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CM-2400S Owner's Manual



CM-2400S Owner's manual:

Thank you for your purchase decision and trust in our products and services.

Index:

- Safety / Caution.....3
- Warranty.....4
- Quick Component Reference.....5
- Philosophy & Theory of Operation.....7
- Unpacking and Machine Set-up.....8
- Operation and Controls.....9
- Setup Diagrams.....14
- Maintenance.....16
- Shredder Direction Options.....19
- Pressure Gauge: How to use it.....20
- Airlock and Seal Replacement.....21
- Blower Replacement Instructions (Blower Box).....25
- Increased Torque Sprocket Setup.....26
- Reverse Auger Install Instructions.....27
- Mechanical Troubleshooting.....28
- Electrical Troubleshooting.....28
- Parts List.....30
- Electrical Parts List & Wiring Diagrams.....42

Safety/Caution

- Be Safe- Keep away from moving parts.
- Be Safe- Make sure all guards, and hopper extensions are in proper location before operating machine. Hands should never pass below top of main hopper.
- Be Safe- Do not move machine, remove motors, or other electrical components when unit is connected to power supply.
- Be Safe- Be sure auger motor, blower motor, and remote control hand pendant are in **off** position **before** connecting power supply to the machine.
- Be Safe- Be sure machine is properly grounded. Protect all electrical supply cords from sharp objects, moisture, and potentially hazardous materials. Keep power cords in good repair. Electrical service must be performed by qualified electrician.
- Be Safe- Disconnect power supply **before** inspecting or adjusting unit.
- Be Safe- Consult qualified technician to answer questions **before** attempting to operate, or injury may result.
- Be Safe- Wear an approved dust mask or respirator for operator safety, comfort and protection.
- Be Safe- Emergency Kill Switch- In case of emergencies, always use 'red' stop button located in center of main panel box. It will stop all feeding and agitation. Note: This action will **not interrupt power** to the panel box.

Make Sure!!!

- Hopper is empty of foreign objects before starting.
- Proper electrical power is supplied or damage to unit will result.
- Blower filter is kept clean and in place when blower is running.
- Blower is turned off immediately if hose is plugged, or blower will overheat.
- Blowers must be on when auger/airlock is running, or machine will bind.
- Auger/airlock motor is not running with hopper empty for more than a few minutes, or damage to seals will result.
- Sprockets, chains, belts and pulleys are correctly **aligned** and **tensioned**.
- Pieces of bags are not left in machine as this can bind and stall machine.

Limited Warranty

Products and components manufactured by **Cool Machines Inc.** are warranted to the original purchaser to be free of defects in material and workmanship and will operate as intended for a period of two (2) years from the date of purchase. Any product or components that do not function may be returned with proof of purchase and (RA) return authorization to:

Cool Machines Inc.
740 Fox Road
Van Wert, Ohio 45891

Important: All items must have a **Return Authorization Number** attached to item for in-house tracking purposes.

Buyer is responsible for all costs incurred in removal and reinstallation of the product and must **pre-pay** shipment to the factory. Returned item will be evaluated for warranty. If warranty is approved, the product will be replaced at no charge and returned standard ground shipping fees pre-paid. (Next day delivery and special expediting fees is responsibility of buyer.) **Note:** If **buyer** needs **immediate** replacement, **buyer** must purchase component and refund will be determined upon evaluation of returned part.

This limited warranty does **not** cover replacement of components or parts manufactured by others than Cool Machines and become inoperative due to wear & usage and needs to be replaced on a regular basis. Including but not limited to: airlock seals, belts, chains, auger wipers, switches, fuses, fan blades, clutches, hoses, and filters.

Cool Machines obligation under this warranty is limited to repairing or replacing any part that is determined by the company to be a manufacturing defect.

No warranty is made with respect to:

1. Components or accessories manufactured and warranted by others. Warranties for purchased components supplied by vendors such as: gas engines, electric motors, blowers, gearboxes, etc., are on file and provided upon request.
2. Defects caused by repair, alteration and/or adjustment performed by others.
3. Labor costs of repairing or replacing parts.
4. Any products not operated and/or maintained in accordance with normal industry practice and/or written recommendations of the company.
5. Products subjected to misuse, negligence, or results of applications not in accordance with company recommendations.

This warranty set forth above is exclusive and makes no other warranties with respect to description or quality of the product including, but without limitation, no warranties of merchantability or fitness for a particular purpose. This warranty set forth above does not extend to, and Cool Machines shall not be responsible for: incidental, consequential, special or indirect damages. Cool Machines shall not be liable for penalties or any liquidated damages.

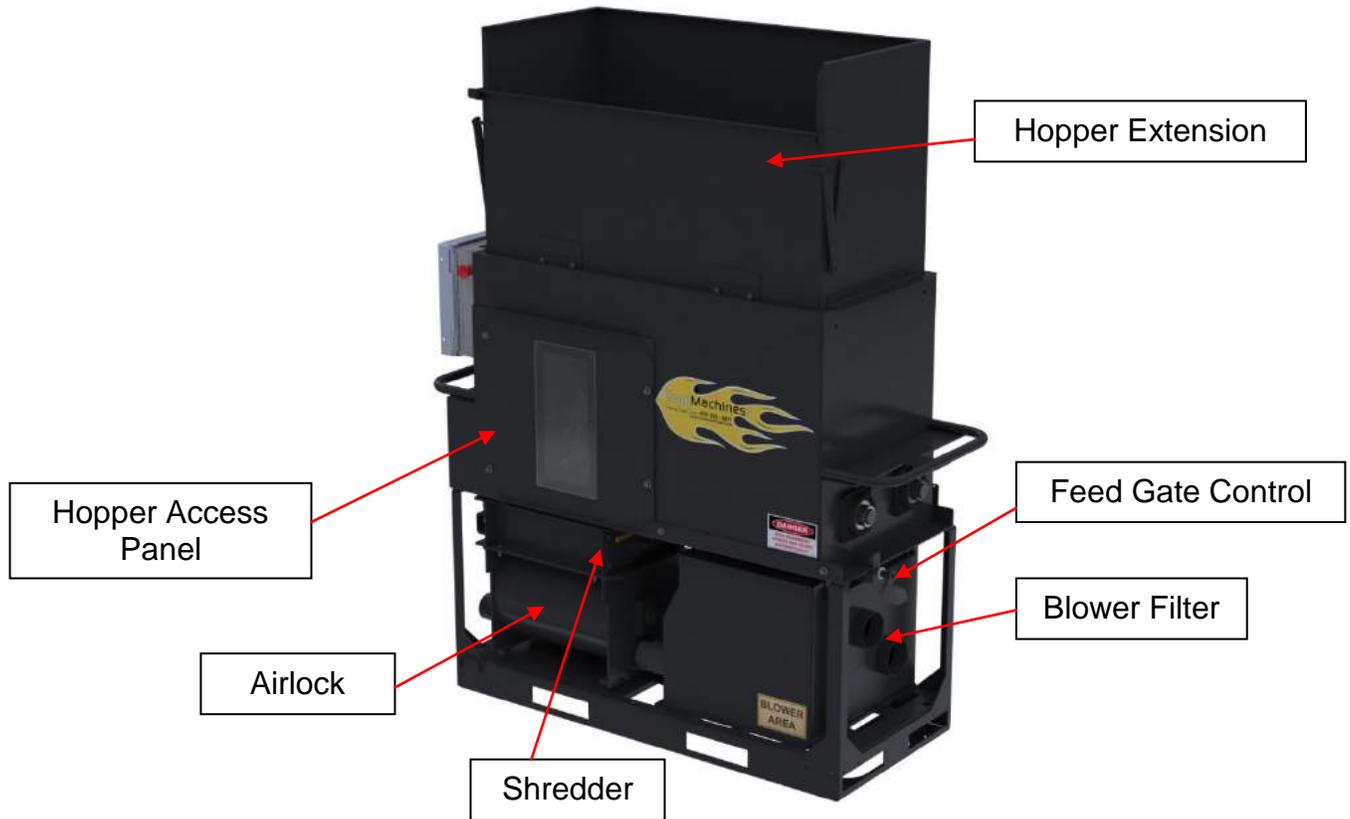
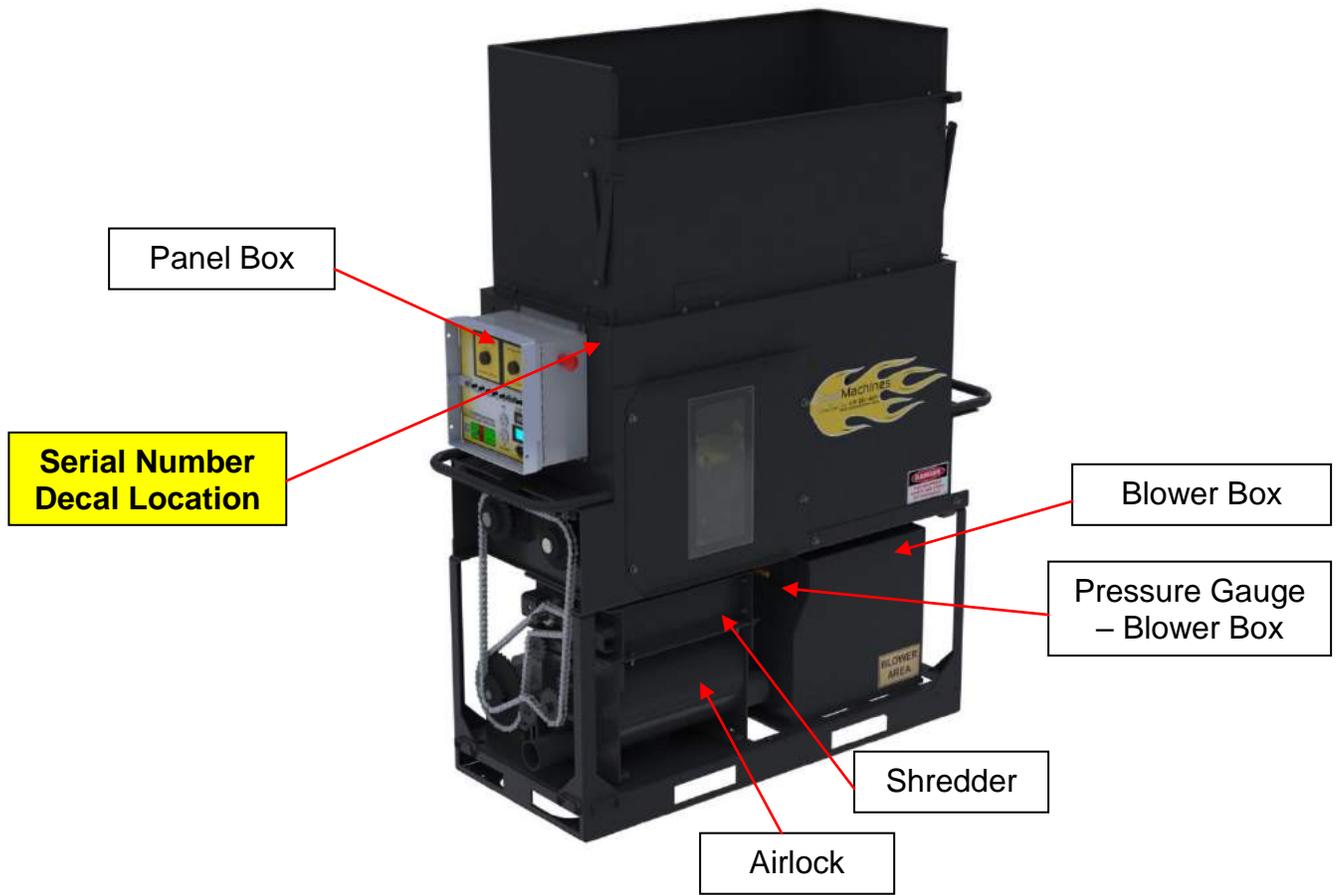
Cool Machines shall not be liable for any injury or damage resulting from failure to follow and comply with the instructions that accompany the product.

This warranty is expressly in lieu of all other written or oral warranties.

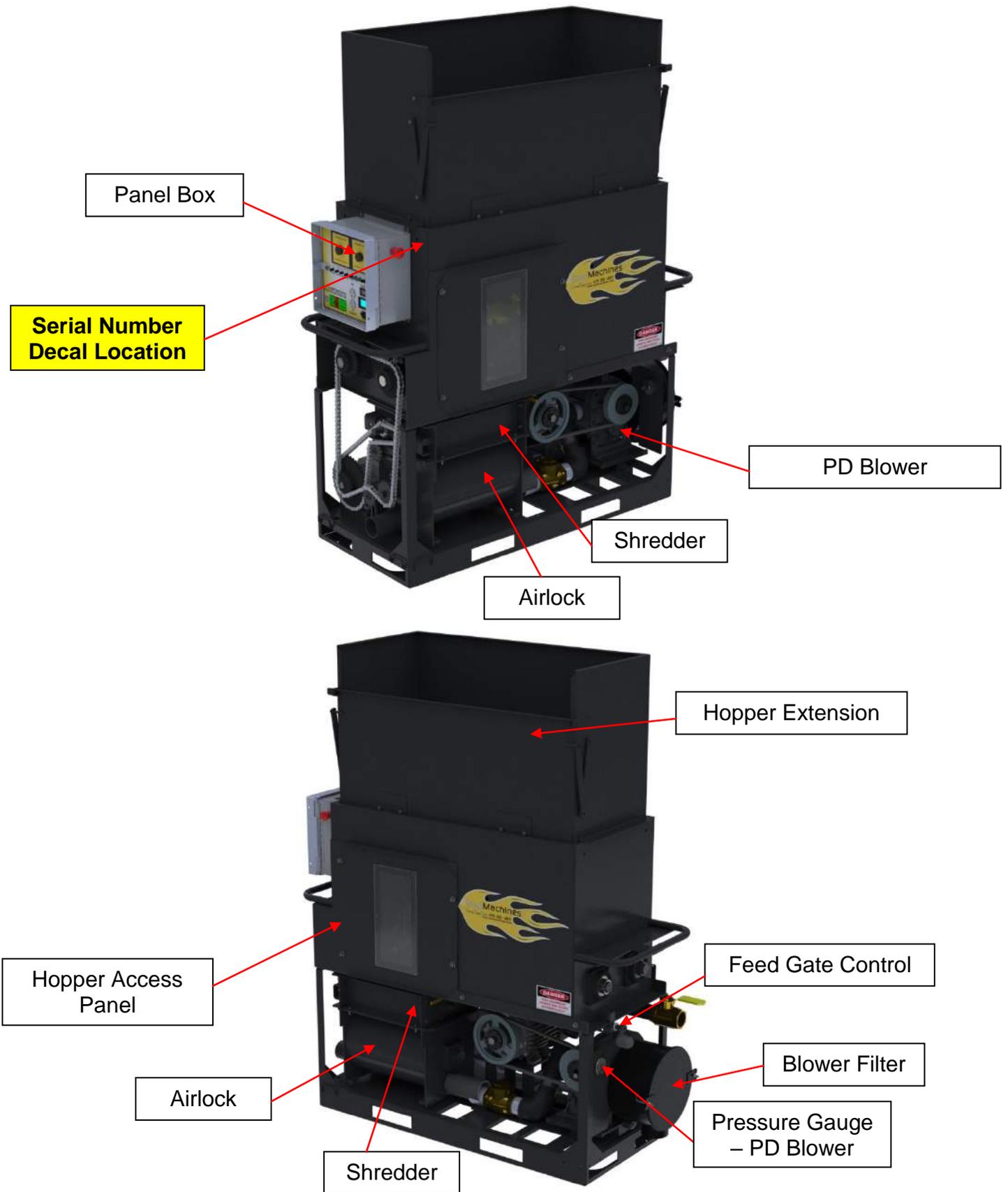
Return Policy: machines, accessories, and parts can be returned if **un-used** within a 30 day period of purchase. All returned items are subject to a 20% re-stocking fee.

Note: warranty statement replaces previous one (1) year warranty, effective rev. 03-09-15.

Quick Component Reference: Blower Box



Quick Component Reference: PD Blower



Cool Machines Philosophy:

Never build, sell, or provide a service that is not good for our customer. High performance machines, placing the customer first, and exceeding expectations every day, with every customer, and with every machine produced, will assure an atmosphere for achieving our highest potential.

Pat. Pend. Technology statement: The designs and technology represented in this manual illustrate concepts and innovations that may have been filed for patent protection with the U.S. Patent and Trademark Office. Any duplication or use of this technology may be in violation of Cool Machines Inc. patent rights, pending final patent approval. A warning notification of potential infringements will be provided to contractors and other concerned parties as needed. This manual represents information regarding the latest and greatest machine technology used in all-fiber, all application, and machine technology. Cool Machines Inc. provides a system that offers the highest production and lowest power requirements. We provide a design and choice of materials that offers the highest durability, highest corrosion resistance, easiest maintenance, and simplest troubleshooting of any machine in its class.

Theory of Operation:

The CM-2400 series machines provide an exclusive proprietary technology. As the different fibers are loaded into the hopper, the proprietary 'scalping' augers located at the bottom of the hopper provide a live bottom for breaking and conditioning of the fibers. This feature provides a positive feeding, non-bridging, method of metering the fibers which has three important advantages. **First;** the slow moving 'scalping' action of the augers, provide a positive movement of the fibers to the shredder area. A positive feeding system will meter the fiber accurately to the airlock, no-matter what angle the machine is positioned on the job site. **Second;** this feature meters the fibers without fluctuations in feeding. Vigorously turning agitators in the hopper cause progressive density changing of the fiber, along with the decreasing 'head' pressure of the fiber over the shredder/airlock assembly. This also creates an undue safety hazard for the operator. **Third;** the low profile position of these slow rpm augers in relation to the higher hopper sides, makes it virtually impossible for operator injury, while providing extended years of bearing and chain life.

As the fiber is fed to the shredder area, an independently controlled, stainless steel slide gate precisely meters the fiber into a high speed stainless steel shredding/ conditioning box. The slide gate has a conveniently accessed crank-handle and oversized acme threaded shaft located at each end of the hopper unit. This feature allows for quick adjustment (5 turns per inch) to the desired setting. A large indicator gauge located on the isle side of the machine; provides high visibility of exact settings for each application. As the fiber is metered thru the slide gate area, the shredder compartment provides the ultimate in a high speed, aggressive break-up, and blending of the different fibers. This feature maximizes the coverage and mixing of the fibers.

The fully expanded and conditioned fiber blend enters the high production airlock (CM-2400, Ø12" x 12" long [Ø30.5cm x 30.5cm] airlock) or (Ø12" x 16" long [Ø30.5cm x 40.6cm] airlock) and is discharged into the high pressure air stream/hose provided by one of two types of blower systems.

The economical 2-blower (optional 4-blower, or PD blower), system with **variable** rpm blowers, provides adequate air for most applications up to 150ft. (45.72m) The optional 5 hp. positive displacement (P.D.) blower system, offers a higher pressure, higher endurance, blowing system that can extend the range of the hose to reach longer distance and higher elevations than the 4-blower system. This P.D. blower system also includes an air bypass control valve for blowing sidewalls along with a **variable** rpm blower control feature which allows the

contractor very accurate control of air for specialized applications. The soft start motor technology incorporated with the blower module, allow the electrical power requirements and generator size to be extremely low. An 8 kw generator (2-blower model), or larger can provide adequate power for both the machine and future upgrades mentioned below. The combination of this high production airlock and high capacity blower system, offers the industry's highest production/performance machine in its size and price range.

The efficient design of the maintenance access areas along with the modular component design of the drive system, blower module, and quick-release 'slide-out' airlock module; offer a simple, fast method to repair your machine. Job-site down time is minimized. The electrical control panel is designed with simple easy to access components, which provide the operator with an instant method to troubleshoot the machine's electrical system. The control functions are simple and easy to understand. The manual thermal overloads provide a component that is easily re-set, reliable, and most importantly - safe.

Un-Packing and set-up of machine:

Machine Specifications:

Weight:

864 lbs. (392kg) - 2 Blower Box
892 lbs. (405kg) - 4 Blower Box
1200 lbs. (542kg) - 5hp PD Blower

Blower/ Sizes:

Two 3-stage Blr Box - 140 ft³/min @ 6psi (240 m³/hr @ 280 mbar)
Four 3-stage Blr Box - 140 ft³/min @ 6psi (240 m³/hr @ 440 mbar)
5 hp. PD Blr - 180 ft³/min @ 6psi (306 m³/hr @ 440 mbar)

Dimensions (LxWxH):

62" x 23" x 51" (158cm x 59cm x 130cm)
74 ½" – 81 ½" (189cm – 207cm) high w/ Ext

Power Requirements:

Two 3-Stage Blr Box - Double input, 20/30 amp. 120V
(Double input, 10/10 amp. 230V)
Four 3-Stage Blr Box - Single input, 30 amps. 240V
(Triple input, 10/10/10 amps. 230V)
5hp PD Blower - Single input, 30 amps. 240V
(Single input, 10 amps. 380V)

Hopper Capacity:

15 ft³ (0.42 m³) Hopper
26 ft³ (0.74 m³) Hopper w/ Ext.

Airlock:

Ø12" x 12" (Ø30.5cm x 30.5cm)
Ø12" x 16" (Ø30.5cm x 40.6cm)
3" (0.74cm) output blowing hose

Recommended Generator:

2-Blr / 8,000 watt
4-Blr / 15,000 watt
5hp PD Blr / 12KW

What should be enclosed with your standard machine?

The machine should have a 150 ft. (45.72m) remote cord included, inside the hopper which needs to be removed and placed on the cord hanger, located on the control panel end of the machine. All other parts and accessories will be packaged separately and placed inside the hopper for shipping.

Available Options: Wheel assemblies, Hopper Extension, Wireless remote, Blowers (2 Blr Box, 4 Blr Box, 5hp PD), See accessory literature for additional offerings.

Moving and lifting machine:

A forklift is needed to move this machine. The heavy duty wheel assembly is recommended for frequent moving of the machine without mechanical assistance.

Locating machine in vehicle:

The machine is designed to be located on the driver's side, rear of the vehicle. The hook-up of blowing hose and controls are easily reached from the rear of vehicle while allowing for easy adjustment and control of the machine. This will also allow quick access to all service points on the machine.

Power Supply:

Depending on quantity and size of the blowers, the machine will require up to 40 amps 240 volt, single phase power supply. If generator is used, a 12kw or larger is recommended for ample power supply.

The machine is shipped with a short input cord(s), and connected to a male input plug. The matching female receptacle is also attached to this plug and will need to be connected to the appropriately sized power cable supplied by the operator. (Consult qualified electrician for proper wiring of this receptacle and recommendations on power cable size.)

Machine Set-up:

After securing the machine in vehicle and hook-up of power supply has been completed, the machine is ready for hook-up of blowing hose and remote control cord. Make sure all hose connections are securely fastened.

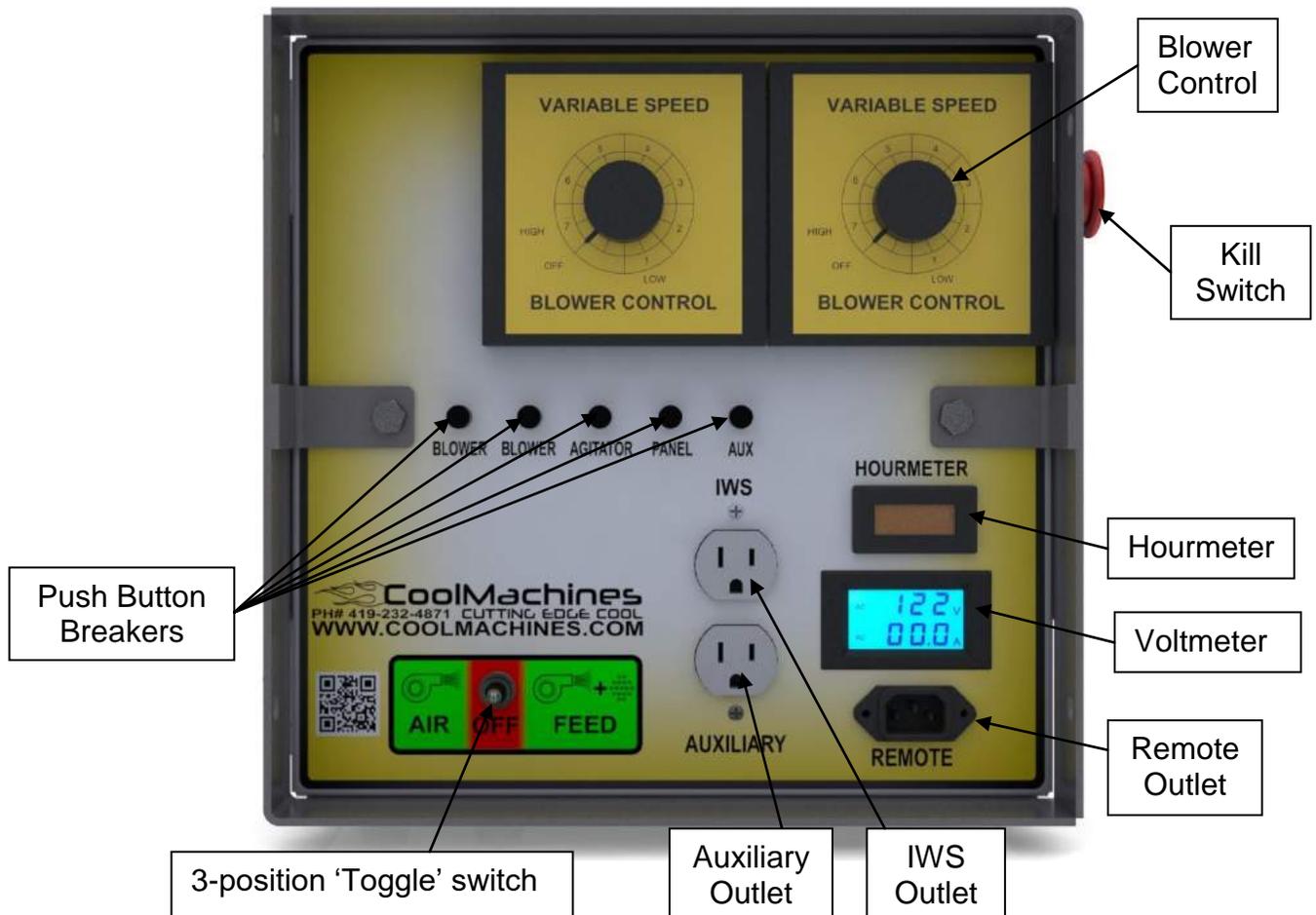
Operation and Control:

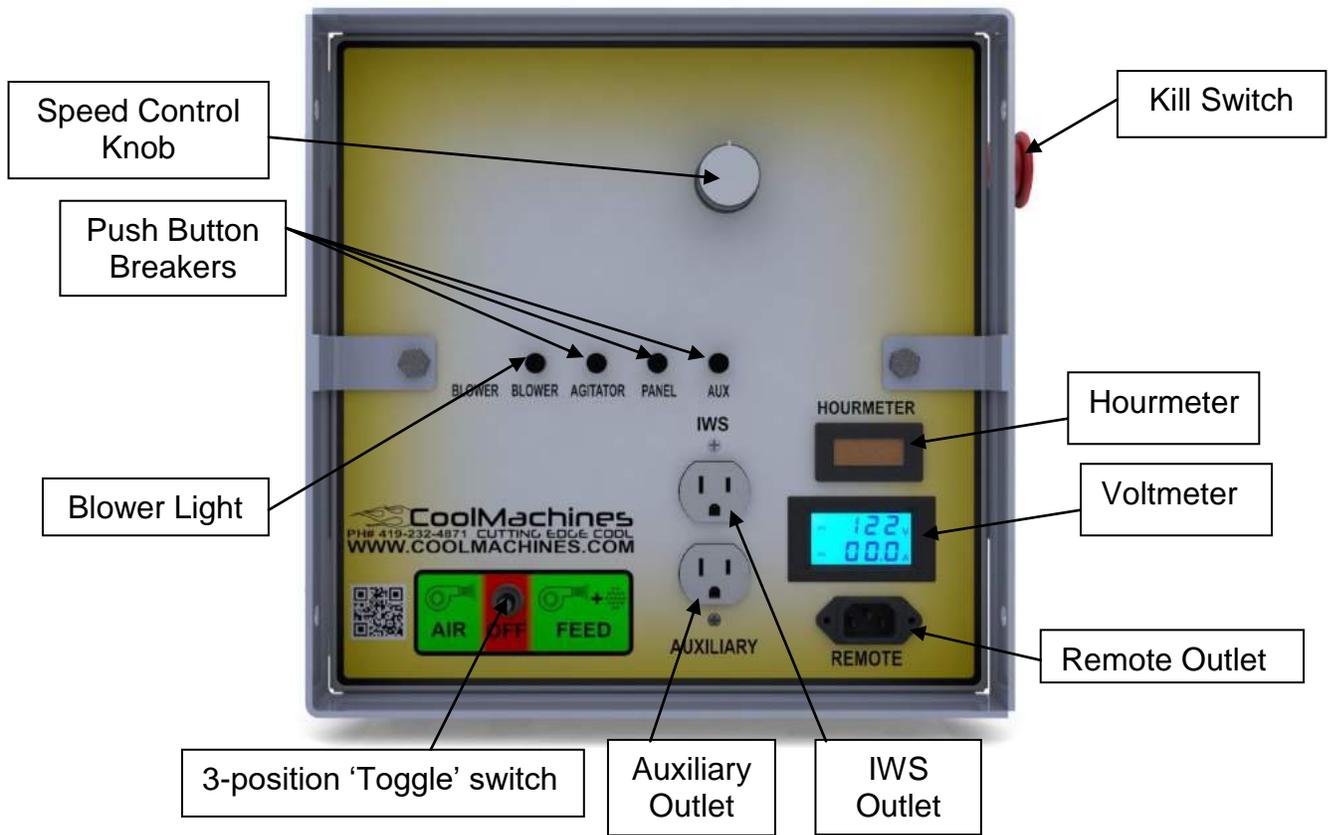
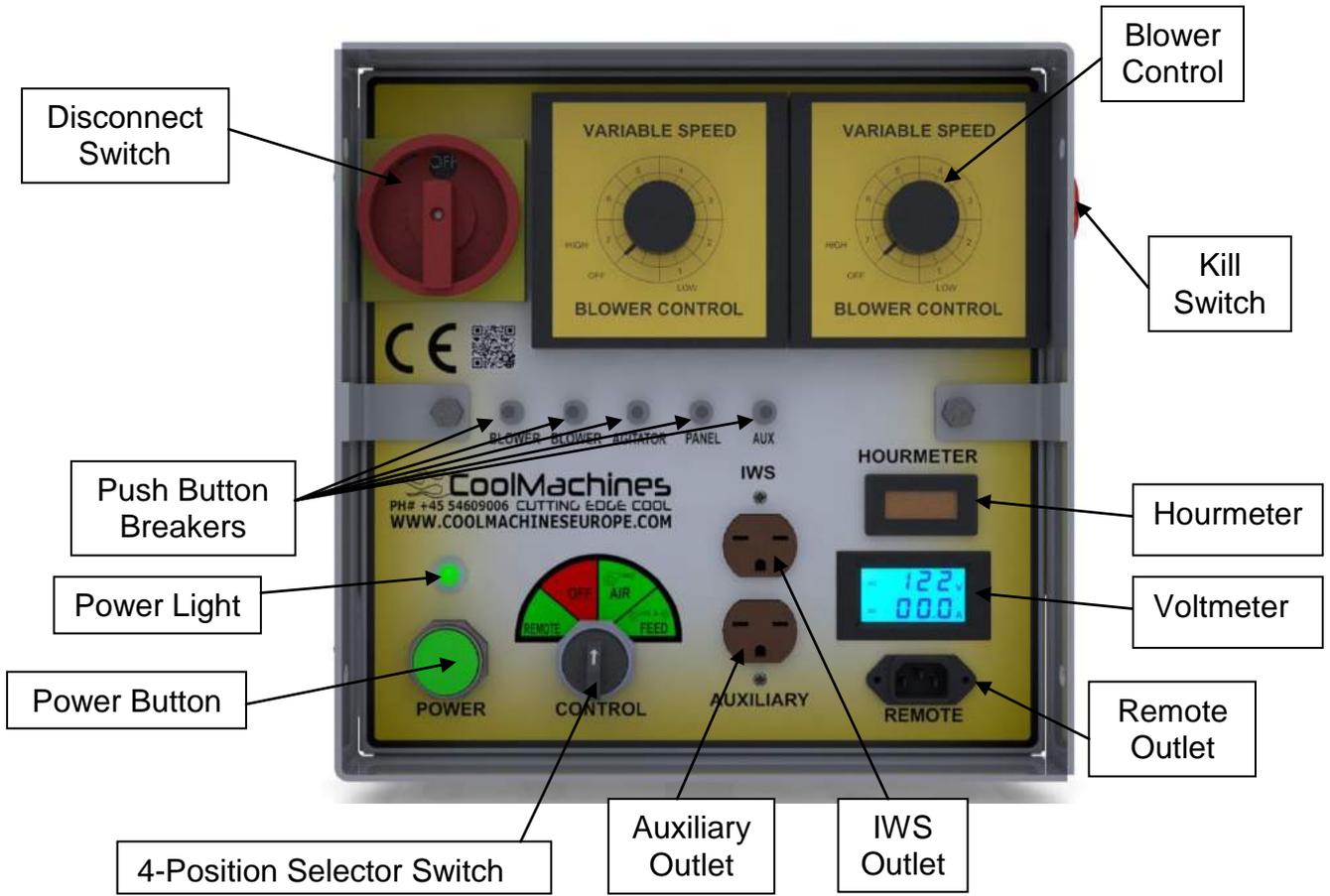
Control panel:

The control panel enclosure contains the electrical components to select (on/off) operation of motors, control speed variations, and protect the circuitry of the main drive motor, blowers and auxiliary devices. (If the machine does not function properly, disconnect power and check the manual thermal overload breakers inside the main panel box.) To start the machine, make sure the power supply (grid/shore power or generator) is appropriate (120 or 240 volts), and power is turned 'on'. Check for correct voltage on panel meter (selected models), and all switches correct 'off' position.

Functions of the various switches and outlets are indicated below:

(NOTE: Panel Box configurations will differ do to various voltage requirements)





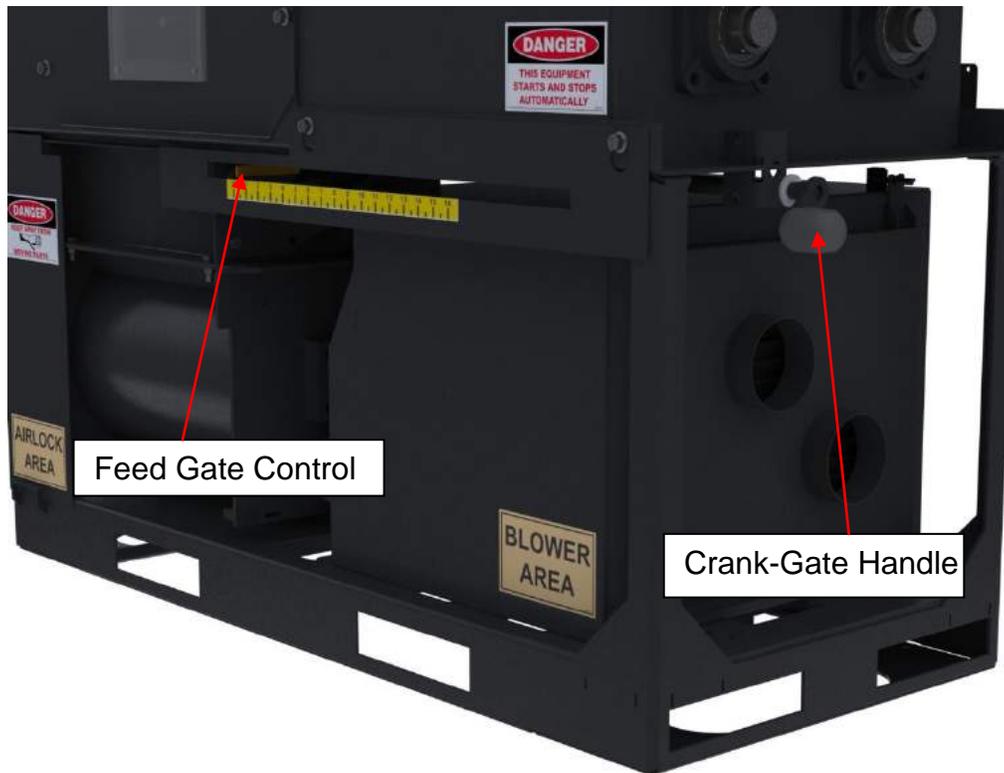
Functions of the various switches and outlets are indicated below:

(NOTE: Panel Box configurations will differ do to various voltage requirements)

- **Blower Control:** Increase or decrease air supply to the blowing hose.
- **Kill Switch:** Emergency stopping of the Auger and Blower motors. (Located on top of Panel Box)
- **Voltmeter:** Visual inspection of the proper voltage.
- **'Control' 3-position 'toggle' selector switch:** The control 'toggle' selector switch allows the operator to control the machine from the remote cord, (wireless remote), or manually at the machine.
 - **Remote Control:** Turn switch to center 'OFF' position for Remote cord control. Insert plug end of remote cord into the remote receptacle located to the right of toggle switch.
 - **Manual Control at Machine:** Turn switch left to 'air' if operator selects blower only. (Used to un-plug clogged fiber hose or check airlock pressure). Turn switch to 'Feed', if operator selects **both** blower and fiber feeding mode. (Use this mode if operator has problem with remote device and desires on/off control at the machine.)
- **Remote Outlet:** Location to plug in remote cord.
- **Auxiliary Outlets:** Located on the lower right side of the main panel box the 120 volt 'auxiliary' outlet (lower receptacle) has a capacity of 10 amps. The upper outlet labeled 'IWS' provides 120 volt, 2 amp power to turn the internal wetting system on/off with the airlock fiber feeding of the machine
 - **Auxiliary Outlet:** Location to plug in 110 volt accessories (10 amp. max.).
 - **IWS outlet:** Location to plug in the internal wetting system. On/Off with feed. (2 amp. max.).
- **'Control' 4-position selector switch:** The control selector switch allows the operator to control the machine from the remote cord or wireless remote, or manually at the machine.
 - **Remote Control:** Turn switch to 'Remote' for Remote cord control. Check for 'green' LED 24 volt light 'on' and remote control plug-in is attached to the remote receptacle.
 - **Manual Control at Machine:** Turn switch to 'air' if operator selects blower only. (Used to un-plug clogged fiber hose or check airlock pressure). Turn switch to Air / Feed, if operator selects **both** blower and fiber feeding mode. (Use this mode if operator has problem with remote device and desires on/off control at the machine.)
- **Speed Control Turn Knobs (PD Blowers ONLY):** provides variable feed rate adjustment of the essential elements/products.
 - **Blower/Air Speed Control:** increases and decreases the velocity/speed of the foamed product as it contacts the surface. (Note: a digital L.E.D. readout showing speed setting is located in the AC Drive Box on the side of the machine opposite the Panel Box, and is visible thru the clear viewing window).
- **Disconnect Switch:** Turns on the power to the main control panel. (Note: this switch 'must' be in off position to open the control panel.) Proper 'lock-out / tag out' procedures must be followed when working on this electrical system.

Feed gate control:

The control of fiber feed rate is adjusted with the crank handle located at end of the machine (opposite main control panel, below the hopper area. This will control the opening of the slide gate to the airlock and can be adjusted with reference to the high visibility scale located on the isle side of the machine at the crank gate level height. See illustration below:



Feed Gate Settings (Approx.)

Open Blowing: high production = gate full open. (Note: if you have air setting on 'high' and the velocity of fiber begins to slow at the end of the hose, 'stop' immediately before hose clogs and close the gate until the correct rate of fiber feed is matched to the available air volume.)

Retrofit / drill and fill: (depending on size of hose) = 2" to 4" (5.08cm – 10.16cm) open.

Wall Spray: 4" to 6" (10.16cm – 15.24cm) open.

Blower/air control:

The variable speed blower / air controls are located on the front of the main panel box. **Two and 4 blower models:** have rheostat controls that regulate the volume of air for two blowers in the blowing hose. When turning the knobs to the left (counterclockwise), the air increases. Note: if knob is turned past the 'high' setting, the blower will click to the 'off' mode.

4 blower models have an on/off 'toggle' switch located under each blower control. These switches control the additional two blowers in only high speed mode. The adjustment of the first two blowers is sufficient for all applications.

Positive Displacement Blower (P.D.), a digital turn knob is located on the front of the panel box. This digital readout in the center of the knob provides a method to calibrate your setting for different applications.

Air Control Ball Valve: is located at the opposite end of machine, adjacent to the feed gate crank handle. This valve is used to control fine air adjustment used when retro-fitting sidewall applications (dense packing), to avoid excessive air pressure in the sidewall.

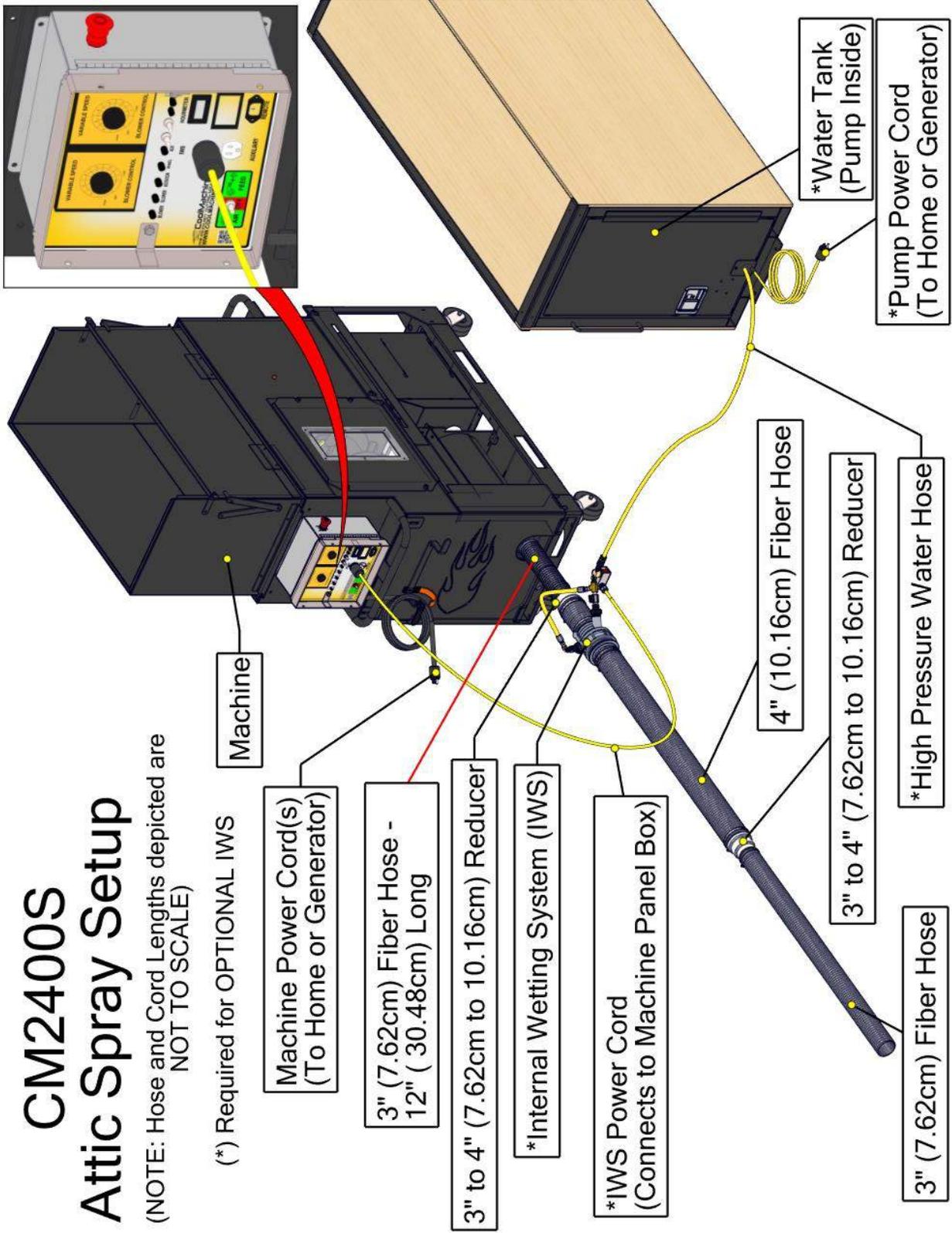
Blower Adjustment with feed gate control:

Adjustment of the blower air is proportional to the feed gate setting. The higher the desired feed rate, the higher the blower air setting. Insufficient air will result in hose plugging. As a general rule; 50% feed gate setting will result in a 50% blower setting. However; different fibers, with moisture and humidity conditions, may require more or less air. Once the desired feed gate setting is established, the operator should adjust the air slightly more than desired to prevent hose plugging. Increased blower air will increase blowing distance from the end of hose, dust, and coverage.

Notes:

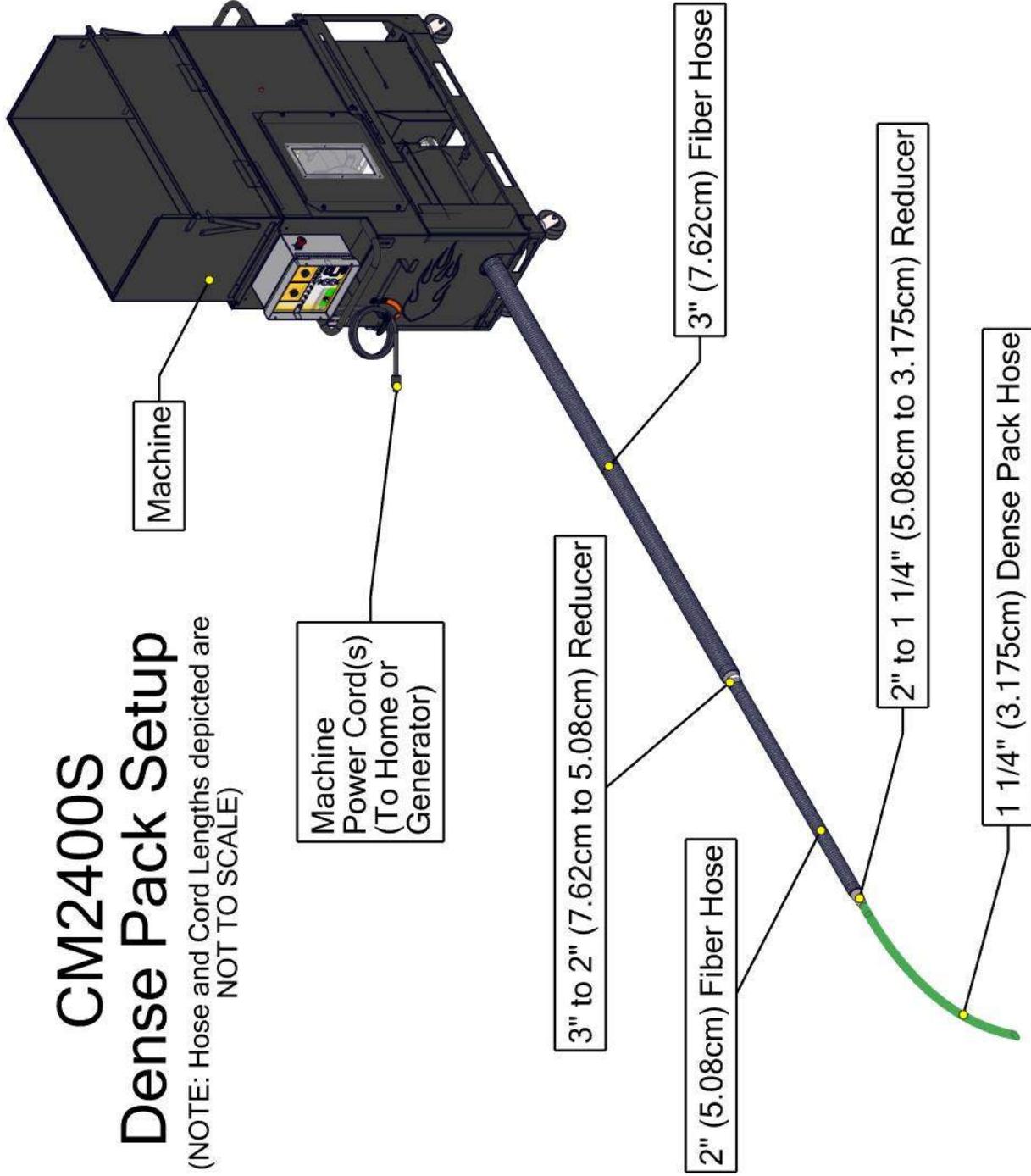
CM2400S Attic Spray Setup

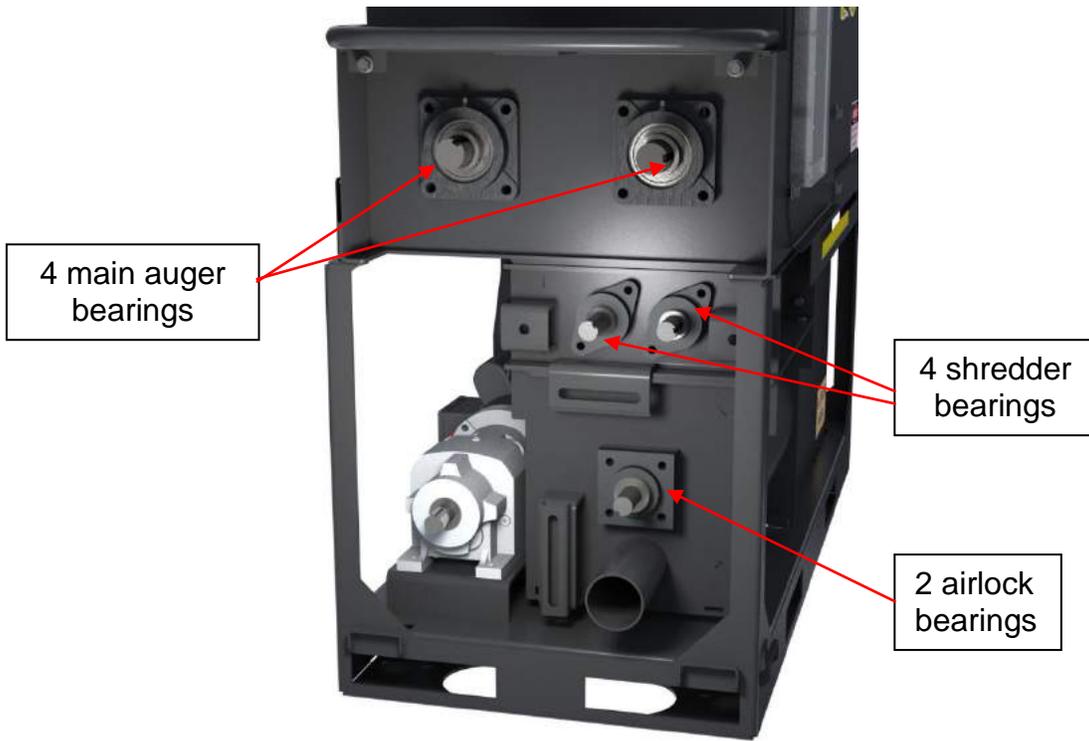
(NOTE: Hose and Cord Lengths depicted are NOT TO SCALE)



CM2400S Dense Pack Setup

(NOTE: Hose and Cord Lengths depicted are
NOT TO SCALE)



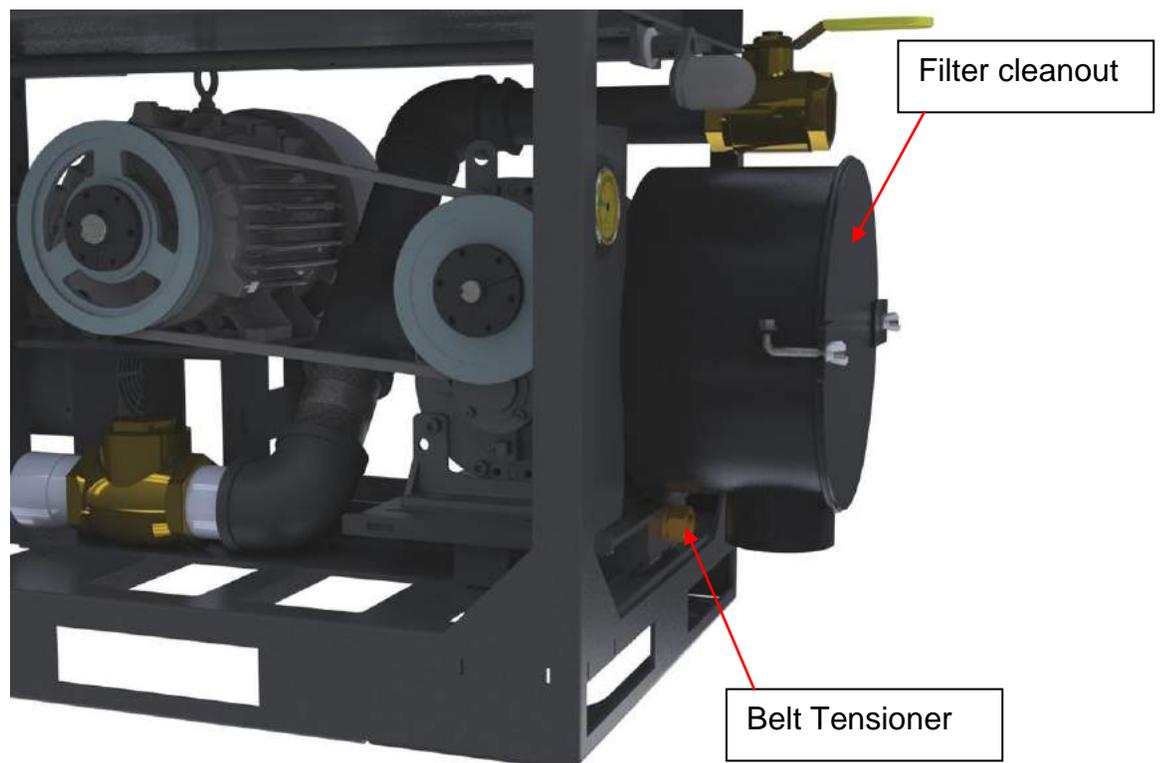
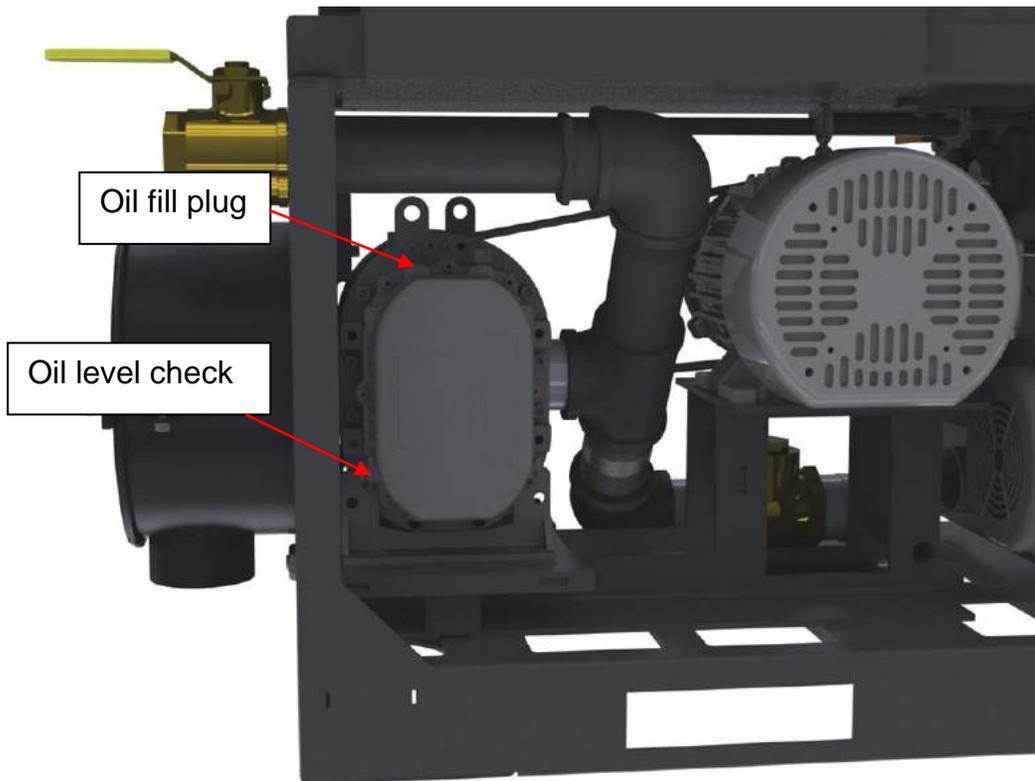


Check Electrical Terminals: (tighten all loose screws) inside panel box and plug-in connections outside the box. (Constant vibration can cause some loosening).



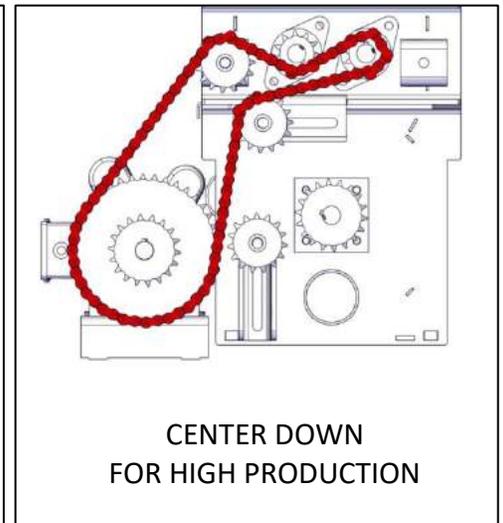
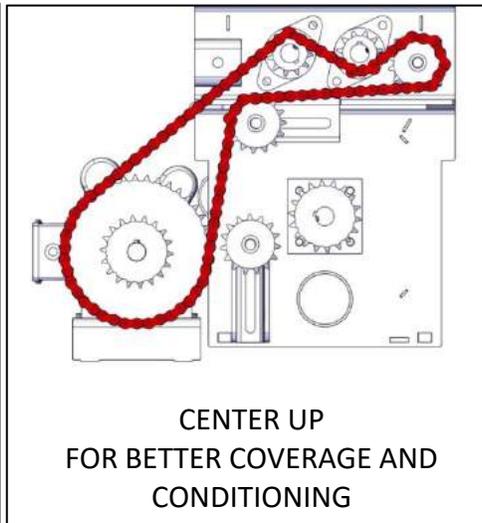
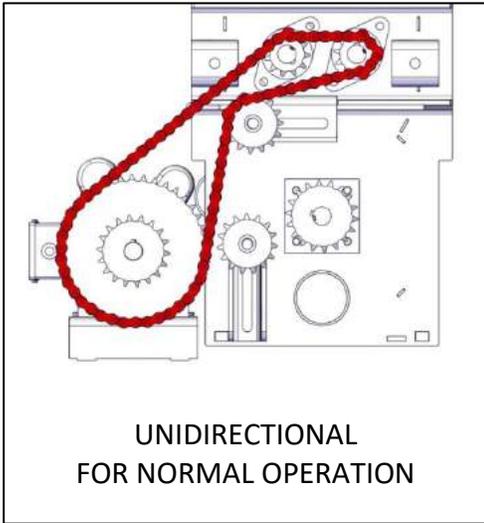
P.D. Blower Models: check belt tightness, and oil level in blower housing. See illustrations below.

Replace blower filter if needed.



Shredder Direction Options

IMPORTANT: Disconnect power and follow proper lock out/tag out procedures before working on machine.



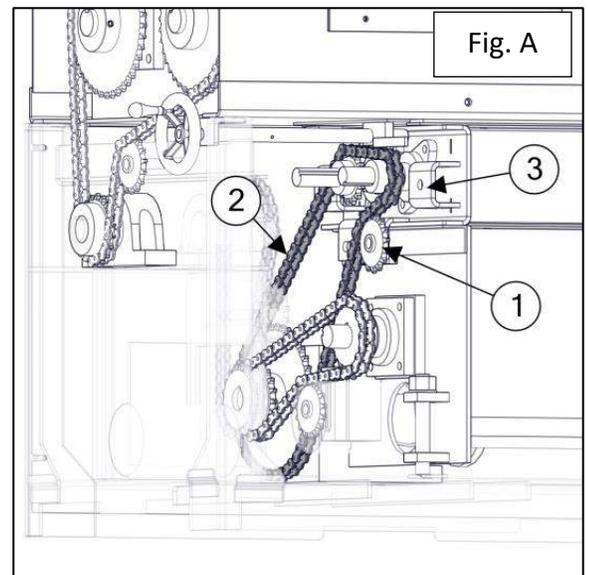
STOCK CHAIN LENGTHS	
SHREDDER	49 ¾" (126.4cm)

Cool#	Description	Qty.
C8J590	Idler	1
C6A500	Chain (added to standard length)	9" (22.86cm)
C6A503	½ Link	1
C6A501	Master Link	1
C6F373	Shoulder Bolt	1
C6D400	Washer	2
C6E472	Nut	1

Cool#	Description	Qty.
C8J590	Idler	1
C6A500	Chain (added to standard length)	4" (10.16cm)
C6A503	½ Link	1
C6A501	Master Link	1
C6F373	Shoulder Bolt	1
C6D400	Washer	2
C6E472	Nut	1

To change shredder direction:

1. Remove front and side chain guards.
2. Loosen the Idler Sprocket (Item #1 in Figure A) and Remove Chain from Idler Sprockets (Item #2 in Figure A).
3. Depending on which direction you want the shredder to turn (as depicted by the above Shredder Direction Images): Install another Idler Sprocket on either bracket shown as Item #3 in Figure A.
(Note: there are two (2) Item #3 brackets on a shredder.)
4. Install a longer Chain around the Shredder Sprockets as desired according to the Shredder Direction Images above.
5. Tighten Chain with Idler (Item #1 in Figure A) and Idler Hardware.
6. Reinstall Guards and test machine.



Pressure Gauge: How to Use it

This machine includes a recessed pressure gauge located in the lower base unit.
(On CM-2400: Located on the front of Blower Box or back of PD Blower)

The pressure gauge has two functions:

1. Calibrate air pressure for effective dense packing (cellulose) and reducing the chance of pushing drywall from the studs.
2. Troubleshooting machine production & coverage problems and assessing wear of airlock seals for replacement.

The performance of your machine is related to the quality of airlock seals and its ability to achieve higher pressures. The airlock seals trap compressed air inside airlock chamber (from blowers), and provide required air pressure & volume for optimizing you're machines performance. When the **back-pressure** drops below 3.2 p.s.i. (0.22 bar) problems will occur.

When air is leaking past the seals, this 'blow-back' into the hopper will cause the following problems:

- **Poor quality dense packed walls** allowing settling in wall cavities over a prolonged period.
- **Low production rates** for open blow, caused by 'blow-back' bridging effect inside hopper.
- **Poor material coverage** (yield) due to loss of conditioning from low air volume & pressure.
- **Hose plugging** due to lower pushing effect of low pressure.

How to use:

Pressure gauge has a graduated scale (0-15 p.s.i. [0 – 1.03 bar]) with a 'green' colored section (3.2 p.s.i. [0.22 bar]) recommended as minimum requirement for optimal performance.

This is the pressure recommended for effective dense packing and acceptable machine performance for open blowing distances over 150 ft (45.72m).

- **Dense pack adjustment:**
 1. Turn blower on (no feed).
 2. Back pressure system by blocking end of hose with hand and read pressure gauge.
 3. Have assistant turn blower speed up/down until the gauge registers in 'green' section of gauge (3.2 p.s.i. [0.22 bar]). (Note: the blower control will need to be adjusted higher as airlock seals wear and lose efficiency).
- **Checking airlock seals:**
 1. Turn blower on (**no** feed).
 2. Back pressure system by blocking end of hose with hand and read pressure gauge.
 3. Turn blower speed on high. If minimum of (3.2 p.s.i. [0.22 bar]) cannot be achieved when blowers are adjusted on high, the airlock seals may be damaged or worn and will need to be replaced. See page 12 of owner's manual. (Note: longer blowing distances and higher elevations will require higher pressure when evaluating airlock seal quality. Properly installed 'new' seals, after short wear-in period, should achieve pressures over 3.5 p.s.i. [0.24 bar])

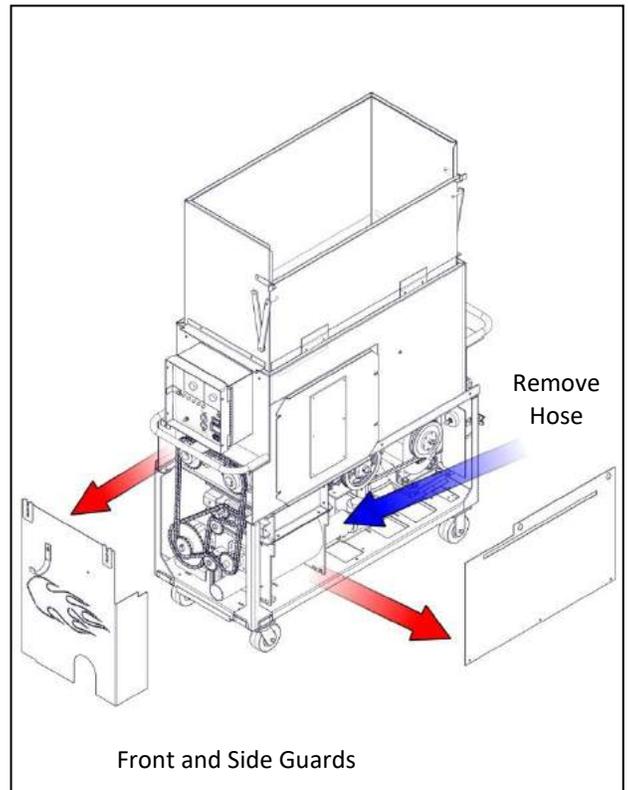


Airlock Seal Replacement Instructions

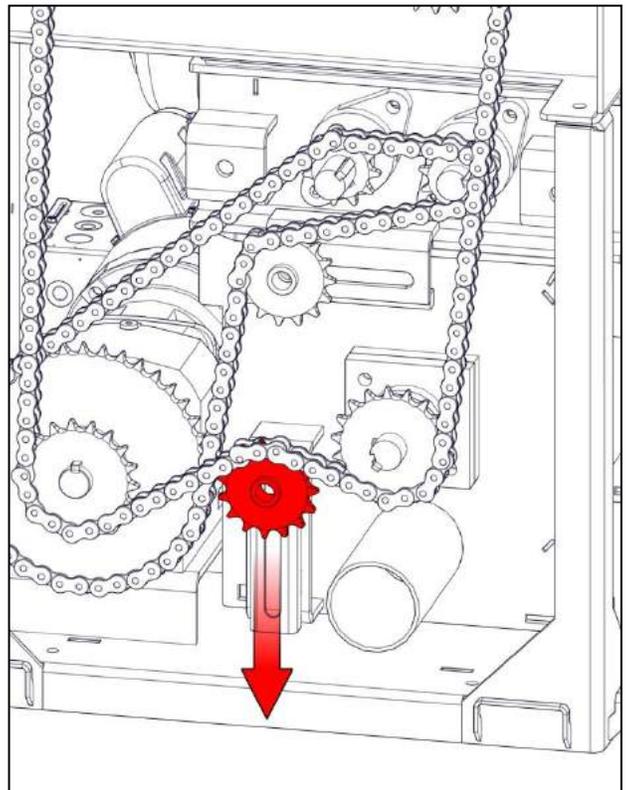
IMPORTANT:

Disconnect power and follow proper lock out/tag out procedures before proceeding.

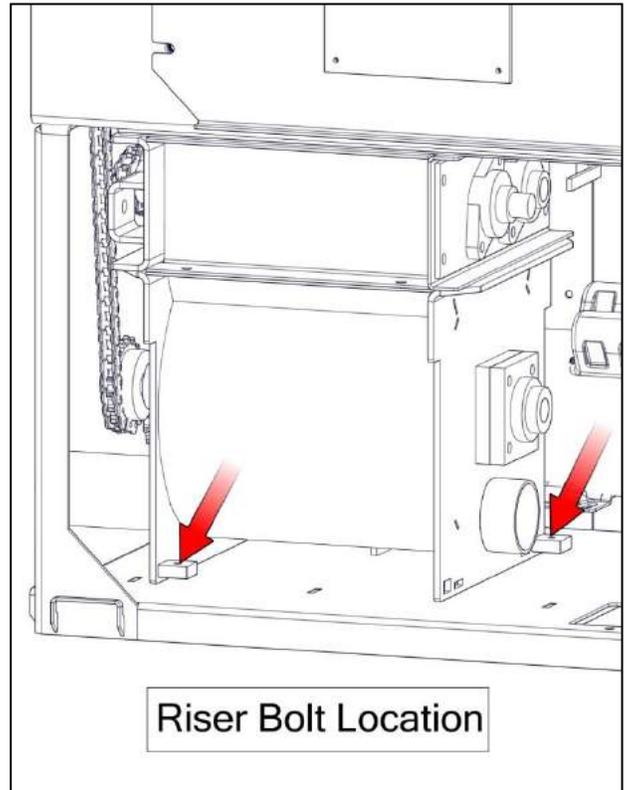
1. Remove Front and Side Guards and Remove Hose behind Airlock.



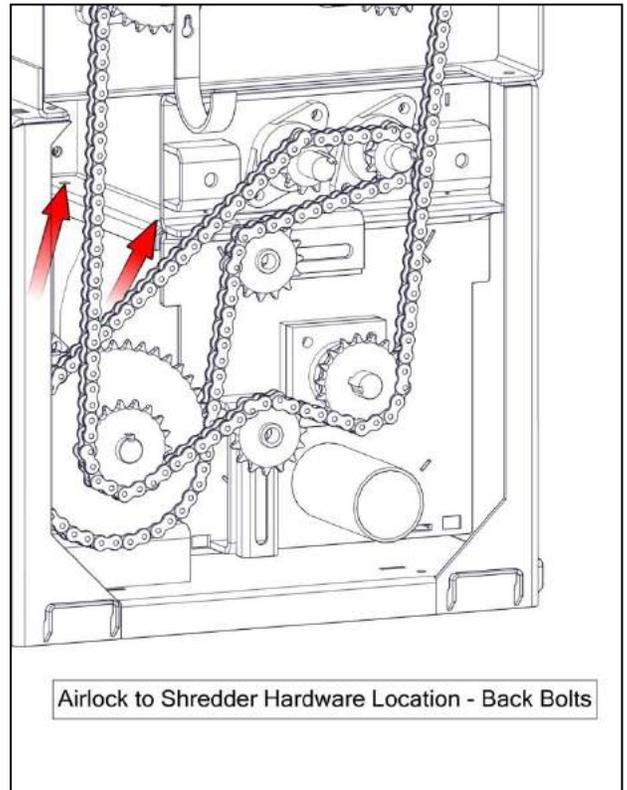
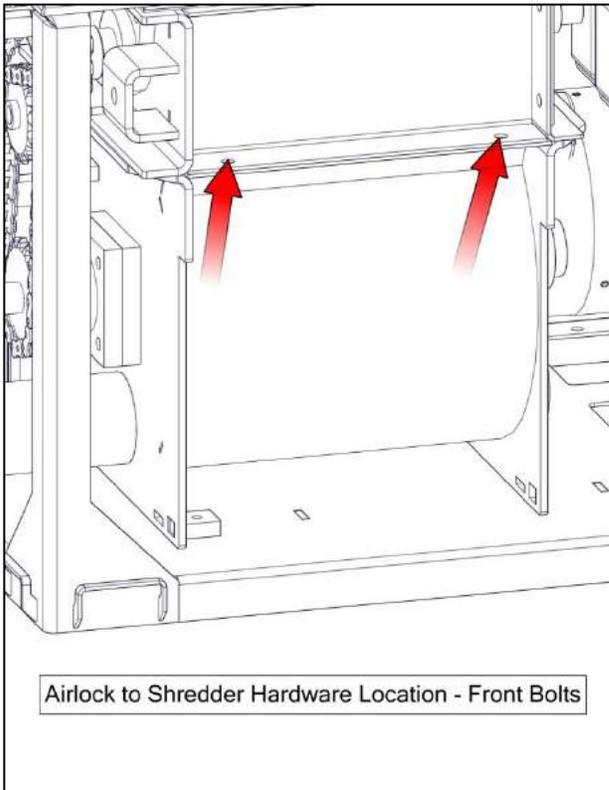
2. Loosen chain idler sprocket located on airlock end-plate, and remove chain. If chain does not slip off, locate and remove chain connector link. (Note: Do not remove shredder box chain.)



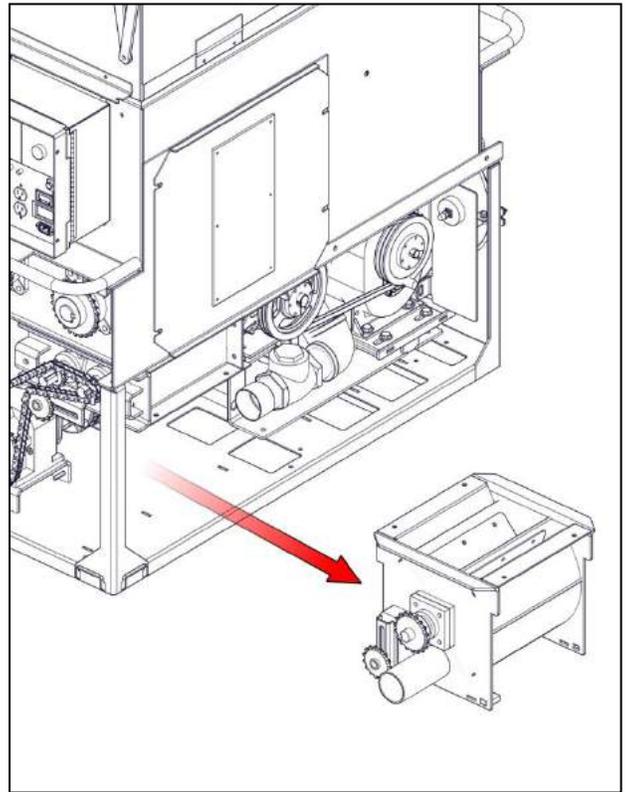
3. Lower 'lift bolts' on both ends of the airlock located at the bottom end of the airlock.



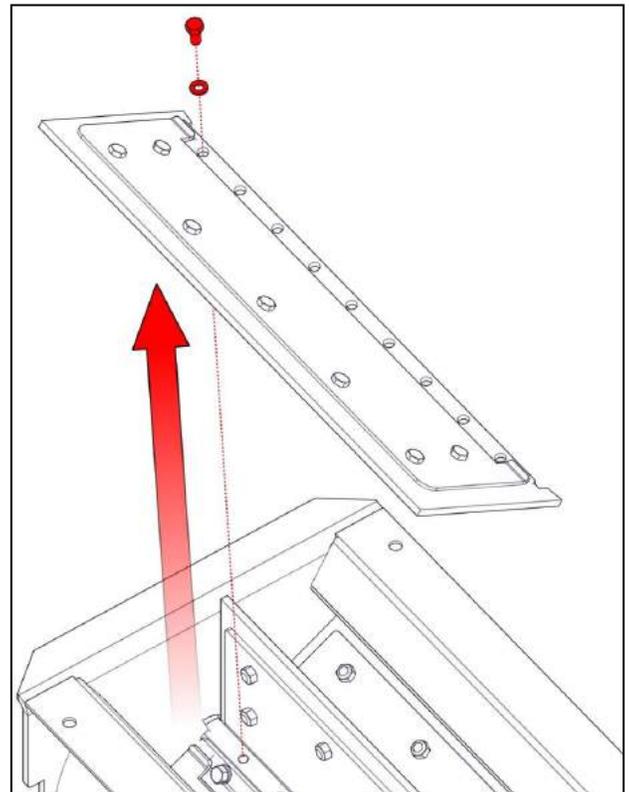
4. Remove bolts fastening top flange of airlock located on the bottom of the shredder box.



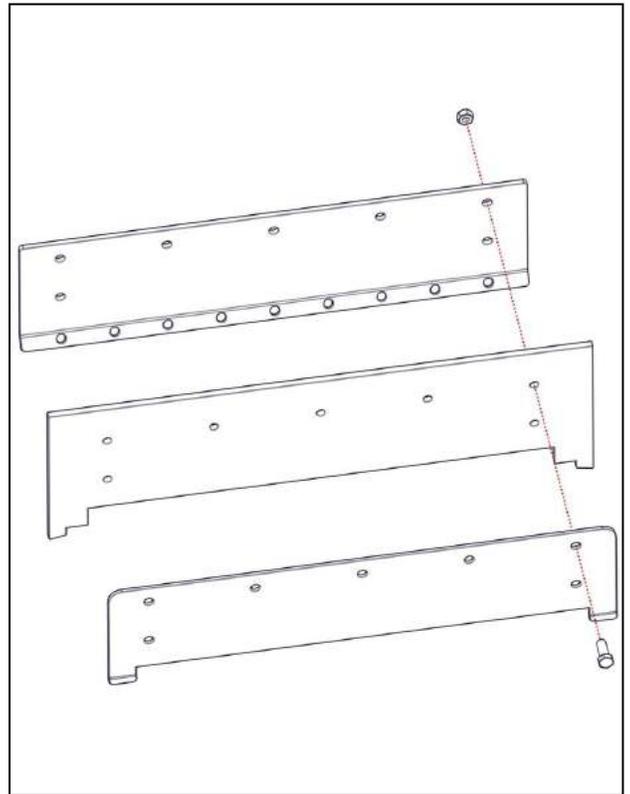
5. Slide airlock out into isle to allow easy for airlock paddle assembly removal.



6. Reaching down into the airlock opening, unbolt the paddle assembly from the airlock shaft and remove the paddle assembly. Rotate the shaft and repeat this step for the remaining 5 assemblies.
(Note: The amount of hardware varies between airlock sizes; but procedure remains the same. So Image may not depict your specific machine)



7. Un-bolt the upper plates from the base plates, remove the old seals and replace with the new seals, and re-attach the fasteners. Tighten bolts and lock nuts until the rubber seals begin to distort/deform slightly. Do NOT over tighten fasteners. (Note: The amount of hardware varies between airlock sizes; but procedure remains the same. So Image may not depict your specific machine)



8. Re-assemble all plates and reverse disassembly procedure above. Be sure to tighten the bolts with lock washers included to a proper tension to prevent the paddles from loosening under stress and wear.
9. When installing the last paddle assembly, push the rubber seal 'tabs' behind the adjacent seal with a long standard blade screwdriver.

CM2400 Blower Replacement Instructions (Blower Box)

IMPORTANT: Disconnect power and follow proper lock out/tag out procedures before proceeding.

Remove Old Blower:

(Note: If a bottom blower needs replaced on a 4-blower system, proceed with steps below. If area is too congested, remove top blower tray to allow for easier access.)

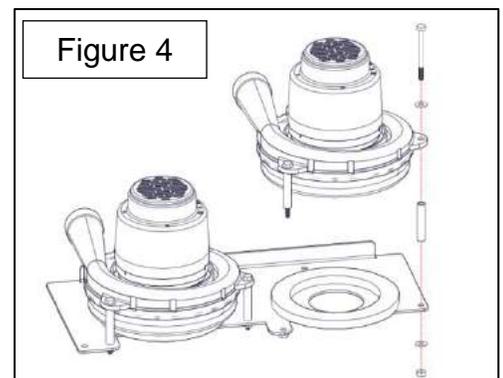
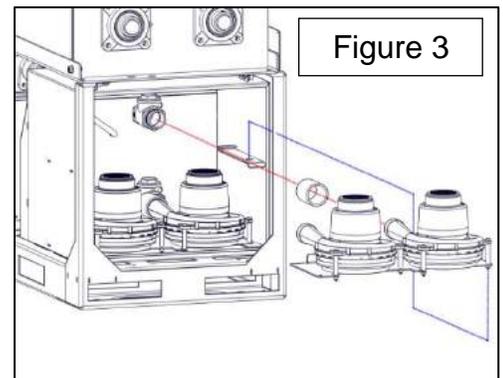
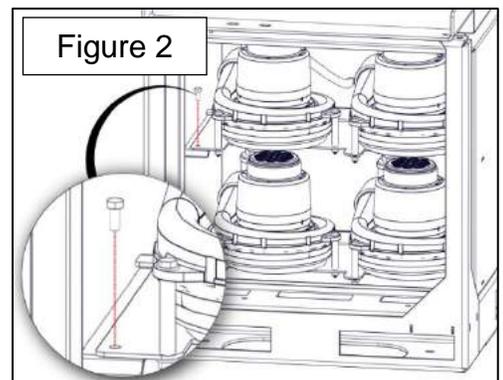
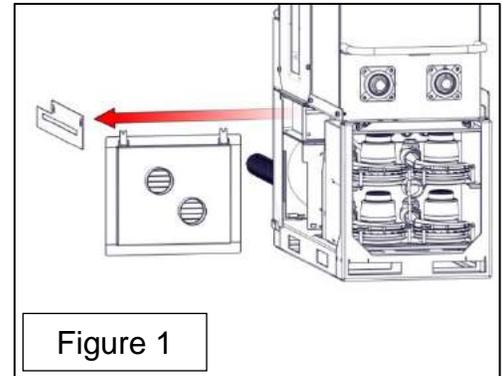
1. Remove blower box cover by swinging the door latches up and then sliding cover to the side. (See Figure 1)
2. Loosen hose clamps behind blower being removed, and detach blower hoses from blower discharge tube of chamber.
3. Disconnect wires from the blower to their corresponding blower plugs.
4. Remove blower tray bolt securing blower tray to the blower box housing. (See Figure 2)
5. Remove blower tray by lifting front of tray to clear location hole and pull tray out. (See Figure 3)
6. Remove Blower from tray by removing three (3) lock-nuts and bolts with socket and box-end wrench. (See Figure 4)
Note: Be careful to catch the spacer bushings as bolts are removed.

Installing New Blower:

1. Insert the bolts with spacer bushings placed between the blower mounting bracket and the blower tray.
2. Tension the lock-nuts on bolts so the blower compresses against the rubber gasket and stops against the spacer bushings.

Important: Be sure the rubber gasket ring remains centered on blower chamber. If the rubber gasket is compressed off-center, the blower chamber will press against the moving fan blades and cause damage to blower.

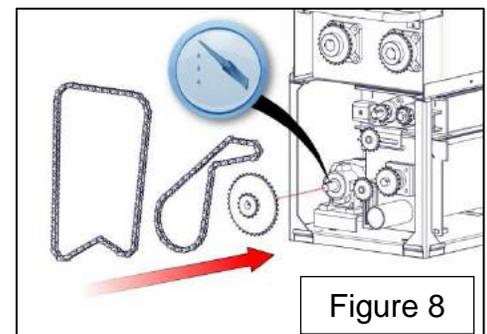
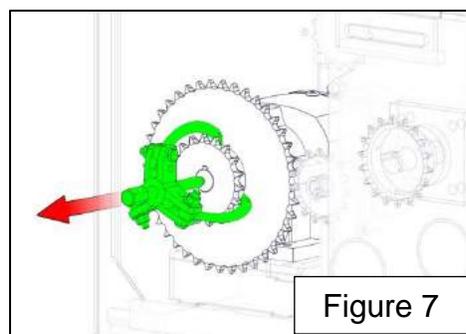
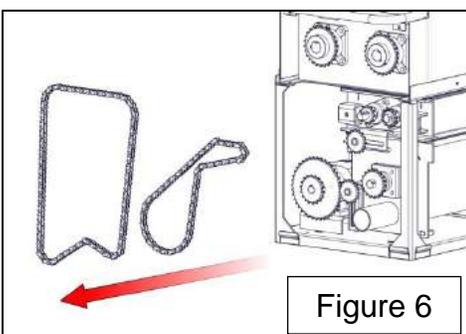
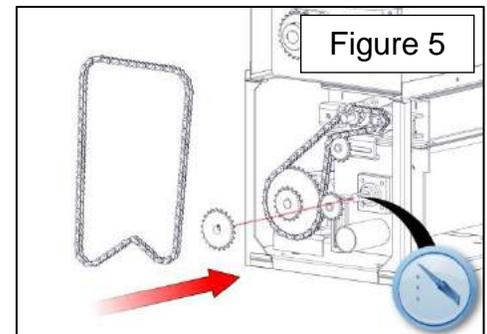
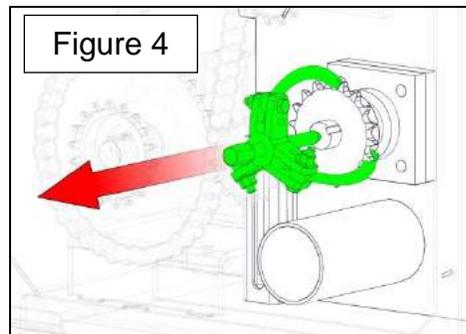
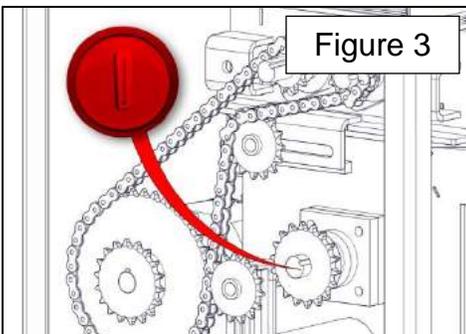
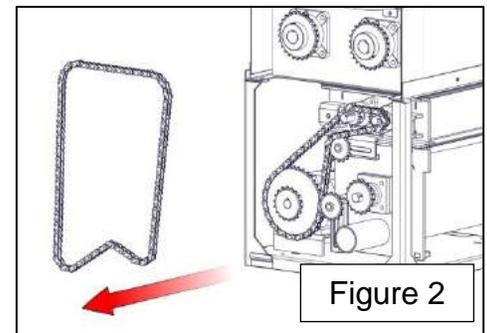
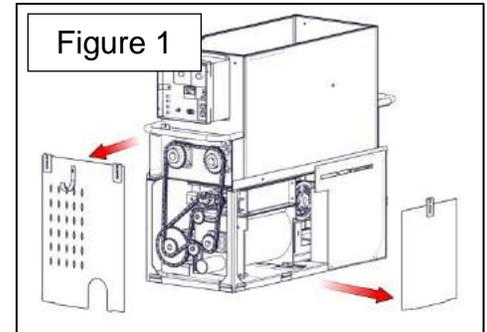
3. Re-install blower tray.
4. Re-connect blower wires to corresponding blower plug cord.
5. Re-attach the blower hose with hose clamp.
6. Secure blower tray with removed hardware. (See Figure 2)
7. Check condition of blower filter and change if needed. Re-attach filter cover firmly in place to protect blower and extend life of blowers.



CM2400 Increased Torque Sprocket Setup

IMPORTANT: Disconnect power and follow proper lock out/tag out procedures before proceeding.

1. Remove Front and Side Chain Guards (See Figure 1).
2. For increased torque:
 - a. Remove Airlock/Auger Chain (See Figure 2).
 - b. Heat Airlock shaft for 5 minutes with propane torch to soften the shaft locking adhesive (See Figure 3). Use 3-Jaw Puller to remove #50 18 tooth Sprocket from Airlock (See Figure 4).
 - c. Apply 3 to 4 drops of medium grade shaft locking adhesive to Airlock Shaft. (See Figure 5) Install larger #50-22 tooth Sprocket on to Airlock. Adjust chain length by adding 1 or 2 links of chain w master link (included in shipment).
3. For a larger increase in torque:
 - a. Remove the Airlock/Auger and Shredder Drive Chains (See Figure 6).
 - b. Heat Motor Reducer shaft for 5 minutes with propane torch to soften the shaft locking adhesive. Use 3-Jaw Puller to remove #50-40 tooth/18 tooth double sprocket from Motor Reducer (See Figure 7).
 - c. Apply 3 to 4 drops of medium grade shaft locking adhesive to Motor Reducer Shaft. (See Figure 8) Install #50-40 tooth/15 tooth double sprocket onto Motor Reducer Shaft. Adjust chain lengths by removing 1 or 2 links of chain and re-install chains.

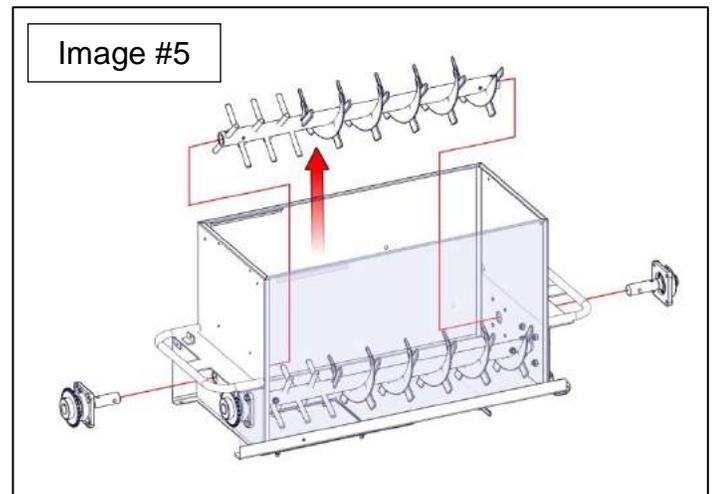
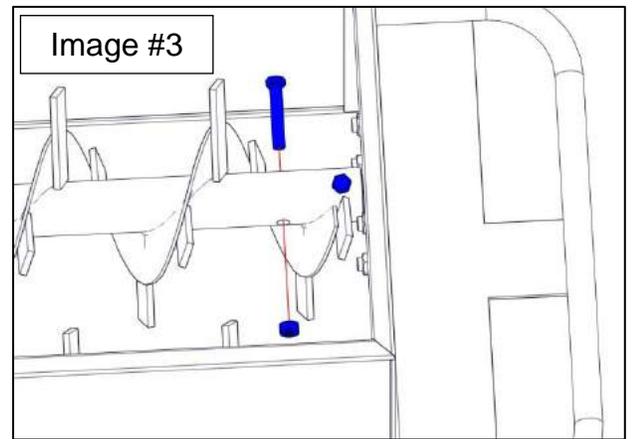
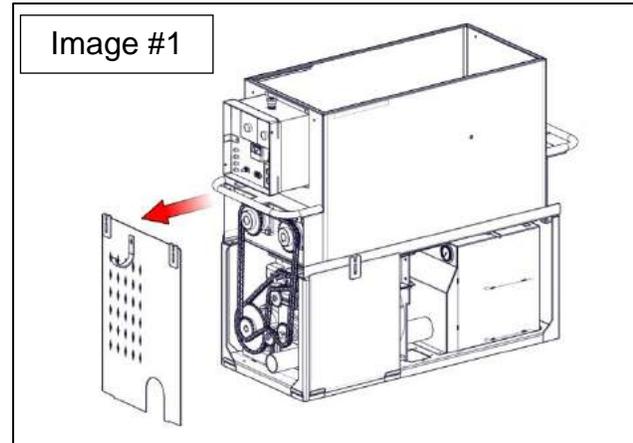
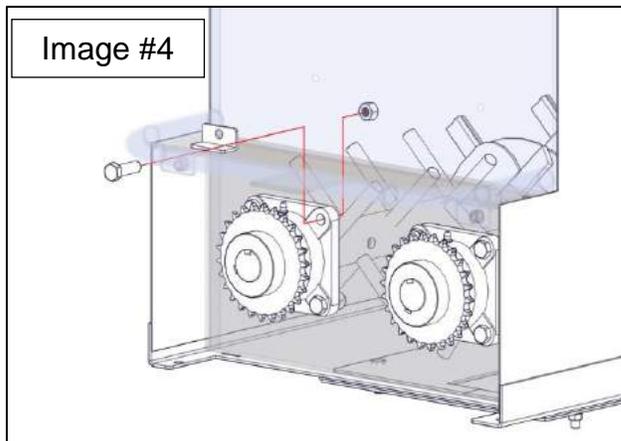
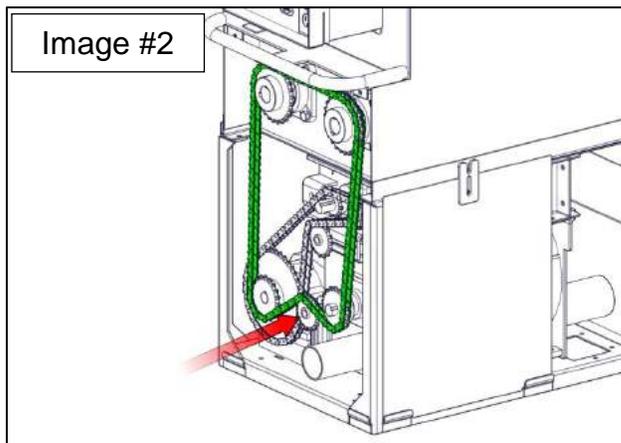


CM2400 Reverse Auger Install Instructions

IMPORTANT: Disconnect power and follow proper lock out/tag out procedures before proceeding.

1. Remove Front Chain Guard
2. Loosen Auger Chain Idler (Red Arrow in Image #2) and Remove Chain from Auger Sprockets (Green Chain in Image #2)
3. From inside hopper, remove the hardware securing the auger to the auger shafts – two (2) bolts on each end. (See Image #3)
4. Remove the four (4) bolts per bearing. (See Image #4)
5. Remove the bearing with the shafts attached - drive end will also have sprocket attached to shaft. (See Image #5)
6. Then lift the old auger out of the hopper. (See Image #5)
7. Insert the new Reverse Auger and reattach the removed hardware and parts in the reverse order.
8. Restore power to the machine and test.

(Note: Images shown are installation on CM-2400. Installation procedure on a CM-3500 is the same.)



Mechanical Troubleshooting

- | <u>Problem</u> | <u>Corrective Action</u> |
|-------------------------------|---|
| 1) Loud knocking sound | A. Check scalping augers or airlock for objects and remove.
B. Check chains for proper alignment and tension.
C. Check for bent or misaligned auger/shredder fingers. |
| 2) Poor output or uneven flow | A. Gradually increase blower air and/or reduce fiber feed until condition improves.
B. Check hose for blockage. Clean out by turning blowers on high with feed turned off (air only). Hold hand over output of hose, forcing pressure to increase and expand hose. Repeat this procedure several times until blockage is removed.
C. Check all hose connections. Tighten hose clamps to eliminate air leakage.
D. Check for damaged airlock seals or bent plates inside the airlock. Remove hopper and inspect airlock. (See previous section for replacement of airlock seals.) |
| 3) Excessive dust /open blow | A. Reduce air into system by decreasing blower control setting and/or opening slidegate.
B. Increase hose dia. at end of blowing hose.
C. Use an internal wetting system (IWS). |
| 4) Cold temperature start-up | A. Turn blowers on high, while holding hand over output hose for several minutes. This will allow the airlock chamber and seals to heat up, reducing the possibility of tripping the motor overload. |

Electrical Troubleshooting

Important!! Use proper 'lock-out tag-out' procedures at the main power supply before inspecting or adjusting unit. Consult qualified electrician to answer questions before attempting to inspect, repair, and operating; or injury may result.

Before operating machine check 'voltmeter' for proper voltage and pull 'red' kill switch button out.

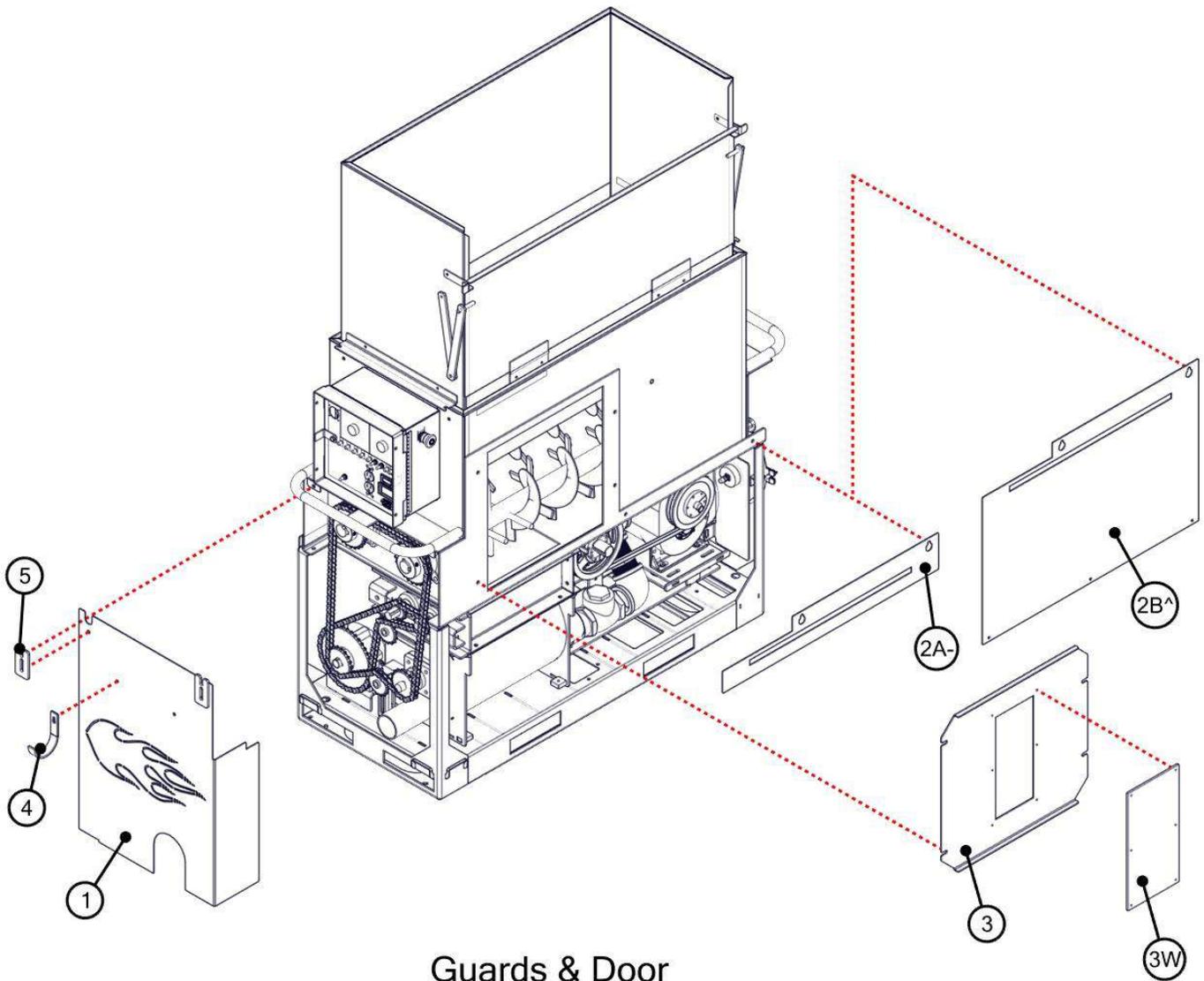
Cold temperature operation. Turn blowers on high, hold hand over output to partially block output and create heat. After 5 minutes, airlock seals should be softening to allow start-up w/o tripping reset.

- 1) Voltmeter indicating no or low voltage
 - A. Check power source for proper voltage.
 - B. Check input cord(s) for proper connection to power source.
 - C. Open Main Control Panel and check voltage with multi-tester at the voltmeter terminals. Replace if necessary.
- 2) Machine does not function with Remote Hand Pendant.
 - A. Turn machine on manually at machine with 'toggle switch' selector. If machine does not run, the remote cord may be OK. Check power source.
 - B. Remote control cord is properly plugged in.
 - C. Check remote cord plug and hand pendant for damage or loose connections.
 - D. Check transformer breaker with continuity tester.
- 3) Blower motor **not** running, but auger motor is running.
 - A. Check operation with both the remote cord and manually with 'toggle' switch on the main Panel Box.
 - B. Check blower speed control for 'ON' position.
 - C. Check blower breakers inside panel box.
 - D. Check for defective, broken, or loose wiring connections inside panel box, blower box, and at the external plug connection.
 - E. Unplug external plugs centered on lower base of machine below the panel box and slide gate. Plug directly into extension cord with 120 volt power. This will verify the blowers are OK.
 - F. If blower control(s) are faulty, by-pass the blower control by removing the wires at connection on back of panel box and joining the two wires. This will offer on/off control of the blower; but blower will run full speed only.
 - G. Visually inspect and/or replace blower relay inside Main Control Panel.

- 4) Blower motor running hot.
 - A. Clean or replace filter(s) located on lower base unit, below slide gate. Check intake of blowers for debris/ insulation. Blow out blower motor and surrounding area with compressed air.
 - B. Check blowing hose for blockage. A restriction in the output hose will cause the blowers to run hotter than normal.
 - C. Check blower(s) for proper operation. (i.e. bearings, armature, excessive arcing by worn brushes.
- 5) Excessive arcing of brushes on blower motor. ('hissing' or 'scratchy' noise)
 - A. Blow out brush assembly area with compressed air remove accumulation of dirt and debris.
 - B. Re-seat or replace brush assembly. If damage to commutator is severe, replace blower.
- 6) Auger/Airlock motor does not run; **but** Blower is running.
 - A. Check reset breaker inside main panel box. Manual Reset on auger/airlock motor is tripped. Disconnect power to machine. Wait until motor cools (approx. 15 minutes), Turn base unit on side and access from under machine and press reset button on motor.
 - B. Check procedure for cold temperature starting above.
 - B. Check for defective, broken, or loose wiring connections inside main control panel.
 - C. Visually inspect and replace motor relay/starter inside main panel box if needed.
- 7) Auger/Airlock motor running improperly or hot.
 - A. Disconnect power. Check augers/shredders, and airlock for debris.
 - B. Low voltage. Check voltmeter on main panel box when machine is running. Try another electrical source. Use proper size input cords.
 - C. Check bearings, chain and sprockets for problems or drive system misalignment.
 - D. Remove chains from motor reducer assembly. Run motor/reducer under power and check Amperage.
 - E. Check voltage, hertz, phase (1 phase), and direction of rotation.
 - F. Replace auger/airlock motor or gear motor...
- 8) Airlock Feeder not turning.
 - A. Check sprockets for missing key. Replace with 3/16" key.
 - B. Chain broken or slipped off sprocket. Repair or replace.
 - C. Check gearbox for sheared key between motor and reducer.

Recommended Spare Parts to Stock

- Airlock seals, set of 6
- Blower filter
- Blower motor
- Relay (24 VAC)
- #50 chain 'master' link

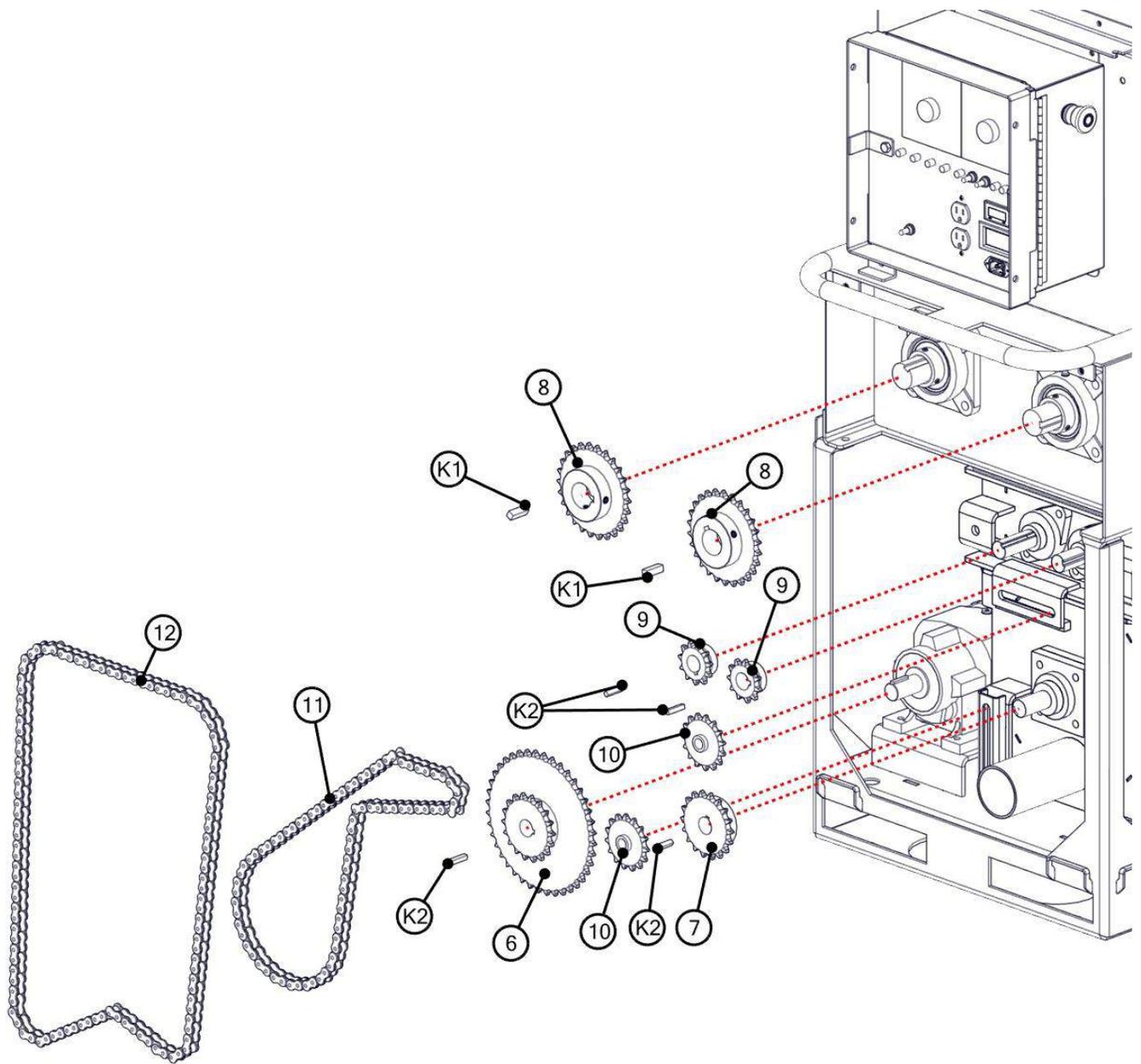


Guards & Door

(-) Indicates for Blower Box Machines

(^) Indicates for PD Blower Machines

BOM ID	COOL #	DESCRIPTION	QTY
1	C6A610	Front Guard	1
2A-		Blower Box Ruler Plate	1
2B^		PD Blower Guard	1
3	C9H652-D	Dry Door Plate	1
3W	C5N380	Recycle Door Window	1
4	C5A260	Hook	1
5	C5A290	Latch	2



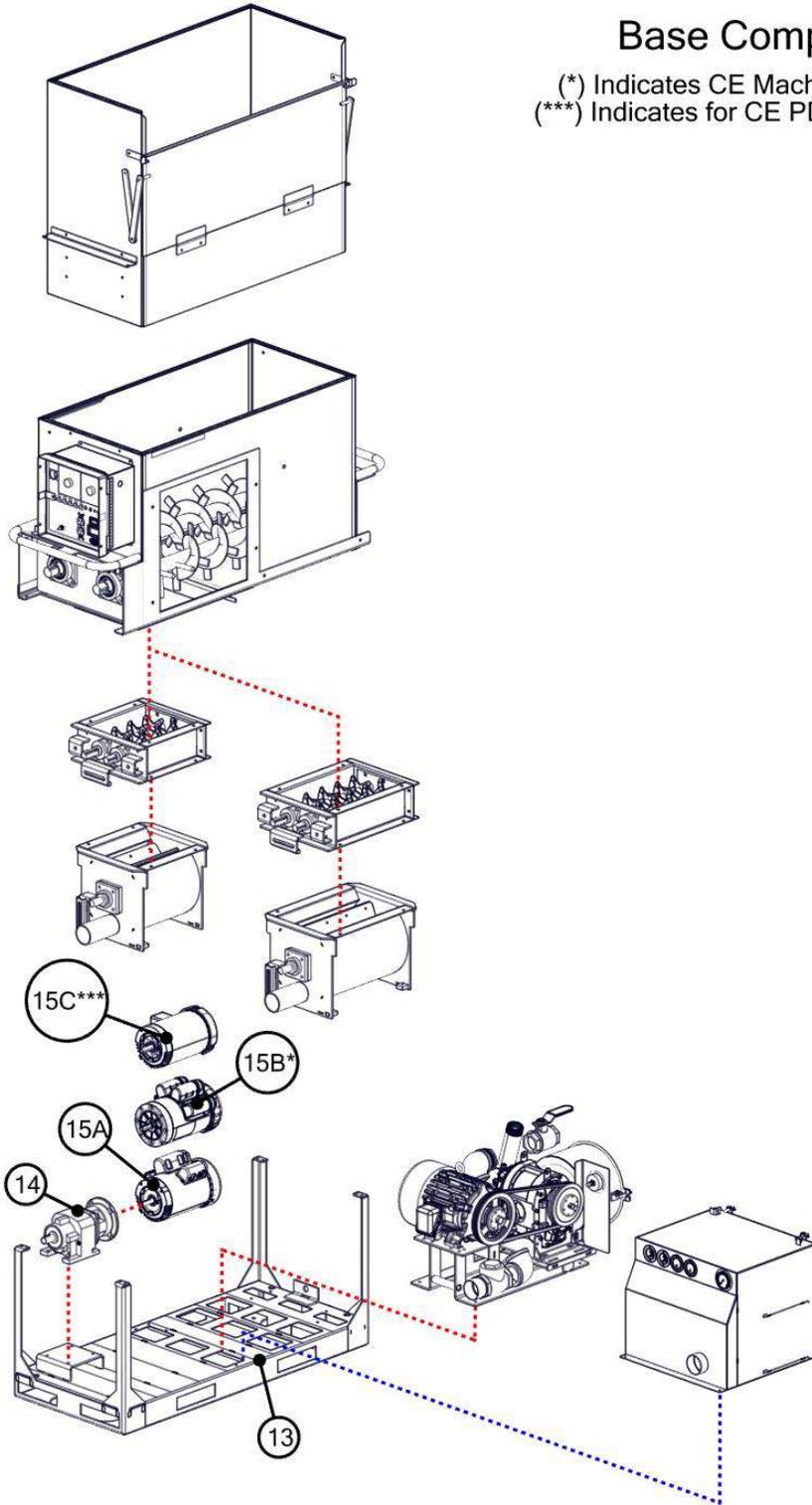
Sprockets and Chain

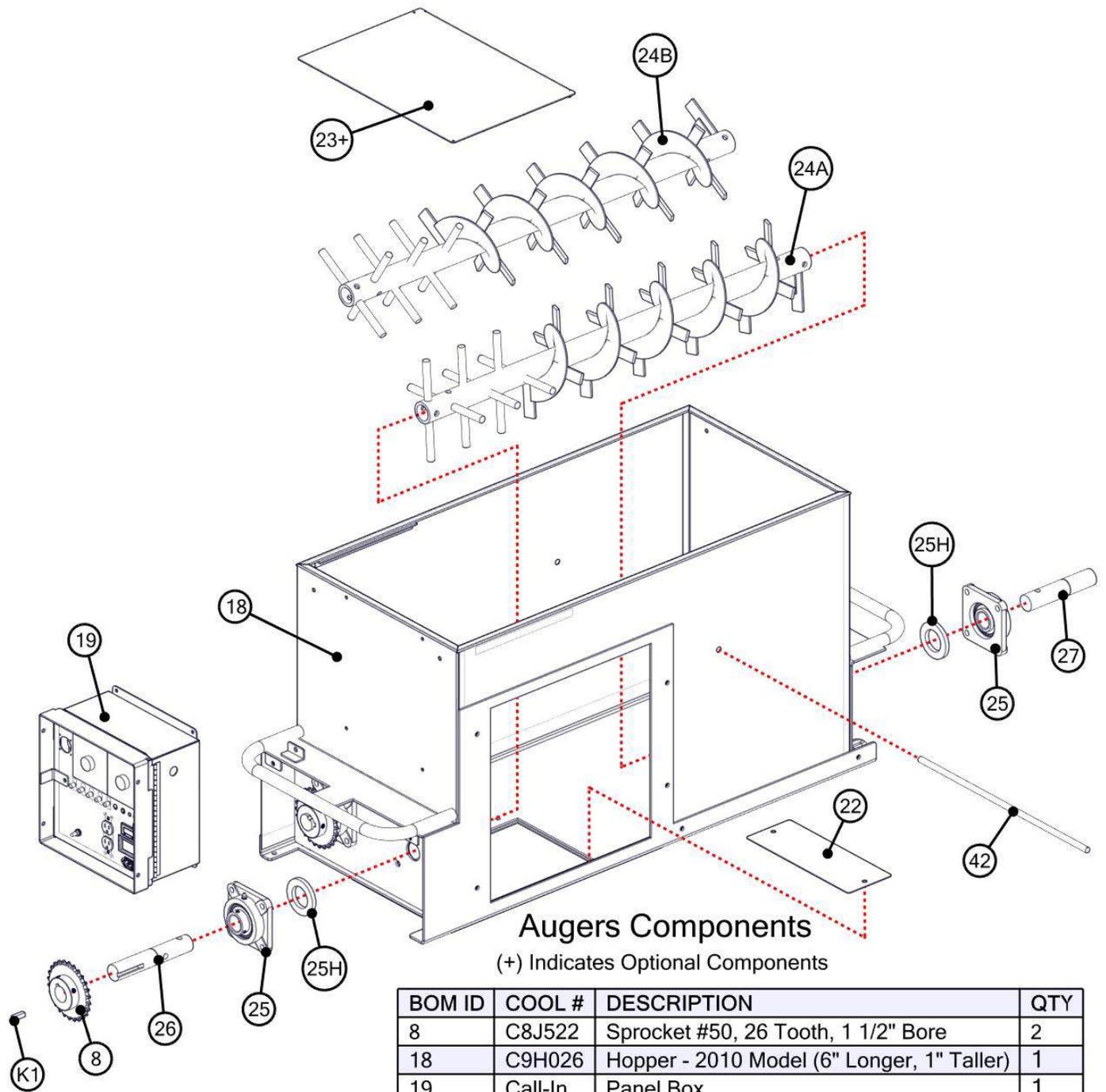
BOM ID	COOL #	DESCRIPTION	QTY
6	C8J607	Sprocket #50, 40 Teeth - 18 Teeth, 1" Bore	1
7	C8J512	Sprocket #50, 18 Teeth, 1" Bore	1
8	C8J522	Sprocket #50, 26 Tooth, 1 1/2" Bore	2
9	C8J510	Sprocket #50, 11 Teeth, 1" Bore	2
10	C8J590	Sprocket #50, Idler	2
11	C6A500	Chain #50 - 50" Long	1
12	C6A500	Chain #50 - 70" Long	1
K1	C6J250	3/8" Keystock	2
K2	C6J255	1/4" Keystock	4

BOM ID	COOL #	DESCRIPTION	QTY
13	C8C242	Base - 2010 Model	1
14	C8B300	Reducer In-Line, 1 HP, 62 RPM	1
15A	C2B035	Motor, 1 1/2 HP, 1 PH, 120/220 VAC, 60Hz	1
15B*	C2B044	Motor, 1 1/2 HP, 1 PH, 230 VAC, 50Hz	1
15C***	C2B042	Motor 1 1/2 HP, 3 PH, 208-230/460 VAC, 50/60HZ, 56C Face	1

Base Components

(*) Indicates CE Machine Components
 (***) Indicates for CE PD Blower Machines

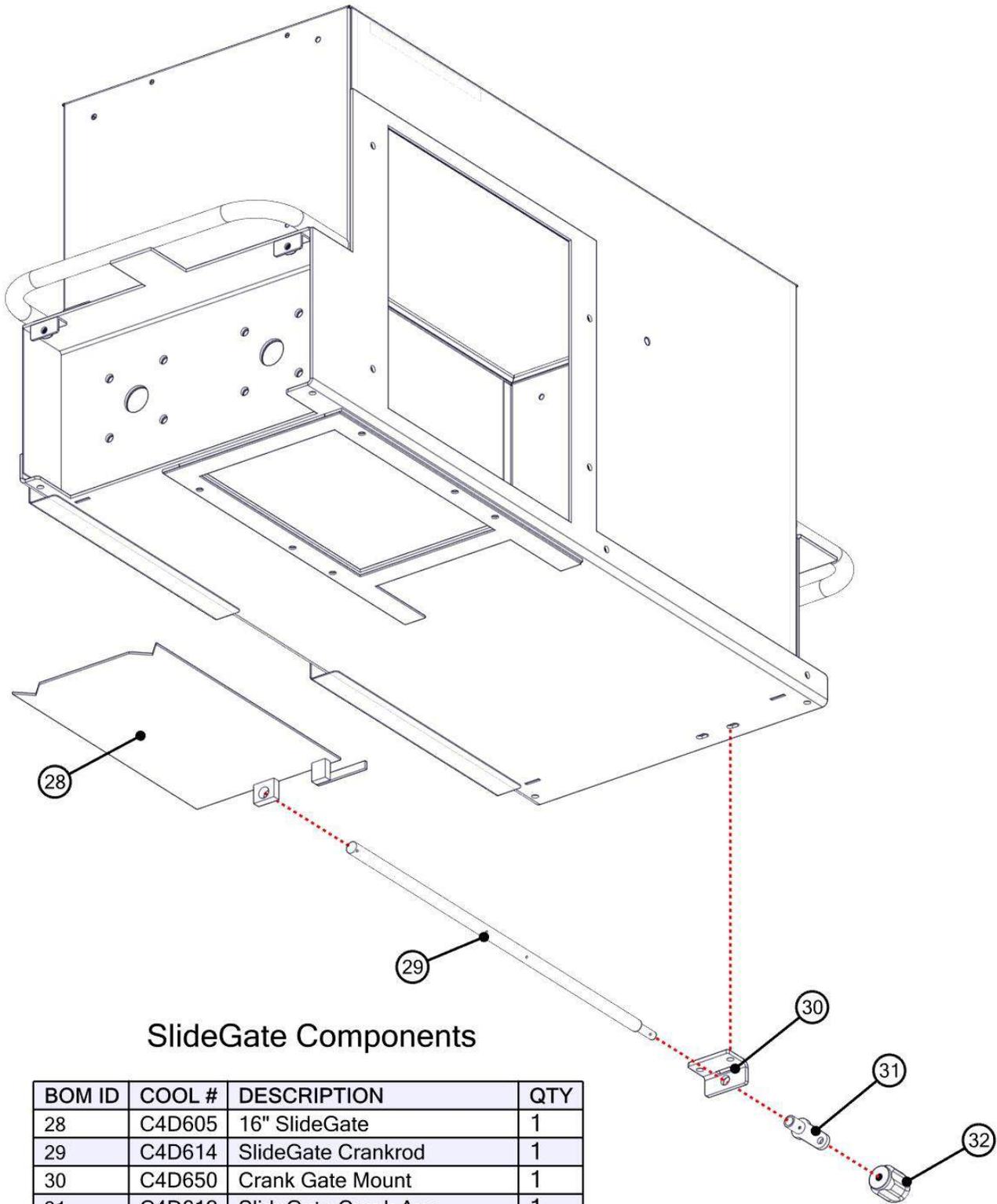




Augers Components

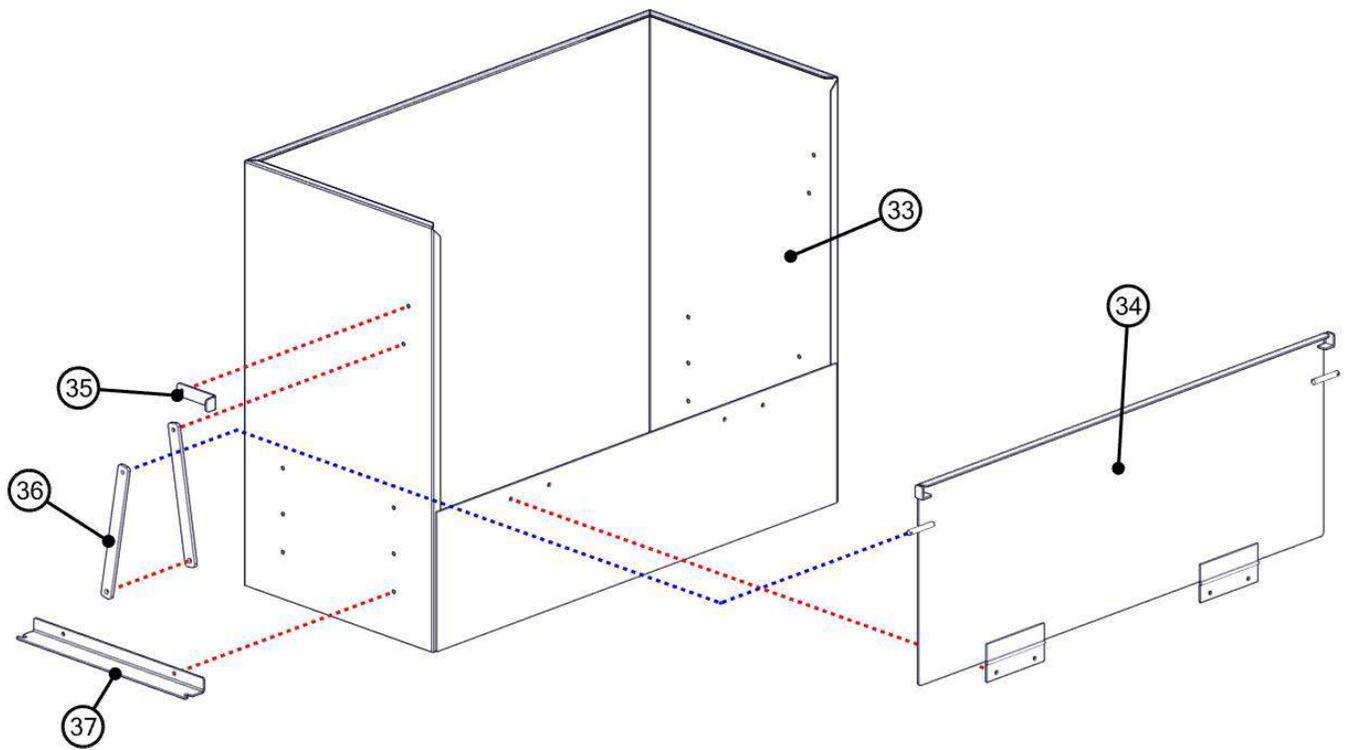
(+) Indicates Optional Components

BOM ID	COOL #	DESCRIPTION	QTY
8	C8J522	Sprocket #50, 26 Tooth, 1 1/2" Bore	2
18	C9H026	Hopper - 2010 Model (6" Longer, 1" Taller)	1
19	Call-In	Panel Box	1
22	C9H651	4" Hopper Bottom Cover Plate	1
23+	C9H325	Hopper Tray	1
24A	C1A658	Auger - 2010 Model Pin Style	1
24B	C1A659	Reverse Auger	1
25	C5X305	1 1/2" Bearing, 4 Bolt	4
25H	C5Q365	Felt Seal, for 1 1/2" Bearing	4
26	C1A622	Drive Shaft	2
27	C1A638	Auger Shaft Dummy End	2
42	C9H626	Hopper Bar	1
K1	C6J250	3/8" Keystock	2



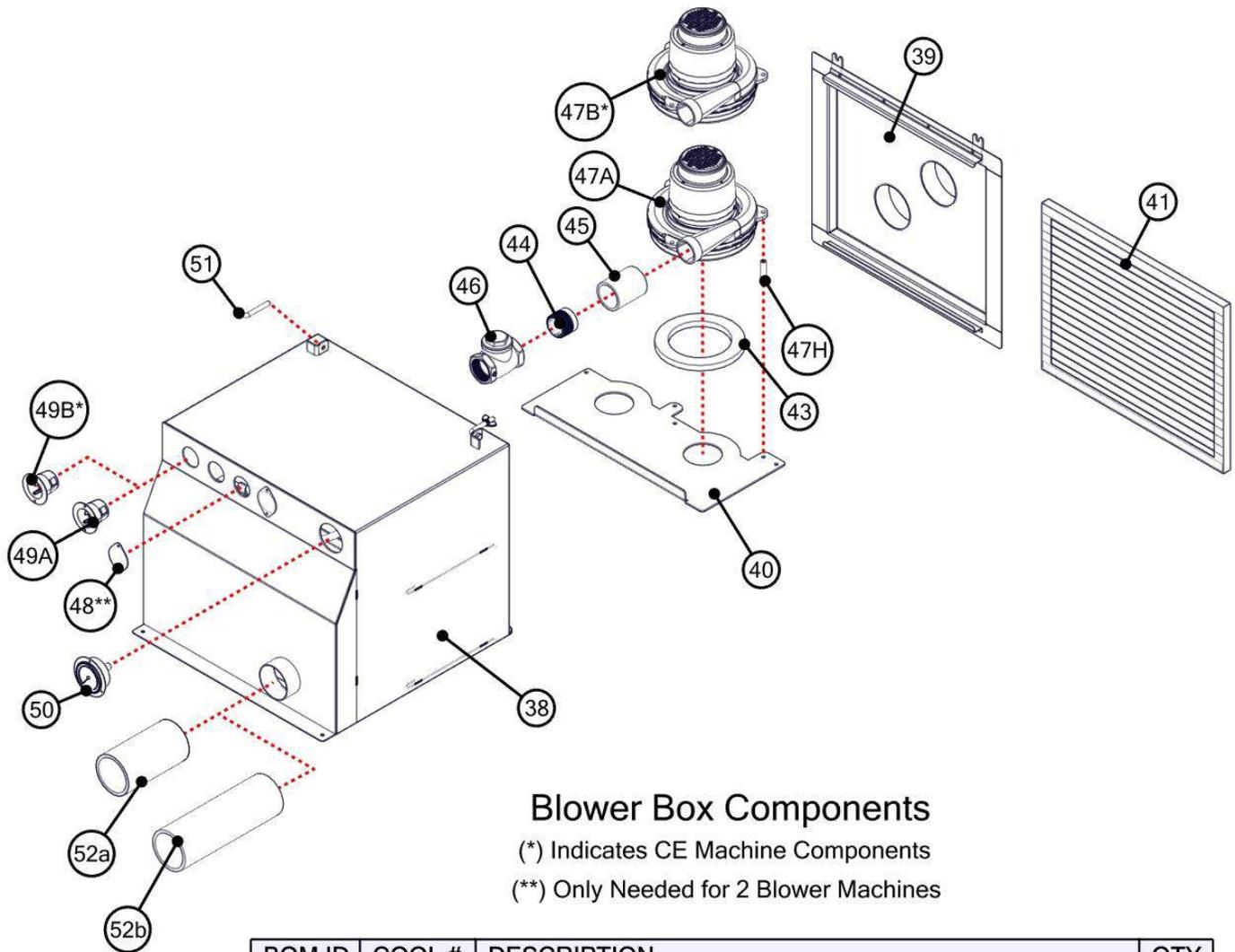
SlideGate Components

BOM ID	COOL #	DESCRIPTION	QTY
28	C4D605	16" SlideGate	1
29	C4D614	SlideGate Crankrod	1
30	C4D650	Crank Gate Mount	1
31	C4D612	SlideGate Crank Arm	1
32	C6J288	Handle, Cusion Grip, 3/8"-16	1



***OPTIONAL Hopper Extension Components**

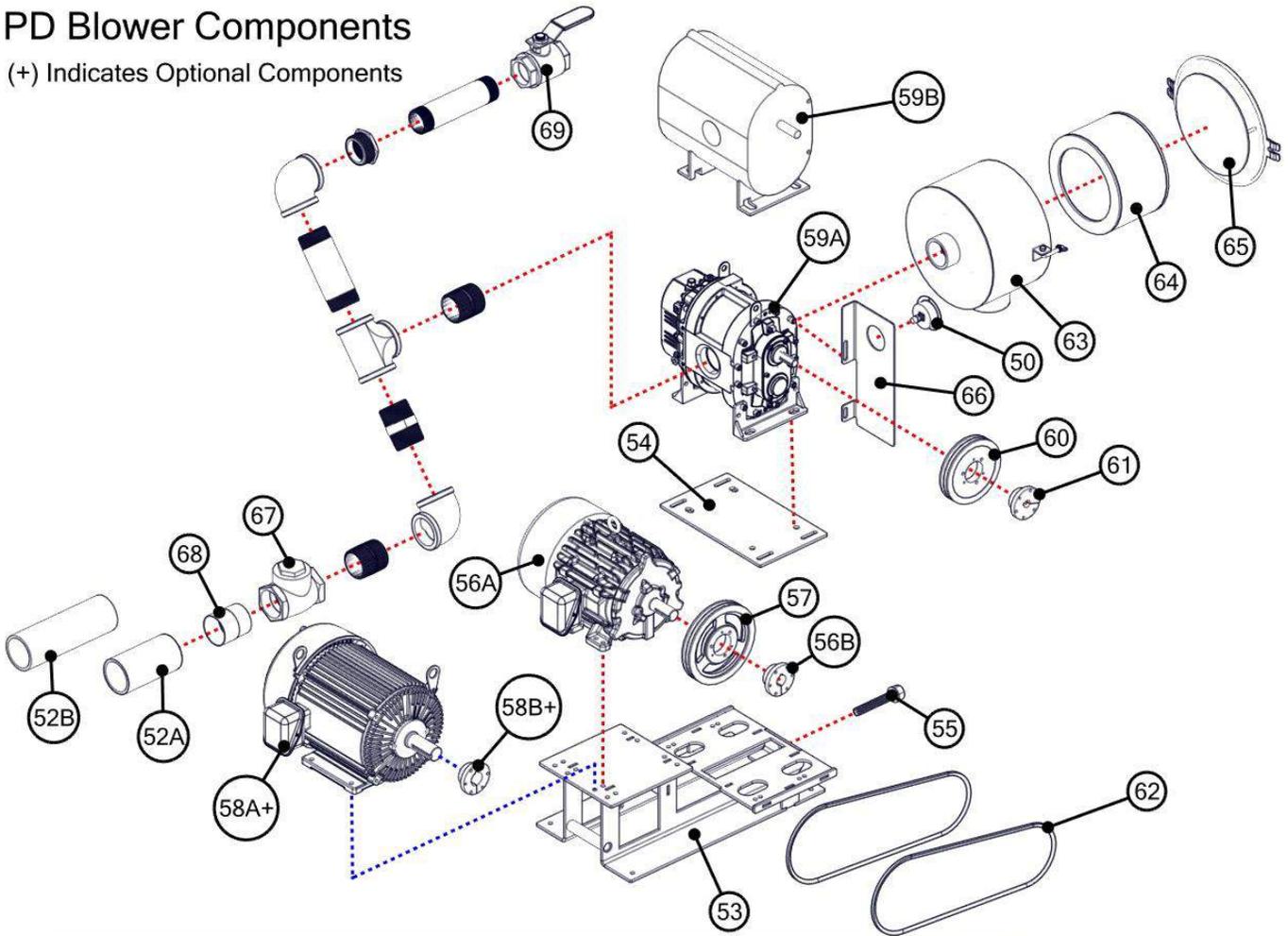
BOM ID	COOL #	DESCRIPTION	QTY
33	C9H661	Hopper Extension Assy 2010 - 6" Longer	1
34	C9H657	Hopper Extension Door 2010 Model	1
35	C5A605	Hopper Extension Door Latch	2
36	C9H660	Hopper Extension Door Arm	4
37	C9H672	Hopper Extension Mounting Bracket	2



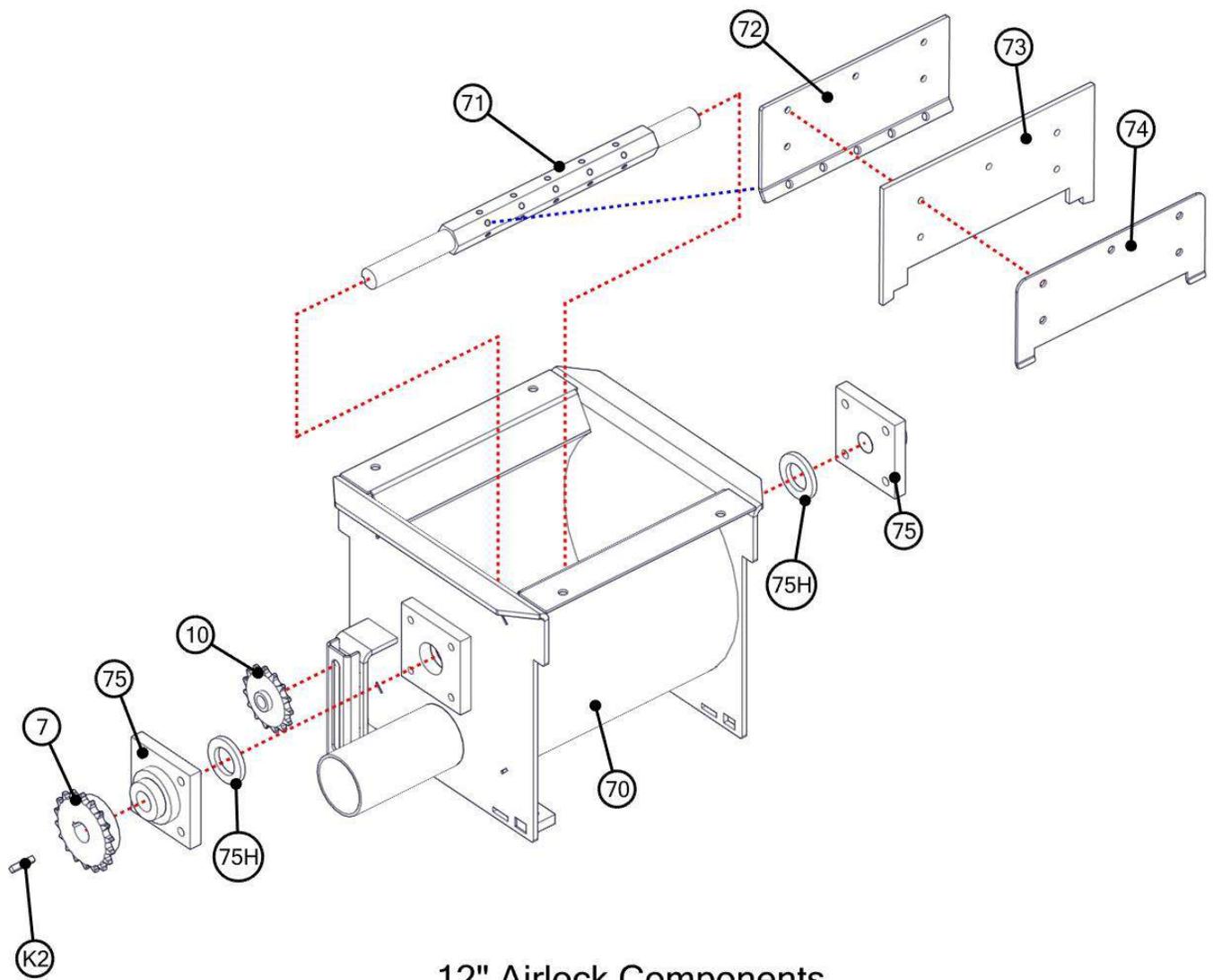
BOM ID	COOL #	DESCRIPTION	QTY
38	C5G718	Blower Box	1
39	C5G726	Blower Box Filter Cover	1
40	C5G716	Blower Mounting Plate	2
41	C6C310	Filter, 16" x 20" x 1"	1
43	C5M300	Rubber Gasket	4
44	C7A608	Adapter, Hose Barb, 2" x 1 1/2" NPT	4
45	C6Q203	2" Hose, 75W - 3" Long	4
46	C7V510	1 1/2" Check Valve, Swing	4
47A	C5G035	Blower, 13.7 Amp	4
47B*	C5G070	Blower, 7.1 Amp	4
47H	C5G710	Blower Bolt Spacer, 2 1/8"	12
48**	C5G727	Blower Receptacle Cover Plate	2
49A	C1U083	Receptacle, Mini-Flange, NEMA 5-15P, 125 VOLT, 15 AMP	4
49B*	C1U084	Receptacle, Mini-Flange, NEMA 6-15P, 250 VOLT	4
50	C4C042	Pressure Gauge	1
51	C6F427	Latch Bolt	2
52a	C6Q310	3" Hose, 75W, 6 1/2" Long for 16" Airlock	1
52b	C6Q310	3" Hose, 75W, 10 1/2" Long for 12" Airlock	1

PD Blower Components

(+) Indicates Optional Components

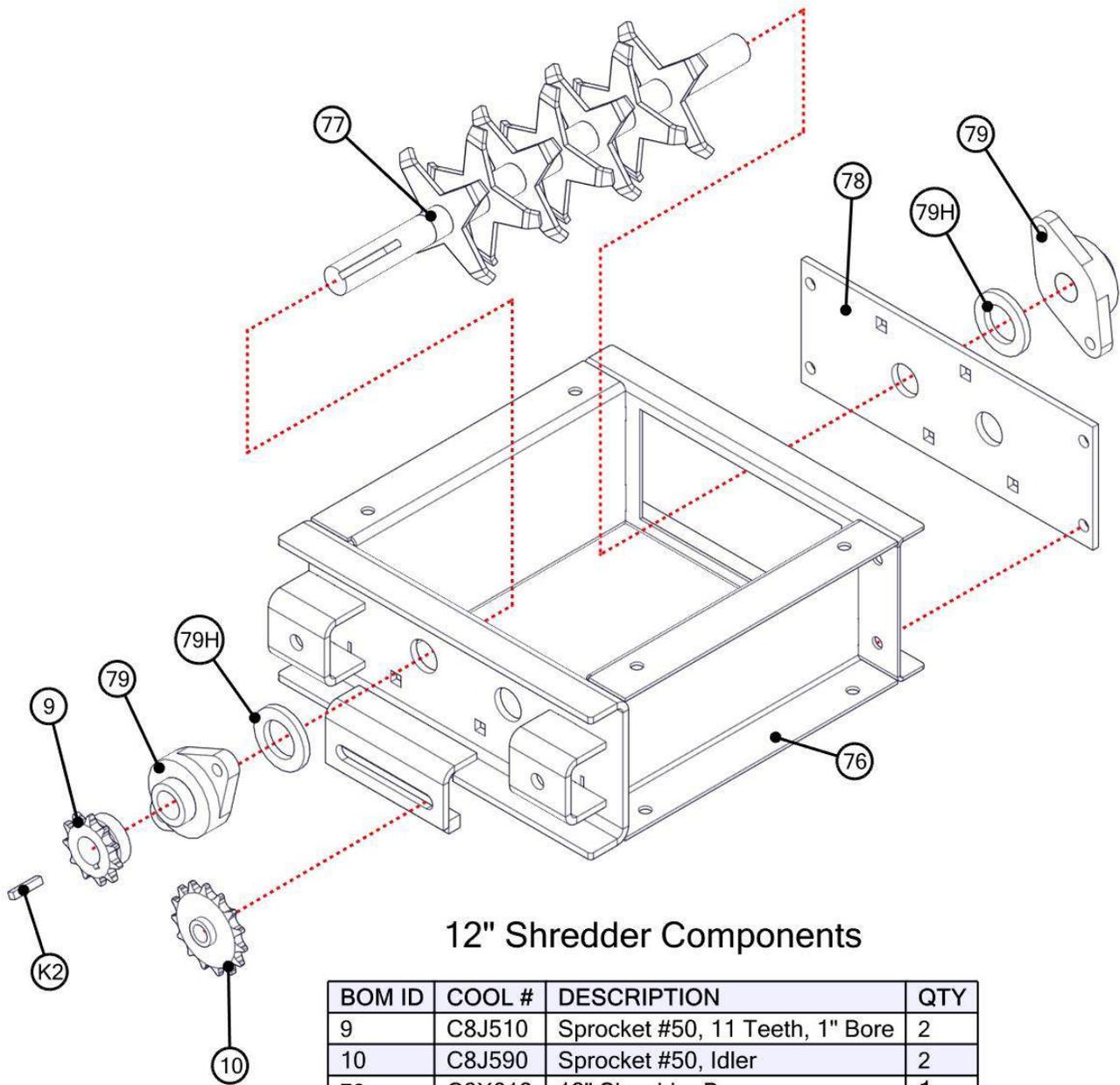


BOM ID	COOL #	DESCRIPTION	QTY
50	C4C042	Pressure Gauge	1
52A	C6Q310	3" Hose, 75W, 6 1/2" Long for 16" Airlock	1
52B	C6Q310	3" Hose, 75W, 10 1/2" Long for 12" Airlock	1
53	C5G676	5 HP PD Blower Frame - Low Profile	1
54	C2B681	5 HP Blower Slider	1
55	C5R601	Airlock Riser Bolt	1
56A	C2B075	Motor, 5HP 220/460 Volt, 3PH 50/60HZ, 1800 RPM, 184T Base	1
56B	C8F142	Bushing, 1 1/8", SDS	1
57	C8F015	Sheave, 2 Belt 8", SDS	1
58A+	C2B095	Motor, 7.5HP, 220/460 Volt, 3PH, w/ 213 BASE	1
58B+	C8F149	Bushing, 1 3/8" I.D. SDS	1
59A	C5G106	5 HP, Gardner-Denver PD Blower	1
59B	C5G105	5 HP, Competitor-Tuthill PD Blower	1
60	C8F035	Sheave, 2 Belt 6 1/2", SDS	1
61	C8F167	Bushing, 3/4", SDS	1
62	C5W305	V-Belt	2
63	C6C281	Filter Housing Base	1
64	C6C270	Blower Filter	1
65	C6C282	Filter Housing Top	1
66	C9W628	Blower Guard	1
67	C7V610	2 1/2" Check Valve	1
68	C7A732	Hose Connector for 2 1/2" Threads	1
69	C7V530	Ball Valve, 2", Brass	1



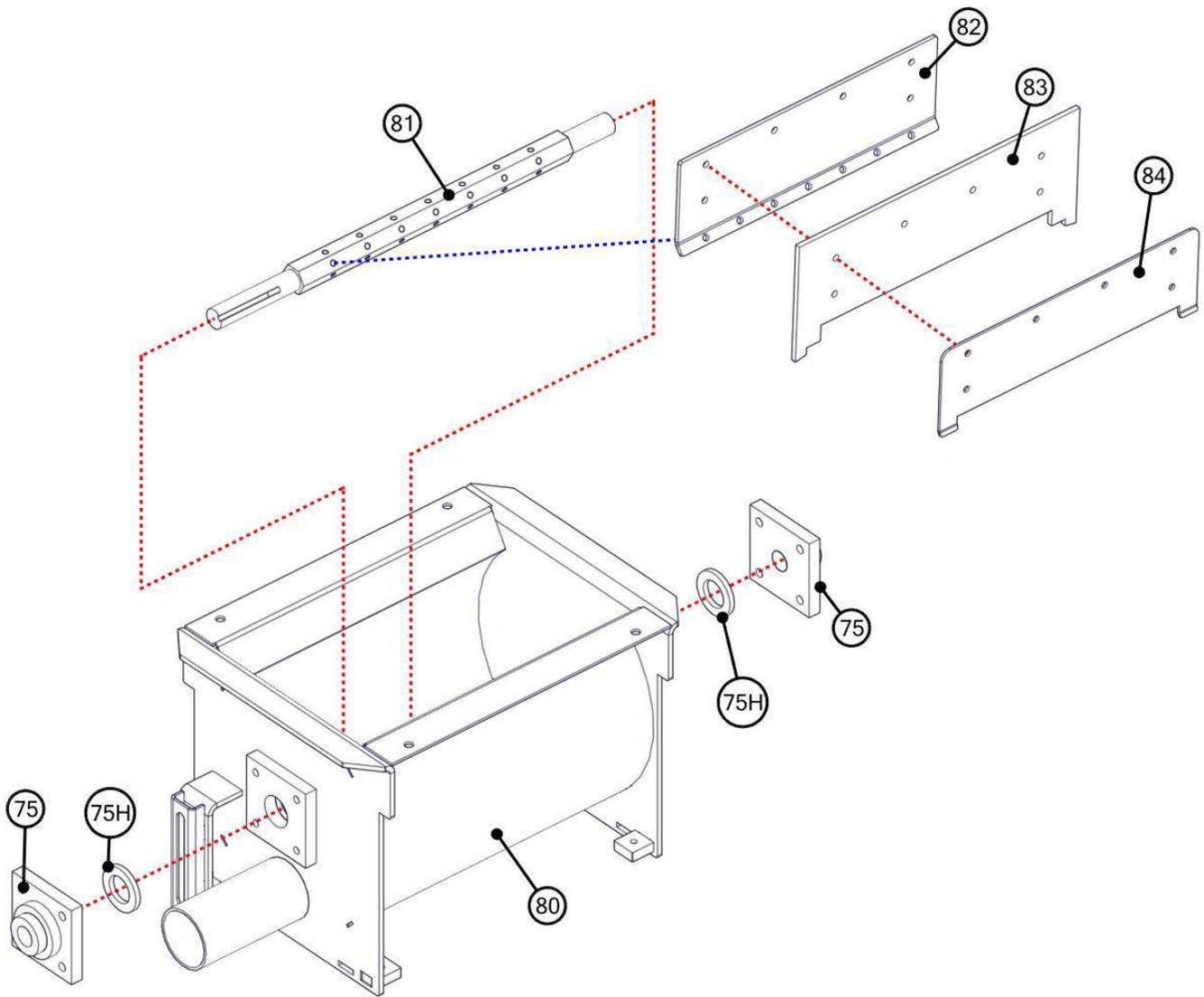
12" Airlock Components

BOM ID	COOL #	DESCRIPTION	QTY
7	C8J512	Sprocket #50, 18 Teeth, 1" Bore	1
10	C8J590	Sprocket #50, Idler	2
70	C5R612	12" Airlock	1
71	C5R512	12" Airlock Shaft	1
72	C5R412	12" Airlock Base Plate	6
73	C5R712-1K	12" Airlock Seal - 2 Ply Rubber	6
74	C5R312	12" Airlock Top Plate	6
75	C5X295	1" Bearing, 4 bolt	2
75H	C5Q355	Felt Seal, for 1" Bearing	2
K2	C6J255	1/4" Keystock	4



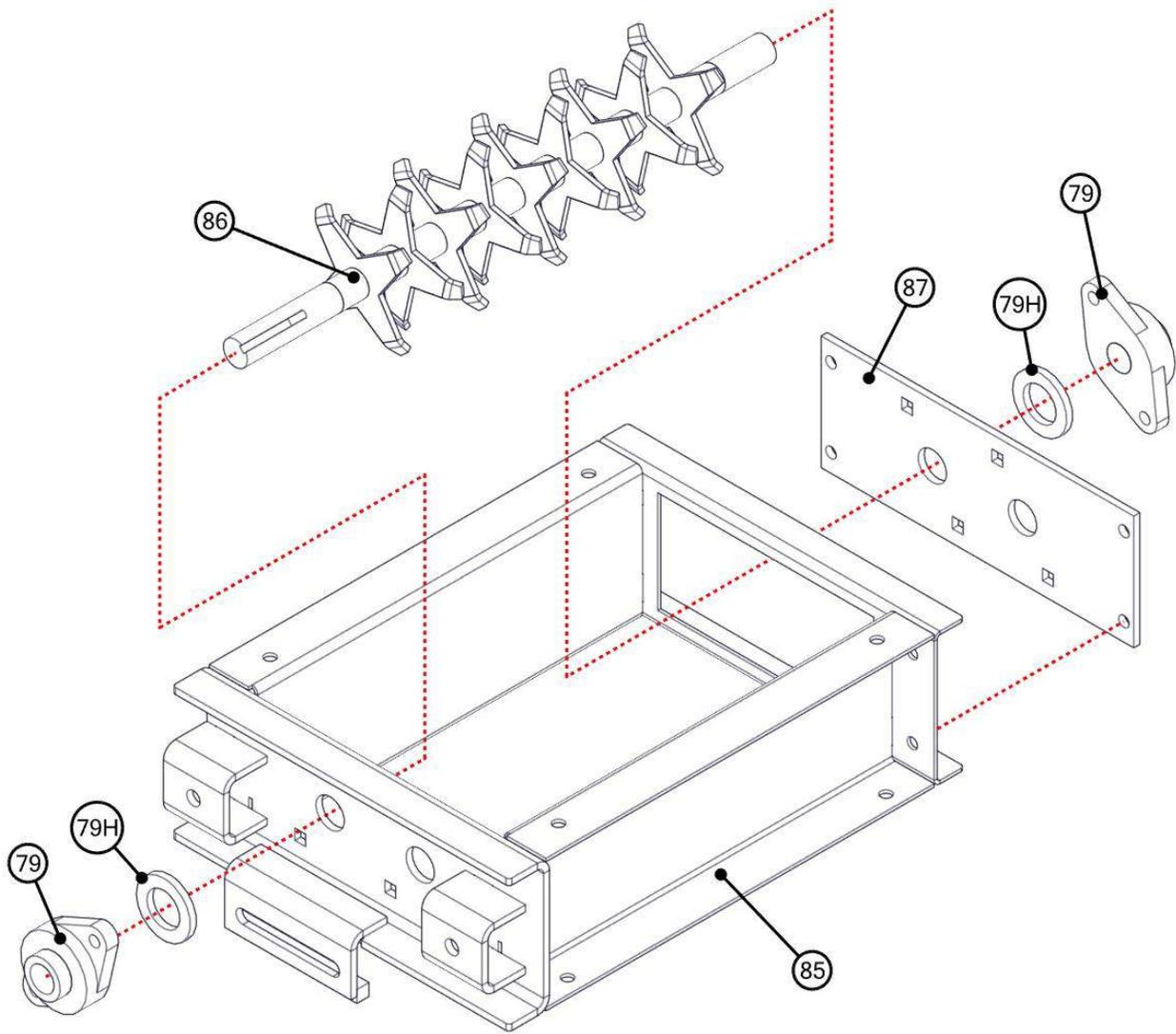
12" Shredder Components

BOM ID	COOL #	DESCRIPTION	QTY
9	C8J510	Sprocket #50, 11 Teeth, 1" Bore	2
10	C8J590	Sprocket #50, Idler	2
76	C8X612	12" Shredder Box	1
77	C8X713	12" Shredder w/ Blades	2
78	C8X710	Shredder Box Removable End	1
79	C5X280	1" Bearing, 2 Bolt	4
79H	C5Q355	Felt Seal, for 1" Bearing	4
K2	C6J255	1/4" Keystock	4



16" Airlock Components

BOM ID	COOL #	DESCRIPTION	QTY
75	C5X295	1" Bearing, 4 bolt	2
75H	C5Q355	Felt Seal, for 1" Bearing	2
80	C5R616-24K	16" Airlock	1
81	C5R516	16" Airlock Shaft	1
82	C5R416	16" Airlock Base Plate	6
83	C5R716	16" Airlock Seal	6
84	C5R316	Airlock Top Plate	6



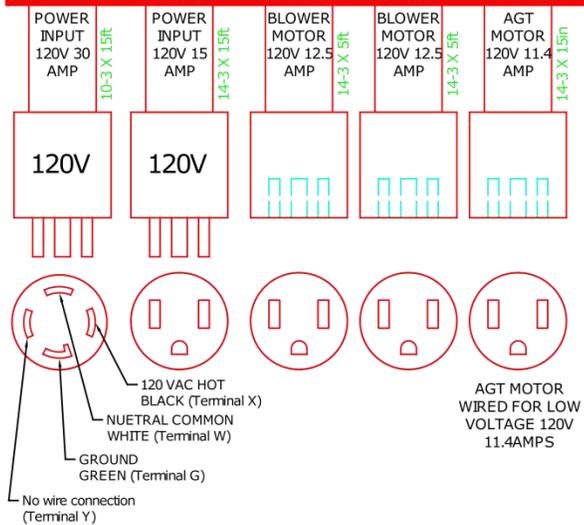
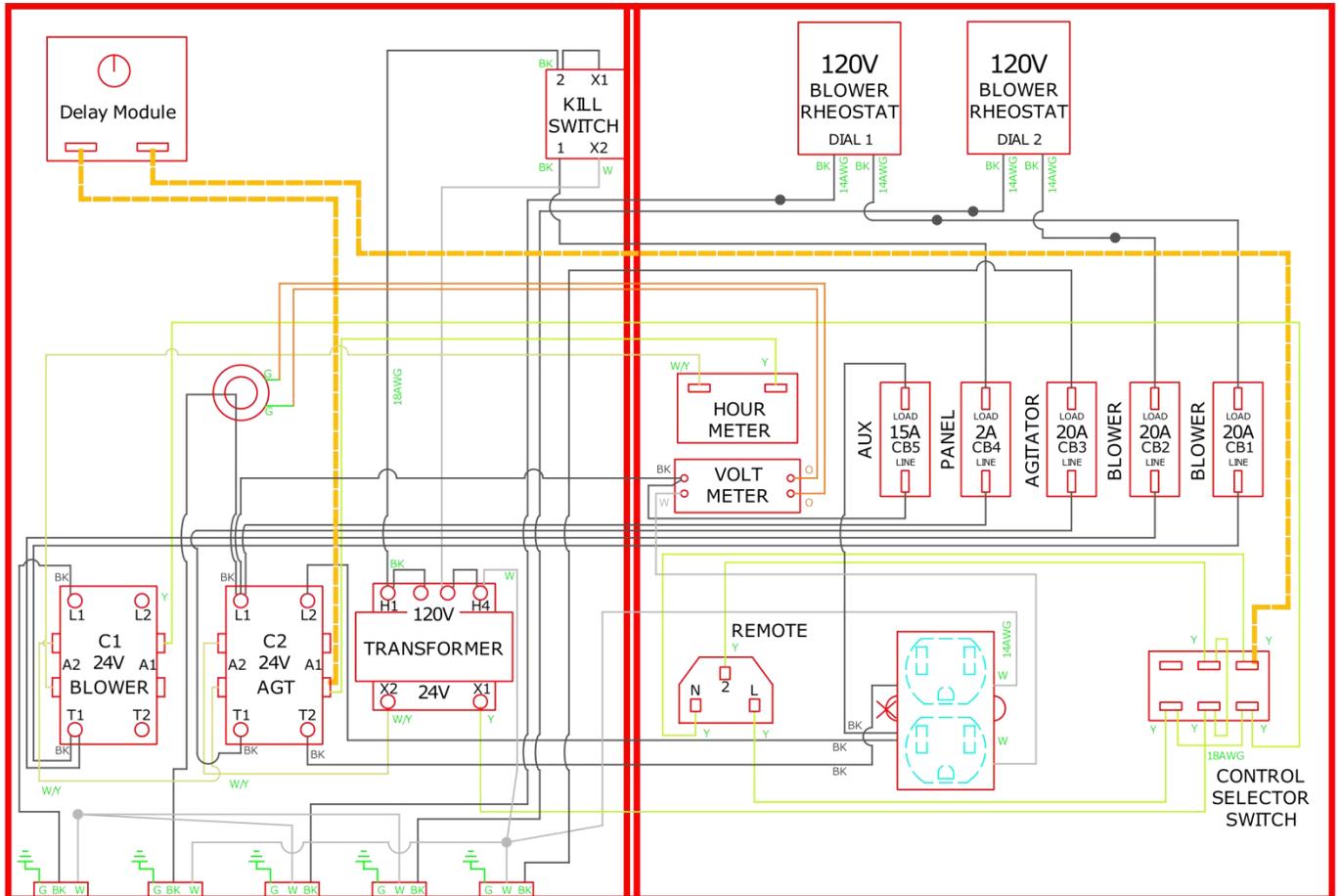
16" Shredder Components

BOM ID	COOL #	DESCRIPTION	QTY
79	C5X280	1" Bearing, 2 Bolt	4
79H	C5Q355	Felt Seal, for 1" Bearing	4
85	C8X616	16" Shredder	1
86	C8X717	16" Shredder w/ Blades	2
87	C8X710	Shredder Box Removable End	1

2400 PANEL BOX WIRING

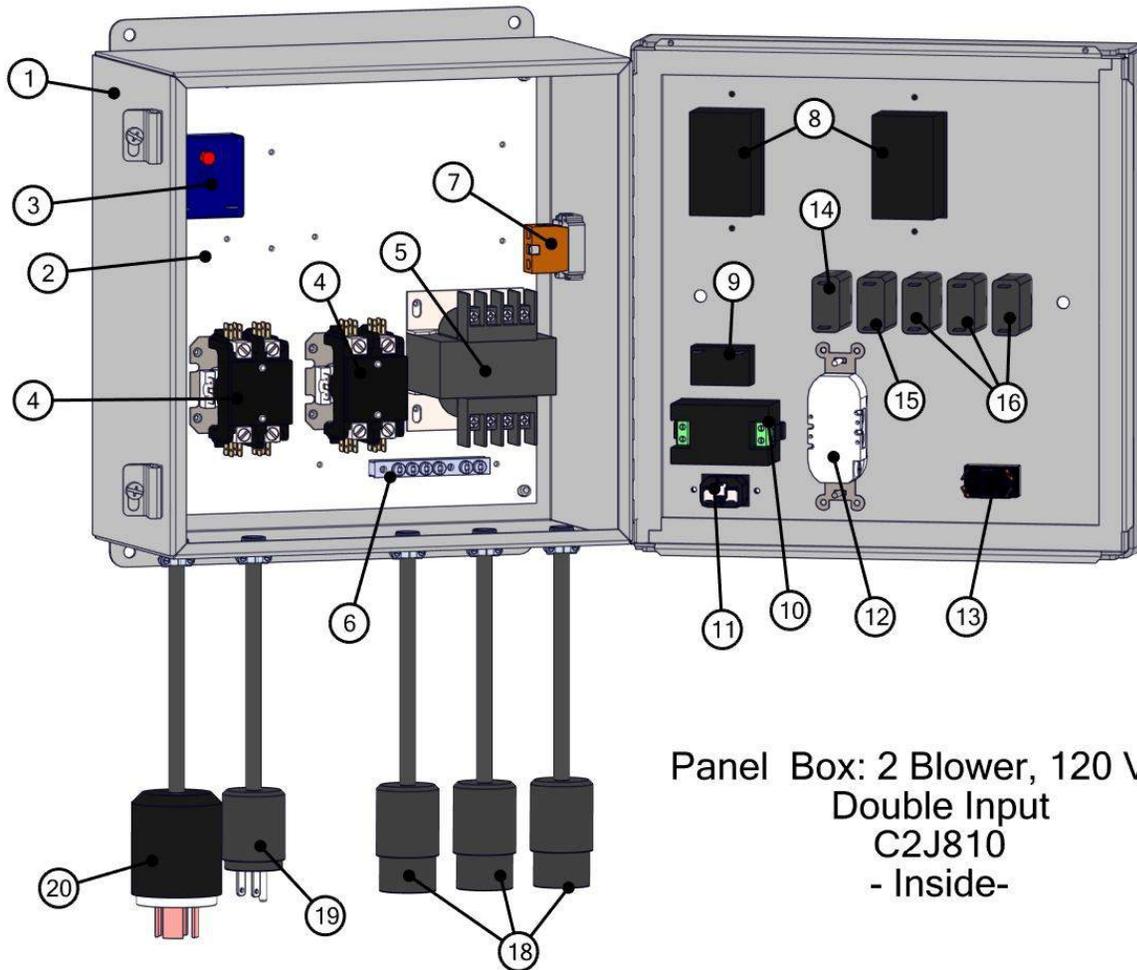
120 VAC Double Input

C2J810



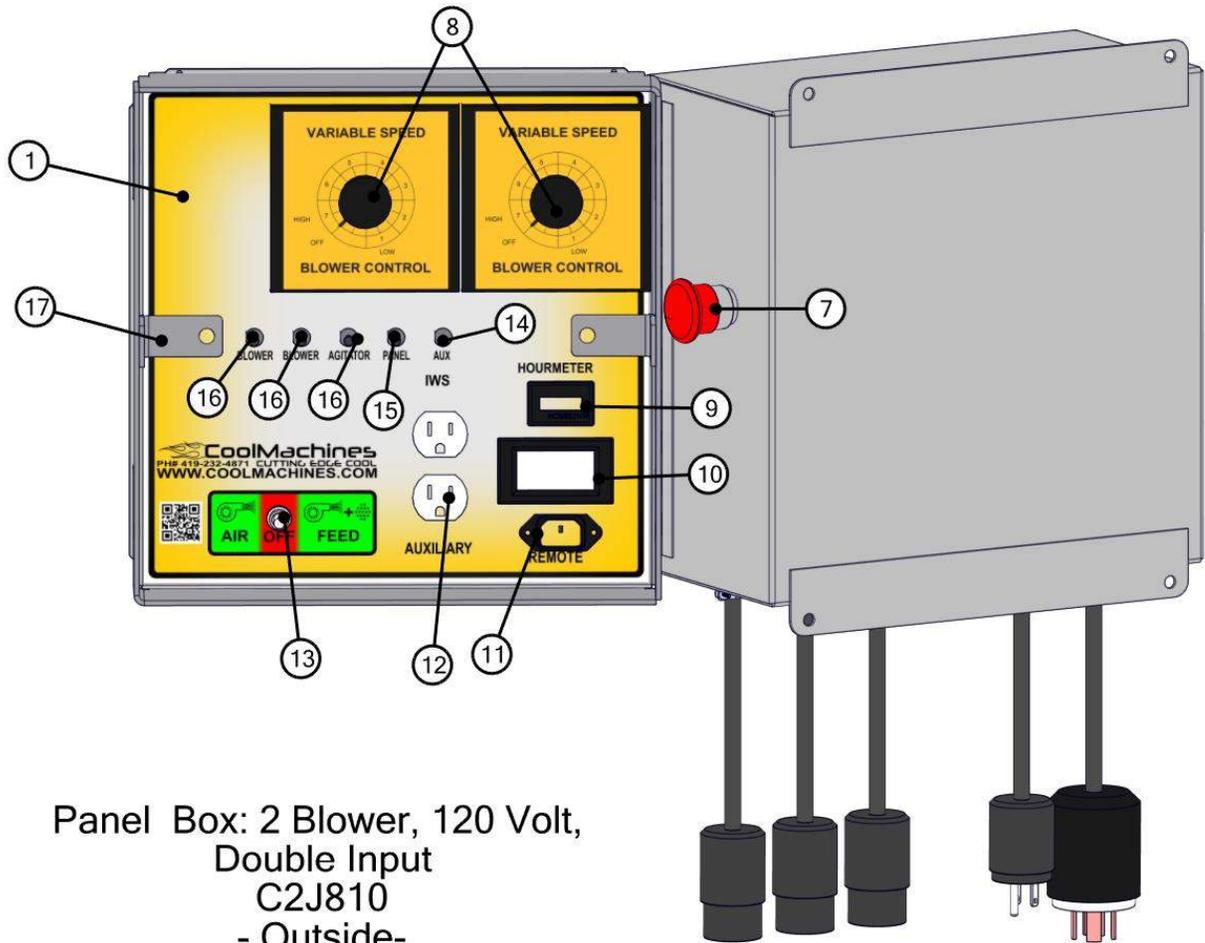
24\Wiring Panel Box.dwg

6.19.2019



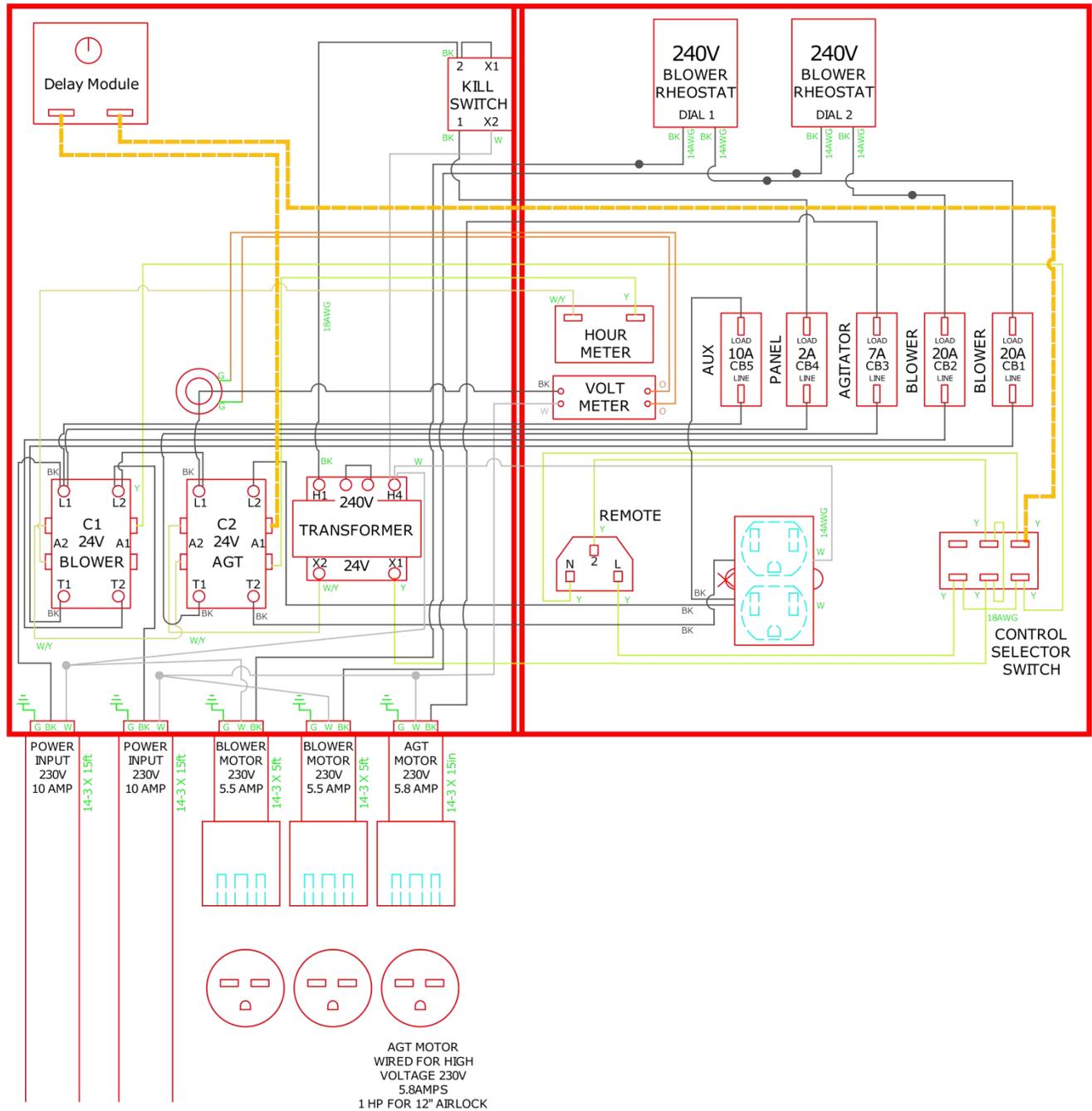
Panel Box: 2 Blower, 120 Volt,
Double Input
C2J810
- Inside-

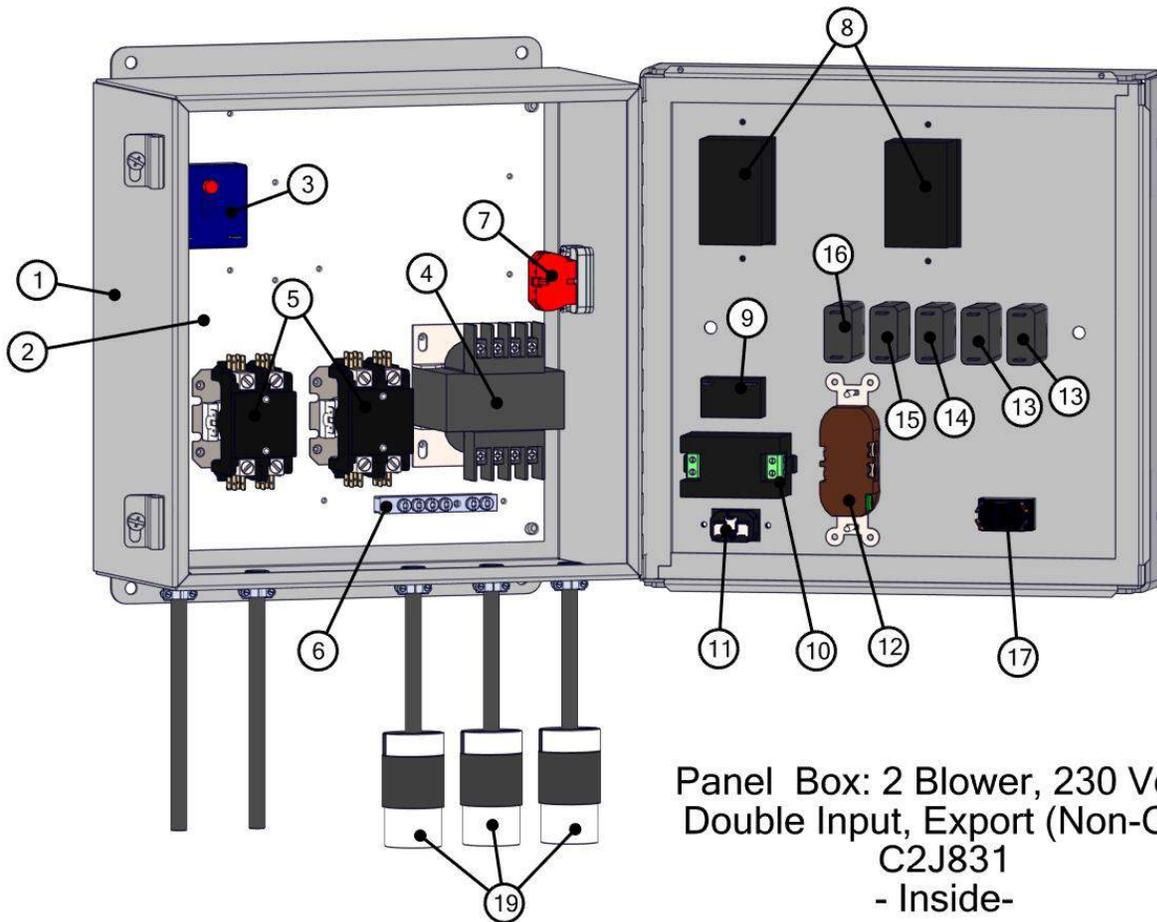
BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
2	C2X833	12" x 12" Panel	1
3	C2E072	Relay, 24-240 Vac, Timing Delay on Make Timer	1
4	C2E056	Relay/Contactor, 24VAC Coil Voltage, 2-Pole	2
5	C4B015	Transformer 100VA, 230 or 120V-24V, 50/60 Hz.	1
6	C3C055	Ground Bar	1
7	C1X220	Kill Switch, 22mm, w/ Contact Block, Lighted	1
8	C2R100	Blower Control, 120v	2
9	C4C014	Hourmeter	1
10	C4C027	Volt/Amp Meter	1
11	C1U020	IEC Receptacle (Remote)	1
12	C1U005	Duplex Receptacle, 125 Volt, 15 amp, Gray, 5-15R	1
13	C1X034	Toggle Switch	1
14	C3W056	15 amp Breaker, Push Button, Magnetic-Hydraulic	1
15	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
16	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	3
18	C1W020	Cord Connector, 15 amp, 120 volt, 3-wire, 5-15C NEMA Lighted	3
19	C1W110	Plug, Straight Blade, 15 Amp, 125 Volt, 3-Wire	1
20	C1W360	Plug, Twist Lock, 30 Amp, 250 Volt, 4-Wire	1



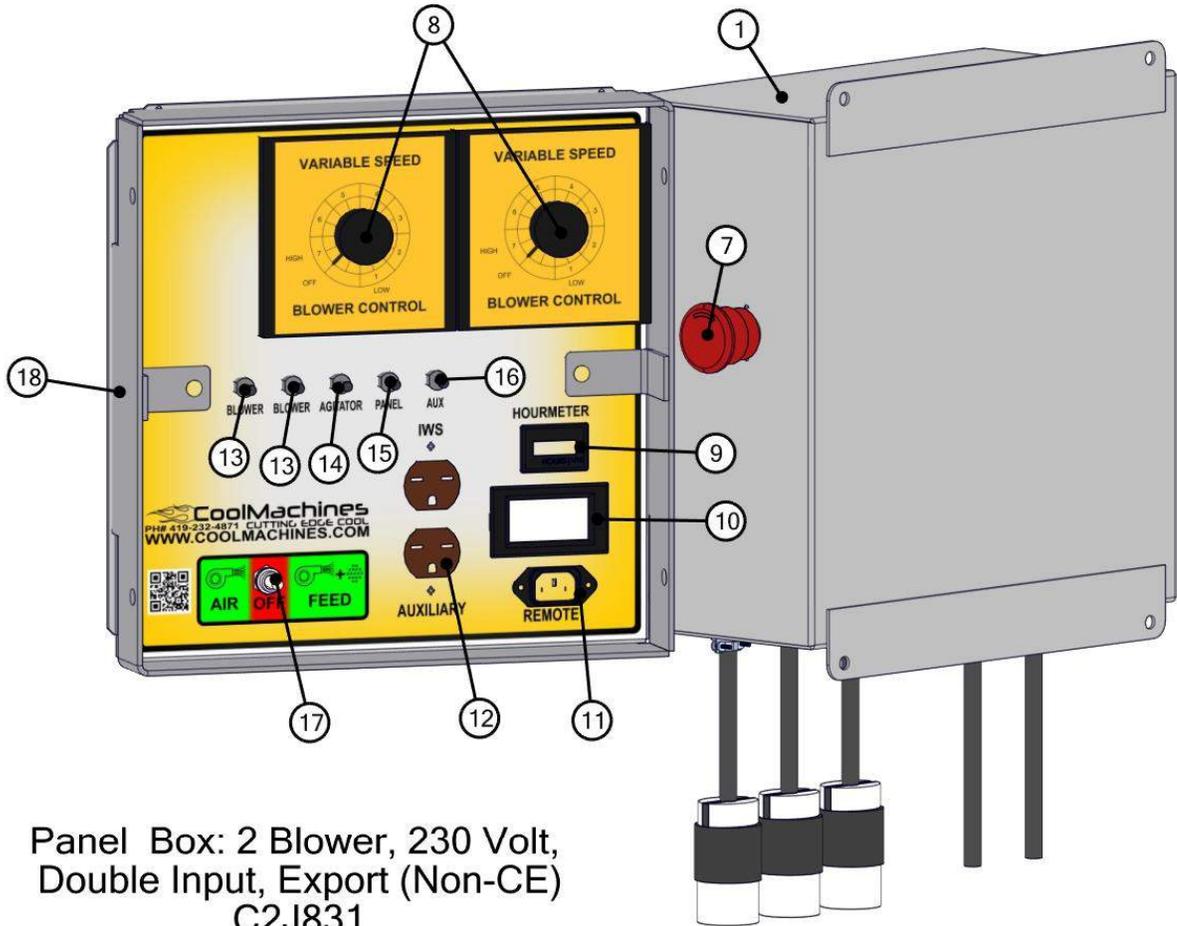
BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
7	C1X220	Kill Switch, 22mm, w/ Contact Block, Lighted	1
8	C2R100	Blower Control, 120v	2
9	C4C014	Hourmeter	1
10	C4C027	Volt/Amp Meter	1
11	C1U020	IEC Receptacle (Remote)	1
12	C1U005	Duplex Receptacle, 125 Volt, 15 amp, Gray, 5-15R	1
13	C1X034	Toggle Switch	1
14	C3W056	15 amp Breaker, Push Button, Magnetic-Hydraulic	1
15	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
16	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	3
17	C9W303	12" Panel Box Guard	1

2400 PANEL BOX WIRING 2 BLOWER 230 VAC EXPORT C2J831





BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
2	C2X833	12" x 12" Panel	1
3	C2E072	Relay, 24-240 Vac, Timing Delay on Make Timer	1
4	C4B015	Transformer 100VA, 230 or 120V-24V, 50/60 Hz.	1
5	C2E056	Relay/Contactor, 24VAC Coil Voltage, 2-Pole	2
6	C3C055	Ground Bar	1
7	C1X223	Kill Switch, 22mm Maintained, w/ NC Contact	1
8	C2R105	Blower Control, 230v	2
9	C4C014	Hourmeter	1
10	C4C027	Volt/Amp Meter	1
11	C1U020	IEC Receptacle (Remote)	1
12	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
13	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	2
14	C3W039	7 amp Breaker, Push Button, Magnetic-Hydraulic	1
15	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
16	C3W047	10 amp Breaker, Push Button, Magnetic-Hydraulic	1
17	C1X034	Toggle Switch	1
19	C1W413	Cord Connector Body, 6-15C, 15A, 250 Volt, 3-Wire, Green Light Only	3



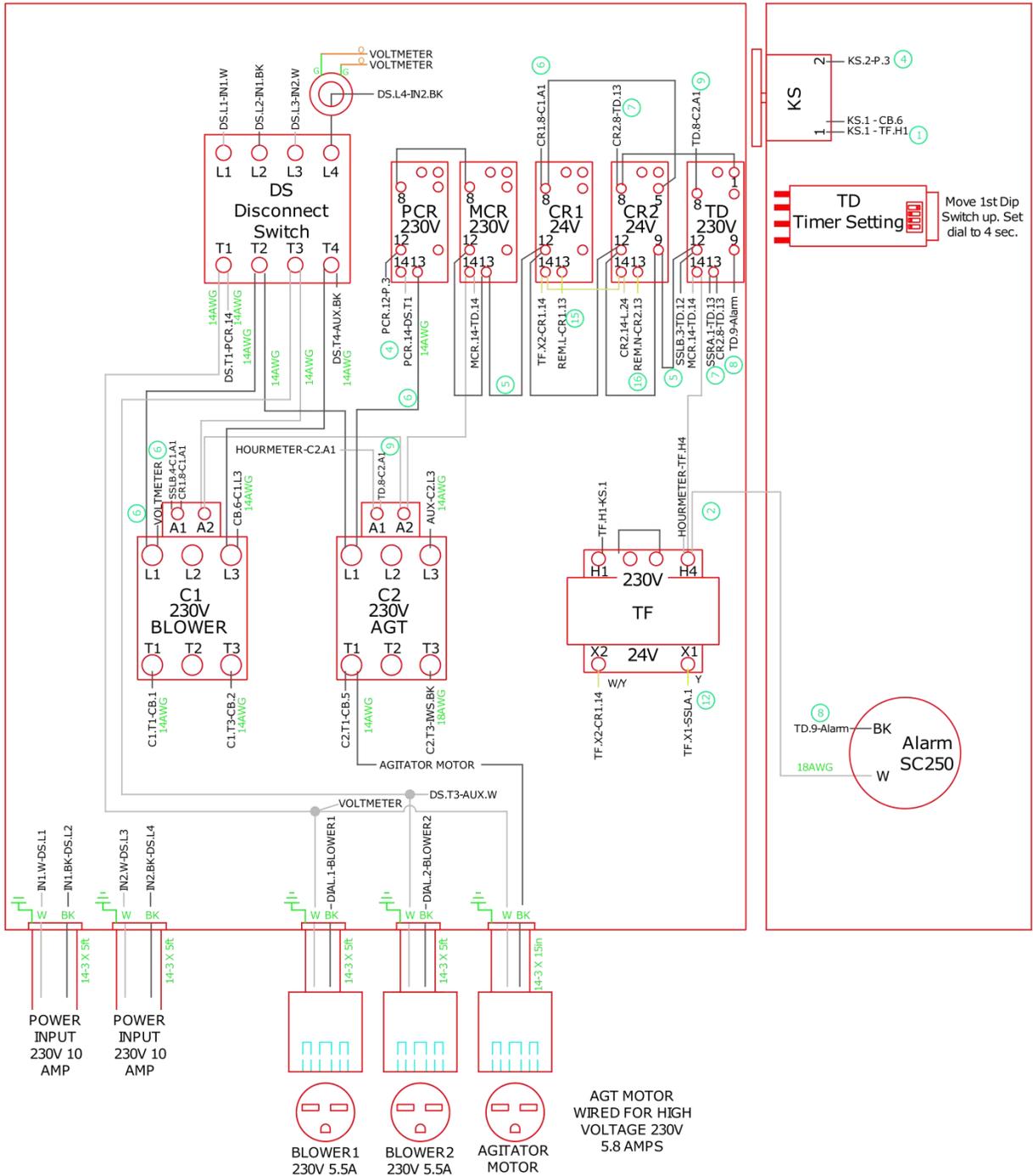
Panel Box: 2 Blower, 230 Volt,
 Double Input, Export (Non-CE)
 C2J831
 - Outside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
7	C1X223	Kill Switch, 22mm Maintained, w/ NC Contact	1
8	C2R105	Blower Control, 230v	2
9	C4C014	Hourmeter	1
10	C4C027	Volt/Amp Meter	1
11	C1U020	IEC Receptacle (Remote)	1
12	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
13	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	2
14	C3W039	7 amp Breaker, Push Button, Magnetic-Hydraulic	1
15	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
16	C3W047	10 amp Breaker, Push Button, Magnetic-Hydraulic	1
17	C1X034	Toggle Switch	1
18	C9W303	12" Panel Box Guard	1

2400 PANEL BOX WIRING

C2J818

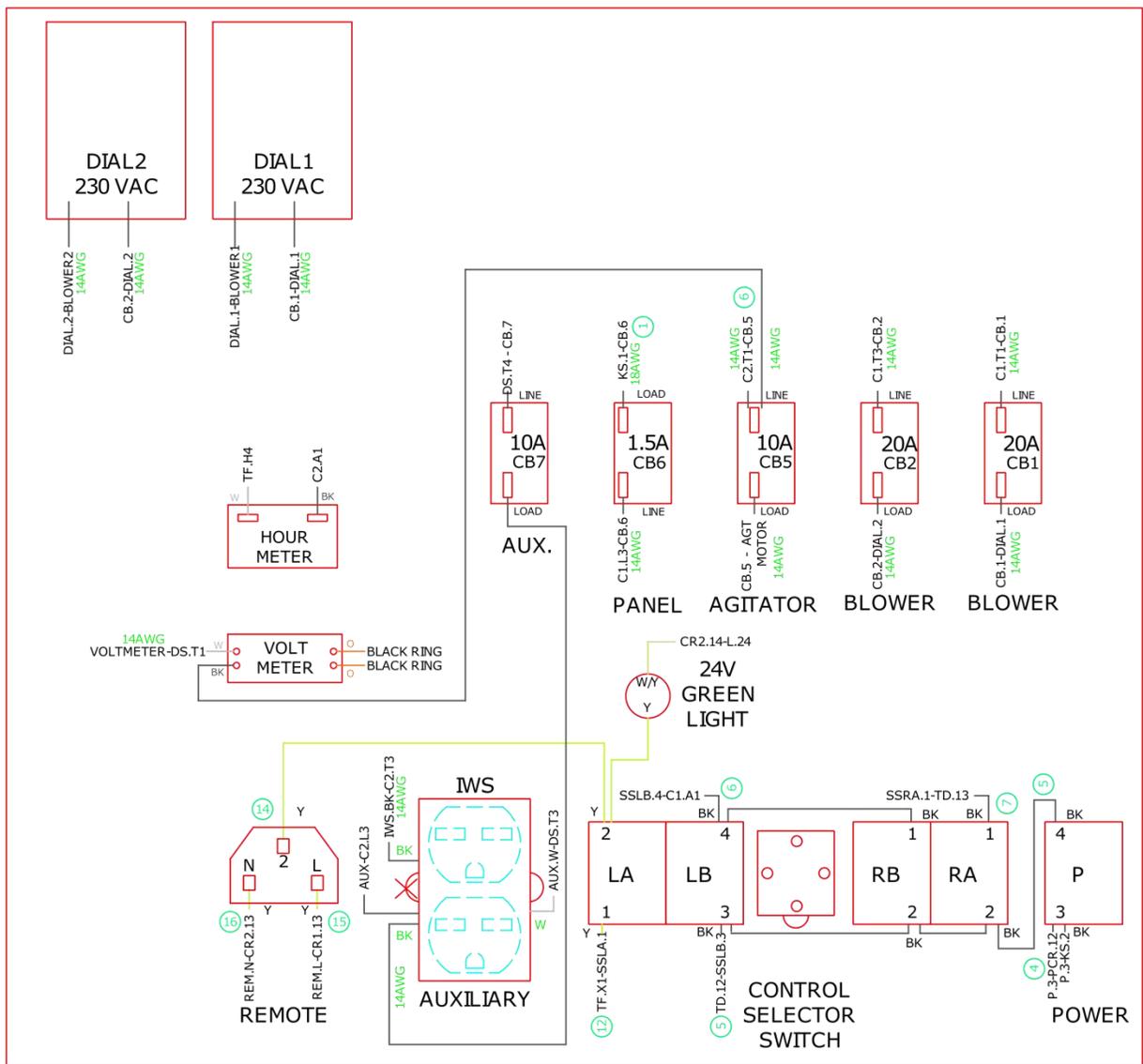
DOOR 2 BLOWER 230 VAC 50 Hz CE

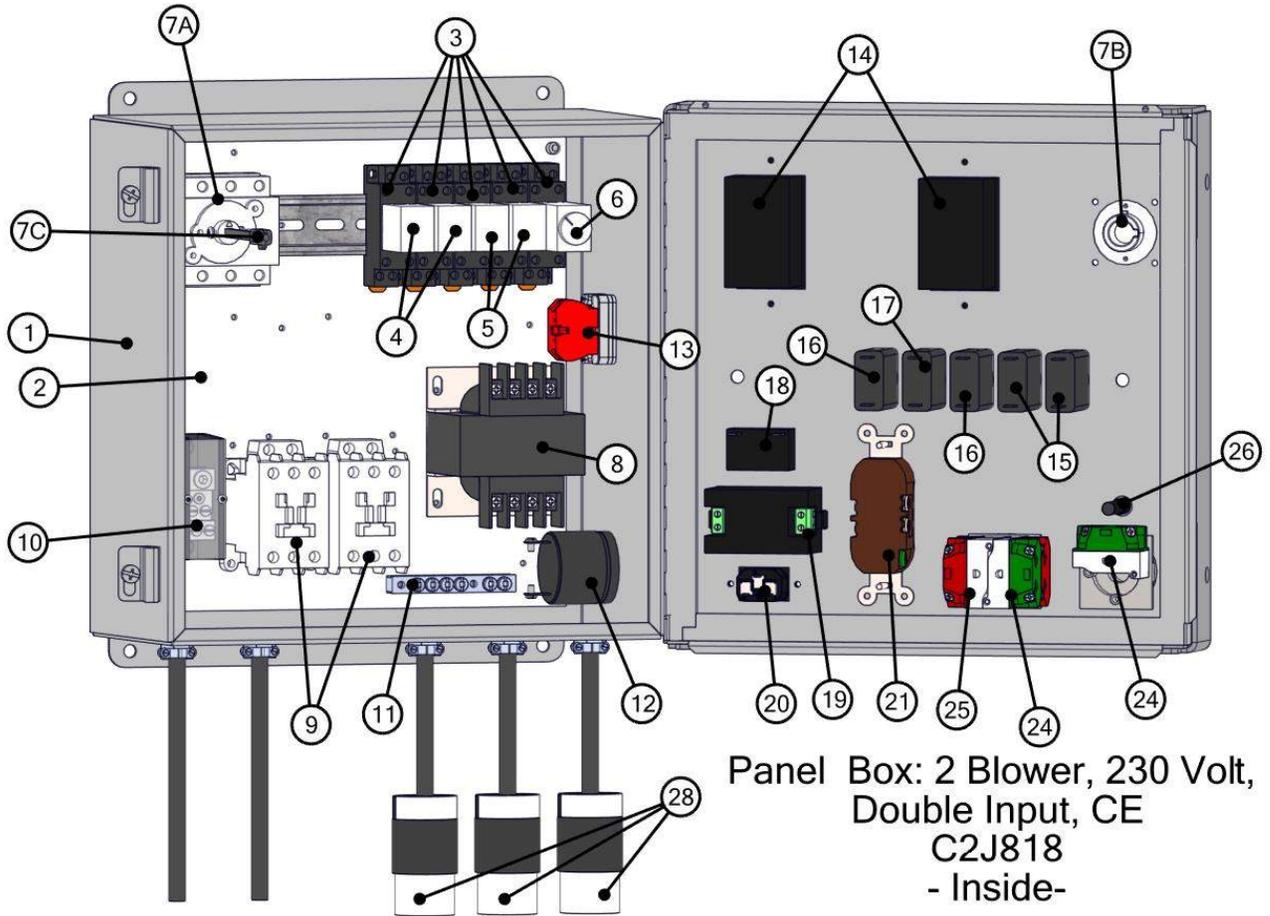


2400 PANEL BOX WIRING

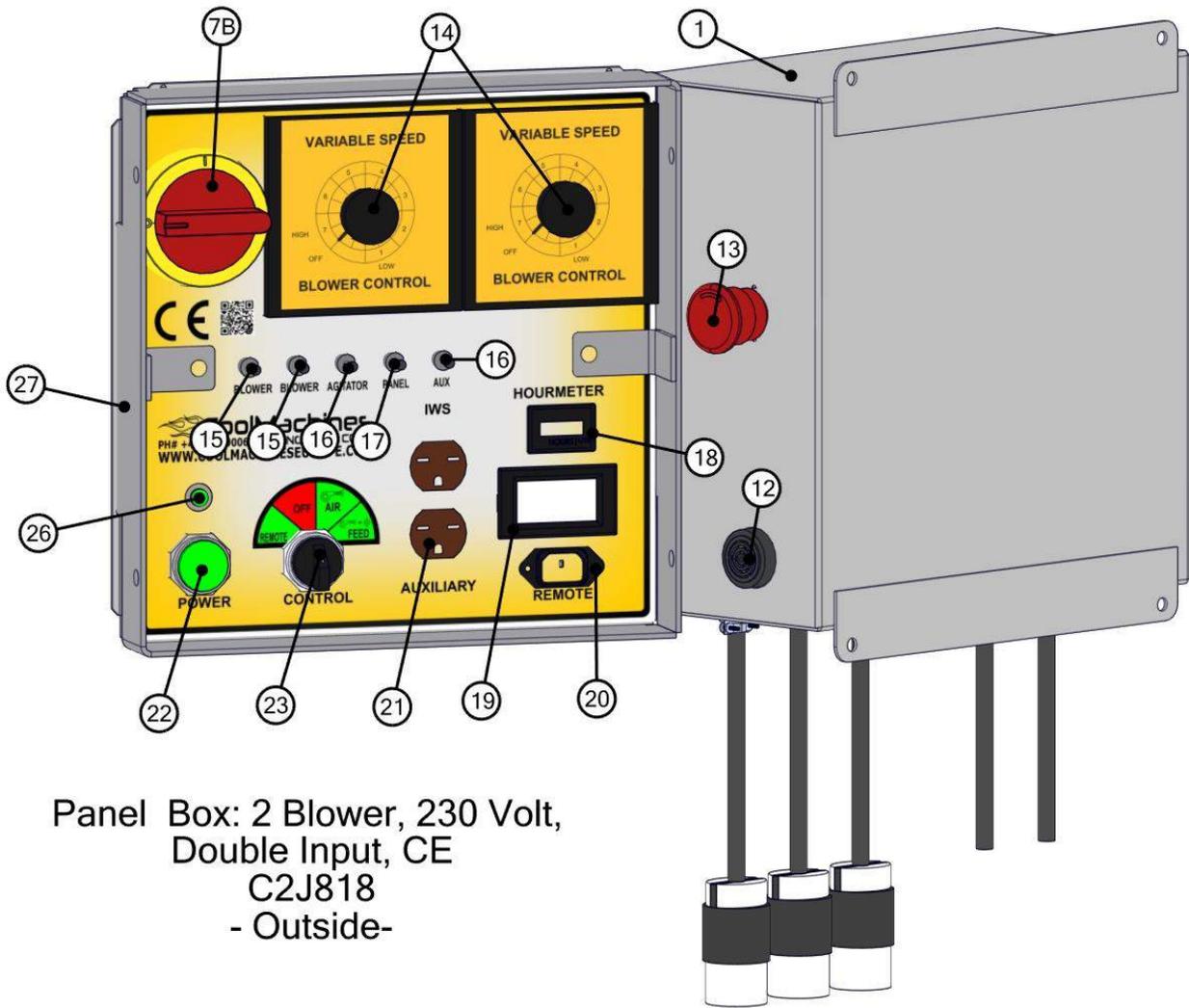
C2J818

DOOR 2 BLOWER 230 VAC 50 Hz CE





BOM ID	COOL #	DESCRIPTION	QTY
1	C2X735	Enclosure, 12" x 12" x 6"	1
2	C2X833	12" x 12" Panel	1
3	C2E124	Socket Relay, 8 Pin Miniature, Screw Terminals (For 5ZJ04)	5
4	C2E035	Relay, 220-240 VAC Miniature 50/60 Hz.	2
5	C2E080	Relay, 24 VAC Miniature 50/60 Hz.	2
6	C2E031	Relay, DPDT 230 VAC on Delay 50/60 Hz.	1
7A	C1X300	Disconnect Switch, 40 Amp	1
7B	C1X300-H	Disconnect Switch Handle	1
7C	C1X300-S	Disconnect Switch Shaft	1
8	C4B015	Transformer 100VA, 230 or 120V-24V, 50/60 Hz.	1
9	C2C230	Starter, 12 Amp, 220-230 Vac Coil	2
10	C3C010	Distribution Block, 1 Pole	1
11	C3C055	Ground Bar	1
12	C1C010	Audible Warning Device	1
13	C1X223	Kill Switch, 22mm Maintained, w/ NC Contact	1
14	C2R105	Blower Control, 230v	2
15	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	2
16	C3W047	10 amp Breaker, Push Button, Magnetic-Hydraulic	2
17	C3W023	1.5 amp Breaker, Push Button, Magnetic-Hydraulic	1
18	C4C014	Hourmeter	1
19	C4C027	Volt/Amp Meter	1
20	C1U020	IEC Receptacle (Remote)	1
21	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
24	C1X341	SQD 9001KA2 Contact Block, N.O. (Green)	2
25	C1X344	SQD 9001KA3 Contact Block, N.C. (Red)	3
26	C3J035	Light, 24V, Green	1
28	C1W413	Cord Connector Body, 6-15C, 15A, 250 Volt, 3-Wire, Green Light Only	3

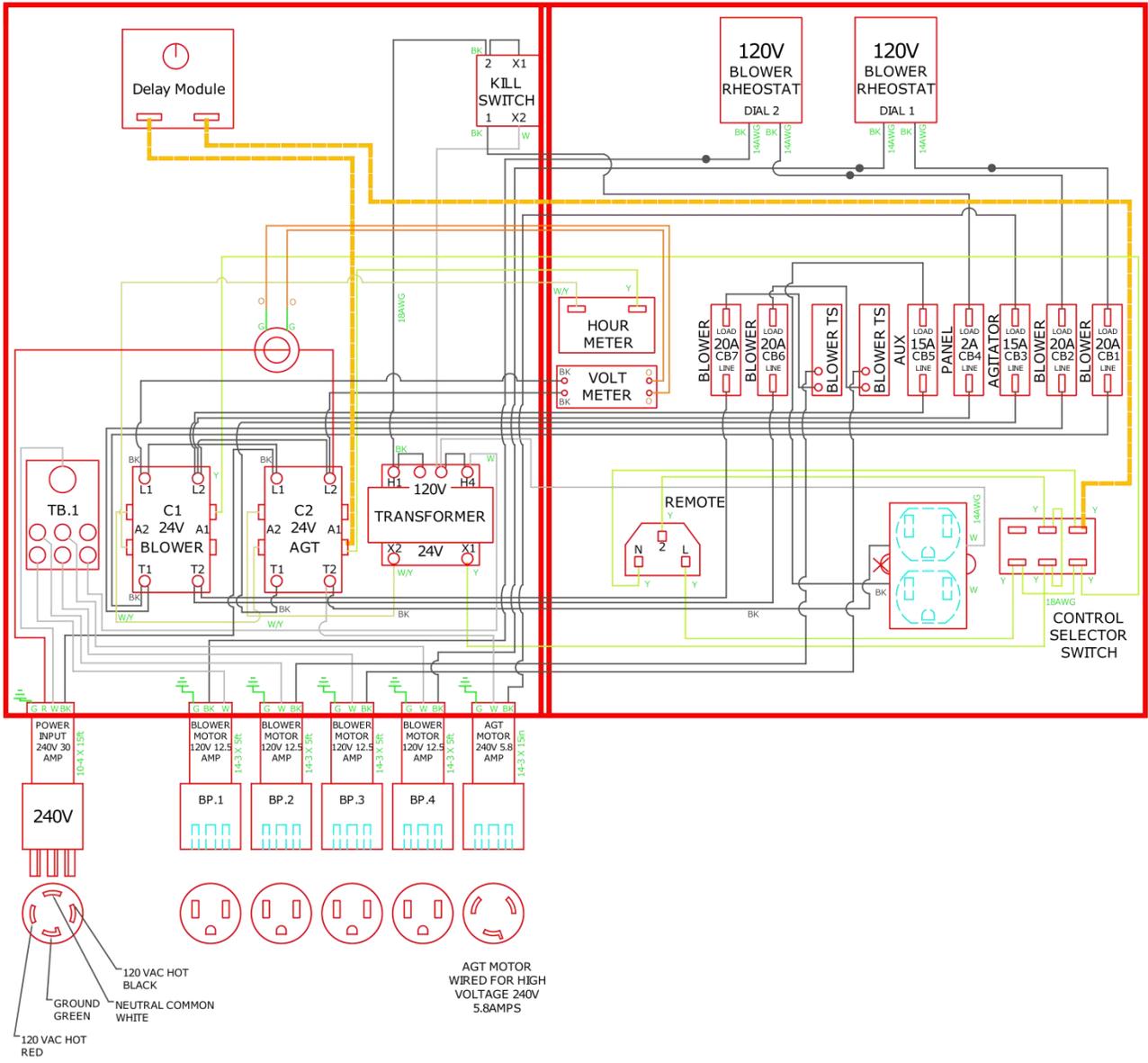


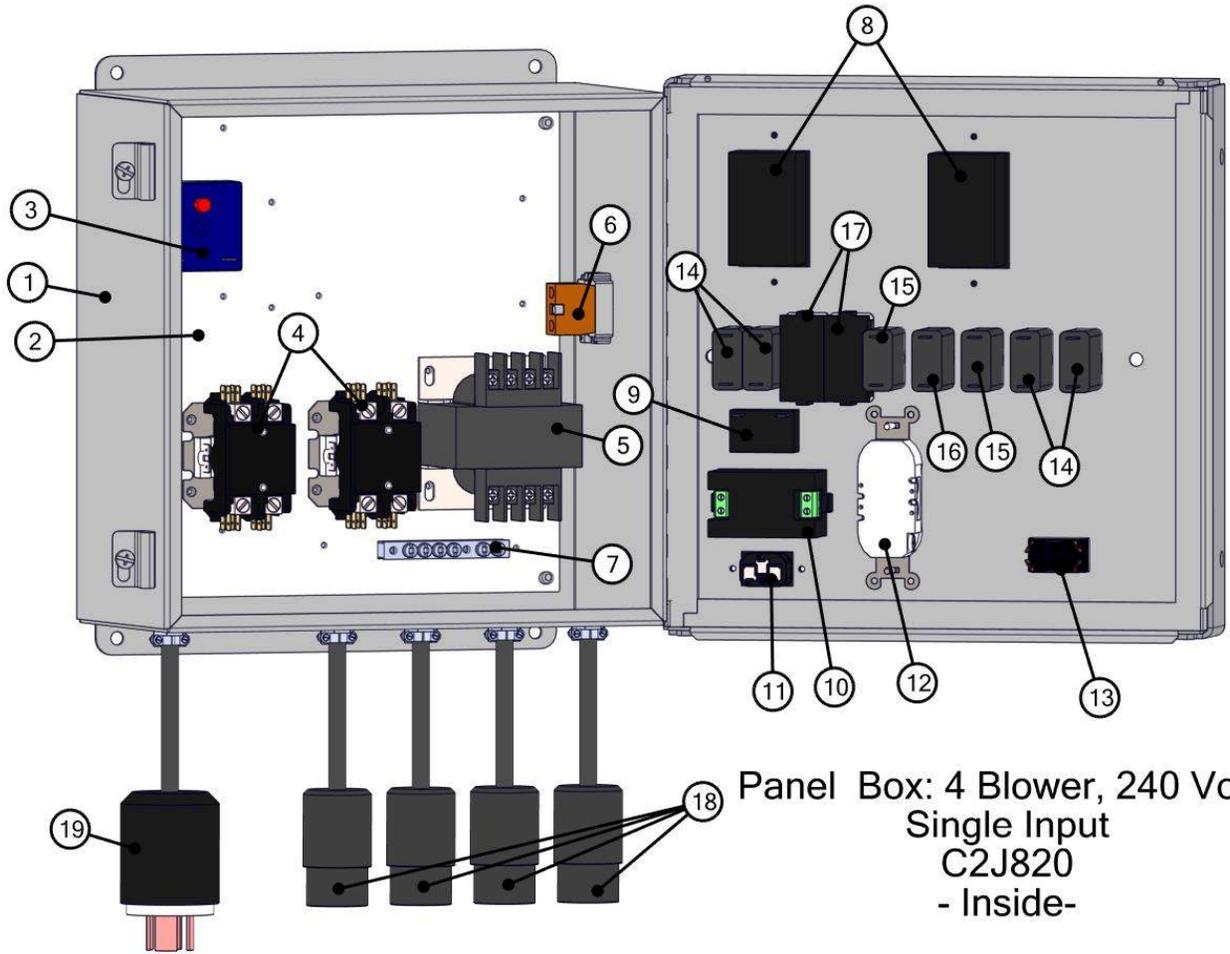
Panel Box: 2 Blower, 230 Volt,
Double Input, CE
C2J818
- Outside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X735	Enclosure, 12" x 12" x 6"	1
7B	C1X300-H	Disconnect Switch Handle	1
12	C1C010	Audible Warning Device	1
13	C1X223	Kill Switch, 22mm Maintained, w/ NC Contact	1
14	C2R105	Blower Control, 230v	2
15	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	2
16	C3W047	10 amp Breaker, Push Button, Magnetic-Hydraulic	2
17	C3W023	1.5 amp Breaker, Push Button, Magnetic-Hydraulic	1
18	C4C014	Hourmeter	1
19	C4C027	Volt/Amp Meter	1
20	C1U020	IEC Receptacle (Remote)	1
21	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
22	C1X207	Universal Push Button, Green	1
23	C1X123	Selector Switch, 4 Position	1
26	C3J035	Light, 24V, Green	1
27	C9W303	12" Panel Box Guard	1

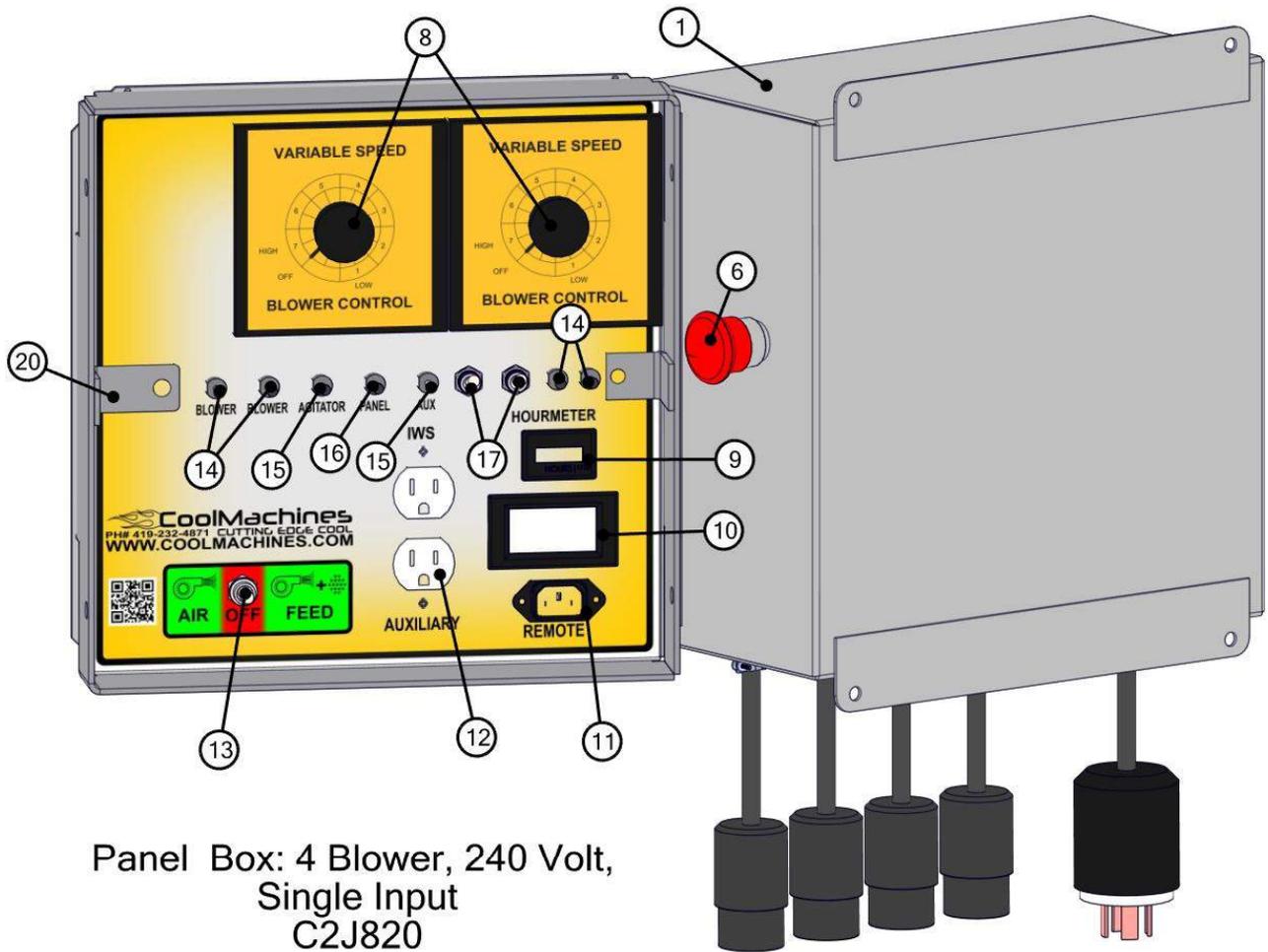
2400 PANEL BOX WIRING 4 BLOWER 240 VAC

C2J820





BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
2	C2X833	12" x 12" Panel	1
3	C2E072	Relay, 24-240 Vac, Timing Delay on Make Timer	1
4	C2E056	Relay/Contactor, 24VAC Coil Voltage, 2-Pole	2
5	C4B015	Transformer 100VA, 230 or 120V-24V, 50/60 Hz.	1
6	C1X220	Kill Switch, 22mm, w/ Contact Block, Lighted	1
7	C3C055	Ground Bar	1
8	C2R100	Blower Control, 120v	2
9	C4C014	Hourmeter	1
10	C4C027	Volt/Amp Meter	1
11	C1U020	IEC Receptacle (Remote)	1
12	C1U005	Duplex Receptacle, 125 Volt, 15 amp, Gray, 5-15R	1
13	C1X034	Toggle Switch	1
14	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	4
15	C3W056	15 amp Breaker, Push Button, Magnetic-Hydraulic	2
16	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
17	C1X032	Toggle Switch, On/Off	2
18	C1W020	Cord Connector, 15 amp, 120 volt, 3-wire, 5-15C NEMA Lighted	4
19	C1W360	Plug, Twist Lock, 30 Amp, 250 Volt, 4-Wire	1



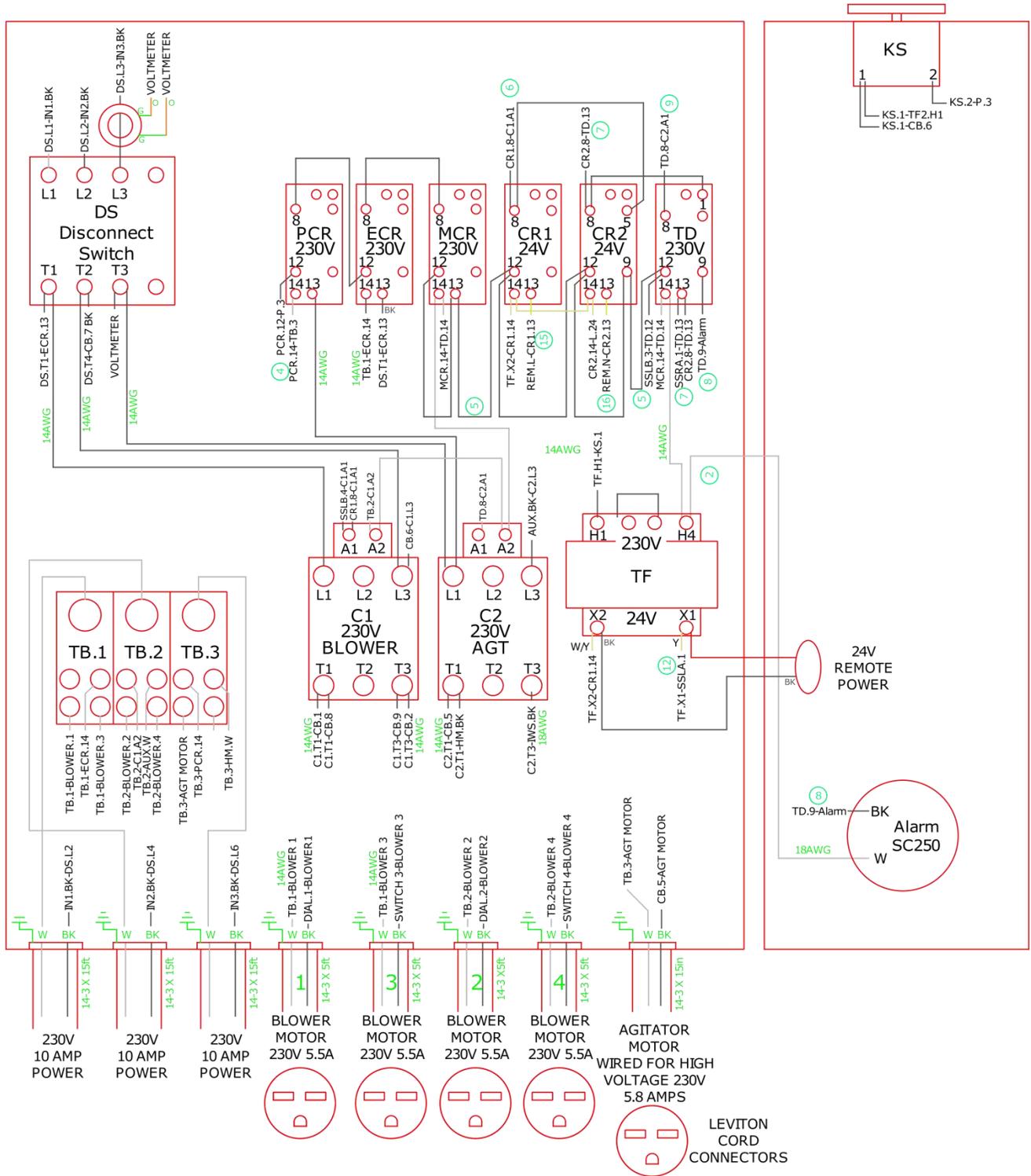
Panel Box: 4 Blower, 240 Volt,
Single Input
C2J820
- Outside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
6	C1X220	Kill Switch, 22mm, w/ Contact Block, Lighted	1
8	C2R100	Blower Control, 120v	2
9	C4C014	Hourmeter	1
10	C4C027	Volt/Amp Meter	1
11	C1U020	IEC Receptacle (Remote)	1
12	C1U005	Duplex Receptacle, 125 Volt, 15 amp, Gray, 5-15R	1
13	C1X034	Toggle Switch	1
14	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	4
15	C3W056	15 amp Breaker, Push Button, Magnetic-Hydraulic	2
16	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
17	C1X032	Toggle Switch, On/Off	2
20	C9W303	12" Panel Box Guard	1

2400 PANEL BOX WIRING

C2J819

4 BLOWERS TRIPLE INPUT 230 VAC 50 Hz CE



2400Wiring 2400 Panel Box Push Button 4 Blower Triple Input 230 volt.dwg

6.18.2019

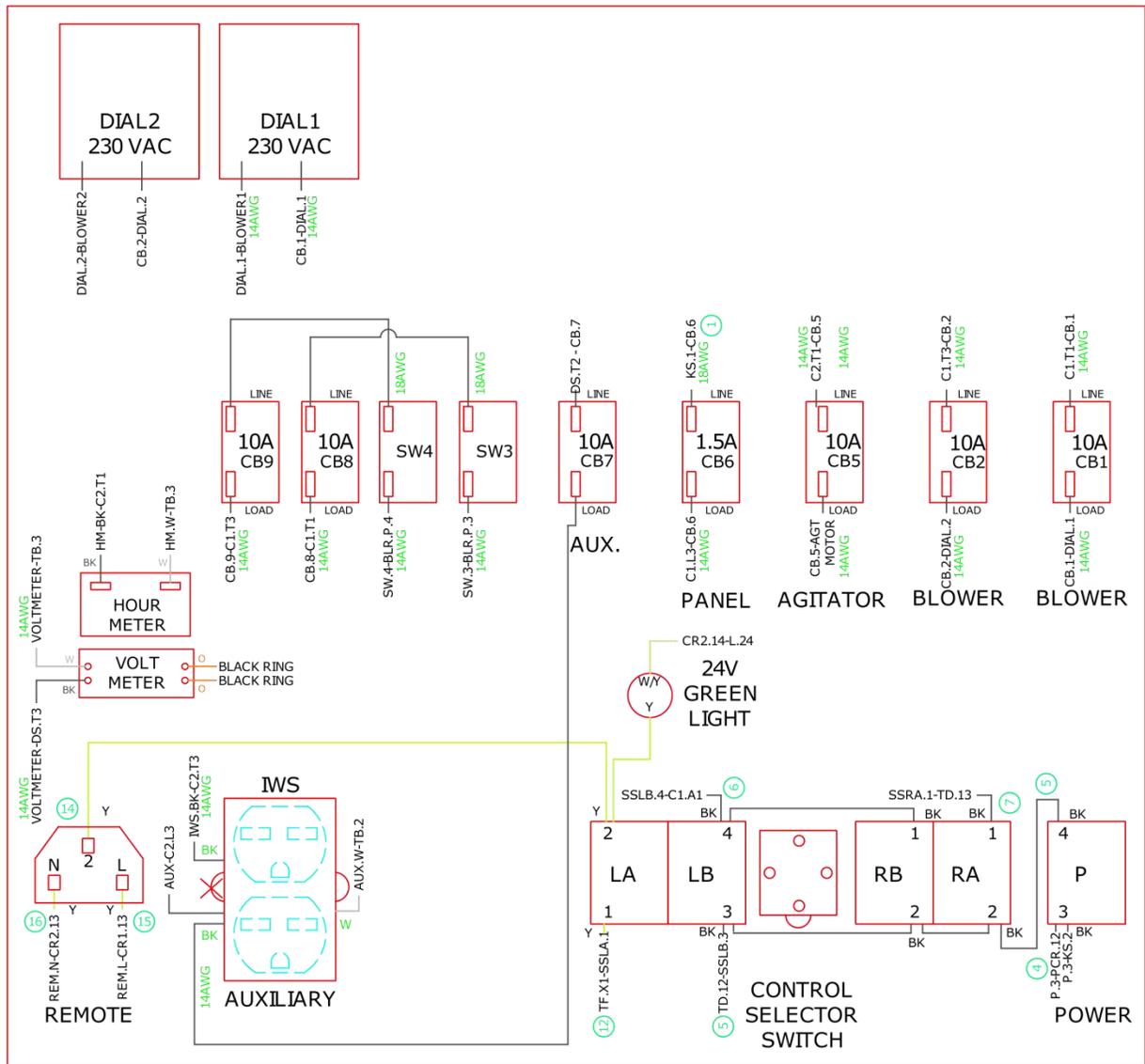
2400 PANEL BOX WIRING

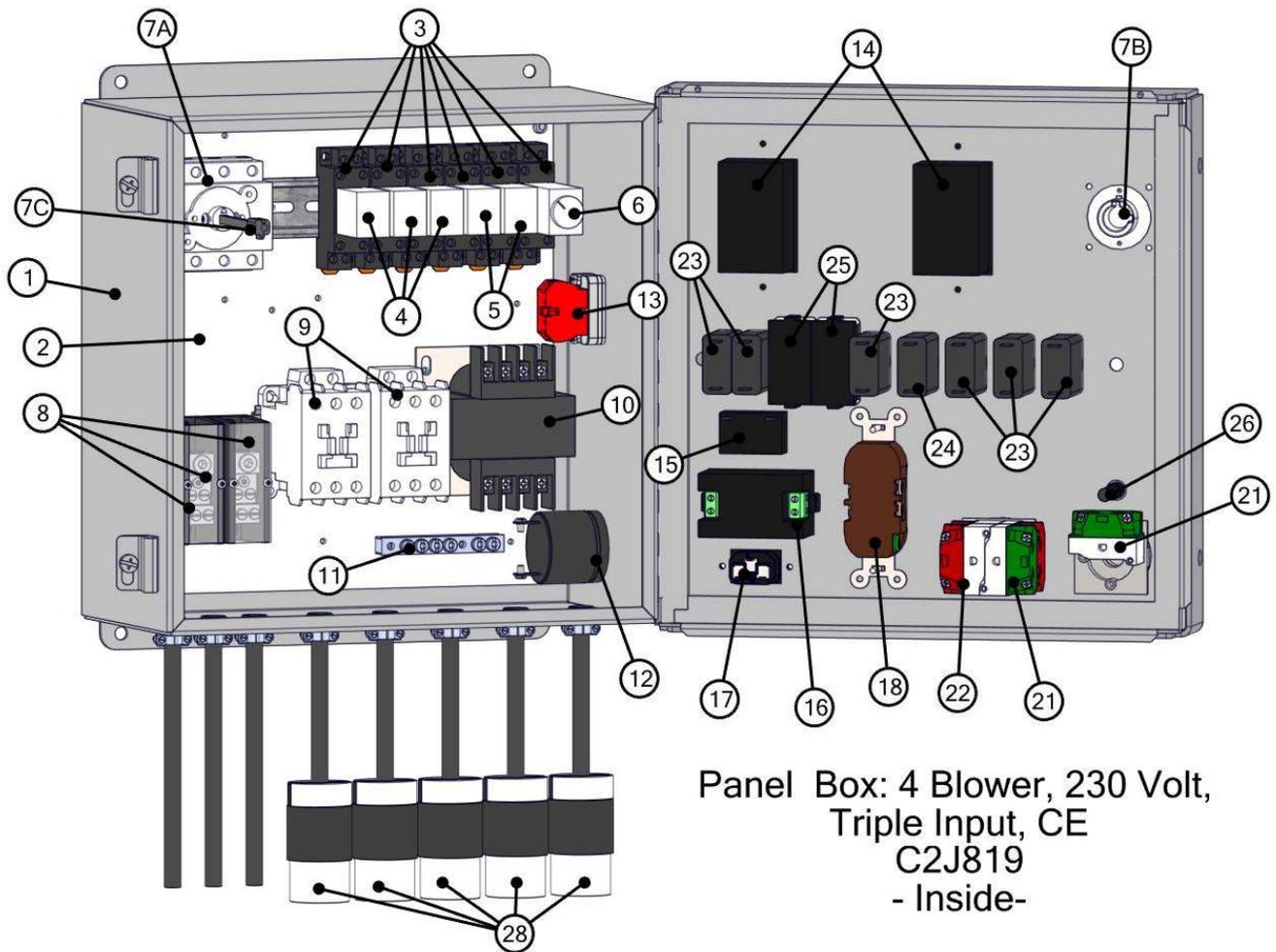
C2J819

DOOR

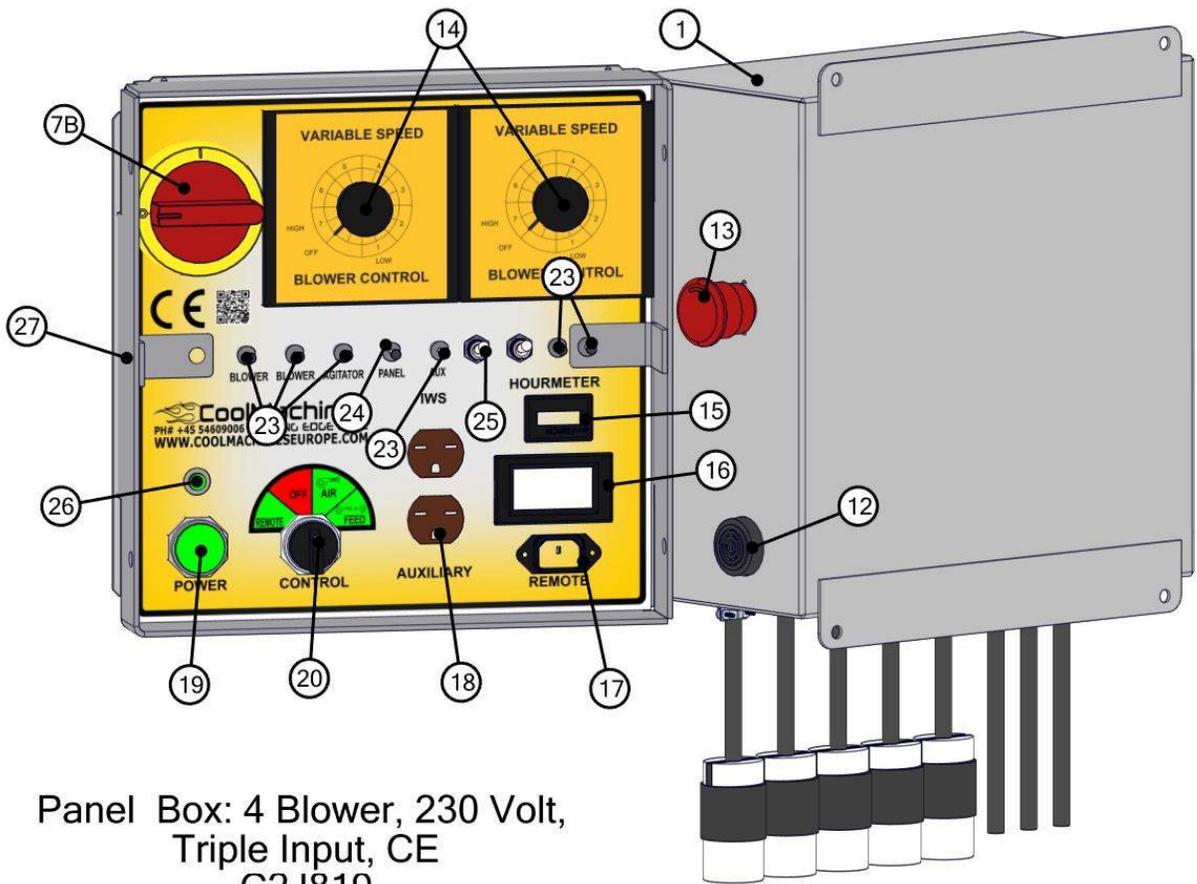
4 BLOWER

230 VAC 50 Hz CE





BOM ID	COOL #	DESCRIPTION	QTY
1	C2X735	Enclosure, 12" x 12" x 6"	1
2	C2X833	12" x 12" Panel	1
3	C2E124	Socket Relay, 8 Pin Miniature, Screw Terminals (For 5ZJ04)	6
4	C2E035	Relay, 220-240 VAC Miniature 50/60 Hz.	3
5	C2E080	Relay, 24 VAC Miniature 50/60 Hz.	2
6	C2E031	Relay, DPDT 230 VAC on Delay 50/60 Hz.	1
7A	C1X300	Disconnect Switch, 40 Amp	1
7B	C1X300-H	Disconnect Switch Handle	1
7C	C1X300-S	Disconnect Switch Shaft	1
8	C3C010	Distribution Block, 1 Pole	3
9	C2C230	Starter, 12 Amp, 220-230 Vac Coil	2
10	C4B015	Transformer 100VA, 230 or 120V-24V, 50/60 Hz.	1
11	C3C055	Ground Bar	1
12	C1C010	Audible Warning Device	1
13	C1X223	Kill Switch, 22mm Maintained, w/ NC Contact	1
14	C2R105	Blower Control, 230v	2
15	C4C014	Hourmeter	1
16	C4C027	Volt/Amp Meter	1
17	C1U020	IEC Receptacle (Remote)	1
18	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
21	C1X341	SQD 9001KA2 Contact Block, N.O. (Green)	2
22	C1X344	SQD 9001KA3 Contact Block, N.C. (Red)	3
23	C3W047	10 amp Breaker, Push Button, Magnetic-Hydraulic	6
24	C3W023	1.5 amp Breaker, Push Button, Magnetic-Hydraulic	1
25	C1X032	Toggle Switch, On/Off	2
26	C3J035	Light, 24V, Green	1
28	C1W413	Cord Connector Body, 6-15C, 15A, 250 Volt, 3-Wire, Green Light Only	5



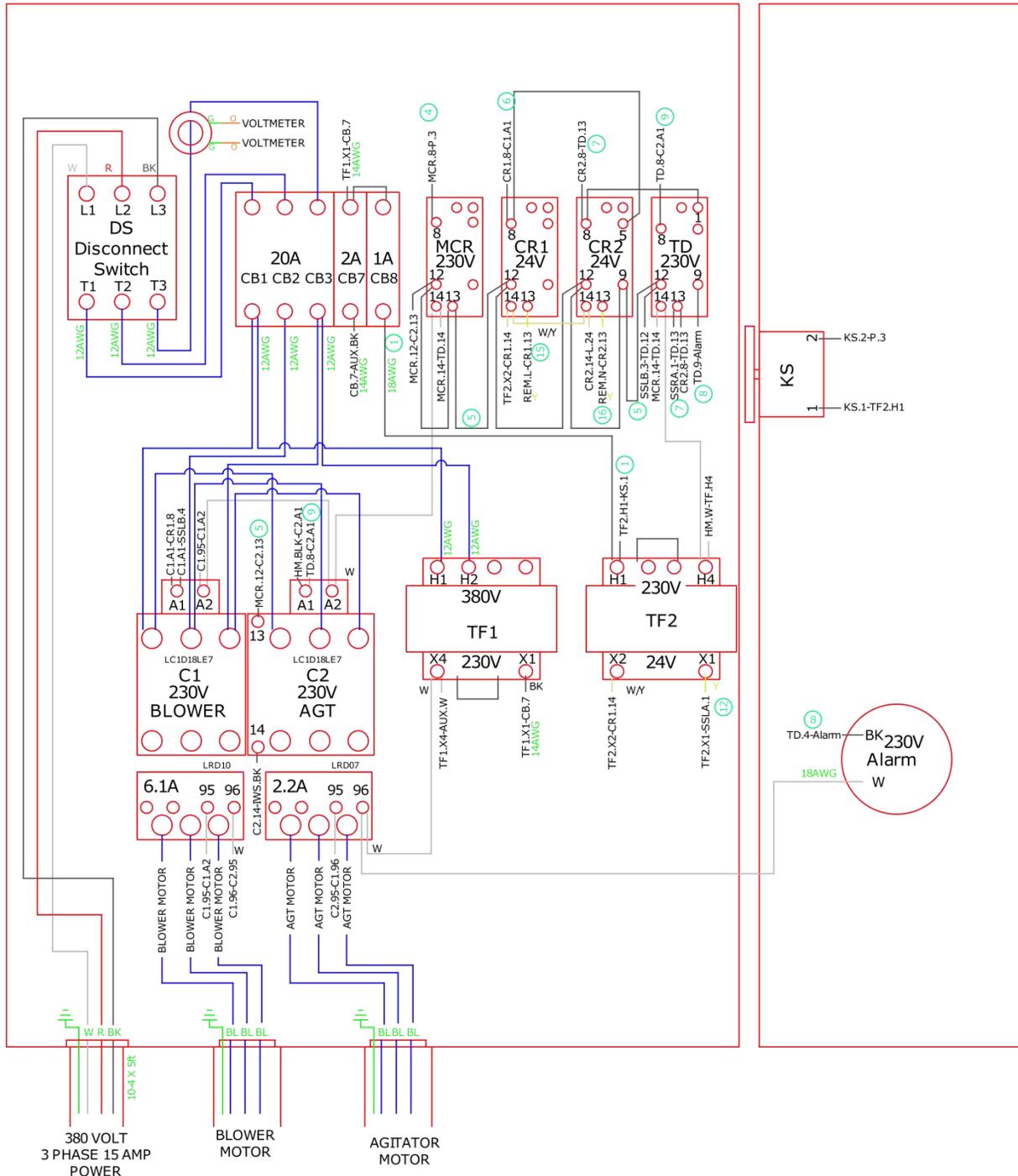
Panel Box: 4 Blower, 230 Volt,
Triple Input, CE
C2J819
- Outside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X735	Enclosure, 12" x 12" x 6"	1
7B	C1X300-H	Disconnect Switch Handle	1
12	C1C010	Audible Warning Device	1
13	C1X223	Kill Switch, 22mm Maintained, w/ NC Contact	1
14	C2R105	Blower Control, 230v	2
15	C4C014	Hourmeter	1
16	C4C027	Volt/Amp Meter	1
17	C1U020	IEC Receptacle (Remote)	1
18	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
19	C1X207	Universal Push Button, Green	1
20	C1X123	Selector Switch, 4 Position	1
23	C3W047	10 amp Breaker, Push Button, Magnetic-Hydraulic	6
24	C3W023	1.5 amp Breaker, Push Button, Magnetic-Hydraulic	1
25	C1X032	Toggle Switch, On/Off	2
26	C3J035	Light, 24V, Green	1
27	C9W303	12" Panel Box Guard	1

2400 PANEL BOX WIRING

5HP BLOWER 380 VAC 50 Hz

C2J865



1500\Wiring Panel Box 1500 DI 230v 2Blr BOX CE Push Button.dwg

6.20.2019

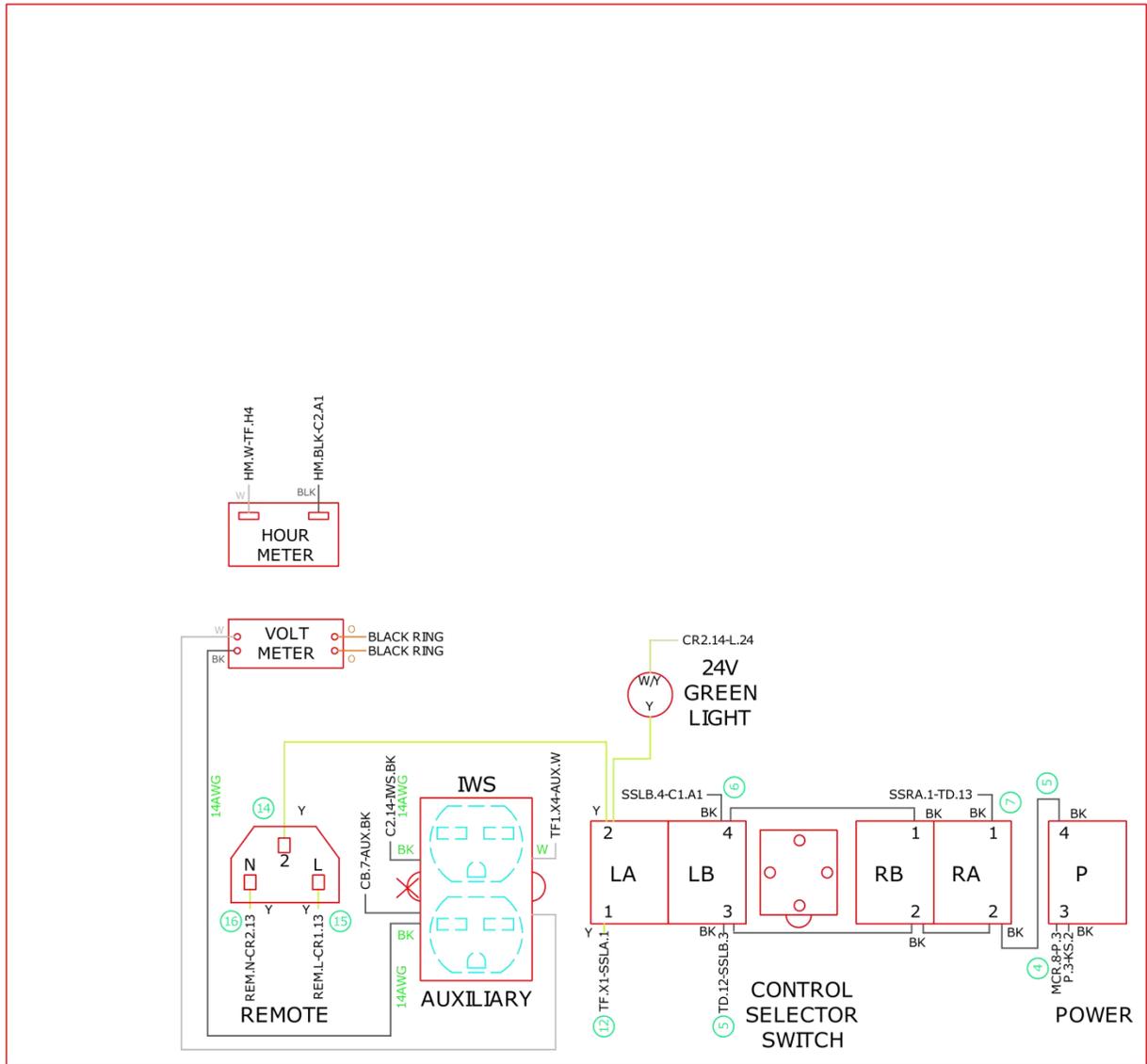
2400 PANEL BOX WIRING

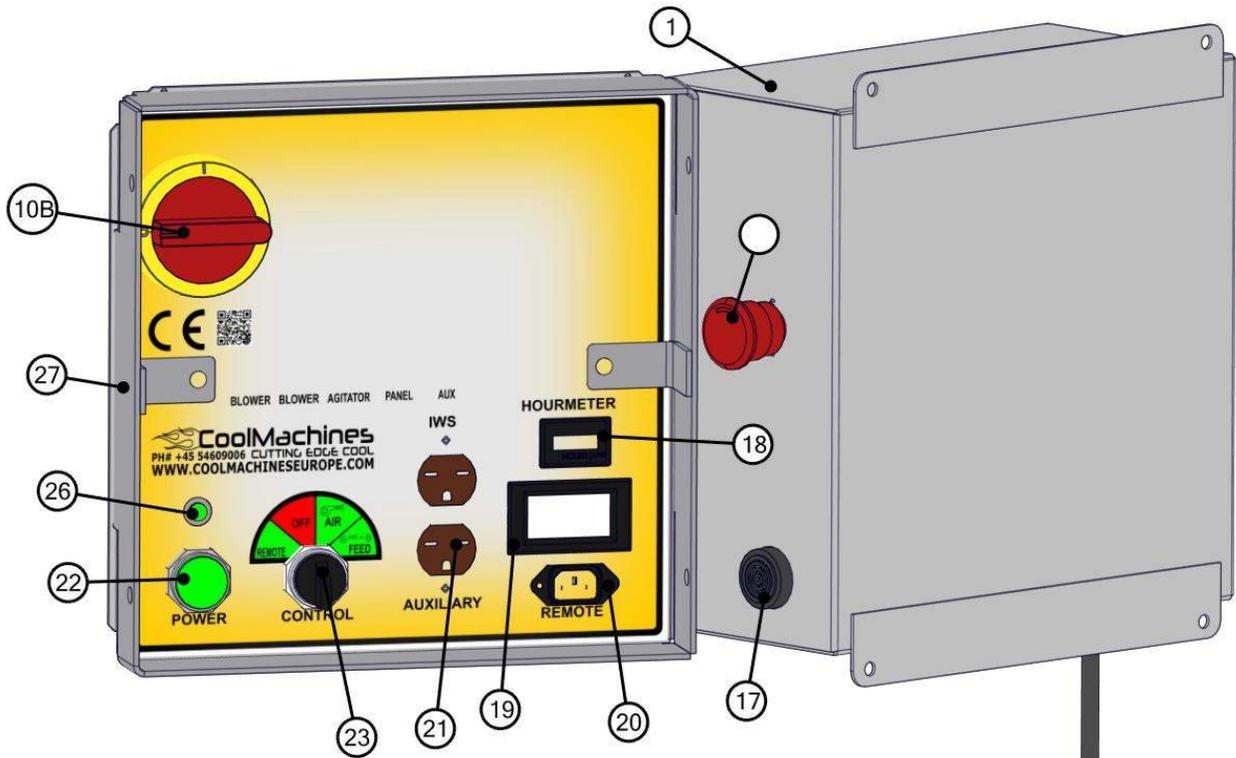
C2J865

DOOR

5HP BLOWER

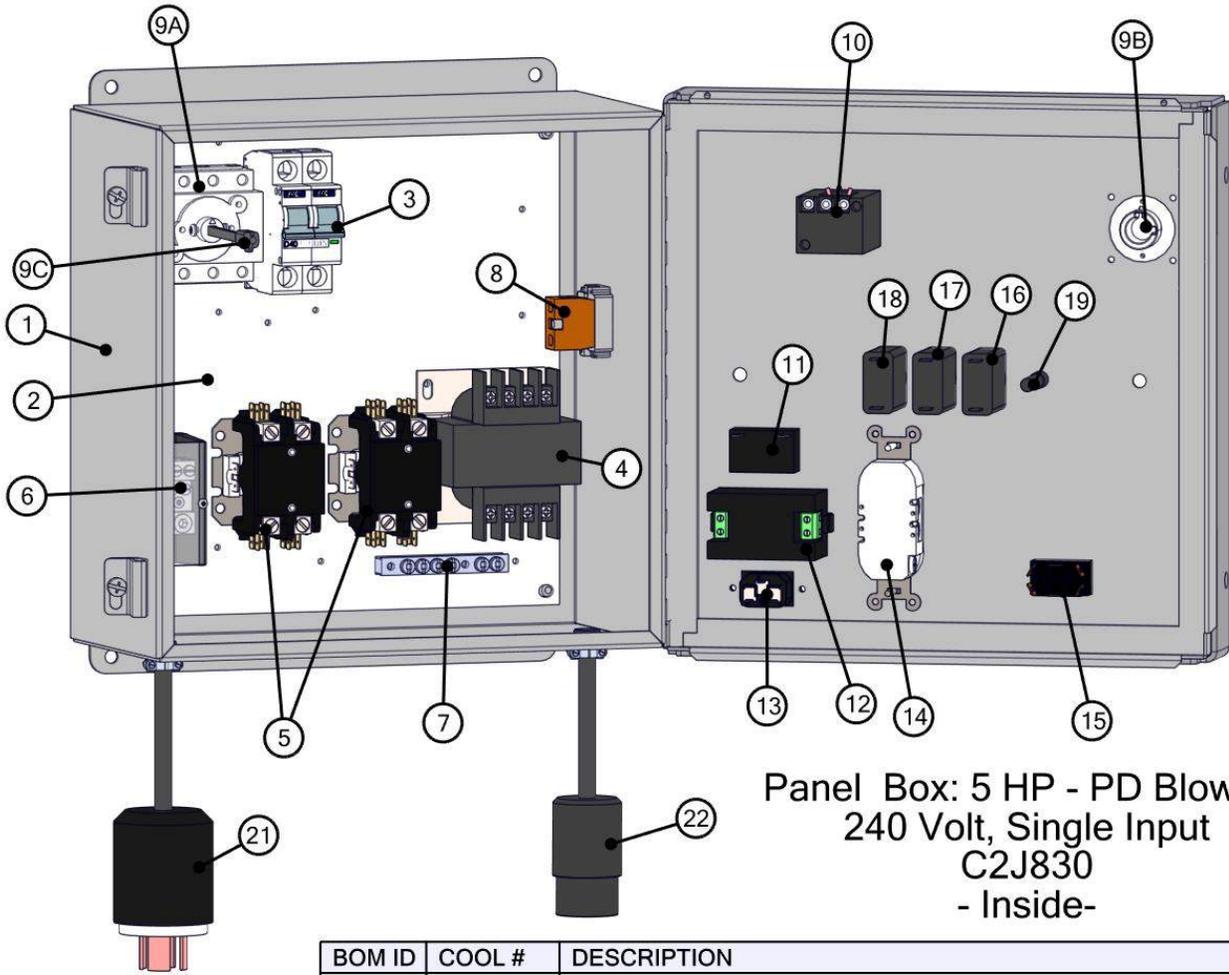
380 VAC 50 Hz





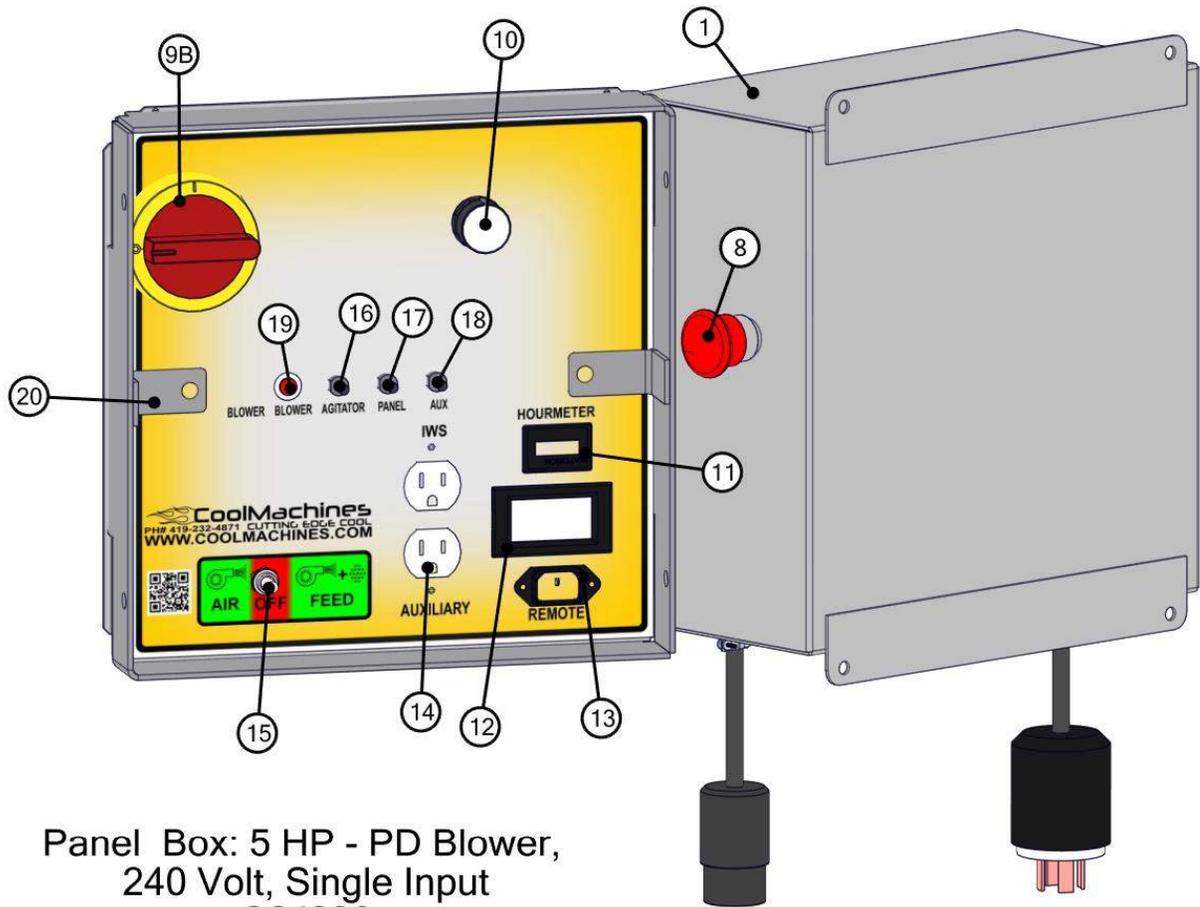
Panel Box: 5 HP - PD Blower, 380 Volt, Single Input, CE
 C2J865
 - Outside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X735	Enclosure, 12" x 12" x 6"	1
10B	C1X300-H	Disconnect Switch Handle	1
17	C1C010	Alarm, 120/230 Vac	1
18	C4C014	Hourmeter	1
19	C4C027	Volt/Amp Meter	1
20	C1U020	IEC Receptacle (Remote)	1
21	C1U086	Duplex Receptacle, 250 Volt, 15 AMP, Brown, 6-15R	1
22	C1X207	Universal Push Button, Green	1
23	C1X123	Selector Switch, 4 Position	1
26	C3J035	Light, 24V, Green	1
27	C9W303	12" Panel Box Guard	1



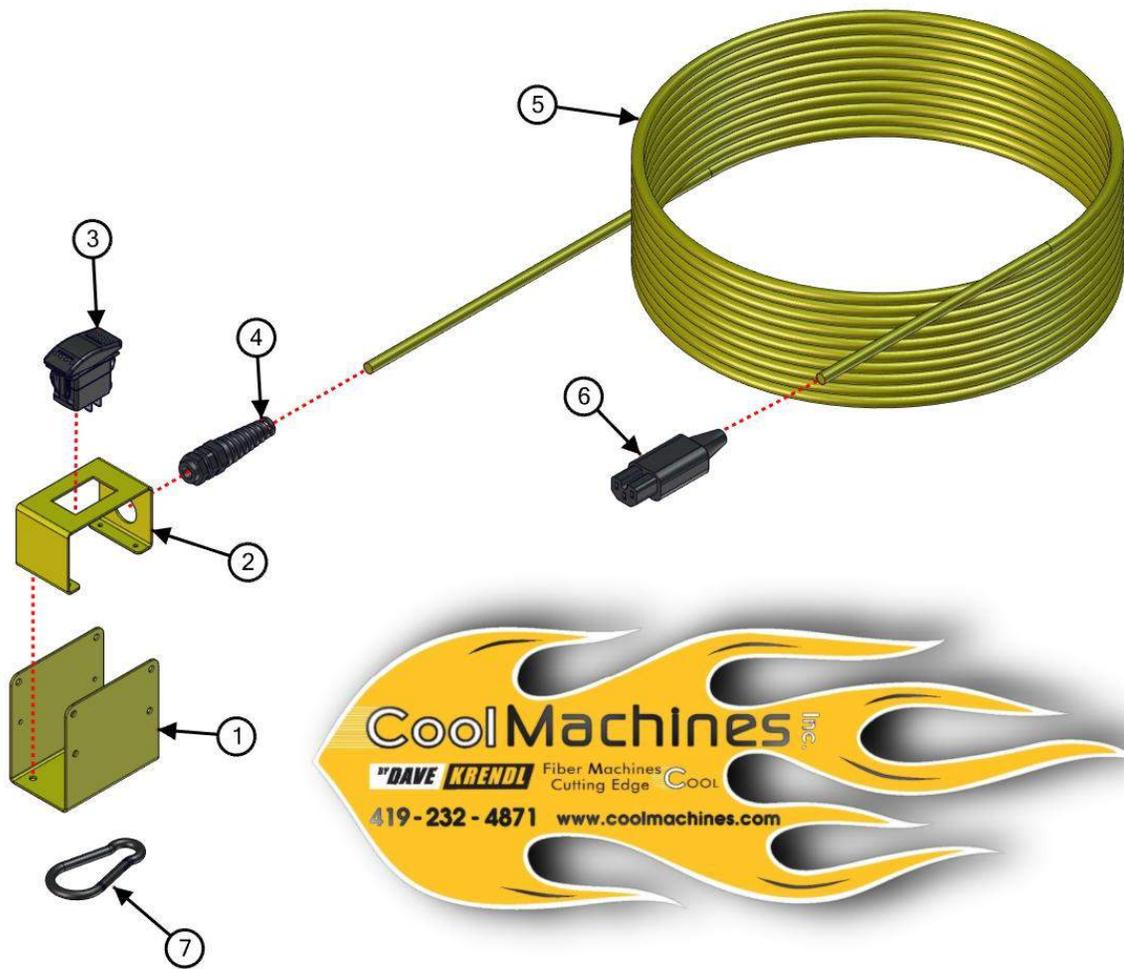
Panel Box: 5 HP - PD Blower,
240 Volt, Single Input
C2J830
- Inside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
2	C2X833	12" x 12" Panel	1
3	C3W080	Breaker, 40 Amp, 2 Pole	1
4	C4B015	Transformer 100VA, 230 or 120V-24V, 50/60 Hz.	1
5	C2E056	Relay/Contactor, 24VAC Coil Voltage, 2-Pole	2
6	C3C010	Distribution Block, 1 Pole	1
7	C3C055	Ground Bar	1
8	C1X220	Kill Switch, 22mm, w/ Contact Block, Lighted	1
9A	C1X300	Disconnect Switch, 40 Amp	1
9B	C1X300-H	Disconnect Switch Handle	1
9C	C1X300-S	Disconnect Switch Shaft	1
10	C1X007	Potentiometer, 10 Ohm, 22mm	1
11	C4C014	Hourmeter	1
12	C4C027	Volt/Amp Meter	1
13	C1U020	IEC Receptacle (Remote)	1
14	C1U005	Duplex Receptacle, 125 Volt, 15 amp, Gray, 5-15R	1
15	C1X034	Toggle Switch	1
16	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	1
17	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
18	C3W056	15 amp Breaker, Push Button, Magnetic-Hydraulic	1
19	C3J050	Light, 125V, Red	1
21	C1W360	Plug, Twist Lock, 30 Amp, 250 Volt, 4-Wire	1
22	C1W020	Cord Connector, 15 amp, 120 volt, 3-wire, 5-15C NEMA Lighted	1



Panel Box: 5 HP - PD Blower,
240 Volt, Single Input
C2J830
- Outside-

BOM ID	COOL #	DESCRIPTION	QTY
1	C2X733	Enclosure, 12" x 12" x 6"	1
8	C1X220	Kill Switch, 22mm, w/ Contact Block, Lighted	1
9B	C1X300-H	Disconnect Switch Handle	1
10	C1X007	Potentiometer, 10 Ohm, 22mm	1
11	C4C014	Hourmeter	1
12	C4C027	Volt/Amp Meter	1
13	C1U020	IEC Receptacle (Remote)	1
14	C1U005	Duplex Receptacle, 125 Volt, 15 amp, Gray, 5-15R	1
15	C1X034	Toggle Switch	1
16	C3W073	20 amp Breaker, Push Button, Magnetic-Hydraulic	1
17	C3W026	2 amp Breaker, Push Button, Magnetic-Hydraulic	1
18	C3W056	15 amp Breaker, Push Button, Magnetic-Hydraulic	1
19	C3J050	Light, 125V, Red	1
20	C9W303	12" Panel Box Guard	1

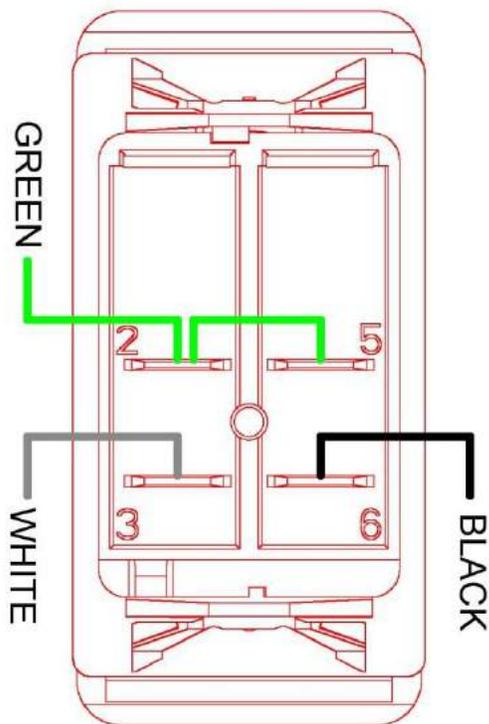


Remote Cord with Rocker Switch, 150 ft. Long
-C2D870-

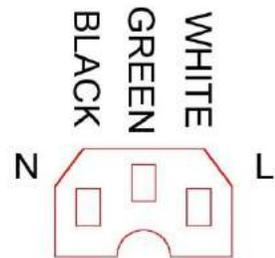
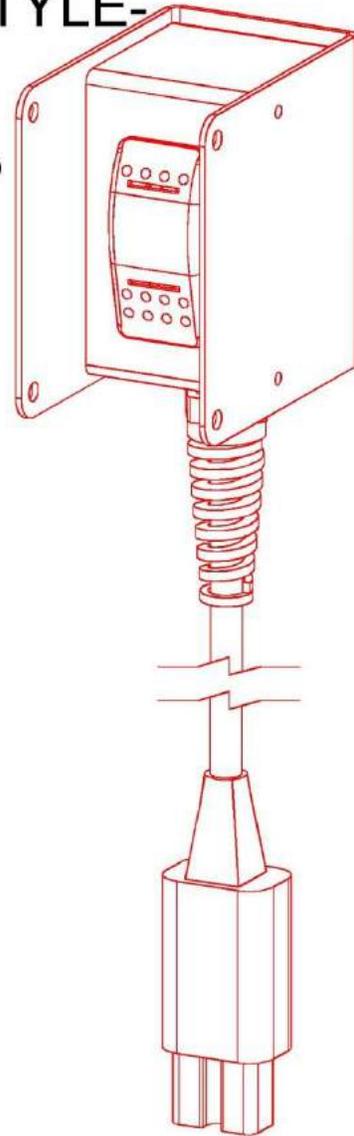
BOM ID	COOL #	DESCRIPTION	QTY
1	C2D885	Rocker Switch Remote Cover Plate	1
2	C2D887	Rocker Switch Remote Electrical Plate	1
3	C1X036	Rocker Switch, DPDT OFF/ON/ON Maintaned, 4 Tab Terminal, 20 amp 12 volt	1
4	C2J035	Cord Connector	1
5	C2A043	Yellow Cord, 16-3 (Call with Length)	1
6	C1U040	Remote Plug	1
7	C5A607	Spring Clip	1

HAND PENDANT ROCKER REMOTE WIRING -REMOTE CORD STYLE-

BACK VIEW OF SWITCH



FEED
AIR
OFF



**REMOTE
CORD**

11.16.2015