	243805-002	Venturi Insulator	14	14
12	226555-001	High Voltage & Ground Plate	37	37
13	342836-002	Ground Electrode (not shown)	4	4
14	342834-001	Spike Blade	5	5
15	220107-118	Spacer- Spike (not shown)	8	8
16	220107-073	Spacer-Cell (not shown)	185	185
17	144015-001	Spacer (cell start)	10	10
18	233137-003	Tie Rod, High Voltage	7	7
19	233137-028	Tie Rod, Ground	7	7
20	247335-001	Access Door	1	1
21	248956-003	Clamping Knob	2	2
22	146442-002	Hinge, Access Door	2	2
23	147567-001	Impinger	1	1
25	147565-001	Discharge Grill	1	1
26	350034-001	Enclosure/Cover	1	1
27	150126-001	Access Plate	1	1
28	122841-204	Screw, Sheet Metal #8-32 x 1/2	34	34
29	224779-015	Gasket	12ft	12ft
30	120124-001	Adhesive	0.1 tube	0.4 tube
31	255232-001	HV Contact Harness- Ionizer	1	1
32	255232-002	HV Contact Harness - Collector	1	1

Note: Item #24 not used

Figure 6 - Exploded Parts View

NOTES:

1. ALUMINUM MESH PRE FILTER (ACCESSORY) TRION PN 224451-021
IMPINGER MUST BE INSTALLED IN INCLINED POSITION OR REMOVED.
2. 460V-3 PHASE TO 120/240V TRANSFORMER (ACCESSORY)
TRION PN 221184-007.





Trion®

101 McNeill Rd. | Sanford, NC 27330

P: 800.884.0002 | F: 800.458.2379 | www.trioniaq.com | customerservice@trioniaq.com
