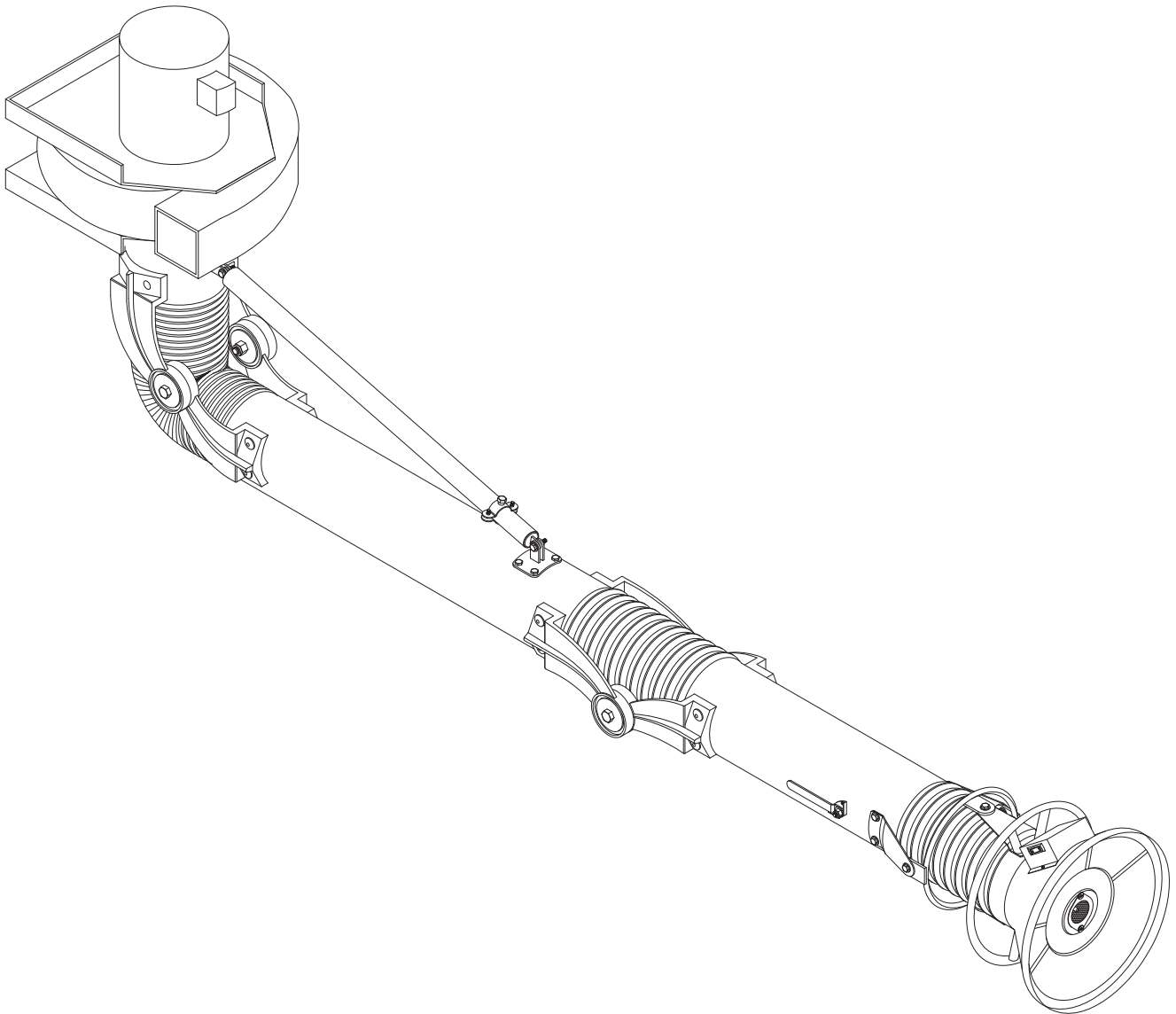




MODEL SCA

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 SCA SPECIFICATIONS

INPUT VOLTAGE:

120V 60Hz 1 Phase
230V 60Hz 1 Phase
208-230V / 460V 60Hz 3 Phase

EXHAUSTER BLOWER/MOTOR:

TEFC 1 HP, 1 Phase - 12.0 Amps @ 120 VAC
TEFC 1 HP, 3 Phase - 3.2 Amps @ 230 VAC
TEFC 1 HP, 3 Phase - 1.6 Amps @ 460 VAC
TEFC 3 HP, 3 Phase - 8.0 Amps @ 230 VAC
TEFC 3 HP, 3 Phase - 4.0 Amps @ 460 VAC

AIR FLOW:

SCA400: 4" Dia. Arms - 1275 CFM, 1HP exhauster
SCA600: 6" Dia. Arms - 1825 CFM, 1HP exhauster
SCA600: 6" Dia. Arms - 2000 CFM, 3HP exhauster
SCA800: 8" Dia. Arms - 2000 CFM, 3HP exhauster

ARM LENGTH:

5' - 4" Diameter
7' - 4", 6" & 8" Diameters
9' - 6" & 8" Diameters
12' - 6" & 8" Diameters

HOOD LAMP:

12 V. Halogen @ 4 Amps (standard)

WEIGHT:

4" Dia. - 5' = 21 lbs.
4" Dia. - 7' = 23 lbs.
6" Dia. - 7' = 48 lbs.
6" Dia. - 9' = 51 lbs.
6" Dia. - 12' = 59 lbs.
8" Dia. - 7' = 59 lbs.
8" Dia. - 9' = 64 lbs.
8" Dia. - 12' = 67 lbs.
1 HP Motor/Blower Assembly = 45 lbs.
3 HP Motor/Blower Assembly = 70 lbs.

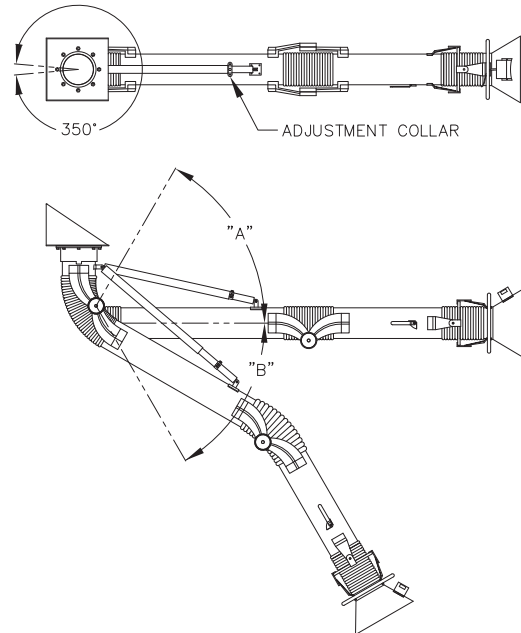
RANGE OF MOTION:

See Figure 1. Factory set for "A" at 10 Deg. Moving the adjustment collar closer to the socket end of the pipe will reduce the amount of upward motion.

Caution:

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

⚠ Typical installations require that the blower or gusset assembly be mounted to a wall. Be sure that the wall is structurally sufficient to support the arm assembly being installed.



| Arm Size | "A" | "B" |
|----------|---------|---------|
| SCA405 | 40 Deg. | 90 Deg. |
| SCA407 | 50 Deg. | 90 Deg. |
| SCA607 | 38 Deg. | 90 Deg. |
| SCA609 | 60 Deg. | 90 Deg. |
| SCA612 | 60 Deg. | 90 Deg. |
| SCA807 | 45 Deg. | 90 Deg. |
| SCA809 | 70 Deg. | 90 Deg. |
| SCA 812 | 68 Deg. | 60 Deg. |

Fig. 1

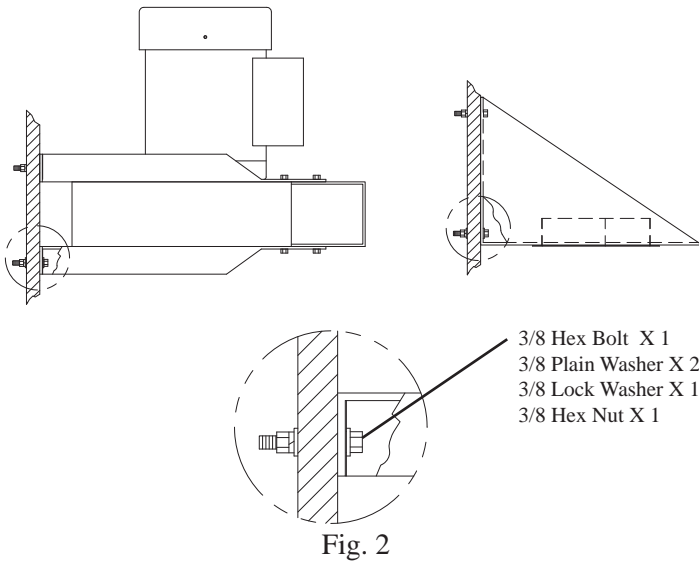
PRE-OPERATING INSTRUCTIONS:

1. Open cardboard carton(s) and remove unit. Remove packaging supports from arm assembly. Be careful not to dent the steel tubes on the arm during unpacking.
2. Inspect the unit for damage that may have been caused during shipping. Immediately report any such damage to the shipping carrier.
3. Examine the unpacked unit and compare it to the parts list description to verify that all components are received. If a component is missing from the assembly, contact your Micro Air representative.

INSTALLATION:

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

1. Determine the location where the arm assembly will be installed (typically at a 10' height).
2. Drill holes into wall or support that align with the gusset or blower mount assembly. Attach the assembly to the wall using hardware provided (Fig. 2).



3. Attach the arm sub-assembly to the motor/blower or gusset assembly as shown (Fig. 3). It is recommended that two (2) people perform this step; one to support the arm assembly, while the other attaches hardware to clamp the arm assembly onto the motor/blower or gusset assembly.
4. Secure the control cable to the arm base using hose clamp. Allow enough slack so arm can move freely (Fig. 4).

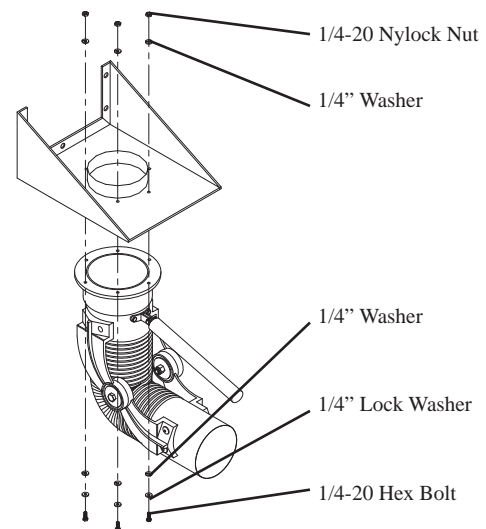
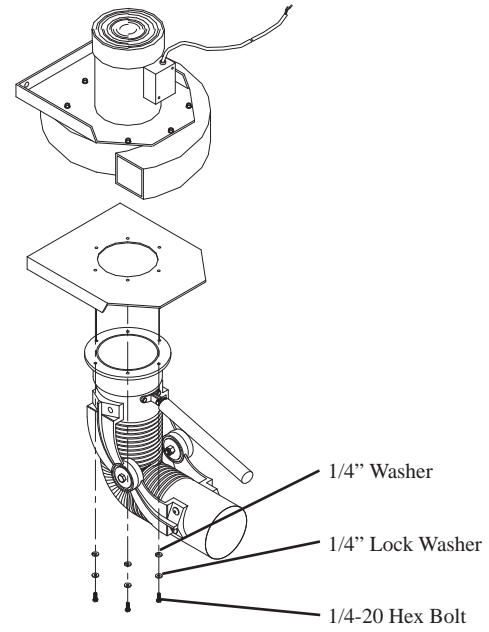


Fig. 3

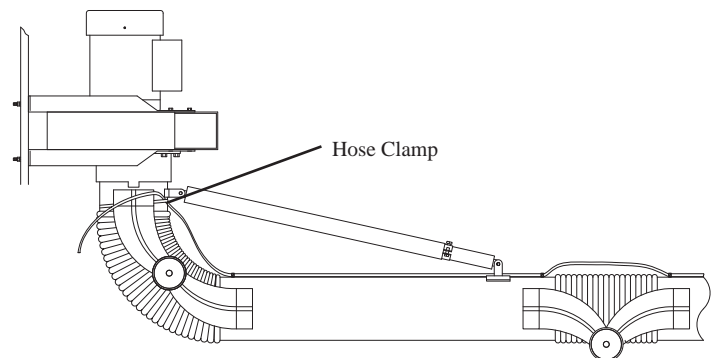


Fig. 4

ELECTRICAL INSTALLATION:

Caution:

⚠ Installation can cause exposure to live parts. Disconnect electrical power before proceeding with installation.

1. An electrical control box is included to house appropriate control transformers, relays, and motor starters. Locate the electrical control box and mount to wall or support, anywhere within reach of the arm control cable connector.
2. Connect the motor/blower power cord to the electrical control box (Fig. 5). The power cord is pre-wired to the motor blower.

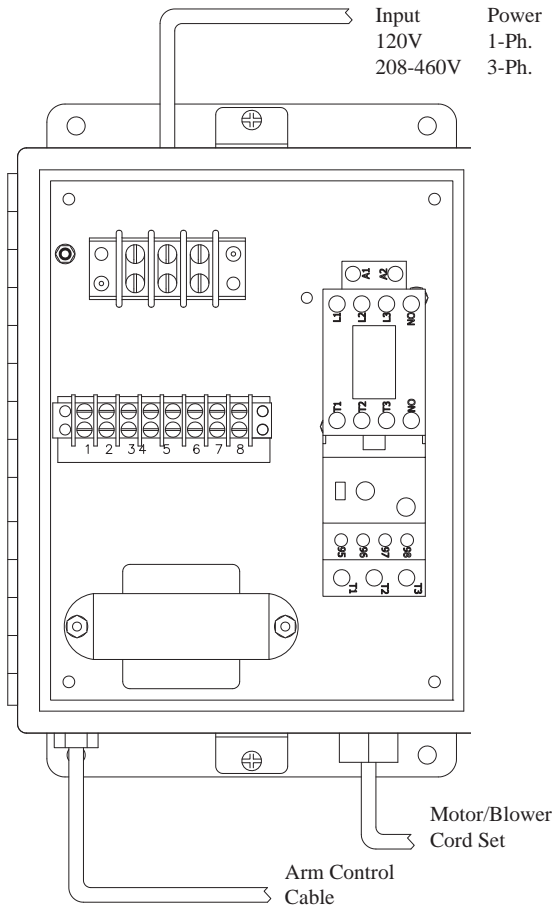


Fig. 5

3. Confirm that the motor wiring matches the supply voltage.
4. Confirm that the blower impeller wheel is rotating in the correct direction when energized (Fig. 6).
5. Connect the arm control cable to the electrical control box (Fig. 5). The arm control cable is pre-wired for turning the lamp on and/or the motor/blower on.

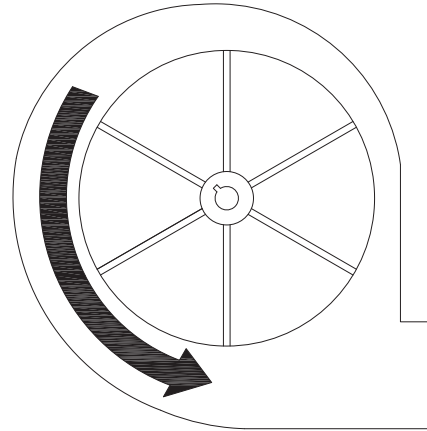


Fig. 6

6. Connect input power to the electrical box at the labeled terminal strip. Refer to specific wiring diagrams and Fig. 5 for details. Be sure to ground input to the electrical control box per local electrical codes.

OPERATION:

1. Upon completion of installation, the SCA should appear similar to the system shown in Fig. 7.
2. 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 1/4-1/2 turn increments. If the arm has trouble maintaining a position, tighten the nuts.
3. 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.
4. To operate the blower, depress the fan switch located on the remote switch control box to ON. The blower motor will activate via a motor relay located inside the electrical control box.
5. Activate the lamp located inside the hood by depressing the lamp switch located on the remote switch control box.
6. The damper lever near the hood can be rotated 90 degrees to adjust the inlet air velocity.

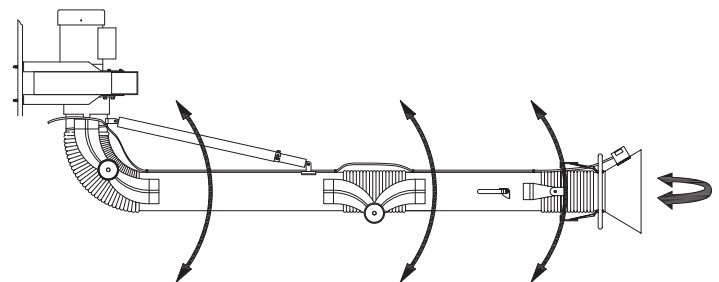


Fig. 7

GENERAL MAINTENANCE:

Daily

- Clean out any debris from the inner surface of the hood.
- Adjust any loose joints.

Once per month

- Grease the rotating socket with bearing grease listed to not react with Aluminum.

Once per 3 months

- Inspect the condition of the flexible hose for any opening that will allow air to flow through.
- Check the blower motor for bearing noise and impeller wheel for debris and dirt. No lubrication is required for the motor since it is a totally enclosed, fan cooled type, with permanently lubricated bearings.
- Inspect hardware for loose nuts and bolts around the swivel base area. Tighten as needed.
- Inspect all wiring for loose connections and cracked or cut insulation. Replace as needed.

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.

| PROBLEM | POSSIBLE CAUSE | REMEDY |
|-------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Blower fails to start | No incoming power | Check line voltage |
| | Blown breaker or fuse | Replace fuse or throw breaker |
| | Primary voltage to motor contactor is below 10% tolerance | Take steps to increase voltage to primary |
| | Burned out motor | Replace motor |
| Unit runs slowly or inadequate capture velocity | Wired for wrong voltage or improper rotation | Check input voltage Check wiring diagram Switch L1 & L2 (3-phase only) |
| | Internal obstruction | Check if damper is open Check inlet for blockage Check hoses for proper connection Check hoses for holes |
| Vibration | Loose motor mount bolts | Tighten bolts |
| | Foreign objects in blower | Remove debris from blower |
| 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 |

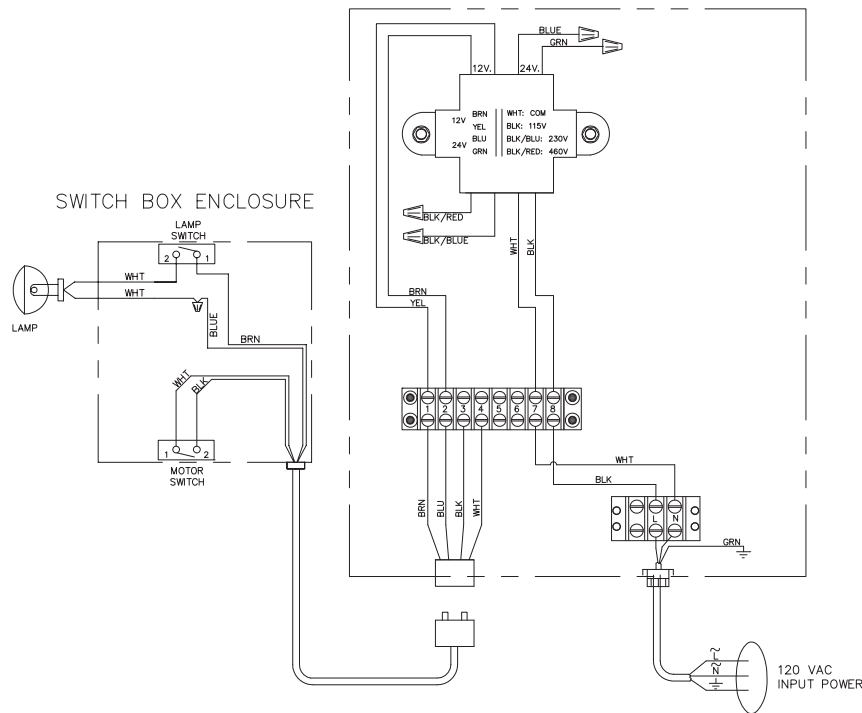
P2488-1

SCA 600
SCA 800

INPUT VOLTAGE

120 VAC
60 HZ.

LAMP: 12VAC.
@ 4.0 AMPS

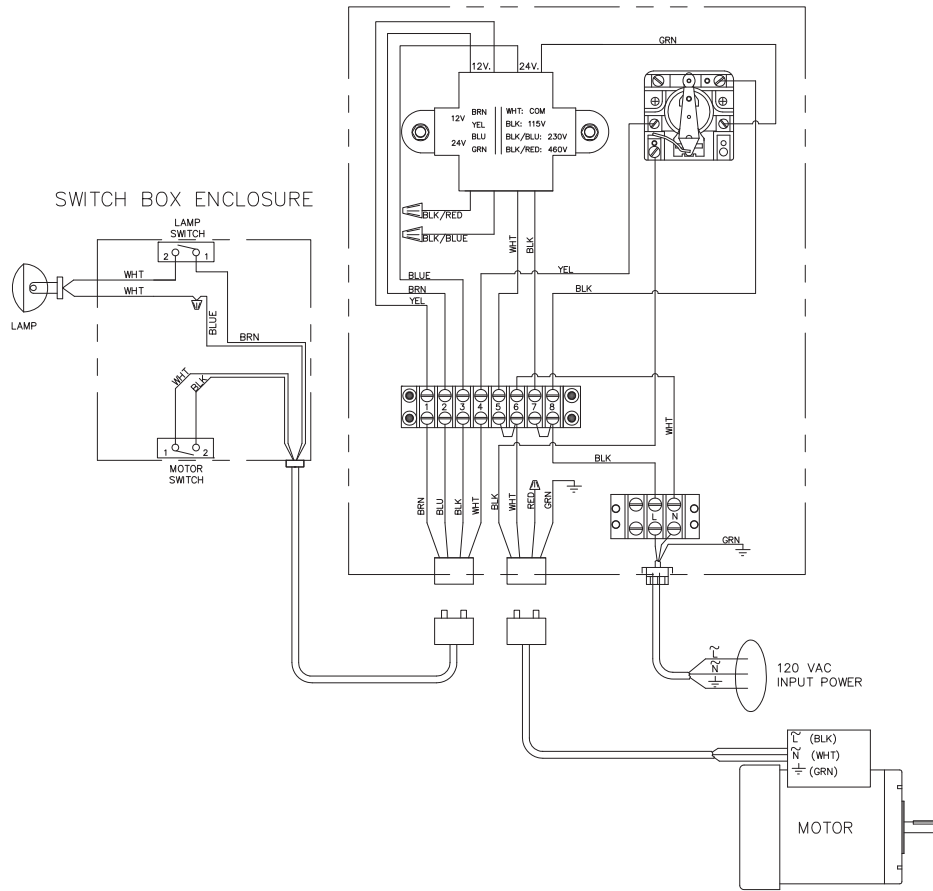


1. CONNECT USING WIRE NUTS AND TAPE OFF. NO CONNECTION TO INPUT POWER.
2. NOTE: COMPONENTS & WIRE COLORS MAY VARY FOR SPECIFIC APPLICATIONS.

METAL-FAB INC. WICHITA, KANSAS USA

120 Volt Light Only Wiring Diagram

P2486-1



SCA 600
SCA 800

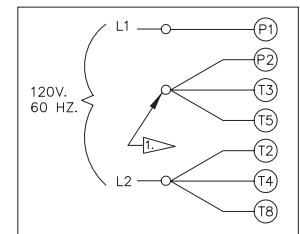
INPUT VOLTAGE

120 VAC
60 HZ.

MOTOR RATING

F.L.A. _____ @120 V
H.P. _____

LAMP: 12VAC.
@ 4.0 AMPS



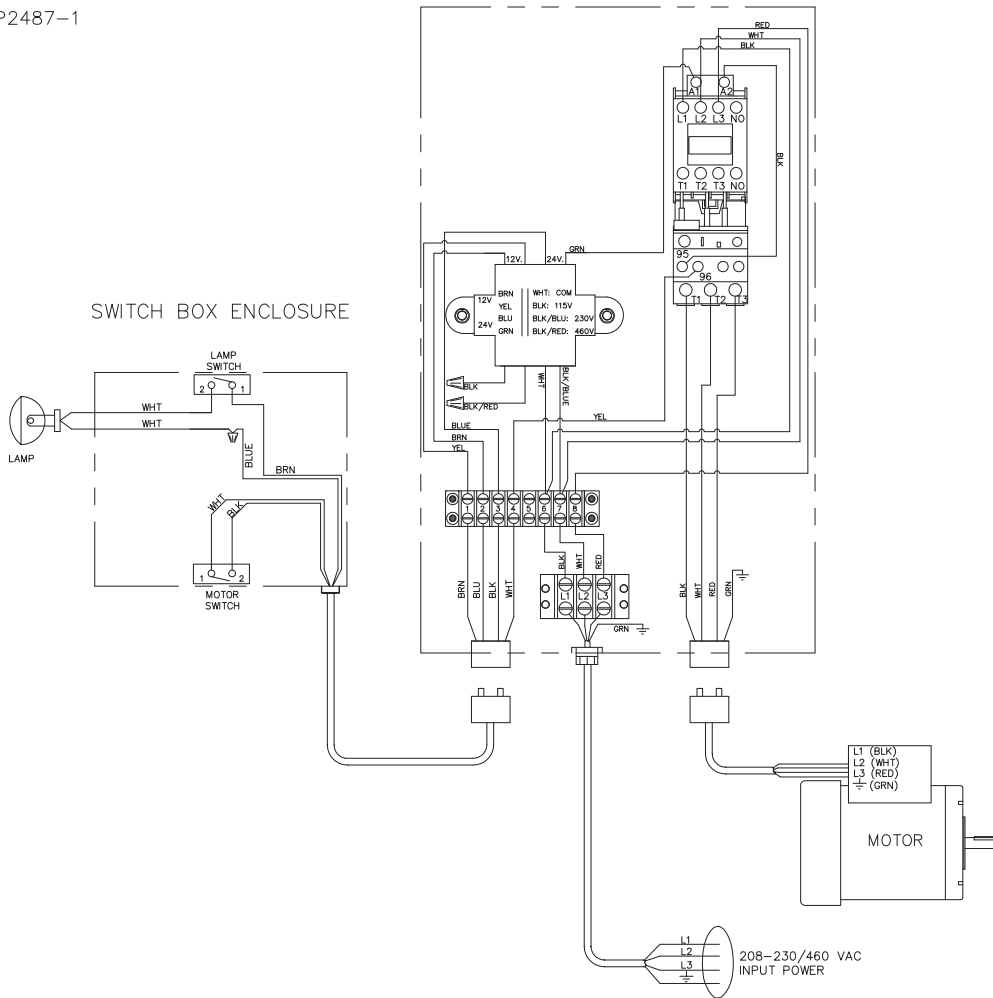
MOTOR CONNECTION

- CONNECT USING WIRE NUTS AND TAPE OFF. NO CONNECTION TO INPUT POWER.
- NOTE: COMPONENTS & WIRE COLORS MAY VARY FOR SPECIFIC APPLICATIONS.

METAL-FAB INC. WICHITA, KANSAS USA

120 Volt Light and Blower Wiring Diagram

P2487-1



SCA 600
SCA 800

INPUT VOLTAGE (3 PH)

208-230 VAC

460 VAC

50 HZ.

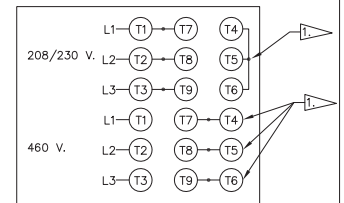
60 HZ.

MOTOR RATING

F.L.A. _____

H.P. _____

LAMP: 12VAC
@ 4.0 AMPS



MOTOR CONNECTION

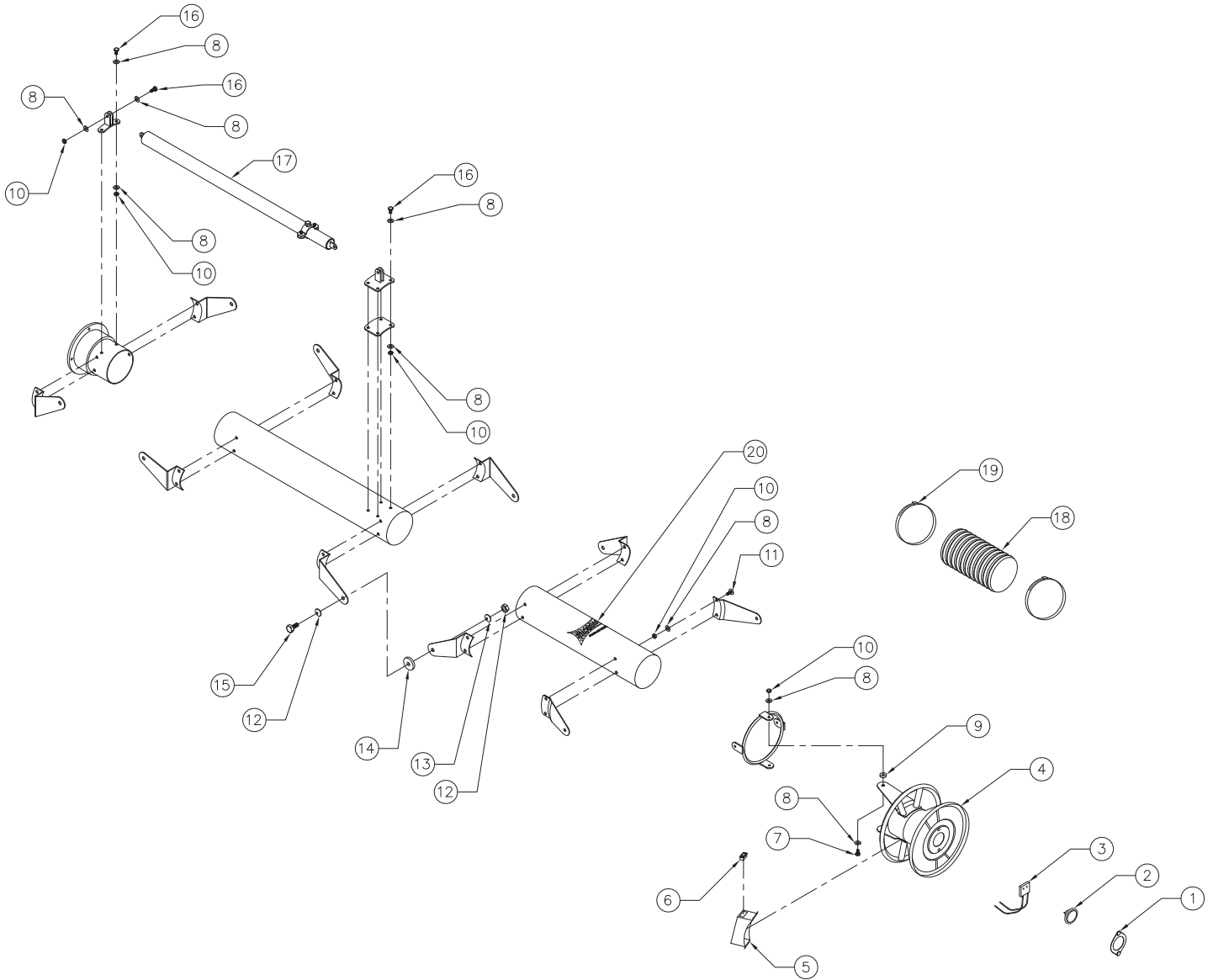
1. CONNECT USING WIRE NUTS AND TAPE OFF. NO CONNECTION TO INPUT POWER.

2. NOTE: COMPONENTS & WIRE COLORS MAY VARY WITH SPECIFIC APPLICATIONS.

METAL-FAB INC. WICHITA, KANSAS USA

208/230/460 Volt Light and Blower Wiring Diagram

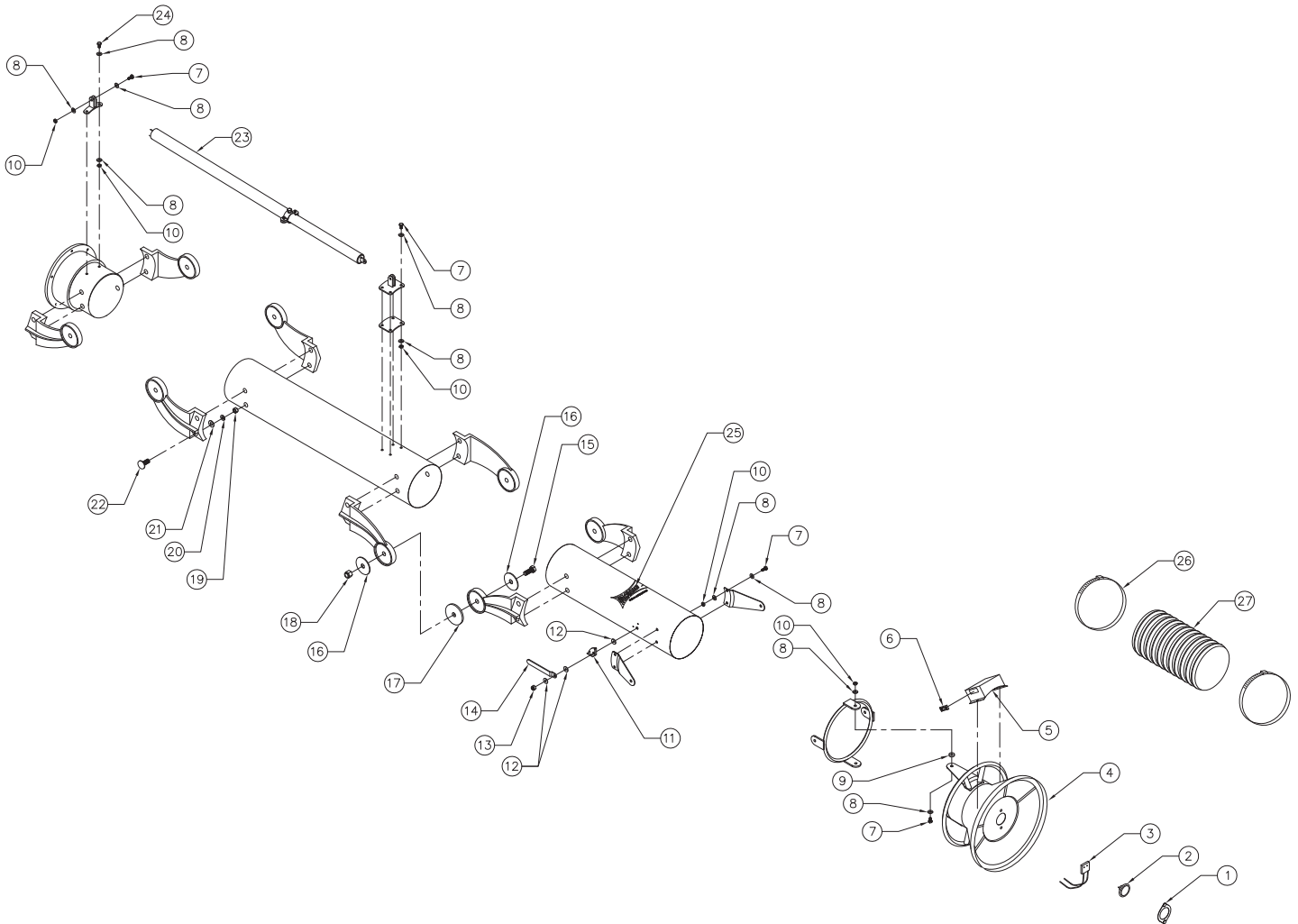
SCA400 ARM ASSEMBLY PARTS LIST



| ITEM | PART NO. | DESCRIPTION |
|------|----------|---------------------------|
| 1. | 37107-01 | Lamp Plate |
| 2. | P2170 | Lamp |
| 3. | P2168 | Lamp Socket |
| 4. | P2463 | Hood Assembly |
| 5. | 37106-01 | Switch Box |
| 6. | P2219 | Rocker Switch |
| 7. | P2483 | 1/4-20 x 1" Hex Head Bolt |
| 8. | P246 | 1/4 Flat Washer |
| 9. | P2482 | Hood Disc Pad |
| 10. | P2485 | 1/4-20 Nylock Hex Nut |
| 11. | P2490 | 1/4-20 x 1" Carriage Bolt |

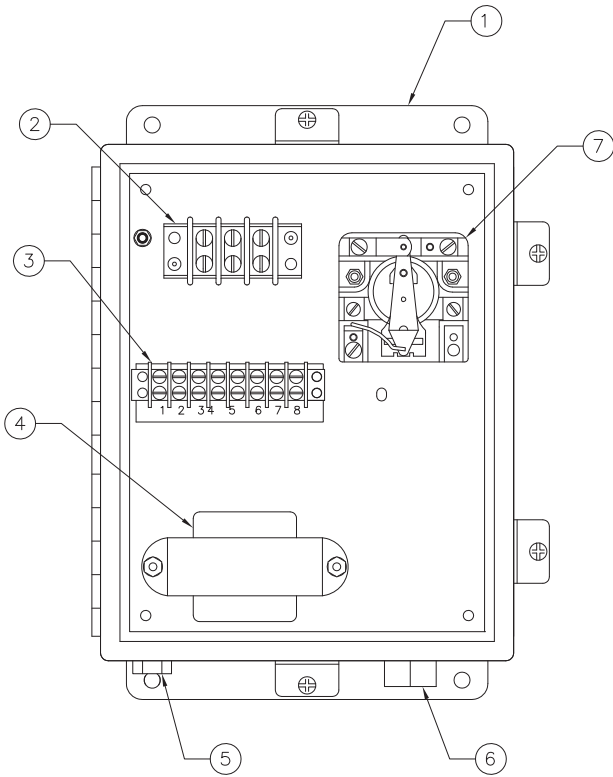
| ITEM | PART NO. | DESCRIPTION |
|------|----------|------------------------------|
| 12. | P2484 | 5/16" Nylock Hex Nut |
| 13. | P2465 | Cup Washer |
| 14. | P2464 | Friction Pad |
| 15. | P2614 | 5/16-18 x 1" Hex Head Bolt |
| 16. | P164 | 1/4-20 x 3/4" Hex Head Bolt |
| 17. | P2457 | 4" Arm Spring Shock |
| 18. | P2470 | 4" Dia. Flex Hose |
| 19. | P2232 | Hose Clamp |
| 20. | P2312 | Micro Air Decal |
| N/S | P2471 | 4 Conductor Cable - 9' long |
| N/S | P2472 | 4 Conductor Cable - 15' long |

SCA600 & SCA800 ARM ASSEMBLY PARTS LIST

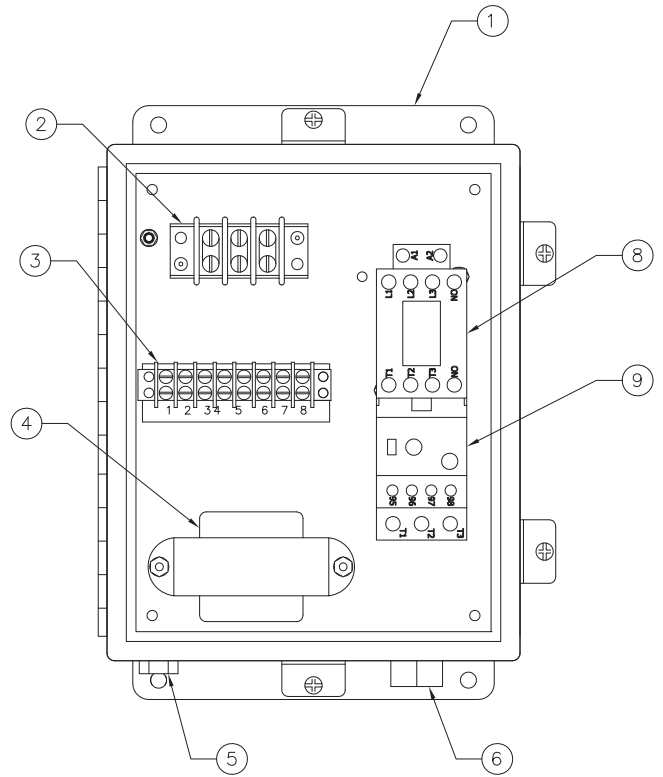


| ITEM | PART NO. | DESCRIPTION | ITEM | PART NO. | DESCRIPTION |
|------|----------|------------------------------|------|----------|------------------------------|
| 1. | 37107-01 | Lamp Plate | 18. | P2479 | 1/2-13 Nylock Hex Nut |
| 2. | P2170 | Lamp | 19. | P141 | 3/8-16 Hex Nut |
| 3. | P2168 |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

SCA ELECTRICAL CONTROL BOX PARTS LIST



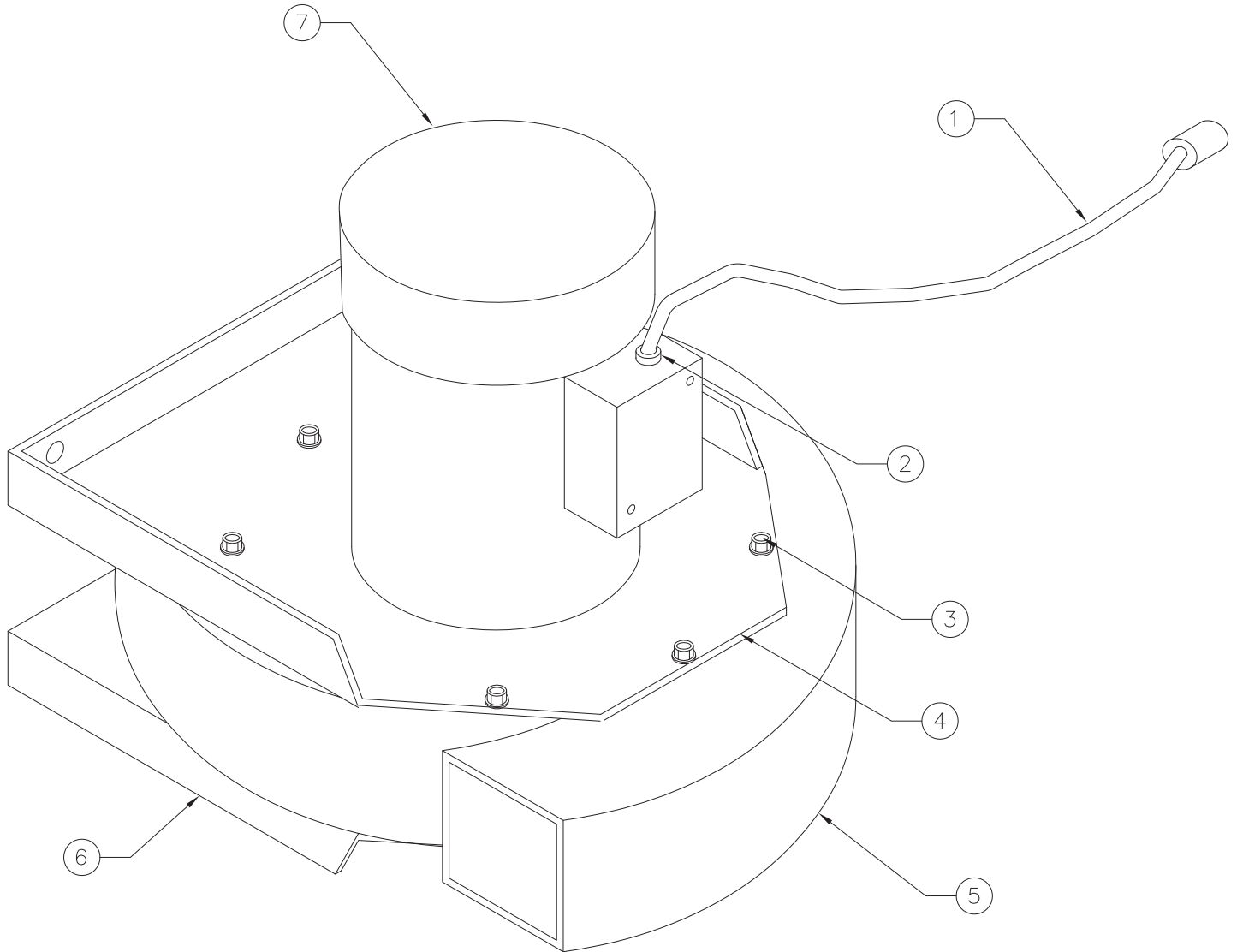
SINGLE PHASE CONTROL BOX



3-PHASE CONTROL BOX

| ITEM | PART NO. | DESCRIPTION |
|------|----------|------------------------------------|
| 1. | P7318 | Nema 4 Control Box |
| 2. | P445 | 3 Conn. Terminal Strip |
| 3. | P3246 | 8 Conn. Terminal Strip |
| | P3252 | Terminal Strip Label |
| 4. | P2534 | Transformer |
| 5. | P2474 | Arm Control Wiring Harness |
| N/S | P2475 | Arm Control wiring Harness Hex Nut |
| 6. | P2477 | Motor Control Wiring Harness |
| 7. | P2078 | Relay |
| 8. | P3909 | Contactor |
| 9. | P3914 | Overload (1HP) |
| | P3915 | Overload (3HP) |

BLOWER ASSEMBLY PARTS LIST



1 HP. BLOWER ASSEMBLY

| ITEM | PART NO. | DESCRIPTION |
|------|----------|-----------------------------|
| 1. | P2473 | Motor Cable |
| 2. | P386 | Strain Relief |
| 3. | P2729 | #12 x 3/4" Drive Screw |
| 4. | 37111-02 | Motor Mount Plate (1-Phase) |
| | 37111-05 | Motor Mount Plate (3-Phase) |
| 5. | P2761 | Blower |
| 6. | 37111-01 | 4" Swivel Plate |
| | 37111-03 | 6" Swivel Plate |
| 7. | P2077 | 1 HP. Single Phase Motor |
| | P2249 | 1 HP. 3-Phase Motor |

3 HP. BLOWER ASSEMBLY

| ITEM | PART NO. | DESCRIPTION |
|------|----------|-----------------------------|
| 1. | P2473 | Motor Cable |
| 2. | P386 | Strain Relief |
| 3. | P2729 | #12 x 3/4" Drive Screw |
| 4. | 37111-05 | Motor Mount Plate (3-Phase) |
| 5. | P2715 | Blower |
| 6. | 37111-06 | 6" Swivel Plate |
| | 37111-04 | 8" Swivel Plate |
| 7. | P2716 | 3 HP. 3-Phase Motor |

