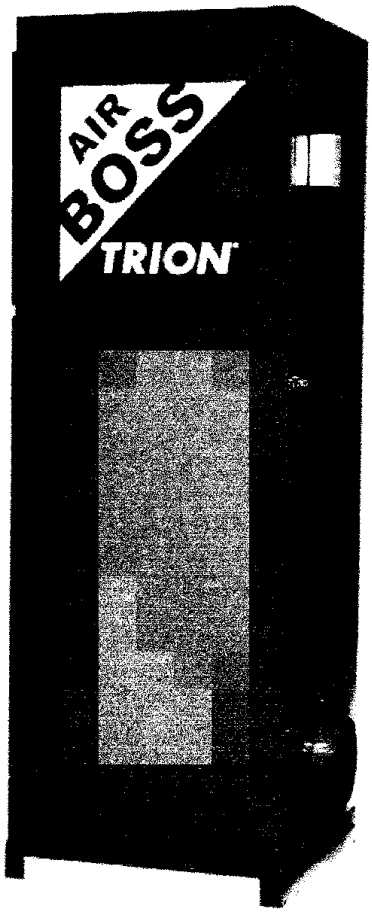
MP 2400M and HIGH STATIC

Vertical Flow Mechanical Mist Collectors



Installation • Operation • Maintenance

TRION®

A **FEDDERS** ENGINEERED PRODUCTS COMPANY

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SAFETY INFORMANTION

1. Read and understand this manual before installing and operating the equipment.

WARNING:
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.

2. Do not install this equipment in any area where combustible vapors or gases exist and do not use this equipment for the collection of any materials where there is the risk of explosion.

3. 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.

4. Turn 'Off", lockout and tag the electrical power while perform ing 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.

Unit weight: MP 2400M 375 lbs.

INTRODUCTION AND EXPLANTION OF OPERATION

The TRION MP2400M is 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 base or water base coolants like those used in cutting and grinding operations.*

The unit, arranged for vertical upward air flow, is in the collecting efficiency range of 95% and consists 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 have been specified.

The second stage, or the 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 of a carbon filter for odor control.

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, 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 contaminate as practical to minimize the length of ducting.

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

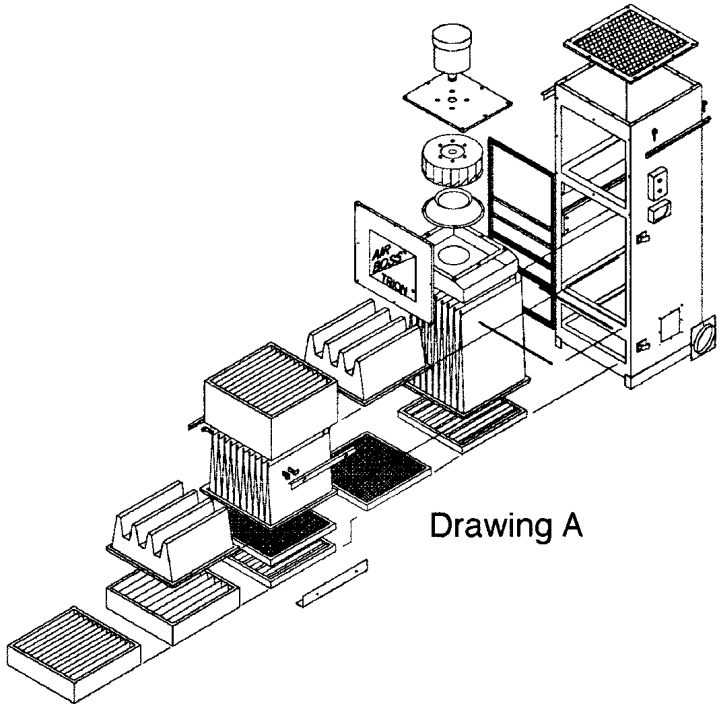
PRE INSTALLATION CONSIDERATIONS

HOOD AND DUCT DESIGN

The effectiveness of the installation is first dependent upon the efficient capture of the contaminant's at their source and transporting them 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 application this subject warrants a great deal more consideration than can be given here. Therefore, if optimum results are to be expected it is recommended that a recognized text be consulted such as INDUSTRAL VENTILATION – " A Manual of Recommended Practice" available from:

American Conference of Governmental Industrial Hygienist, 6500 Glenway Avenue Bldg. D-7 Cincinnati, Ohio 45211-4438 (Library of Congress Catalog Card Number 62-12929)



Drawing A

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 as required. An optional collar is available for this purpose. See optional components list, pages 6.) 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 duct work 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 Curves. See the TABLE OF CONTENTS.

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 page 4. 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.

If the unit is to be installed on or above machinery or otherwise supported above floor level be sure that supports and bracing will adequately support the unit weight plus the weight of any added accessories, collected contaminant and dusting. Refer to SAFETY INFORMATION, page 1.

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 the TRION representative or the factory for authorization and instruction prior to the return of any equipment.

INSTALLATION

LOCATION & MOUNTING

Review the PREINSTALLATION CONSIDERATIONS as found on page 1 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 bade by drilling out the retaining rivets with a 5/32" drill bit. Next, cut a 8" diameter hole in the desired location. Using the collar and baffle as templates drill 5/32" diameter holes and secure the components with 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 components, page 6.

4. If either the optional angle mounting brackets or the pedestal mounting base are to be used, secure them to the unit base at the time.

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 suppoted. See SAFETY INFORMATION, page 1, for unit weights.

Connect the duct work as discussed under hood and duct design, page 1, being sure I 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 1" 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, as listed in the TABLE OF CONTENTS, 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 inter-changing 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 assemble. The frequency for a routine cleaning and/or replacement of the filters is dependent upon the nature and amount of contaminate 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 a "self-cleaning". As the make-up and quantity of contaminant's 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 contaminate pick-up at the hood area 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.

An optional draft gage is also available that can be easily installed to measure increases in pressure drop as filters become clogged. Gage readings taken with clean filters, then again when filters are clogged provide an accurate maintenance reference.

CLEANING

Impingers, and the metal mesh filters can be cleaned with 140 to 160 degree water and a good detergent safe for use on aluminum. TRION 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 first rinsed in warm water then soaked in a detergent water solution. When the contaminant has been loosened or dissolved 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 to not impair efficiency.

If down 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 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 housingat each end of the rod. Then slide the rod to the left and pull it out of the loops. When the replacement filter has been slide into the cabinet, reinstall the rod by reversing the removal steps.

BLOWER/MOTOR ASSEMBLY

After 1000 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.

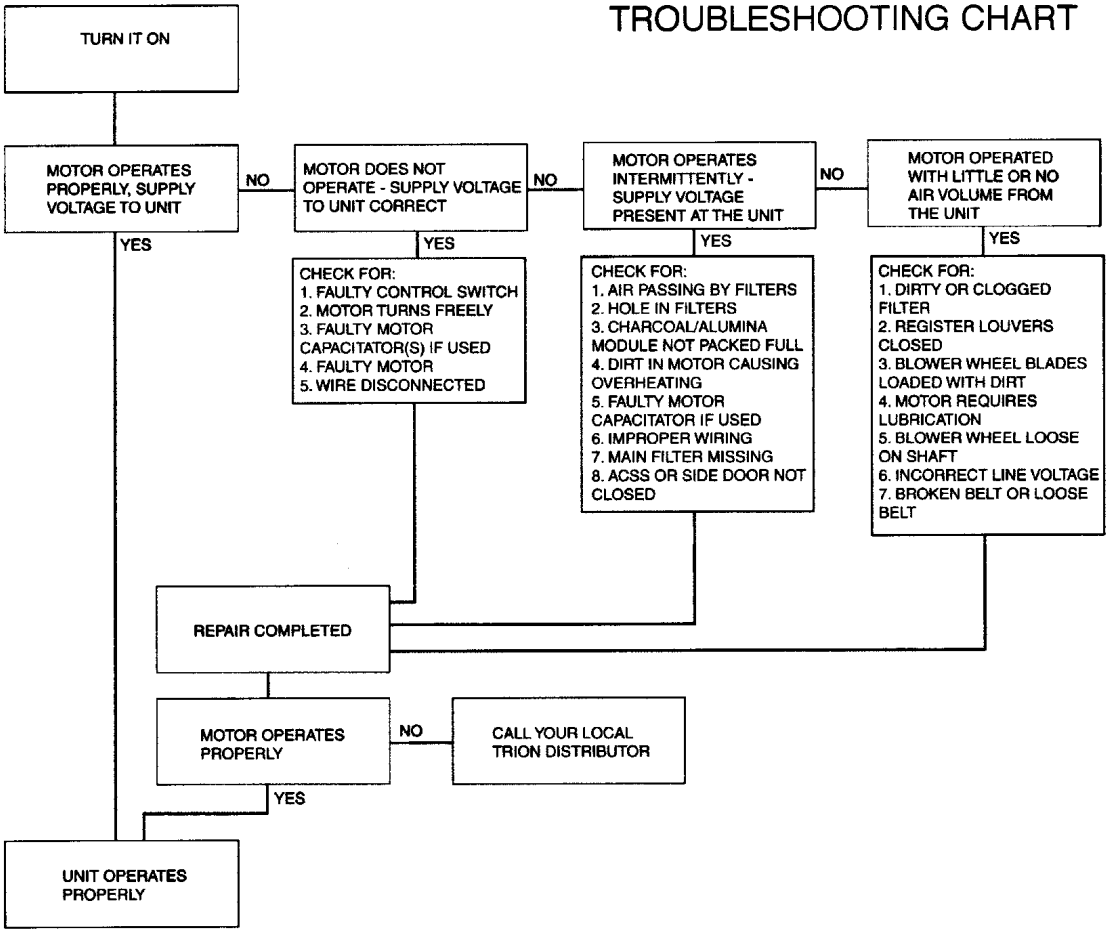
TROUBLE-SHOOTING

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 CHART



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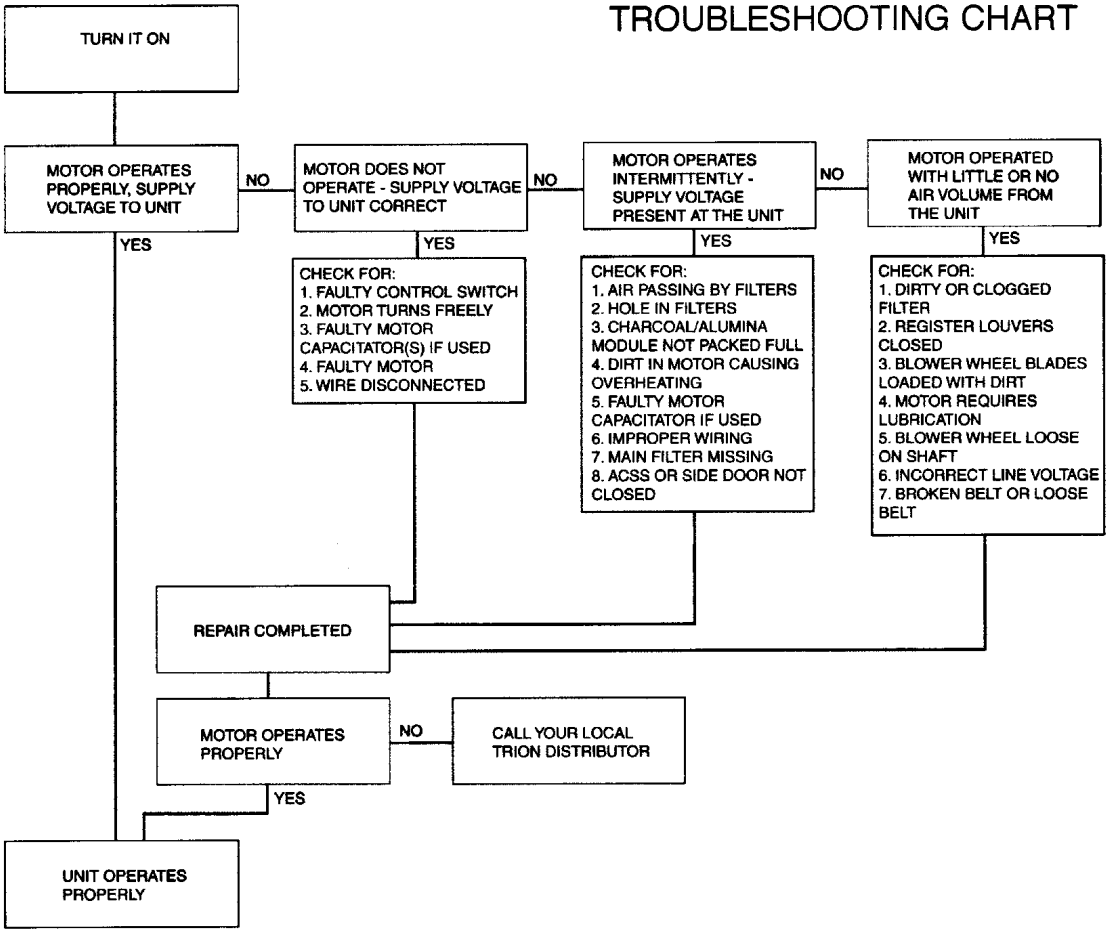

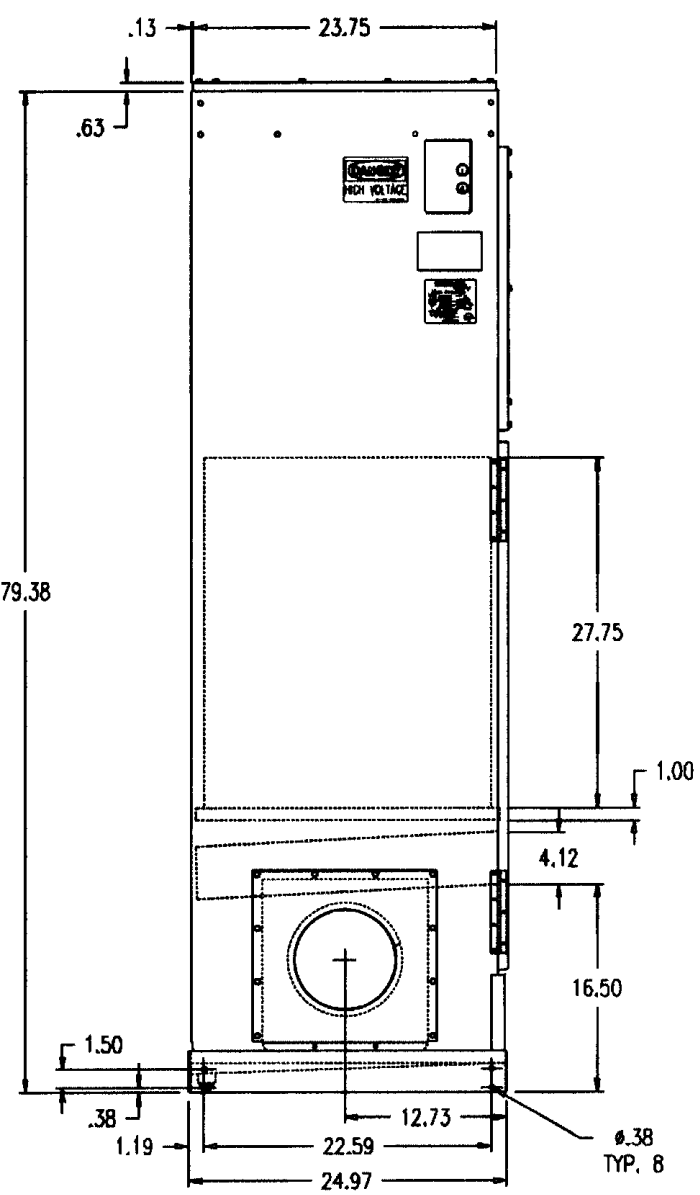

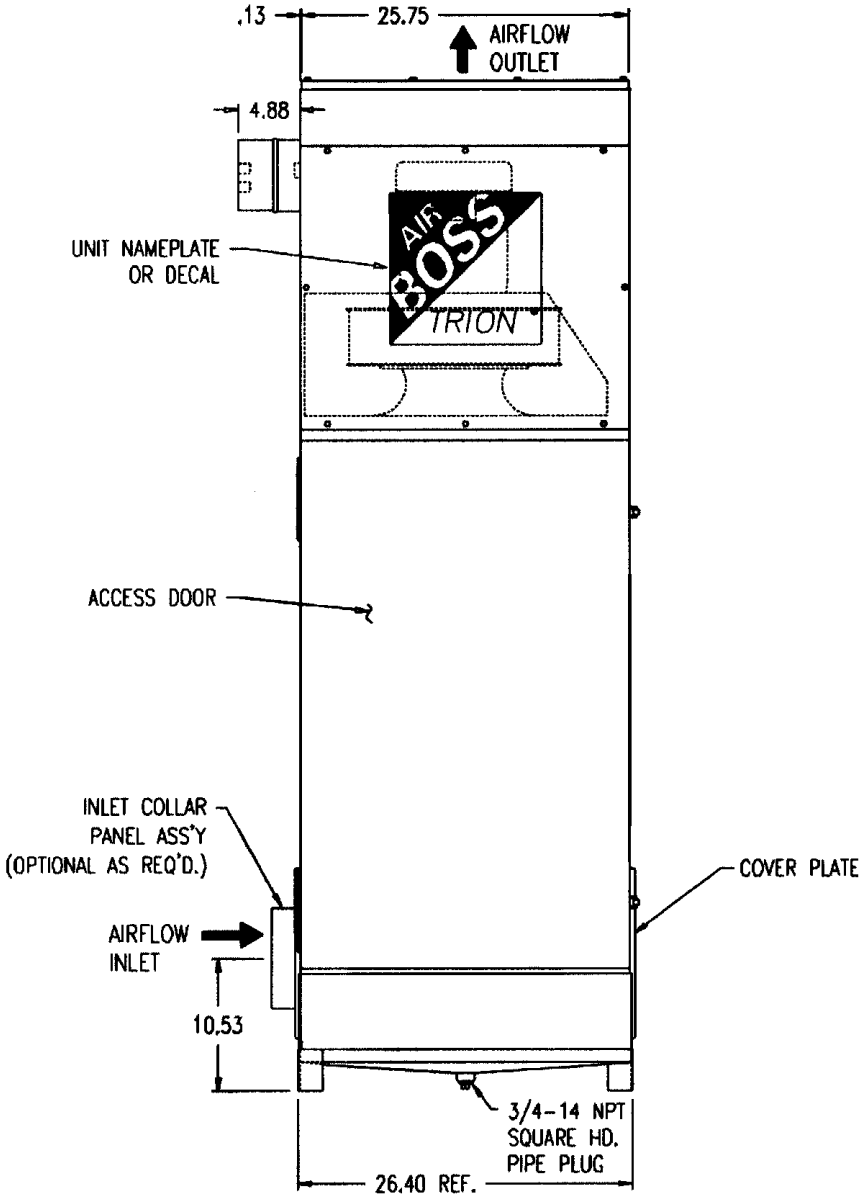

FIGURE 1 - UNIT OUTLINE

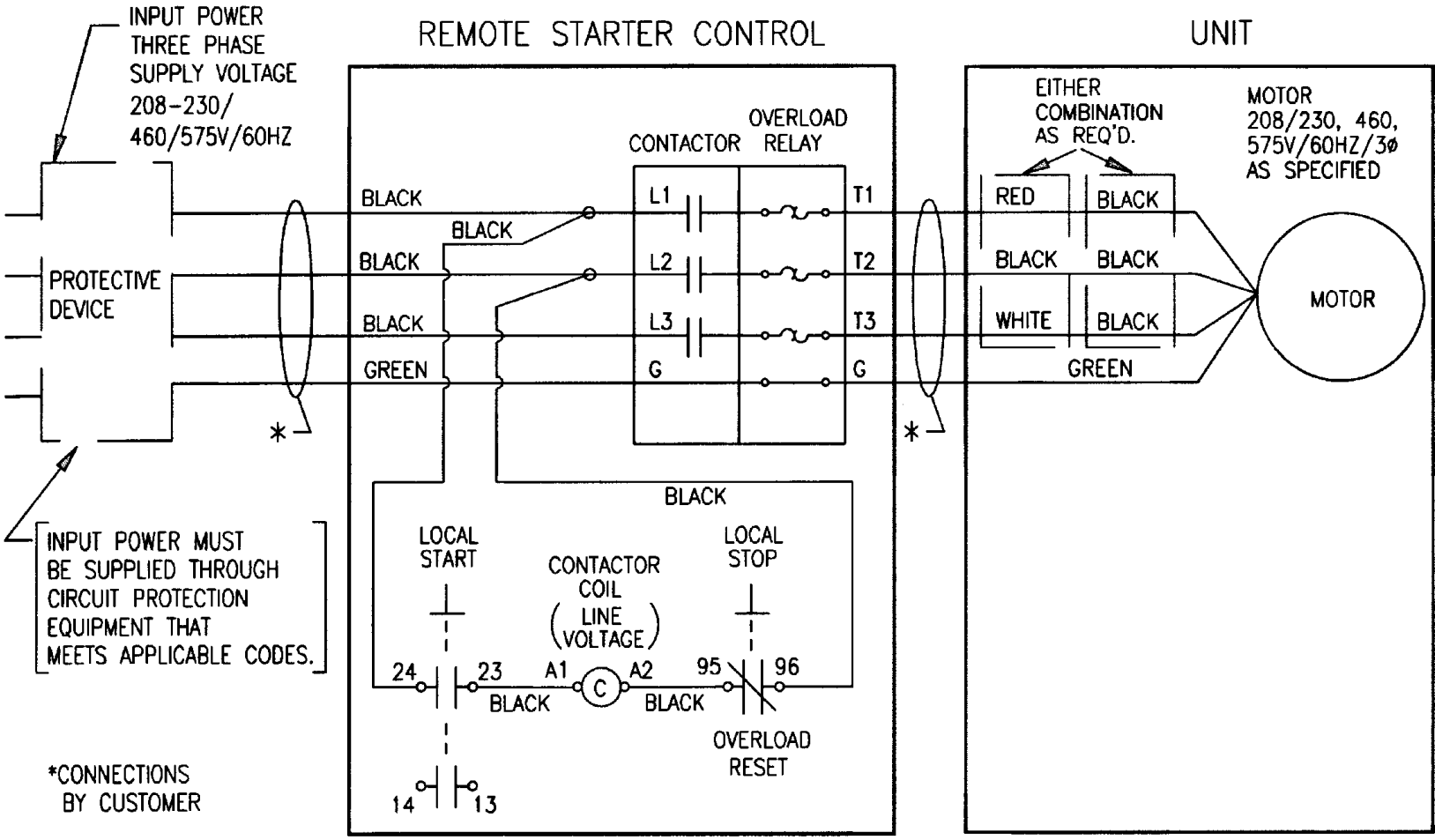

FIGURE 2 - WIRING DIAGRAM

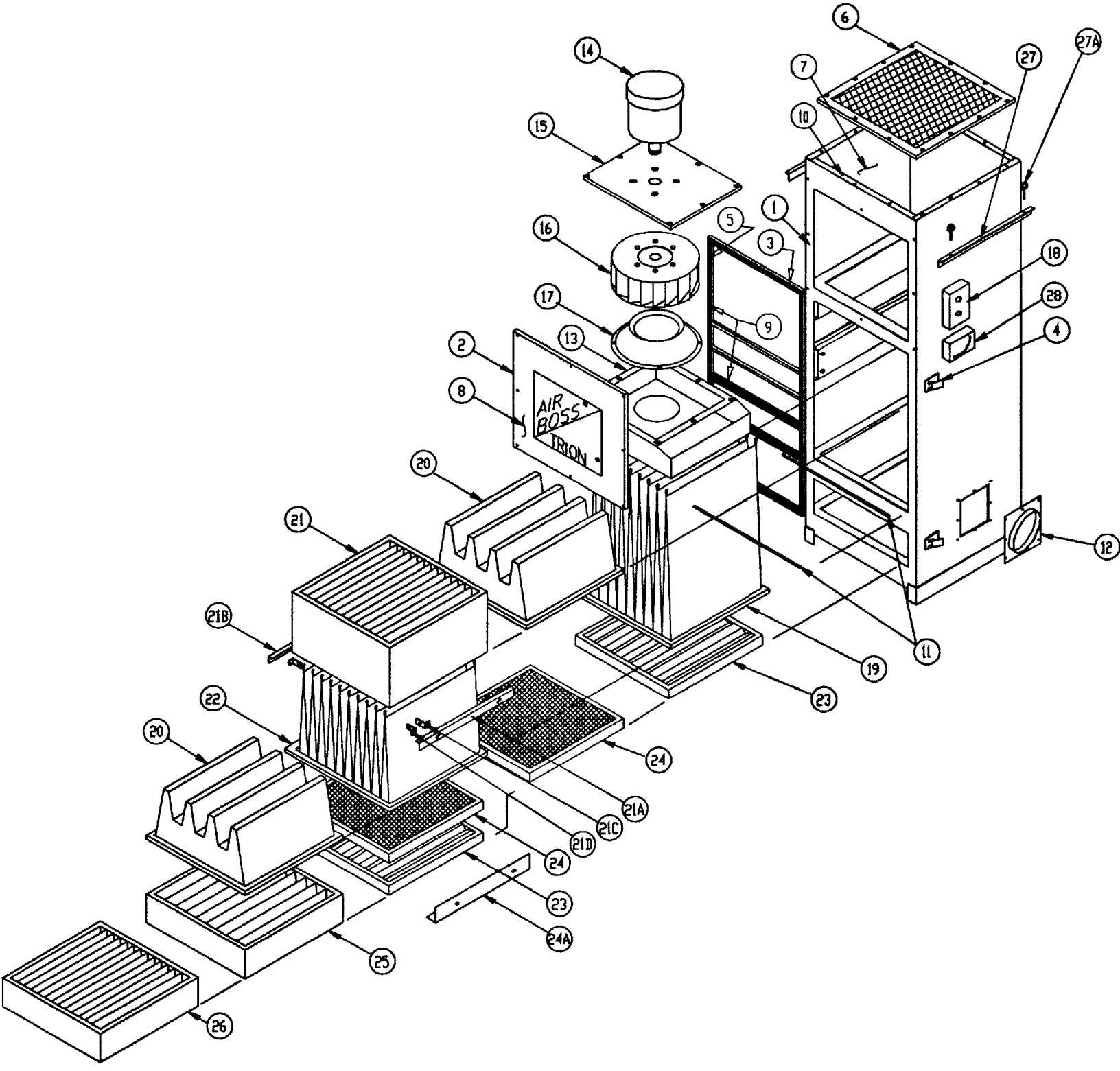

FIGURE 3A - PARTS VIEW

QTY	ITEM	TRION P.N.	DESCRIPTION
1	1	454496-001	CABINET ASSY.
1	2	354177-001	ACCESS COVER ASSY.
1	3	354508-001	ACCESS DOOR ASSY.
2	4	246609-107	TOGGLE LATCH
2	5	246609-012	DOOR LATCH STRIKE
1	6	354497-001	TOP COVER
1	7	254404-001	ACOUSTIC FOAM KIT
8'	8	253390-023	GASKET 1/2 X 1/2
16'	9	253390-025	DOORGASKET 3/4 X 1/2
9'	10	224779-029	GASKET 3/4 X 1/8
1	11	154838-001	BAG SUPPORT ROD
1	12	354504-001	INLET PANEL 8" DIA.
		-002	INLET PANEL 10" DIA.
		-003	INLET PANEL 12" DIA.
		-004	INLET PANEL BLANK
1	13	354398-001	BLOWER HOUSING
1	14	142396-003	MOTOR 5 HP 208-230/460/3
		-011	MOTOR 5HP 575/3
		-004	MOTOR 7.5 HP 208-230/460/3
		-012	MOTOR 7.5 HP 575/3
1	15	254405-001	MOTOR MOUNTING PLATE
1	16	252660-002	WHEEL SIZE 15 X 80%
		252661-002	WHEEL SIZE 16 X 68%
1	17	253686-003	CONE SIZE 15
		253686-004	CONE SIZE 16
1	18	250929-XXX	COMPACT STARTER
OPT.	19	346016-008	FILTER 95% BAG (LONG)
OPT.	20	346618-004	FILTER 95% MINI-PLEAT
		-003	85% MINI-PLEAT
		-002	75% MINI-PLEAT
		-001	65% MINI-PLEAT
OPT.	21	254510-001	FILTER 95% HEPA
		254510-002	FILTER 99.97% HEPA
1	21A	354499-001	HEPA CLAMPING ANGLE RH
1	21B	354499-002	HEPA CLAMPING ANGLE LH
2	21C	254814-001	CLAMPING BRACKET
2	21D	254815-001	ANGLE BRACKET
OPT.	22	346016-007	FILTER 95% BAG (SHORT)
OPT.	23	246901-008	IMPINGER (ANGLE)
		245390-012	IMPINGER (RADIUS)
OPT.	24	224451-016	PREFILTER (ALUM)
		322031-014	PREFILTER (GALV)
2	24A	354501-001	PREFILTER TRACK
OPT.	25	345392-005	PREFILTER 35% PLEAT
		345392-006	PREFILTER 35% PLEAT
OPT.	26	254505-001	MIST ELIMINATOR
OPT.	27	349192-001	UNIT MOUNTING ANGLE
4	27A	222449-017	EYEBOLT 3/8-16
OPT.	28	01-750-8004-00	MANOMETER

FIGURE 3A - MP2400M PARTS LIST

TO DETERMINE SYSTEM PERFORMANCE WITH VARIOUS COMPONENT COMBINATIONS, ADD STATIC OF COMPONENTS (BELOW) AND SUBTRACT FROM SPECIFIC PERFORMANCE CURVE (LEFT). THE REMAINING STATIC PRESSURE IS AVAILABLE FOR DUCT WORK LOSSES AND FILTER LOADING.

FILTER/PREFILTER/IMPINGER/INLET OPTION	COMPONENT P/N	COMPONENT STATIC (IN. W.C.)		
		1600CFM	2400 CFM	3200 CFM
FILTER - BAG - LONG - 95%	346016-008	.40	.50	.70
- BAG - SHORT - 95%	346016-007	.55	.90	1.60
- MINI - PLEAT - 65%	346618-001	.15	.35	.60
- MINI - PLEAT - 95%	346618-004	.25	.50	.75
- HEPA - 95%	254510-001	.50	1.15	2.10
- HEPA - 99.97%	254510-002	.70	1.55	2.80
PRE-FILTER - ALUMINUM	224451-016	.05	.15	.25
-GALVINIZED	322031-014	.15	.30	.55
- PLEATED - 65%	345392-006	.40	.85	1.55
IMPINGER - MIST ELIMINATOR	254505-001	.02	.05	.10
- ANGLE BLADES	246901-008	.35	.75	1.35
- RADIUSED BLADES	245390-012	.90	2.05	3.65
*INLET CONNECTION - (2) 12" DIA	-	.40	.90	1.60
(2) 10" DIA	-	.85	1.90	3.35
(1) 12" DIA	354504-003	1.60	3.65	6.45
(1) 10" DIA	354504-002	3.35	7.55	-

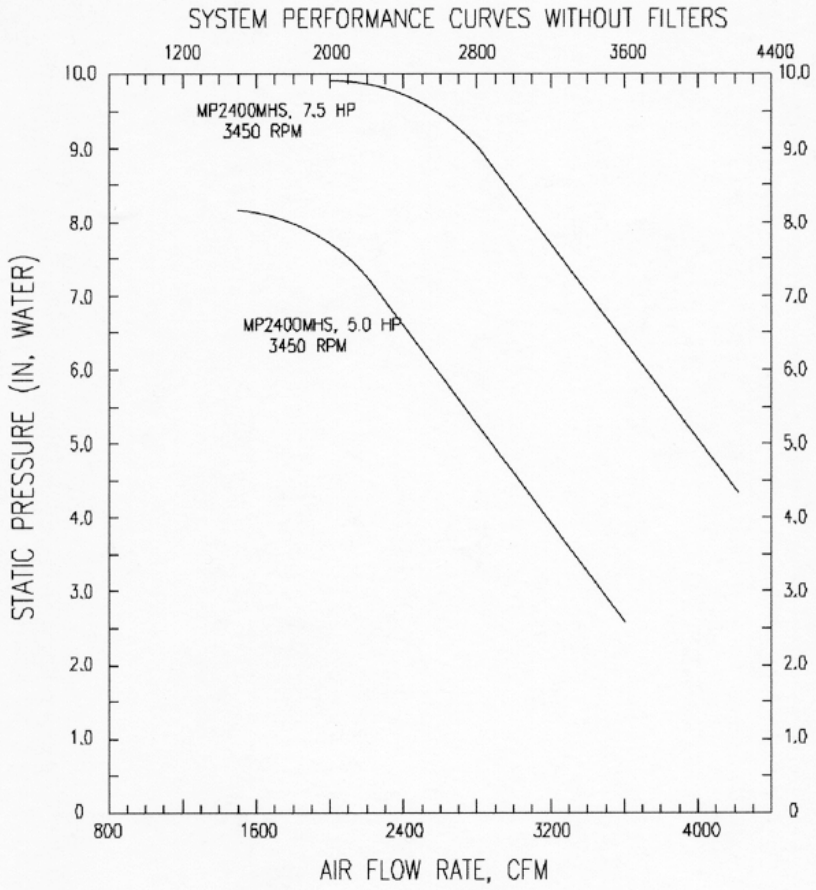

FIGURE 4 - BLOWER CURVES

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 1-800-884-8002 or Fax 1-800-458-2379 to obtain material return authorizations and service information.

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