



OWNERS MANUAL MODEL 250A



60 YEARS OF AMERICAN INGENUITY

KRENDL MACHINE COMPANY • 1201 SPENCERVILLE RD
DELPHOS, OHIO 45833 • TELEPHONE 800-459-2069 • FAX 419-695-9301
E-MAIL : krendl@krendlmachine.com • SITE WEB : www.krendlmachine.com

CONGRATULATIONS ON YOUR PURCHASE OF KRENDL EQUIPMENT

**MODEL #250A
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 INSULATION MOVING MACHINE**. With over sixty years experience in manufacturing insulation moving equipment, we have designed and built your machine with the highest quality to provide years of reliable service.

This manual has been prepared to help you obtain the maximum efficiency and service from your Krendl equipment. The machine is designed to condition and apply insulation with the utmost in dependable performance. 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 insulation. Our interest lies only in the proper performance of the equipment we manufacture. We make no recommendations or guarantees concerning various insulations.

CAUTION:

 This manual contains important information regarding the **safe** assembly and operation of your machine. We urge you to read it carefully and follow the instructions provided. If your questions are not answered in this manual, may we hear from you? We want you to be able to operate this unit safely and confidently.

UNPACKING: Store and unpack carton with correct side up. Unpack your machine **IMMEDIATELY** and check for damage in shipping. **Place any damage claim with delivering carrier, saving all packing materials for inspection.** Our warranty covers manufacturer's defects only. **DO NOT** return to shipper.

FILL IN AND RETAIN:

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


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 number _____	Blower motor manufacturer _____
Serial number _____	Agitator motor manufacturer _____
Blower(s) serial number(s) _____	Speed reducer manufacturer _____
Date of purchase _____	Supplier _____

The model and machine serial numbers are located on the base of the machine unit. The blower(s) serial number(s) is located on the motor housing of blower.

GENERAL SAFETY INFORMATION

 **Important:** Read **all** instructions **before** operating this unit. 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. Store and unpack cartons with the correct side up. 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.



General Safety

1. Read this manual carefully and become familiar with your machine unit. Know its applications, limitations, and any hazards involved.
2. This machine was designed and manufactured for specific applications. 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 machines 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 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.



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 bar are in proper place **before** operating machine. Guards and safety devices/switches should not be removed, modified or by-passed. Hands should **never** pass below hopper bar.
- **Be Safe** - Do not remove motors or lift hopper when unit is connected to power supply.
- **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** - 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 insulation 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.
- 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.
- Machine must be on **before** adding insulation.
- Blower(s) 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.

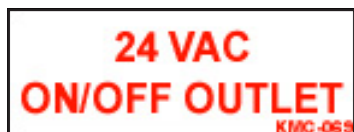
DECALS



Indicates the slidegate settings used when sidewall blowing.



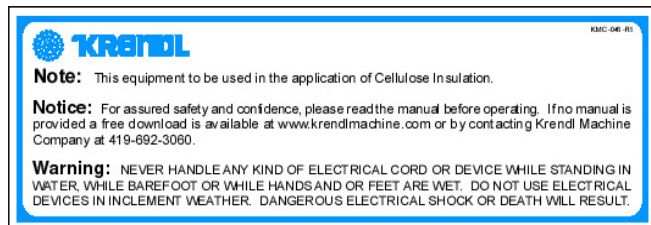
Manufacturer information is provided here along with machine model, and serial number.



Specifies the voltage this outlet is rated for.



Part number for identification and tracking.



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.



Emergency stop button for machine.



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



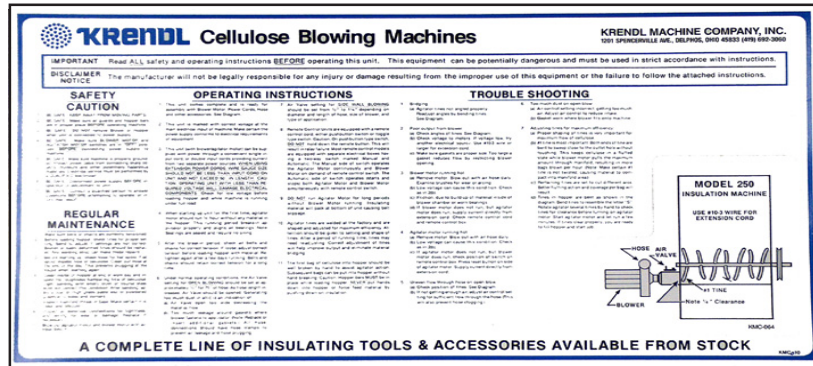
Identifies position of material feed gate.



General safety information intended to reduce the risk of serious injury or death.



Reset button for motor.



Operating and troubleshooting instructions provided here.



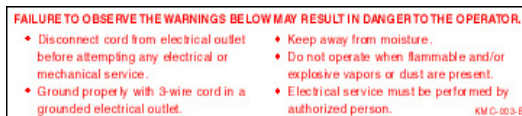
Made in the U.S.A.



Operating machine at specified voltage will result in longer machine life and better performance.



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



General safety information intended to reduce the risk of serious injury or death.



Indicates which employee inspected equipment and on what date.



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 the input power of the machine.



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.



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

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, 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.

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.

ASSEMBLY

Prior to packing, your machine has been assembled and tested to assure quality performance. However, to safeguard against damage in shipping, certain items are packaged separately within your carton and will need assembly.

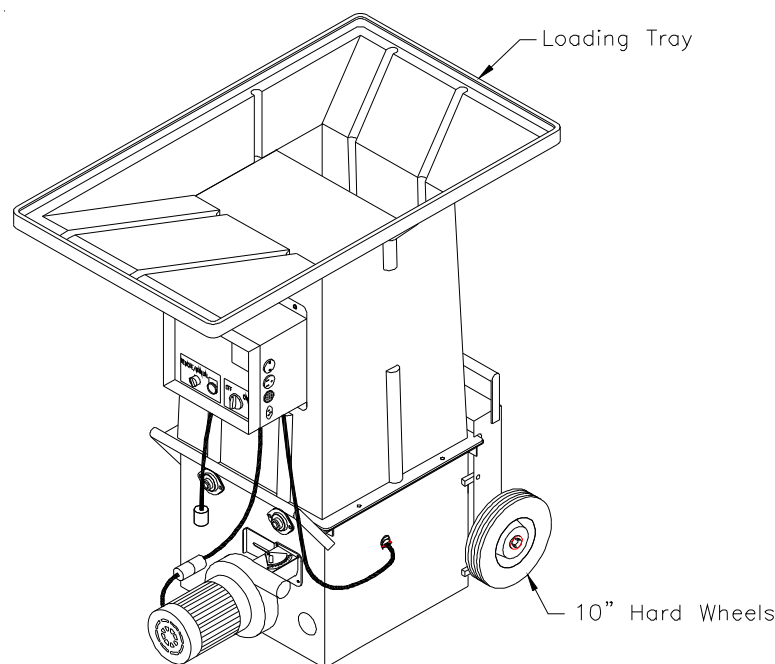
POWER CORDS:

Female receptacle(s) need to be wired properly to main power cord(s). (Consult electrician for assistance.) Units shipped to European countries will have standard (2) two prong 230V 16 amp plugs supplied. Units shipped overseas to other than Europe do not have plugs and receptacles on input cords due to the varying electrical plug configurations in different countries, unless provided by Krendl agents or suppliers.

ASSEMBLY OF OPTIONS: (See illustration A)

Standard Wheel Package: 10" (Hard) Wheels

Loading Tray: Loading Tray is already a part of the hopper.



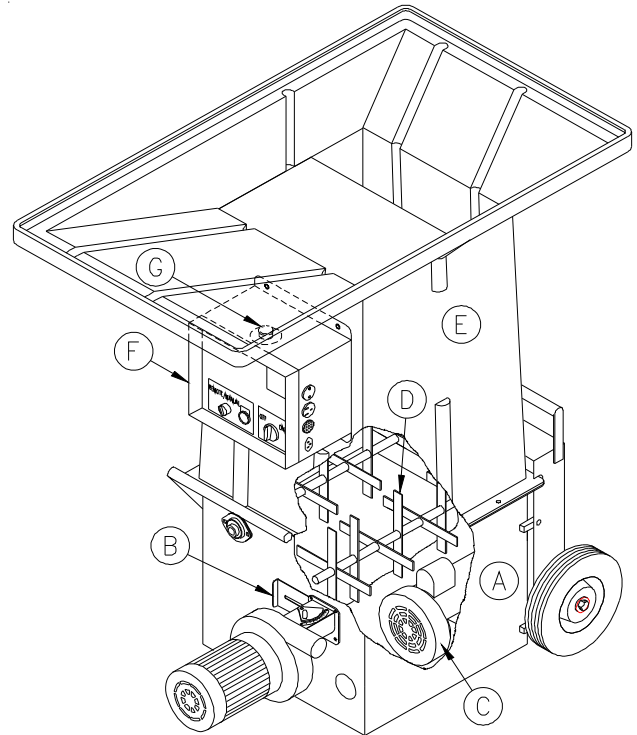
(illustration A)

BASIC COMPONENTS

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

(illustration B)

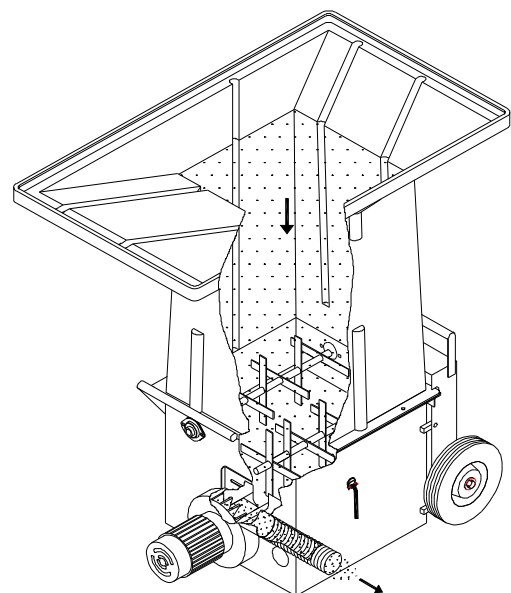
- A) BASE UNIT** — Lower frame unit supporting blower, motor, and hopper.
- B) SLIDEGATE** — Meters the amount of insulation entering into the blower by controlling size of blower opening.
- C) MOTOR** — Provides driving power for agitators.
- D) AGITATOR** — Conditions insulation in the hopper.
- E) HOPPER** — Upper unit of machine holding insulation.
- F) MAIN CONTROL PANEL** — Connects with main power, allowing operation of unit at machine or Remote Cord.
- G) KILL SWITCH** — Safety device for immediate stopping of machine.



(illustration B)

THEORY OF OPERATION

These units are designed to accept dry, non-abrasive (cellulose) insulation into the hopper area of the machine passing **through** the blower fan and chamber. The flow of insulation through the hose is controlled by a slidegate and an air vent opening adjacent to blower mount. The high speed (13,000 r.p.m.) conditioning effect of the blower fan provides unsurpassed performance in sidewall blowing and **coverage** in open attic blowing.



(illustration C)

OPERATING INSTRUCTIONS**Machine Hook-up**

This unit comes ready for connection to blower, insulation hose, power cords, and accessories.

This unit provides a direct connection to 2" or 2 1/2" insulation hose. Slide hose onto blower and secure with a hose clamp. All hose connections must have hose clamps to prevent air leakage from blower to nozzle. This helps to prevent hose plugging.

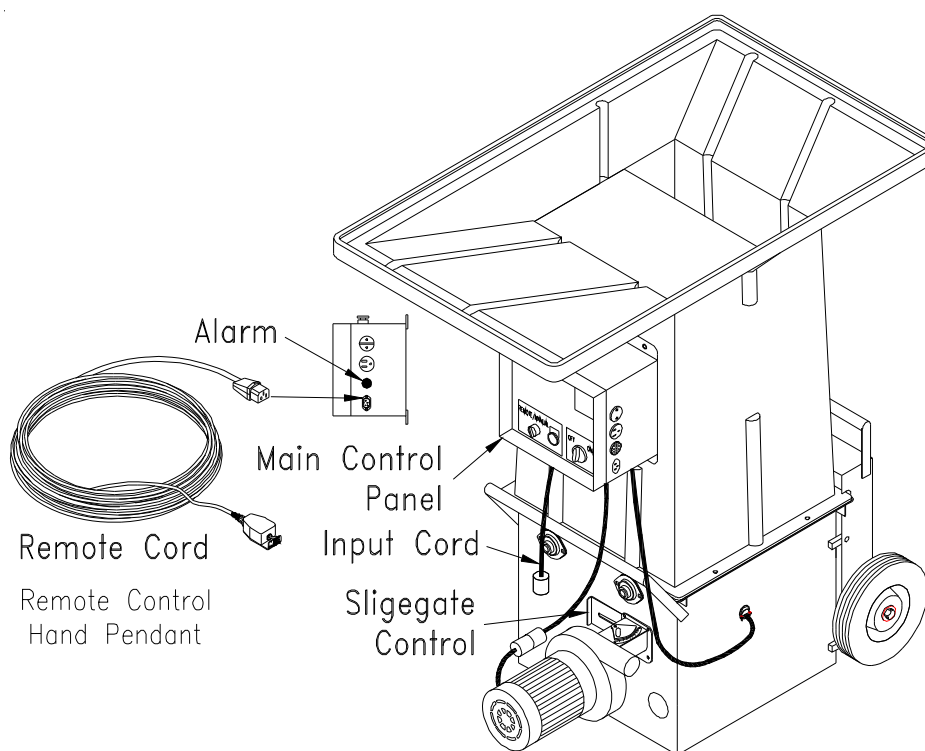


Remove remote control cord, packet, accessories, ect. from hopper and plug remote control cord into **Main Control Panel** located in the hopper area. (See illustration D)

The first bag of insulation into hopper should be well broken by hand to assist agitator action. **Caution:** Hopper bars **must** be in place while loading hopper. **Never** put hands below bars or force feed insulation by pushing down on insulation.

When assembling unit, make sure remote control **hand pendant** switch is in the **off** (middle) position and close **slidegate**.

1. Connect power to Input Cord(s) located below Main Control Panel. (See illustration D) On double input units, **both** input cords must be supplied with power from two separate sources for unit to work properly. When using extension power cords, wire gauge size should not be less than input cord on unit and not to exceed 50' in length. **(See Voltage Drop Chart On Next Page.)**



(illustration D)



Caution: Operating unit with less than required voltage or inadequate generator size will result in damage to electrical components. This machine is marked with the correct input voltage on input cords located on bottom of the Main Control Panel. **Note:** Agitator motor and blower should only be operated with steady or constant flow of electricity between 220-230 volts. **Do not** operate machine with less than required voltage. Damage to motors and other electrical parts will result. Check voltmeter on Main Control Panel when machine is running.

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;
230 volts - 1.98 volts = 228.02 volts as the load voltage.

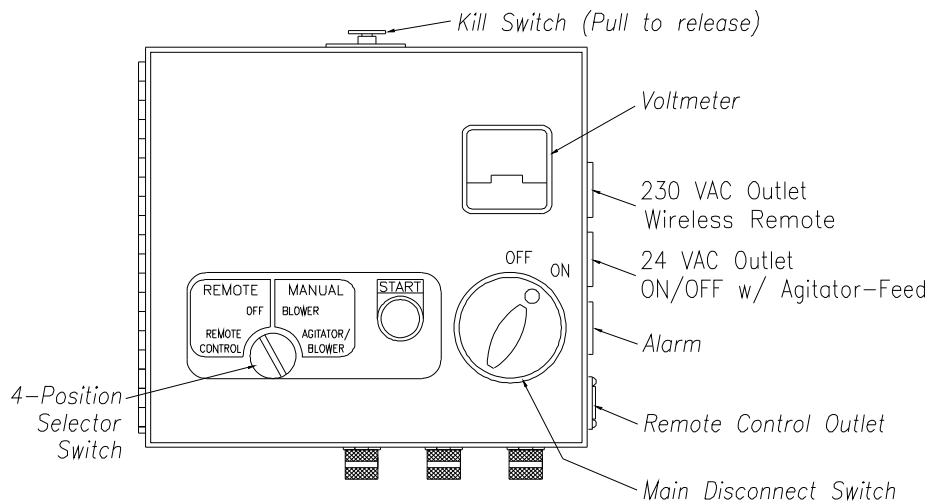
Electrical Operation

PRESS KILL SWITCH TO IMMEDIATELY STOP MACHINE AT ANY TIME!

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

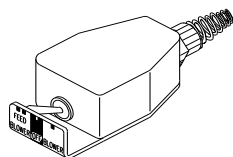
Remote:	Remote control hand pendant will control machine.
Off:	Machine will not run. (overrides remote hand pendant)
Blower:	Only the blower will run continuously. (manual control at machine)
Agitator-Feed/Blower:	Both the blower and the agitator-feed will run continuously. (manual control at machine)

Main Control Panel (lid closed)



(illustration E)

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



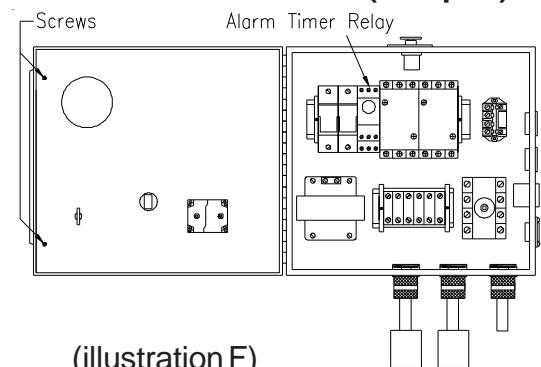
BLOWER-FEED	- operates both blower motor and agitator-feed motor simultaneously
OFF	- (middle position) all functions stop
BLOWER	- operates the blower motor only

8. Adjust blower and slidegate to desired settings. (See page 13)
9. **To adjust alarm time**, follow the procedure below: (See illustration F)

Electrical Operation (cont.)

- Unplug machine from power source.
- Turn **off** Main Disconnect Switch, loosen two screws in door, and open Main Control Panel lid.
- Turn Timer Relay knob to desired setting. (clockwise to **increase** warning time)
- Close lid, tighten two screws in door, plug in machine, turn on Main Disconnect Switch and press *green* Start Button.
- Retest machine.

Main Control Panel (lid open)



(illustration F)

Mechanical Settings

The control end of your machine contains the slidegate controls to adjust your machine for each application and type of insulation. (See illustration G) **Slidegate** (material feed) is adjusted according to:

APPLICATION:	Open blow, retro-sidewall and spray-on applications require varying amounts of control.
TYPE OF MATERIAL:	Cellulose has 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.

SLIDEGATE GENERAL SETTINGS:

Slidegate control can increase or decrease the amount of air in the system, affecting the velocity(speed) and spread rate(coverage) of insulation. (See illustration G) The slidegate control slides to control air pressure and amount of air.

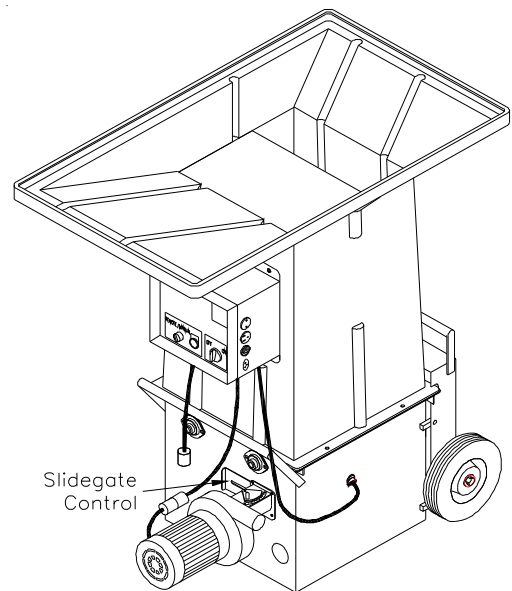
Opening or closing slidegate (material feed) controls the amount of insulation entering into the blower which changes the production rate (lbs. per hour). (See illustration G)

The slidegate control affects the distance insulation can be blown through a hose without plugging. This control also affects the accurate blowing of insulation for spraying applications.

These settings control the following:

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

Control End of Machine



(illustration G)

ELECTRICAL SYSTEM

General Operation: (See illustration H for sequence and illustration E and I for location of components)

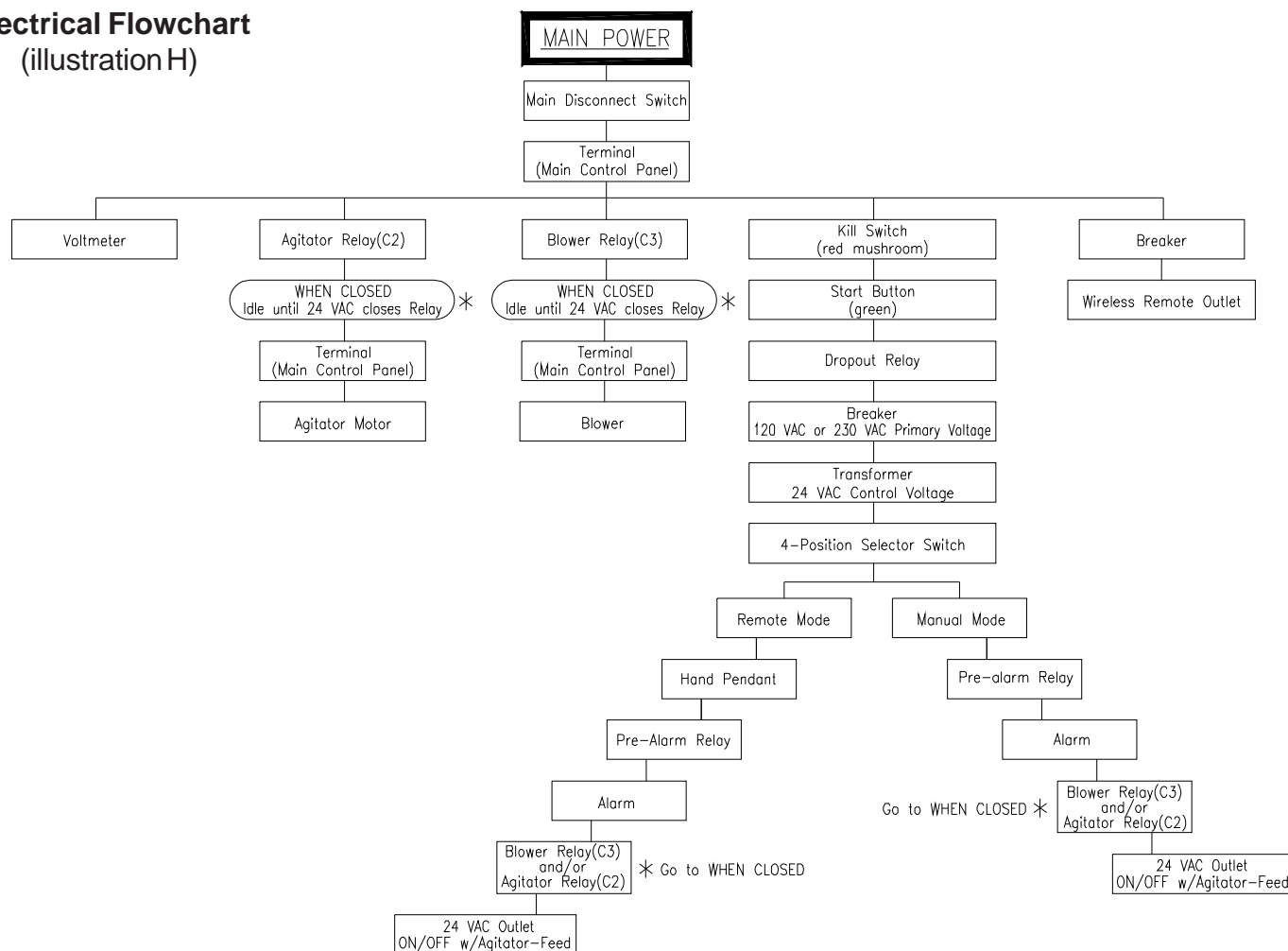
This unit is powered by **one** input source connected at the bottom of the Main Panel Panel. Turning the Main Disconnect Switch (located on front of Main Control Panel) to the ON position distributes power to the Terminal Boards of the Main Control Panel, Voltmeter, Kill Switch, and the Terminals of the agitator (C2) and the blower (C3) relays. (See illustration E)

When the Kill Switch (*red* mushroom button) is released (closed) and the *green* Start Button is pressed, power is supplied to the dropout relay(s) and the transformer. The transformer supplies 24 VAC to the 4-Position Selector Switch located on the front of the Main Panel Box.

When the 4-Position Selector Switch is turned to MANUAL mode or the 4-Position Selector Switch is set to REMOTE mode with remote control hand pendant switch closed, 24 VAC is supplied to the Pre-Alarm relay, sounding the alarm for a preset time. After the alarm stops, 24 VAC powers the blower (C3) and/or agitator (C2) relays.

If power is interrupted to this system by unplugging either main input cord(s), turning Main Disconnect Switch OFF, or pressing Kill Switch; the *green* Start Button needs to be **pressed** to reactivate the system **after** power distribution into the system has been reestablished. (See illustration I for more details.)

Electrical Flowchart (illustration H)



Electrical System (cont.)

Electrical Diagram Description for Page 16:

Tags have been placed at the end of each wire in the electrical system to identify specific wires. This identification code is as follows:

- First letter - identifies component classification
- Second number - indicates specific component
- Decimal number/letter - identifies the terminal on the component

Letter next to identification code indicates **color code**.

Second series of numbers and letters **after dash** which identify connection at opposite end of wire are as follows:

- First letter - identifies component classification
- Second number - indicates specific component
- Decimal number/letter - identifies the terminal on the component

Example: C1.8-4SBL.1

Wire is connected between Relay 1, terminal 8 and Four Position Selector Switch Bottom Left, terminal 1.

LEGENDS FOR ELECTRICAL DIAGRAM

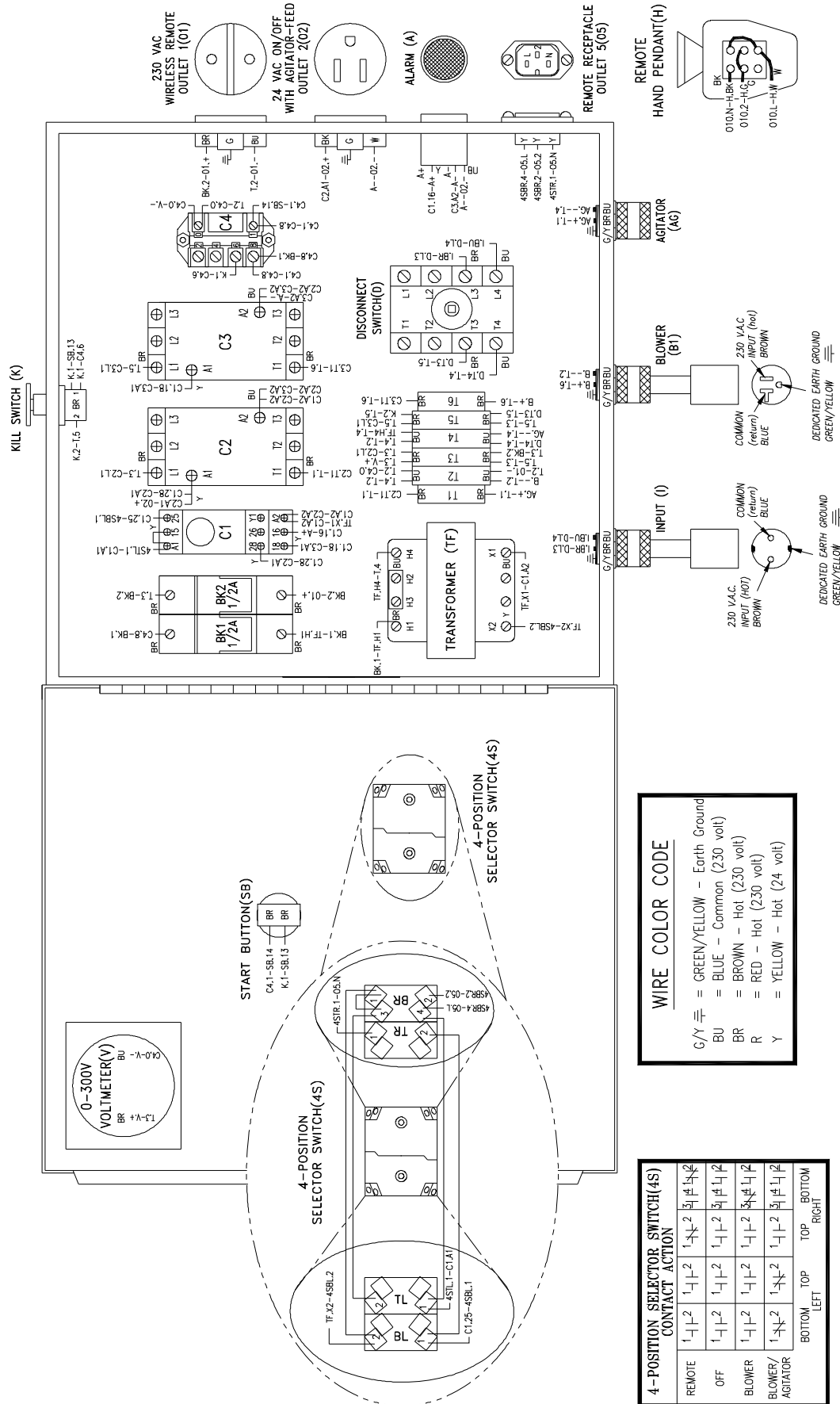
Electrical Component Abbreviations

- TF = Transformer
- C = Relay (C1,C2,C3,etc.)
- D = Disconnect Switch (.L = Disconnect input Line/ .T = Disconnect output Terminal)
- BK = Breaker (BK1,BK2,etc.)
- T = Terminal Board for Main Control Panel
- I = Input Cord
- RI = Right Input Cord (for Blower)
- LI = Left Input Cord (for Agitator)
- O = Outlet (O1,O2,O3,O4,etc.)
- V = Voltmeter
- H = Hand Pendant
- A = Alarm
- K = Kill Switch
- B = Blower (B1, B2, etc.)
- 4S = Four Position Selector Switch
- SB = Start Button
- 4SBL = Four Position Selector Switch Bottom Left
- 4STL = Four Position Selector Switch Top Left
- 4STR = Four Position Selector Switch Top Right
- 4SBR = Four Position Selector Switch Bottom Right

ELECTRICAL DIAGRAM:

Periodically, disconnect machine from power source and check all electrical connections and components for broken or loose wires.

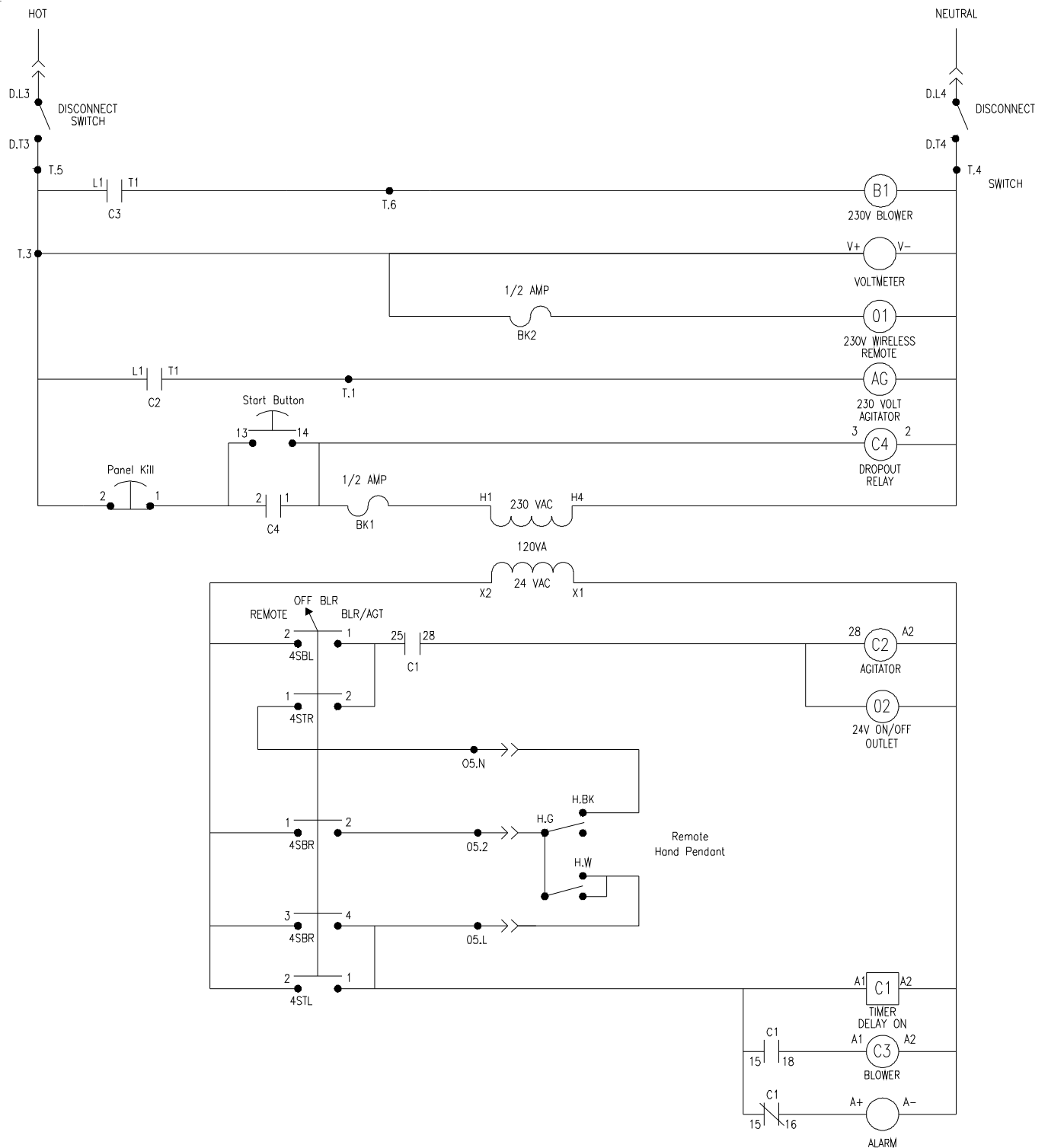
MODEL #250A
230 V.A.C. — 50 Hz (Single input)



(illustration I)

LADDER DIAGRAM

230 VOLT 50 HZ SINGLE INPUT




TROUBLESHOOTING

WARRANTY

 This unit is backed by a warranty for manufacturer's defects. If machine needs service during that time, call your supplier immediately. **Do not** attempt to service, as this voids warranty.

IMPORTANT


 At any signs of trouble with your machine, stop immediately, disconnect power and call your supplier. Always disconnect electrical power before making inspection or repairs.

Mechanical Troubleshooting

Problem	Corrective Action
1) Loud knocking sound.	A. Remove hopper and check machine agitators or airlock for foreign objects and remove. B. Check and retension belts.
2) Poor output or uneven flow through the hose.	A. Gradually decrease slidegate control setting and/or close slidegate until condition improves. B. Check hose. Remove hose from blower outlet and check for blocked material. Clean out by shaking hose. Connect hose to blower, turn blower on only for a few moments and try to free blockage. C. Check insulation hose and blower hoses on machine for damage. Check connections. Tighten hose clamps to eliminate air leakage. D. Check for misaligned agitator tines. E. Try another electrical source. Use proper size wire for input power to correct low voltage condition. F. Remove hopper, inspect airlock seals and plates for damage or wear.
3) Too much dust on open blow.	A. Reduce air into system by opening slidegate control setting.

Electrical Troubleshooting

IMPORTANT

 Whenever power is interrupted to unit (i.e., unplugged, main disconnect switch off, kill switch depressed), power must be returned by correcting power interruption condition and pressing *green* start button.

Electrical Troubleshooting (cont.)

Problem

Corrective Action

- | | |
|--|--|
| 1) Voltmeter showing no voltage or low voltage. | A. Turn Main Disconnect Switch to ON position.
B. Check input cord for proper connection to power source.
C. Check power source for proper voltage.
D. Remove lid from Main Control Panel and check voltage with multitester at voltmeter terminals. Replace defective voltmeter. |
| 2) Dropout relay does not engage. | A. Check voltmeter. If no voltage, refer to #1 above.
B. Check power on input cord.
C. Check indicator light on solid state relay(C4). On double input machines, check the solid state drop-out relay on the right. (If light is "on", refer to #3.) |
| 3) Dropout relay is engaged(light is "on"), but machine will not run. | A. Check transformer breaker (breaker #1) with continuity tester.
B. Check secondary output of transformer (24volt). Replace if necessary |
| 4) Machine does not function with hand pendant while 4-Position Selector Switch is in REMOTE mode. | A. Check for proper start-up conditions as mentioned at beginning of this section. (See #2)
B. Be sure remote control cord is properly plugged into Main Control Panel.
C. Check remote control cord and hand pendant switch for damage or loose connections.
D. If neither Remote mode or Manual mode will function, check transformer breaker (breaker #1) with continuity tester. |
| 5) Blower motor does not run, but drive motor does run. | A. Check operation in remote mode and manual mode with 4-Position Selector Switch and remote hand pendant.
B. Check blower switch for ON position.
C. Check for loose blower cord plug-in connection at drop cords from Main Control Panel.
D. Check blower motor. Manually unplug blower(s) and plug directly into a separate power source, (i.e., extension cord). Disconnect power supply and visually inspect system for defective, broken or loose wiring connections inside blower box.
E. Check blower breaker(s) in Main Control Panel with a continuity tester.
F. Visually inspect and/or replace blower relay(C3) inside Main Control Panel. |
| 6) Blower motor does not run in manual mode. (4-Position Selector Switch.) | A. Check wiring connections on Selector Switch contacts. (Located on back of Main Control Panel door.) |

Electrical Troubleshooting (cont.)

- | | |
|--|---|
| 7) Blower motor running hot. | A. Blow out blower motor and surrounding area with compressed air.
B. Check material hose for blockage. A restriction in the material output hose will cause the blowers to run hotter than normal.
C. Check blower motor for proper operation. (i.e. bearings, armature, or worn brushes.) |
| 8) Excessive arcing of brushes on blower motor. | A. Blow out brush assembly area with compressed air to remove accumulation of dirt and debris.
B. Check blower motor for proper operation. (i.e. bearings, armature, etc.) |
| 9) Motor does not run, but blower motor does run. | A. Manual Reset on motor is tripped. Disconnect power supply to machine. Wait until motor cools, (approximately 15 minutes), and press button on machine to reset.
B. Check for loose plug-in connection at drop cords from Main Control Panel. If there is a good connection, unplug motor from back of Junction Box and plug directly into a separate power source (i.e., extension cord). You will need to remove or change motor plug, and connect directly to power supply. (check for proper voltage 230 volt)
C. Visually inspect and/or replace agitator relay (C2), inside Main Control Panel. |
| 10) Motor running improperly or hot. | A. Disconnect power. Check agitators and airlock for debris.
B. Low voltage. Try another electrical source. Use proper wire size for power input cords.
C. Check bearings, pulley and belts for binding, failure, or drive system misalignment.
D. Remove belts. Run motor under power. Check amperage.
E. Make sure the voltage, cycle (hertz), phase (1), and direction of rotation is correct.
F. Replace motor and/or reducer. |
| 11) Pre-alarm sounds too long or continues without activating machine. | A. Pre-alarm relay C1 (relay with control adjustment), should be turned counterclockwise/left. This will reduce time duration of alarm.
B. Replace relay module. |

PARTS LIST

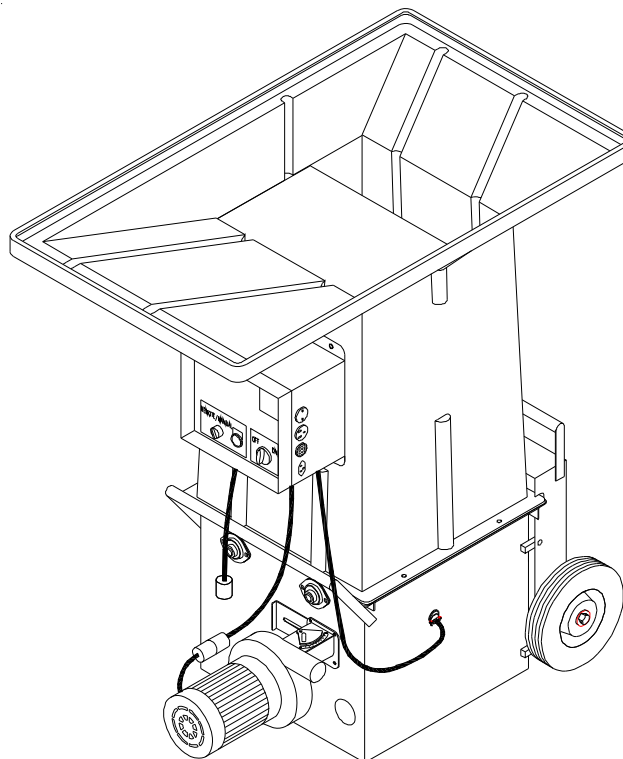
The manufacturer recommends that all repairs be made at its own factory service center. Machine repair done by the manufacturer is warranted for 90 days on repair parts and workmanship.

If you choose to have repairs made elsewhere, we offer replacement parts that have been carefully inspected to insure they meet the specifications of the original part. Any disassembly and reassembly of the unit to replace the defective part must be done with care to insure proper fit and alignment. No warranty consideration will be extended on parts that appear to be mishandled. All units should be run for a few minutes without material to insure proper alignment. All questions regarding replacement of parts should be directed back to the factory.

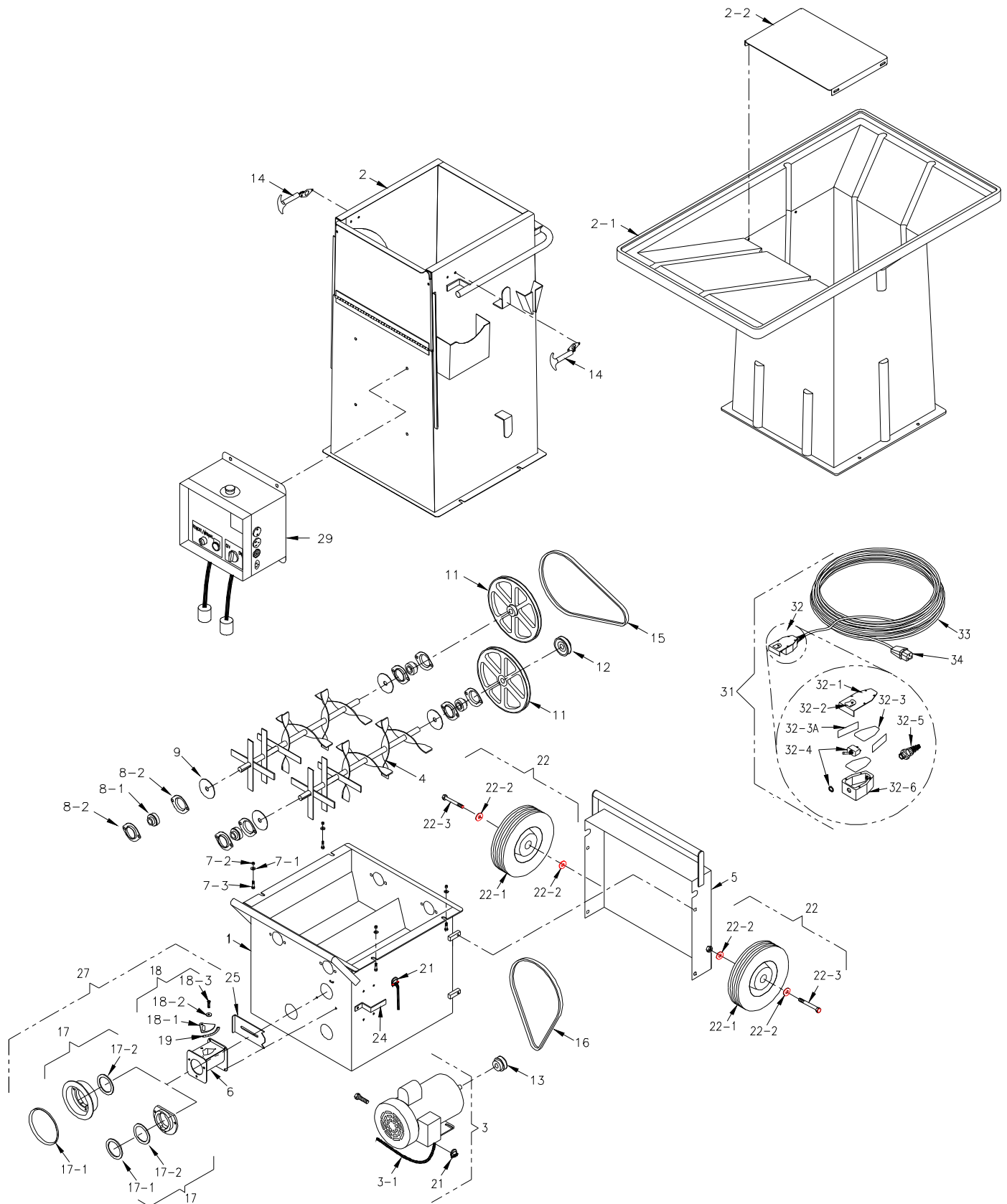
IMPORTANT: Certain information is needed concerning your specific machine when ordering replacement parts:

- Machine Model number (i.e. Model #250A) • Serial Number
- Date Purchased
- Voltage of unit (main input): 120V or 230V(overseas) - single or double input
- Cycle: 50 or 60 hz. (U.S. and North American models are 60 hz.)
(**Most** overseas units are 50 hz. Check invoice for correct cycle.)
- Blower Type

If this information is not known, contact supplier with serial number of machine. This information is needed on mechanical parts as well as electrical components. (Due to mechanical adjustments that compensate for electrical requirements, the above information is needed.)



MODEL #250A -- PARTS LIST



MODEL #250A -- PARTS LIST

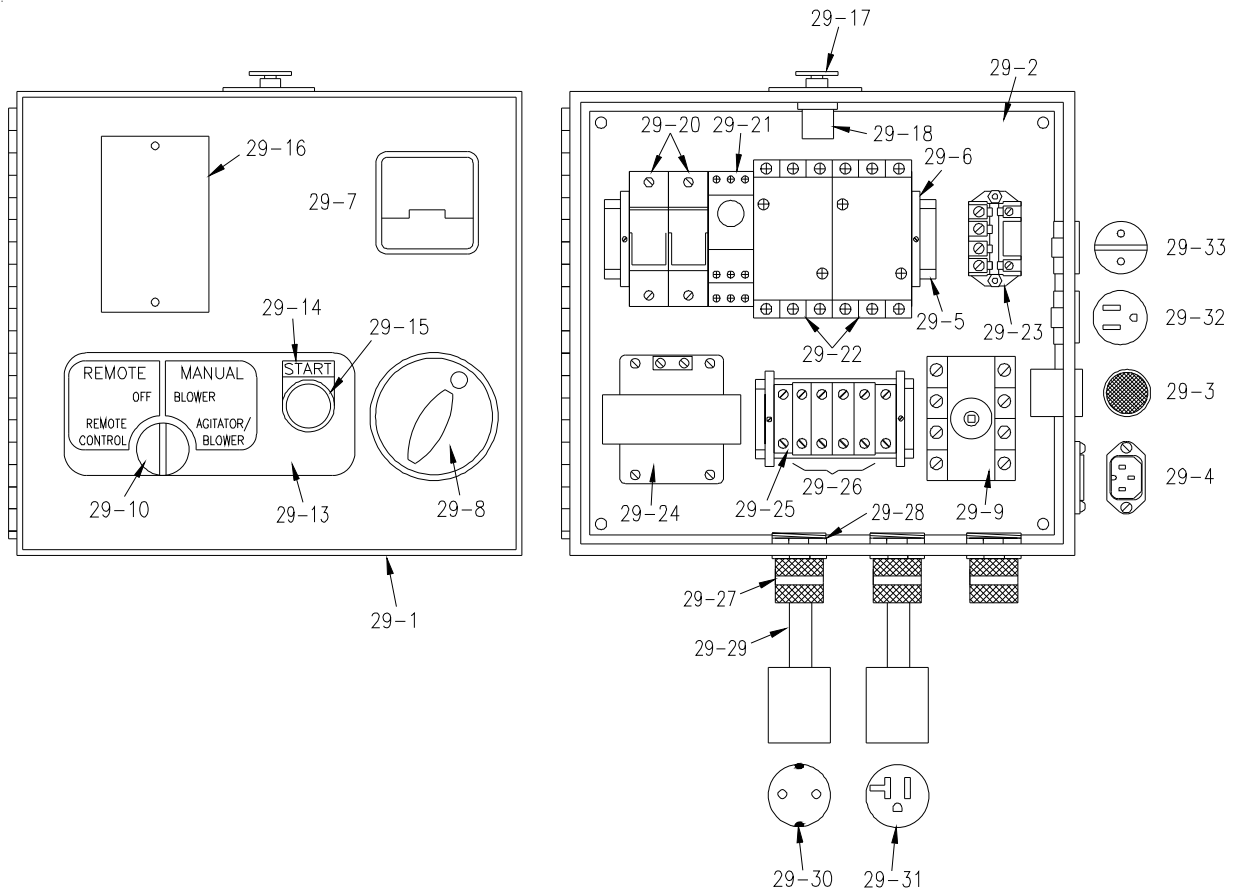
Item #	Part #	Description
1	2501-A-R1	Base
2	250A-9	Hopper
2-1	4502-P	Hopper (Plastic) w/Loading Tray
2-2	4502-B-7	Hopper Insert
3	2503-60-ASSY-R2	Motor Assembly, 3/4HP, 56 Frame, T.E.F.C., 120V/60HZ (U.S.)
3	2503-50-ASSY-R2	Motor Assembly, 3/4HP, 56 Frame, T.E.F.C., 230V/50HZ (Overseas)
3-1	12-3 SJ	Cord, 12-3 SJ x 57" (U.S.)
3-1	12-3-SJ-M	Cord, 12-3-SJ-M x 57" (Overseas)
4	2504	Agitator, Shredder (2)
5	2506A-R1	Guard, Belt
6	2508	Air Manifold
7-1	FW007	5/16 Flat Washer (4)
7-2	FN014	N 5/16-18 Lock Nut-Crimped (4)
7-3	FSB038	SB 5/16-18 x 1 HMS (4)
8-1	107-1	Bearing, 3/4" Insert Only (#UC204-12-GO) (4)
8-2	1507	Housing, Flange, 3/4" 2-Bolt (8)
9	1506	Seal, Felt, 3" x 3/4" Bore (4)
11	108	Pulley, 10" Diameter x 3/4" Bore (2) #AL104 x 3/4 (2)
12	214	Pulley, 3" Diameter x 3/4" Bore (AK28 x 3/4)
13	109	Pulley, 2" Diameter x 5/8" Bore (AK20 x 5/8)
14	23-99	Latch, Pull (2)
15	1511	V-Belt, #4L410 (Agitator Drive)
16	111	V-Belt, #4L420 (Motor Drive)
17	112-AA	Adapter, 2" w/Gasket
17	112-BA	Adapter, 2 3/8" w/Gasket
17	112-CA	Collar, 6" w/Gasket
17-1	113-A	Gasket, 3/16" Standard f/2" Adapter
17-1	113-B	Gasket, 3/16" Standard f/2 3/8" Adapter
17-1	113-C	Gasket for 6" Collar
17-2	114-A	Gasket, 1/16" Shim for 2" Adapter
17-2	114-B	Gasket, 1/16" Shim for 2 3/8" Adapter
17-2	114-C	Shim for 6" Collar (zinc)
18	142	Air Control Valve Assembly w/spring and screw
18-1	115	Valve, Air Control (less spring & screw)
18-2	F001	Washer, Wave (2)
18-3	FSB022	SB 1/4-20 x 3/4" RMS
19	116	Guage
21	141	Cord Clamp, 3/8" (2) (#30384)
22	W-10	Wheel Package, 10"
22-1	4520-1	Wheel, 10" (2)
22-2	FW018	Washer, 9/16" Flat (4)
22-3	FSB071	5/8-11 Bolt, 3" (2)
24	2531	Bracket, Cord (Overseas Only)
25	2509	Slidegate
27	2508A	Manifold, Air Assy w/ 2" Adapter
27	2508B	Manifold, Air Assy w/ 2 3/8" Adapter

MODEL #250A -- PARTS LIST

Item #	Part #	Description
27	2508C	Manifold, Air Assy w/ 6" Collar
29	ELU11-1566	ELU, 230V/50HZ S.I. (See page 25 for components)
31	ELU95-395A-D	RC Cord Assy, 100', ELU, Style D
32	1536-A	Hand Pendant, ELU/DPDT
32-1	1536-1-A	Cover, Switch with belt clip & guard
32-2	1536-7	Belt Clip
32-3	1536-2	Insulator (2)
32-3A	1536-2A	Insulator, side (2)
32-4	109066-9	Switch, toggle, DPDT (1)
32-5	1536-4	Cord Restraint
32-6	1536-5	Switch Housing
33	18-3 SJ	Wire, 18-3 SJ (100')
34	543-M-8	Plug, #509-1215

MODEL #250A -- ELECTRICAL PARTS LIST

230 V.A.C. 50 Hz.



Electrical Exploded Parts List

Item#	Part#	Description	Item#	Part#	Description
29-1	1557-R2	Box, Electrical 11" x 13" x 7"	29-17	508-2	Switch, Kill
29-2	1565	Plate, Backing for Electric Box	29-18	8075-1	Contactor, Kill Switch
29-3	543-M-38	Alarm for Pre-Alarm System, 24V	29-20	BRKR-5	Breaker, 1/2AMP(2)
29-4	543-M-2	Receptacle, RC Plug #509-1050 (remote)	29-21	ELU06-6	Timer, 24 VAC
29-5	RM-DINRAIL-A	Dinrail, 1 3/8"	29-22	ELU11-5	GE Contactor / Relay 25 Amp (2)
29-6	151080-49	Clamp, f/ 1 3/8" Din Rail (4)	29-23	ELU10-12	Relay, E-Mech, Control-V230, DPDY-NO
29-7	1531-B	Voltmeter, 0-300V	29-24	ELU06-10	Transformer 2A
29-8	54-M-33-OS	Operator Handle Assembly (Overseas)	29-25	151080-61	Terminal Block, Small (2)
29-9	543-M-33-D	Switch, Disconnect 40A #XA324BY	29-26	151080-62	Terminal Block, Large (4)
29-10	543-M-22	Switch, 4-position Selector	29-27	543-M-17	Connector, Cord, Liq.Tite, 1/2" Blue (3)
29-11	543-M-15	Contact Block , Selector Switch (white) #KA-1 (not shown)	29-28	391N-A-3	Locknut, Steel, Conduit, 1/2" (3)
29-12	543-M-16	Contact Block , Selector Switch (red) #KA-3 (3) (not shown)	29-29	12-3-SJ-M	12-3 SJ w/Brown/Blue/Green/Yellow
29-13	KMC-068	Decal, (Remote/Manual - 4-Position)	29-30	ELU06-9	Plug, European
29-14	543-M-60	Start Legend Plate	29-31	543-M-97	Cord & Connector Assy (Blower)
29-15	543-M-59	Switch, Pushbutton On	29-32	1544	Receptacle, NEMA# 5-15R
29-16	532	Plate, Block-Off	29-33	543-M-78	Socket, Schuko, 16A Cover Panel
			29-34	ELU06-1	Cover, Transformer (not shown)
			29-35	ELU10-13	Cover, ELU10-12, E-Mech Relay

GLOSSARY

BRIDGING	A tendency for insulation 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 insulation as it leaves the hose.
CHECK VALVE	A valve that allows air to flow in one direction only. When mounted on the outlet of the blower, it protects the blower from insulation contamination through the air hose when using one blower. When the blower stops, the valve closes.
COMMERCIAL SPRAY-ON	The application of insulation 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 insulation coverage, usually measured in square feet, according to the R-value desired. This information is given on the insulation package.
NEW CONSTRUCTION WALL CAVITY SPRAY	The spray application of insulation with water or adhesive into an exposed wall cavity to later be covered with drywall sheathing, etc.
PSI	Pounds of pressure per square inch of force exerted on a surface by air or liquid. High-pressure blowers push the insulation through the hose. Higher pressure provides less hose plugging and increased compaction in side wall.
PRODUCTION RATE	Pounds of insulation 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 insulation into an unexposed wall cavity. Insulation is usually installed through holes drilled into the exterior siding.
SETTLED DENSITY	The point at which the insulation will not continue to settle further. Any insulation blown will have a certain amount of progressive settling that occurs over a period of time. Following the insulation manufacturer's recommendations for bag rate coverage will provide useful information to accommodate for settling.
SETTLING	Compression or 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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