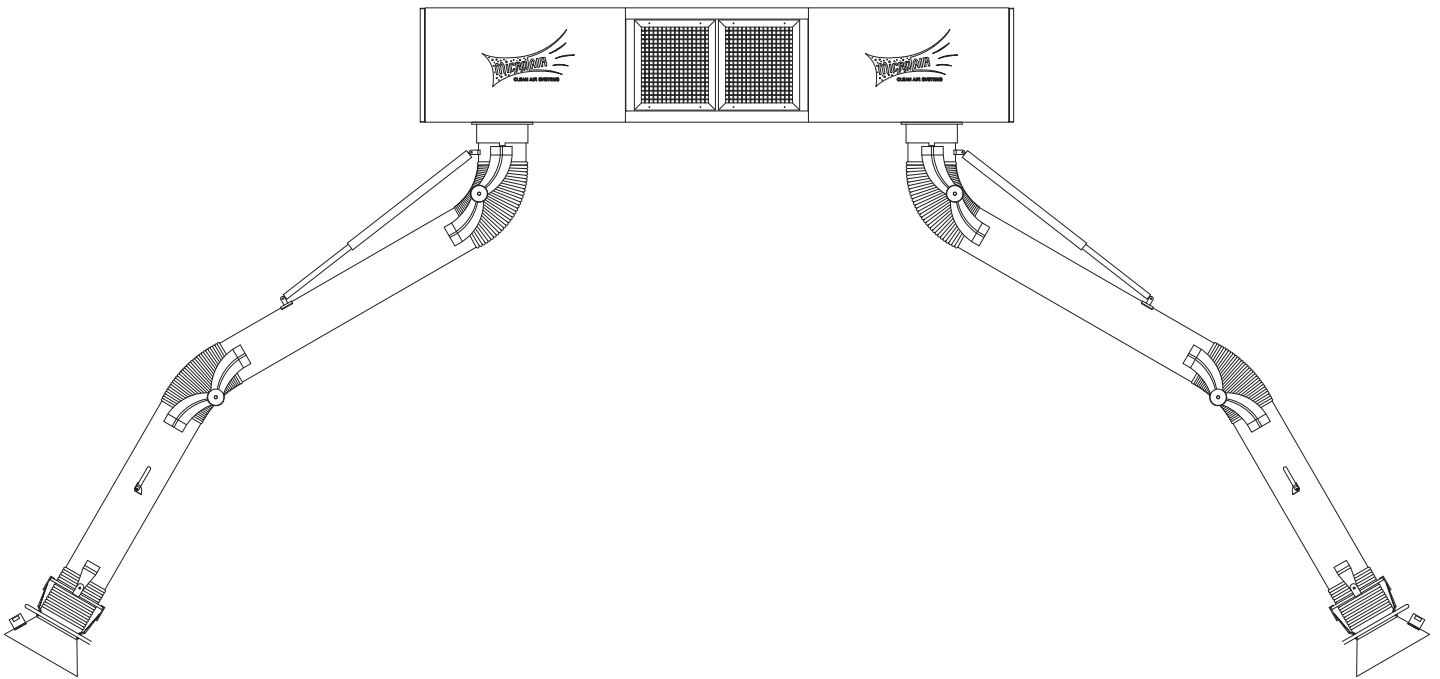




# MC2500

## 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.

**WARNINGS:**

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

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

**The system is not provided with a fused disconnect switch, it is strongly recommended that one be installed.**

**SPECIFICATIONS:**

- Input Voltage: 208-230/460 VAC, 60Hz, 3 Phase
- Max Current: 208/230 VAC - 15.0 Amps  
460 VAC - 7.5 Amps
- Motor: 5HP, TEFC, Dual Shaft, 3450RPM
- Dimensions: 20”h X 36”w X 68”l (2 module)  
20”h X 36”w X 104”l (3 module)
- Weight: 280 lbs. Blower Module  
220 lbs. Filter Module 44-80 lbs. Arm (length & dia. dependant)
- Filter Area: 2 or 4 High efficiency cartridges with 173 sq. feet of media per cartridge.
- Compressed Air: 80 psi mininum - 90 psi maximum.  
Clean, dry air.
- Cleaning: A 1/2” NPT male nipple is factory installed for attachment to shop air.

**PACKAGE CONTENTS:**

- 1 Ea. Blower and Filter Module Assembly
- 1-4 Ea. Source Capture Arm(s)
- 1 Ea. Owners Manual

**UNPACKING INSTRUCTIONS:**

1. Remove unit from crate packaging. Remove arm assembly(s) from cardboard containers. Be careful not to dent the steel tubes on the arm(s) during unpacking.
2. Inspect the unit and arm(s) for any possible damage that may have been caused during shipping.

**INSTALLATION INSTRUCTIONS:**

NOTE: Due to the numerous system configurations available, some of the following installation steps may not be applicable. Follow steps that directly address the specific system configuration being installed.

**⚠ CAUTION: Typical installations require that the unit be suspended from ceiling structure. Structure must be sufficient to support at least four (4) times the maximum weight of the unit.**

1. Determine the location where the unit will be installed. Be sure to allow sufficient room to access all four (4) vertical sides of the unit for servicing and maintenance. Three (3) feet minimum is recommended.
2. Suspend unit from ceiling by use of solid rod or angle brackets. Do not use chain link, cables or any other non-rigid means of suspension.

**⚠ CAUTION: Use solid rod or steel brackets capable of supporting 500 pounds to support the air cleaner. Hang from structural supports.**

3. Support the unit at each end and where modules are coupled together. 8 points of support for 3 module system, 6 points of support for 2 module system (Fig 1).

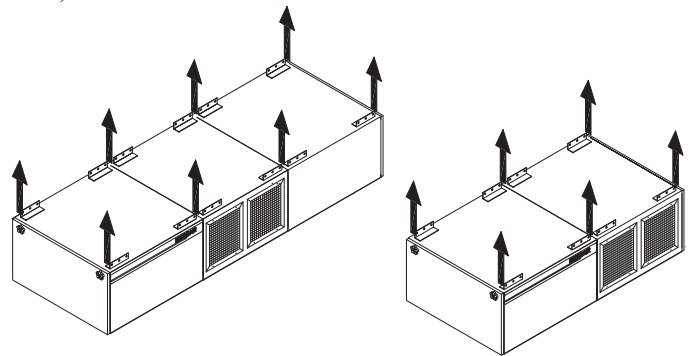


FIG 1

4. Using the 1/4” hardware supplied with each source capture arm, attach the base collar to the bottom of the MC2500 cabinet (Fig. 2).
5. The finished assembly should resemble the assembled view (Fig. 3).

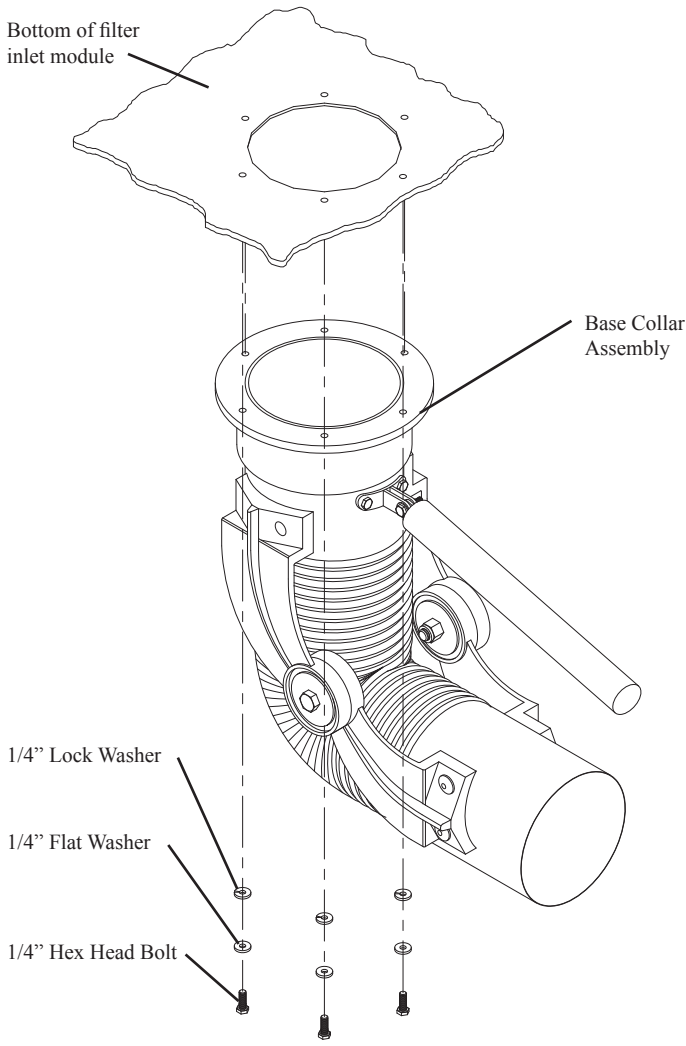


FIG 2

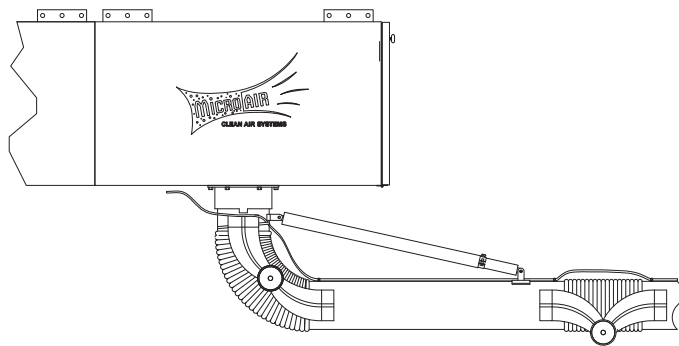


FIG 3

**ELECTRICAL INSTALLATION:**

1. Remove the access panel from the blower module, thereby gaining access to the electrical control boxes internal to the blower module.
2. Remove the input connection access cover from the electrical box located inside the blower module top panel. Make connections from power supply to terminals marked L1, L2, & L3.

3. Reassemble access cover onto the electrical box.
4. Electrical connections for each source capture arm are made inside the blower module. Run all electrical cables from each arm to the nearest 2" diameter hole located on the blower module bottom panel.
5. Make the appropriate connections to the electrical sockets located on the electrical control box. Note that the connections are marked ARM #1, ARM #2, ARM #3 and ARM #4 (Fig. 4).

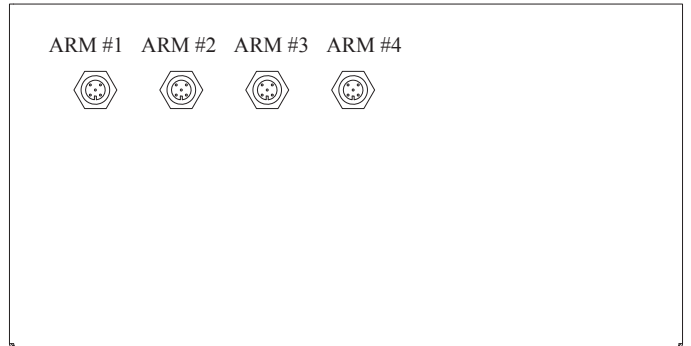


FIG 4

6. Once the cables have been connected, group excess cable length into a tight bundle and secure together using wire ties provided. Be certain that enough cable length is left outside the module that source capture arms can move freely without pulling on cables.
7. Metal cable clamps are supplied to allow the installer to clamp cables (Fig. 5).

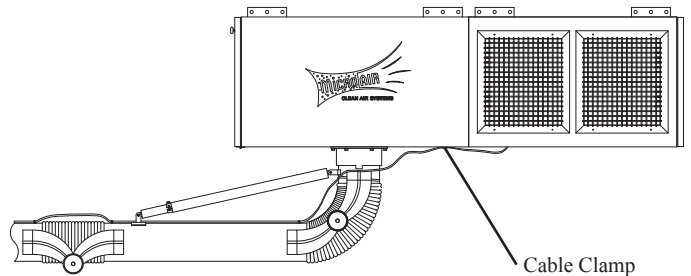


FIG 5

8. Before reattaching the blower module access panel, supply power to the unit and momentarily turn unit on and off via the blower switch located at the source capture hood. Note the rotation of the impeller wheels (Fig. 6).
9. If impeller rotation is incorrect, switch L1 and L2 connections. This will reverse wheel rotation.

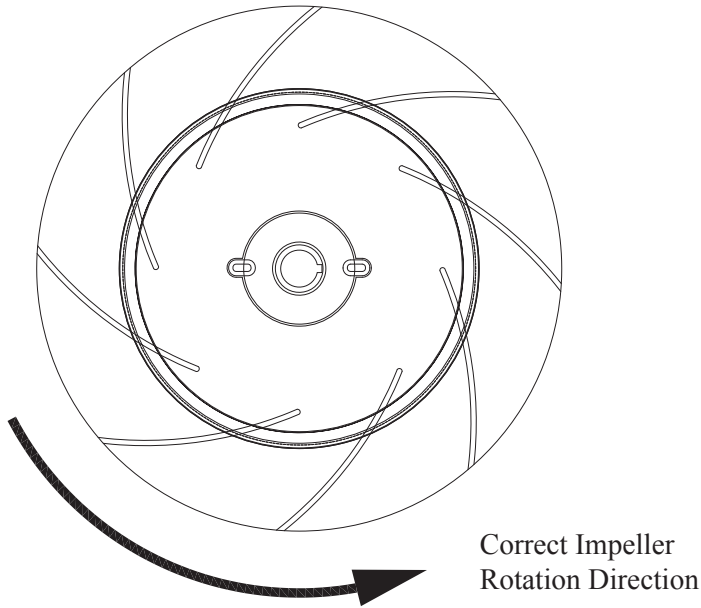


FIG 6

**OPERATING INSTRUCTIONS:**

1. Grasp the hood handle and lift the lower arm section up and down. If the middle joint seems to tight, loosen the two nylock hex nuts that hold the joint together in 1/4 to 1/2 turn increments. If the arm has trouble maintaining a position, tighten the nuts.
2. The hood joint section can be manipulated up and down as well as right and left. If the joints are too loose or too tight, simply adjust the nylock hex nuts as needed.
3. To turn the unit on, depress the blower switch located on the remote switch control box to "ON". The MC2500 will activate via a motor starter relay located within the unit.

**Warning: For multiple arm configurations, all arms contain a motor switch. To turn unit off, all motor ON/OFF switches must be in the off position.**

4. Activate lamp located inside the nozzle by depressing the lamp switch located on the remote switch control box located on the remote switch control box.
5. The damper lever near the nozzle can be rotated 90 degrees to adjust inlet air velocity.
6. When using source capture arms, grasp the hood by the handle ring and position within 18" of the source or pollution. Adjust the hood to capture the maximum amount of contaminants. Periodically adjust the position of the hood to keep it in maximum capture range.

**CARTRIDGE CLEANING OPERATION (Back-Flushing):**

1. The MC2500 is designed with an automatic Roto-Pulse system that cleans the cartridge.
2. During installation, permanently attach a shop air hose to the inlet located on the top of the blower module

NOTE: The unit is supplied with 1/2" NPT male nipple. It is recommended that a pressure regulator and water trap be installed between the shop air and the MC2500.

3. For proper cleaning pressure, shop air should be at 90 psi. maximum.
4. During normal operation, the automatic back-flush cleaning system is factory set to pulse clean the cartridges every 60 seconds.

NOTE: For three (3) module units, cartridge modules are alternately pulsed every 30 seconds.

5. Once the unit is turned off, the pulse cleaning cycle will continue for approximately 17 minutes. Do not service filters until pulse cleaning is completed.

**⚠ CAUTION: Allow twenty (20) minutes down time before opening filter access door. Auto-Pulse system is monetarily operational after unit is turned off.**

6. The back-flushing operation restricts particles from settling on cartridges. Particles are blown off of cartridges which then fall down into dust collection trays.
7. After continued use of the unit, the dust collection trays will need to be removed and emptied. The frequency of servicing the removable trays depends on the type and quantity of pollutants that are collected. The dust trays should be emptied before the particles have accumulated to a depth of 1/2 inch.
8. To remove the dust particles from the MC2500, turn the unit off, wait a minimum of six minutes, open the cartridge filter access door and slide out the dust trays. Dump the dust out of the dust trays and return the trays to the unit. Close and latch the filter access door.

## AUTO BACKFLUSHING TIMER ADJUSTMENTS:

**⚠ CAUTION: This procedure can cause exposure to live components.**

1. Remove the access panel from the blower module, thereby gaining access to the electrical box located inside the blower module top panel.
2. Open the access cover to the electrical box; exposing the timer board within (see FIG 10).
3. The timer control board is pre-set at the factory to pulse a cartridge every 30 seconds. This time can be adjusted from 1 second to 999 seconds. To adjust this time press the select button on the timer board until the off time LED is lit. Press the up/down buttons until the desired value is displayed. Press select to set the new value.

NOTE: Cleaning of the filters too often will decrease your level of performance. A certain level of dust cake on the filters will improve the efficiency of the filter cartridges. You should try to maintain a minimum of 1 in w.c. of pressure differential across the filters. If you can not maintain this minimum level of differential across the filters the time between cleaning pulses should be increased until this can be achieved.

4. The timer control board is preset at the factory to have a cleaning pulse duration of 2 seconds. This can be adjusted from .05 seconds to 600 seconds. To adjust this time press the select button on the timer board until the on time LED is lit. Press the up/down buttons until the desired value is displayed. Press select to set the new value (see FIG 7).

NOTE: While this time can be adjusted we recommend that you leave the “on time” at the factory setting. If less cleaning is needed you should increase the time between pulses as means of reducing the amount of cleaning. If more cleaning is needed you should decrease the amount of time between pulses. Beware, as the time between pulses is decreased for additional cleaning, this will increase your compressed air consumption and create an additional load on your compressed air system.

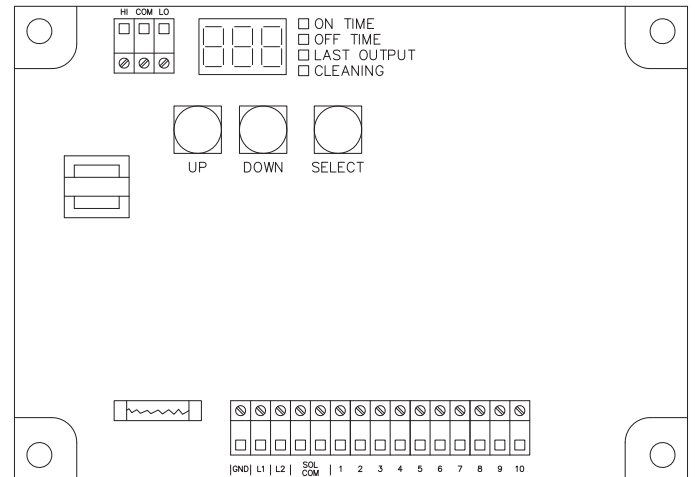


FIG 7

## AFTER-PULSE CLEANING TIMER ADJUSTMENTS:

1. The unit is equipped with an After-pulse cleaning cycle. This cycle will continue to clean the cartridge filters for a period of time after the unit is turned off.
2. The length of the After-pulse operation is preset at the factory for 360 seconds. This time can be adjusted from 0 seconds to 999 seconds. To adjust this time press the select button until the off time LED is lit. Press and hold the select button for 3 seconds. Press the up/down buttons until the desired value is displayed. Press select to set the new value. The After-pulse operation can be disabled by setting the time value to zero (0) seconds.

## CARTRIDGE REPLACEMENT:

1. Turn the unit off.
2. Wait twenty (20) minutes.
3. Open the cartridge filter access door.
4. Remove cartridge filters retained by plastic nuts.
5. Slide new cartridge filters into cabinet and retain with plastic nuts.
6. Close filter access door.

**GENERAL MAINTENANCE:**

1. Occasionally check the condition of the flexible hose for any opening that will allow air to flow through. For replacement, see parts list.
2. Check the impeller(s) for debris and dirt. Periodic cleaning is recommended.
3. Periodically, inspect hardware for loose nuts and bolts around swivel base areas. Tighten as needed.
4. Periodically, inspect all wiring for loose connections and cracked insulation. Replace as needed.
5. Once per month grease the rotating socket with bearing grease listed to not react with Aluminum.

**ELECTRICAL ENCLOSURE ASSEMBLIES:**

**NOTE: This section is to be used as a reference for identifying electrical components and their function.**

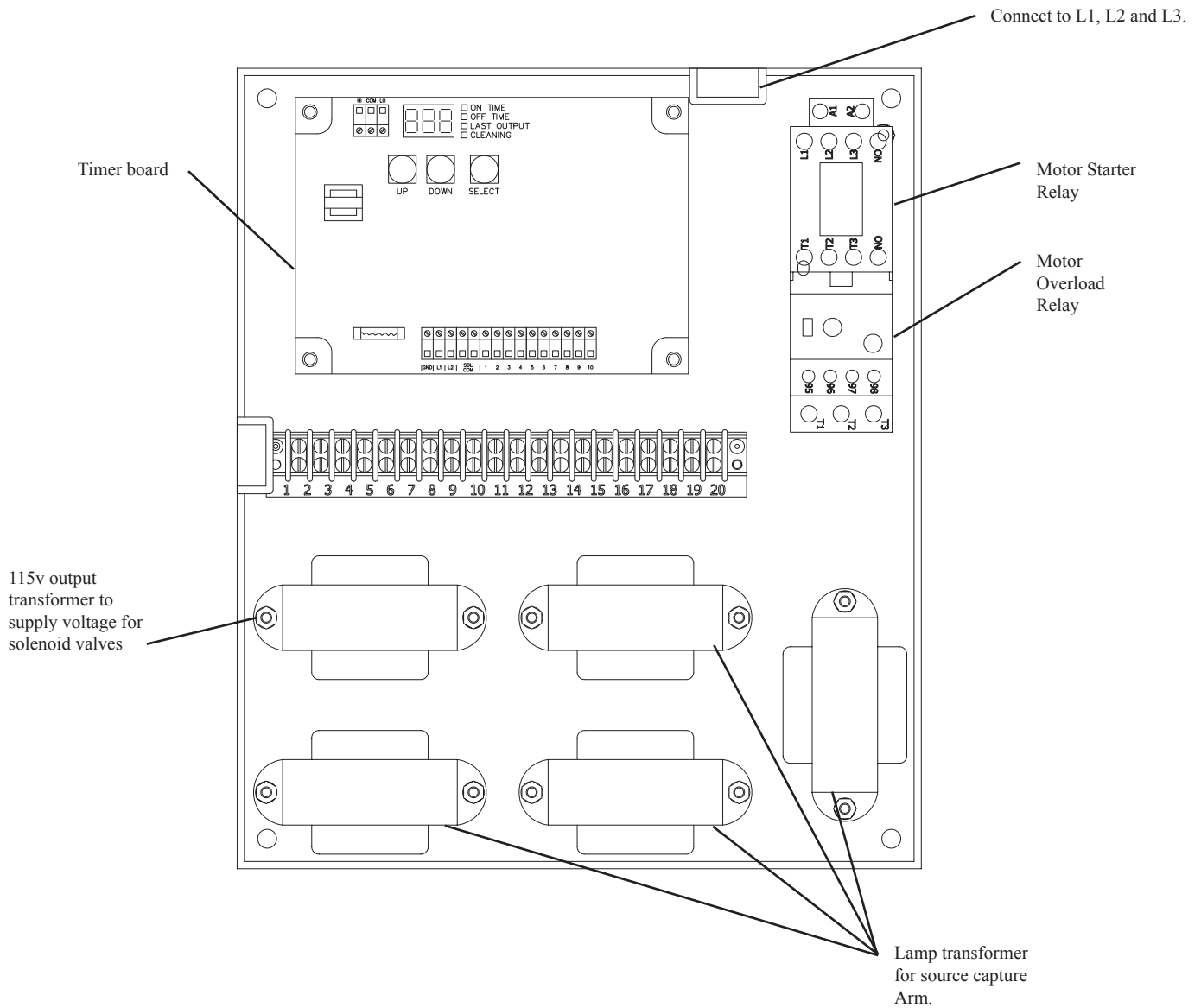


FIG 8



**MC2500 SILENCER INSTALLATION INSTRUCTIONS:**

This kit includes:

1 ea. 36617-01 MC2500 Silencer Assembly

**CAUTION: This installation will cause exposure to live parts. Disconnect power to unit prior to installation.**

**INSTALLATION:**

1. Remove both exhaust grilles from the unit.
2. Remove exhaust panel from the unit by removing the screws (8) and pulling the panel out.
3. Align the holes on the sides of the silencer with the holes where the exhaust panel was located.
4. Attach the side of the silencer to the unit with the six (6) screws provided.
5. Using the pre-punched holes on the top and bottom of the silencer as a template, drill pilot holes in the unit.
6. Attach the top and bottom of the silencer to the unit using the provided screws.
7. Screw grille onto the silencer. Installation is complete.

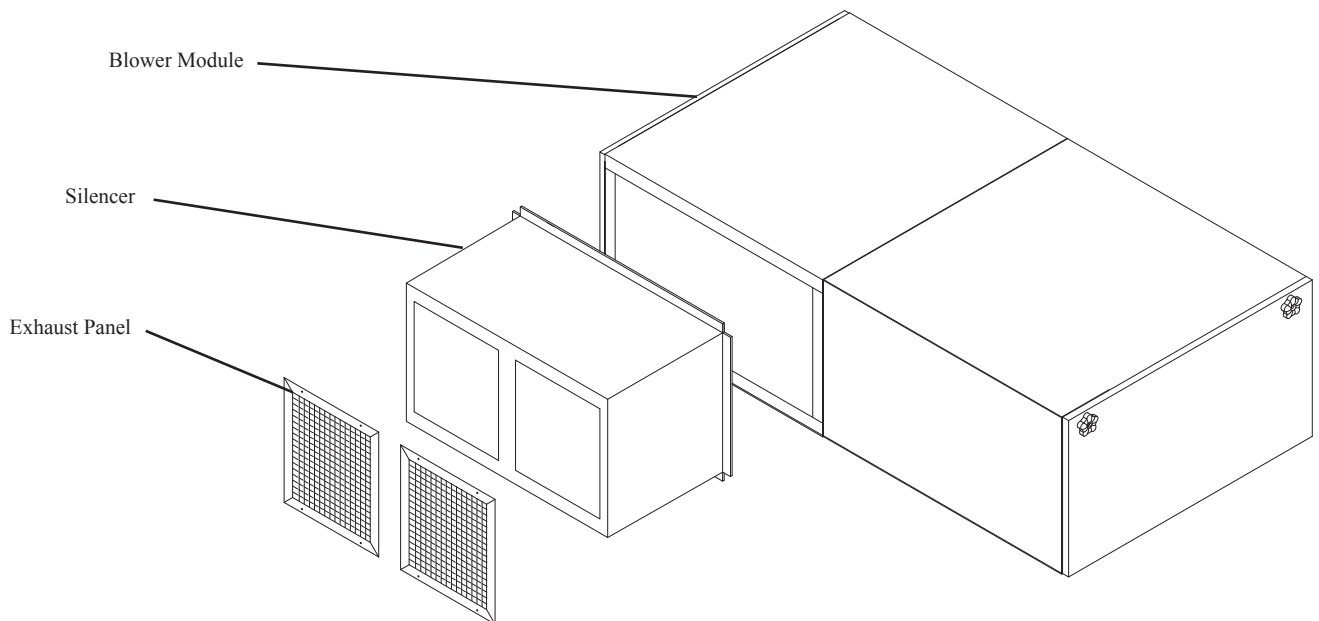


FIG 9

**MC2500 AFTER FILTER INSTALLATION INSTRUCTIONS:**

This kit includes:

1 ea.	36491-01	After filter module
1 ea.	36494-01	Exhaust panel
4 ea.	P2206	3/8" flat washers
4 ea.	P142	Split lock washers
4 ea.	P3295	3/8"-16 x 3" hex bolts

**CAUTION: This installation will cause exposure to live parts. Disconnect power to unit prior to installation.**

**INSTALLATION:**

1. Unpack and inspect all parts.
2. Remove both exhaust grilles from the blower module. Retain exhaust grilles and screws to use later in the installation.
3. Remove the exhaust grille panel from the blower module by removing eight (8) sheet metal screws. This panel and screws will not be used later, so discard as desired.
4. Remove the exhaust panel on the after filter module by removing the four (4) sheet metal screws in each of the corners. Retain these parts, they will be reattached to the module.
5. If your module contains a refillable module or hepa filter, remove the filter by loosening the wing nuts and retaining clips. Move the retaining clips out of the path of the filter and slide the filter out.
6. Position the after filter module against the blower module. Mark the location of the holes on the blower module (see FIG 16).
7. Drill a 1/2" hole at the marked location on the blower module. It will be necessary to drill completely through the support tubes in the blower module.
8. Attach the after filter module to the blower module using the 3/8" hardware provided. The bolts will be attached through the blower module into a weld nut located in the after filter module.
9. Replace the refillable module or hepa filter back into the after filter module. Make sure the filter is tightly sealed against the back of the module. The refillable module may require to be filled prior to placing it into the after filter module.
10. Tighten the retaining clip and the wing nuts securely back into place against the filter.
11. Place the after filter exhaust panel back on the after filter module. Secure using the four (4) sheet metal screws previously removed in step 4.
12. Attach the exhaust grilles to the new exhaust panel. Installation is complete.

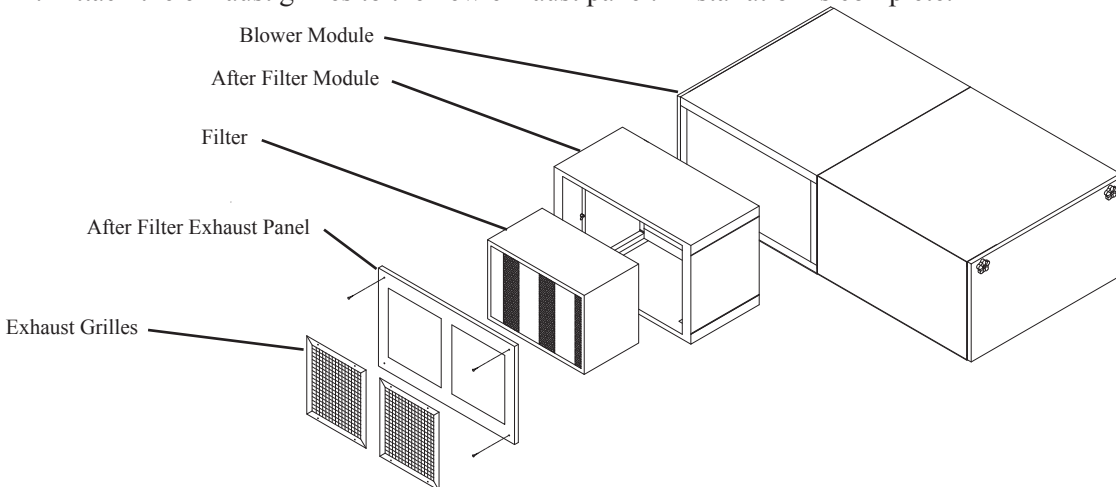


FIG 10



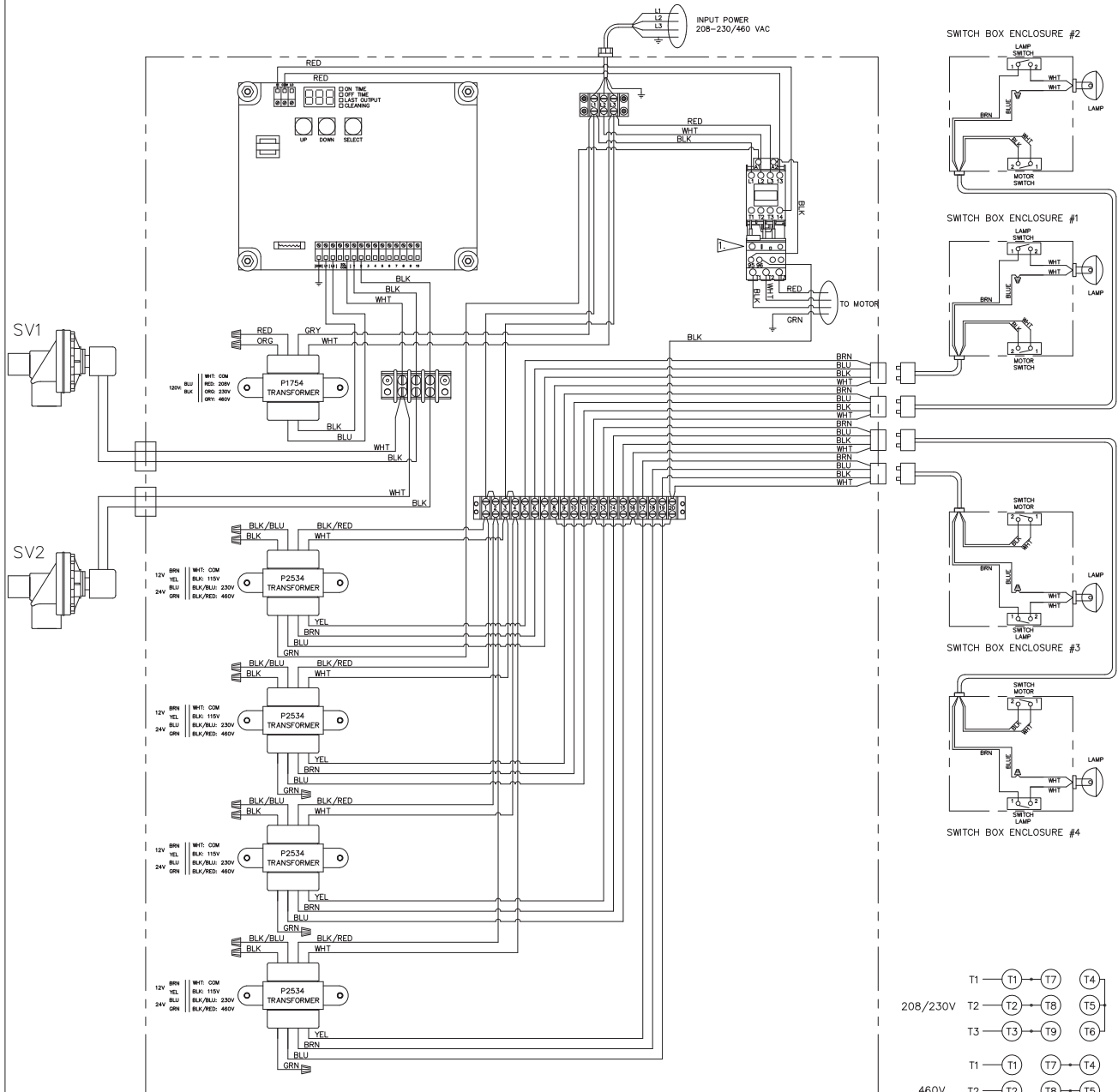
MC2500 WIRING DIAGRAM

# MC2500

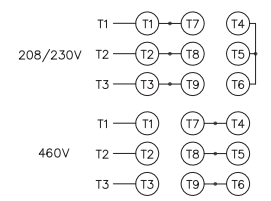
INPUT VOLTAGE (3 PH)  
 208-230 VAC.     460 VAC.  
 OTHER: \_\_\_\_\_ VAC.

FREQUENCY  
 50 HZ.  
 60 HZ.

▶ MAXIMUM CURRENT  
 \_\_\_\_\_ AMPS



TRANSFORMER WIRING IS SHOWN FOR 460V FOR 230V:  
 P1754 SWITCH GRY AND ORG.  
 P2534 SWITCH BLK/RED AND BLK/BLU



MOTOR WIRING CONNECTION

**MC2500 ARM PARTS LIST**

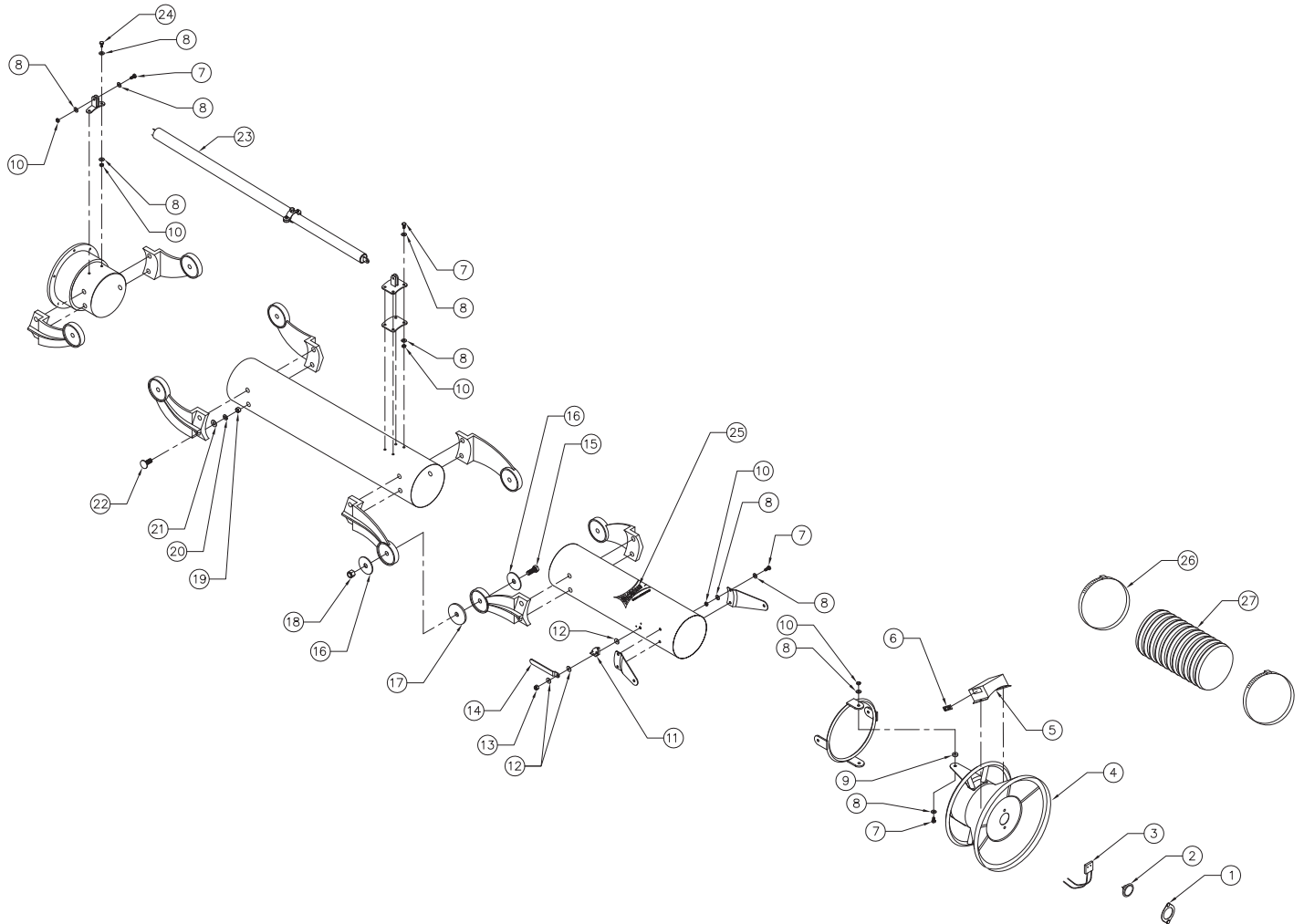


FIG 12

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	37107-01	Lamp Plate	17.	P2467	Friction Pad
2.	P2170	Lamp	18.	P2479	1/2-13 Nylock Hex Nut
3.	P2168	Lamp Socket	19.	P141	3/8-16 Hex Nut
4.	P2466	6" Hood Assembly	20.	P142	3/8 Lock Washer
	P2469	8" Hood Assembly	21.	P2206	Flat Washer
5.	37106-01	Switch Box	22.	P2481	3/8-16 x 1.25" Carriage Bolt
6.	P2219	Rocker Switch	23.	P2458	7' & 9' Arm Spring Shock
7.	P164	1/4-20 x 3/4" Hex Head Bolt		P2459	12' Arm Spring Shock
8.	P246	1/4 Flat Washer	24.	P2483	1/4-20 x 1" Hex Bolt
9.	P2482	Hood Disc Pad	25.	P2312	Micro Air Decal
10.	P2485	1/4-20 Nylock Hex Nut	26.	P2232	Hose Clamp
11.	37104-01	Damper Handle Stop Plate	27.	P2616	6" Dia. Flex Hose
12.	P2206	5/16" Flat Washer		P2617	8" Dia. Flex Hose
13.	P2484	5/16" Nylock Hex Nut	N/S	P2471	4 Conductor Cable - 9' long
14.	37103-01	Damper Handle	N/S	P2472	4 Conductor Cable - 15' long
15.	P2478	1/2-13 x 2.25" Hex Head Bolt	N/S	P2473	4 Conductor Cable - 18' long
16.	P2468	Cup Washer			

**MC2500 BLOWER MODULE PARTS LIST**

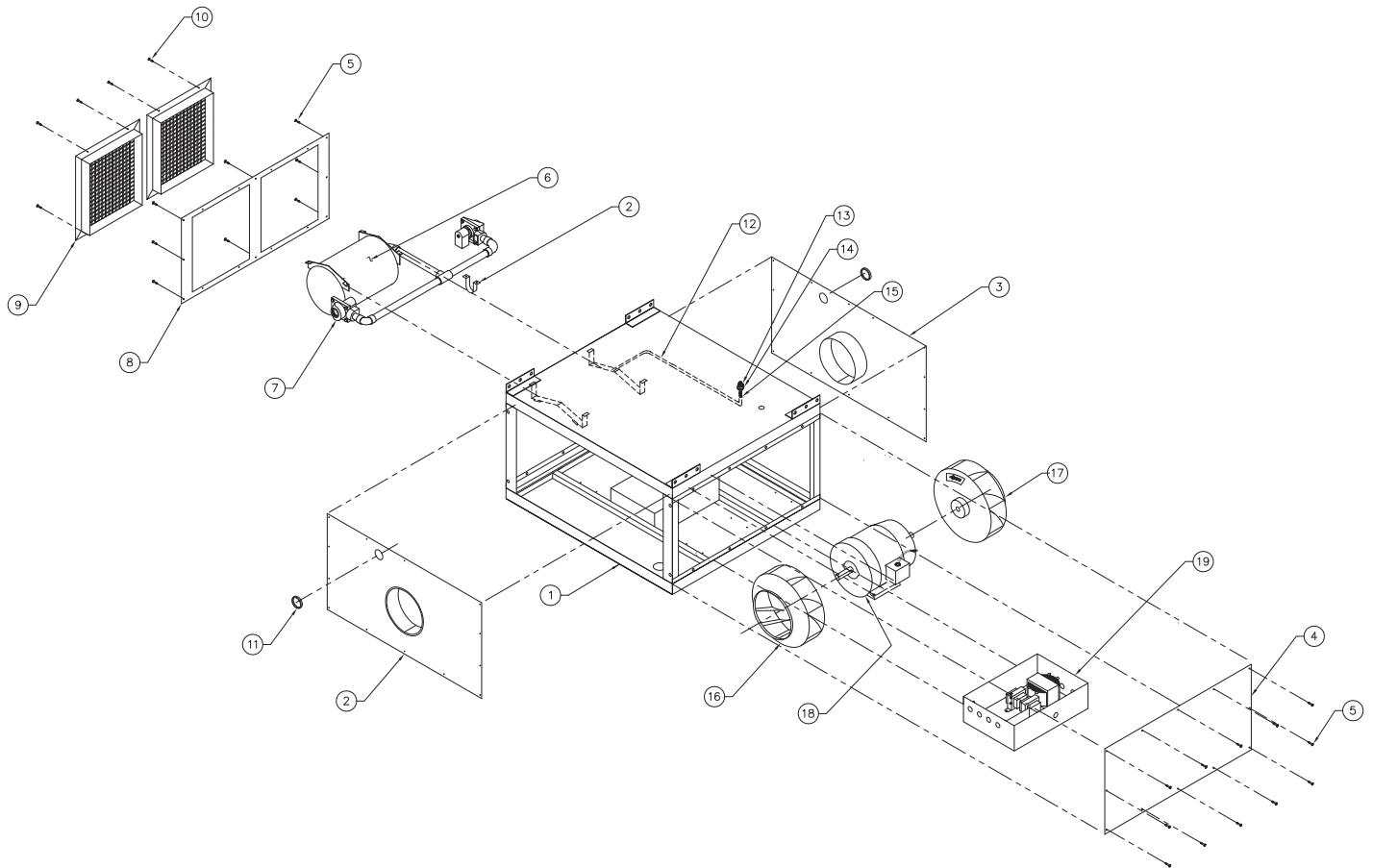


FIG 13

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	36673-01	Blower Weldment	10.	P106	#8 x 3/4" SMS
2.	36693-02	Impeller Inlet (Left)	11.	P2952	Rubber Grommet
*3.	36693-01	Impeller Inlet (Right)	12.	P3403	Hose
4.	36690-01	Blower Access Panel	13.	P3411	Hose Clamp
5.	P2059	#8 x 1/2" SMS	14.	P3413	1/2" NPT x 5/8" Barb
6.	36591-01	Accumulator Assembly (2 Valve)	15.	P3526	1/2" Hex Nut
	36591-02	Accumulator Assembly (1 Valve)	16.	P2778	CW Impeller
7.	P3567	Solenoid Valve	17.	P2777	CCW Impeller
8.	36691-01	Blower Exhaust Panel	18.	P2776	5HP Dual Shaft Motor
9.	P1977	Exhaust Grille	19.	36614-XX	Electrical Box Assembly
*	36578-01	End Cap Panel for Single Blower			

**MC2500 FILTER MODULE PARTS LIST**

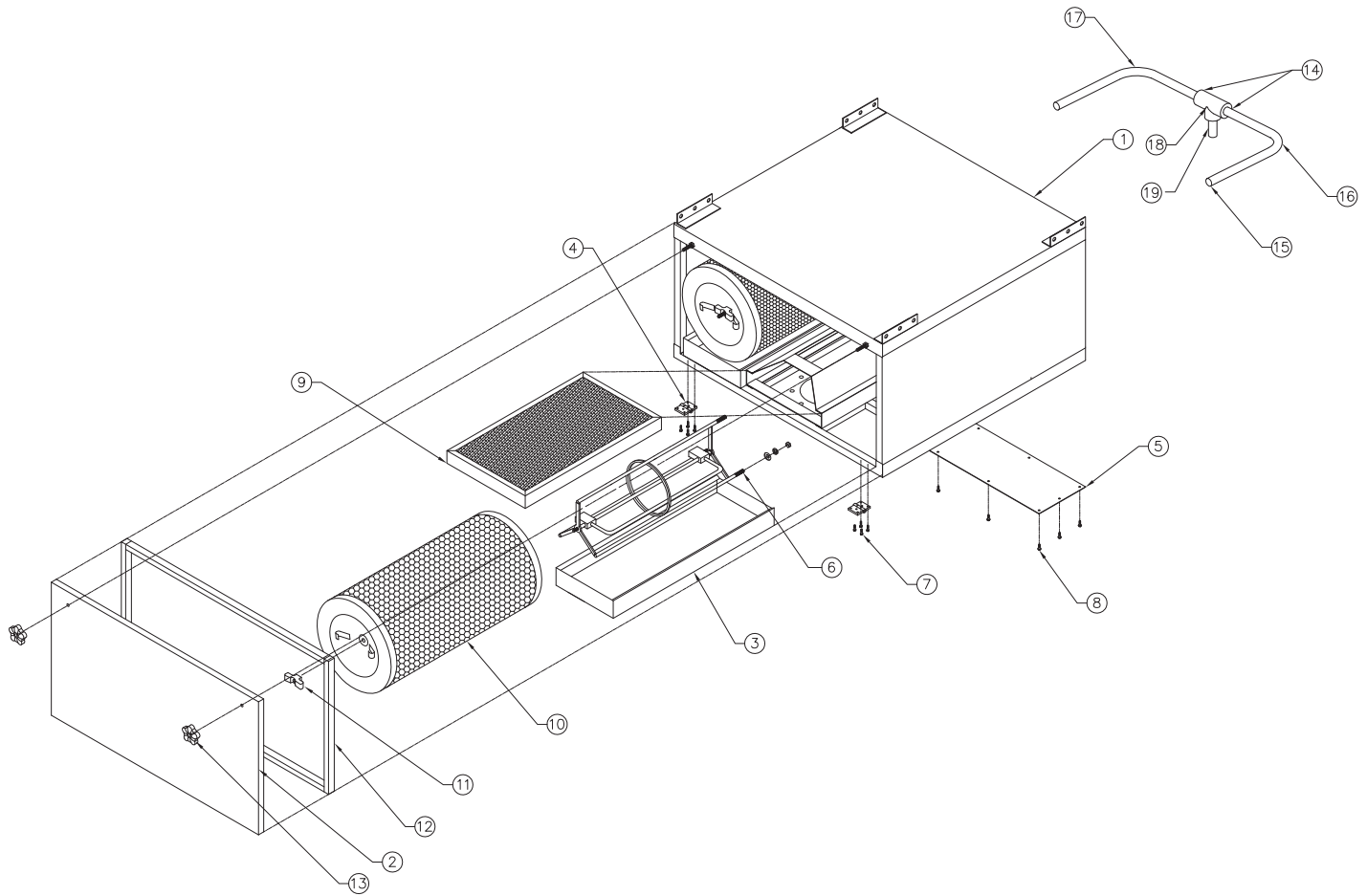


FIG 14

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	36609-01	6" Filter Weldment	11.	P2619	Filter Knob
	36609-02	8" Filter Weldment	12.	P1367	Foam
2.	36560-01	Filter Access Door	13.	P2886	Door Knob
3.	36561-02	Dust Tray	14.	P3413	1/2" NPT x 5/8" Barb
4.	P3121	Metal Hinge	15.	P3411	Hose Clamp
5.	36671-01	Filter Panel	16.	36721-02	Hose
6.	36720-09	Roto-Pulse Assembly	17.	36721-03	Hose
7.	P3120	#6 x 1/2" SMS	18.	P3414	Tee
8.	P2059	#8 x 1/2" SMS	19.	P3257	Pipe Nipple
9.	P2061	Oil Impinger			
10.	P7401RM	80/20 Filter			
	P7408RM	Spunbond Filter			
	P7410RM	Treated Spunbond Filter			
	P7416NM	Nano Filter			

**MC2500 ELECTRICAL BOX PARTS LIST**

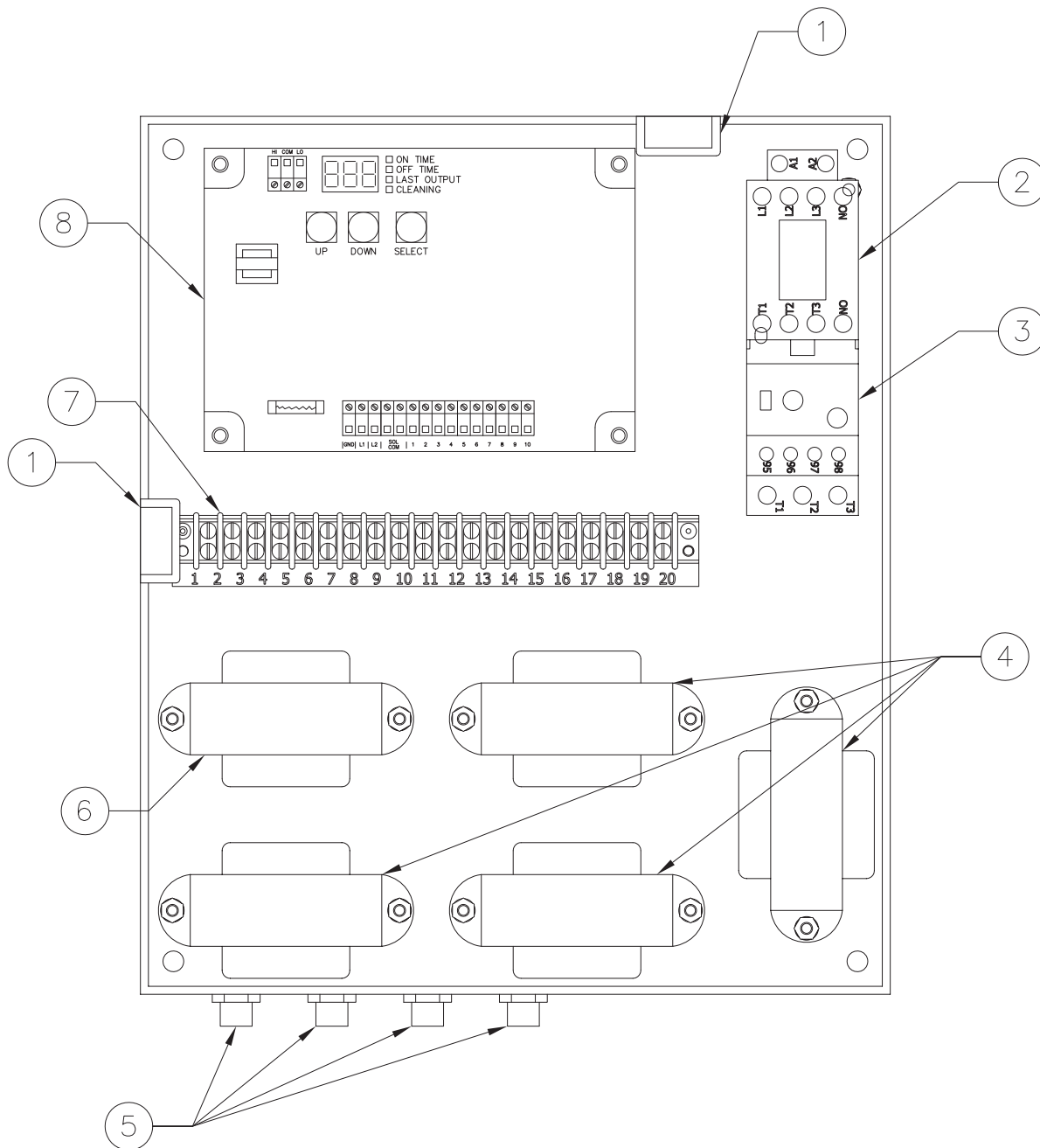


FIG 15

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	P445	3-Cond. Terminal	5.	P2474	4 Pole Wiring Harness
2.	P3911	Motor Starter Relay	6.	P1754	Control Transformer
3.	P3916	Overload Relay (230V)	7.	P2248	20-Cond. Terminal
	P3915	Overload Relay (460V)	8.	P3874	Timer Board
4.	P2534	Lamp Transformer			

**Serial Number:**

**Supply Voltage:**

**Date Installed:**

**Installed By:**

**Noters**