The Innovator in Insulation Equipment

OWNERS MANUAL

MODEL #4200-D

60 YEARS OF AMERICAN INGENUITY

KRENDL MACHINE COMPANY • 1201 SPENCERVILLE RD
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CONGRATULATIONS ON YOUR PURCHASE OF KRENDL EQUIPMENT

MODEL #4200-D
OWNER'S MANUAL

FOR ASSURED SAFETY AND CONFIDENCE, PLEASE READ THIS MANUAL CAREFULLY BEFORE INSTALLING AND OPERATING YOUR MACHINE.

E-MAIL ADDRESS IS: krendl@krendlmachine.com
WEB SITE IS: www.krendlmachine.com

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INTRODUCTION

Thank you for purchasing a **KRENDL FIBER MOVING MACHINE.** With over sixty years experience in manufacturing fiber moving equipment, we have designed and built your machine with the highest quality parts and workmanship to provide years of reliable service.

This manual has been prepared to help you obtain the maximum efficiency and service from your Krendl equipment. This machine is designed to blow cellulose, fiberglass and mineral fiber into attics. Our primary objective is to build equipment which will provide complete satisfaction so that you may confidently recommend Krendl to others.

We do not manufacture or sell fiber. Our interest lies only in the proper performance of the equipment we manufacture. The fiber material manufacturer's instructions prevail when it comes to applying their product, since they guarantee the final results.

This manual contains important information regarding the safe assembly and operation of your machine. We urge you to read it carefully and THOROUGHLY before putting your machine to work. If your questions are not answered in this manual, please contact us. We want you to be able to operate this equipment safely and confidently.

Upon receipt of this machine, check it carefully for any shipping damage. If there is damage or if any of the parts are missing, notify the delivery trucking company immediately and file a claim for damages, saving all packaging materials for inspection. Our warranty covers manufacturer's defects only. If Krendl Machine Company delivered or set up your machine and any parts are missing or damaged, notify the authorized representative before they leave.

Krendl Machine Company
1201 Spencerville Rd
Delphos, Ohio 45833 U.S.A.

Telephone: 800-459-2069
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Web Site: www.krendlmachine.com

For your protection in the event of theft or loss, please fill in the information requested for your own records. This information will be needed for in-warranty repairs. You may also want to attach a copy of your invoice.

Machine Model No. _____
Machine Serial No. _____

Engine Manufacturer _____
Engine Model No. , Serial No. _____

Blower Manufacturer _____
Blower Model No., Serial No. _____

Blower Clutch Manufacturer _____
Blower Clutch Model No., Serial No. _____

Airlock Clutch Manufacturer _____
Airlock Clutch Model No., Serial No. _____

UNPACKING AND INSPECTING EQUIPMENT

RECEIVING YOUR MODEL #4200-D KRENDL MACHINE:

Immediately check the condition of your Model #4200-D machine when it is received. It should be received in the same condition that it was shipped to you. **If there are any visible problems with your machine or any other items in the shipment, it is imperative that you place any claim with the delivery carrier.** Please save all packaging materials for inspection. The delivery carrier should also contact our office before leaving the premises to notify us of a claim. The ownership to your machine and all other items in the shipment were transferred to your name as soon as the shipment left our premises, thus it is your responsibility to contact us with any claims. Contact the truck line to arrange for an independent inspector to come out to inspect the damage and to prepare the inspection report. It is imperative that this inspection is done prior to unpacking or using any of the equipment. Please contact us for assistance or with any questions you may have regarding the claim process.

UNPACKING:

Handle all cartons with care to avoid damage from dropping or bumping. Completely remove machine from the packaging and from any shipping pallet or skid to which it might be attached. In addition, completely remove all shipping materials from inside the machine. Check that all parts are included as stated on the below.

ACCESSORIES INCLUDED:

- 150’ REMOTE CONTROL CORD
- MULTIMETER
- SPANNER WRENCH FOR BELT TENSIONERS
- #50 CHAIN MASTER LINK
- SECTION OF CHAIN FOR CHANGING SHREDDER DIRECTION
- 5/16 ALLEN WRENCH FOR ADJUSTMENT OF CHAIN IDLERS
- EXHAUST SYSTEM FOR ENGINE MODELS ONLY
- OWNERS MANUAL

GENERAL SAFETY INFORMATION

Important: Read **all** instructions **before** operating this equipment. This equipment can be potentially dangerous and must be used in strict accordance with instructions.

Disclaimer Notice: The manufacturer will not be legally responsible for any injury or damage resulting from the improper use of this equipment or the failure to follow instructions.

Unpacking

Handle cartons with care to avoid damage from dropping or bumping. Completely remove the machine from the packaging and from any shipping pallet or skid to which it may be attached. In addition, completely remove all shipping materials from the **inside** of the machine.

Important: Please recheck inside the hopper for any loose items or damaged equipment. Injury may occur when equipment is started with foreign material in the hopper.

General Safety

1. Read this manual carefully and become familiar with your machine. It is important to know it's applications, limitations, and any hazards involved prior to operating the machine.
2. This machine was designed and manufactured for blowing cellulose, fiberglass and mineral fiber. Do not attempt to modify the unit or use it for any application it was not designed for. If you have any questions about your intended use or the machine's suitability, ask your dealer/distributor or consult the factory. The manufacturers could not possibly anticipate every circumstance that might involve a hazard. For that reason, warnings in the manual and warning tags or decals affixed to the unit, are not all-inclusive. If you intend to handle, operate, or service the unit by a procedure or a method not specifically recommended by the manufacturer, first make sure that such a procedure or method will not render this equipment unsafe or pose a threat to you and others.
3. Do not disable any of the safety features on the equipment. These features are for your protection and safety.
4. Read and obey all safety and operating instructions in the manual and on the machine.
5. Equipment is to be operated and/or maintenanced by TRAINED & QUALIFIED personnel ONLY!!
6. ***BEFORE PERFORMING ANY MAINTENANCE ON THE MACHINE, YOU MUST FIRST:***
   #1 TURN MAIN DISCONNECT SWITCH ON MACHINE TO THE "OFF" POSITION
   #2 TURN THE ENGINES IGNITION TO THE "OFF" POSITION AND REMOVE KEY
   #3 DISCONNECT THE BATTERY CABLE
7. Do not operate the machine without all guards and safety equipment installed in the proper location and in working order. Always follow the proper shut down procedures outlined in Item 6 when guards are removed from the machine or when compartment or electrical control doors need to be opened.
8. If a malfunction occurs while running the machine, turn it off immediately, follow the directions under item 6 and correct the problem prior to restarting the machine.
9. Keep body and all clothing away from rotating equipment. Rotating shafts can be dangerous.
10. Always wear proper safety equipment when operating the machine. This includes steel toed shoes, safety glasses and a respirator.
11. Under no circumstances should your hand, a stick or a broom be used to force material down into the hopper. The machine is a self feeding design and requires no outside assistance.
12. Stand on the floor, not a platform while operating the machine. The operator may lose balance and fall while loading bags of material.

All Model #4200 Machines are factory equipped with side, front, and main drive belt guards. The top of the machine is not guarded since it poses no safety threat for normal insulation blowing operations when mounted as shown in the installation guide. The machine is designed to be mounted in the van body of the contractor's truck and the rear of the machine against the wall of the van body.

Always turn the main power switch (located on the electrical box) to off and unplug the remote cord from the receptacle for any type of machine maintenance or adjustments. An additional safety feature is the ability to adjust the material slide gate from the outside of the machine. Rotate the adjustment handle clockwise to open the slide to the desired setting, no entrance into the machine is required.

All safety features are incorporated into the machine to protect everyone from serious injury. Operate your machine according to the outlined instructions in the manual with all guards in place and securely latched. Operation with any guards removed can result in injury to or loss of fingers, hands, arms, toes, feet, legs, hair, and even your eyes.

Electrical Safety

- The **National Electric Code** (NEC) in the United States and many international electrical codes require frame and external electrically conductive parts of this machine to be properly connected to an approved earth ground. Local electrical codes may also require proper grounding of machine. Consult with local electricians for grounding requirements in your area.
- Never handle any kind of electrical cord or device while standing in water, while barefoot or while hands or feet are wet. Dangerous electrical shock will result.
- Use a ground fault circuit interrupter (GFCI) in any damp or highly conductive area. (metal decking or steel work)
- Reference NFPA 79, 70E, or OSHA safe work practices when performing energized work procedures.

Safety/Caution

- **Be Safe** - Keep away from moving parts.
- **Be Safe** - Make sure all guards and hopper extensions are in proper place **before** operating machine. Guards and safety devices/switches should not be removed, modified or by-passed. Hands should never pass between rotating parts.
- **Be Safe** - Make sure remote control hand pendant switch is in **off** position **before** connecting the power supply to the machine.
- **Be Safe** - Make sure machine is properly grounded. Protect all electrical supply cords from sharp objects, moisture, and other potentially hazardous materials. Keep power cords in good repair. Electrical service must be performed by a qualified electrician.
- **Be Safe** - Disconnect power supply **before** inspecting or adjusting unit.
- **Be Safe** - Consult a qualified technician to answer questions **before** attempting to operate, or injury may result.
- **Be Safe** - **Emergency Kill Switch** - In case of emergencies, always use red stop button located on the front of Main Control Panel and on the side of the hopper. It will stop all feeding and agitation.
- **Be Safe** - Do not remove motors or lift hopper when unit is connected to power supply.
- **Be Safe** - Do not operate machine alone.
- **Be Safe** - Do not leave machine unattended and energized.
- **Be Safe** - Turn machine off and disconnect electricity before clearing and feeding jam or attempting to remove any object dropped in the hopper.
- **Be Safe** - Keep hands, loose clothing, jewelry and hair away from agitators, gears, chains and other moving parts.
- **Be Safe** - Use proper lifting when moving fibers and loading machine.
- **Be Safe** - Keep work area clear of debris.
- **Be Safe** - Wear proper safety equipment, including protective gear, such as respirators, eye and ear protection.
- **Be Safe** - Violation of the Owner's Manual or safety precautions may void warranty.

Make Sure!

- Hopper is empty of foreign objects **before** starting.
- Adequate electrical power is supplied or damage to unit will result.
- Machine must be on **before** adding fiber.
- Blower filter is kept clean and in place when blower is on.
- Machine is turned off **immediately** if hose is plugged, or blower will overheat.
- Blower must be on, when agitators are running, or machine will bind.
- Agitator motor is not run 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 bag are **not** left in the machine as this can bind and stall your machine.
- This machine should only be used with good quality fibers that are dry, undamaged and that meet a certain industry specification or quality standards.

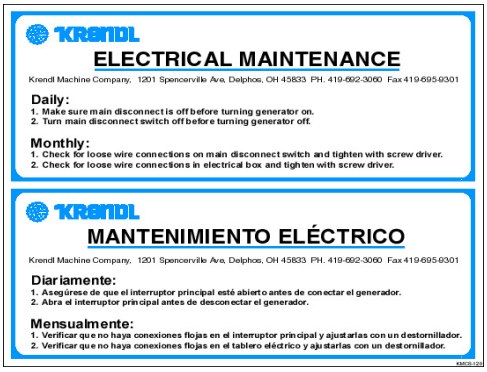
IF THERE ARE ANY QUESTIONS WITH YOUR KRENDL MACHINE, DO NOT HESITATE TO CONTACT US AT: 1-800-459-2069

DECALS

Do not smoke around machine. Machine contains a flammable liquid. Failure to do this could cause serious injury or death.

Indicates that the electrical box on the machine is in compliance with UL codes.

Indicates which employee inspected equipment and on what date.

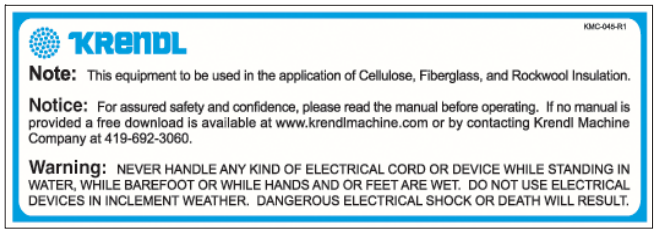


Electrical maintenance information and schedule provided here.

Keeping the filter clean will result in longer blower life and better performances.

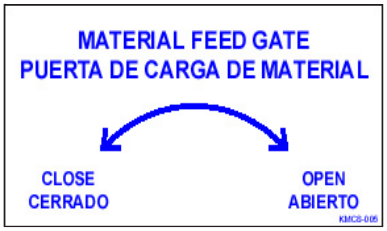
Manufacturer information is provided here along with machine model, and serial number.

Emergency stop button for machine.



Identifies what type of insulation should be used with this machine and that the manual should be read before operating. Warns to be careful around electrical components! This can cause serious injury or death.

Rotating parts can be dangerous! You can snag clothes, skin, hair, hands, etc. This can cause serious injury or death.



Opens and closes the material feed gate which in turn controls the production.

Made in the U.S.A.

Indicates if blower is off, on, or on with agitator.

Identifies position of material feed gate.

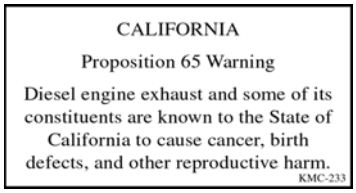
Indicates that this outlet is intended for only the agitator motor.

Indicates that this outlet is intended for only the remote control outlet. Each time machine cycle starts, an audible alarm warns the operator that the machine is about to come on.

Indicates that this outlet is intended for only the blower motor.

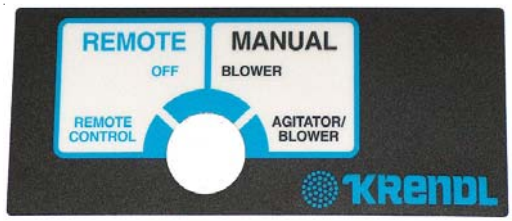
Rotating parts will be moving in this direction.

Specifies the voltage this outlet is rated for.



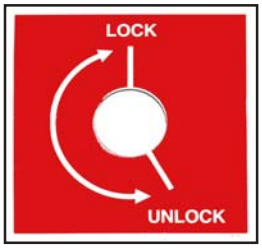
Do not breathe engine exhaust. Failure to do this could cause serious injury or death.

Part number for identification and tracking.



Identifies if machine is in remote mode, manual mode, or off position. In manual mode this switch operates machine. In remote mode the hand pendant operates machine. Each time machine cycle starts, an audible alarm warns the operator that the machine is about to come on.

Keeping the door closed will keep bystanders safe from rotating parts.



Indicates if the latches on the access door are locked or unlocked

WARRANTY:

Krendl Machine Company (Company) warrants to each original purchaser (Buyer) of its machines that such products will be free of manufacturing defects for a period of 2 years from the date of shipment to the Buyer. (This does not include accessories, pumps, blowers, wall scrubbers, etc.)

No warranty is made with respect to:

1. **Components or accessories manufactured and warranted by others. Warranties for purchased component parts as supplied from vendor such as engine, electric motor, blower, gearbox, transmission, etc., if furnished by the manufacturer of the component, are on file at the Company's main office and copies will be furnished at request of Buyer. Component(s), shipping costs prepaid, shall be sent to Company who in turn shall forward to vendor for evaluation and warranty determination.**
2. **Any defect caused by repair, alteration and/or adjustment performed by Buyer or customer/vendor of Buyer without the express written authorization of the Company.**
3. **The labor costs of replacing parts by parties other than the Company.**
4. **Any machine that has not been operated and/or maintained in accordance with normal industry practice and the written recommendations of the Company. (e.g. machine operated with an improperly sized, worn or damaged hose, improper or inattention to preventative maintenance, etc.)**
5. **The product has been subjected to misuse, negligence or accident or results of any application or use of the blowing equipment not in accordance with the Company recommendations.**

This limited warranty does not cover the free replacement of component parts that become inoperative due to wear and usage and need to be replaced on a regular basis, including but not limited to: airlock seal(s), agitator(s), shredder(s), auger(s), fuse(s), switch(es), clutch(es), hose(s), shaft seal(s), chain(s), belt(s), sprocket(s), pulley(s), bearing(s), cable(s), battery(ies), filter(s), fan(s), etc.

The Company's obligation under this warranty is limited to repairing or replacing (at Company option) any part that is determined by the Company to be suffering from a manufacturing defect. The Company (at Company option) will provide any required parts and labor to the Buyer. If the equipment or parts must be returned to the Company for repair, all transportation costs shall be the Buyer's responsibility.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER GUARANTEES AND / OR WARRANTIES, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTY OF MERCHANTABILITY. NO WARRANTY, EXPRESS OR IMPLIED, OTHER THAN THE AFORESAID WARRANTY IS MADE OR AUTHORIZED BY COMPANY. COMPANY SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES TO PROPERTY OR INJURY TO ANY PERSON OR COSTS ASSOCIATED WITH LOSS OF PRODUCTION RESULTING IN LOSS OF REVENUE, PROFITS OR LOSS OF EQUIPMENT THROUGH THE USE OF THIS EQUIPMENT.

Note: Special job circumstances incurring costs for specialized repair and next day delivery of parts will not be reimbursed by the manufacturer unless authorized by factory.

RETURNED GOODS PROCEDURE

IF MACHINE WAS NOT PURCHASED DIRECTLY FROM KRENDL MACHINE COMPANY, CONTACT YOUR SUPPLIER / DISTRIBUTOR.

When returning products to Krendl for repair, first obtain a return goods authorization (RGA), at which time you will be given shipping instructions. The product must be shipped **PREPAID**:

Krendl Machine Company
1201 Spencerville Rd
Delphos, Ohio 45833 U.S.A.

Telephone: 800-459-2069
Fax: 419-695-9301
E-mail:krendl@krendlmachine.com
Web Site: www.krendlmachine.com

Once the unit is received, it will be inspected. In-warranty units will be repaired and returned immediately. An estimate of repair charges will be provided for out-of-warranty units.

SPECIFICATIONS

MODEL:	#4200-D
MACHINE:	14” Diameter x 14” Length airlock feeder air volume control system electromagnetic clutches on agitator and blower in line helical gearbox (driving the machine)
HEIGHT:	83.00 inches
LOAD HEIGHT:	55.25 inches
WIDTH (DEPTH):	43.00 inches
LENGTH:	70.00 inches
WEIGHT:	1700 pounds
ELECTRICAL:	12VDC remote control system
BLOWER VOLUME:	170 CFM
BLOWER PRESSURE:	5.0 PSI maximum
HOSE OUTPUT:	4” diameter

MAXIMUM FEED RATES:
CELLULOSE: 4200 lbs./hr. *FIBERGLASS*: 1700 lbs./hr.

WARNING: Recommended hose size, type and length must be used to achieve maximum results. Krendl cannot guarantee performance of the #4200-D machine if hoses are undersized, worn, damaged, or hoses other than those we recommend are used.

BEFORE YOU RUN THIS MACHINE...*PLEASE READ THE REST OF THIS MANUAL!!*

BASIC COMPONENTS

This is a view of the basic components of your Model #4200-D machine. It shows the location of each item and gives the function of each. Use this as a guide throughout the manual.

(Illustration 1)

A) Base Unit - Lower frame unit supporting blower box, speed reducer, motor, airlock and hopper.

B) Airlock - Traps air and fiber while providing a metered flow.

C) Shredder System - Increases production and coverage on all fiber products while reducing clumps that may exist in various fibers.

D) Slidegate - Meters the amount of fiber dropping into the airlock by controlling size of airlock opening.

E) Speed Reducer - Increases output power while decreasing speed of agitator/airlock drive motor.

F) Agitator - Conditions fiber in the hopper.

G) Hopper - Upper unit of machine holding fiber.

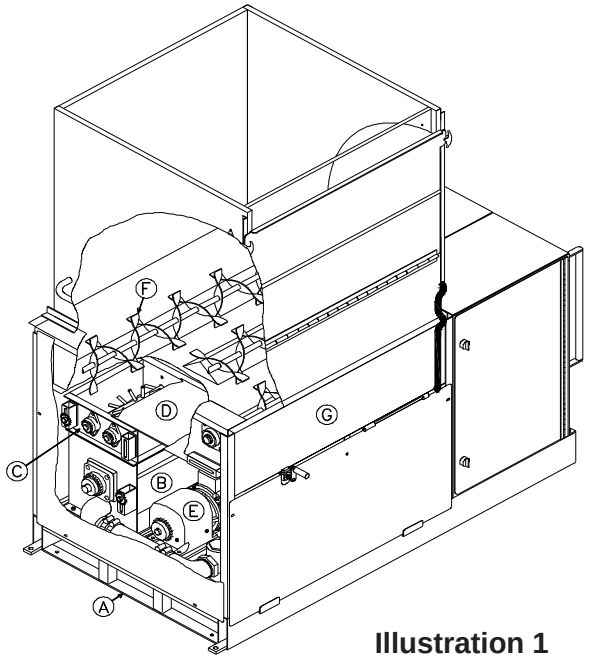


Illustration 1

(Illustration 2)

H) Main Control Panel - Connects with main power, allowing operation of unit at machine or Remote Cord.

I) Kill Switch - Safety device for immediate stopping of machine.

J) Blower - Provides the air necessary to move fiber from the airlock.

K) Motor/Radiator - Provides driving power for speed reducer, blower, and agitator/airlock system.

L) Hopper Extension - Increases overall hopper capacity.

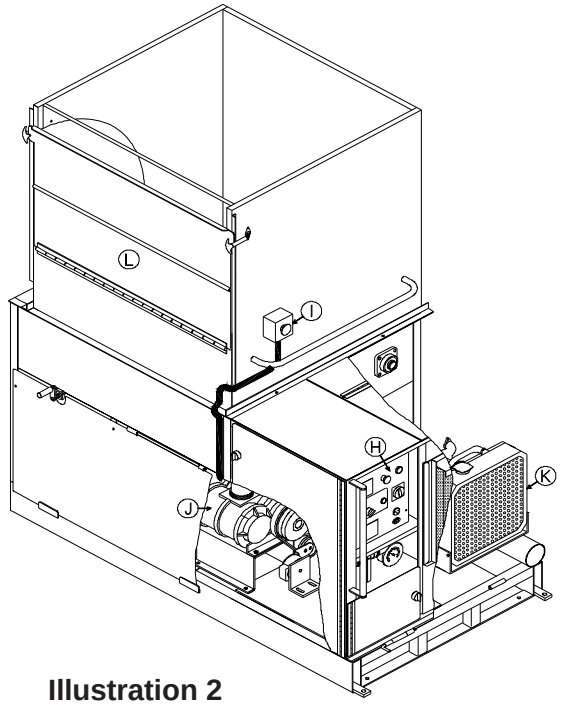


Illustration 2

INSTALLATION

MACHINE DRIVE AND TRUCK SPECIFICATIONS:

Your Model #4200-D Krendl Machine can be mounted in any truck and chassis configuration. We recommend a minimum chassis rating of 26,000 GVWR. We also recommend a minimum 22 feet van body. The body should have a full width rear door. The Krendl Model #4200-D Machine can be mounted anywhere in the truck body. The factory recommended position is shown in Illustration 3.

*****INSTALLATION NOTE: It is very important that all of the doors be open for all engine powered machines. This is to provide proper ventilation to the engine. If unit location is different than the factory recommended location, engine cooling problems may occur. This will void the warranty on the machine and the engine!**

TOOLS NEEDED:

1/2" Heavy Duty Drill
Drill Bits: 9/16" for bolts
Fork Lift (means to lift the machine)
Pry Bars
Basic Wrenches
5" hole saw & 2-1/2" hole saw

CUSTOMER SUPPLIED ITEMS:

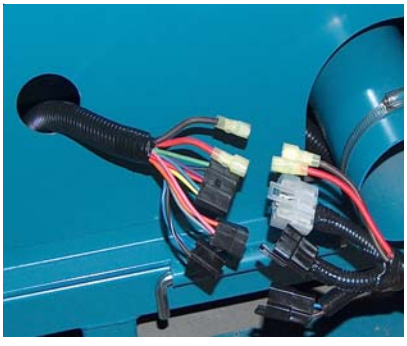
1/2" Bolts, washers, locknuts for fastening machine
3/16, 5/16 fuel lines for pick-up & return fuel (diesel)
fuel pump for diesel fuel

INSTALLATION INSTRUCTIONS:

Note: Make sure all shipping materials and accessories have been removed from inside the machine before installing.

1) Locate and mount the engine control panel to the front of machine as shown in the picture below. **Note: The engine control panel may also be mounted to the truck wall in the position you desire once the machine has been located on the truck.**
   a. Connect the plugins between the engine control panel and engine wire harness.
   b. Remove front cover from engine control panel and locate panel on front of machine.
   c. Once the engine control panel has been located, mark and drill two (2) 17/64" holes thru both the panel and machine.
   d. Bolt the control panel to the machine using the provided 1/4-20 hardware.

Engine Control Panel



2) Place the machine in the truck to locate the correct position so the machine will not be in the way of the truck's back door and you are still able to open the hood of the machine.

3) Using illustration 3 as a reference, check under the truck body that the opening will not interfere with any truck components underneath. If there is any interference with any of the truck parts, then you will need to adjust the position of the machine to clear the obstruction. The holes for the blower inlet and machine hold down do not have much room for adjustment. However, the holes for the exhaust and fuel lines do have room for slight adjustments.

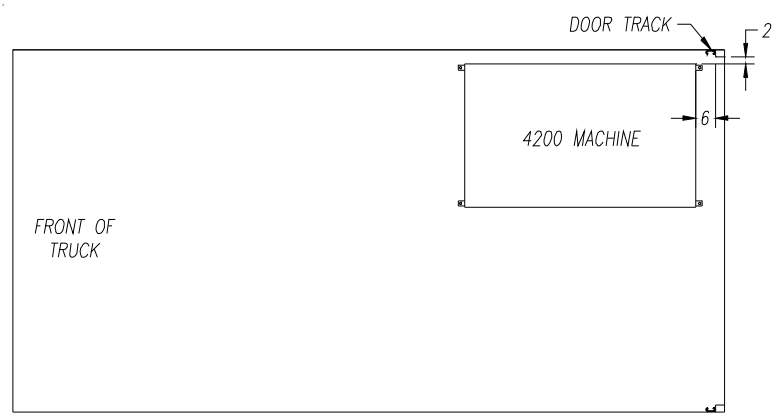


Illustration 3

4) Remove the machine after the holes are located.
5) Cut the following holes: (Using illustration 4 as reference ONLY)
   a. Blower Inlet: 5"
   b. Engine Exhaust: 5"
   c. Fuel Lines: 2 1/2"

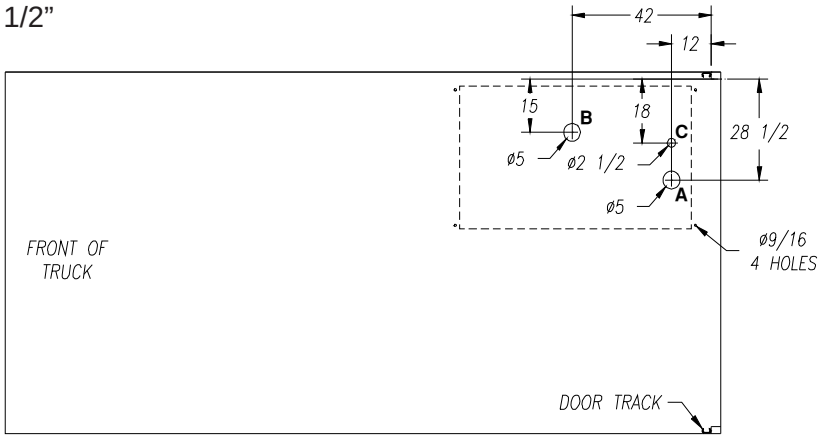


Illustration 4

6) Place the machine in the truck lining it up with the holes.
7) Locate and drill 9/16" holes for the four hold down holes located in the bottom of the base flange. Again, check the underside of the truck body for any obstructions. Use 1/2" bolts and nuts to bolt the base to the truck floor.

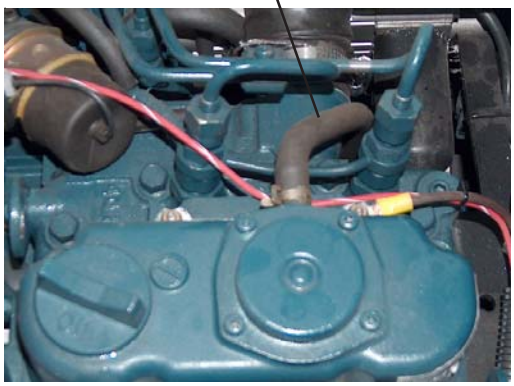
8) Run fuel lines from the tank to the machine 5/16 ID for fuel supply, 3/16” ID for return, placing a fuel pump in-line close to the truck’s diesel fuel tank.

In-line Fuel Pump

Fuel Lines From Tank

9) Attach fuel lines to the engine.

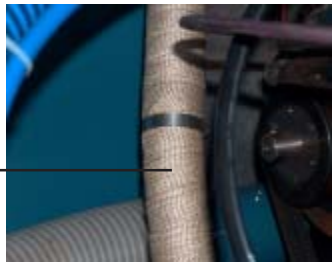
Fuel Return Line



Fuel Supply Line

10) Wire fuel pump into the machine panel box. Sample wires installed to show where fuel pump wire will be placed.
11) Mount engine’s muffler under the truck so that the muffler’s inlet lines up with the 5” hole.

12) Run supplied flexible exhaust from the engine to the muffler using a supplied muffler clamp on both ends.
13) Use the supplied heat wrap to wrap the exhaust, using hose clamps to hold it in place. Make sure that exhaust pipe and flexhaust hose are not in contact.
14) Attach 4” hose to the filter box inlet so that the hose sticks through the 5” hole cut into the floor of the truck.



If you need more information, please call your sales agent. Your Krendl Model #4200-D Machine is now ready for operation.

Your Krendl Model #4200-D Machine was checked and thoroughly run before it was shipped but it is always a good idea to check all belts and chains for proper tension and that all fluid levels are checked and topped off where required.

OPERATING INSTRUCTIONS

Starting Your Krendl Model 4200-D Machine:

1) After installing your Model #4200-D according to the installation instructions, it is now time to start your machine. Again, check all fluid levels, belt tension, and that all guards are installed properly.
2) Attach the blowing hose to the machine and run the hose into the building.
3) Run the remote control cord into the building.
4) Make sure the control switch on the remote control cord is in the “off” position. Now, you may plug in the remote control cord.
5) When starting engine in cold conditions first turn the key switch counter clockwise for thirty seconds or until engine warming light goes off. Push in reset button while turning key clockwise to the start position and hold until the engine starts. Release the key, the machine will automatically return to the run position. Release reset button.
6) Let the engine run at full speed until the engine warms up, approximately 5 minutes.
7) Your machine is now ready for operation.

   Note: Agitator motor and blower should only be operated with steady or constant flow of electricity between 110-120 volts.

   Note: When using extension cords, wire gauge size should not be less than input cord on unit and not exceed 50' in length. **(See Voltage Drop Chart Below.)**

VOLTAGE DROP CHART

Typical voltage drop values based on conductor size and one-way length* (60 C termination and insulation)

25 FEET									
		12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	3 AWG	2 AWG	1 AWG
AMPERES	20	1.98	1.24	0.78	0.49	0.31	0.25	0.19	0.15
	30		1.86	1.17	0.74	0.46	0.37	0.29	0.23
	40			1.56	0.98	0.62	0.49	0.39	0.31
	50				1.23	0.77	0.61	0.49	0.39
	60					0.93	0.74	0.58	0.46

50 FEET									
		12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	3 AWG	2 AWG	1 AWG
AMPERES	20	3.95	2.49	1.56	0.98	0.62	0.49	0.39	0.31
	30		3.73	2.34	1.47	0.93	0.74	0.58	0.46
	40			3.13	1.97	1.24	0.98	0.78	0.62
	50				2.46	1.55	1.23	0.97	0.77
	60					1.85	1.47	1.17	0.92

75 FEET									
		12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	3 AWG	2 AWG	1 AWG
AMPERES	20	5.93	3.73	2.34	1.47	0.93	0.74	0.58	0.46
	30		5.59	3.52	2.21	1.39	1.1	0.87	0.69
	40			4.69	2.95	1.85	1.47	1.17	0.92
	50				3.69	2.32	1.84	1.46	1.16
	60					2.78	2.21	1.75	1.39

100 FEET									
		12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	3 AWG	2 AWG	1 AWG
AMPERES	20	7.90	4.97	3.13	1.97	1.24	0.98	0.78	0.62
	30		7.46	4.69	2.95	1.85	1.47	1.17	0.92
	40			6.25	3.93	2.47	1.96	1.56	1.23
	50				4.92	3.09	2.45	1.94	1.54
	60					3.71	2.94	2.33	1.85

125 FEET									
		12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	3 AWG	2 AWG	1 AWG
AMPERES	20	9.88	6.21	3.91	2.46	1.55	1.23	0.97	0.77
	30		9.32	5.86	3.69	2.32	1.84	1.46	1.16
	40			7.81	4.92	3.09	2.45	1.94	1.54
	50				6.15	3.86	3.06	2.43	1.93
	60					4.64	3.68	2.92	2.31

150 FEET									
		12 AWG	10 AWG	8 AWG	6 AWG	4 AWG	3 AWG	2 AWG	1 AWG
AMPERES	20	11.85	7.46	4.69	2.95	1.85	1.47	1.17	0.92
	30		11.18	7.03	4.42	2.78	2.21	1.75	1.39
	40			9.38	5.90	3.71	2.94	2.33	1.85
	50				7.37	4.64	3.68	2.92	2.31
	60					5.56	4.41	3.50	2.77

Ex: A two-wire 20-ampere circuit using 12 AWG with a one-way distance of 25 feet will drop 1.98 volts; 120 volts - 1.98 volts = 118.02 volts as the load voltage.

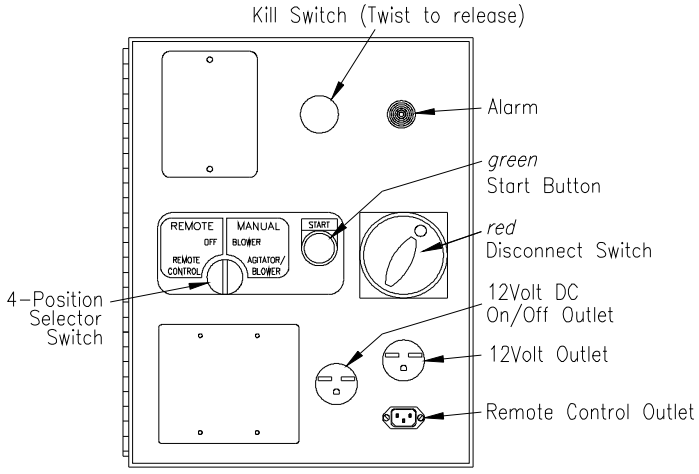
Electrical Operation:

NOTE: PRESS KILL SWITCH TO IMMEDIATELY STOP MACHINE AT ANY TIME!

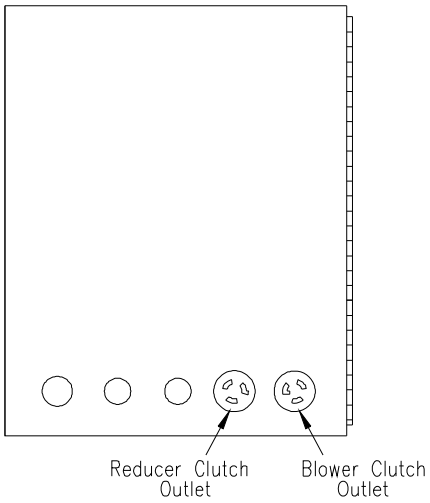
1. Make sure Kill Switch is out by twisting clockwise/right. (See illustration 5)
2. Turn *red* Main Disconnect Switch to ON position. (See illustration 5)
3. Set 4-Position Selector Switch to OFF. (See illustration 5)
4. Press *green* start Button. **Machine will not run unless start button is pressed *after* Kill Switch is out and *red* Main Disconnect Switch is on.** (See illustration 5)
5. Select operating mode on 4-Position Selector Switch from one of the following options:

Remote:	Remote control hand pendant will control machine.
Off:	Machine will not run. (overrides remote hand pendant)
Blower:	Only the blower will run continuously. (manual control at machine)
Agitator-Feed/Blower:	Both the blower and the agitator-feed will run continuously. (manual control at machine)

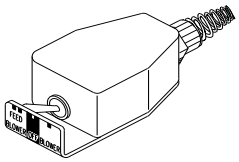
Main Control Panel (lid closed)
Illustration 5



Main Control Panel (back)
Illustration 6



6. When operating in **Remote mode**, the 4-Position Selector Switch must be set to **Remote** position. (See illustration 5 on page 15.)
7. Remote control hand pendant positions will be selected from the following:



BLOWER-FEED - operates both **blower** and **agitator-feed** simultaneously
OFF - (middle position) all functions stop
BLOWER - operates the **blower** only

8. Use the Auxiliary Outlet on the Main Control Panel for supplying **continuous** power (while *red* Main Disconnect Switch is ON) to accessories.

Stopping Your Machine:

1) Switch the remote switch to “AIR ONLY” and wait until the hose is clear of all material.
2) Let the engine run for a couple of minutes to cool down.
3) Turn the control switch on the remote control cord to the “off” position and unplug the remote control cord from the panel.
4) Turn the key switch to the “off” position.

SAFETY NOTE:
DO NOT FILL THE HOPPER TO CAPACITY AT THE END OF THE DAY. THE MATERIAL WILL COMPRESS AND CAN CAUSE MACHINE LOCKUP DURING THE NEXT START-UP.

Mechanical Settings:

The controls of your machine contain the blower and slidegate controls to adjust your machine for each application and type of fiber. (See illustration 7 on page 17.) **Blower control** (air) and **slidegate** (material feed) are adjusted according to:

TYPE OF MATERIAL:	Cellulose and fiberglass have different textures and densities that respond to machine settings.
HOSE:	Corrugations or roughness of interior surface, diameter, length and elevation of hose will also require varying adjustments.
WEATHER CONDITIONS:	Temperature and humidity may require day to day adjustment of machine settings.

Blower Control and Slidegate General Settings:

Blower control can increase or decrease the amount of air in the system, affecting the velocity (speed) and spread rate (coverage) of fiber. (See illustration 7 on page 17.) The blower control valve is used for controlling air pressure and amount of air flow.

Opening or closing slidegate (material feed) controls the amount of fiber dropping into the airlock which changes the production rate (lbs. per hour). (See illustration 7 on page 17.) For calibration purposes the scale located on the machine indicates how many inches the airlock slidegate is opened.

The blower and slidegate controls **working together** affect the distance fiber can be blown through a hose without plugging. These controls also affect the accurate blowing of fibers for spraying applications.

These settings control the following:

- **Density** of fiber blown in application.
- **Velocity** of material impact when spraying.
- **Dust** on open blow.
- Material **spread rate** or coverage.
- **Production** rate (lbs. per hour blown).

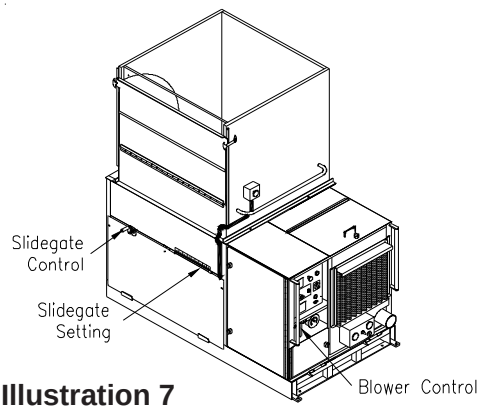


Illustration 7

General Blower Control and Slidegate Settings for Open Blow:

With the **slidegate** closed and blower control valve on low (valve open), turn **agitator-feed and blower on**. Fill hopper with insulation and adjust **blower valve** and **slidegate.** Move controls proportional to each other. (i.e. If **blower valve** is half open, **slidegate** should be half open.) As hose length is increased, air pressure/volume is increased by closing off the **blower valve** while closing the slidegate proportionally. This will increase the distance fiber can be blown through the hose, while decreasing the blowing production rate (lbs. per hour blown). (See illustration 7)

Shredder Assembly:

This unit is supplied with a shredder assembly; airlock/agitator speeds are preset at the factory. **No** further sprocket setting speeds are needed, as this system will accommodate most fibers and applications. However, the shredder and agitator **direction** can be adjusted as described below.

Shredder & Agitator Adjustment:

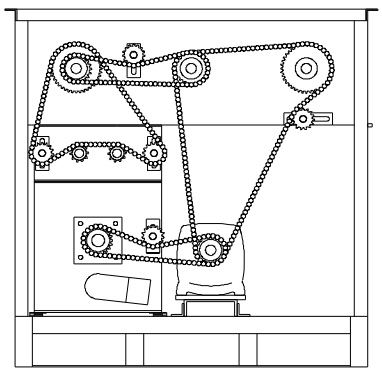


Illustration 8

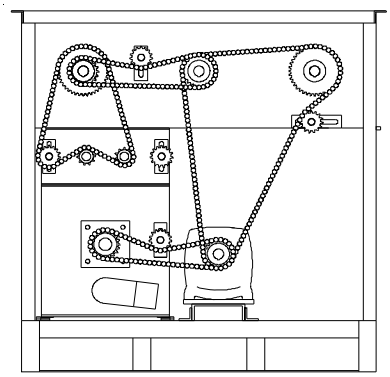


Illustration 9

Unidirectional Rotation (See illustration 8) is preferred as an all-around setting for a combination of materials and applications. This setting provides the greatest **coverage** and **best control** for internal wetting (stabilized) and open blow applications.

Center-Down Rotation (See illustration 9) force feeds the fiber into the airlock at a faster rate. This direction provides the greatest **production** for cellulose fibers in an open attic blow application although coverage may decrease.

GENERAL MAINTENANCE

Your Krendl Model #4200-D Machine is designed to be used with minimal maintenance for all its components. The following is only a guide; experience is the best guide for the right maintenance schedule for you.

DESCRIPTION	EACH SHIFT	40 HOURS	80 HOURS	200 HOURS	1000 HOURS
CHECK GUARDS	X				
CHECK ENGINE FLUID LEVELS	X				
CHECK DRIVE ALIGNMENT & TENSION		X			
CHECK ENGINE EXHAUST HOSE		X			
SERVICE ENGINE AIR CLEANER CARTRIDGE & CLEAN ENGINE COOLING SYSTEM		X			
VISUALLY INSPECT COUPLING ELEMENTS FOR FATIGUE CRACKS (OVER 1/2")		X			
CLEAN BLOWER AIR FILTER		X			
CHECK BLOWER OIL LEVEL		X			
CHANGE ENGINE OIL		X			
(needs to be changed after first 8 hours of operation and thereafter every 25 hours if operating under high ambient temperature)					
GREASE BLOWER BEARINGS			X		
LUBRICATE DRIVE CHAINS WITH A DRY LUBRICANT				X	
GREASE SHREDDER, AIRLOCK, AGITATOR, & JACK SHAFT BEARINGS				X	
CHANGE BLOWER OIL					X
(needs to be changed after first 100 hours of operation and thereafter every 1000 hours)					

NOTE: When further maintenance is needed, please refer back to other manufacturer's manuals for additional assistance!

SAFETY NOTE

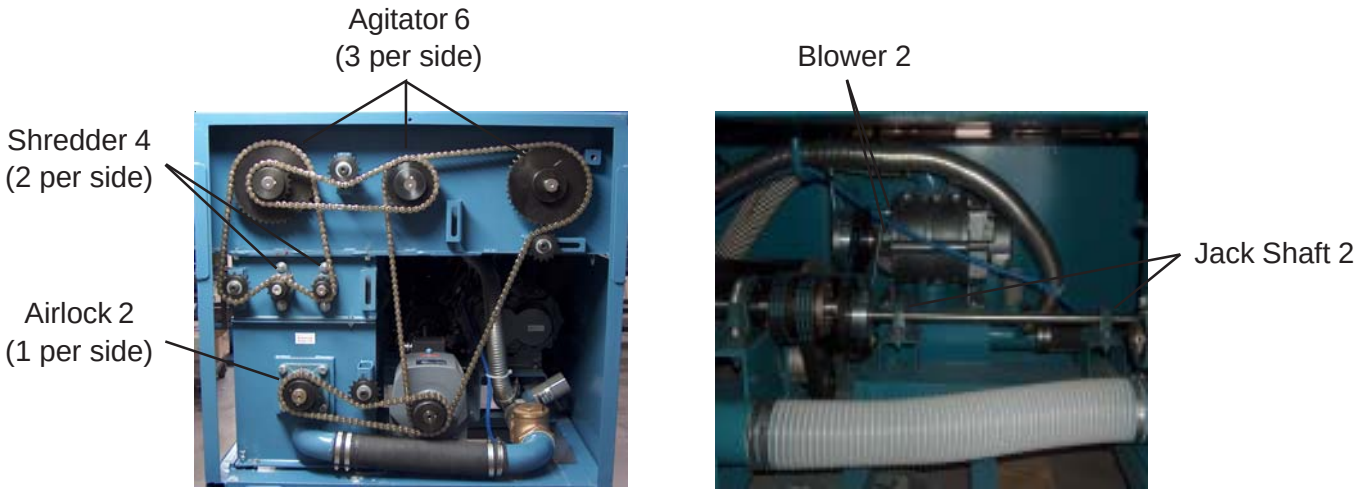
WHEN MAINTENANCE IS TO BE PERFORMED ON THE MACHINE ALWAYS:

1) STOP THE ENGINE COMPLETELY.
2) TURN THE IGNITION TO THE "OFF" POSITION AND REMOVE THE KEY.

RECOMMENDED LUBRICATION

ALL BEARINGS:	GREASE: MOBILITH AW-2 (NLGI grade #2)
DRIVE CHAIN:	DRY LUBRICANT (EG: DRY GRAPHITE)
BLOWER:	OIL: PNEULUBE (Refer to blower manual) GREASE: MOBILITH AW-2 (NLGI grade #2)
ENGINE:	SAE MOTOR OIL *AMBIENT TEMP.* — *OIL TYPE* Above 77° — SAE 30 OR SAE 10W-30 / SAE 10W-40 32° to 77° — SAE 20 OR SAE 10W-30 / SAE 10W-40 Below 32° — SAE 10 OR SAE 10W-30 / SAE 10W-40
AIRLOCK REDUCER:	OIL: KLUBERSYNTH UH1 6-460

Bearing Grease Zerks



Airlock: (Seal Replacement)

The purpose of the airlock seal is to trap air and fiber until it rotates 180° to the 6:00 o'clock position. At this point, fiber is pushed by air from the blower, out of the chamber. Worn or damaged seals allow air and fiber to escape back into hopper, thus reducing production and coverage. When it is necessary to replace seals, follow these directions:

Remove chain and air hoses from both input and output of airlock. Using a 9/16" socket, remove hold down bolts from airlock. Lower the front of the airlock down by loosening the jamb nuts and turning the liftbolts counter clockwise. Slide the airlock out of the machine. (See illustration 10) Airlock rotor plates that are damaged (bent) will need replaced. (Refer to Rotor Plate Replacement below.) Take out rubber seal by removing seven plate fastening bolts and nuts and top plate. The base plate will remain attached to airlock shaft. To install a new seal, reverse procedure. Seal should be inserted tight against the back base plate, pressing the lower tabs of the seal down under the adjacent seal with a flat blade screwdriver. Make sure all bolt holes are aligned while each side of seal is equally pressed against the end plates, before tightening bolts. Seal should be bent forwards for **counter clockwise** rotation. (See illustration 12)

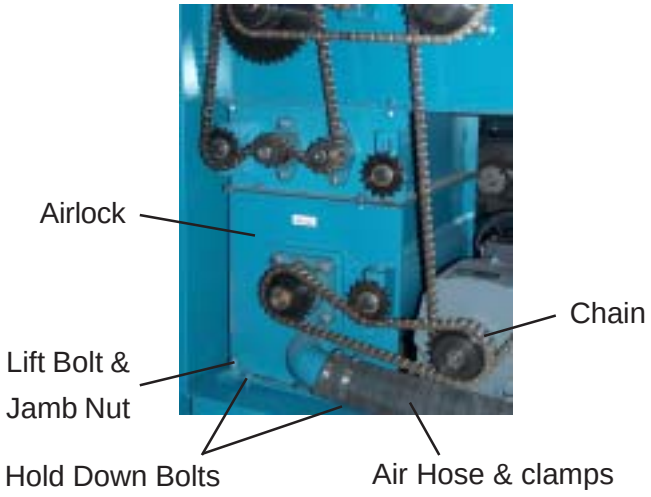


Illustration 10

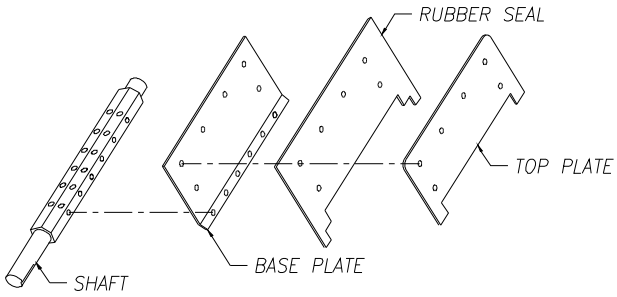


Illustration 11

Base Plate Replacement:

1. Remove damaged baseplate assembly from shaft using ratchet drive wrench with extension and 9/16" socket.
2. Check seal for wear and damage. (Installing seal and top plate on the bench is quick and easy). Remove bolts from plate assembly and replace with new seal. Make sure seal and top plate are assembled on **correct** side of base plate before assembling in airlock. Seal should press backward towards top plate when installed correctly into airlock chamber. (Illustration 12)
3. Install the rotor plate assembly into the airlock. The airlock runs **counter clockwise** viewing it from the sprocket drive shaft. (Illustration 12) Align the base plate with holes on airlock shaft using a tapered punch. **Caution:** Do not mount rotor plate backwards. If installed

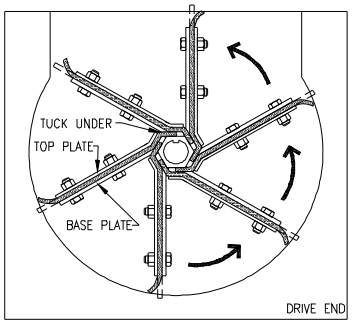


Illustration 12

(**Note:** Entire rotor plate assembly may be removed and replaced. This procedure maybe easier than replacing just the seals.)

improperly, damage to seals will result and put undue stress on agitator motor. This causes overheating and poor production. Seal should be bent backward to allow for a **clockwise** rotation of rotor.

5. As rotor plate is installed, press bottom tab of seal under adjacent seal with flat blade screwdriver. (See illustration 12 on page 20)

Chain: (Adjustment) (#50 Nickel Plated)

A smooth operating chain drive should have a slight sag on the idler side of the chain. New chains should be installed under slight tension as they will elongate a small amount due to seating of pins and bushings during the first few days of operation. Chain should be kept in good condition by proper lubrication (use dry film lubricant Dow 321) and occasional cleaning. Soaking chain in container of 10 weight oil will provide for internal lubrication of pins and bushings. However, excess oil must be drained and wiped away as excessive lubrication will cause fiber accumulation on chain. Worn out chain should be replaced. When chain is replaced, worn sprockets should also be replaced, preventing further damage to new chain.

Sprockets:

Check Sprockets For Wear. Misalignment and/or loose sprockets and improper chain tension causes the premature wear of chain and sprockets. All sprockets, except speed reducer and idler sprockets, have been secured with a medium grade Loctite (general purpose thread locker), to prevent gradual movement. The set screws and key are also inserted with a medium grade Loctite. If sprocket is difficult to remove, it may be heated with a propane torch to loosen.

Caution: Do not overheat sprocket or damage to bearing will result. A pulley or bearing puller can then be used to remove the sprocket and key. Replace new sprocket on shaft with key and medium grade Loctite applied to shaft. Align sprocket with corresponding sprocket, using a straightedge placed along face of teeth and tighten set screws.

Bearings:

Agitator Bearings in hopper are double-sealed, self aligning ball bearings. They have grease fittings and should be periodically lubricated. At least every 3 months. If bearings produce noise or heat *(too-hot-to-touch)*, the bearings should be replaced.

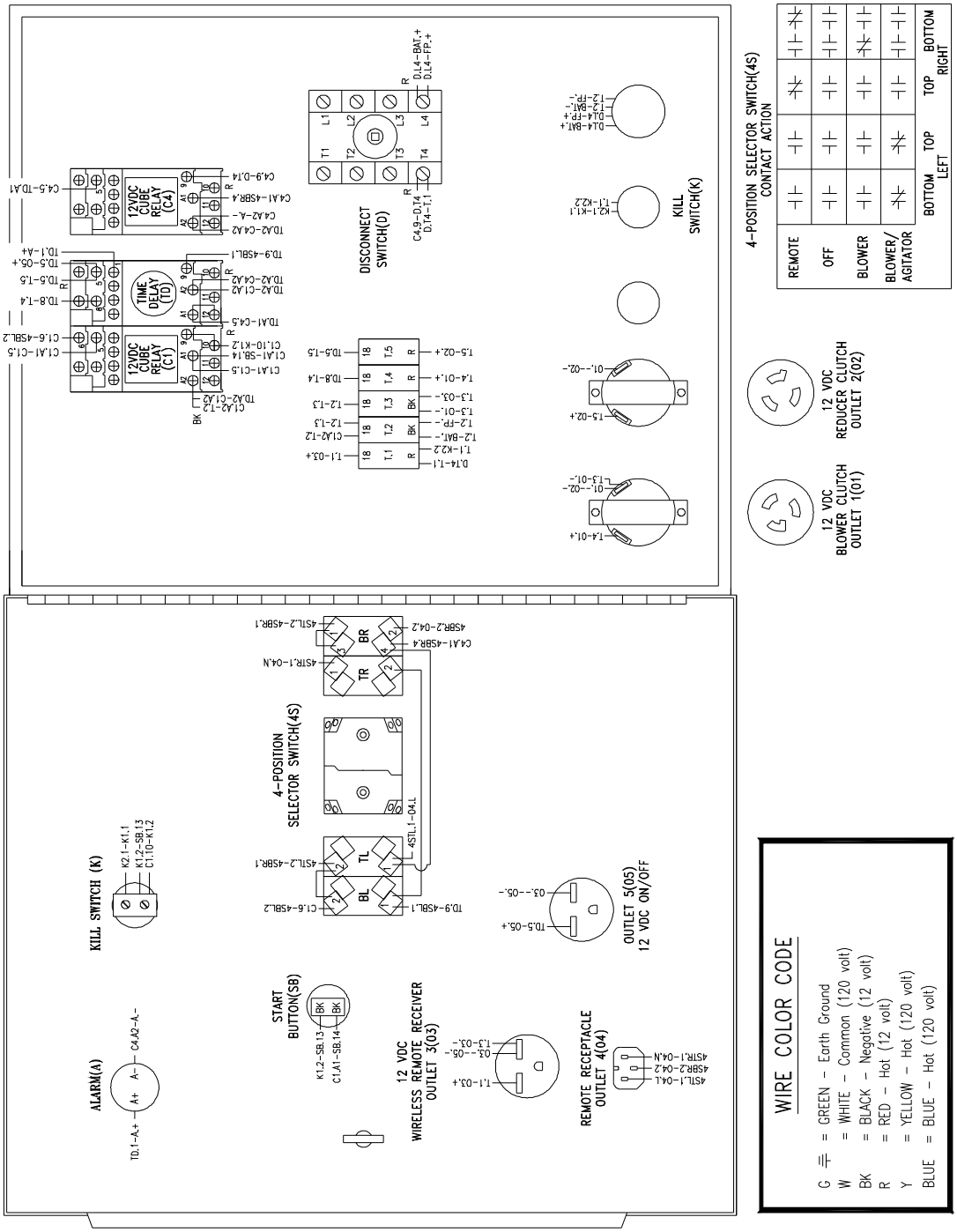
Agitator Bearing Replacement:

Spray area with rust penetrant (WD-40). Remove sprocket (See SPROCKET section above). Remove the four bolts from bearing flange. Loosen set screws on bearing hub at each end of agitator shaft. Since all set screws are installed with a medium grade Loctite, a propane torch may be used to assist in removing them. Do not overheat unit, causing shaft to expand. Using a rubber mallet, drive agitator shaft an inch in one direction, creating a space between hopper and bearing unit. A bearing puller can then be used to remove the bearing. Eliminate any metal burrs from shaft with file and install new bearings with felt seals. Use a medium grade Loctite on set screws before securing bearing to shaft. (Check shaft diameter before ordering bearings)

ELECTRICAL SYSTEM

ELECTRICAL DIAGRAM:
Periodically, disconnect machine from power source and check all electrical connections and components for broken or loose wires, loose screws or fasteners. Machine Vibration can cause fasteners to loosen.

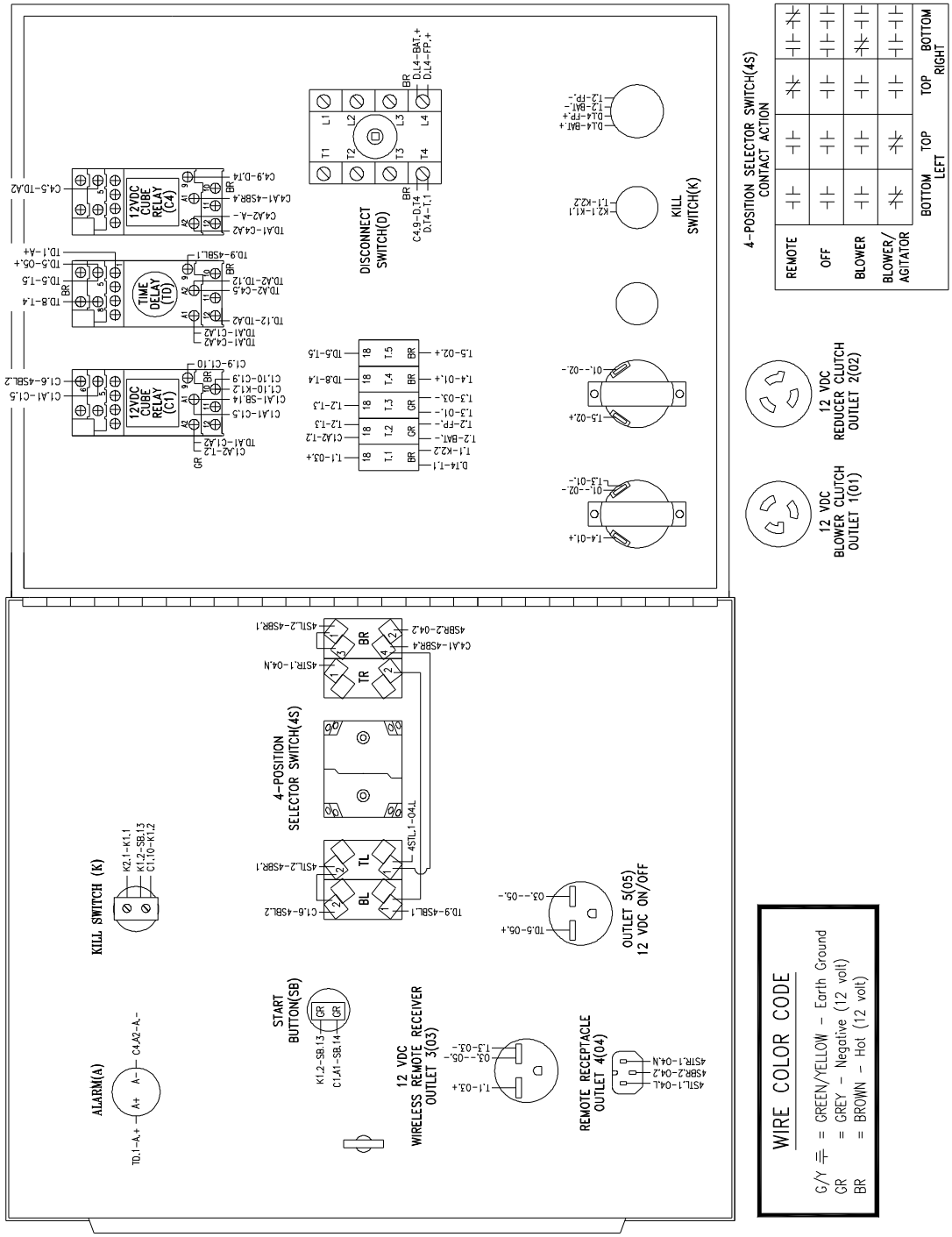
MODEL #4200-D
12 V.D.C. (4200-57-A) U.S.



ELECTRICAL SYSTEM

ELECTRICAL DIAGRAM:
Periodically, disconnect machine from power source and check all electrical connections and components for broken or loose wires, loose screws or fasteners. Machine Vibration can cause fasteners to loosen.

MODEL #4200-D
12 V.D.C. (4200-57-B-R1) Overseas



TROUBLESHOOTING

WARRANTY

This unit is backed by a warranty for manufacturer's defects. If your machine needs service during the warranty time period, call your supplier immediately. DO NOT attempt to service the machine, as this voids the warranty!

IMPORTANT

At any signs of trouble with your machine, stop immediately, disconnect power and call your supplier. Refer to the GENERAL MAINTENANCE section of this manual for further details. Always disconnect the electrical power before making any inspections or repairs.

TROUBLESHOOTING

PROBLEM	CORRECTIVE ACTION
1.) Engine will not start	A. Check if battery charge is low. B. Check terminals on battery for good connection. C. See Engine Manufacturer's Manual.
2.) Engine starts but there are no other machine functions - no electrical power to the front panel	A. Check for loose or damaged wires, ground shorts. which may be caused from machine vibration. B. Turn off all power to machine before opening the panel box.
3.) Engine starts - but the blower will not operate	A. Check to see if the blower clutch is operating B. Check clutch electrical connections. C. Check belts, adjust or replace as required. D. Check battery, clutch will not cycle or will slip if battery is not fully charged. E. Check that blower can be turned by hand. If not, blower may be tied up. F. Weak/Worn clutch- replace or rebuild as required.
4.) Insufficient air - clutch is operating	A. Check that the blower control valve isn't fully open. Close or adjust the handle control as needed. You should be able to get over 4 p.s.i. of air on gauge. See illustration 13. B. Check that the blower relief valve is not stuck open. See illustration 14 on page 25. C. Check if blower air filter and intake hose is clogged. See illustration 13. D. Check airstream and bypass air hose connections, clamps, etc.

Illustration 13

Illustration 14

5.) No material flow - clutch is operating

A. Check material level in main hopper.
B. If the material slide gate is closed or adjusted in too far for material feed rate, open the slidegate.
C. Check the belts coming from the main drive shaft pulley to the reducer shaft drive pulley and blower drive pulley. Adjust or replace belts as required. Check for missing keys under the drive pulleys.
D. Check chains, adjust or replace as required. Check for missing keys under drive sprockets.
E. Fiber hose plugged. Make sure the air bypass valve is completely closed, then switch machine to blower only to blow out the hose. If problems still occur, try hitting the hose where it is plugged to release the material.
E. Check that the one way air check valve isn't stuck closed. See illustration 14.
F. Check belts, adjust /replace as required and check for missing keys under drive pulleys.
G. Fiber hose plugged. Make sure the air bypass valve is completely closed, then switch machine to blower only to blow out the hose. If problems still occur, try hitting the hose where it is plugged to release the material.
H. If the airlock seals and/or airlock components are worn or damaged, replace all the parts as needed.

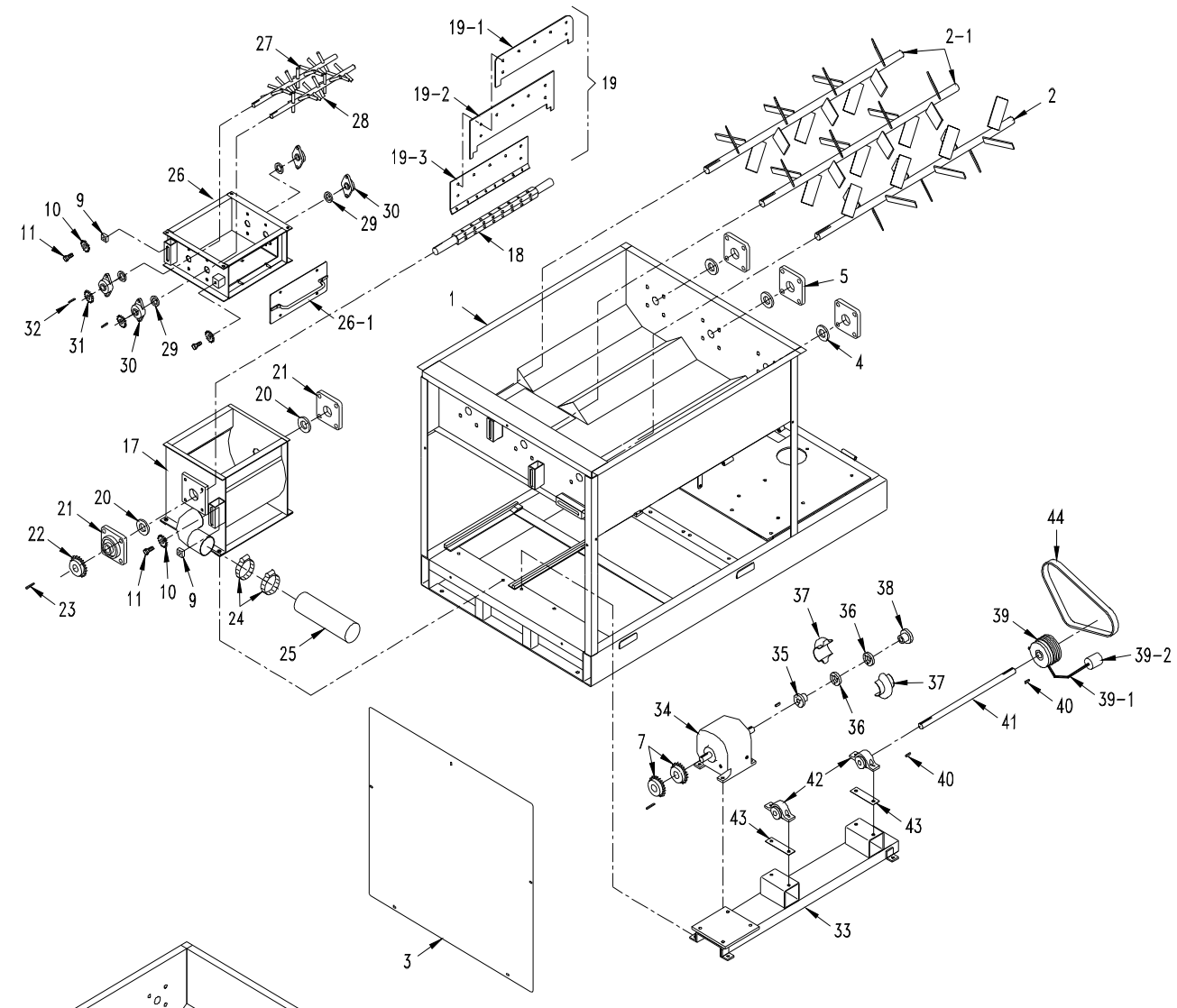
SPARE PARTS LIST

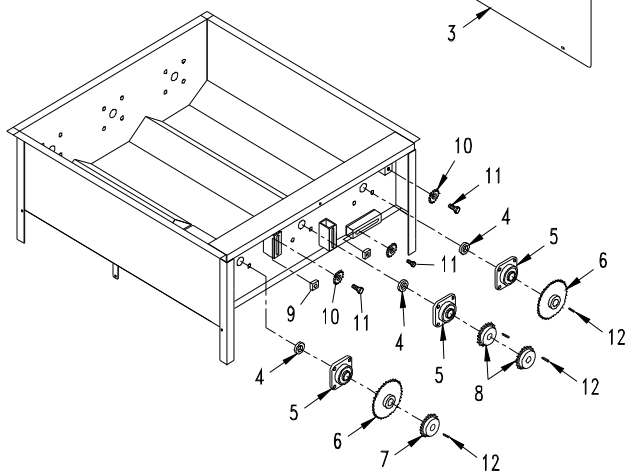
The following is a recommended spare parts list. To keep your machine up and running, these are the parts we suggest you keep on hand for your Model #4200-D Krendl Machine.

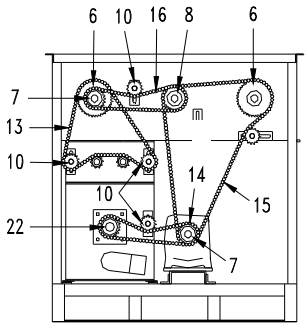
PART NUMBER	DESCRIPTION	QUANTITY REQUIRED
250503-8	AGITATOR BEARINGS	6
8036-2	SHREDDER BEARINGS	4
8065-2	AIRLOCK BEARINGS	2
1032	JACK SHAFT BEARINGS	2
5200-38	V-BELT ENGINE TO JACKSHAFT	1
4200-50	V-BELT JACKSHAFT TO BLOWER	1
4200-9M	AIRLOCK SEALS	6
150526	#50 MASTER LINK	4

PARTS LIST

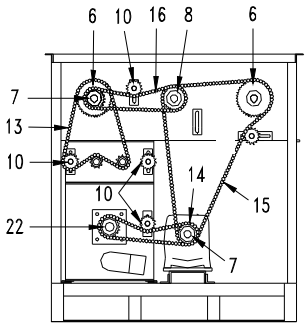
#4200-D Exploded Parts View





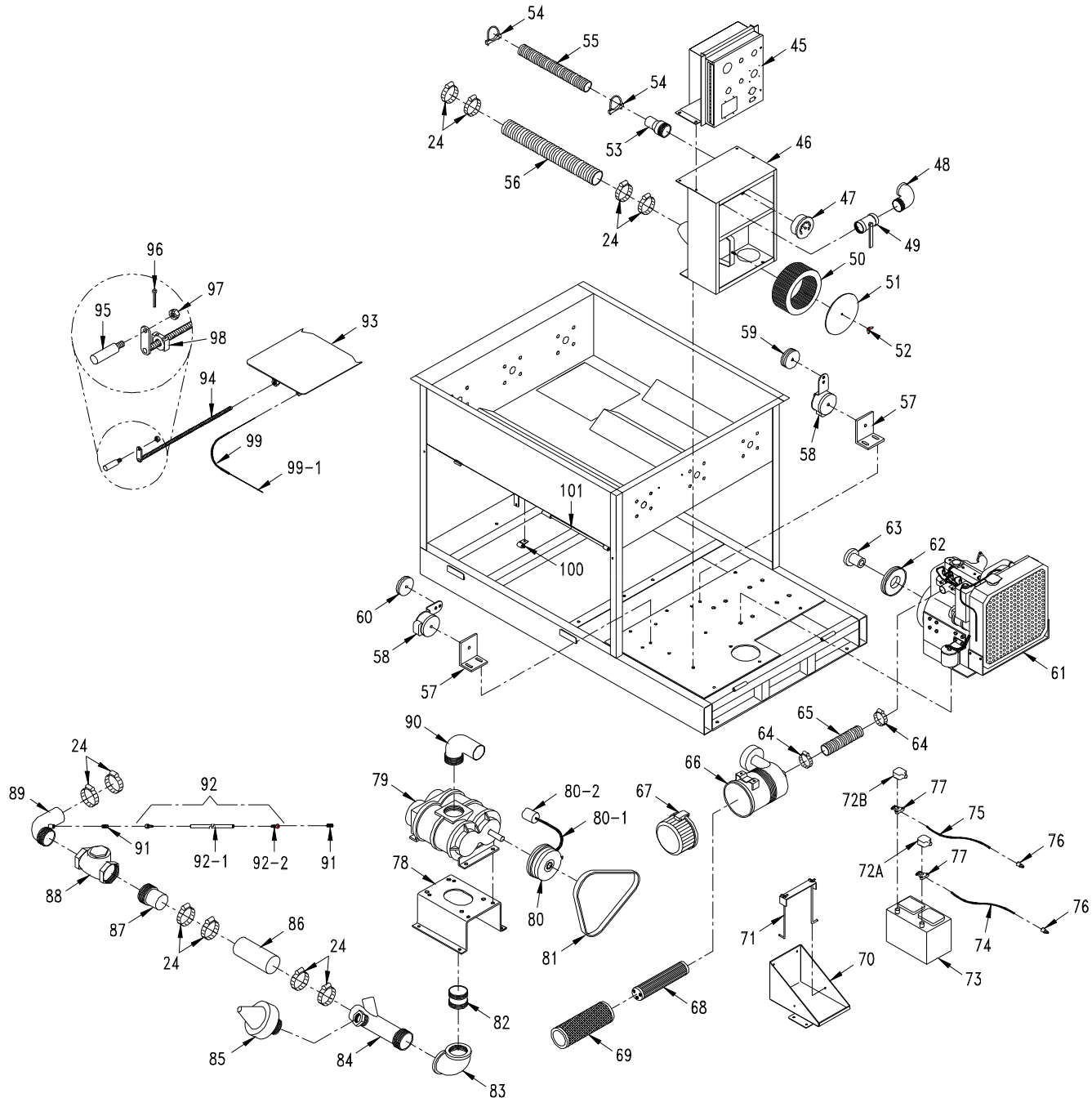


Unidirectional

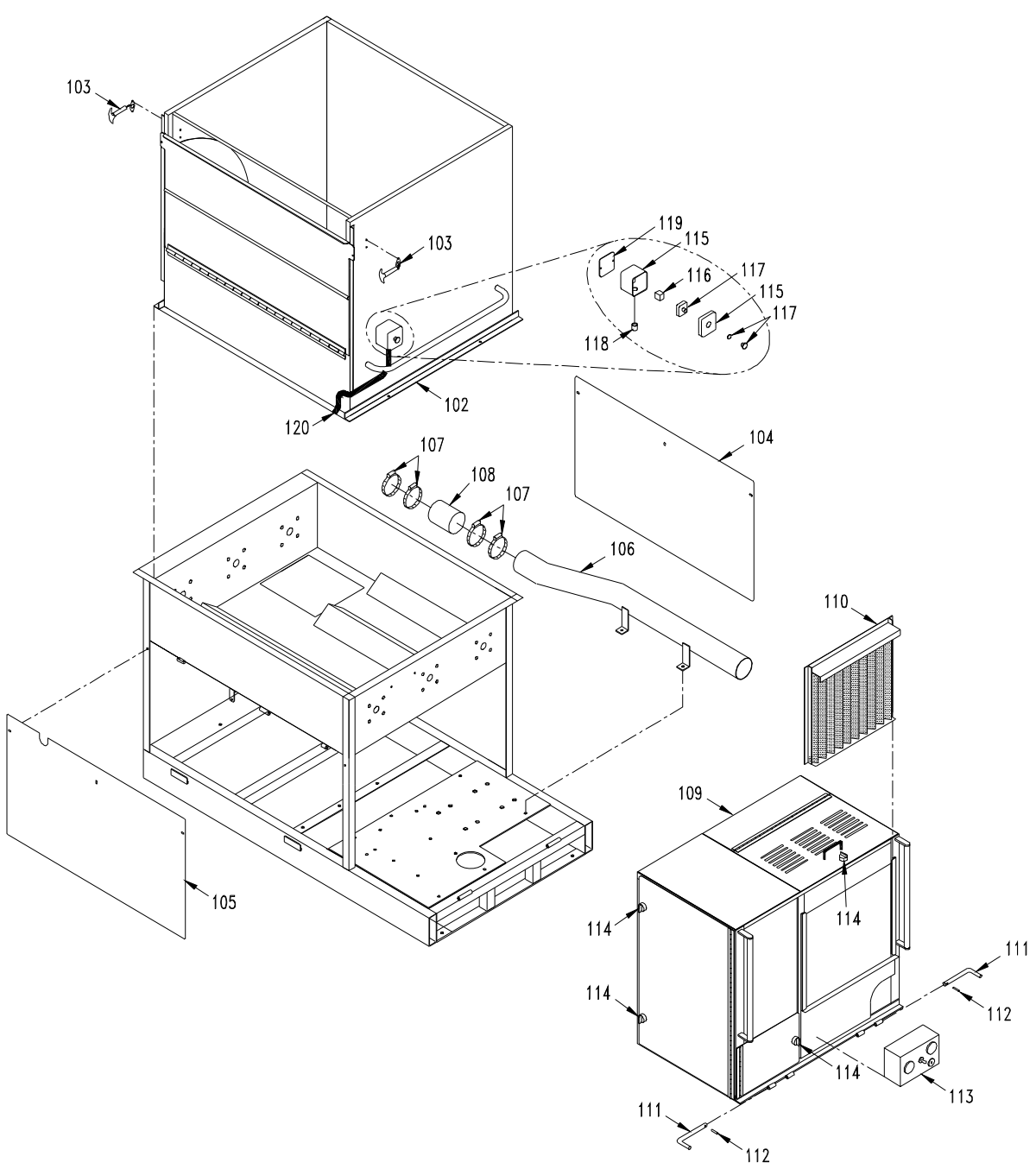


Center - Down

#4200-D Exploded Parts View



#4200-D Exploded Parts View



#4200-D Exploded Parts List

Item#	Part#	Description
1	4200-1	Base, (Upper & Lower Portion)
2	4200-13	Agitator, Hopper
2-1	4200-14	Agitator, Middle & Shredder (2)
3	5200-47-1-R1	Guard, Chain
4	250503-7	Seal, Felt, 1 1/4”
5	250503-8	Bearing, Flange, 4-Bolt, 1 1/4”
6	5200-42	Sprocket, #50 40T x 1 1/4” (2)
7	250504	Sprocket, #50 20T x 1 1/4” (3)
8	250505-1	Sprocket, #50 25T x 1 1/4” (2)
9	40052	Nut, 1” x 1” x 1/2” (Plated)
10	150513	Sprocket #50, Idler, 15T x 5 (6)
11	FSB120	5/8” X 3/4” Shoulder Bolt (5)
12	561	1/4” x 1/4” x 1” Key (3)
13	109806	Chain, #50 x 47 1/4” Long (Center Down)
13	109809	Chain, #50 x 50” Long (Unidirectional)
14	109801	Chain, #50 x 38 1/2” Long
15	- -	Chain, #50 x 80” Long
16	2502028	Chain, #50 x 41” Long
16	250500-1	Chain, #50 x 66” Long (Fiberglass Option Only)
17	4200-5	Chamber, Airlock, 4200
18	4200-6	Shaft, Airlock, 4200
19	4200-9-ASSY	Seal Assy, 4200, 14” (2 PLY/FAB)
19-1	4200-7	Plate, Top, Airlock
19-2	4200-9M-2PLYF	Seal, Airlock
19-3	4200-8	Plate, Bottom, Airlock
20	8065-3	Felt Seal, 1 1/2”
21	8065-2	Bearing, 4-Bolt, 1 1/2”
22	5200-43	Sprocket, #50 20T x 1 1/2”
23	556	3/8” Square Stock, 1 1/4” Long
24	339A	Clamp, Hose, 3” (6)
25	RM-OTH095-MI	Hose, Radiator, 3” x 23”
26	4200-10-R1	Shredder Box
26-1	4200-67	Shredder Box Access Door
27	4200-11-A	Shredder Agt., Short
28	4200-11-B	Shredder Agt., Long
29	517-7	Seal, Felt Airlock 1” Bore
30	8036-2	Bearing, 2-Bolt, 1”
31	8037	Sprocket, #50, 11T x 1”
32	448	Key, 3/16” x 3/16” x 7/8”
33	4200-3	Mount, Reducer, 4200
34	5200-98	Reducer
35	5200-102	Bushing, JA 3/4”
36	5200-87	Hub, F/E4 Element (2)
37	5200-86	Element, Coupling, E4
38	5200-89	Bushing, JA 1”
39	5200-99	Clutch, Shaft Mount, 5 Groove
39-1	16-2 SJ	Wire, 16-2 SJ00W, 18” long
39-2	434	Plug, NEMA# L6-15P
40	109080	Key, 1/4” x 1/4” x 2 1/8” Long (5)
41	5200-111	Jack Shaft, Reducer, 35 1/2” long

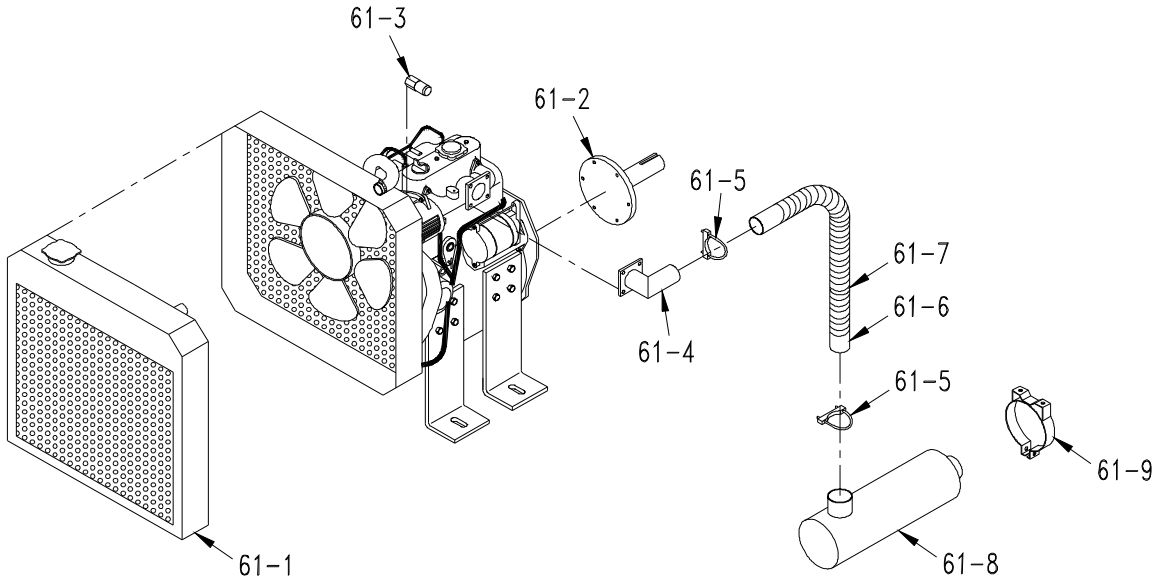
#4200-D Exploded Parts List

Item#	Part#	Description
42	1032	Bearing, 1" PB (2)
43	5200-51	Shim, Bearing (2)
44	5200-38	Belt, 3/3VX425
45	4200-57-A	Electrical Assy, U.S.
45	4200-57-B-R1	Electrical Assy, Overseas
46	5200-56	Filter Box
47	5200-59	Gauge, Pressure, 0-10 PSI
48	5200-64	Elbow, 2", 90 Street
49	8051	Ball Valve, 2"
50	81-1063	Filter, F/250300-2-R1 (Blue)
51	5200-63	Cover, Filter
52	FN014	5/16-18 Locknut-Crimped
53	5200-81	Adapter, 2" Barb
54	5200-106	Muffler Clamp (2)
55	RM-OTH103-MI	Pipe, Exhaust Flex (70")
56	H440	Hose, 3" Master Flex (44")
57	5200-105	Idler Bracket
58	5200-22	Tensioner, H.D., Rotary
59	5200-97	Idler, 3GR3V3.35
60	5200-96	Idler, 2GR3V3.35
61	4200-44	Engine, Diesel, Kubota
62	4200-103	Pulley, 3GR3V4.75 SDS
63	4200-104	Bushing, SDS 1 1/8"
64	337	Clamp, Hose, 2"
65	RM-OTH085-MI	Hose, 2" Radiator (10")
66	2FW-E2-BODY	Air Cleaner Body
67	2FW-E2-CAP	Air Cleaner Cap
68	2-E2	Air Cleaner Safety Element
69	2-E1	Air Cleaner Primary Element
70	5200-55	Battery Tray
71	5200-79-R	Bracket, Battery Hold Down
72A	4000-50	Cover, Battery Terminal, Red
72B	4000-51	Cover, Battery Terminal, Blk
73	5200-75	Battery
74	RM-OTH002-BK	5 ft. Black Battery Cable
75	RM-OTH002-RD	5 ft. Red Battery Cable
76	ST301-4	Battery Connector
77	ST301-3	Battery Terminal Connector
78	4200-4	Blower Mount
79	2100-2	Blower, P.D., #3006
80	5200-101	Clutch, Shaft Mount, 2 Groove
80-1	16-2 SJ	Wire, 16-2 SJ00W, 13" long
80-2	1538	Plug, NEMA# L5-15P
81	4200-50	Belt, 2/3VX425
82	- -	Nipple, 2 1/2"x4" (Painted)
83	8044	Elbow, 2 1/2" 90 Black Pipe (Painted)
84	4200-61	Pressure Relief Tube
85	4200-12	Relief Valve, Pressure, 6 PSI
86	RM-OTH095-MI	3" Heater Hose 24"
87	5200-62	Adapter, 2" Long, Male
88	250539	Check Valve, 3"
89	5200-66	Elbow, Pressure Gauge

#4200-D Exploded Parts List

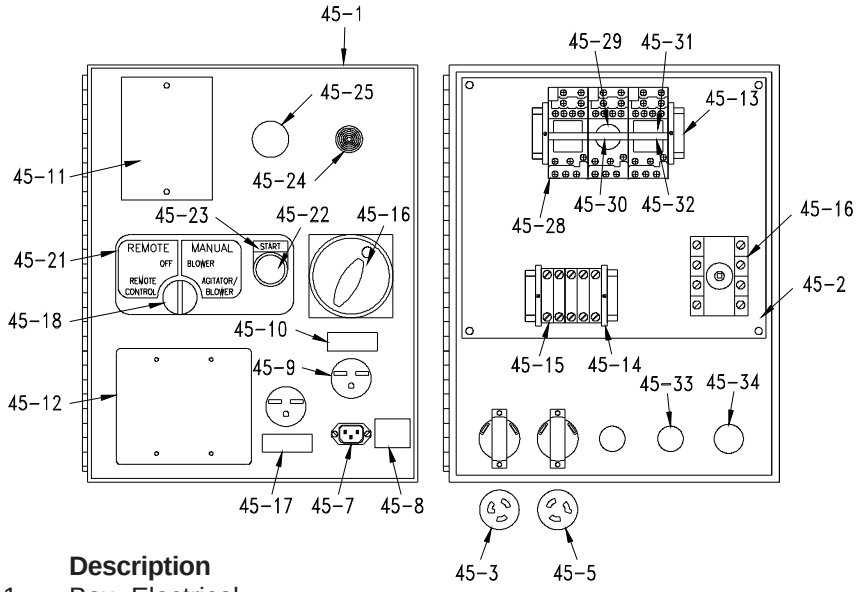
Item#	Part#	Description
90	4200-65	Elbow, Inlet
91	IWS-32	Male Connector (2)
92	IWS-25A	Water Line, 1/4” x 6’ w/swivel
92-1	IWS-H-1/4	1/4” Hose
92-2	IWS-29	Swivel, SAE 37
93	4200-45	Slidegate, 4200
94	5200-46	Crankrod w/ Handle Bracket
95	5200-60	Handle
96	FSB078	Pin, Cotter, 1/8” x 1”
97	FN015	N 3/8-16 Lock Nut-Crimped
98	5200-58	Support, Crankrod
99	5200-74	Cover, Slidegate Cable 18 1/4”
99-1	5200-67	Cable, Slidegate, Indicator, 33”
100	5200-69	Mount, Indicator Cable
101	5200-68	Cover, Slidegate Indicator
102	4200-2-R3	Hopper Extension, 4200
103	23-99	Latch, Pull Back (2)
104	4200-49	Guard, Side (Back Side)
105	4200-48	Guard, Side (Crankrod Side)
106	4200-60	Tube, Output
107	340	4” Hose Clamp (4)
108	RM-OTH108-MI	4 1/4” Radiator Hose, 5” long
109	5200-12-A	Hood, Engine, Diesel
110	5200-73	Guard, Screen, Radiator
111	541	Hinge Pin (2)
112	FSB080	Roll Pins (2)
113	--	Engine Control Box
114	8065-6	Compression Latch (4)
115	8076	Enclosure
116	508-1	Contact Block
117	508-2	Killswitch
118	543-M-18	Connector, Conduit, 1/2” Straight
119	4000-47	Spacer Block
120	543-M-75	Conduit, Flexible 1/2", 5ft long
121	190	Link, Chain, 1/2 #50 NP (Not Shown

KUBOTA DIESEL ENGINE
EXPLODED PART VIEW



Item#	Part#	Description
61-1	79000385	Radiator, (4200-44)
61-2	P01	Stubshaft (4200-44)
61-3	TM9A230RQCG	Temperature Switch
61-4	4200-107	Muffler Flange
61-5	5200-106	Muffler Clamp (2)
61-6	RM-OTH103-MI	Pipe, Exhaust Flex, 5 Ft.
61-7	RM-OTH022-MI	Heat Wrap, Exhaust, 33 Ft.
61-8	15262-12110	Muffler (4200-44)
61-9	15371-11252	Muffler Band
61-10	HC02-HARN-NSM	Harness (5200-44) (Not Shown)

12 V.D.C Electrical Exploded Parts View



12 V.D.C.

Item #	Part #	Description
45-1	5200-57-1	Box, Electrical
45-2	1563	Plate, Backing, 9” x 11 1/8”
45-3	1542-A	Receptacle, NEMA# L5-15R
45-4	KMC-014	Decal, Blower Control (not shown)
45-5	1542-B	Receptacle, NEMA# L6-15R
45-6	KMC-015	Decal, Agitator (not shown)
45-7	543-M-2	Receptacle, RC Plug #509-1050 (remote)
45-8	KMCS-024	Decal, (SP) Remote Control
45-9	132-B	Receptacle, NEMA# 6-15R (2)
45-10	KMCS-131	Decal, (SP) 12 Volt D.C. Outlet
45-11	532	Plate, Block-off, Blower Box
45-12	4200-57-1	Plate, Block-off, Duplex
45-13	RM-DINRAIL-A	Dinrail, 1 3/8"
45-14	151080-49	Clamp, f/1 3/8" Din Rail (4)
45-15	151080-61	Terminal Block, Small (5)
45-16	543-M-85	Disconnect Switch Assembly
45-17	KMCS-132	Decal, (SP) 12VDC On/Off (IWS)
45-18	543-M-22	Switch, 4-position Selector
45-19	543-M-15	Contact Block, for Selector Switch (white) #KA-1 (not shown)
45-20	543-M-16	Contact Block for Selector Switch (red) #KA-3 (3) (not shown)
45-21	KMC-068	Decal, (Remote/Manual - 4-Position)
45-22	543-M-59	Switch, Pushbutton ON
45-23	543-M-60	Start Legend Plate
45-24	543-M-38	Alarm for Pre-Alarm System, 24V
45-25	508-2	Switch, Kill
45-26	8075-1	Contactor, Kill Switch (not shown)
45-27	KMCS-012	Decal, (SP) Kill Switch (not shown)
45-28	4000-32-3	Socket, Relay (3)
45-29	4000-32-7	Relay, Time Delay
45-30	4000-32-8	Clips, Timer Relay
45-31	4000-32-2	Relay, 12VDC Cube (2)
45-32	4000-32-4	Clips, Relay (2)
45-33	543-M-18	Connector, Conduit, 1/2" Straight
45-34	121	Cord Clamp, 3/4"

GLOSSARY

BRIDGING Tendency of fiber to cling in the hopper forming an air pocket above the airlock. This hinders the normal feeding process of the machine.

CFM (Cubic feet per minute). A measurement of volume or **quantity** of air flowing at a certain rate, or air moving capability, of a blower. It is the volume of air moved per minute. Higher volume provides increased coverage and velocity of fiber as it leaves the hose.

CHECK VALVE An apparatus that allows air to flow in one direction only. When mounted on the outlet of the blower, it protects the blower from fiber contamination through the air hose when using one blower. When the blower stops, the valve closes.

COMMERCIAL SPRAY-ON The application of fiber with adhesive to a surface which will remain exposed. The application must therefore be impacted in a smooth, uniform manner.

COVERAGE Refers to the amount of fiber coverage, usually measured in square feet, according to the R-value desired. This information is given on the fiber package.

NEW CONSTRUCTION WALL CAVITY SPRAY The spray application of fiber with water or adhesive into an exposed wall cavity to later be covered with drywall sheathing, etc.

PSI (Pounds of pressure per square inch). The **force** exerted on a surface by air/liquid. High-pressure blowers push the fiber through the hose. Higher pressure provides less hose plugging and increased compaction in side wall.

PRODUCTION RATE Pounds of fiber blown per hour.

RPM (Revolutions per minute). Speed at which the shaft of a rotating device (i.e. blower fan, agitator) is moving.

R-VALUE Resistance value. A precise measurement of the insulation's resistance to heat transfer. The higher the resistance value, the slower the heat will transfer through the insulating material.

RETRO-SIDEWALL This refers to the installation of fiber into an unexposed wall cavity. Fiber is usually installed through holes drilled into the exterior siding.

SETTLED DENSITY The point at which the fiber will not continue to settle further. Any insulation blown will have a certain amount of progressive settling that occurs after a period of time. Following the fiber manufacturer's recommendations for bag rate coverage will provide useful information to accommodate for settling.

SETTLING Compression of compaction of insulation fibers caused by the weight of the material, vibration of structure, temperature, and humidity cycles.

SERVICE RECORD

DATE	MAINTENANCE PERFORMED	COMPONENTS REQUIRED

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