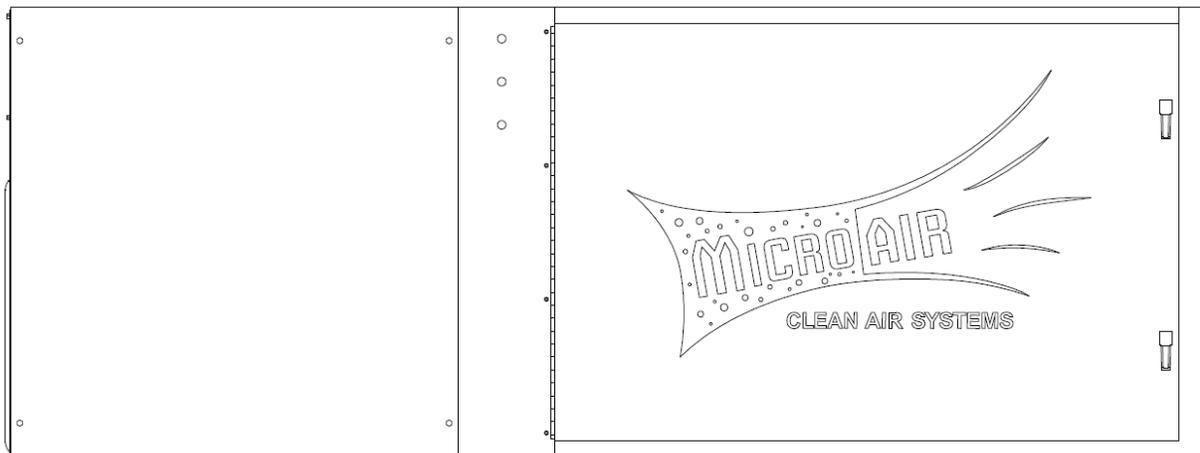




MX3510

Installation and Operation Manual



This manual contains specific cautionary statements relative to worker safety. Read this manual thoroughly and follow as directed. It is impossible to list all of the hazards of dust control equipment. It is important that use of the equipment be discussed with a Micro-Air Representative. Persons involved with the equipment or systems should be instructed how to operate in a safe manner.

WARNINGS:

CAUTION: Installation can cause exposure to live components. Disconnect electrical power before proceeding with installation. Proper Lock Out / Tag Out procedures should be used.



All electrical work must be done by a qualified electrician according to local, state and national codes.



Improper installation or operation of this equipment can cause damage to equipment and / or injury to personnel. The installation / operation manual must be read and followed in its entirety.

MX3510 SPECIFICATIONS:

Motor:	1-1/2 HP, 1725 RPM, 1 Phase, TEFC 3 HP, 1760 RPM, 3 Phase, TEFC
Input Voltage:	1-Phase - 120V, 60 Hz 3-Phase - 230/460V, 60 Hz
Max Current:	1-Phase - 16 Amps 3-Phase - 8.4/4.2 Amps
Blower:	12-9 Belt Driven
Dimensions:	26"H x 26"W x 69"L
Shipping Weight:	300 lbs.
Actual Weight:	268 lbs.* *Add 35 lbs. per charcoal module when selected.

PACKAGE CONTENTS:

1 Ea.	MX3510 Unit
1 Ea.	Owner's Manual
4 Ea.	5/16-18 Eye Bolt
4 Ea.	5/16-18 Hex Nut

EQUIPMENT / TOOLS REQUIRED:

- Forklift or Hoist
- Lifting straps or chains
- Socket wrenches
- Wire nuts

PRE-OPERATING INSTRUCTIONS:

1. Inspect the unit for any visible damage that may have occurred during shipment. Report any damage to the delivery carrier.
2. Remove the shipping crate, shipping straps and plastic wrap from unit. Discard skid and hardware.
3. Determine the location where the unit is to be installed. Be sure to allow sufficient access to the unit for servicing and maintenance on all sides.

HANGING INSTRUCTIONS:

1. Remove the hanger kit from the owner's manual envelope which contains four (4) threaded eyebolts and hex nuts.
2. Thread a nut onto each eyebolt and thread an eyebolt into each of the four (4) threaded holes in the cabinet. Tighten nuts against the cabinet. The unit is now ready to be hung in an appropriate location.

NOTE: If hanging MX 3510 upside down is required, remove the four (4) 5/16" hex bolts from the bottom of cabinet and relocate to top four corners. Then place the four (4) eye bolts into bottom panel of cabinet.

3. Once eye bolts are secured, the MX 3510 is ready to be hung in an appropriate location. (See FIG. 1)



CAUTION: Use strong braided wire or chain to support the air cleaner. Hang from structural supports.

NOTE: If a unit is to be installed on brackets against a wall, use brackets strong enough to hold the unit. Install brackets securely onto the wall.

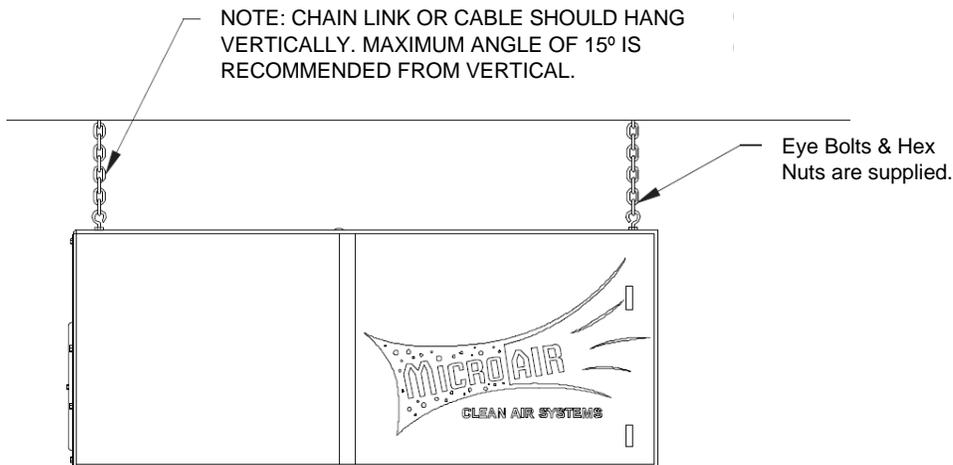


FIG. 1

ELECTRICAL CONNECTIONS:

All electrical work must be done by a qualified electrician according to local, state and national codes. Be sure that the designated circuit breaker is off until all wiring has been completed.

NOTE: It is recommended that a properly sized motor starter and overload protector be used in the supply circuit of the 3 Phase motor. The 120V units have thermally protected motors with on/off switches.

1. Make electrical connections as shown in the wiring diagram to the wires protruding from the conduit on the side of the unit.
2. Check blower for proper rotation direction. Blower should rotate clockwise when viewed from the pulley end. If the blower rotates backwards, interchange two of the motor supply connections.
3. Check current draw of the motor. Do not exceed Amps specified.

PRE-OPERATING CHECKLIST:

- Check blower drive belt for proper tension. Belt should deflect $\frac{3}{4}$ " when firm pressure is applied midway between the pulleys.
- Check that motor, blower and drive pulleys are mounted securely.
- Make sure that both corners of every pocket in the filter bag is supported by the filter support rods and that filter support rods are fully engaged in their support brackets.
- Air flow direction arrows on the pre-filters must point toward the blower.
- Make sure all access panels removed during the installation are re-installed and the filter access door is closed.

GENERAL MAINTENANCE:

- Occasionally check the condition of the drive belt for tightness and wear.
- Check the blower bearings for unusual wear and the blower wheel for debris and dirt. Clean when necessary.
- Check the wiring for loose connections or for cracked insulation.
- No lubrication is required for the motor because it is a permanent pre-lube design. Excessive dirt/oil should be periodically removed.

PRESSURE SWITCH ADJUSTMENT:

1. The pressure switch which turns the light on with a differential pressure increase, should be wired to poles L1 (red) and L2 (blue) at the time of installation with 230/460 volt source (See Wiring Diagram).
2. The pressure switch is preset at the factory to indicate (light on) dirty filters, but may need readjustment due to a desire for earlier or later filter changes, a different combination of filters, or because the set point shifted during shipping. The pressure switch is also orientation sensitive. To re-adjust the switch, remove the hole plug in the side of the unit for access to the adjustment screw. Make sure filters and pre-filters are installed in unit. Turn the unit on and place a piece of cardboard over the intake covering about 80% to 85% of the intake area. With a standard

screwdriver, turn the adjustment screw clockwise until the light goes off, or counterclockwise until the light comes on.

3. For more time between filter changes (less air flow), cover slightly more of the opening, and for less time between filter changes (more air flow), cover less of the opening.

AIR FLOW ADJUSTMENT:

Depending on the configuration, the MX3510 will be equipped with a variable diameter pulley on the motor to allow the air flow to be adjusted to the installation requirements. The pulley is set for maximum air flow from the factory. The air flow rate can be adjusted as follows:

1. Remove motor compartment access cover. Be careful to avoid tearing gasket material between door and cabinet.
2. Remove belt.
3. Loosen pulley adjustment set screw on motor pulley and screw adjustable sheave out away from fixed sheave. Tighten set screw onto flat of fixed screw (FIG. 1).
4. Adjusting the motor pulley may require a size larger or smaller belt, depending on the application.
5. Replace belt and check belt tension. Proper tension should be between 1/2" and 3/4" deflection when belt is squeezed with normal pressure between fingers.
6. Replace motor compartment access cover.
7. Recheck for correct draw of motor amperage. NOTE: All filters and panels must be installed on unit and door must be closed for current measurements of motor.

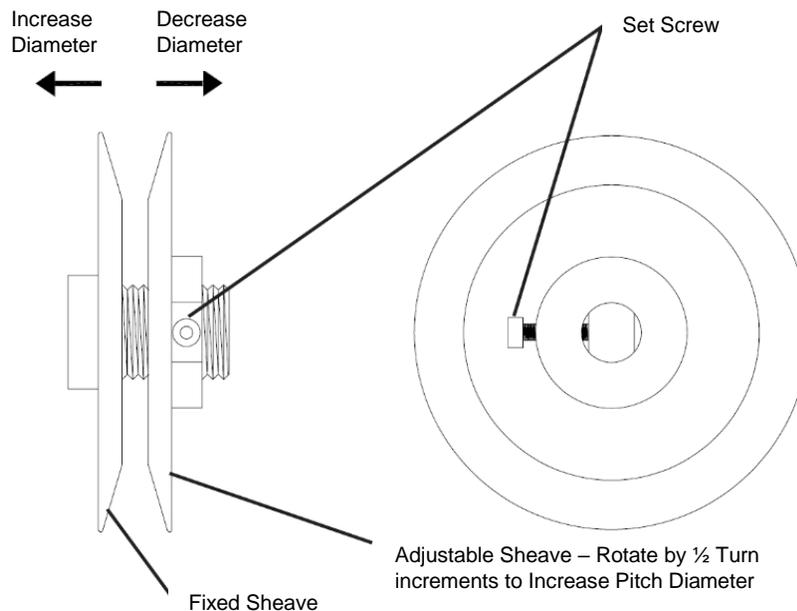


FIG. 2

CHANGING FILTERS:

Always make sure that the unit is turned off before changing filters or servicing the unit.

1. The MX3510 is equipped with a filter change light or optional Magnehelic Gauge. If the differential pressure has been set properly the light or gauge signals the need for examination for the filters.
2. When the light comes on, or gauge reads high differential pressure, turn the unit off and remove the **pre-filter only**. Replace with a new pre-filter, making sure that the air flow directional arrow is pointed toward the outlet end. Turn the unit back on. If the filter change light is off, or gauge reads low differential pressure, then the unit is operating properly.
3. If the filter change light fails to go out, or the gauge continues to read high differential pressure after replacing the pre-filter, then the media filter also needs to be replaced.
4. To install a new bag filter, turn the unit off. Remove the filter from the channel and insert a new filter in place.
5. Start the unit. The filter change light should be off or gauge reads low differential pressure and the unit should be operating properly.

INSTRUCTIONS FOR SIDE DISCHARGE BLOWER EXHAUST:

Read instructions completely before making changes. Due to relocation of internal components, some wiring may be loose. Be sure to retain wires so they will not become loose in air stream of blower inlet.

1. The MX3510 motor/blower module can be rotated so that the exhaust air exits from the side of the unit. Before rotating the motor/blower module be sure that all input power is disconnected and the unit is turned off.
2. Remove the motor access door and exhaust grille.
3. Remove 5/16" hex bolts and washers that secure the motor/blower module to the filter module.
4. Rotate the motor/blower module 90° as shown in FIG. 3.
5. Using 5/16" hex bolts and washers, re-secure the motor/blower module to the filter module.
6. Re-install motor access door and exhaust grille.
7. Reconnect input power and turn unit on. Check for proper air flow and blower rotation.

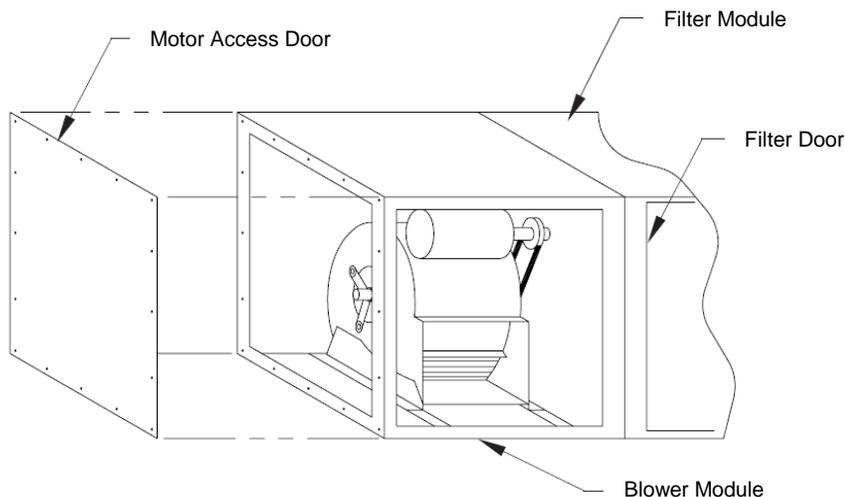


FIG. 3

UNITS WITH HEPA OR CHARCOAL AS A SECOND MAIN FILTER:

On units with optional HEPA or charcoal filters, an adjustable filter track kit is used to complete the seal of the filters to the filter stop (FIG. 4 & FIG. 5). If the unit was ordered with either a HEPA or charcoal filter, the adjustable filter track kit is included with the unit. If a HEPA or charcoal filter is ordered as an after-market item, the adjustable filter track kit should be ordered as well. Order part number 38036-01.

Each filter track kit is supplied with:

ITEM	QTY.	DESCRIPTION
1	1 Ea.	Filter Track
2	2 Ea.	Supports
3	1 Ea.	Handle
4	4 Ea.	Retaining Brackets
5	1 Ea.	Door Stop Bracket
6	3 Ea.	Horizontal Support
7	16 Ea.	#8-32 Self-Tapping Hex Screws

INSTALLATION:

1. Place supports (Item # 2) in cabinet at a dimension of 13-1/4" and secure with self-tapping screws.
2. Place track supports (Item # 1) in cabinet so it rests upon supports and 1/2" diameter pin is located behind brackets on supports.
3. Place handle supports (Item # 3) on supports so that it rests in notches.
4. Lock 1/2" diameter rods on handle and track in place with brackets supports (Item # 4) and self-tapping screws.
5. Place handle stop bracket supports (Item # 5) at a dimension of 15-1/2" and secure with self-tapping screws. This is to keep handle from rotating past 90° and allowing filter to loosen.
6. Place horizontal supports (Item # 6) in 2 places. One piece at a dimension of 5" on bottom of cabinet and one piece at a dimension of 10" on rear cabinet with self-tapping screws.

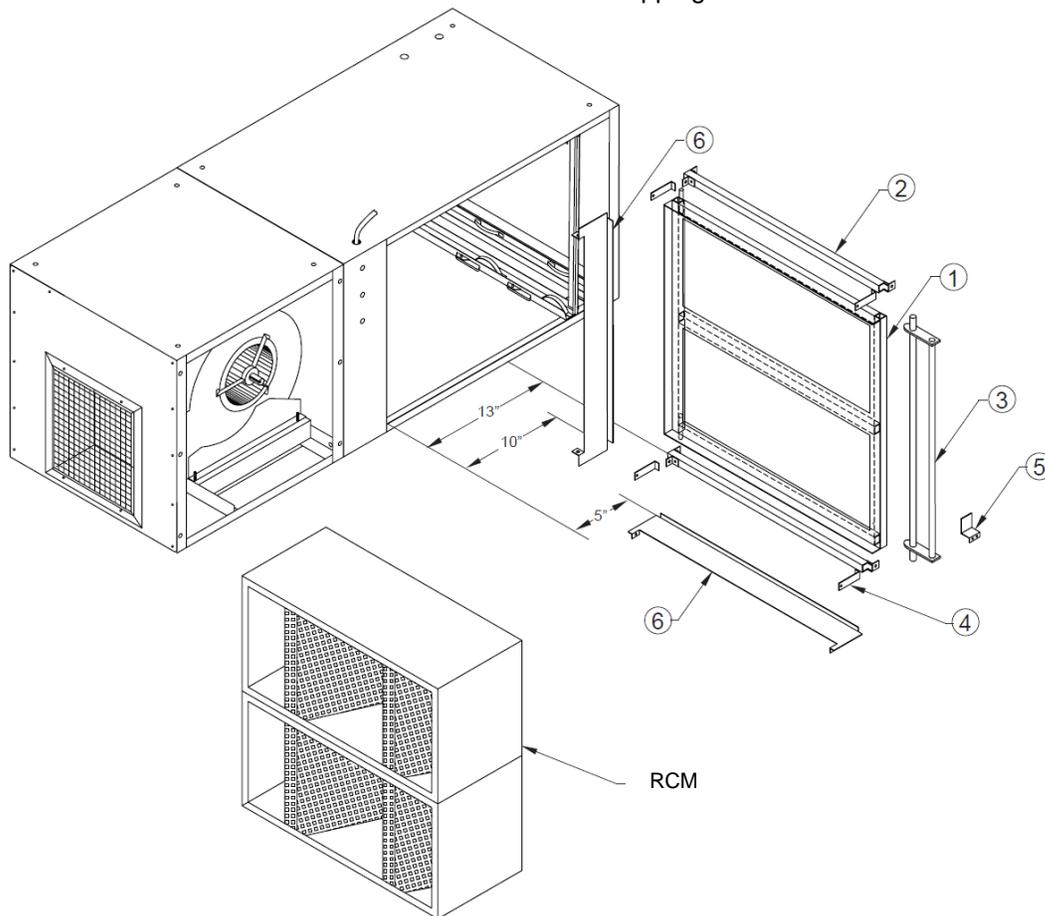


FIG. 4

UNITS WITH HEPA OR CHARCOAL AS A FIRST AND SECOND MAIN FILTER:

On units with optional HEPA or charcoal filters, an adjustable filter track kit is used to complete the seal of the filters to the filter stop (FIG. 3 & FIG. 4). If the unit was ordered with either a HEPA or charcoal filter, the adjustable filter track kit is included with the unit. If a HEPA or charcoal filter is ordered as an after-market item, the adjustable filter track kit should be ordered as well. Order part number 38036-01.

Each filter track kit is supplied with:

ITEM	QTY.	DESCRIPTION
1	1 Ea.	Filter Track
2	2 Ea.	Supports
3	1 Ea.	Handle
4	4 Ea.	Retaining Brackets
5	1 Ea.	Door Stop Bracket
6	3 Ea.	Horizontal Support
7	16 Ea.	#8-32 Self-Tapping Hex Screws

INSTALLATION:

1. Place supports (Item # 2) in cabinet at a dimension of 24-15/16" and secure with self-tapping screws.
2. Place track (Item # 1) in cabinet so it rests upon supports and 1/2" diameter pin is located behind brackets on supports.
3. Place handle (Item # 3) on supports so that it rests in notches.
4. Lock 1/2" diameter rods on handle and track in place with brackets (Item # 4) and self-tapping screws.
5. Place handle stop bracket at a dimension of 27" and secure with self-tapping screws. This is to keep handle from rotating past 90° and allowing filter to loosen.
6. Place horizontal supports (Item # 6). One piece on rear of cabinet at a dimension of 9", 1 piece on bottom of cabinet at 5" and 1 piece on bottom of cabinet at 12-3/4" and secure with self-tapping screws.

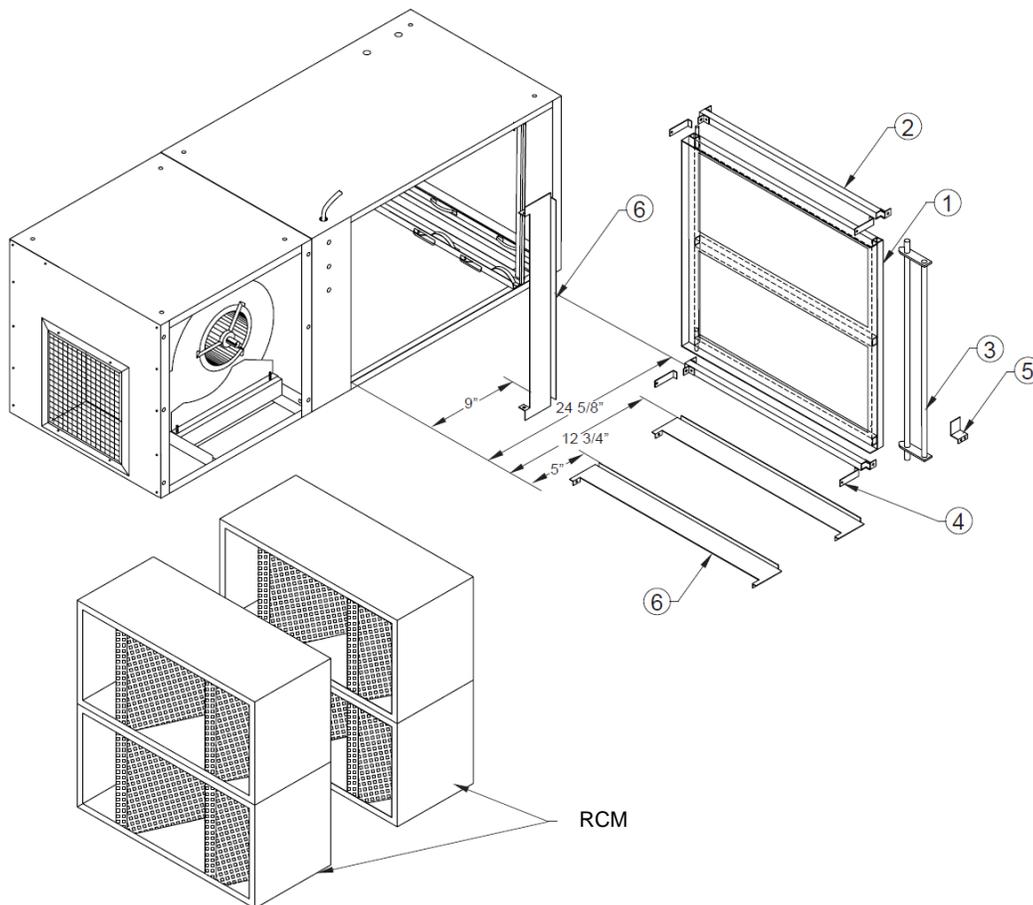
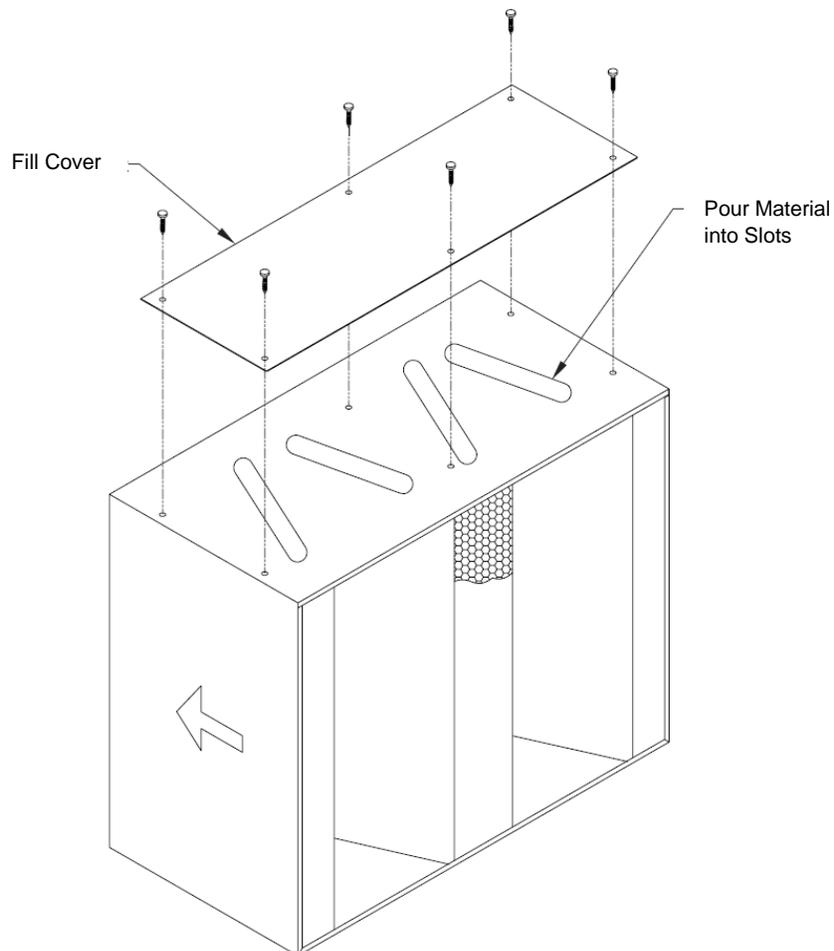


FIG. 5

FILLING OF RCM MODULES:

1. Remove bulk charcoal or purasorb from the shipping container.
2. Set module on a level surface. Remove fill cover by removing six #10-32 Phillip head screws that secure cover. Set cover aside (FIG. 6).
3. Open the lid of the charcoal or purasorb bucket. Pour the material from the plastic bag into the module through the slots. It may be necessary to slightly shake the module to assure an even fill. Excess material may be saved by resealing the bucket. Note that slow pouring will minimize dust that will be present during filling.
4. After filling the module, discard the bucket and reinstall the fill cover removed in step 2.
5. With filter track in place and handle pulled out away from cabinet load RCM modules into track.
6. With filters in place rotate handle 90° and lock filter modules in place.

NOTE: The MX3510 requires two modules when used as a second main filter and four modules when used as a first and second main filter.

**FIG. 6**

OPTIONAL SILENCER INSTALLATION:

1. Remove exhaust grille from unit as shown in Fig. 7.
2. Slide silencer over blower assembly.
3. Align holes from silencer with those located on side of the blower assembly.
4. Attach silencer to blower assembly using 3/8" bolt, lock washer and flat washer.
5. Center exhaust grille over hole in silencer and attach using #8-32 self-tapping machine screws.

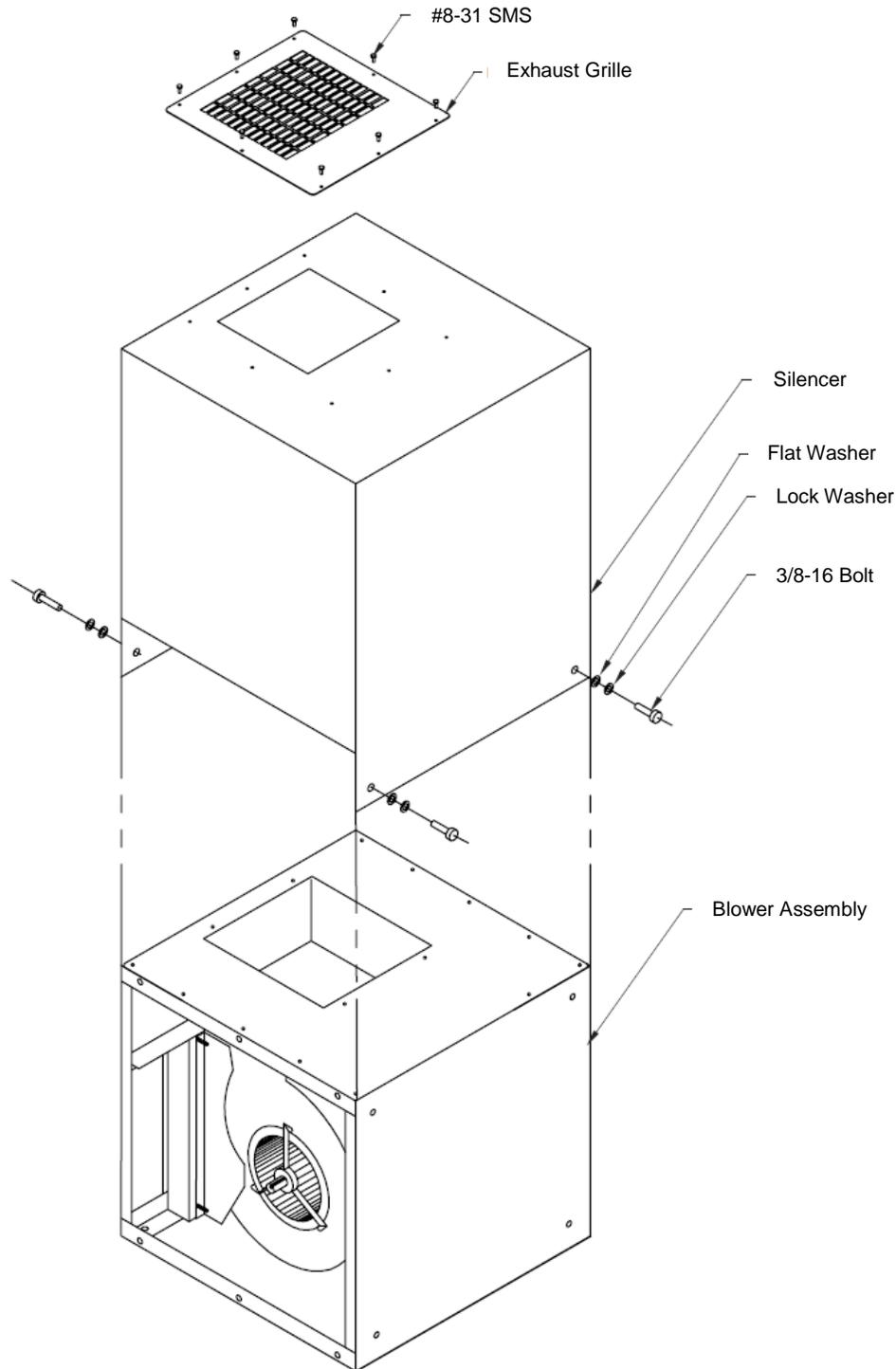


FIG. 7

OPTIONAL WRAP AROUND PRE-FILTER INSTALLATION:

Kit includes:

PART NO.	QTY.	DESCRIPTION
38086-01	1 Ea.	WAPF Assembly
P114	6 Ea.	5/16-18 x 3/4" Hex Head Bolt
P222	6 Ea.	5/16-18 Hex Nut
P233	6 Ea.	5/16" Flat Washer

Installation:

1. Align six holes from WAPF with holes located on bottom of air filter unit.
2. Using hardware supplied, attach WAPF module.

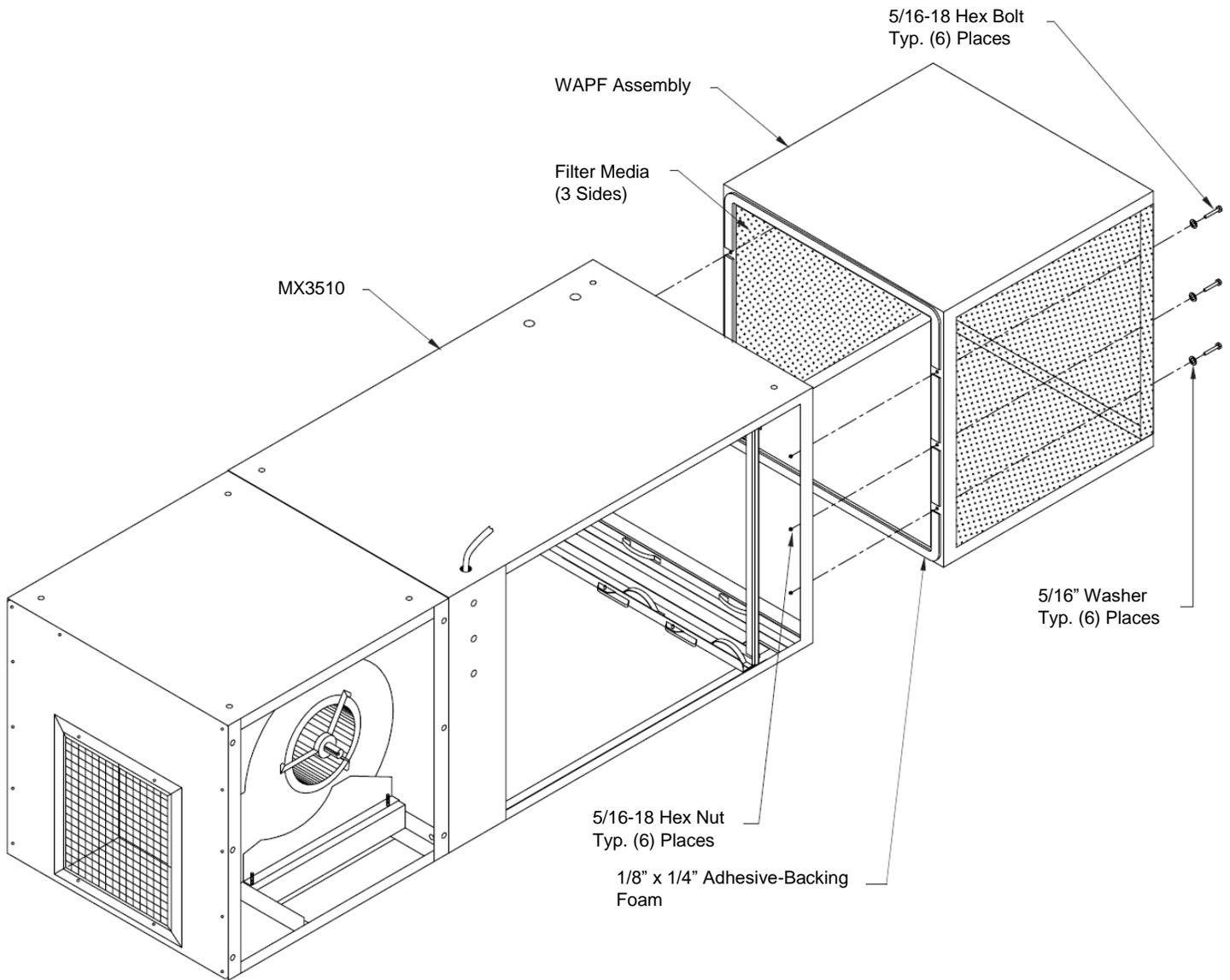


FIG. 8

WIRING DIAGRAM:



All electrical work must be done by a qualified electrician according to local, state and national codes.

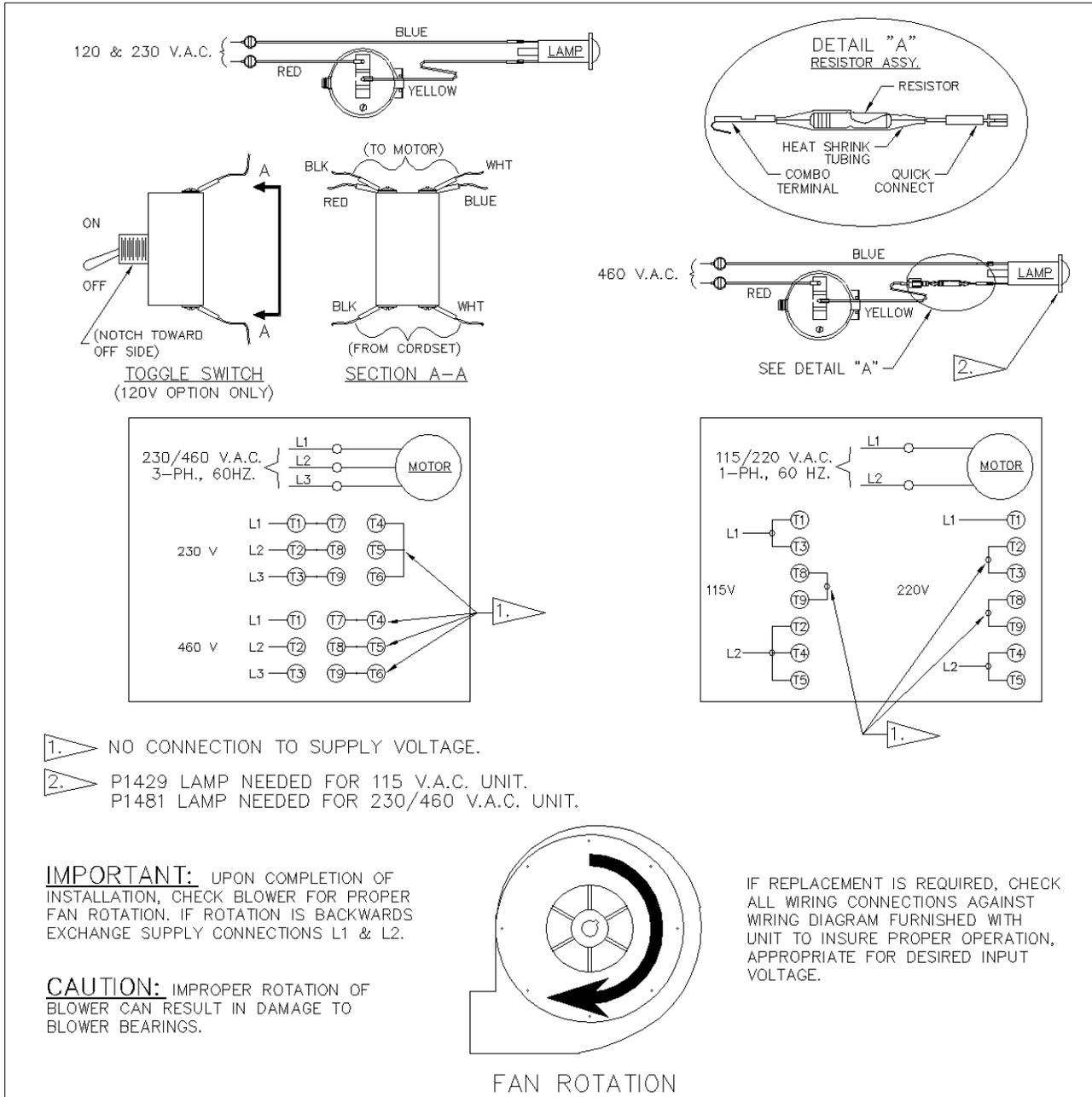


FIG. 9

TROUBLESHOOTING:



CAUTION: Before disassembling the unit or doing any inspecting of the parts, make certain that the power has been cut off and the blower has come to a complete stop. NEVER run the unit with the access door opened or the panels removed.

TABLE 1 – Troubleshooting Chart

PROBLEM	POSSIBLE CAUSE	REMEDY
Unit fails to start	No incoming power	Check the circuit and switch
	Blown breaker or fuse	Replace fuse or throw breaker
	Loose wire in terminal box	Reconnect wire
	Burned out motor	Replace motor
	Primary voltage to motor contactor is below 10% tolerance	Take steps to increase voltage to primary
	Motor thermal trip (1 Phase only)	Reset at motor
	Tripped overload (3 Phase only)	Reset overload protector
Unit runs slowly, Inadequate capture	Wired for wrong voltage	Check input voltage Check wiring diagram
	Improper rotation	Check wiring diagram Switch L1 & L2 (3 Phase only)
	Internal obstruction	Remove obstruction
	Pulleys set for improper static	Adjust or change pulleys
	Dirty filters	Service/Replace filters
Vibration	Loose motor mounting bolts	Tighten bolts
	Foreign objects in blower/ Build-up on blower wheel	Remove debris from blower
	Dirty filters	Service/Replace filters
Mist coming from exhaust	Dirty disposable filters on torn filters	Service/Replace filters
	Air bypass around filters	Check for proper seal against picture frame and seals on door and back wall

MX3510 ASSEMBLY PARTS LIST:

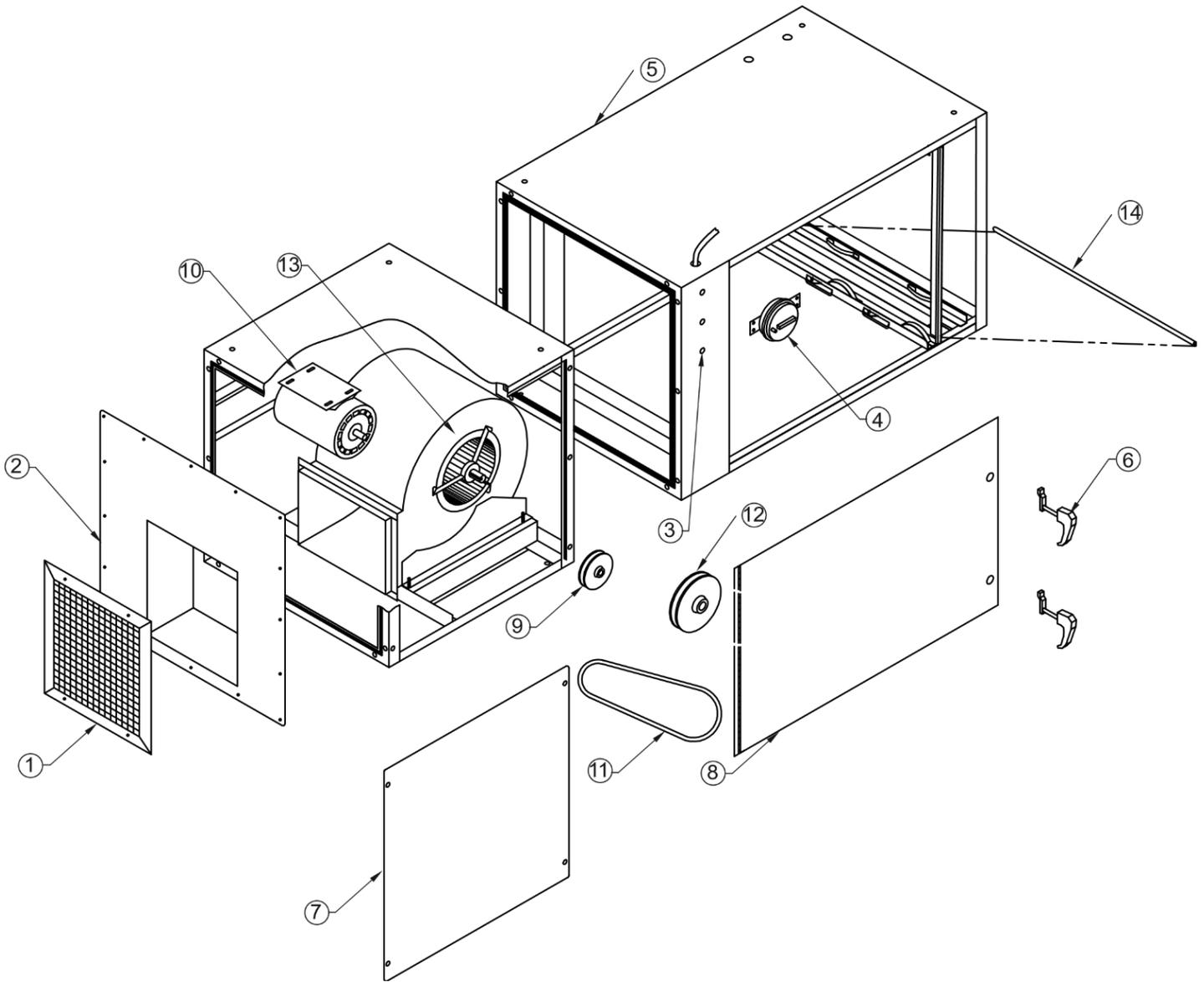


FIG. 10

MX3510 ASSEMBLY PARTS LIST:

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	P1977	Grille	12	P1710	4.95" Blower Pulley
2	38010-01	Blower Access Panel		P1504	5.45" Blower Pulley
3	P1429	Light (120V)		P1974	6.25" Blower Pulley
	P1481	Light (230V, 460V)		P3218	8.00" Blower Pulley
4	P3505	Pressure Switch		P3270	9.75" Blower Pulley
5	38072-01	Cabinet Weldment	13	P3498	12-9 Blower
6	P1372	Latch	14	P3214	Filter Gasket (Specify Length)
7	38011-02	Motor Access Panel	N/S	38059-01	SCM w/ (3) 8" Collars
8	38043-01	Filter Door	N/S	38059-02	SCM w/ (2) 10" Collars
9	P2105	1-1/2HP, Var. Pitch Dia. Motor Pulley	N/S	38059-03	SCM w/ (1) 16" Collars
	P3578	3HP, Var. Pitch Dia. Motor Pulley	N/S	P2250	Magnehelic Gauge
	P3986	3HP, 7.75" Motor Pulley	N/S	38086-01	Wrap Around Pre-Filter
10	P3545	1-1/2HP, 120V, 1 Phase Motor	N/S	38050-01	Silencer
	P3495	3HP, 230/460V, 3 Phase Motor	N/S	38036-01	Filter Track
N/S	30251-01	Mounting Bracket for P3495 Motor			
11	P1495	42" Belt			
	P3207	43" Belt			
	P3550	49" Belt			
	P7135	51" Belt			

REPLACEMENT FILTER LIST:

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
P1411	24" x 24" x 4" Pleated Pre-Filter	P1799*	24" x 24" x 2" Baffle Oil Impinger
P1439	24" x 24" x 32" 55% Bag Filter	P2101	24" x 24" x 12" 99.97% DOP HEPA
P1442	24" x 24" x 32" 95% Bag Filter	P2179	24" x 24" x 32" 95% Oil Mist Bag Filter
P1455	24" x 24" x 12" 95% DOP HEPA	33628-01	WAPF Pad
P1460	24" x 24" x 15" 95% Short Bag Filter	33740-00	Refillable Module
P1461*	24" x 24" x 2" Pleated Pre-Filter		P1450 - Purasorb Media
P1475*	24" x 24" x 2" Mesh Oil Impinger		P1823 - Charcoal Media

*NOTE: 2" Pre-Filters must be used in combination to fill 4" channel.

