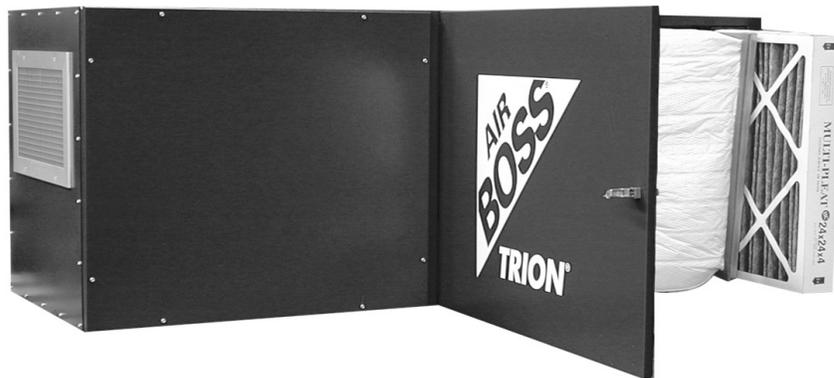


TRION®

Indoor Air Quality



READ AND SAVE THESE INSTRUCTIONS

Air Boss® Model M3000
Industrial Air Cleaner

Industrial Air Cleaner AIR BOSS® M3000

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Specifications

Air Handling Capacity	<ul style="list-style-type: none"> • M3000: See Blower Curves • M30: 2000 CFM
Power Requirements	<p>2 HP, 120/230V, 1 PH 23.6/11.8 Amps, 1610 Watts</p> <p>2 HP, 208-230/460V, 3 PH 5.8/2.9 Amps, 1334 Watts</p> <p>3 HP, 208-230/460V, 3 PH 9.1/4.6 Amps, 2093/2116 Watts</p>
Controls	Owner-supplied motor starter
Cabinet Dimensions	<ul style="list-style-type: none"> • M3000: 68" L x 25" W x 26.25" H • M30: 92" L x 25" W x 26.25" H
Weight	<ul style="list-style-type: none"> • M3000: 260 lbs. • M30: 452 lbs.
Filter Options	
Pre-Filter (Standard)	<ul style="list-style-type: none"> • Fiberglass pleated, 24" H x 24" W x 4" D • Aluminum mesh, 24" H x 24" W x 2" D
Pre-Filter (Optional)	<ul style="list-style-type: none"> • Impinger, 2" aluminum mesh • Extended surface wrap-around with 10 sq. ft. of 2" thick polyester media • 2" thick polyester pad in metal frame
Main Filter	<ul style="list-style-type: none"> • 65% efficiency filter bag • 95% efficiency filter bag • Texwood bag: Polyester single-pocket with fiberglass liner (cleanable) • 65%, 75%, 85%, 95%, and 98% extended surface mini-pleat filter

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

In addition, the TRION M30 also consists of:

1. Dual arm plenum
2. Pick-up arm assemblies (2 required)

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.

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.

Preparation & Installation

CAUTION

THE MAXIMUM WEIGHT OF THE MODEL M3000/M30 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 are guidelines for installation, however, alternate methods may be equally adequate.

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.

Plenum & Arm Assembly Mountings

If you have purchased a Model M30 with plenum assembly uninstalled, the Mounting instructions are as follows:

1. Remove the two (2) end plates from the plenum assembly by loosening the four (4) screws that secure them.
2. Removed the plastic bag on the inside of the plenum containing gasket and screws.
3. Affix gasket to the flange on the intake end of the air cleaner.
4. Using the sixteen (16) #10 x 1/2" sheet metal screws, secure the plenum assembly to the intake of the air cleaner. The expanded metal diffuse may be removed to facilitate plenum mounting. If so, reinstall before unit operation.
5. Remove the two (2) support rails and the rail mounting hardware from the pick-up arm assembly carton.
6. Punch out the 5/16" diameter knockouts on the top of the unit and the plenum assembly.
7. Mount the support rails to the unit and the plenum assembly using the mounting hardware provided. The six (6) 2 1/2" long bolts will be required to secure the rails to the unit, while the four (4) 1 1/2" long bolts will be used to secure them to the plenum. Each screw will require one each of the flat washers, lock-washers, and hex nuts.
8. Remove the arm assemblies and mounting hardware from the carton.
9. Secure the arm assemblies to the bottom of the plenum using the pre-drilled holes and eight (8) 1/4"-20 bolts, nuts and washers furnished. Each bolt will require one each of the flat washers and lock washers.
10. Reinstall the two (2) end panels to the plenum using the forty (40) #8 x 1/2" screws.

Mounting of Wraparound Pre-Filter Assembly

Secure the wraparound plenum to the intake of the Model M3000 using the mounting hardware supplied.

Mounting of Source Capture Plenum

1. Remove bag containing mounting hardware (screws) from inside of plenum.
2. Adhere supplied gaskets to inside of flange on plenum.
3. Align the pre-drilled holes on the plenum flange to the pre-drilled holes on the intake flange of the unit and secure with the self drilling screws provided.

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

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

1. Remove the filter assemblies from the unit. This will

CAUTION

NO LESS THAN FOUR CHAINS MAY BE USED TO SUSPEND UNIT FROM CEILING. WHEN POSSIBLE, CHAINS SHOULD NOT ANGLE FROM CEILING TO UNIT MORE THAN 15 DEGREES.

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.

2. 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

Models M3000 and M30 are 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.

NOTE

The alumina/charcoal modules weight 25 lbs. each. Exercise caution.

Place the empty 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.

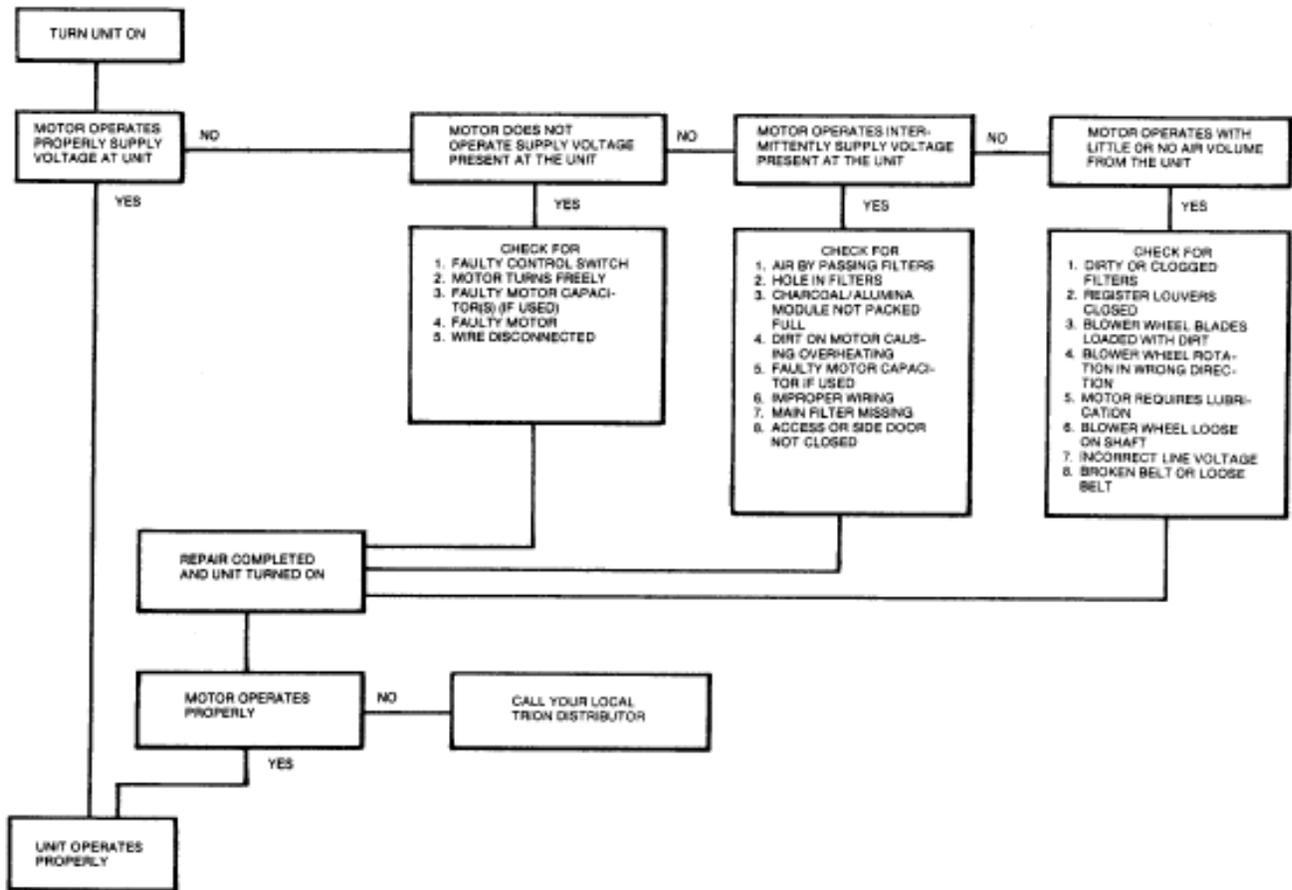
Models having motors with oil cups require periodic inspection. Use SAE-20 non-detergent motor oil every six months. Motors with ball bearings do not require lubrication. Rubber gasketing should be checked twice a year. Aging occurs primarily due to ozone present in ambient air and eventually hardens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

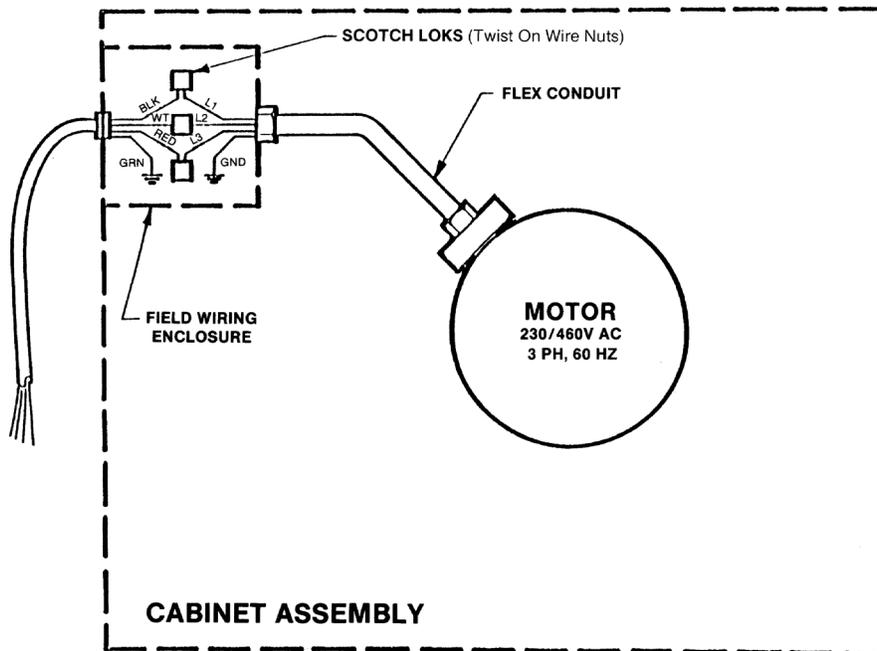
Troubleshooting

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.

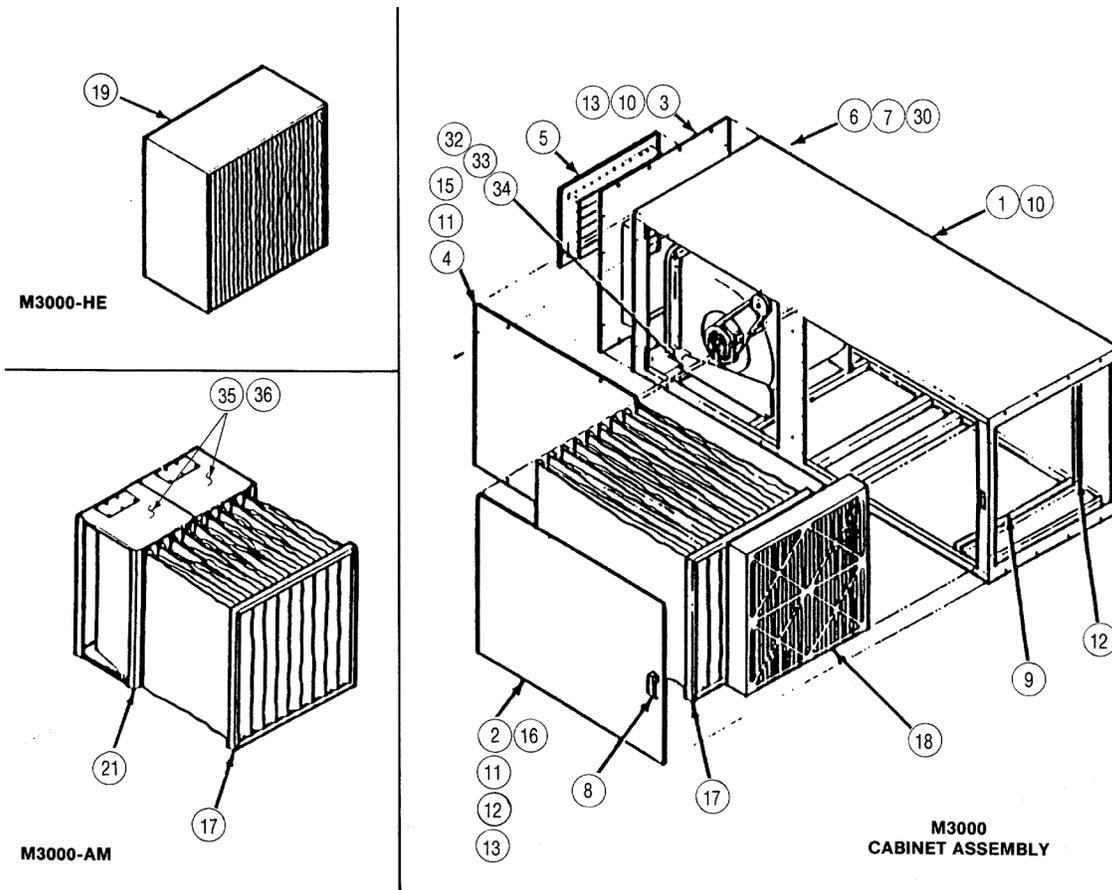
Before troubleshooting the unit, refer to the wiring diagram, check for proper wiring connections, and the input line voltage.





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.

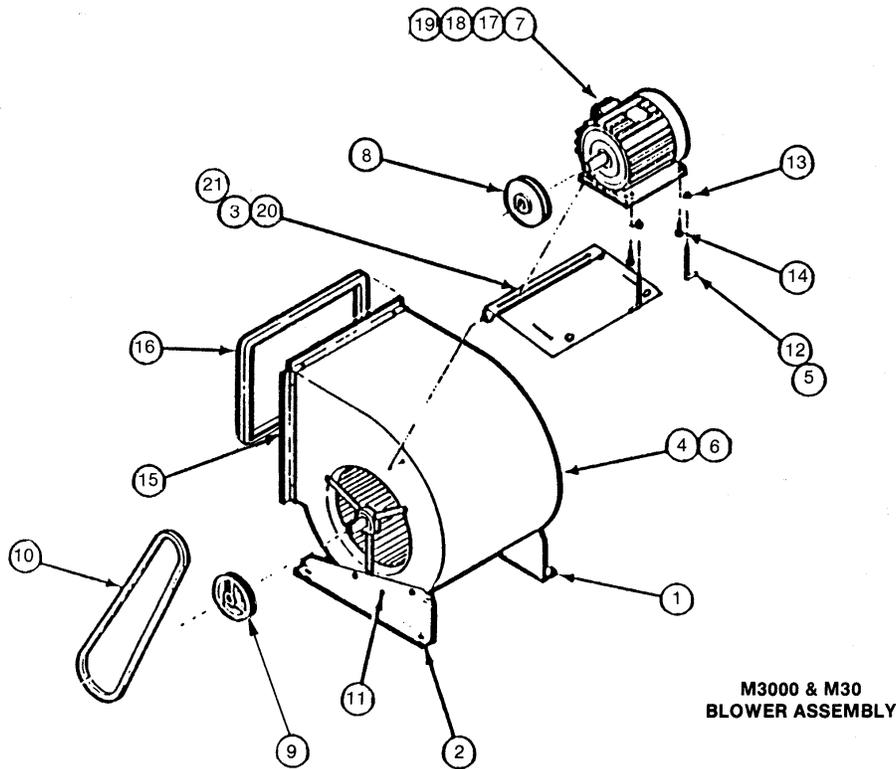


Item	Qty.	Part No.	Description
1	1	447575-001	Cabinet Assembly, Welded
2	1	347595-001	Access Door
3	1	347590-001	Blower Panel
4	1	347594-001	Panel, Front
5	1	247606-001	Outlet Grill or Register
5a	1*	247607-001	Double Deflection Discharge Grill
6	1	60000-0008-01	Box, Electrical Connection
7	1	60000-0008-02	Cover, Electrical Box
8	1	334562-003	Latch, "Lift & Turn"
9	2'	224779-021	Gasket - 3/4 x 3/4
10	8'	224779-026	Gasket - 1/2 x 1/16
11	20'	224779-020	Gasket - 5/8 x 5/8
12	12'	224779-039	Gasket - 5/8 x 3/4
13	18	222005-017	Screw
15	8	222005-020	Screw
16	1	236936-001	"TRION" Nameplate
17a	Std.	3000-3000-6031	Filter Bag, 65%
17b	1*	3000-0000-9031	Filter Bag, 95%
17c	1*	3000-3002-0001	Texwood Bag
17d	1*	3000-3000-9020	Filter Bag, Short 95%
17e	1*	346618-001	Extended Surface Mini-Pleat Filter 65%
17f	1*	346618-004	Extended Surface Mini-Pleat Filter 95%
18a	Std.	69000-0001-19	4" Pleated Pre-Filter
18b	1*	224451-016	Aluminum Mesh Pre-Filter
18c	1*	1500-8000-00	2" Poly, Pre-Filter in Frame
19a	1*	69000-0001-69	HEPA Filter, 99.97%
19b	1*	69000-0001-89	HEPA Filter, 95%
20	2*		Adsorption Module, Charcoal (Note 1)
21	2*	21300-8000-0001	Adsorption Module, Charcoal (Note 1)
22	7*	224779-018	Gasket - Use with Module or HEPA
23	2*	247795-001	Impinger Rail
24	1*	3000-8003-00	Impinger
25	1*	137356-001	2" Poly, Wraparound (Replacement)
26	1*	137668-001	Pressure Gage Kit, Magnahelic
27	1*	3000-8001-0001	Plenum - Wraparound Pre-Filer
28	1*	3000-8000-00	Plenum - Source Capture
30	1	121711-002	Connector - Straight
32	4	221235-307	Screw, 1/4 x 20 x 3/4 Long
33	4	120031-011	Washer, Flat
34	4	62000-0011-02	Grommet
35	*	55900-0004-01	Activated Charcoal (25 lb. / module)
36		55900-0004-02	Activated Aluminum (40 lb. / module)

*** Options**

Note: Unit Capacity - Charcoal - 50 lbs. / Alumina - 80 lbs. / Mixture - 25 lbs. Charcoal & 40 lbs. Alumina

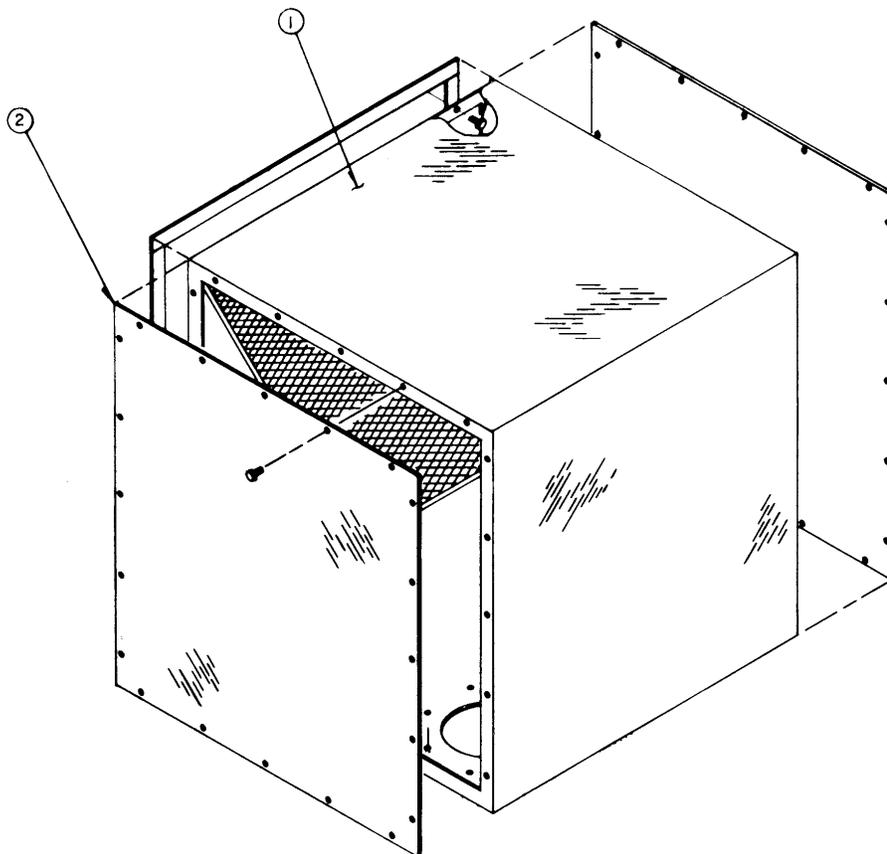
Note: Item 18a may be replaced with 23 & 24, 23 & 18B, 23 & 18c



Item	Qty.	Part No.	Description	Item	Qty.	Part No.	Description
1	1	347589-002	Blower Leg, Left	9c	1*(A)	124053-016	Pulley, Blower (3 HP, 9.5)
2	1	347589-001	Blower Leg, Right	10a	1	220926-032	Belt, 2 HP, 4L450
3	1	233137-015	Blower Rod	10b	1*	220926-033	Belt, 3 HP, 4L460
4	2	1-2700-9023-00	Bracket, J-Bolt	10c	1*(A)	234887-001	Belt, 3 HP, A50
5	2	2700-1200-04	Insulator	11	6	137343-402	Screw, H.W.H. 1/4-20 x 1/2 Long
6	1	62000-0012-22	Blower & Wheel	12	2	90000-0022-01	J-Bolt
7a	Std.	124885-008	Motor, 2 HP, 208-230/460V, 3 PH	13	8	90000-0003-01	Nut/Washer
7b	*	124885-010	Motor, 3 HP, 208-230/460V, 3 PH	14	4	137437-017	Bolt, Carriage 5/16-18 x 1 Long
7c	*(A)	241094-001	Motor, 3 HP, 208-230/460V, 3 PH	15	10	222005-017	Screw, Self Tap
7d	1*	142016-001	Motor, 3 HP, 575V, 3 PH, 3450 RPM	16	5'	224779-020	Gasket, 5/8 x 5/8
7e	1*	134559-018	Motor, 3 HP, 575V, 3 PH, 1750 RPM	17	1	121711-002	Connector, 90 Degrees
7f	1*	124885-011	Motor, 2 HP, 575V, 3 PH, 1750 RPM	18	30"	121707-002	Conduit
8a	1*(A)	125699-007	Variable Pitch Sheave (3 HP, 1-1/8 Bore)	19	2	92090-1000-10	Reducing Washer
8b	1	125699-006	Variable Pitch Sheave (2 HP, 7/8 Bore)	20	2	123149-001	Elastic Stop Nut
8c	1	125699-005	Variable Pitch Sheave (2 HP, 5/8 Bore)	21	1	347604-001	Motor Mounting Bracket
9a	1*	124053-035	Pulley, Blower (3 HP, 4.7)	22	1	62000-0003-03	Bearing (Not Shown)
9b	1	124053-040	Pulley, Blower (Except 3 HP, 5.2)				

* Options

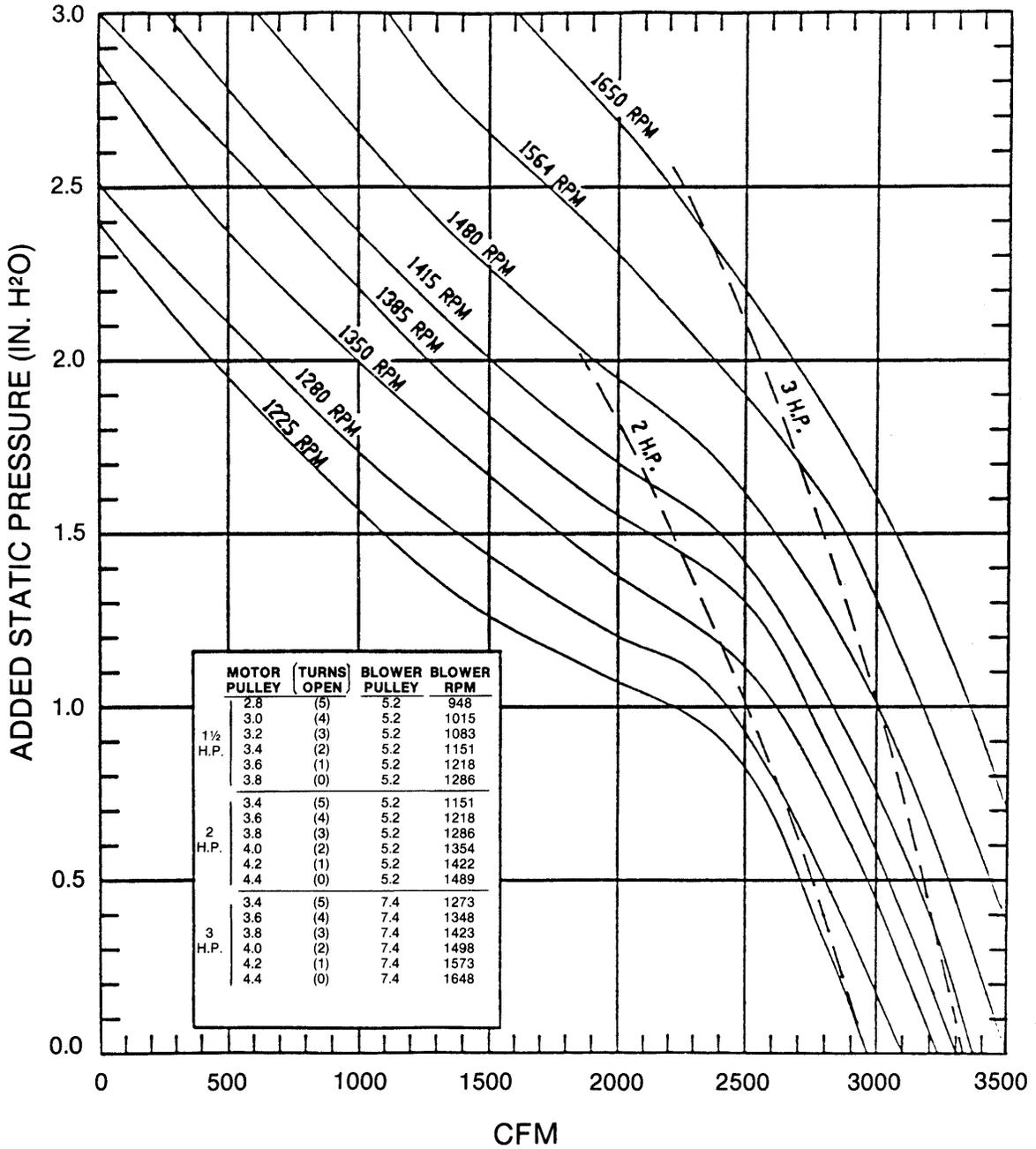
(A) Side-Discharge Unit



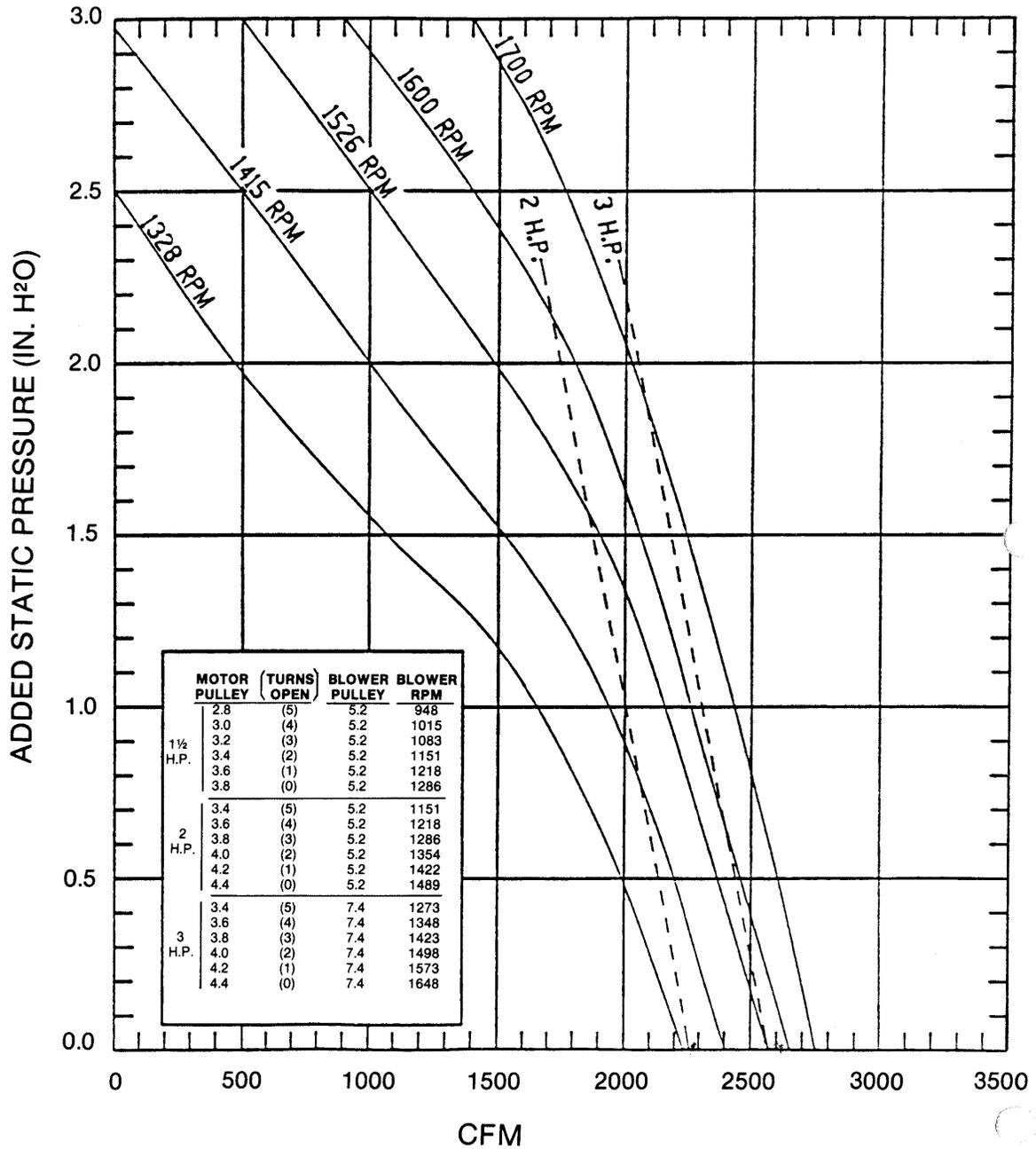
Item	Qty.	Part No.	Description
1	1	3000-9056-00	Plenum, Welded
2	2	237484-001	Side Panel

For details of arm, see Manual 145498-001.

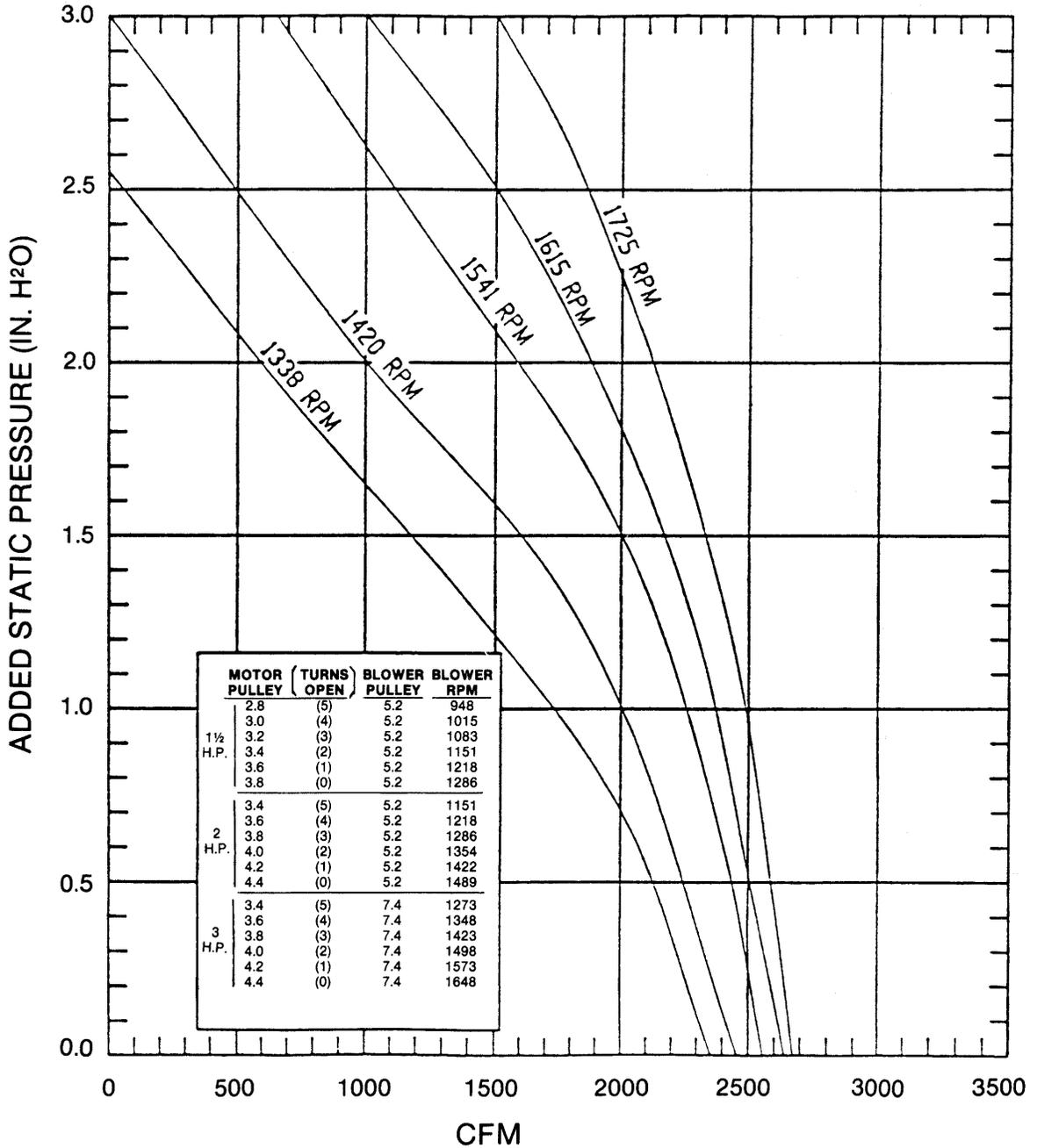
M3000
Pre-Filter: 4" Pleated
Primary Filter: 65% Bag



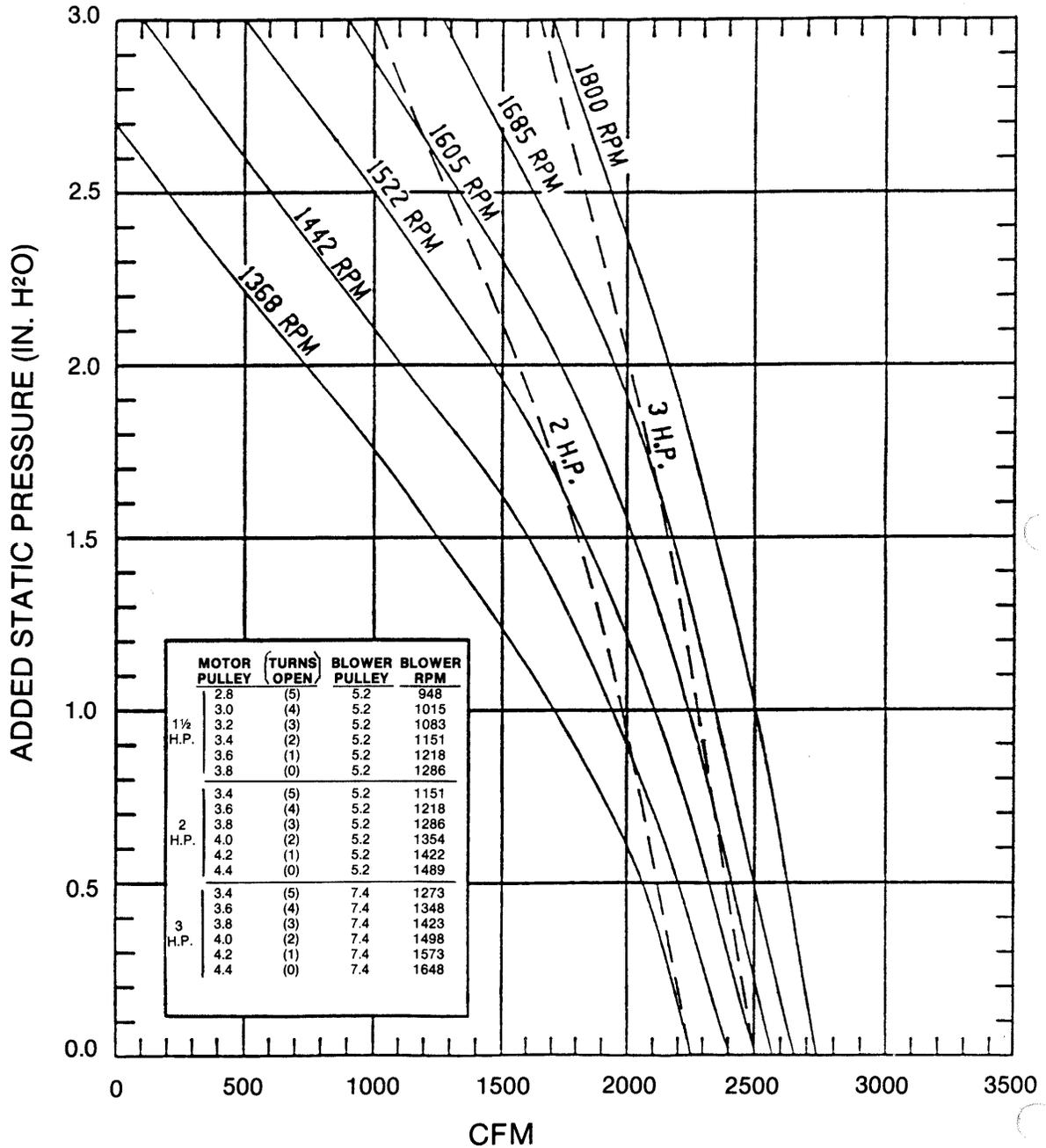
M3000
 Pre-Filter: 4" Pleated
 Primary Filter: 95% Bag



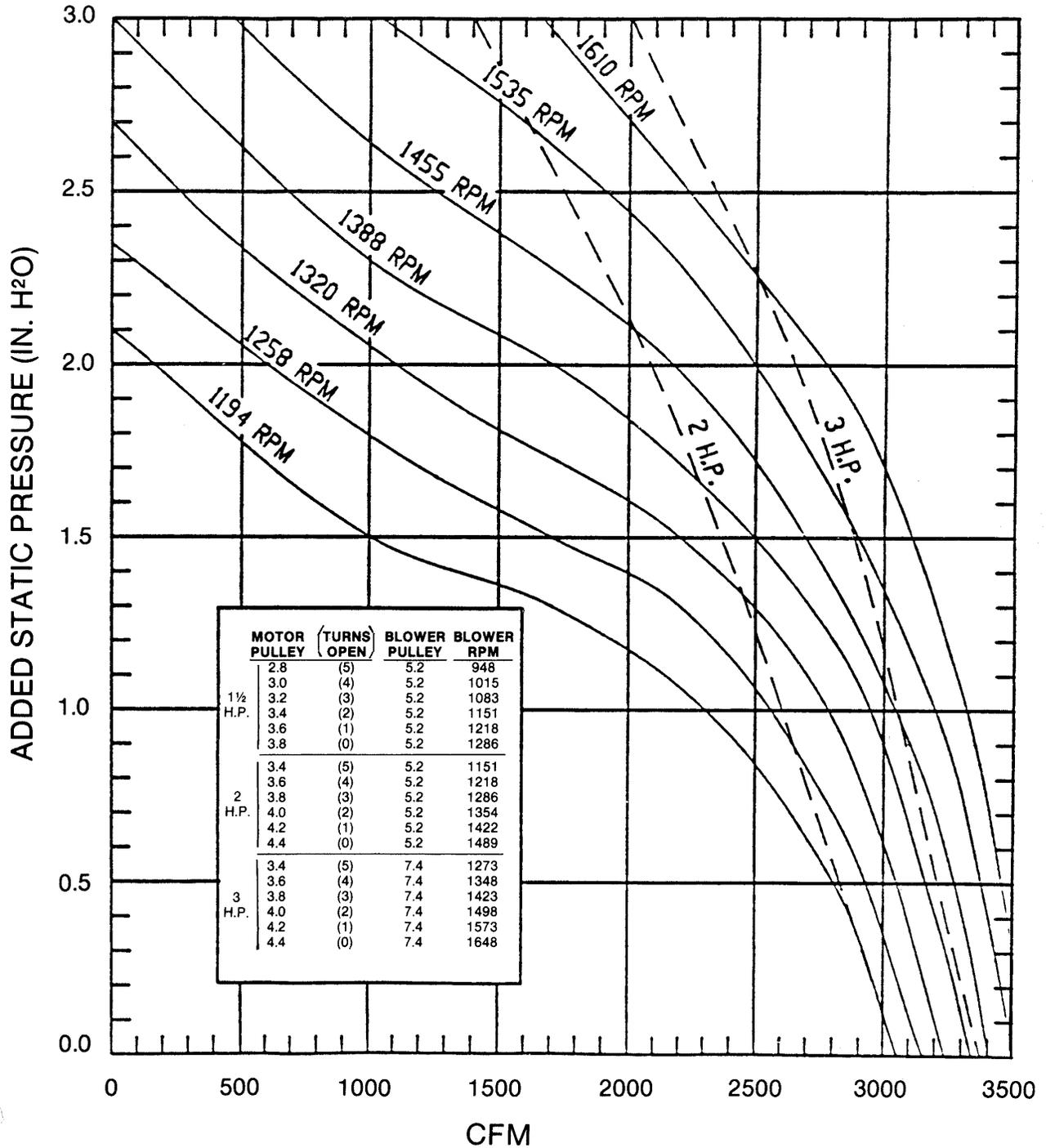
M3000
Pre-Filter: 2" Aluminum
Primary Filter: 95% Bag



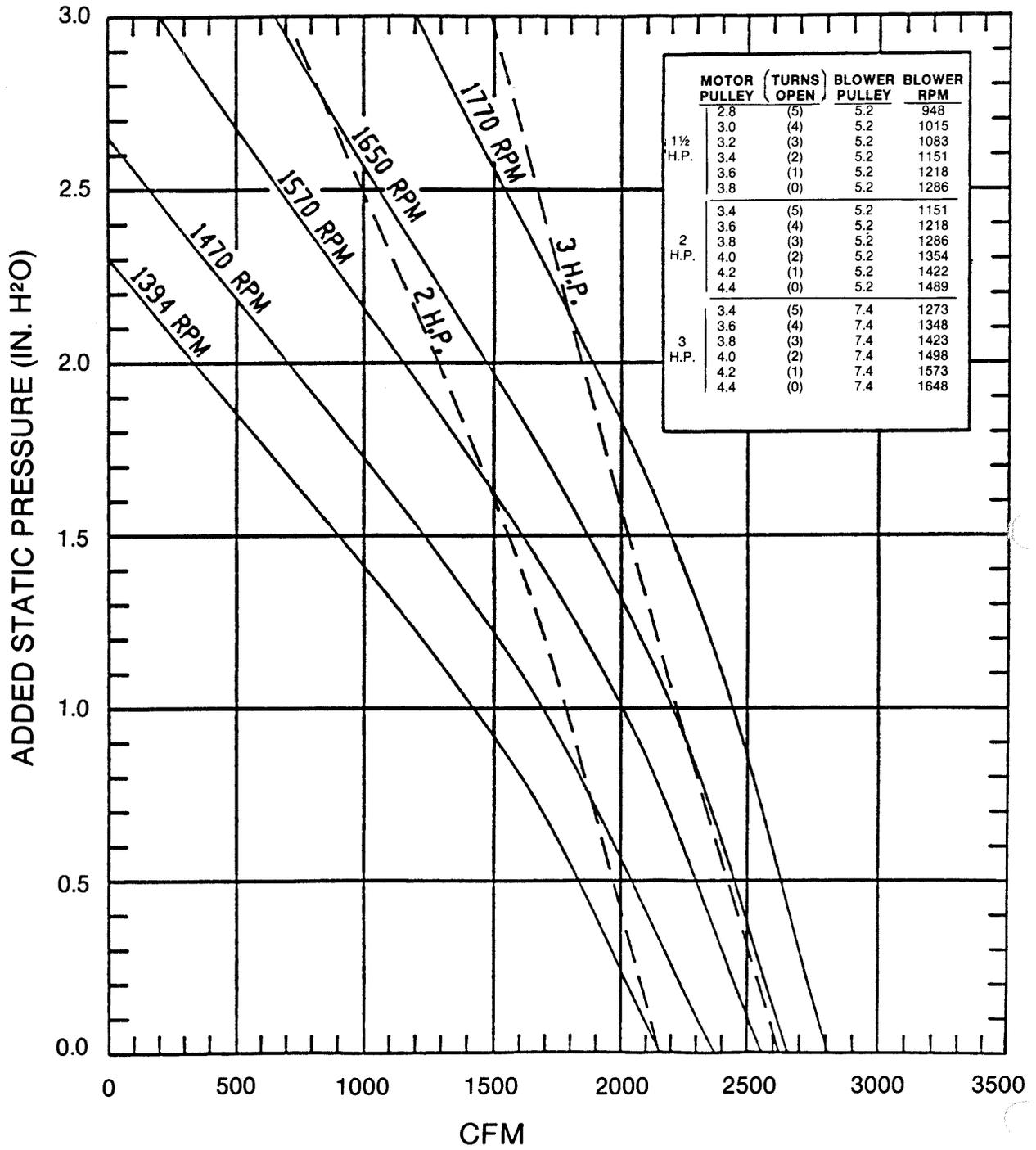
M3000
 Pre-Filter: 2" Poly
 Primary Filter: 95% Bag



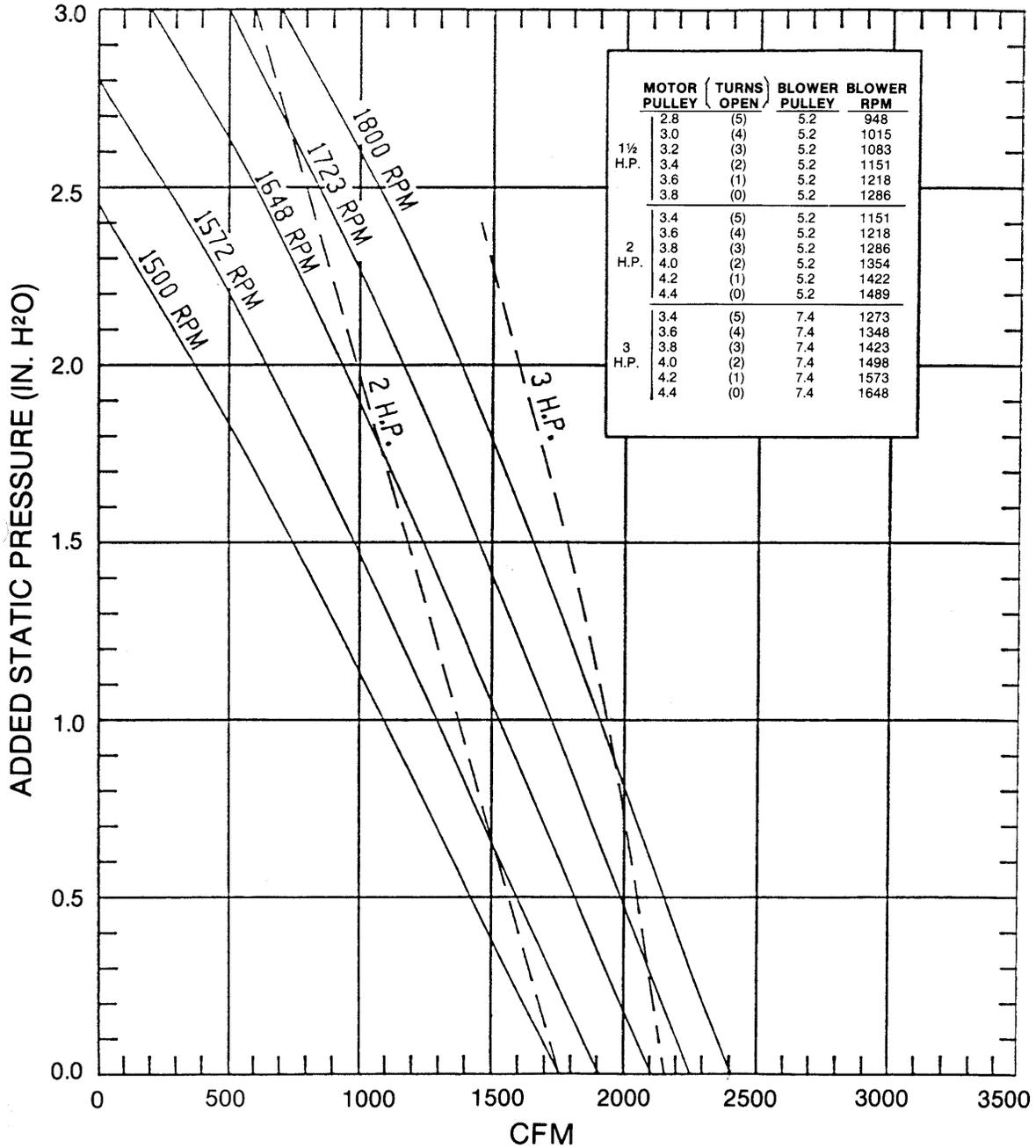
M3000
 Pre-Filter: 4" Pleated
 Primary Filter: Texwood



M3000
 Pre-Filter: 4" Pleated
 Primary Filter: 95% Short Bag/95% HEPA



M3000
Pre-Filter: 4" Pleated
Primary Filter: 95% Short Bag/99.96% Pleated



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