KRENDL™

The Innovator in Insulation Equipment

OWNERS MANUAL

MODEL #475-IDI

QUALITY RELIABILITY DURABILITY SERVICE KRENDL Performance

65 YEARS OF AMERICAN INGENUITY

KRENDL MACHINE COMPANY • 1201 SPENCERVILLE RD
DELPHOS, OHIO 45833 • TELEPHONE 800-459-2069 • FAX 419-695-9301
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CONGRATULATIONS ON YOUR PURCHASE OF KRENDL EQUIPMENT

MODEL #475-IDI
OWNER'S MANUAL

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

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INTRODUCTION

Thank you for purchasing a **KRENDL INSULATION MOVING MACHINE.** With over sixty five 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_____ Gear motor manufacturer_____

Blower(s) serial number(s)_____ Gear motor serial number_____

Supplier_____ Date of purchase_____

The model and machine serial numbers are located on the hopper of the machine unit. The blower and gearmotor serial numbers are located on the motor housing of each unit.

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 including wheel package, manual, ect....

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 insulations that are dry, undamaged and that meet a certain industry specification or quality standards.
- Set screws on tension bar inside hopper have not backed out due to vibration. This could cause material to get underneath the base and damage motors. Failure to check **will** void the warranty on motors.

DECALS

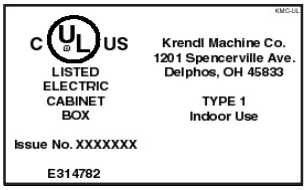
Keeping the filter clean will result in longer blower life and better performances.

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

Indicates this machine is made exclusively for IDI.

Rotating parts move in this direction.

Made in the U.S.A.



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

Indicates which way opens and closes the material feed gate which in turn controls the production

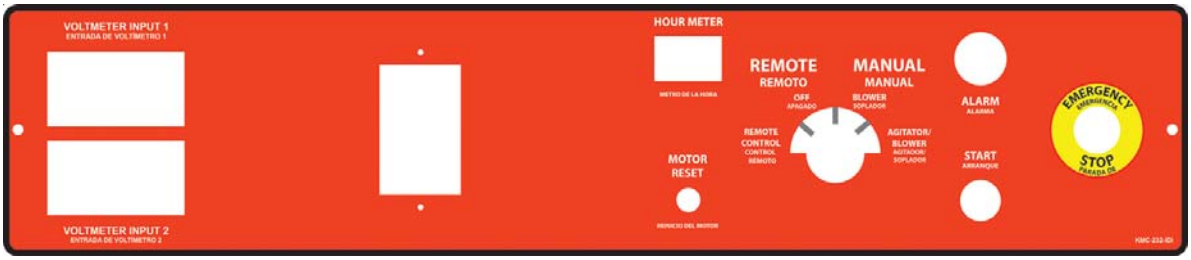
General safety information intended to reduce the risk of serious injury or death

Indicates this unit has two power sources that should be disconnected before servicing to reduce the risk of serious injury or death.

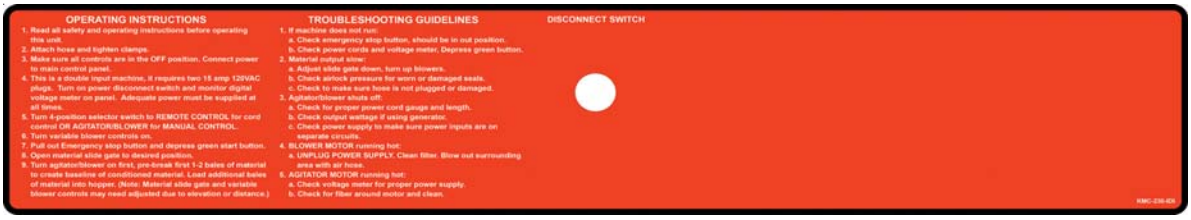
Identifies position of material feed gate.

Model number of machine for identification.

Manufacturer information is provided here along with machine serial number.



Indicates the controls that start, stop, and run the machine.



Provides the necessary instructions to properly operate and troubleshoot the machine. Failure to follow these instructions could result in damage to the machine.

Specifies the voltage and amps this outlet is rated for.

Identifies the two outlets on this side of machine.

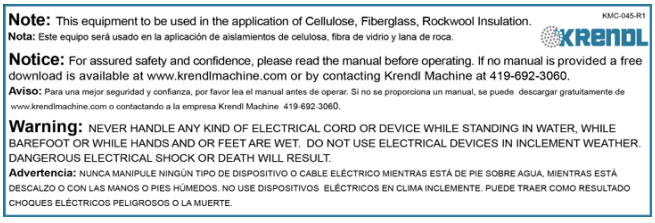
Remote Control Outlet - Indicates that this outlet is intended for only the remote control outlet. Each time machine cycle starts, an audible alarm warns the operator that the machine is about to come on.

24VAC On/Off Outlet - Specifies the voltage this outlet is rated for. Power turns on and off with remote.

Indicates which employee inspected the equipment and on what date.

KMC-01234

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.

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, 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#:	475-IDI
HEIGHT:	75" (191 cm)
WIDTH (DEPTH):	31 1/2" (80 cm)
LENGTH:	40 1/2" (103 cm)
WEIGHT:	405 pounds (184 kg)
ELECTRICAL:	120VAC, (2) 15 amp, D.I.
BLOWER VOLUME:	140 CFM
BLOWER PRESSURE:	3 1/2 PSI maximum
HOSE OUTPUT:	3” diameter (7.6 cm)

MAXIMUM FEED RATES:

CELLULOSE:	2100 lbs/hr	(953 kg/hr)	70 bags per hour
FIBERGLASS:	700 lbs/hr	(318 kg/hr)	23 bags per hour

WARNING: Recommended hose size, type and length must be used to achieve maximum results. Krendl cannot guarantee performance of the 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: #475-IDI

This is a view of the basic components of your #475-IDI machine. It shows the location of each item and gives the function of each. Use this as a guide throughout the manual.

A) BASE UNIT — Lower frame unit supporting blower, gearmotor, airlock and hopper.

B) AIRLOCK — Traps air and insulation while providing a metered flow.

C) MOTOR & REDUCER — Provides driving power of agitation system. Increases output power while decreasing speed of the agitators and airlock.

D) BLOWER — Creates air pressure to blow fiber out of airlock.

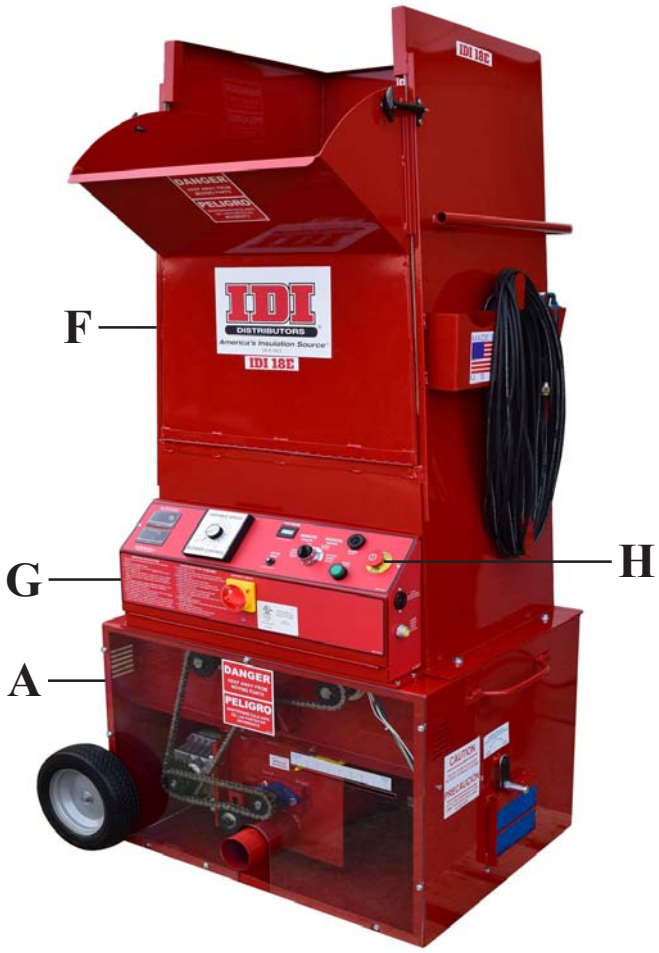
E) AGITATORS (2) — Conditions insulation in the hopper.

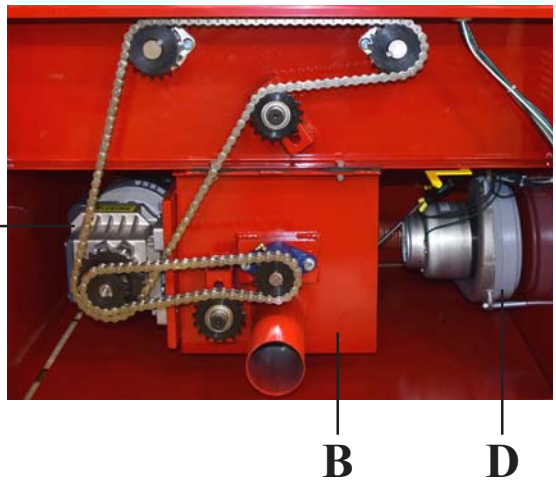
F) HOPPER — Upper unit of machine holding insulation.

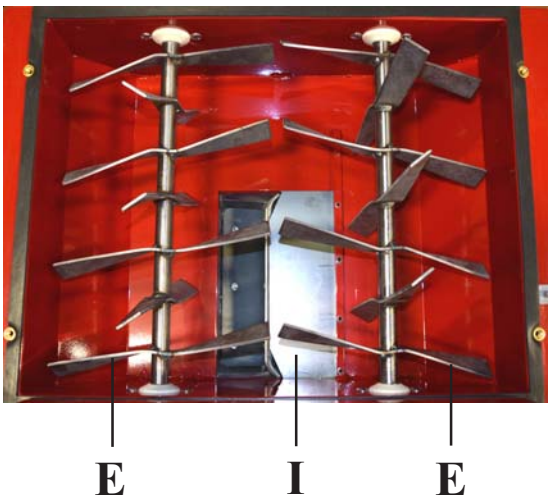
G) MAIN CONTROL PANEL — Connects with main power, allowing operation of unit at machine.

H) EMERGENCY STOP BUTTON — Safety device for immediate stopping of machine. (Located on electrical box)

I) SLIDEGATE — Meters the amount of insulation dropping into airlock by controlling size of airlock opening







OPERATING INSTRUCTIONS

Machine Hook-up

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

The #475-IDI provides a direct connection to 3" insulation hose. Slide hose on to outlet 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 on machine. (See Illustration A)

The first bag of insulation into hopper should be well broken by hand to assist agitator action. **Caution: Never** put hands in hopper when machine is running or force feed material 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(s) located on side of Main Control Panel. (See Illustration A)
   On double input units, **both** inputs must be supplied with power from two separate sources for unit to work properly. The 15 amp plug (Input 1) must be plugged into one circuit and the 15 amp plug (Input 2) plugged into a separate circuit. See instructions below.
   a. **For 120volt, 60hz. models,** the extension power cords should have an input wire gauge size of #12-3 for both 15 amp inputs and not exceed 50' in length. **(See Voltage Drop Chart on page 10)**

(Illustration A)

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.

Caution: Operating unit with less than required voltage, more than required voltage, or inadequate generator size will result in damage to electrical components. This machine is marked on the side of the Main Control Panel with the correct input voltage required. **Note:** Agitator motor and blower should only be operated with steady or constant flow of electricity. **Do not** operate machine with less than or more than required voltage. Damage to motors and other electrical parts will result, voiding warranty. Check voltmeter(s) on Main Control Panel when machine is running.

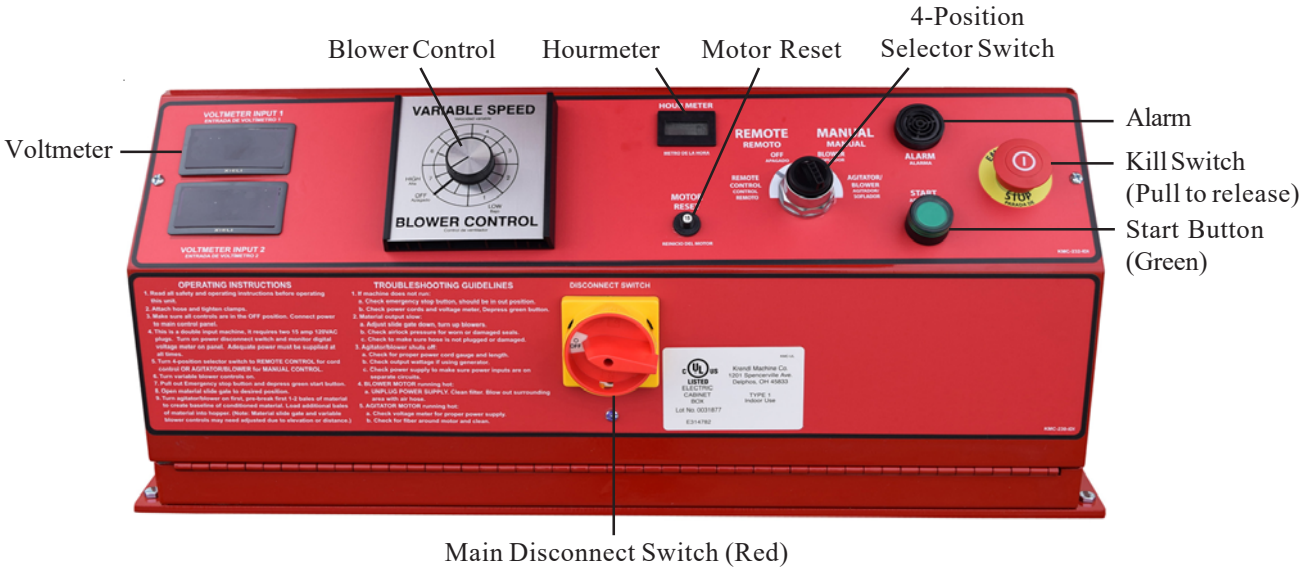
Electrical Operation

PRESS KILL SWITCH TO IMMEDIATELY STOP MACHINE AT ANY TIME!

1. Make sure Kill Switch is out by pulling. (See Illustration B)
2. Turn *red* Main Disconnect Switch to ON position. (See Illustration B)
3. Set 4-Position Selector Switch to OFF. (See Illustration B)
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 B)
5. Select operating mode on 4-Position Selector Switch from one of the following options:

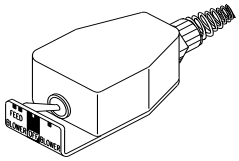
Remote:	Remote control hand pendant will control machine.
Off:	Machine will not run. (overrides remote hand pendant)
Blower:	Only the blower will run continuously. (manual control at machine)
Agitator-Feed/Blower:	Both the blower and the agitator-feed will run continuously. (manual control at machine)

Main Control Panel (lid closed)



(Illustration B)

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



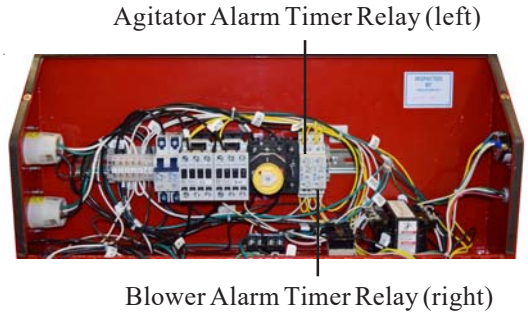
BLOWER-FEED	- operates both **blower motor** and **agitator-feed motor** simultaneously
OFF	- (middle position) all functions stop
BLOWER	- operates the **blower motor** only

8. If using optional Internal Wetting System (IWS), connect IWS cord to 24 VAC Outlet on Main Control Panel. (See Illustration A)
9. Adjust blower and slidegate to desired settings. (See page 12 and 13)

Electrical Operation Cont.

10. **To adjust alarm time**, for agitators and blowers follow the procedure below: (See Illustration C)
    a) Unplug machine from power source.
    b) Turn **off** *red* Main Disconnect Switch, loosen two screws in door, and open Main Control Panel lid.
    c) Turn Timer Relay knob for agitator (timer on left) to desired setting. (clockwise to **increase** warning time)
    d) Turn Timer Relay knob for blower (timer on right) to desired setting. (Note, by turning blower relay knob clockwise by (1) sec more than the agitator relay it will reduce hose plugging and power draw)
    e) Close lid, tighten two screws in door, plug in machine, turn on *red* Main Disconnect Switch and press *green* Start Button.
    f) Retest machine.

Main Control Panel (lid open)



(Illustration C)

Mechanical Settings

Your machine contains blower and slidegate controls used to adjust your machine for each application and type of insulation. (See Illustration D for machine model and location of controls) **Blower control** (air) and **slidegate** (material feed) are adjusted according to:

Application:	Open blow, retro-sidewall and spray-on applications require varying amounts of control.
Type of Material:	Cellulose, fiberglass, and mineral fiber 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.

(Illustration D)

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 insulation. (See Illustration D) The blower control dial operates clockwise, from HIGH to LOW, controlling air pressure and amount of air.

Opening or closing slidegate (material feed) controls the amount of insulation dropping into the airlock which changes the production rate (lbs. per hour). (See Illustration D) For calibration purposes the scale located on right side of machine indicates how many inches the airlock slidegate is opened.

The blower and slidegate controls **working together** affect the distance insulation can be blown through a hose without plugging. These controls also affect 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).

GENERAL BLOWER CONTROL AND SLIDEGATE SETTINGS FOR OPEN BLOW:
With the **slidegate** closed, turn **agitator-feed motor on** and variable speed blower control on low. Fill hopper with insulation and adjust **blower control** and **slidegate.** In making adjustments, move controls proportional to each other. (i.e. If variable speed **blower control** is half speed, **slidegate** should be half open.) Open slidegate to allow insulation to drop into the airlock providing good production, but not beyond point where hose plugs. As hose length is increased, the **blower control** speed is increased while closing the slidegate proportionally. This will increase the distance insulation can be blown through the hose and improve material coverage rate, while decreasing the blowing production rate (lbs. per hour blown). These adjustments are for open blow. If specialty application or retro sidewall work is done, refer to General Blower/Slidegate Settings chart (below left) or fiber manufacturer. (See Illustration D)

GENERAL BLOWER/SLIDEGATE SETTINGS:
Since specific settings need to be determined by each operator, the following are only suggested guidelines. Consult the insulation manufacturer for additional recommendations specific to **their** product.

APPLICATION	BLOWER CONTROL	SLIDEGATE
Open Blow	High	Full Open
Sidewall-Retrofit	Low-Med	1/3 Open -Half Open
Wall Cavity Spray	Medium	Half Open
Commercial Spray (Adhesive)	High	One-third Open

GENERAL MAINTENANCE

Periodic preventive maintenance will add years of life to your equipment. Reviewing the information in this manual will go a long way in reducing downtime. **Remove hopper** for easy maintenance of lower base unit.

KEEP CLEAN: During operation, keep material from accumulating on Blower Filter and keep vent holes on side of machine clear of debris by blowing with compressed air. Always keep Filter in place while operating machine. After each use, remove insulation from hopper and blow out hose.
Caution: Be sure to unplug machine before servicing.

Note: For certain models the gear box located on the side of the airlock may contain a vent cap. Keep airlock upright to prevent oil from leaking out of vent cap.

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

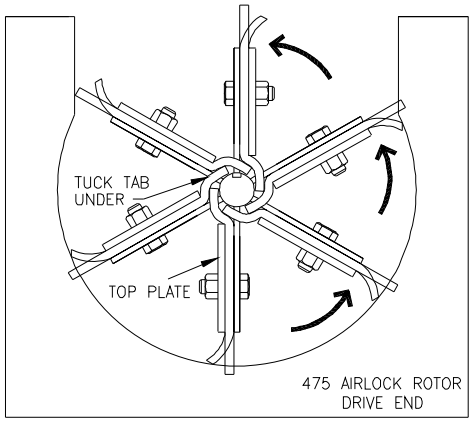


Illustration E

Remove hopper from base unit. Check airlock rotor plates for damage (bent). If damaged (bent) the entire airlock will need replaced. (Refer to Airlock Replacement below.) Take out rubber seal by removing the three plate fastening bolts and top plate. Install new seal. Seal should be inserted tight against the rotor plate, pressing the lower tabs of seal down under the adjacent seal with a flat blade screwdriver. (See Illustration E) Before tightening bolts make sure all bolt holes are aligned while each side of seal is equally pressed against the end plates. Seal should be bent backwards for **counterclockwise** rotation.

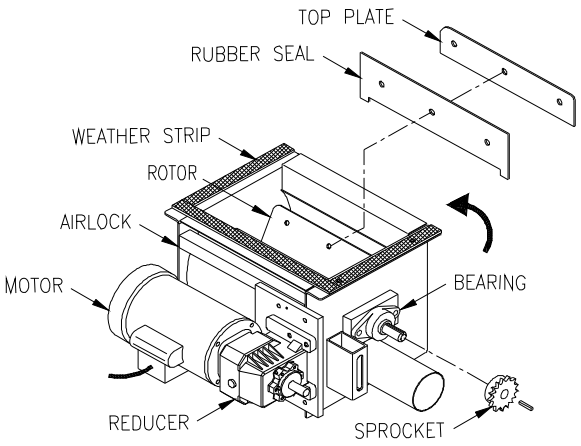


Illustration F

AIRLOCK REPLACEMENT:

1. Remove the chain guard, chain, and hose from airlock.
2. Lay machine down and remove bottom guard and two bolts that secure airlock to machine. Take note of electrical connections and unhook gearmotor drive wires.
3. Remove airlock from machine.
4. Remove top plate and seal from rotor. Check seal and top plate for wear and/or damage. (See Illustration F)
5. Remove gear motor and bearings from old airlock.
6. Install gearmotor and bearings on new airlock. Tighten set screws on locking collar of bearings. (See Illustration F)
7. Install seal and top plate. As seal and top plate are installed, press bottom tab of seal under adjacent seal with flat blade screwdriver. (See Illustration E)
8. Install weather stripping on top outer edge of airlock. (See Illustration F)
9. Place airlock back into machine and reattach with bolts. Reinstall chain and sprocket.
   NOTE: When inserting airlock back into machine, make sure back lip of airlock slides into airlock track then fasten bolts. Also, make sure slidegate is in slidegate track.

General Maintenance (cont.)

Make sure seal and top plate are assembled on **correct** side of rotor plate before assembling in airlock. Seal should press backward towards top plate when installed correctly into airlock chamber. The airlock runs **counterclockwise** viewing it from the sprocket drive shaft. (See Illustration E)

Caution: If installed 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 **counterclockwise** rotation of rotor.

CHAIN: (#40 Nickel Plated)

ADJUSTMENT: 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. Excessive chain tension or loose chain will cause shortened life of bearings, chain, and sprocket. Chain should be kept in good condition by proper lubrication (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 insulation 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 the idler sprocket, 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 screw. Gearmotor sprocket does **not** require Loctite.

BEARINGS:

AGITATOR BEARINGS in base unit are prelubricated, double-sealed, self aligning ball bearings. **No** lubrication is necessary. If bearings produce noise or heat *(too-hot-to-touch)*, replace the bearings.

AGITATOR BEARING REPLACEMENT: Spray area with rust penetrant (WD-40). Remove sprocket (See SPROCKET section above). Remove the two bolts from bearing flange and outer flange from bearing insert. Loosen set screws on bearing hub at each end of agitator shaft. Since all set screws are installed with a medium grade Locktite, a propane hand 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.

AIRLOCK BEARINGS are prelubricated, double sealed, self aligning ball bearings. Lubrication **is** required at three month intervals of normal running time, or sooner if bearings produce a noise or become *too-hot-to-touch*. Relubrication at the grease fittings is done with a lithium base grease conforming to a NLGI GRADE TWO consistency. The grease should be pumped in slowly until a slight bead forms around the seals. This bead, in addition to acting as an indicator of adequate lubrication, provides additional protection against the entry of foreign matter. **Important:** If a slight bead does **not** form, indicating a failure of lubrication, or if bearing shows signs of wear, replace bearing.

General Maintenance (cont.)

AIRLOCK BEARING REPLACEMENT: Remove two bolts from bearing and follow steps above for agitator bearing replacement.

SPEED REDUCER:
Periodically check oil level in reducer. If speed reducer malfunctions because of improper oil level or type used, **warranty is voided**. Oil seals at input and output drives are considered to be replaceable maintenance items and can affect oil level. These are available at power transmission distributors. Your speed reducer has been filled with a synthetic lubricant (Mobilgear SHC 320).

LUBRICATION: This speed reducer was filled with oil at the factory to operate within -25°F to +113°F ambient temperature. This reducer will not require regular oil changes under normal industrial operating conditions. However, if the reducer is operated in severe environments (i.e. high or low temperatures, high altitudes) oil changes may be required.

AGITATOR MOTOR:
If agitator motor runs hot, unit may shut off. Wait for motor to cool, then activate the manual reset on Main Control Panel by depressing button. If unit does not run properly, refer to troubleshooting sections of manual. The agitator motor should start quickly and run smoothly. If not, shut motor off **immediately** and check the cause. Low voltage, incorrect power supply, bad bearings, or misconnected wiring could cause motor failure. **These conditions void the motor warranty.** Overload conditions can be detected by checking the electrical current (amperage) compared with nameplate current (amperage) located on the body of the motor.

AGITATOR MOTOR REPLACEMENT: (See Illustration G) Disconnect power from machine. Remove chain guard and drive chain. Lay machine down and remove bottom guard. Take note of electrical connections and unhook motor drive wires. Loosen hose clamp on rear airlock input tube. Slide hose off airlock. Remove airlock and motor drive assembly out of base. **Note: When agitator motor is replaced reverse this procedure for assembly.** Remove four reducer flange bolts with a 9/16" socket wrench. (If bolts are difficult to reach, remove reducer unit from airlock for better access.) Pry motor from speed reducer a slight distance, using a large flat blade screwdriver placed in one of the slots where they join together. Pull motor unit straight away from speed reducer, retaining key. If motor does not separate easily, contact factory for assistance. Before installing replacement motor, refer to motor nameplate. Check connection of new cord for correct voltage (low or high) and proper rotation of **motor** output shaft (**counterclockwise** facing output shaft). Rotate keyways of motor shaft and quill (input) of speed reducer to 12:00 o'clock position. Assemble the key 3/4" off the end of the motor shaft and coat motor shaft with anti-seize compound. Align and insert the motor shaft carefully into the input quill. (A flat blade screwdriver may be helpful to keep key in place as motor shaft is inserted or centerpunch motor shaft.) Secure to flange with four hex bolts.

Caution: If the motor does not readily seat itself, check to determine if **key** has moved axially along motor shaft, causing interference. Tightening motor to reducer with excessive pressure against key will cause premature bearing failure and overheating of motor and reducer. Reconnect motor drive wires and check for correct rotation of **speed reducer** output shaft (**counterclockwise**). Reconnect assemble unit for operation.

BLOWER MOTOR:

Periodically lay machine on its side and vacuum any material that has accumulated around blower motor. Blow out any remaining debris around motor and intake orifice of fan with compressed air. This will extend the life of the blower significantly. Blower filter life can be extended by occasional removing and blowing through with compressed air. Filter should be replaced periodically depending on use. If blower produces noise or heat, refer to troubleshooting section of manual.

BLOWER REPLACEMENT: (See Illustration H) Disconnect power from machine. Remove chain guard. Loosen hose clamp on blower and slide hose off blower. Take note of electrical connections on blower and unhook blower wires. Remove three bolts and spacers from machine and remove blower. Reverse procedure for assembly. **NOTE: Do not over tighten bolts on re-assembly, it may damage blower and void warranty !!!**

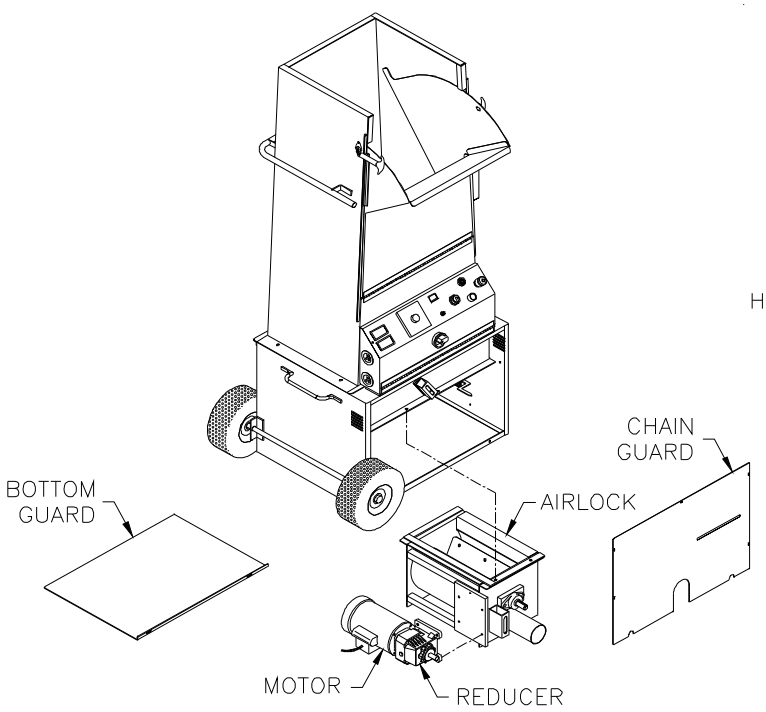


Illustration G

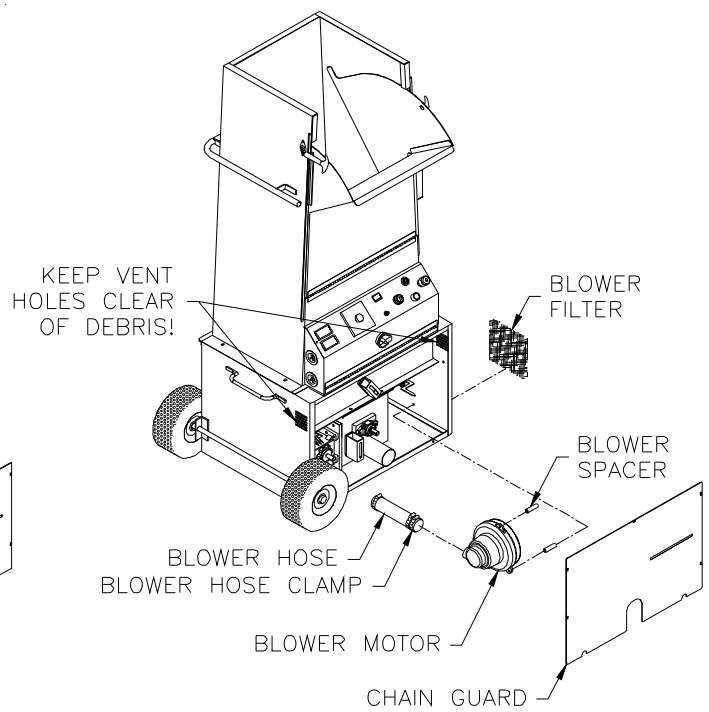


Illustration H

General Maintenance (cont.)

Your Krendl Model #475-IDI Machine is designed to be used with minimal maintenance for all its components. Periodic preventive maintenance will add years of life to your equipment. The following is only a guide; experience is the best guide for the right maintenance schedule for you.

Important: Before performing any maintenance, the machine must be turned to the **off** position and **unplugged** from the power source.

Note: Remove hopper for easy maintenance of lower base unit.

DESCRIPTION	EACH SHIFT	40 HOURS	200 HOURS
CHECK GUARDS	X		
CHECK BLOWER FILTER	X		
CHECK VENT HOLES ON BOTH SIDES OF MACHINE	X		
CHECK DRIVE ALIGNMENT & TENSION		X	
LUBRICATE DRIVE CHAINS WITH A DRY LUBRICANT			X
GREASE AIRLOCK BEARINGS			X
REMOVE BOTTOM GUARD AND BLOW OUT INSULATION BUILDUP AROUND BLOWER AND MOTOR	X		
CHECK ALL ELECTRICAL CONNECTIONS AND COMPONENTS FOR BROKEN OR LOOSE WIRES			X

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

TROUBLESHOOTING

IMPORTANT: DO NOT attempt to service unit. (Contact your dealer for further information.)

1. If machine does not run:
   a. Make sure emergency stop button on **CONTROL PANEL** is pulled out and start button is pressed.
   b. Check manual reset button on **CONTROL PANEL**. Press to reset.
   c. Check **REMOTE CONTROL CORD** for broken connections.
   d. Check power cords for proper connection.
   e. Check breakers inside **CONTROL PANEL**.

2. Loud knocking sound:
   a. **UNPLUG** power supply. Check machine agitators and airlock for foreign objects.
   b. **UNPLUG** power supply. Check for misaligned sprockets or loose chain.

3. Poor output from machine or uneven flow through hose:
   a. Open **SLIDEGATE**.
   b. Turn **BLOWER CONTROL** up.
   c. **UNPLUG** power supply. Check for material bridging in hopper.
   d. Low voltage, try another electrical source. Check extension cord wire size. (See page 9)
   e. **UNPLUG** power supply. Check for worn or damaged rubber airlock seals.

4. Too much dust on open blow:
   a. Open **SLIDEGATE**.
   b. Turn **BLOWER CONTROL** down.

5. **BLOWER MOTOR** running hot:
   a. **UNPLUG** power supply. Clean filter. Blow out surrounding area with air hose. (See Illustration H)
   b. **UNPLUG** power supply. Check for restriction in blowing hose.
   c. **UNPLUG** power supply. Check for buildup of insulation around blower.

6. **AGITATOR MOTOR** running hot:
   a. **UNPLUG** power supply. Check for insulation buildup around motor and blow out with air hose.
   b. Low voltage can cause this condition. Try another electrical source.
   c. **UNPLUG** power supply. Debris jamming airlock. Rotate airlock manually and clean out.
   d. **UNPLUG** power supply. Check for sprocket misalignment and bearing wear.

7. **HOSE PLUGGING**
   a. **UNPLUG** power supply.
   b. Turn **off** red Main Disconnect Switch, loosen two screws in door, and open Main Panel lid.
   c. Turn Timer Relay knob for blower (timer on right) to desired setting. (Note: By turning blower relay knob clockwise by (1) sec more than agitator relay it will reduce hose plugging and power draw.)

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 #475-IDI Krendl Machine.

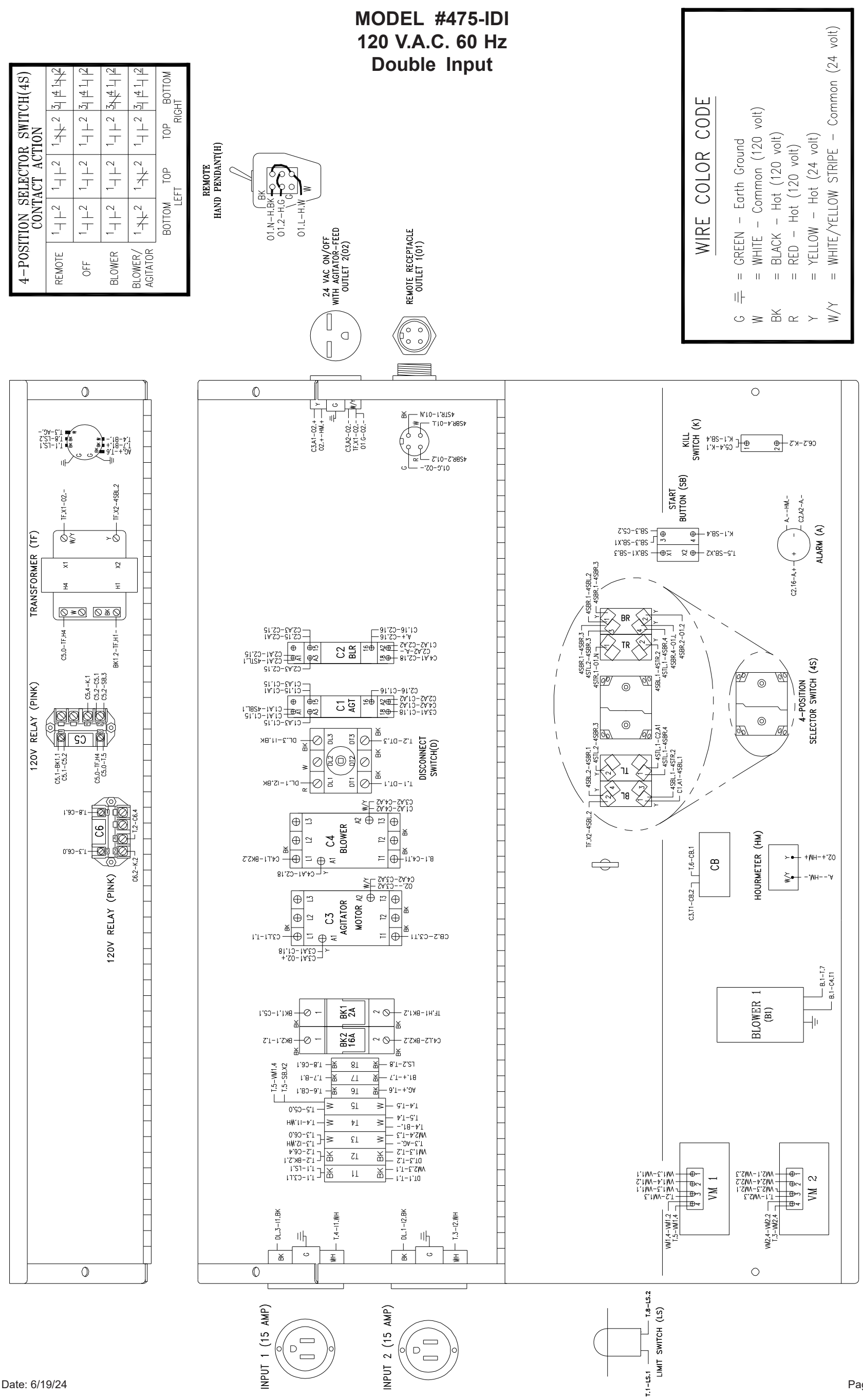
PART NUMBER	DESCRIPTION	QUANTITY REQUIRED
563	AGITATOR BEARINGS (INSERT ONLY)	4
564	AGITATOR BEARING FELT SEALS	4
426-6	AIRLOCK BEARINGS	2
426-7	AIRLOCK BEARING FELT SEALS	2
475-4	AIRLOCK SEALS	6
42562	BLOWER FILTER	1
199	#40 MASTER LINK	2
189	#40 HALF LINK	1
475MK	475 MAINTENANCE KIT	1

ELECTRICAL

ELECTRICAL DIAGRAM:

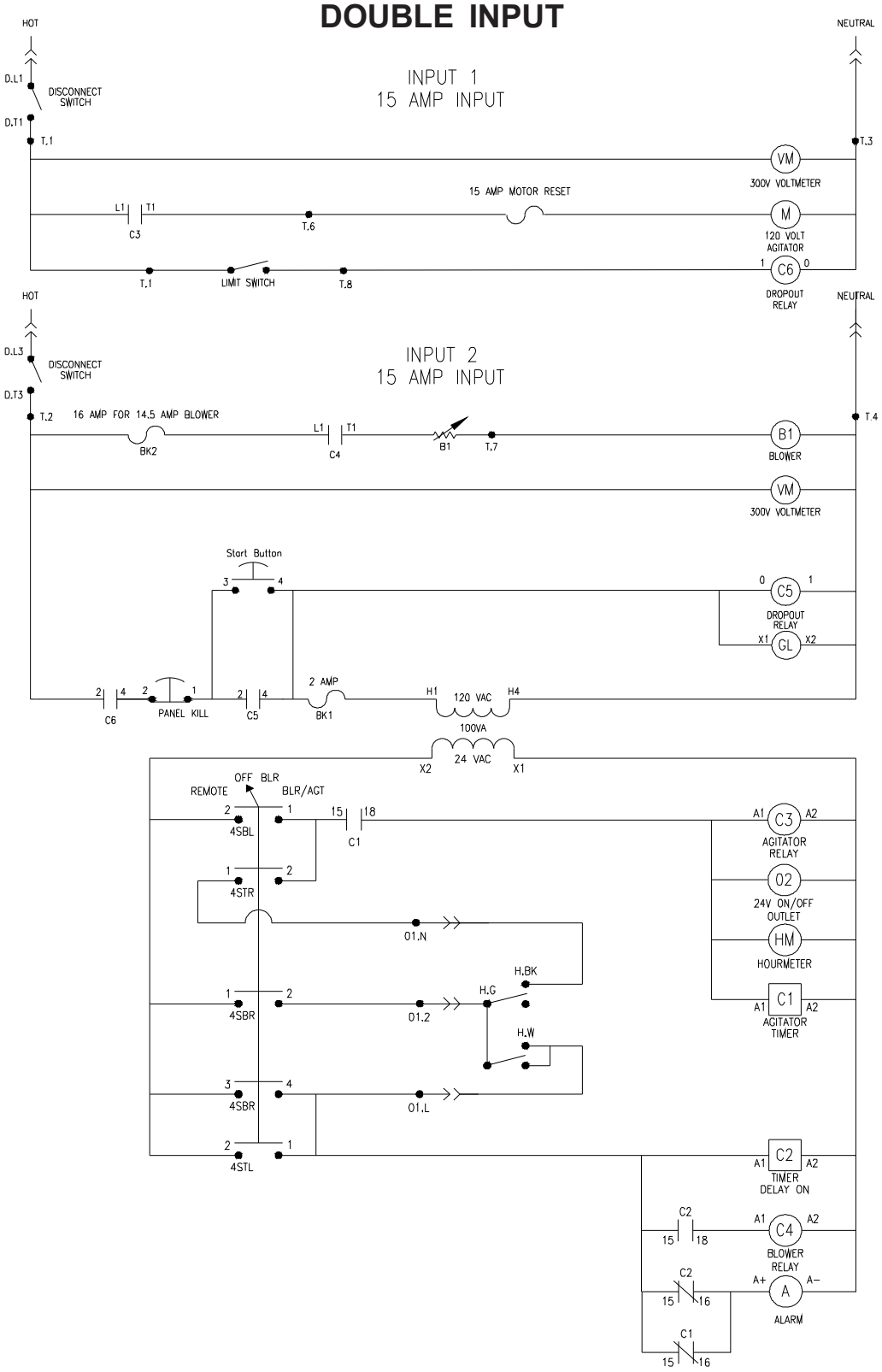
Periodically, disconnect machine from power source and check all electrical connections and components for broken or loose wires.

MODEL #475-IDI
120 V.A.C. 60 Hz
Double Input



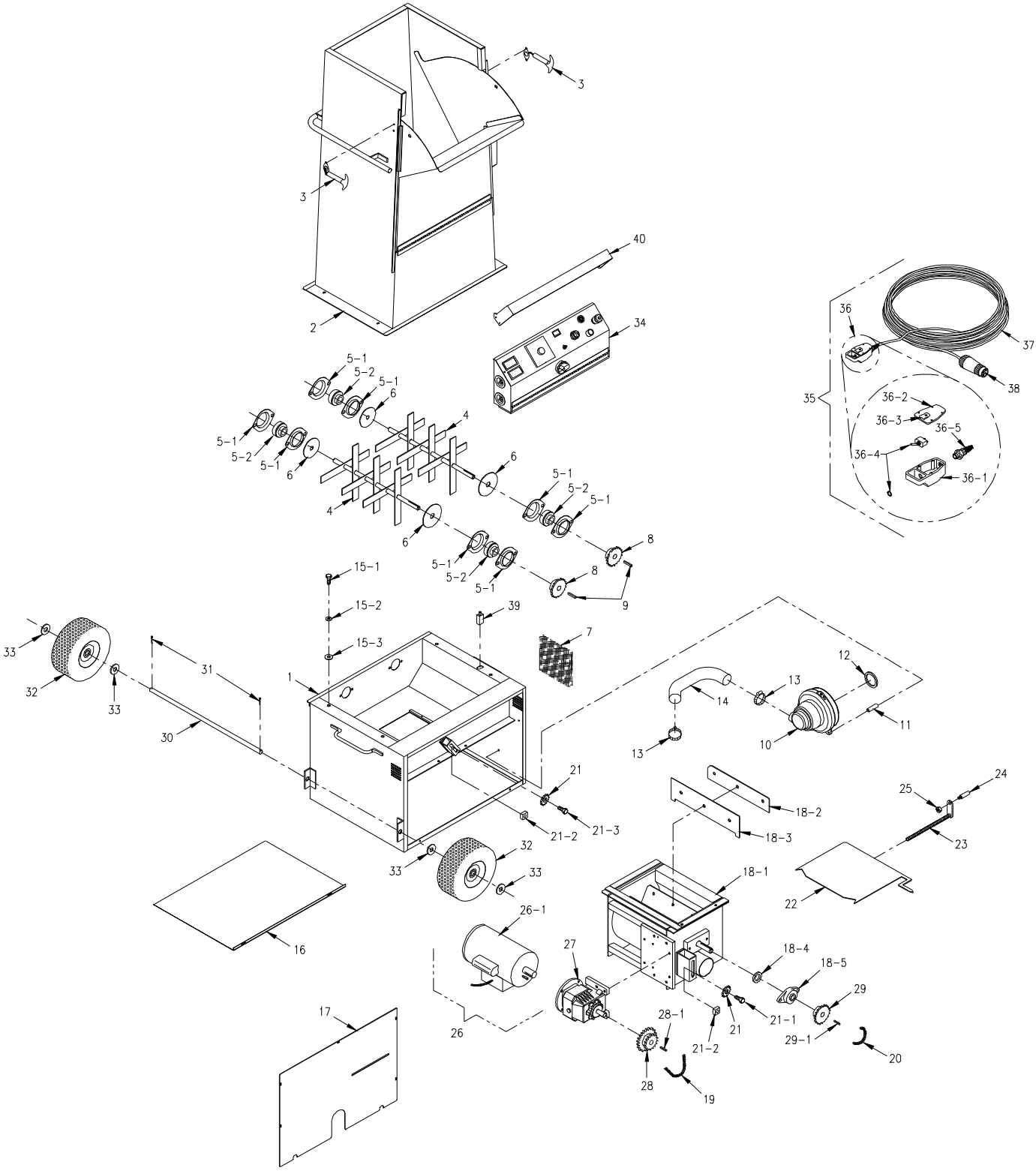
LADDER DIAGRAM

120 VOLT 60 HZ
DOUBLE INPUT



EXPLODED PARTS

#475 Machine

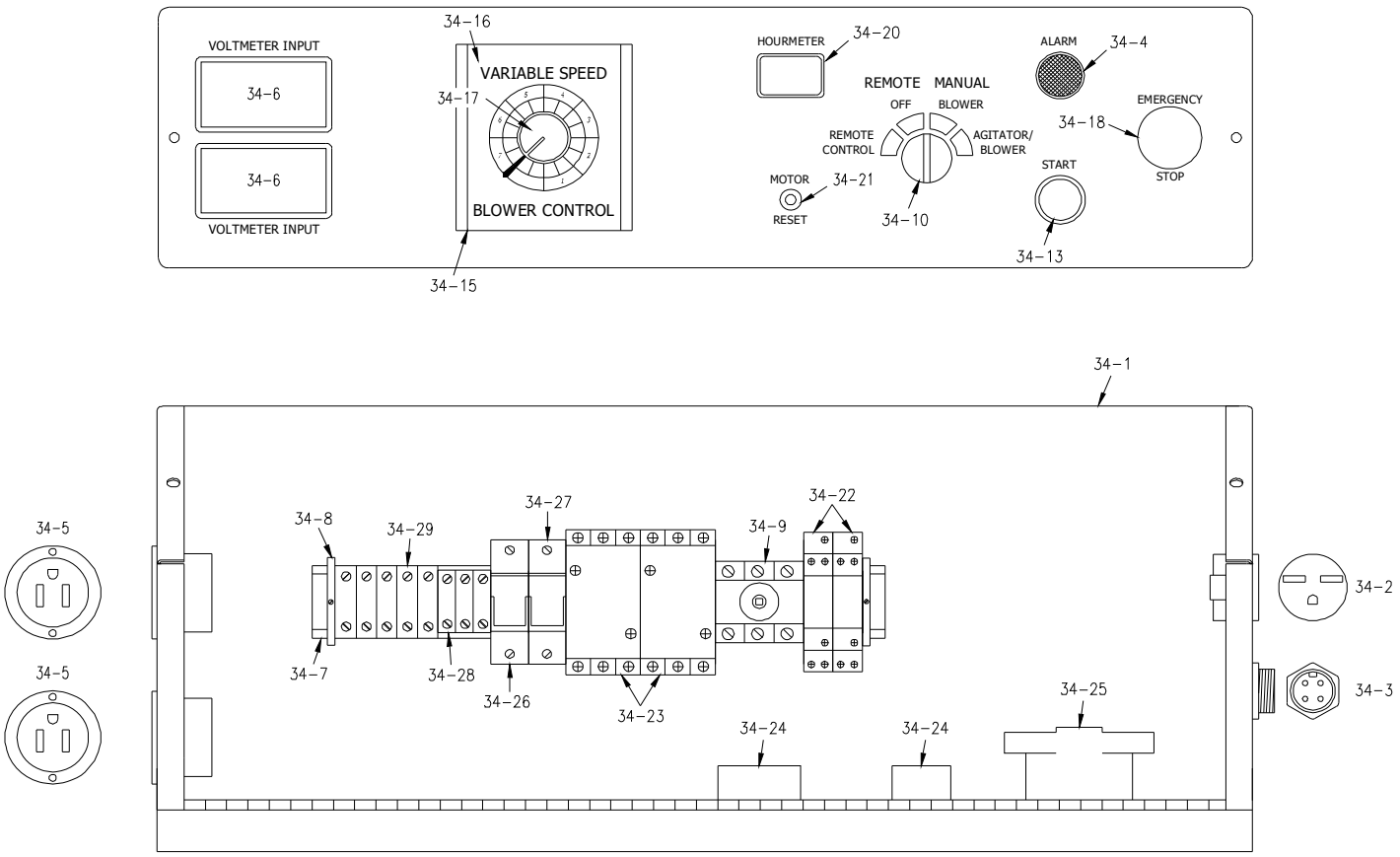


#475 PARTS LIST

Item #	Part #	Description
1	475-5-R5-IDI	Base
2	575-9-R1-IDI	Hopper
3	23-99	Latch, Pull (2)
4	575-7	Agitator (2)
5-1	565	Housing, Flange, 2-Bolt 1" Stamped (8)
5-2	563	Bearing, 1" Bore (4) Insert Only
6	564	Seal, Felt, 1" (4)
7	42562	Filter, Blower 6 1/4" x 6 1/4"
8	S-40BS18T1	#40 Sprocket, 18T x 1" (2)
9	561Z	Key, 1/4" x 1/4" x 1" (2)
10	408-G	Blower Motor, 14 amp, 2-stage (U.S.)
10	408-J	Blower Motor, 7 Amp, 2-Stage (Overseas)
11	409-A	Spacer, 2 1/4" Blower (3) (only 1 shown)
12	113-AC	Gasket, 2", STD 3/16"
13	337	Clamp, 2" Hose (2)
14	42518-R1	2" Hose, 22" long
15-1	FSB037	SB 5/16-18 x 7/8" HMS (4)
15-2	FW008	Lock Washer, 5/16" (4)
15-3	FW007	Flat Washer, 5/16" (4)
16	575-10	Guard, Bottom
17	575-15-P	Guard, Chain
18-1	475-1-R2	Airlock Chamber with Rotor (before 6-17-24 used with 47502)
18-1	475-1-R3	Airlock Chamber with Rotor (after 6-17-24 used with 575GB)
18-2	475-3	Plate, Top Airlock (6)
18-3	475-4	Seal, Airlock (6)
18-4	426-7	Seal, Felt, 3/4" (2)
18-5	426-6	Bearing, 2 Bolt , 3/4" (2)
19	109019-14	Chain, #40 x 58". N.P.
20	42524	Chain, #40 x 26" (U.S.) (before 6-17-24)
20	42524-28	Chain, #40 x 28" (U.S.) (after 6-17-24)
20	42537	Chain, #40 x 27" (Overseas)
----	199	Master Link, #40 (2) (not shown)
----	189	Half Link, #40 (1) (not shown)
21	432	Sprocket, Idler, #40 17T x 5/8" (2)
21-1	FSB120	SB 5/8" x 3/4" Shoulder Bolt
21-2	40052	Nut, 1" x 1/2" (1/2-13), Plated (2)
21-3	FSB092	SB 5/8" x 1" Shoulder Bolt
22	475-6-R1	Slidegate
23	475-8	Crankrod
24	4507	Handle f/Crankrod
25	FN015	Lock Nut, 3/8"-16
26	475-21-A	Motor & Cord Assy, 3/4HP, 120V 60Hz (U.S.)
26-1	47501	Motor, 3/4HP, 120V 60Hz (U.S.)
26	475-22	Motor & Cord Assy, 3/4HP, 230V 50Hz (Overseas)

26-1	512-1	Motor, 3/4HP, 50Hz (Overseas)
27	47502	Gearbox, In-Line (before 6-17-24) (obsolete purchase 475-GB-KIT)
27	575GB	Gearbox, In-Line (after 6-17-24)
28	1024	#40, Sprocket, 15T x 24T x 3/4" (U.S.) (before 6-19-24)
28	475-20	#40, Sprocket, 15T x 24T x 1" (U.S.) (after 6-19-24)
28	514-5	#40, Sprocket, 18T x 28T x 3/4" (Overseas)
28-1	562Z	Key, 1/4" x 1/4" x 1 1/4"
29	4511	#40, Sprocket, 15T x 3/4" w/hub
29-1	448Z	Key, 3/16" x 3/16" x 1"
30	575-11	Axle, 29 3/4" Long
31	57565	Pin, Cotter, 1/8" x 1 1/2" (2)
32	W-12	Wheel, Flat Free, 3/4" (2)
33	FW030	W 3/4 Flat Washer-SAE (4)
34	ELU13-KT-0475	Electrical Upgrade (120V, 60 Hz.) (double input, single 14 A blower)
35	RC395-K	Remote Control Cord Assembly, 4 Pin Connector 150 Ft.
36	RC395-DPDT	RC Service Kit (DPDT)
36-1	RC395-1	Switch Housing
36-2	RC395-2	Switch Housing Cover with belt clip
36-3	1536-7	Belt Clip
36-4	109066-9	Switch, Toggle, DPDT
36-5	1536-4	Strain Relief
36-6	RC395-4	8-16 Plastic Screws (4) (Not Shown)
37	18-4 SJ	Wire, 18-4 SJ (150')
38	487	Connector, 4 Pin Male
39	LS100	Flush Mount, Limit Switch
40	575-40	Electrical Guard
- -	475-GB-KIT	Reducer Upgrade Kit

ELECTRICAL PARTS LIST
120 V.A.C. 60 Hz. D.I



Electrical Exploded Parts List

Item#	Part#	Description
34-1	475-23-R1	Box, Electrical
34-2	132-B	Receptacle, NEMA #6-15R
34-3	491	Connector, 4 Pin Female (remote)
34-4	543-M-38	Pre-Alarm System
34-5	42528	Plug, Recessed Input 5-15P (2)
34-6	543-M-83	Voltmeter, Digital 120V (2)
34-7	ELU12-A	Dinrail, 1 3/8", 16" Long
34-8	151080-49	Clamp, f/ 1 3/8" Din Rail (2)
34-9	600-R-01	Switch, Disconnect Assy 3P
34-10	543-M-22	Switch, 4-Position Selector
34-11	543-M-15	Contact Block, Selector Switch (white) #KA-1 (not shown)
34-12	543-M-16	Contact Block, Selector Switch (red) #KA-3 (3) (not shown)
34-13	543-M-14	Pushbutton On, Green
34-14	8075-2	Contact Block 22mm Green (Pushbutton not shown)

Item#	Part#	Description
34-15	419-A	Blower Control (120V, 60Hz.) (2)
34-16	420-1	Cover, Blower Control (2)
34-17	420-2	Knob, Blower Control (2)
34-18	508-2	Switch, Kill, Red
34-19	8075-1	Contact Block (Kill Switch not shown)
34-20	543-M-77	Hour Meter
34-21	433-E	Manual Reset, 15 Amp
34-22	RELAY-11	Timer / Relay SPDT 12-24VAC 15A (2)
34-23	ELU11-5-A	Contactor / Relay 25 Amp (2)
34-24	ELU10-10	Relay, Contactor/Relay, 120V Control (2)
34-25	1530-D	Transformer, 4 Amp
34-26	BRKR-16	Breaker, 16 Amp (2)
34-27	BRKR-2	Breaker, 2 Amp
34-28	151080-61	Terminal Block, Small (3)
34-29	151080-62	Terminal Block, Large (5)

INSTALLATION INSTRUCTIONS

WHEEL INSTALLATION INSTRUCTIONS:

1. Slide axle thru axle mounts. (See Illustration I)
2. Assemble one 12" wheel on either side of the machine using two 3/4" flat washers and one cotter pin per wheel. Be sure to place flat washer on each side of wheel. (See Illustration I)
   Note: Install wheel with hub and grease zerk facing in.

CRANK HANDLE INSTALLATION INSTRUCTIONS:

1. Mount handle to crank rod and secure with nut. (See Illustration I)

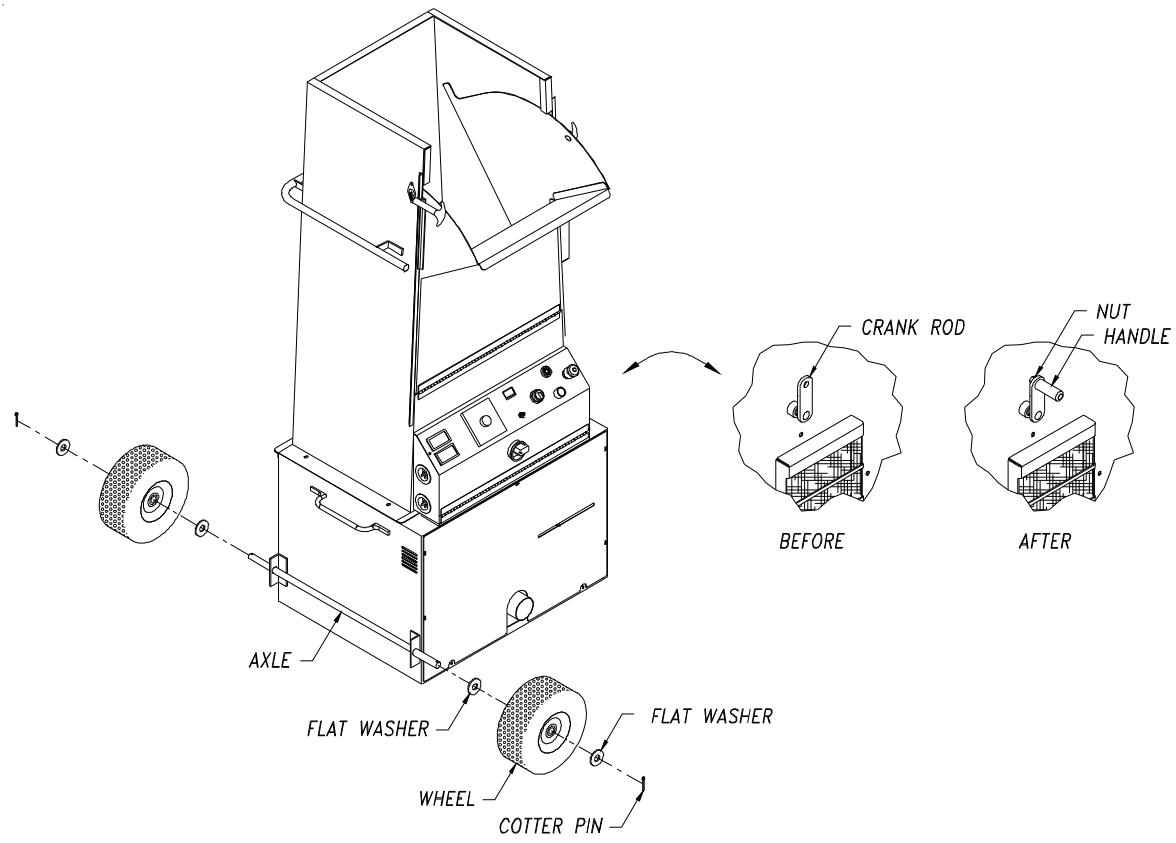


Illustration I

GLOSSARY

BRIDGING Tendency of 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.

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.

PSI (Pounds of pressure per square inch). The **force** exerted on a surface by air/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.

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 after a period of time. Following the insulation manufacturers 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

65 YEARS
OF AMERICAN INGENUITY

Made in the U.S.A.

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