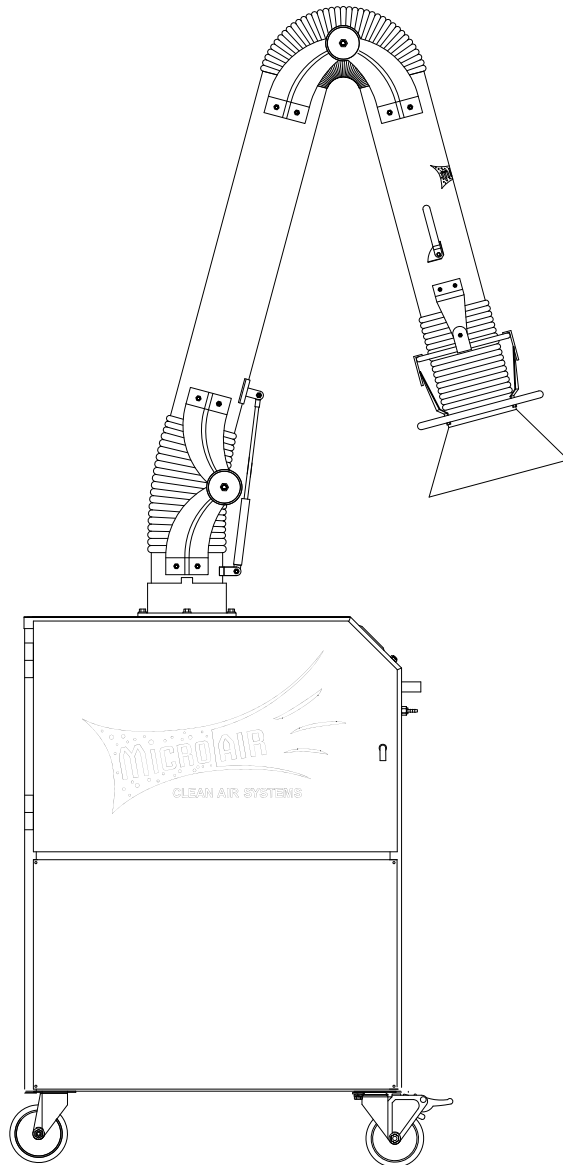




# MODEL MC1500

## Installation and Operation Manual



### **Important:**

This manual contains specific cautionary statements relative to worker safety. Read this manual thoroughly and follow as directed. It is impossible to list all the hazards of dust control equipment. All persons involved with the equipment or systems should be instructed how to operate in a safe manner.

**MODEL MC1500 SPECIFICATIONS**

**INPUT VOLTAGE:**

208-230V / 460V 60Hz 3 Phase

**MAX. CURRENT:**

12.0 Amps at 208-230V

6.0 Amps at 460V

**MOTOR:**

TEFC 5HP, 3 Phase

**COMPRESSED AIR:**

80 psi. minimum, 90 psi. maximum. 1/4" NPT male nipple connection. Clean, dry air required.

**FILTER AREA:**

174 sq. ft. per cartridge filter (348 sq. ft. total)

**DIMENSIONS:** 48" h. X 25-1/2" w. X 32-1/2" l.

**SHIPPING WEIGHT:** 525 lbs.

**ACTUAL WEIGHT:** 475 lbs.

**PACKAGE CONTENTS:**

1 Ea. MC1500

OPTIONS (These items are separately packed):

1 ea. 8" dia., 7' Arm Assembly

1 ea. 8" dia., 9' Arm Assembly

2 ea. 6" dia., 7' Arm Assembly

2 ea. 6" dia., 9' Arm Assembly

**Caution:**

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

**PRE-OPERATING INSTRUCTIONS:**

NOTE: The following instructions will vary depending on options received.

1. Remove the shipping crate, shipping straps and plastic wrapping from the unit.
2. Remove the MC1500 from the shipping skid and set on a level surface.
3. Remove the attachment option from the shipping carton.
4. Install the arm assembly onto the base unit (Fig. 1A).

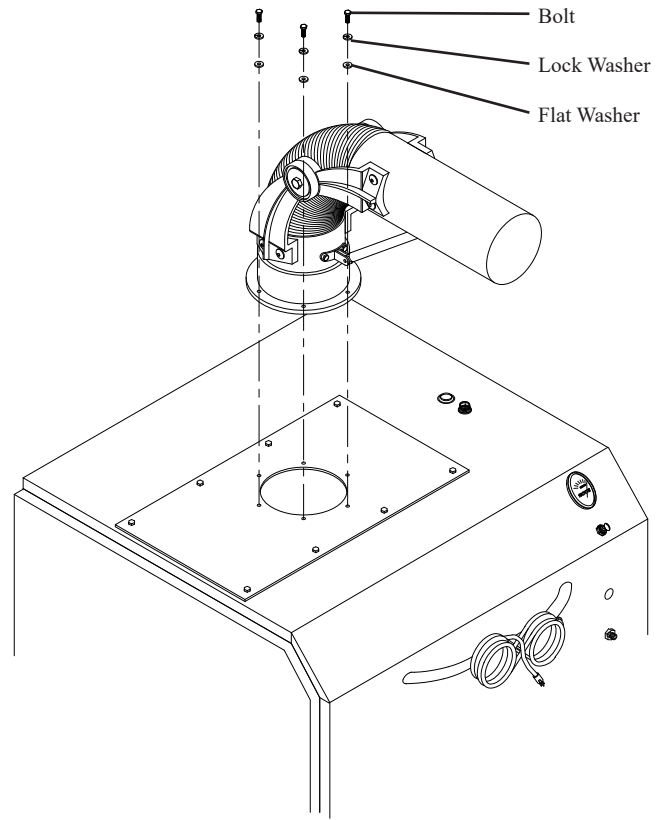


Fig. 1A

5. Insert the lamp plug on the arm into the receptacle located directly behind the base of the arm on the MC1500. Secure the arm cable in clamp provided on mounting plate (Fig. 1B).

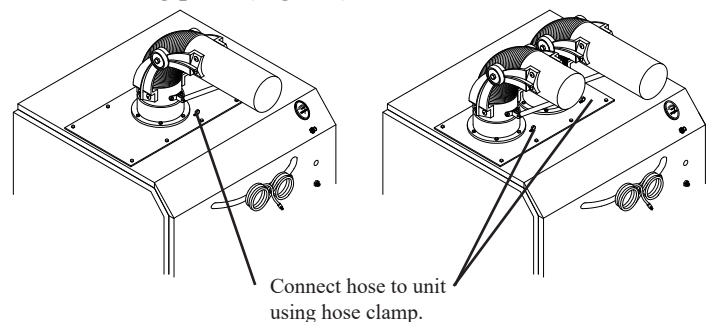


Fig. 1B

**OPERATING INSTRUCTIONS:**

1. Choose a suitable, level place near the workstation and position the unit so that the hose/arm assembly will be placed near the source of pollution being generated. The MC1500 has locking wheels at the front handle end. The wheels are locked by stepping down on the flat plate on the wheels.
2. Grasp the hood by the handle ring and position within 18" of the source of pollution.
3. Plug the power cord into a outlet of the appropriate voltage and phase.

4. Turn the power switch on (located near the Mini-Helic gauge).
5. The light control switch (optional) is mounted on the hood. Turn the light on as needed.
6. Adjust the hood to capture the maximum amount of contaminants. Periodically adjust the position of the hood to keep it in maximum capture range.
7. If the unit fan is rotating incorrectly, switch L1 and L2 connections to reverse the rotation direction.

### MINI-HELIC GAUGE OPERATION:

1. As the cartridge filters collect airborne pollutants they will eventually begin to become loaded with particulate. The filter loading will cause an increase in static pressure and a decrease in air flow.
2. The Mini-Helic gauge on the control panel indicates static pressure. Note the reading at the initial start-up. As the unit is operated the static pressure will gradually increase as the filters become loaded. This will indicate the need to back flush the system.

### CARTRIDGE CLEANING:

NOTE: Pulse clean cartridge filters frequently for proper operations. Failure to do so will decrease performance and lead to pre-mature filter failure.

1. The MC1500 is designed with a Roto-Pulse system to clean the cartridge filters.
2. Attach a shop air hose to the inlet located on the front of the MC1500. It is recommended that a pressure regulator and water trap be installed between the shop air and the MC1500,

NOTE: Do not exceed 90 psi of shop air. Exceeding 90psi will result in filter damage.

3. Shut off the MC1500 blower.
4. Push the cartridge back-flush control button (mounted on the control panel) three or more times. This operation initiates the Roto-Pulse system which spins the tube inside the cartridge filter. As the tube spins, air dislodges the dirty particles from the cartridge filters. These particles then settle into the two removable dust trays.
5. After several cleaning cycles, the dust particles that have been collected by the MC1500 will need to be emptied from the dust trays. The frequency of dust removal depends on the type and quantity of pollutant that is collected. The dust trays should be emptied before the particles have accumulated to a depth of 1/2 inch.
6. To remove the dust trays from the MC1500, turn the unit off. Open the cartridge access door and slide out the dust trays.

7. Dump the dust out of the trays.
8. Slide dust trays back into the MC1500. Close and latch the filter access door.

### CHANGING FILTERS:

#### Caution:

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

1. Turn the MC1500 off and open the filter access door.
2. Remove the cartridge filters retained by wing nuts.
3. Slide new cartridge filters into the cabinet and retain with wing nuts.
4. Close the filter access door.

### GENERAL MAINTENANCE:

1. Check the wiring for loose connections for cracked insulation.
4. No lubrication is required for the motor because it is a permanent pre-lube design.
5. Once per month grease the suction arm base assembly with a bearing grease listed to not react with aluminum.

**OPTIONAL HEPA / CHARCOAL FILTER INSTALLATION:**

**KIT CONTENTS:**

1. 1 Ea. Filter Track
2. 2 Ea. Stretch Cord
3. 6 Ea. #8 x 1/2" SMS
4. 1 Ea. HEPA Filter or RCM Module

**INSTALLATION:**

1. Remove the four (4) screws used to attach the lower panel and remove lower panel from the MC1500.
2. Locate filter tracks shown in Fig. 2. Filter track is to be located flush to front edge of cabinet bottom and centered above the exhaust opening.
4. Secure filter track to the MC1500 using six (6) each #8 x 1/2" sheet metal screws provided.
5. To install filter, slide the filter in between tracks so that the airflow arrow points downward.
6. Retain the filter with stretch cords provided.
7. Replace the lower panel.

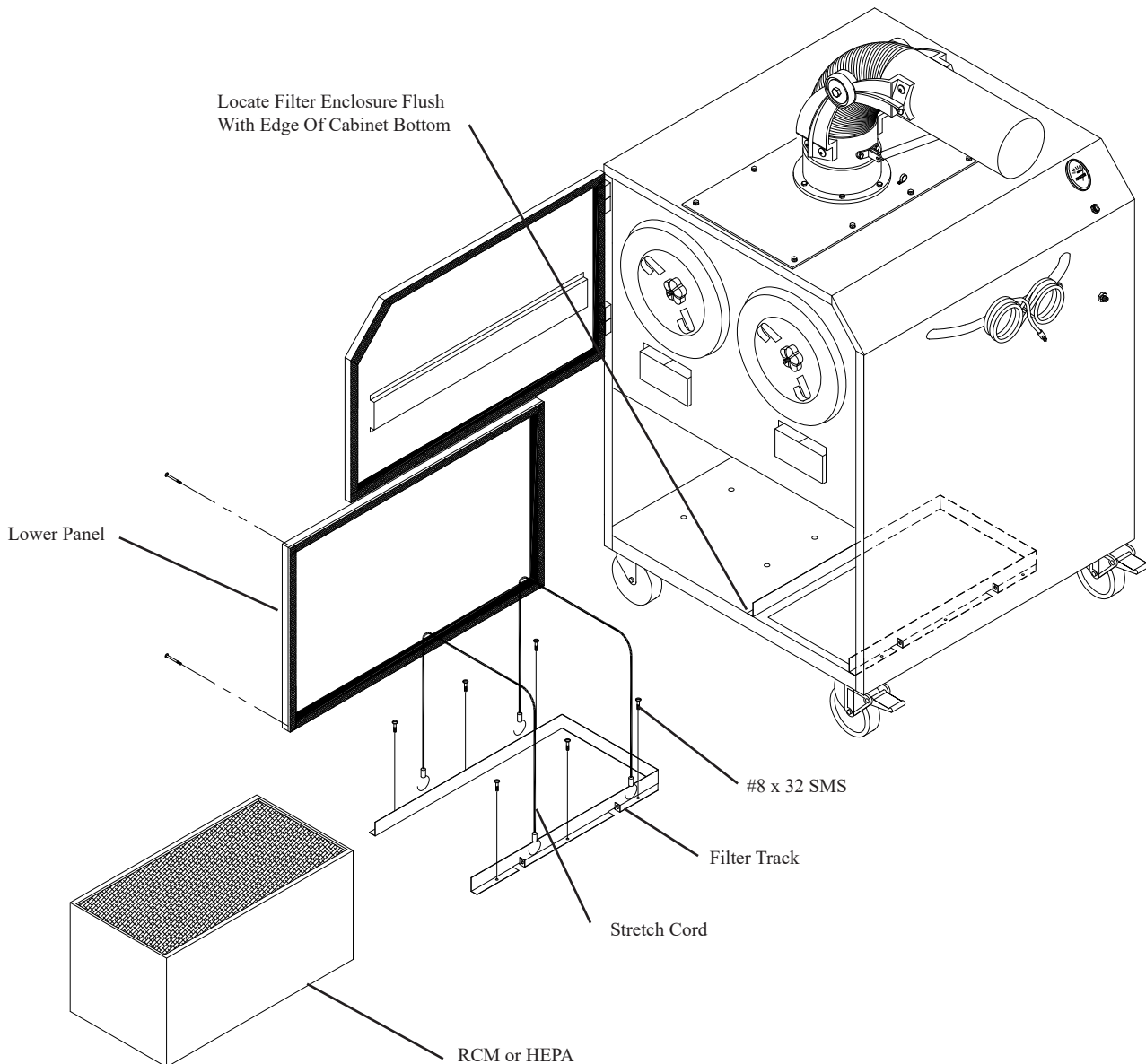


Fig. 2

## OPTIONAL SILENCER INSTALLATION:

### KIT CONTENTS:

- 1 Ea. Silencer Box Assembly
- 6 Ea. #8 x 1/2" SMS

### INSTALLATION:

1. Remove the four (4) screws used to attach the lower panel and remove the lower panel from the MC1500 unit.
2. Locate the silencer box assembly (Fig. 3). Silencer assembly is to be located flush to front edge of cabinet bottom and centered above the exhaust opening.
3. Attach the silencer box assembly using the six (6) sheet metal screws provided.
4. Replace the lower panel.

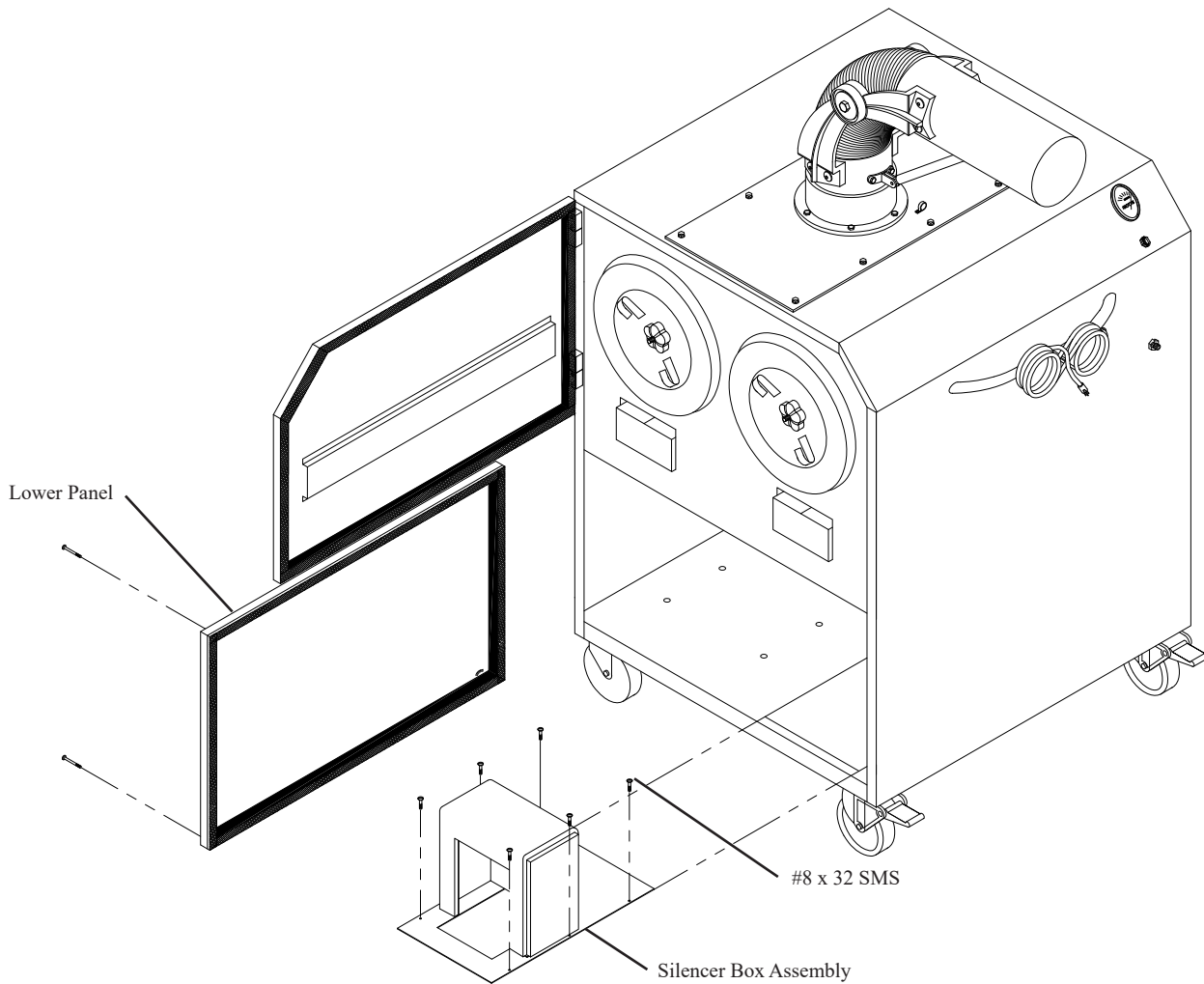


Fig. 3

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**OPTIONAL BIG WHEEL INSTALLATION:****KIT CONTENTS:**

- 1 Ea. Big Wheel Assembly
- 8 Ea. 5/16-18 x 1" Hex Bolt

**INSTALLATION:**

1. Position the unit on its' side with the bottom exposed.
2. Remove the four (4) bolts, flat washers and lock washers retaining each fixed wheel. Retain the hardware for use in step four.
3. Place the Big Wheel Assembly onto the unit. Align the eight slotted holes over the holes in the unit, making sure that the Big Wheel Assembly presses against the back wall of the unit.
4. Install the lock washer, flat washer and the 1" long hex bolts supplied with the kit. Secure the Big Wheel assembly to the unit with the eight (8) 1" long hex bolts. Make sure the bolts are tight.
5. Position the unit onto the wheels and reattach any attachments removed for installation.

**Caution:**

**⚠ Source capture arms or other attachments must no be attached during kit installation.**

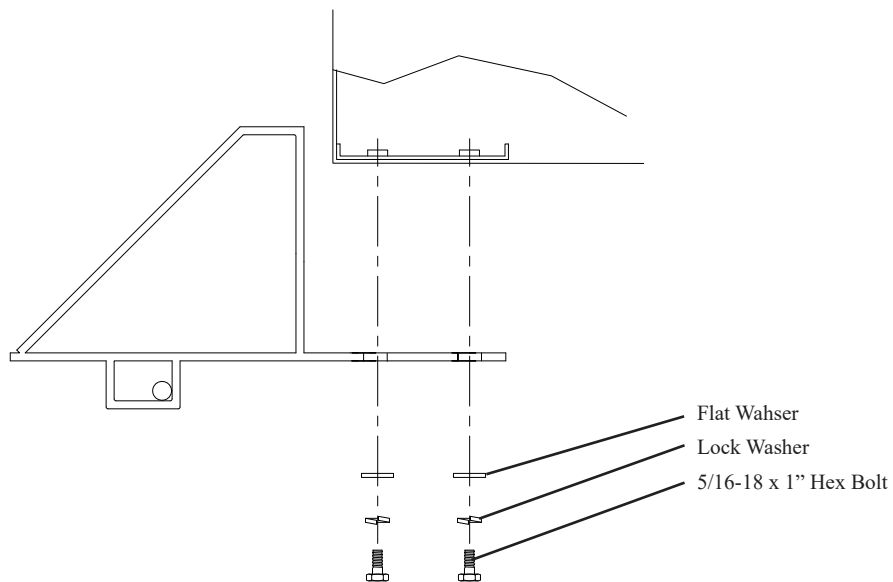


Fig. 5A

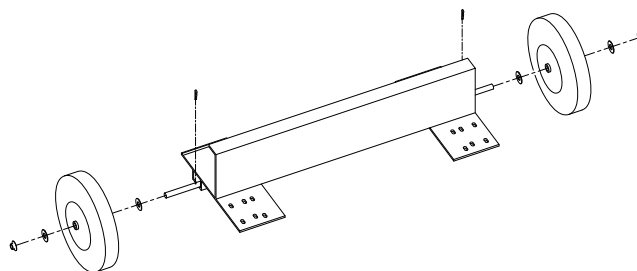


Fig. 5B

**MC1500 WIRING DIAGRAMS**

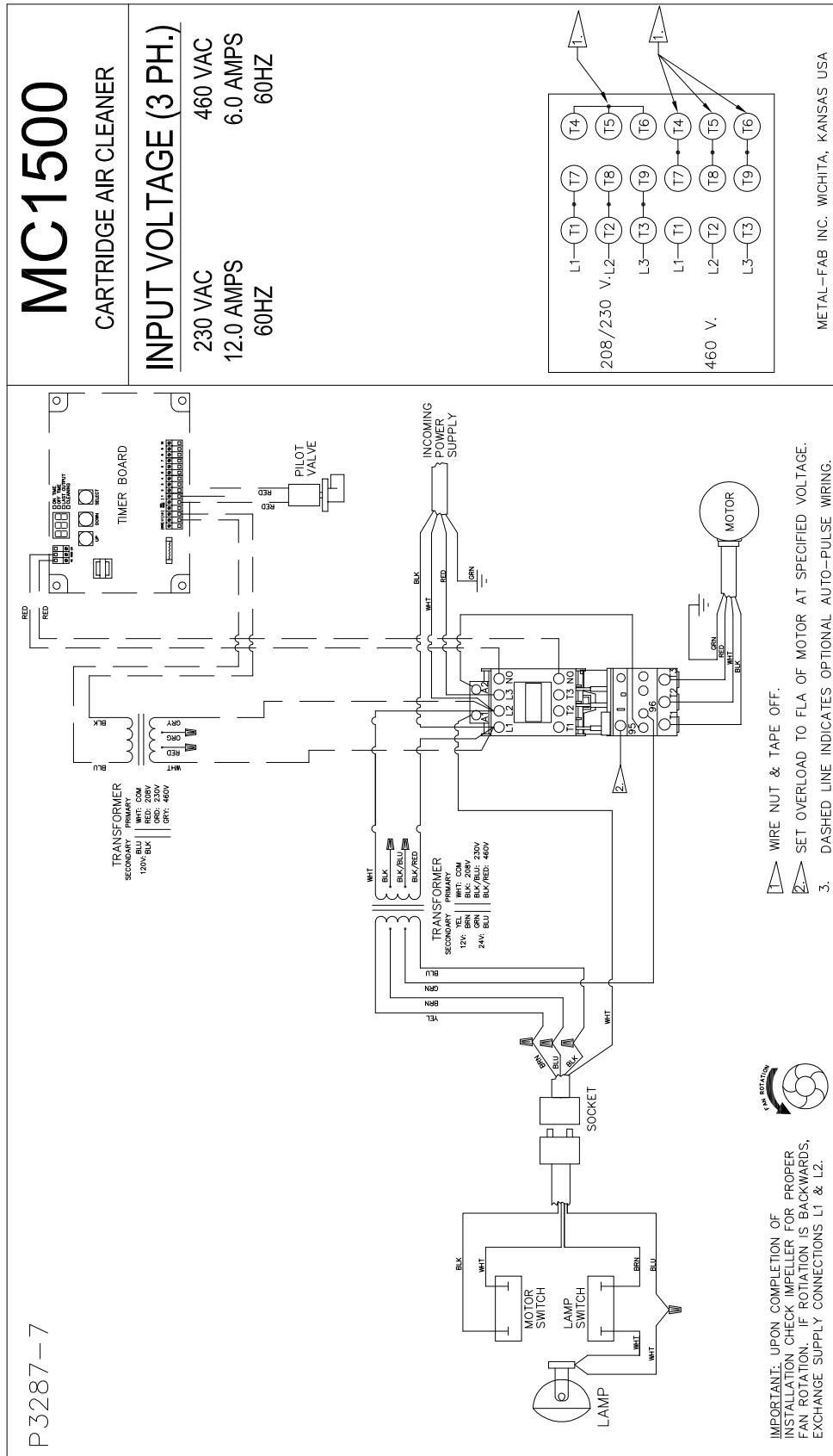
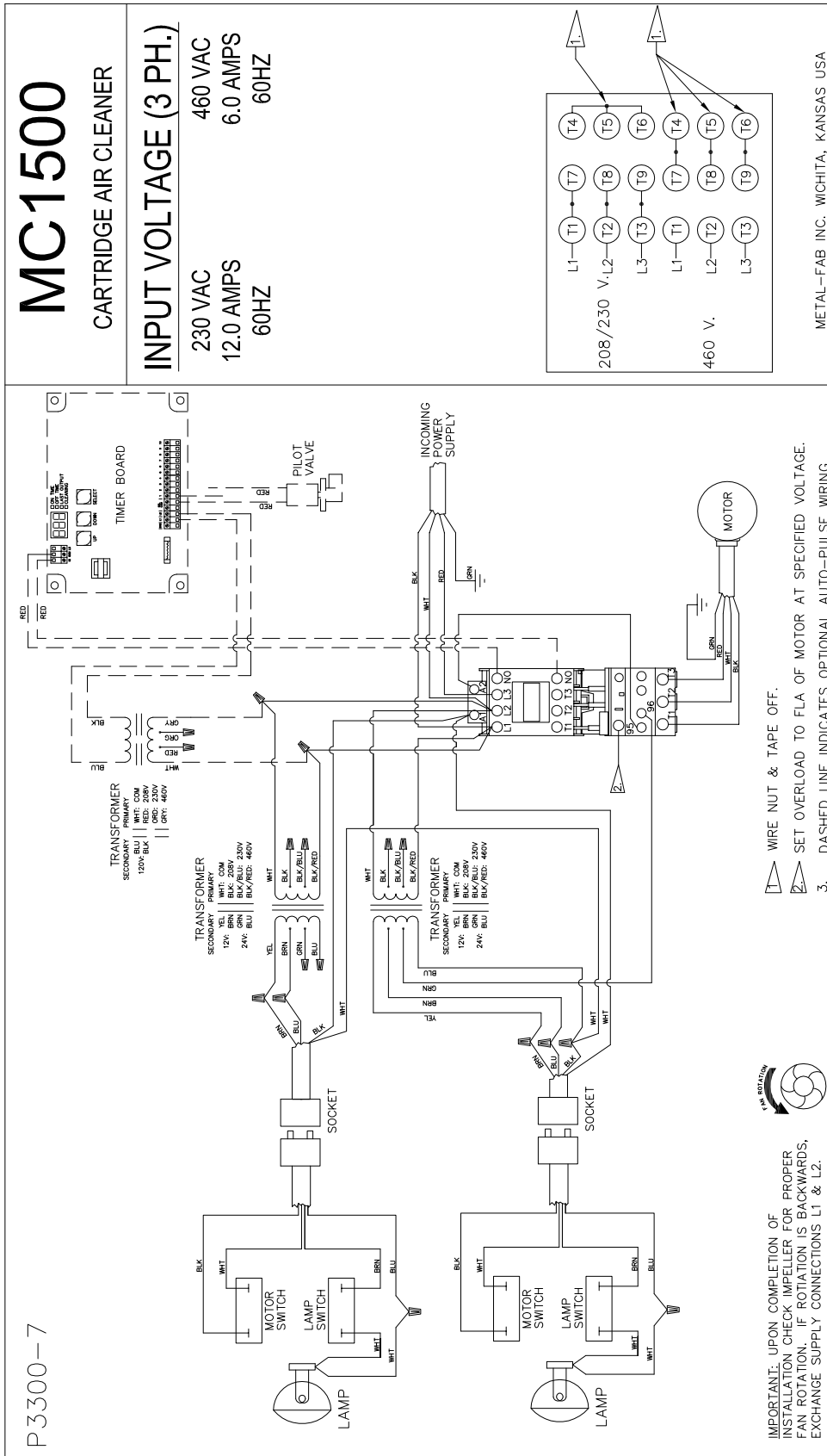


Fig. 6  
8



## MC1500 WIRING DIAGRAMS



METAL-FAB INC. WICHITA, KANSAS USA

Fig. 7  
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**6" & 8" DIAMETER ARM ASSEMBLY PARTS LIST**

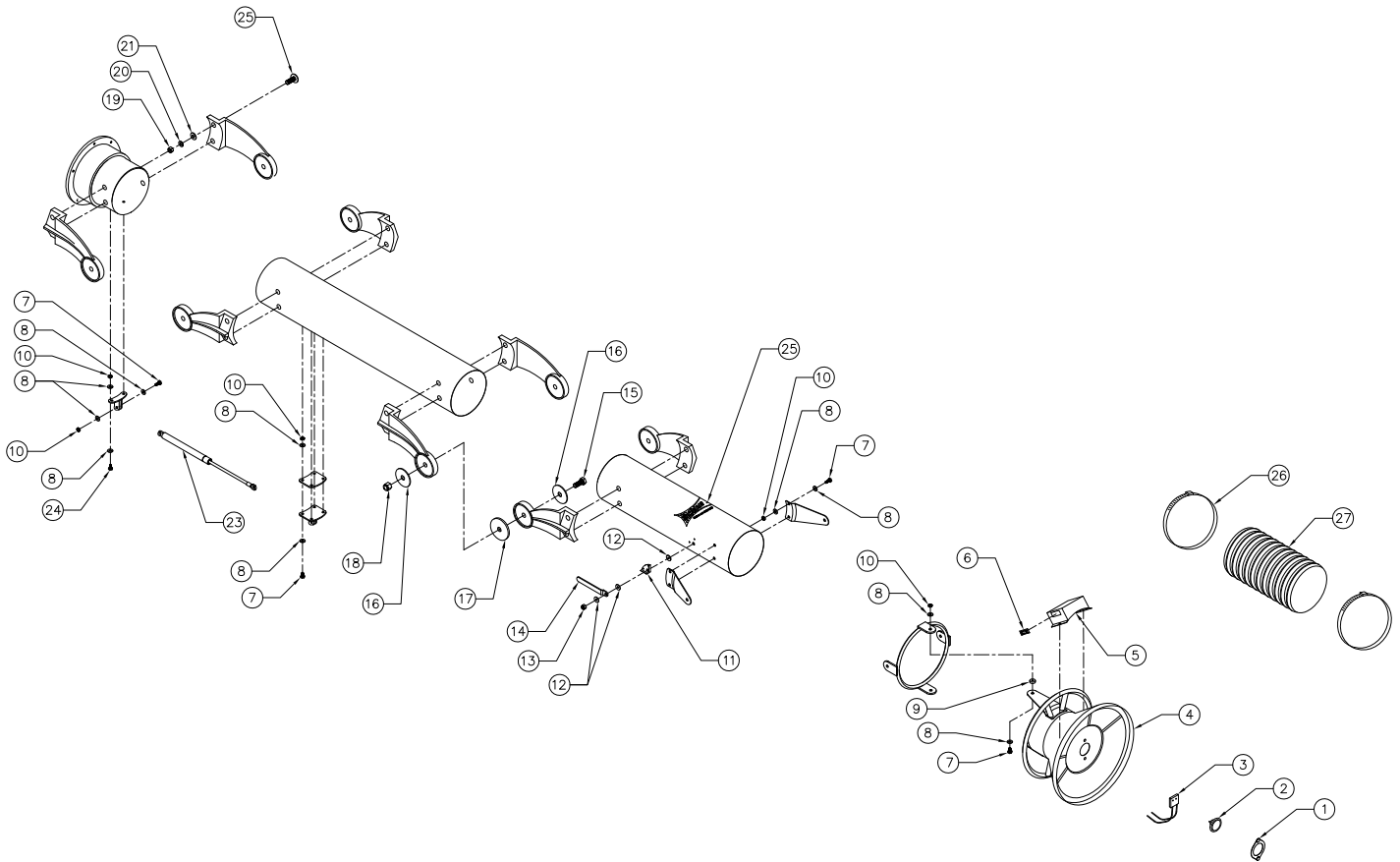


Fig. 9

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	37107-01	Lamp Plate	16.	P2468	Cup Washer
2.	P2170	Lamp	17.	P2467	Friction Pad
3.	P2168	Lamp Socket	18.	P2479	1/2-13 Nylock Hex Nut
4.	P2466	6" Hood Assembly	19.	P141	3/8-16 Hex Nut
	P2469	8" Hood Assembly	20.	P142	3/8" Lock Washer
5.	37106-01	Switch Box	21.	P2206	Flat Washer
6.	P2219	Rocker Switch	22.	P2481	3/8-16 x 1.25" Carriage Bolt
7.	P164	1/4-20 x 3/4" Hex Head Bolt	23.	P2461	6" Gas Shock
8.	P246	1/4 Flat Washer		P2462	8" Gas Shock
9.	P2482	Hood Disc Pad	24.	P2483	1/4-20 x 1" Hex Head Bolt
10.	P2485	1/4-20 Nylock Hex Nut	25.	P2312	Micro Air Decal
11.	37104-01	Damper Handle Stop Plate	26.	P2232	Hose Clamp
12.	P2206	5/16" Flat Washer	27.	P2491	6" Dia. Flex Hose
13.	P2484	5/16" Nylock Hex Nut		P2617	8" Dia. Flex Hose
14.	37103-01	Damper Handle	N/S	P2471	4 Conductor Cable - 9' long
15.	P2478	1/2-13 x 2.25" Hex Head Bolt	N/S	P2472	4 Conductor Cable - 15' long

**MC1500 PARTS LIST**

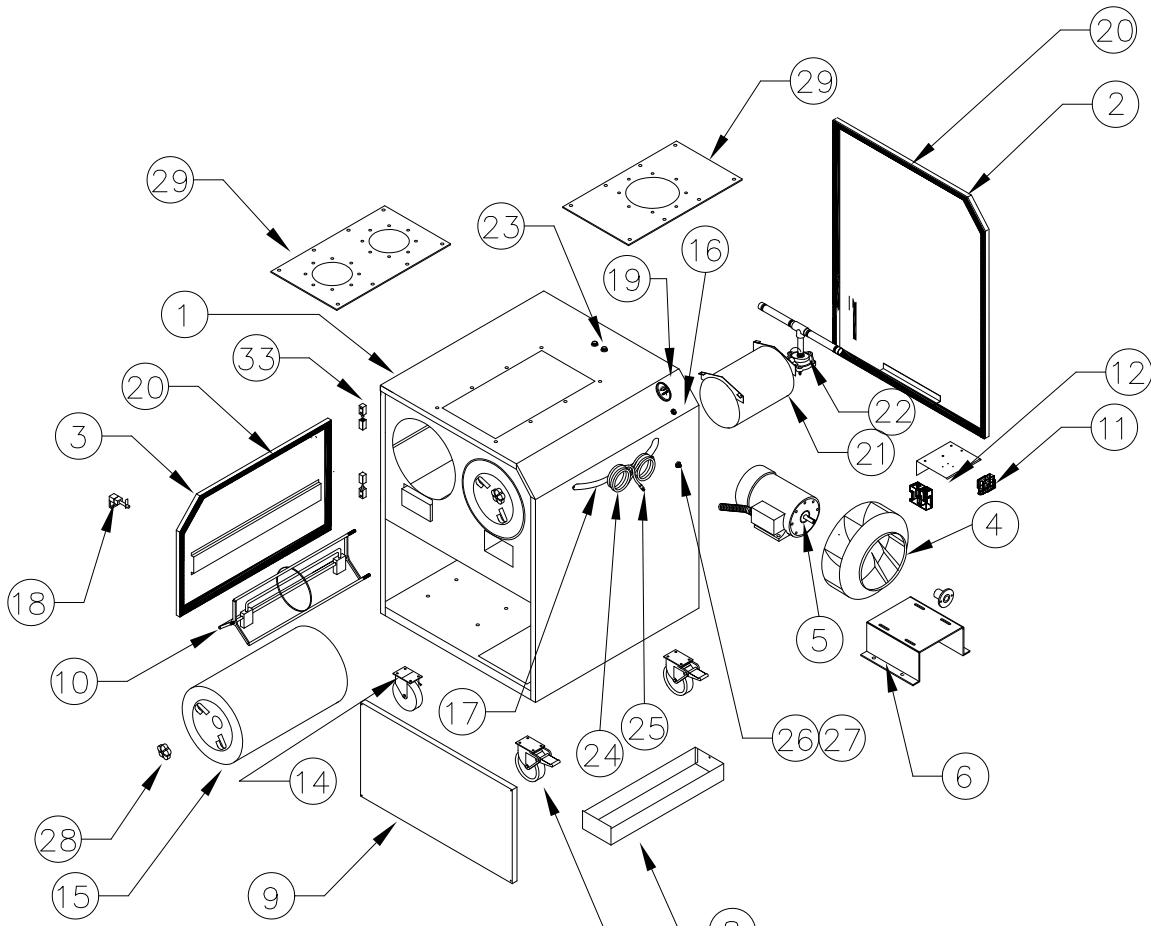


Fig. 10

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	36876-01	Cabinet	18.	P1372	Latch
2.	36885-01	Back Panel	19.	P2221	Mini-Helic Gauge
3.	34294-02	Filter Door	*20.	P1367	3/4" x 1" Foam Gasket
4.	P3280	Impeller		P3743	3/4" x 1-1/4" Foam
5.	P2320	Motor (208/230-460V, 3-Phase)	21.	36712-01	Accumulator Tank
6.	36923-01	Motor Mount	22.	P3281	1" Diaphragm Valve
8.	36561-01	Dust Tray	23.	P3278	Receptical
9.	36882-01	Lower Panel	*24.	P1818	Power Cord
10.	36720-14	Roto Assembly	25.	P2735	230V Plug
11.	P2534	Transformer		P2736	460V Plug
12.	P3911	Relay	26.	P2222	1/4" Barb x 1/8" NPT
	P3916	Overload Protector (208-230V)	27.	P2210	1/8" Male x 1/4" Male Hex Nipple
	P3915	Overload Protector (460V)	28.	P3649	Filter Knob
13.	P3283	Swivel Caster	29.	36933-01	Adapter Plate (Dual Inlet)
14.	P3284	Fixed Caster		36932-01	Adapter Plate (Single Inlet)
15.	P7401RM	80/20 Cartridge Filter	33.	P2835	Hinge
16.	P3392	Push Button Air Valve			
17.	P2215	Handle			

\* Specify Length Required

**TROUBLE SHOOTING CHART**

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 OPEN OR REMOVED.

PROBLEM	POSSIBLE CAUSE	REMEDY
Unit fails to start	No incoming power  Blown breaker or fuse  Primary voltage to motor contactor is below 10% tolerance  Burned out motor  Tripped overload (3 Phase)	Check line voltage  Replace fuse or throw breaker  Take steps to increase voltage to primary  Replace motor  Reset overload protector
Unit runs slowly or inadequate capture velocity	Wired for wrong voltage or improper rotation  Dirty filters  Internal obstruction	Check input voltage Check wiring diagram Switch L1 & L2 (3-phase only)  Service / Replace filters  Check if damper is open Check inlet for blockage Check hoses for proper connection Check hoses for holes
Vibration	Loose mounting bolts  Foreign objects in blower  Dirty disposable filters	Tighten bolts  Remove debris from blower  Service or replace filters
Unit runs for a short period of time and stops	Exhaust restrictor plate removed  Incorrect extension cord size (120V)	Re-install Restrictor plate  Plug directly into outlet Use a cord rated to 20 Amps
Stronger resistance during rotation of the arm	Lack of grease in the rotating socket	Grease the rotating socket
Arm will not stay where it is placed	The joints are loose	Tighten the joints

