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TRION M6000 Air Boss Owner's Manual

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TRION[®]

Indoor Air Quality



READ AND SAVE THESE INSTRUCTIONS

Air Boss[®] Model M6000
Industrial Air Cleaner

Industrial Air Cleaner AIR BOSS® M6000

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Specifications

Air Handling Capacity	See blower curves
Power Requirements	5 HP, 208-230/460V, 3 PH 14.8/6.7 Amps, 3082 Watts 7.5 HP, 208-230/460V, 3 PH 21.8/9.9 Amps, 4740 Watts
Controls	Owner-supplied motor starter
Cabinet Dimensions	72" L x 49" W x 30" H
Weight	420 lbs
Filter Options	
Pre-Filter (Standard)	<ul style="list-style-type: none"> • Pleated: 24" H x 24" W x 4" D-STD (2 required) • Aluminum mesh: 24" H x 24" W x 2" D-OPT (2 required)
Pre-Filter (Optional)	Impinger (2 required)
Main Filter	<ul style="list-style-type: none"> • 65% efficiency filter bag (2 required) • 95% efficiency filter bag (2 required)
HEPA Option	<ul style="list-style-type: none"> • 99.97% absolute HEPA filters • 95% efficiency filter bags • HEPA mounts on the clean air side

Principles of Operation

The TRION M3000 consists of four basic components:

1. A cabinet for housing all components
2. A blower for moving the air
3. Electrical wiring (to external junction box)
4. Filter components

The air in any room contains millions of particles of dust. The composition of the dust will vary depending on the environment. The dust may be in the form of smoke, airborne dirt from outside, small particles of grease or moisture. The size of the particles (or particulate) will range from as little as 0.03 microns to anything large enough to remain airborne in the air. (A micron is one millionth of a meter.)

When the unit is turned on, the blower begins moving the air through the pre-filter section. On the Model M30, this is accomplished by the plenum and arm assemblies. The pre-filter collects the large dust and lint particles. The air then enters the main filter where the dust or smoke is trapped in the millions of fibers of the bag. The cleaned air then passes through the unit back into the room.

Model M6000

New Unit Inspection

Immediately upon receiving the unit, carefully examine the carton for damage during transit. If unit is damaged, contact the last carrier for filing a claim and contact your local TRION distributor.

When uncrating the unit, look for concealed shipping damage. If there is damage, it should be reported to the last carrier for filing claim and contact your local TRION Distributor.

The following are guidelines for installation; however, alternate methods may be equally adequate.

Preparation & Installation

This manual should be carefully read before starting the preparation and installation of the air cleaner.

The installation should conform to all local ordinances associated with building codes and electrical codes required for the unit. Authorities having jurisdiction should be consulted before installation is complete. If there are no local codes, the installation should conform to the National Electrical Code.

For maximum air cleaning efficiency, your air cleaner should be located as specified by your local TRION distributor.

The unit can be either wall-mounted, chain-hung, or suspended from threaded rod. Eyebolts are supplied with the unit.

NOTE

Remove the filters from the cabinet to ease handling.

Suspension Mounting

CAUTION

THE MAXIMUM WEIGHT OF THE MODEL M6000 IS 600 LBS. ANY MOUNTING ARRANGEMENT MUST BE ABLE TO SUPPORT THIS WEIGHT. FAILURE TO DETERMINE IF MOUNTING IS SUBSTANTIAL MAY RESULT IN DAMAGE OR INJURY IN THE AREA.

The following materials will be needed for ceiling suspension:

- 2 / 0 chain minimum rated at 205 lbs. working load
- 18 lap links
- 6 – 3/8” diameter eye bolts with two nuts per bolt are supplied with the unit
- 6 – 3” adjustable turnbuckles with eye bolts are frequently used

NOTE

Blower end of cabinet must be a minimum of 1” higher than drain plug end to ensure proper drainage when collecting mist. An “S” drain trap is also required.

1. Remove the filter assemblies from the unit. This will reduce the weight to be lifted.
2. Drill 6 – 3/8” mounting holes, using the round indentations formed in the cabinet top panel for location. (Through cabinet panel only.)
3. Install the eye bolts using two nuts per bolt. The nuts should be tightened together to prevent vibration loosening.
4. Secure the chain to the ceiling by wrapping chains around beam or joist and securing with a lap link (total of 6 chains).
5. Fasten the turnbuckles to the eye bolts at each corner of the unit using lap links. Fasten the remaining lap links to the free end of the turnbuckles.
6. Screw the turnbuckles out to approximately 1/2 full extension.
7. Raise the unit up to chains and fasten lap links to chains. Adjust turnbuckles until unit is level. See not and diagram on page 4 for mounting when collecting mist.
8. Reinstall the pre-filter and primary filter assemblies.

For alternate installation methods, contact your local TRION distributor.

CAUTION

DO NOT TAKE CHANCES. IF YOU ARE UNSURE ABOUT THE PRECEDING METHOD OR ANY OTHER METHOD, STOP THE INSTALLATION UNTIL YOU ARE SATISFIED THAT THE METHOD OR PROCEDURE IS CORRECT.

Wiring

Model M6000 is equipped with an externally mounted junction box. See the enclosed wiring diagram of this manual for connection. Switches and motor starters are not supplied with the unit. All wiring must meet local National Electrical Codes.

Unit Operation

After all wiring has been completed, switch the unit on. Note the rotation of the blower wheel. If the rotation is backward, it must be changed to give the proper airflow.

Rotation can be changed on single-phase units by rewiring the internal motor hook-up. Three-phase rotation can be changed by switching any two legs of the input voltage.

Maintenance

Precision equipment such as your TRION Air Cleaner will require a minimum amount of maintenance to keep in good operating condition. You can do all normal preventative maintenance, or your local TRION distributor may offer a maintenance and cleaning contract at a nominal charge. Contact them for details.

CAUTION

ALWAYS DISCONNECT THE POWER SOURCE BEFORE WORKING ON OR NEAR THE MOTOR OR ITS WIRING ASSEMBLY. IF THE POWER DISCONNECT POINT IS OUT OF SIGHT, LOCK IT IN THE PROPER POSITION AND TAG TO PREVENT UNEXPECTED APPLICATION OF POWER.

The pre-filter and main filter are accessible through the access door allowing simple, fast replacement.

If your air cleaner is equipped with an Impinger, it will need periodic inspection. It can be removed and checked easily each time the pre-filter is replaced.

Filters are changed according to the pressure across the filter. Filter change gauges are available from TRION. A U-tube or slant gauge with a range of 0-3” water column can also be used to read filter pressure. Install pressure tap in “lo” side of the gauge.

Main Filter	Both Filters Clean	Change Pre-Filter	Rec. Final
95%	0.63	0.85	1.0
65%	0.51	0.85	1.0
Approximate Airflow Reduction			
		10%	20%

NOTE: These readings will vary slightly due to altitude and temperature.

Upon installation of the unit, note the initial pressure reading. Check daily and replace pre-filter at the reading shown in the Table. Pressure should return to near the initial pressure reading. When the pressure reading, with new pre-filter, shows little improvement (less than 0.1") allow unit to run until recommended final pressure is reached. At that point, both pre-filter and main filter should be replaced. Impinger models will have approximately 1.0" greater pressure initially than standard models.

Once a pattern has been established, the pre-filters can be replaced on a calendar basis with the main filter being replaced when the gauge reads as "Recommended Final" in the Table. For example, if the unit takes 6 weeks to go from 0.63 to 0.85, the pre-filter would then be replaced every 6 weeks until no change occurred in the pressure reading when the pre-filter is replaced. At that point, the unit would be allowed to run until 1.0 and both filters replaced.

NOTE

The unit can continue to run beyond the 1.0 pressure reading; however, airflow will be reduced further.

CAUTION

TO CHECK INTERNAL COMPONENTS, TURN UNIT POWER OFF.

HEPA Filter

A diminished airflow signals that the HEPA filter is dirty. It CANNOT be cleaned. See your local TRION distributor for all replacement filters.

Remove power to the unit. Open the door of the air cleaner. Observe the orientation of the filter and the airflow indicator. Remove the 6 screws securing the HEPA rail in place, remove the rail and then the HEPA filter.

NOTE: THE HEPA FILTER WEIGHS 35 LBS. WHEN CLEAN. EXERCISE CAUTION.

Install the replacement filter in the same configuration as the dirty one. Close the door and restore power to the unit; the airflow should return to normal.

Alumina/Charcoal Modules

The Alumina/Charcoal Modules need changing when unpleasant odors are again noticed in the room. Remove power to the unit. Open the door of the air cleaner. Remove the six screws securing the module rail in place. Remove the rail and then the module.

NOTE: THE ALUMINA/CHARCOAL MODULES WEIGH 25 LBS. EACH. EXERCISE CAUTION.

Place the module on the floor. Remove the cover plate. Empty the used alumina or charcoal from the module into a suitable waste dispenser. Refill with alumina/charcoal available from your local TRION distributor. Repeat procedure for the second module.

IMPORTANT: Shake module to pack media tightly, using an air nozzle, blow the dust from the modules before reinstallation to prevent charcoal dust from momentarily passing through the unit.

Replace the cover plate and reinstall modules in the unit in reverse order of removal. Close the door and restore power; the airflow should return to normal.

Cleaning & Inspection of Cabinet

After the dirty components have been removed, an inspection of the cabinet should be made. Remove all foreign debris and dirt accumulation inside the cabinet. Check for dirt accumulation on the blower wheel blades and clean if there is a buildup. Inspect all wiring for loose connections and cracked insulation.

Bearings on both blower and blower motor should be checked for sign of unusual wear.

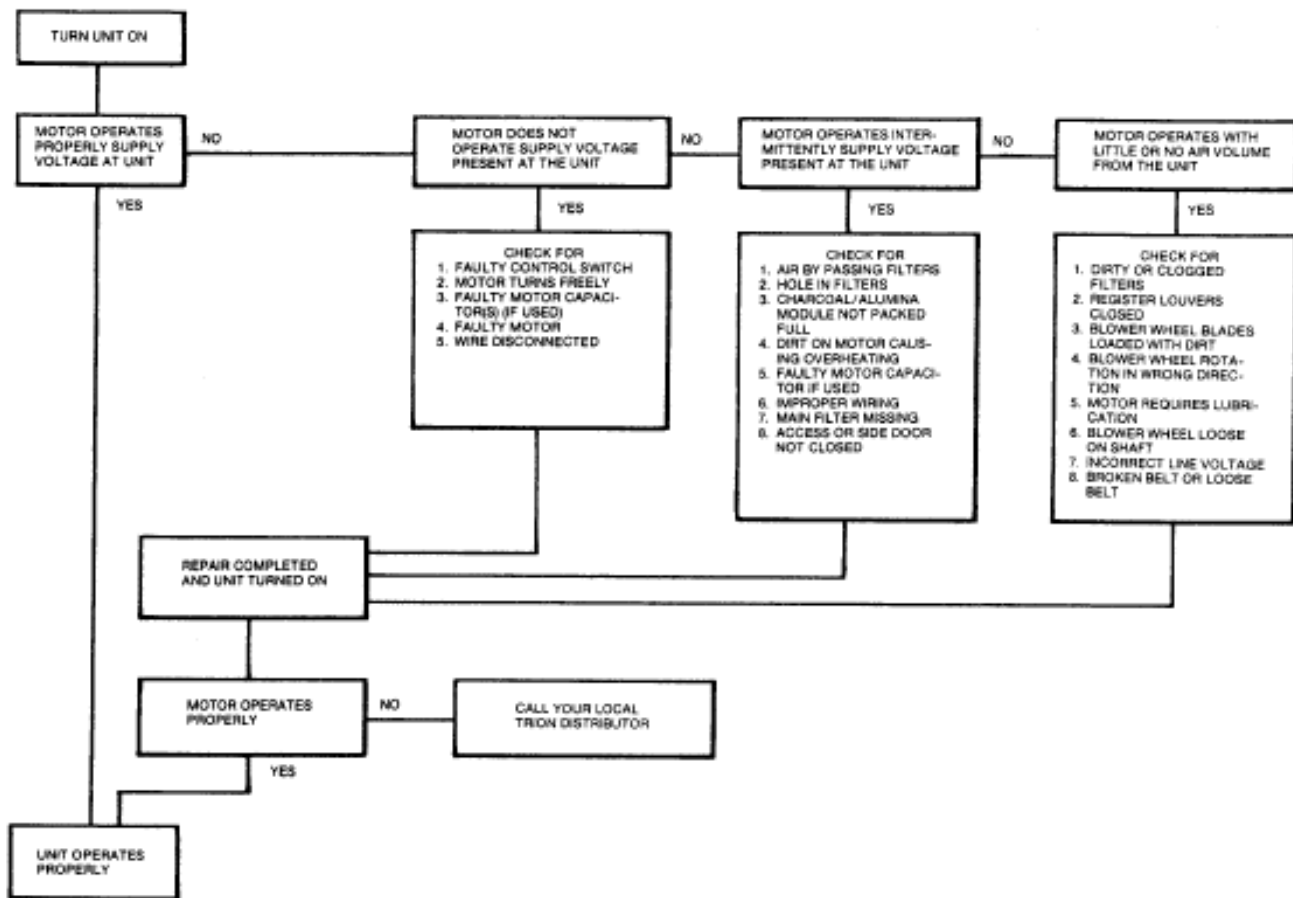
Models having motors with oil cups require periodic inspection. Use SAE-20 non-detergent motor oil every six months. Motors with ball bearings do not require lubrication. Rubber gasketing should be checked twice a year. Aging occurs primarily due to ozone present in ambient air and eventually hardens the rubber and causes cracking and loss of seal. Contact your local TRION distributor for replacement.

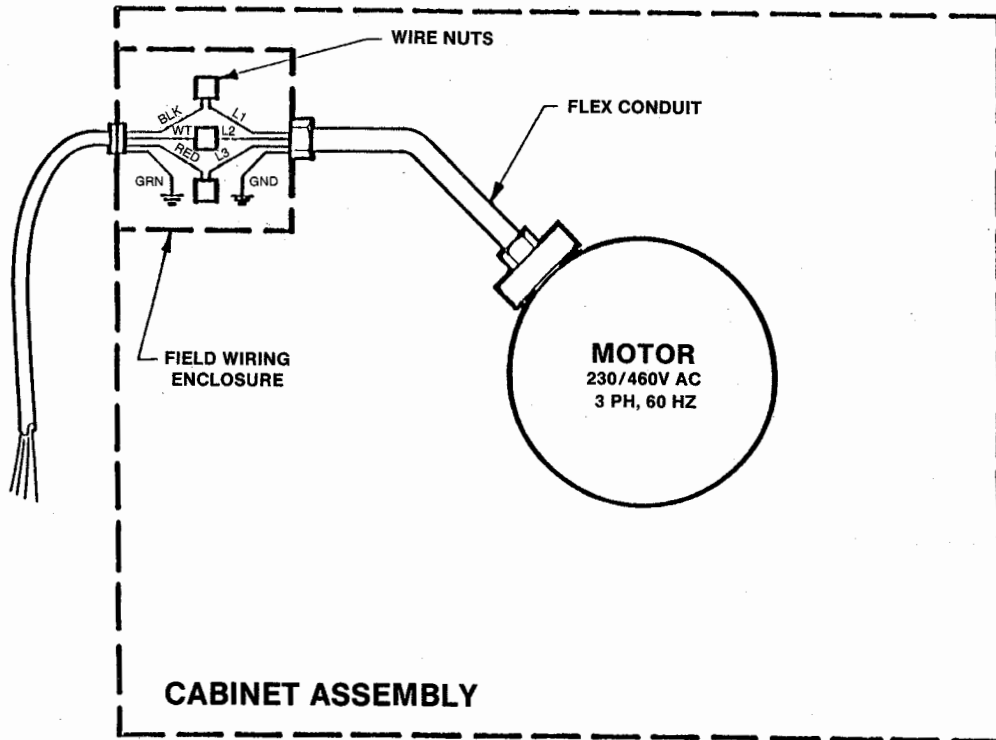
Troubleshooting

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" for replacement parts.

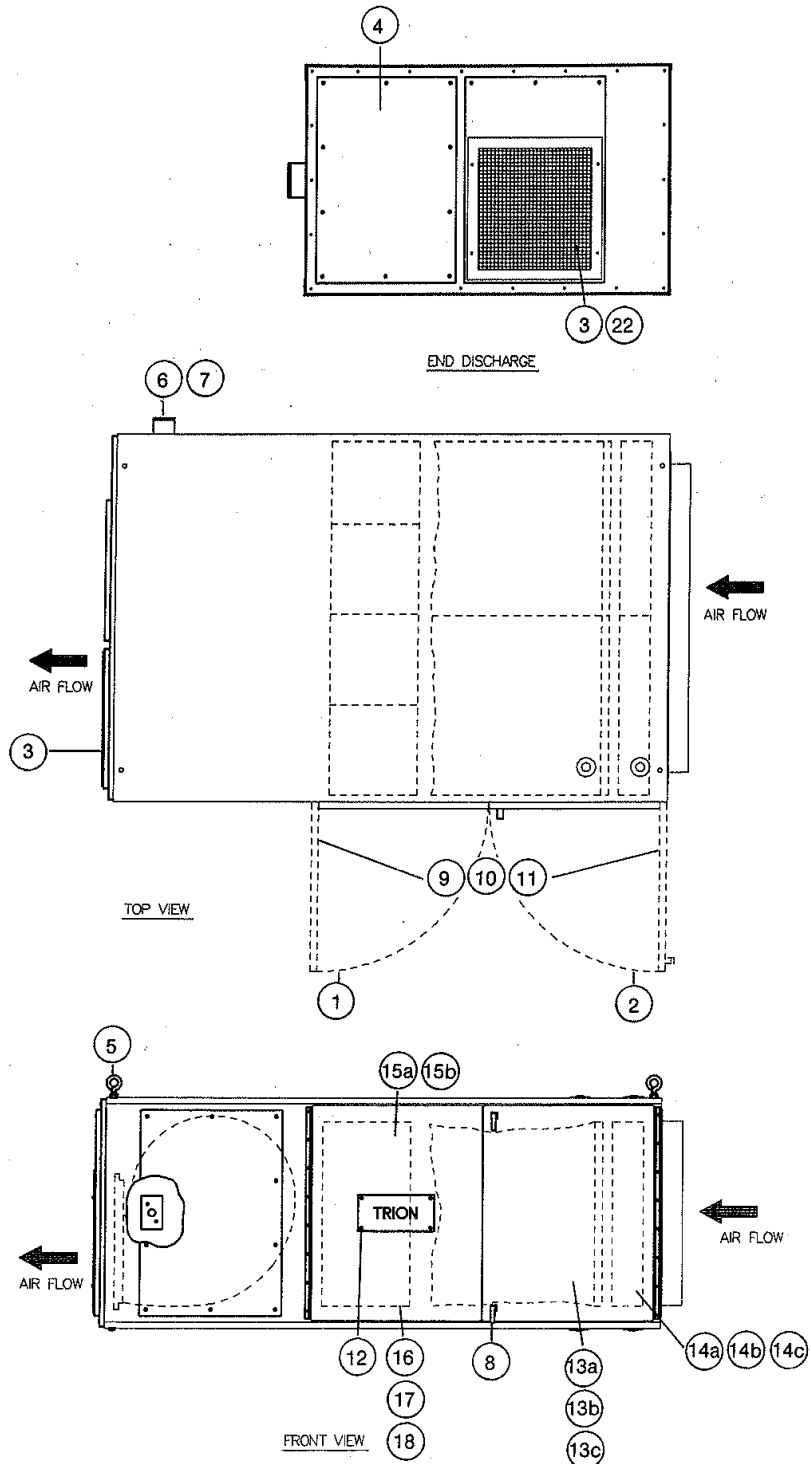
Before troubleshooting the unit, refer to the wiring diagram, check for proper wiring connections, and the input line voltage.





NOTES:

1. To reverse motor rotation, reverse any two (2) motor leads (L1, L2, L3).
2. Voltage may be changed by rewiring internal motor connections per manufacturer's instructions.



M6000 CABINET ASSEMBLY

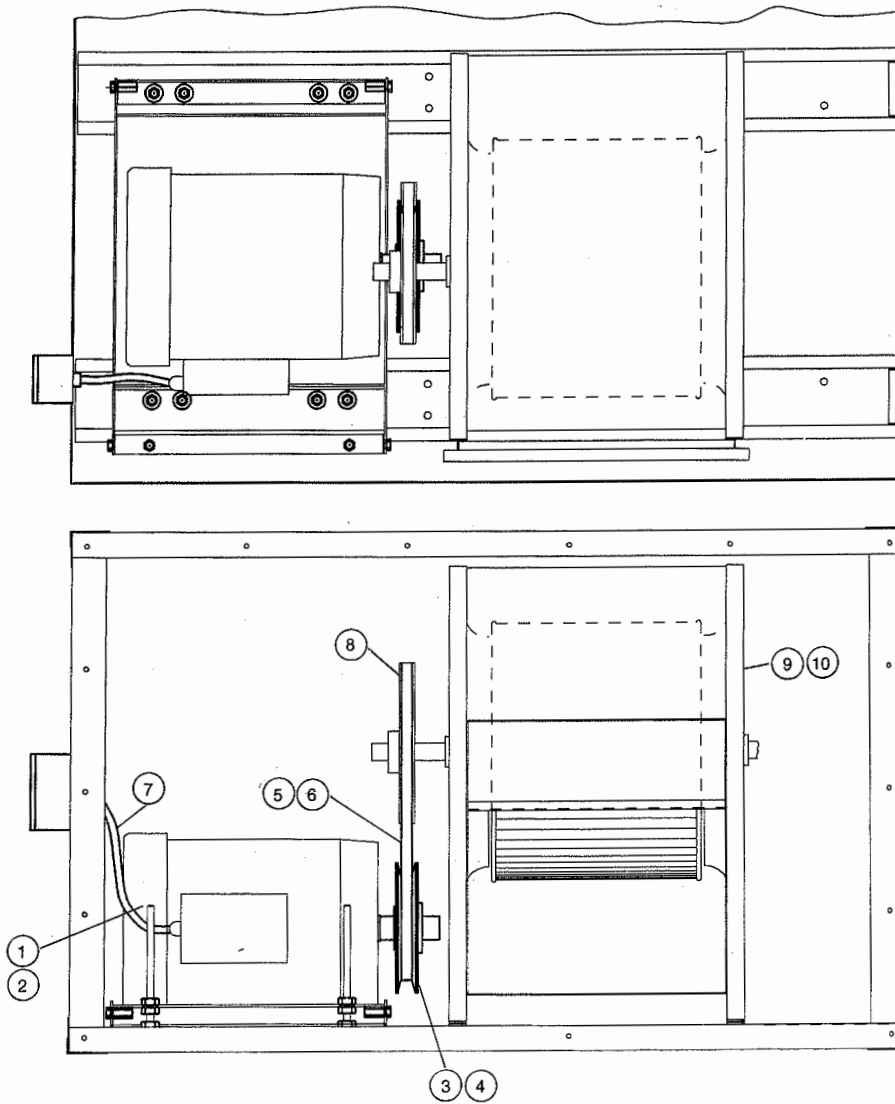
The following information will be required to ensure accuracy in supplying your repair parts.

- Unit Model Number, located on ID plate inside door
- Unit Serial Number, located on ID plate inside door
- Part Number & Description, located on Exploded Views and Bills of Material

Item	Part No.	Description	Qty. Req.
1	446602-001	Middle Door	1
2	446597-001	End Door	1
3	247284-001	Discharge Grille	1
4	447280-001	Cover Panel	1
5	222449-018	Eye Bolt (1/2)	4
6	60000-0008-01	Box, Electrical Connection	1
7	60000-0008-02	Cover, Electrical Box	1
8	334562-004	Latch, "Lift & Turn"	2
9	224779-011	Gasket - 3/4 x 3/16 (Door)	1 Ft.
10	224779-033	Gasket - 5/8 x 7/8 (Door)	15 Ft.
11	224779-020	Gasket - 5/8 x 5/8 (Door)	40 Ft.
12	236936-001	"TRION" Nameplate	1
13a	346615-002	Filter Bag, 65% (36"L)	2 Std.
13b	346615-001	Filter Bag, 95% (36"L)	2*
13c	346615-003	Filter Bag, Short 95% (22"L)	2*
14a	69000-0001-19	4" Pleated Pre-Filter	2 Std.
14b	322031-014	Aluminum Mesh Pre-Filter (2")	2*
14c	245390-012	Impinger	2*
15a	246787-002	HEPA Filter, 99.97%	2*
15b	21300-8000-0001	Adsorption Module (Note 1)	4*
16	447420-001	HEPA or Module Retainer Rail	2*
17	224779-018	Gasket - Use with Module or HEPA	7**
18	347421-001	Impinger on 1 7/8 Metal Mesh Retainer Rail	1*
19	137668-001	Pressure Gage Kit, Magnahelic (not shown)	1
20	750-8004-0001	Filter Charge Gauge, 0-3" (not shown)	1
21	347806-002	Plenum - Source Capture (20") (not shown)	1*
22	247384-001	Double Deflection Grille	1*
23	55900-0004-01	Activated Charcoal (25 lb. / module)	*
24	55900-0004-02	Activated Aluminum (40 lb. / module)	*

* Options

Note: Unit Capacity - Charcoal - 100 lbs. / Alumina - 160 lbs. / Mixture - 50 lbs. Charcoal & 80 lbs. Alumina

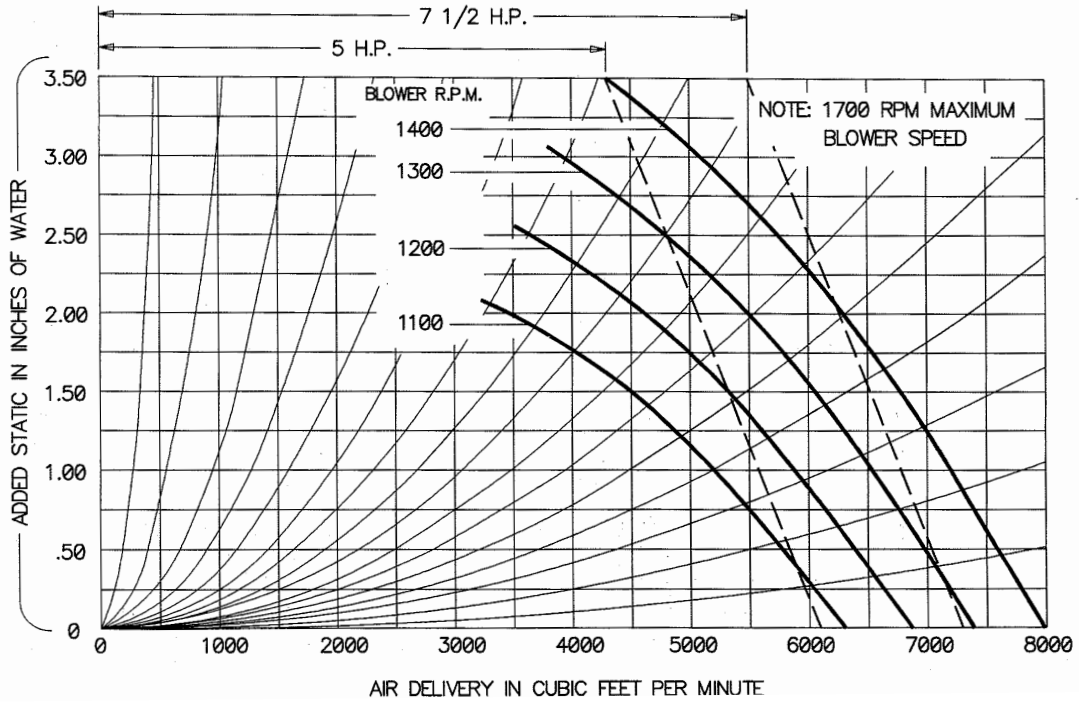


M6000 MOTOR/BLOWER ASSEMBLY

Item	Part No.	Description	Qty. Req.
1	345515-051	5 HP Motor 208-230/460	1
2	345515-057	7.5 HP Motor 208-230/460	1
3	125699-025	Variable Pitch Motor Sheave 5 HP	1
4	125699-022	Variable Pitch Motor Sheave 7.5 HP	1
5	323215-101	"V" Belt Grip Notch B x 38 End Discharge	1
6	323215-124	"V" Belt Grip Notch B x 71 Side Discharge	1
7	246259-001	Motor Cable (SJO)	1
8	124053-061	Blower Sheave	2
9	347281-011	Blower Assembly - 5 HP	1
10	347383-001	Blower Assembly - 7.5 HP	1

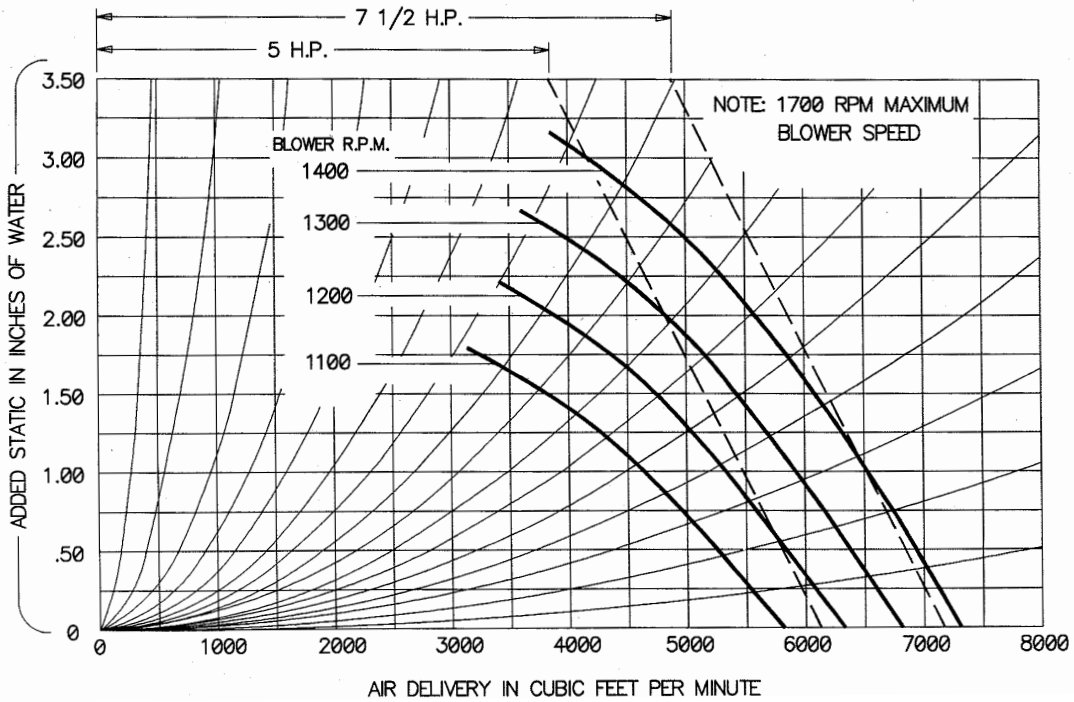
* WHEN CHANGING THE PITCH DIAMETER OF THE VARIABLE PITCH MOTOR SHEAVE, IT IS IMPORTANT TO MAINTAIN PRECISE BELT ALIGNMENT TO AVOID INTRODUCTION OF DRIVE RELATED VIBRATION.

M6000 MEDIA UNIT – FILTER COMBINATION
 4" PLEATED PREFILTER – MIN. 30% EFFICIENCY
 36" LONG BAG FILTER – 65% EFFICIENCY



* WHEN CHANGING THE PITCH DIAMETER OF THE VARIABLE PITCH MOTOR SHEAVE, IT IS IMPORTANT TO MAINTAIN PRECISE BELT ALIGNMENT TO AVOID INTRODUCTION OF DRIVE RELATED VIBRATION.

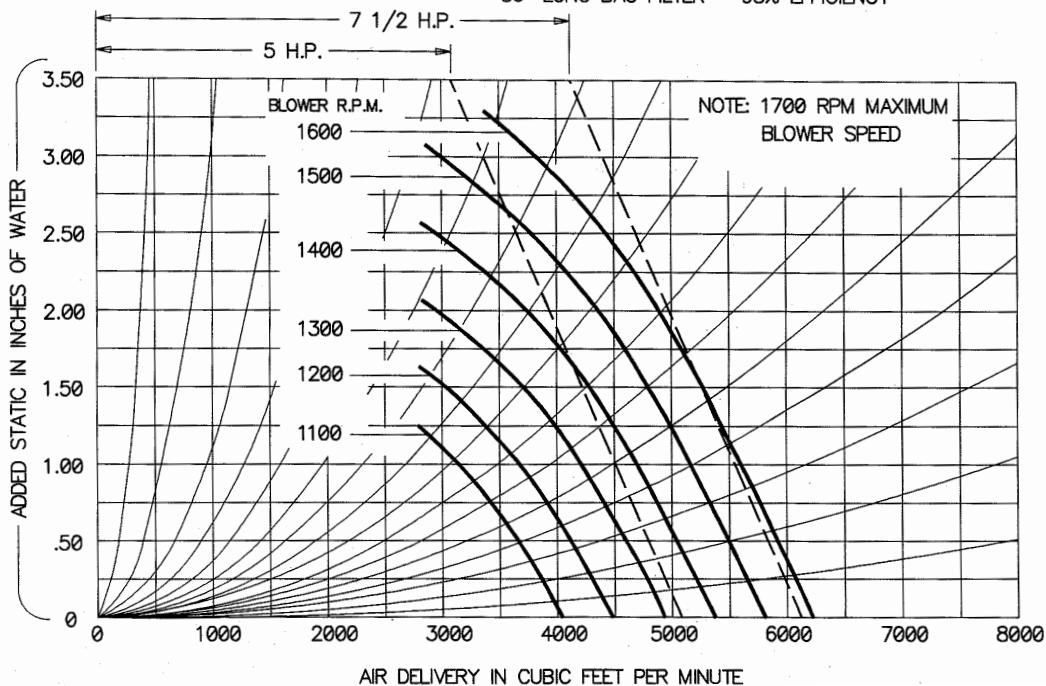
M6000 MEDIA UNIT – FILTER COMBINATION
 4" PLEATED PREFILTER – MIN. 30% EFFICIENCY
 36" LONG BAG FILTER – 95% EFFICIENCY



* WHEN CHANGING THE PITCH DIAMETER OF THE VARIABLE PITCH MOTOR SHEAVE, IT IS IMPORTANT TO MAINTAIN PRECISE BELT ALIGNMENT TO AVOID INTRODUCTION OF DRIVE RELATED VIBRATION.

M6000 MEDIA UNIT – FILTER COMBINATION

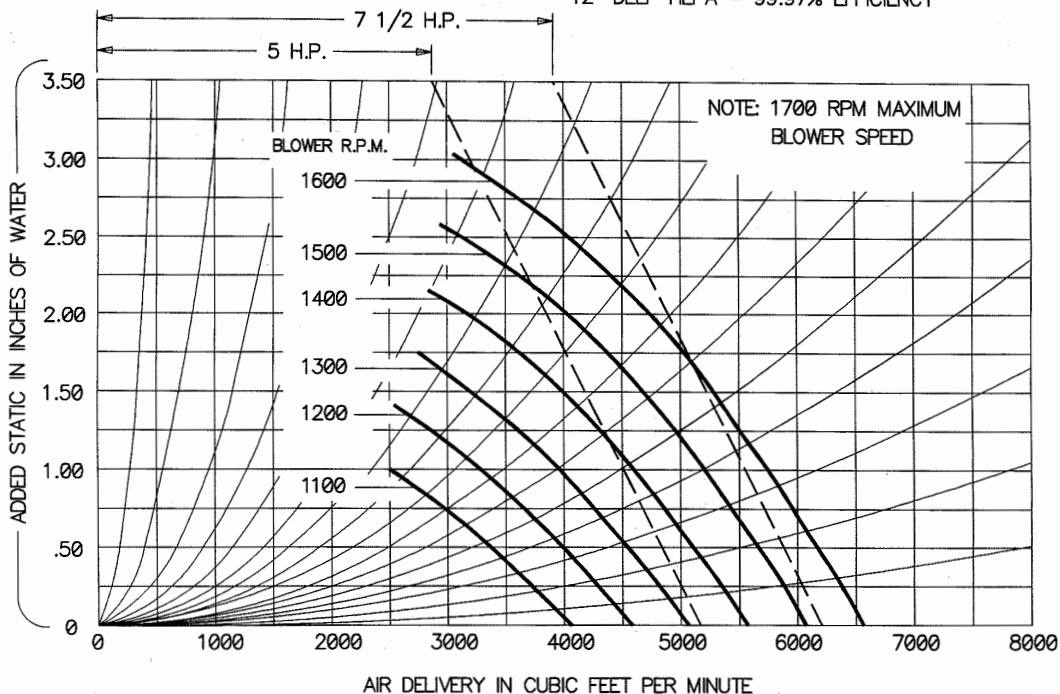
- 2" METAL IMPINGER
- 2" METAL MESH PREFILTER
- 36" LONG BAG FILTER – 95% EFFICIENCY



* WHEN CHANGING THE PITCH DIAMETER OF THE VARIABLE PITCH MOTOR SHEAVE, IT IS IMPORTANT TO MAINTAIN PRECISE BELT ALIGNMENT TO AVOID INTRODUCTION OF DRIVE RELATED VIBRATION.

M6000 MEDIA UNIT – FILTER COMBINATION

- 4" PLEATED PREFILTER – MIN. 30% EFFICIENCY
- 22" LONG BAG FILTER – 65% EFFICIENCY
- 12" DEEP HEPA – 99.97% EFFICIENCY



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