



Air Boss MP 1200M

Vertical Air Flow Mist Precipitator

Installation Operation Service

Please read these instructions carefully for trouble free operation and to get the most out of your purchase. For further information concerning this project, contact your local Trion representative.



A **FEDDERS** INDOOR AIR QUALITY COMPANY

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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 exit and do not use this equipment for the collection of any materials where there is a risk of explosion.
4. Do not alter any of the electrical devices or remove the third prong from those units containing a plug-in power cord. These units (as most electrical appliances) must be electrically grounded for safe operation.
5. Turn "Off," lockout and tag the electrical power while performing service work within the unit cabinet.
6. 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.

Unit weight is as follows:
Model 1200M 350 lbs.

INTRODUCTION and EXPLANATION OF OPERATION

The TRION MP Series units are designed primarily for the filtration of mists from ventilation air as found in the metal removing and forming industries. The mists may be created from either oil-based or water-based coolants like those used in cutting and grinding operations*.

The units, arranged vertical for upward airflow, are in the collecting efficiency range of 95% and consist of an air inlet chamber, a series of three or four filtration stages and a blower. There are various options available for each stage of filtration and the options are dependent upon what is specified for the particular application.

Normally, a self-draining impingement fiber is used as a pre-filter in the first stage of filtration. As the larger particles of mist impinge on the fiber surface, 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, or second and third stage, are the primary filters and may be either pleated or bag type, or a combination of both as required for the given applications.

The third or fourth stage may be a metal mesh after-filter or a carbon filter for odor control.

In application, the contaminated air is captured at its source and transported to the unit through dusting 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 and if required, one additional collar may be installed in the field. 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 MP Series is designed primarily for mist or liquid particulate filtration, it may also be used for the filtration of solid or dry particulate.*

PRE-INSTALLATION CONSIDERATIONS

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 dusting 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. Therefore, H optimum results are to be expected. 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)

Basically, 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 FPM. One air inlet collar is provided on the side of the unit cabinet at the bottom. (One additional collar can be added, if required. An optional collar / air bade kit is available for this purpose. See optional components list.) The ducting 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 applicable Blower Curve.

UNIT LOCATION

The unit should be mounted vertically with ample space above the discharge grille (18" minimum). 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 dusting from each source is identical in length and configuration. If this is not practical, the dusting 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.

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 Pre-Installation Considerations as found on page 2 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 and remove the filtration units. Place them safely aside.
2. If the plan requires the inlet air to enter the cabinet on the opposite side, or the rear, remove the existing air inlet collar and baffle by drilling out the retaining rivets with a 5/32" drill bit. Next, cut an 8" diameter hole in the desired location. Using the collar and baffle as templates, drill 5/32" rivets or No. 6 machine screws and nuts. Cover the original opening with a rust protected sheet metal. Secure it with rivets or bolts and nuts and seal it air tight with caulking.
3. If the plan calls for dual air inlets, install the second inlet collar and baffle as described above. These components are available from TRION in a kit. Refer to the list of Optional Components.
4. If either the optional angle mounting brackets or the pedestal mounting base are to be used, secure them to the unit base at this time. Refer to the unit outline drawing, Figure 1, for details.
5. Next, locate, level and secure the unit in the desired location being sure that the weight of the unit plus the weight of any accessories, collected contaminant and any dusting are adequately supported. See Safety Information, for unit weight.

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 sloped and pitched toward a 3/4" NPT female 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 and complete the wiring as shown.

OPERATION

INITIAL START_UP

1. Double check the unit 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 of the unit "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" to check the blower rotation. Air should blow out of the discharge grille located on top of the unit. Correct blower rotation if necessary on 3 phase motors by turning "Off" the supply line power and interchanging any 2 of the 3 input wires on the terminal block.
6. The unit is now ready and can be placed into operation by turning the unit control switch "On."

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 start-up, 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 operations. Also, observing the contaminant pick-up at the hood is a good indicator. Any depreciation in the effectiveness of pick-up indicates a drop off in capture velocity which is usually attributed to clogging filters.

CLEANING

Impingers, and the metal mesh filter, can be cleaned with 140-160 degree water and a good detergent, safe for use on aluminum. TRION's Tri-Dex 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.

If downtime 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 while the unit is operating.

Box, pleated, bag, and HEPA filters are usually replaced rather than cleaned, especially when filtering liquid mists. The filters simply slide out of the unit, with the exception of the 12" bag or pocket filter. Prior to sliding the bag or pocket filter from the cabinet, lift the loop support rod upward in the key slots located in the housing at each end of the rod. Then slide the rod to the left and pull it out of the loops. When the replacement filter is slid into the cabinet, reinstall the rod by reversing the removal steps.

BLOWER / MOTOR ASSEMBLY

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

1. Securement of fasteners and pulleys
2. Blower wheel and compartment for excess dirt build-up.
3. Belt wear and tension.

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

NOTE: When changing pitch diameter on the variable sheave or replacing sheaves and/or belts, it is important to maintain accurate sheave alignment to prevent vibration.

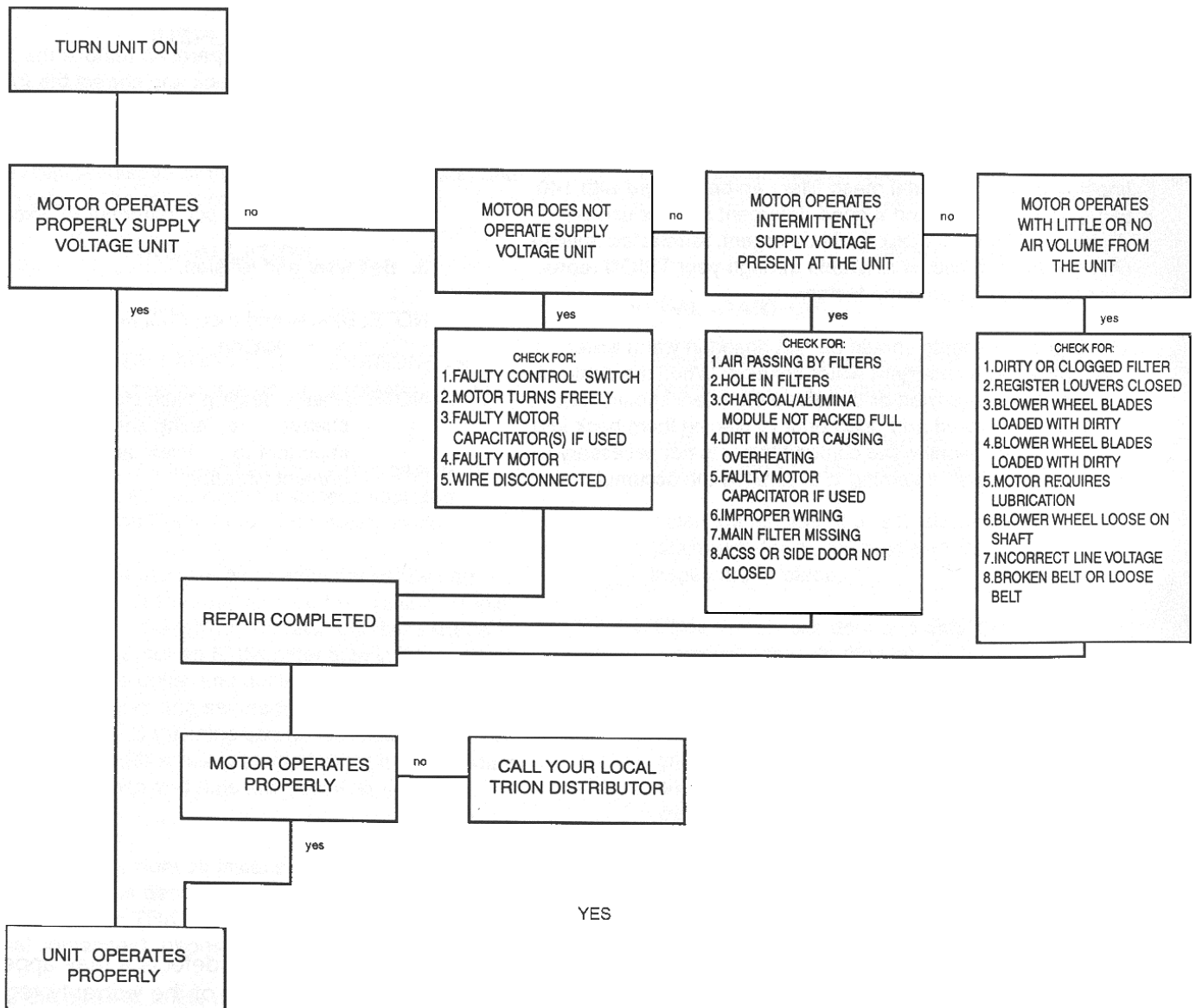
TROUBLESHOOTING

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

Refer to the "Replacement Parts Schedule," page 6, for replacement parts.

Before troubleshooting the unit, refer to the Wiring Diagram, check for proper wiring connections, and the input line voltage.

TROUBLESHOOTING PROCEDURE



REPLACEMENT PARTS ORDERING INFORMATION

The following pages contain Exploded Views and the Bill of Material for the TRION MP1200M. Use these pages to determine the part numbers of items that are needed.

To order repair parts, contact your local TRION Representative, or the factory directly at 101 McNeill Road, Sanford, NC 27330, 1-800-884-0002.

OPTIONAL COMPONENTS & PARTIAL PARTS LIST

Part Number	Qty	Description
346665-001	1	Pedestal Base Mtg. Kit 20
346662-001	1	Angle Bracket Mtg. Kit 20: x 26"
750-8004-0001	1	Manometer 0-3 inches W.G.
246858-001	1	8" Diameter Inlet Collar & Air Baffle Kit
246901-005	1	Impinger, 19½" x 23½" x 1⅞"
224451-015	1	Aluminum Mesh Filter, 19½" x 23½" x 1⅞"
322031-013	1	Metal Mesh Filter, 19½" x 23½" x 1⅞"
345392-003	1	Pleated Filter, 19½" x 23½" x 3⅞"
345393-005	1	Pleated Filter, 65%, 23⅜" x 19⅜" x 11½"
345393-006	1	Pleated Filter, 95%, 23⅜" x 19½" x 11½"
245394-005	1	HEPA Filter, 95%, 23½" x 19½" x 11½"
245395-006	1	HEPA Filter, 99%, 23½" x 19½" x 11½"
238001-001	1	Carbon Filter, 23⅝" x 23⅝" x 1⅞"
245844-001	1	"On" – "Off" Toggle Switch, 120V
243847-001	1	"On" – "Off" Lighted Rocker Switch, 240V
224779-029	Spec. No. of Feet	Neoprene Gasket, ¾" x ⅞"
224779-021	Spec. No. of Feet	Neoprene Gasket, ⅝" x ⅝"
125740-003	1	Motor, 1 HP TEFC, 11SR / 230V / 60 Hz / 1 Ph
141196-001	1	Motor, 2 HP TEFC, 230/460V / 60 Hz / 3 Ph

Figure 1: MP 1200M Outline

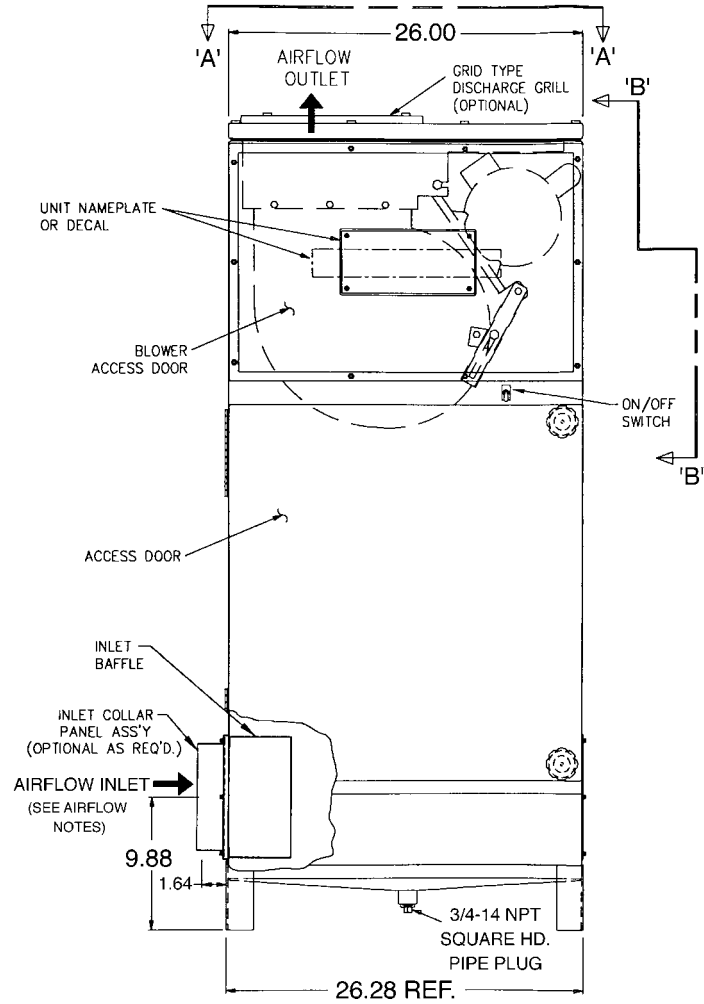
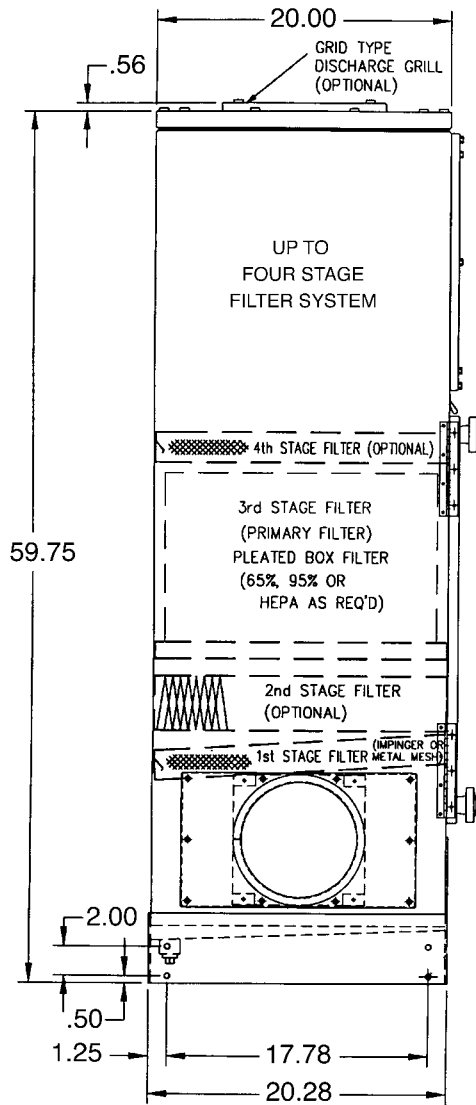


Figure 2

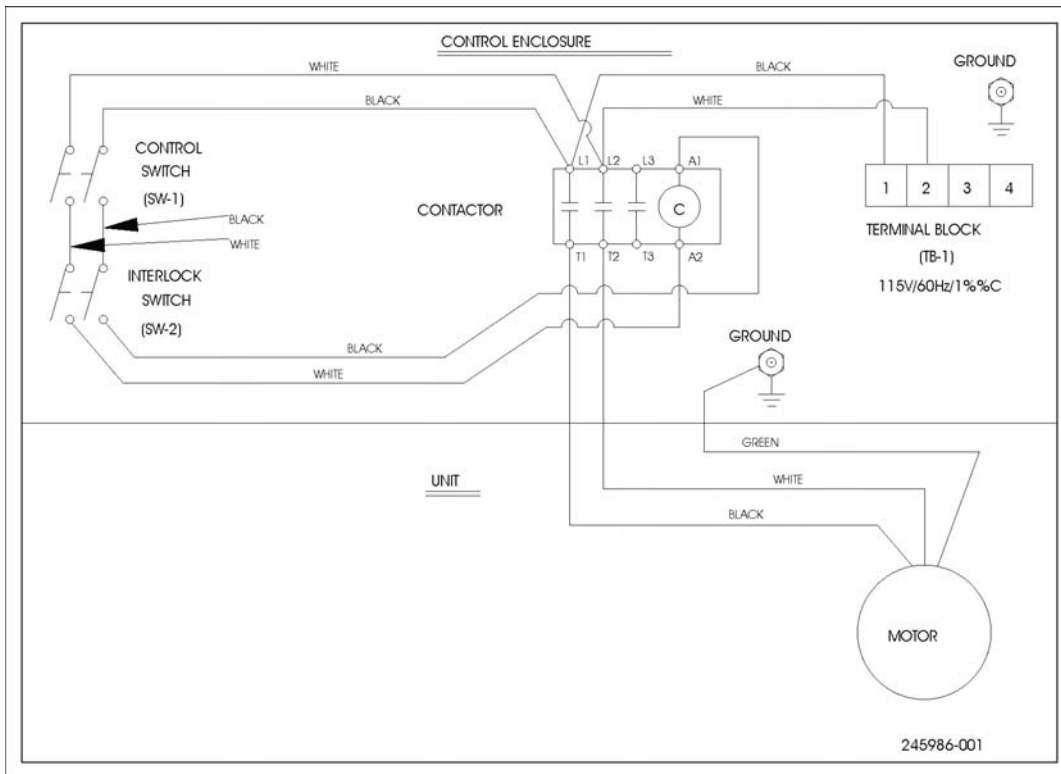


Figure 3

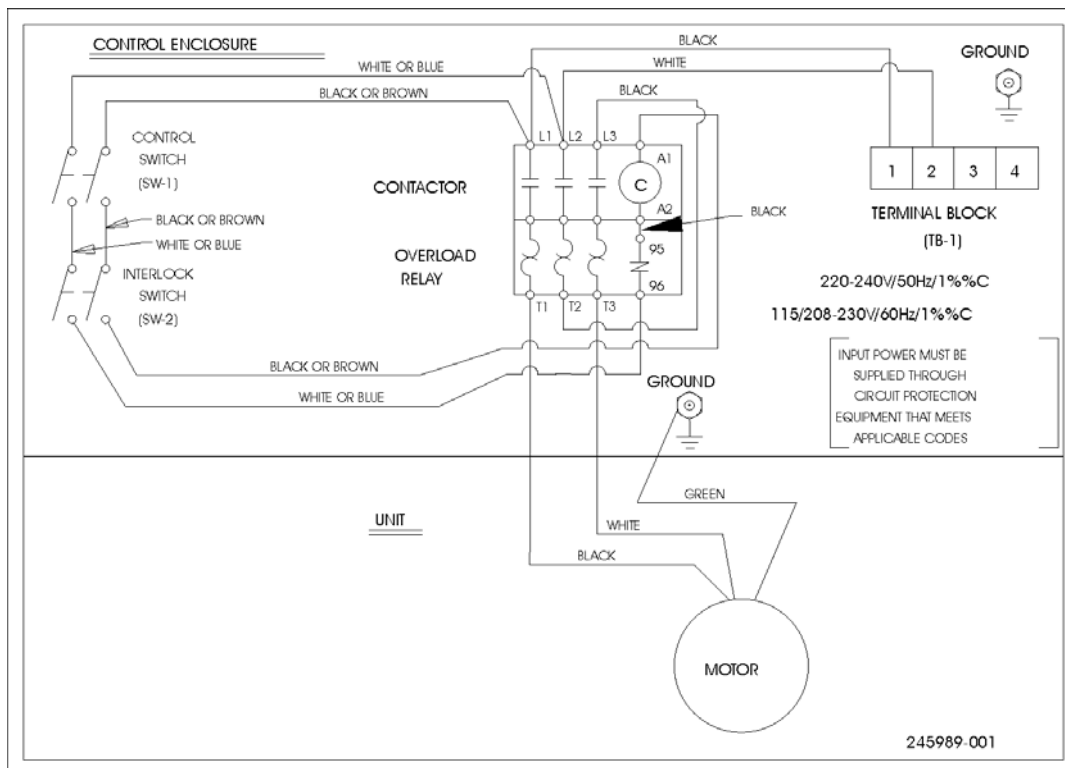
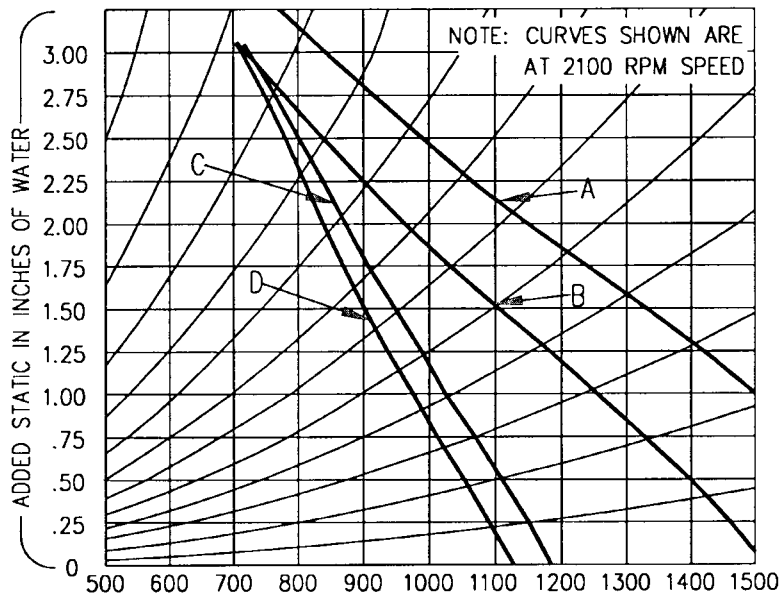
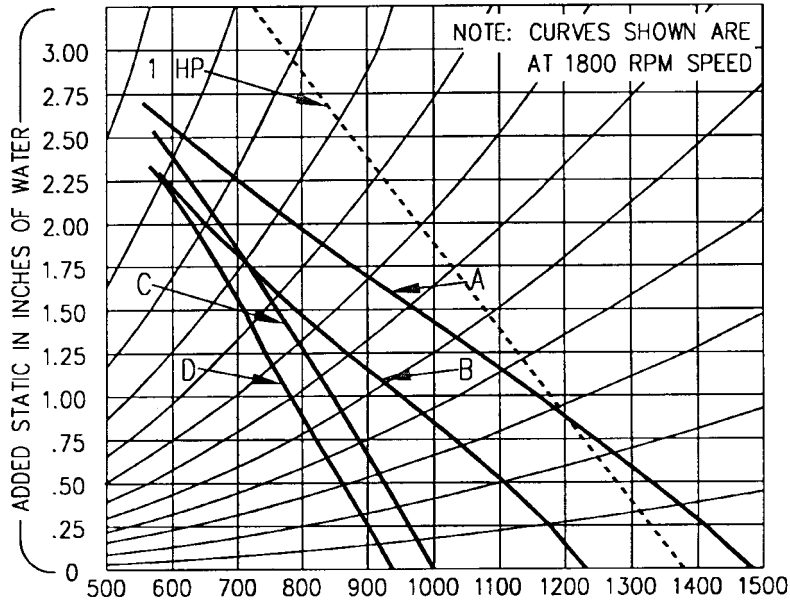


Figure 4

Figure 5

- A: 2" Metal Impinger
 4" Pleated Pre-Filter
 12" Pleated 95% Filter
 (1) 8" Diameter Inlet
- B: 2" Metal Impinger
 4" Pleated Pre-Filter
 12" HEPA 99.97% Efficiency
 (1) 8" Diameter Inlet

- C: 2" Metal Impinger
 4" Pleated Pre-Filter
 12" Pleated 95% Filter
 2" Activated Charcoal After-Filter
 (1) 8" Diameter Inlet
- D: 2" Metal Impinger
 4" Pleated Pre-Filter
 12" HEPA 99.97% Efficiency
 2" Activated Charcoal After-Filter
 (1) 8" Diameter Inlet



WARRANTY

All Trion air cleaners are warranted for component failure and workmanship for a period of three years after purchase. Do not return defective parts without prior permission from the factory. Contact your local Trion Distributor or Trion Customer Service Department at 1-800-884-002 or Fax 1-800-458-2379 to obtain material return authorizations and service information.



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