



OWNERS MANUAL MODEL #9000



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 • WEB SITE: www.krendlmachine.com**

CONGRATULATIONS ON YOUR PURCHASE OF KRENDL EQUIPMENT

THIS IS YOUR

MODEL #9000-PLC OWNER'S MANUAL

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

THANK YOU FOR YOUR PURCHASE!

**KRENDL E-MAIL ADDRESS IS: krendl@krendlmachine.com
KRENDL 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.

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 _____


Serial number _____

Date of purchase _____

Supplier _____

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

IMPORTANT: There is a combination lock on the front guard and main control panel that will need removed from the machine. Refer to the machines invoice or contact Krendl Machine for the combinations.

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. Unpack controller from machine and inspect for damage. Remove all hose 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 hands, loose clothing, jewelry and hair away from agitators, gears, chains and other moving parts.
- **Be Safe** - Make sure all guards are in proper place **before** operating machine. Guards and safety devices/ switches should not be removed, modified or by-passed.
- **Be Safe** - Do not remove motors or adjust hopper when unit is connected to power supply.
- **Be Safe** - Make sure main disconnect switch is in **off** position **before** connecting the power supply to the machine.
- **Be Safe** - Make sure machine is properly grounded. Protect all electrical supply cords from sharp objects, moisture, and other potentially hazardous materials. Keep power cords in good repair. Electrical service must be performed by a qualified electrician.
- **Be Safe** - Disconnect power supply **before** inspecting or adjusting unit.
- **Be Safe** - Consult a qualified technician to answer questions **before** attempting to operate, or injury may result.
- **Be Safe** - **Emergency Kill Switch** - In case of emergencies, always use red stop button located around the machine. It will stop all feeding and agitation.
- **Be Safe** - Do not leave machine unattended and energized.
- **Be Safe** - Turn machine off and disconnect electricity before clearing out jammed material or attempting to remove any object dropped in the hopper.
- **Be Safe** - Capacity of the hydraulic lift platform not to exceed 2500lbs.
- **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, as this can bind and stall your machine.
- Load is centered on hydraulic lift platform.
- 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.
- Blower must be on, when machine is 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**.
- Machine top is covered with roll tarp during bad weather or when machine is not in use, as wet material can bind and stall your machine.
- Machine has an observation deck and it is **NOT** to be used for anything other than observing, **NO** loading or leaning from deck.
- This machine should only be used with good quality fibers that are dry, undamaged and that meet a certain industry specification or quality standards.

RETURNED GOODS PROCEDURE

When returning products to Krendl for repair, first obtain a return goods authorization, and 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

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

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

WARRANTY

Krendl Machine Company (Company) warrants to each original purchaser (Buyer) of its equipment or accessories that such products will be free of manufacturing defects for a period of 2 years for machine and 1 year for PLC electrical from the date of shipment to the Buyer.

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.

Information and design disclosed herein was originated by and is the property of Krendl Machine Company, Inc. We reserve the right to proprietary design, manufacturing, production and sales thereto and to any articles disclosed therein, except to the extent that such rights are expressly granted to others in writing.

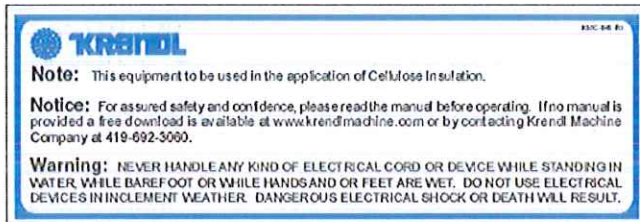
DECALS



Manufacturer information is provided here along with machine model number.

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.



Rotating shafts can be dangerous! Make sure power is locked out before servicing hopper area. This can cause serious injury or death.



Do not touch live weigh area as this will alter the actual weight readings.



Indicates the hydraulic lift platform can hold a maximum of 2500 lbs.



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



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



Be careful around electrical components! This can cause serious injury or death.

KRENDL MODEL #9000-PLC

SHIPPING INSTRUCTIONS

- 1) Run machine until most of the fiber is out of machine.
- 2) Unplug console from 110 volt power supply.
- 3) Disconnect Ethernet and emergency stop connectors and any plant computer wires from controller.
- 4) Disconnect 480 volt power from machine.
- 5) Disconnect the fiber hose from plant.
- 6) Lower the amber flashing light.
- 7) Raise the load cell lift bolts until the machine hits the upper stop. The upper load cell bracket should be able to wiggle. Tighten jamb nut down to prevent lift bolt from loosening.

NOTE: Lift weight of machine off all load cells before shipping.

ILLUSTRATION VII-A

- 8) Insert the braces between the wind guard and the upper hopper area.
- 9) Unbolt and remove side and back extensions for lift.
- 10) Carefully package accessories in hopper.

These items should be included:

- Hose and hose clamps
- Plant Adapter male and female
- Owners manual
- Console
- Tarp crank handle
- Side extensions for lift

These items might have come with your machine:

- No-flow detector box and tube
- Printer
- Cord connector

ILLUSTRATION VI-B

- 11) Fold up platform if machine has one.
- 12) Wrap cable on machine and secure with straps.
- 13) Close tarp and secure with tie downs.

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KRENDL MODEL #9000-PLC

SHIPPING INSTRUCTIONS CONTINUED

- 14) Unit requires a forklift or front-end bucket loader with a lifting capacity of 10-12,000 lbs. because of the overhung load of the machine. (Use only the orange areas on the channels to insert forks or attach chains for lifting machine.)

NOTE: Do not lift unit from top (above load cells) or damage to load cells will occur.

ILLUSTRATION VI-C

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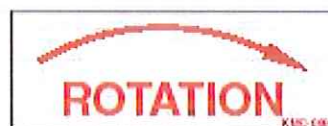
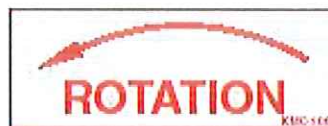
Provides the necessary instructions to properly prepare the machine for shipping. Failure to follow these instructions could result in damage to the machine.



Indicates this equipment starts automatically!
This can cause serious injury or death.



Directs operator to use platform deck for observation only and do not load or lean from deck.



Rotating parts will be moving in this direction.



Hopper must be raised up off load cells before moving unit. Tighten lift bolts upward to raise hopper. Failure to do so will result in damage to load cells.



Made in the U.S.A.



Emergency stop button for machine.

ADVANCED PREPARATION OF PLANT FACILITIES

NOTE: All of these preparations must be made before arrival of equipment.

Machine Specifications:

Weight = 9400 lbs.

Dimensions = 96" x 144" x 103" high

1.) Select proper location for Model #9000 machine.

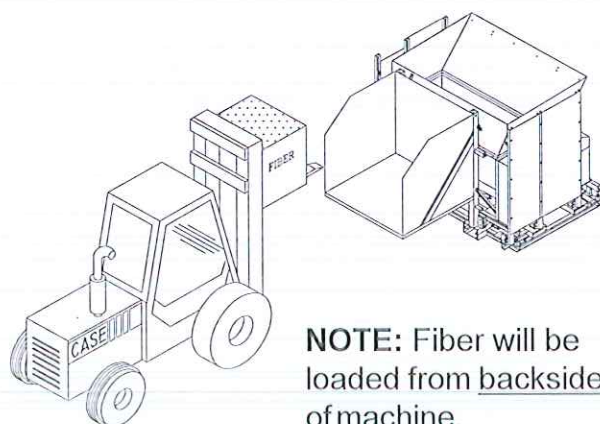
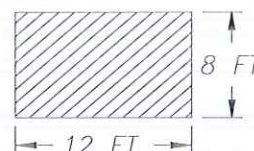
Considerations:

- Protected from excessive wind gusts and turbulence.
- Within 50 ft. (preferably) of Drum or Batch equipment.
- Flat, level surface.
- Easily accessible for loading product without obstructing normal in-plant traffic patterns.

A.) Be selective in choosing a site for the unit. Locate the Model #9000 unit on a level surface (i.e. concrete pad or low trailer) in an area that is protected from wind turbulence and other outside environmental forces. There are wind guards located on sides of unit. Place unit so prevailing winds hit the back of unit, not the front.

NOTE: Wind gusts can cause fluctuation in the scale reading and should be avoided by erecting a temporary wind break. When machine is not in use or during bad weather use roll tarp on top of machine to prevent rain and moisture from entering inside the hopper area; as this will cause wet fiber to bind in the machine. (**NOTE:** Fiber should be emptied from machine when not in use for long periods of time because fibers will absorb moisture.) The Model #9000 should be in clear view of the control tower. If this is not possible, it is preferable to have the fiber hose in view of plant controller.

B.) Unit must be level in two directions (width and length), until corrected level is within 1/2 inch. (See Illustration I-A below)



NOTE: Fiber will be loaded from backside of machine.

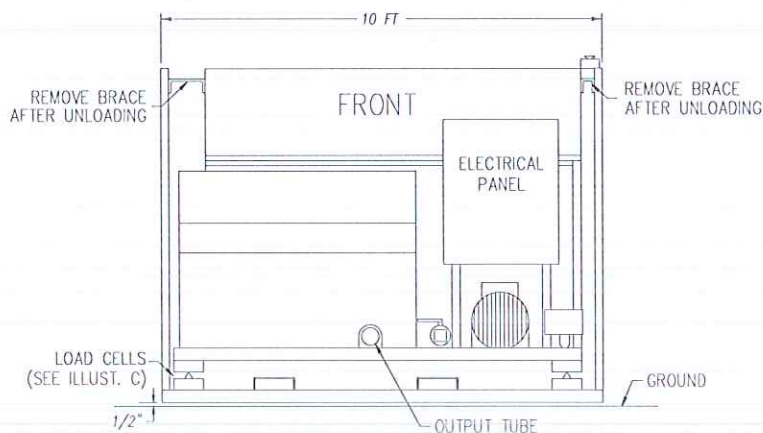


Illustration I-A

NOTE: It may be impossible to satisfy all the above requirements.

- Install 4" schedule #40 pipe into proper location of Drum or Batch equipment. Fiber hose (4") will be attached to the 4" male pipe thread extending from plant. Many plants will already have this provision available for the introduction of mineral filler, dust fines etc. (More information can be provided upon request.)
- Install an electrical supply line to the fiber machine area. (40 amp 3-phase 480 volts)

IMPORTANT: DO NOT UNLOAD, HANDLE, OR USE THIS EQUIPMENT UNLESS PROPERLY INSTRUCTED BY FACTORY TRAINED PERSONNEL.

BASIC COMPONENTS

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

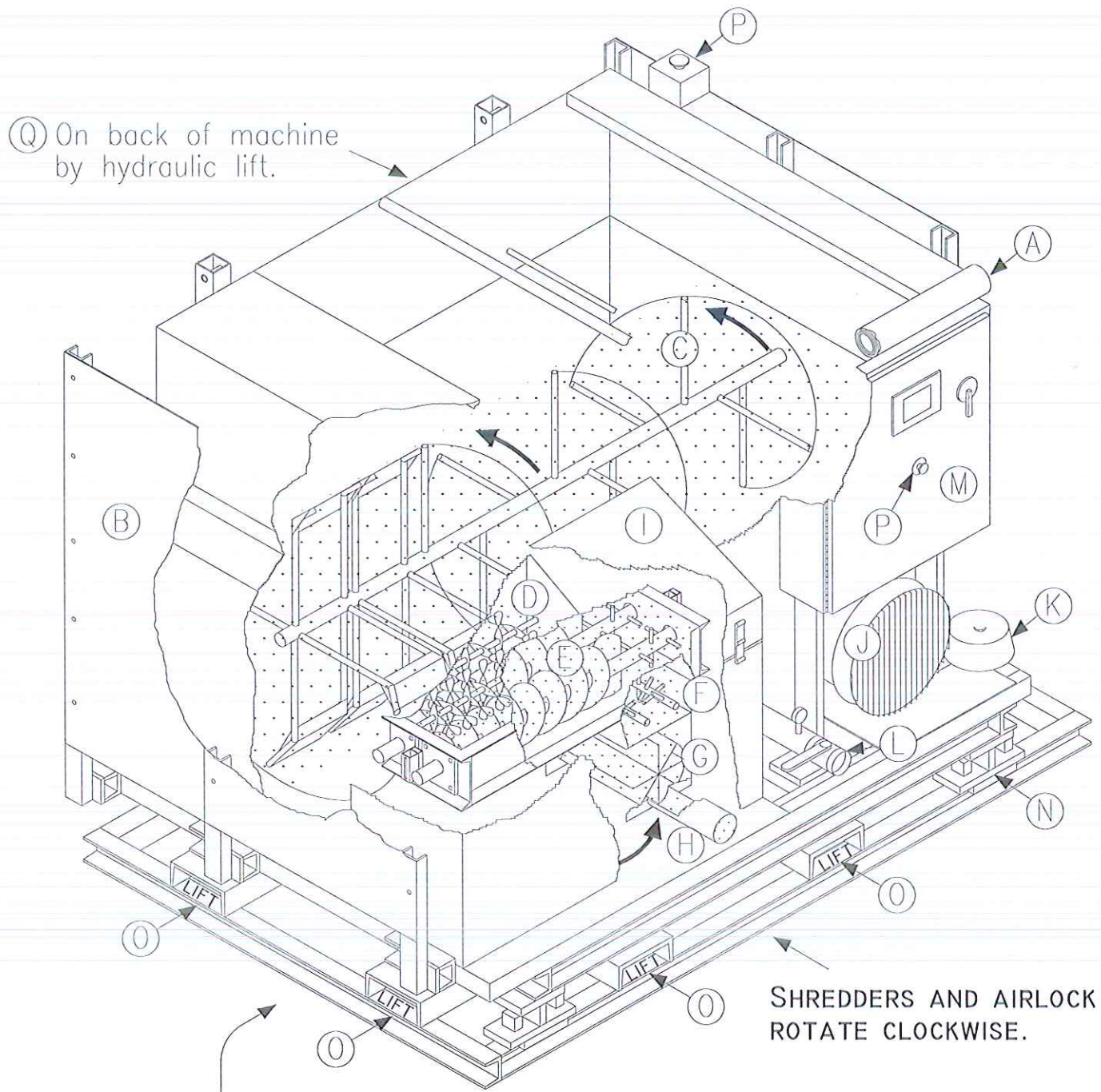


Illustration I-B

PARTS DESCRIPTION

- A.) HOPPER COVER:** Roll-tarp protects fibers from rain moisture.
- B.) WIND GUARDS:** Protects the "live" hopper area (weighing vessel) from wind turbulence and external influences during operation.
- C.) RIBBON AUGER:** Slowly breaks down fiber into smaller pieces while gently moving to end "staging area."
- D.) STAGING AREA:** Fiber loaded from main hopper vessel is uniformly conditioned and separated before entering the triple augers below. This area maintains a constant equilibrium of fibers over the auger screws. Removing the "head pressure" factor decreases feed rate variations.
- E.) AUGER SCREWS:** Balanced feeding system powered by a variable speed drive. This double flighted system provides a consistently balanced supply of fibers into the shredder unit below with very accurate metering capabilities.
- F.) SHREDDER:** High speed fingers completely separate clumped, entangled fibers as they exit the triple auger feed system and enter the rotary airlock below.
- G.) ROTARY AIRLOCK:** Traps air and fibers while providing a secondary metering system that insures a smooth even flow of fibers to hose.
- H.) OUTPUT TUBE:** 4" O.D. fiber discharge tube for connection to flexible hose.
- I.) ACCESS COVER:** Provides easy access to staging/screw auger/shredder areas for quick inspection, clean-out, and maintenance. Access Cover has kill switch interlock for safety of operator.
- J.) BLOWER:** Provides adjustable amount of air to rotary airlock, transporting fibers through flexible hose into affected area. Air can be adjusted to provide maximum dispersal with minimal dust into area. Blower is protected by one way check valve and pressure relief valves.
- K.) FILTER:** Weatherproof enclosure protecting high capacity blower from particle contamination.
- L.) AIR CONTROL VALVE:** Ball valve used to control the proper amount of air into the fiber stream.
- M.) MAIN CONTROL PANEL:** Nema-12 Enclosure connects with main power input and rate/dosage controller allowing total remote operation of machine. This safe, simple and easy-to-operate control panel provides full circuit protection for all components.
- N.) LOAD CELLS:** Four load cells sense the weight of fiber in the vessel as it is being discharged.
- O.) LIFT AREAS:** Locations (orange) where the entire unit can be safely lifted with forklift.
- P.) SAFETY KILL SWITCH:** Three safety switches for immediate stopping of machine.

FUNCTIONS KEY AND OTHER TERMS

Airlock: A six vane feeder that delivers fiber to the bottom of the airlock chamber where air from the blower system pushes the fiber out of the chamber and into the connecting hose. The vane feeder rotates at a constant speed.

Alarm: Sounds when starting and filling machine.

Amber Flashing Light: This unit is actuated through a signal from the rate controller or manual loading system, indicating that fiber level is low. In continuous drum operations, the feed rate is frozen when the light is on allowing refilling of hopper.

Continuous Operation: Continuous feed of fiber for drum plants at a set target rate.

Emergency Stop: These three red buttons are located on back left, front right, and right top of unit. They are actuated by pressing in. When ready to return to normal operations, release by pulling out slightly. The Emergency Stop button is a safety measure to immediately shutdown the complete fiber system.

Live Weigh Area: This is the area that is being weighed by the load cells. Do not touch this area when the unit is running.

Main Control Panel: The electrical control box located on the Model #9000. Caution: This unit is powered by 3-phase high voltage.

MAIN CONTROL PANEL

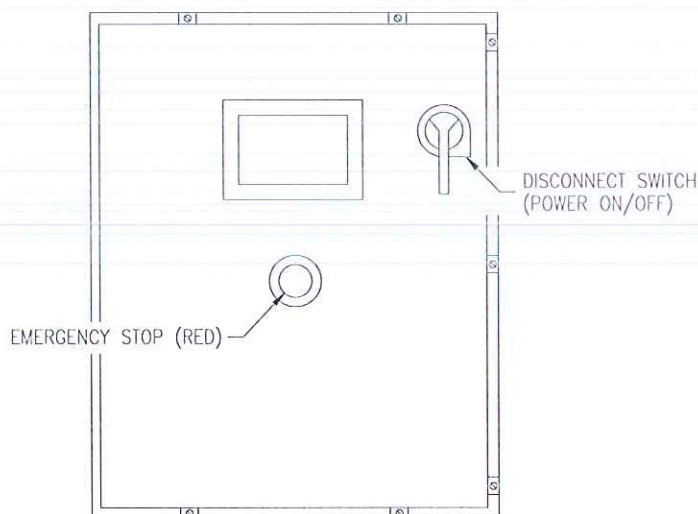


Illustration I-C

PLC CONSOLE

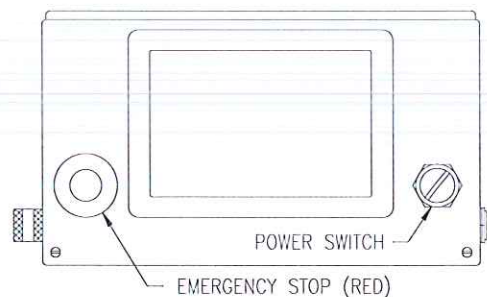


Illustration I-D

IMPORTANT UNLOADING AND HANDLING INSTRUCTIONS

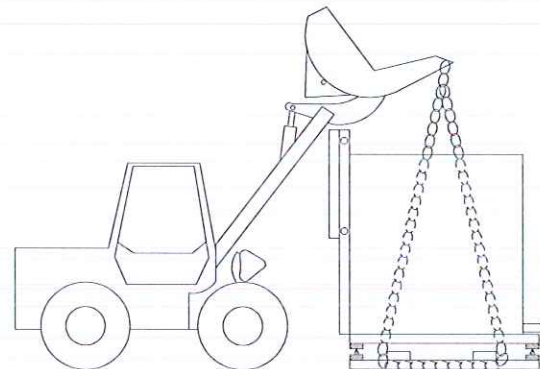
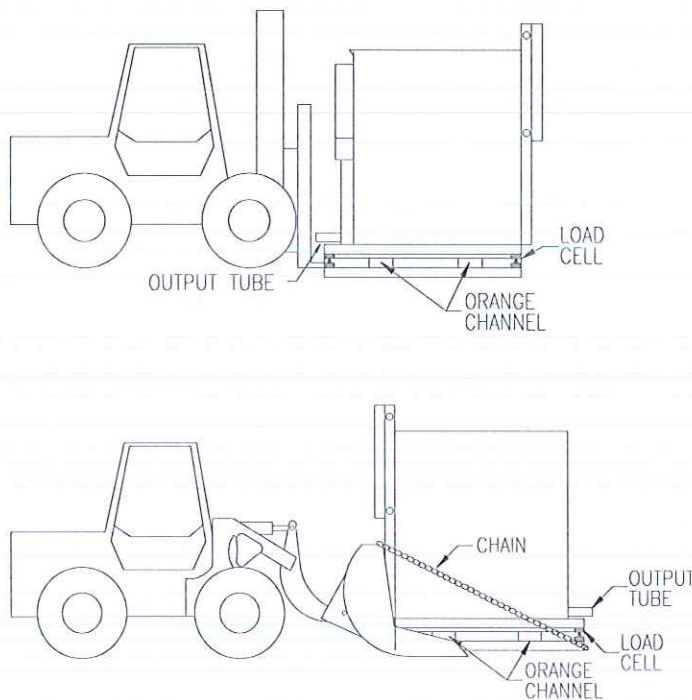
DO NOT: Lift, move, or handle equipment until you read the following instructions.

The Krendl Model #9000 is assembled with upper hopper/drive system attached to a lower subframe. The two components have four very delicate and sensitive load cells between them. **It is very important that this entire machine be lifted by the bottom or lower subframe to avoid any damages.** (See Illustration below)

- 1.) Unit requires a forklift or front-end bucket loader with a lifting capacity of 10-12,000 lbs. because of the overhung load of the machine. (Use only the **orange areas** on the channels to insert forks or attach chains for lifting machine.)

NOTE: Do not lift unit from top (above load cells) or damage to load cells will occur.

This unit must be moved or handled by placing forks or bucket and chains to bottom base frame of machine.



CHAIN IS WRAPPED AROUND THE CHANNELS BETWEEN THE WIND GUARD AND THE MACHINE.

NOTE: ADDITIONAL CHAIN ATTACHED SAME WAY ON OPPOSITE SIDE OF MACHINE

Illustration I-E

PREPARATION FOR SHIPPING

- 1.) **Important:** Raise shipping bolts to relieve weight of machine from the load cells. These shipping bolts or blocks can be found adjacent to each load cell.

NOTE: Do not raise excessively, as this could damage load cell.

Shipping bolts should be tensioned just enough to allow the connecting linkage to be loose between the upper and lower cell mounts.

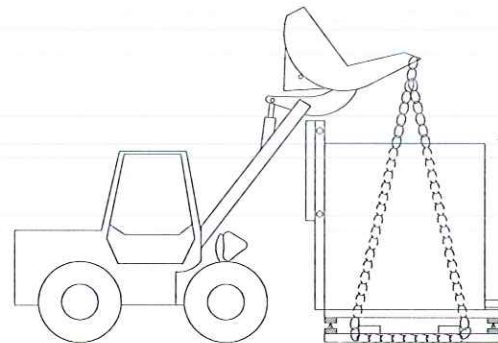
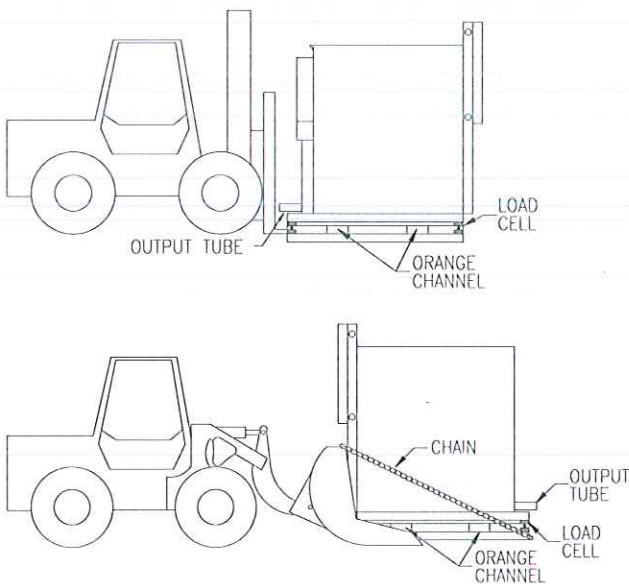
- 2.) Repackage all hoses, connectors, etc. and place inside main hopper.
- 3.) Hold-down straps must be placed over entire unit to hold down roll-tarp. High wind speeds can cause this cover to thrash excessively, causing damage to this area.

INSTALLATION INSTRUCTIONS

UNLOADING AND HANDLING

- 1.) Unit requires a forklift or front-end bucket loader with a lifting capacity of 10-12,000 lbs. because of the overhung load of the machine. (Use only the **orange** areas on the channels to insert forks or attach chains for lifting machine.)

NOTE: Do not lift unit from top (above load cells) or damage to load cells will occur.



CHAIN IS WRAPPED AROUND THE CHANNELS BETWEEN THE WIND GUARD AND THE MACHINE.

NOTE: ADDITIONAL CHAIN ATTACHED SAME WAY ON OPPOSITE SIDE OF MACHINE

Illustration II-A

- 2.) The necessary accessories have been packaged and shipped inside of hopper. They must be carefully removed and assembled. (Detailed assembly instructions follow.) Operating instructions and support manuals with an electrical schematic are packaged and shipped with the machine.
- 3.) After the unit has been positioned, remove the braces between the wind guard and the upper hopper area. (See Illustration II-B)

SET-UP AND ASSEMBLY

- 1.) Select proper location for Model #9000 machine.

Considerations:

- A.) Be selective in choosing a site for the unit. Locate the Model #9000 unit on a level surface (i.e. concrete pad or low trailer) in an area that is protected from wind turbulence and other outside environmental forces. Consideration must be given to allow easy access for loading fiber and overhead clearance when lift platform is at full loading height. There are wind guards located on sides and back of unit. Place unit so prevailing winds hit the back of unit, not the front.

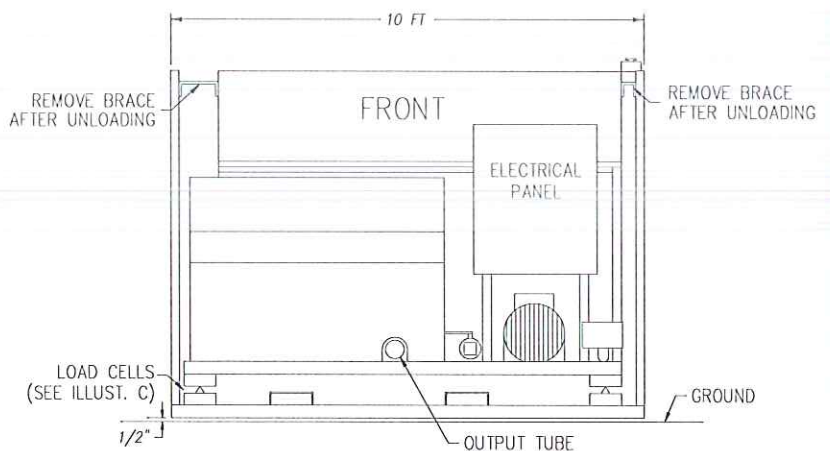


Illustration II-B

NOTE: Wind gusts can cause fluctuation in the scale reading and should be avoided by erecting a temporary wind break. Rain and moisture should be prevented from entering inside of hopper area; as this will cause wet fiber to bind in the machine. **NOTE:** Fiber should be emptied from machine when not in use for long periods of time because fibers will absorb moisture. The Model #9000 should be in clear view of the control tower. If this is not possible, it is preferable to have the fiber hose in view of plant controller.

B.) Unit must be level in two directions (width and length), until corrected level is within 1/2 inch. (See Illustration II-B)

- 2.) ONCE THE UNIT HAS BEEN LEVELED, loosen the jamb-nuts and lower Lift Bolt adjacent to the four load cells. Some units may have a different style load cells. Please check for shipping blocks, or separate shipping bolts that may be placed between upper and lower frame of unit close to load cell placement. Remove blocks, or loosen shipping bolts before starting equipment. A reverse procedure must be done prior to any moving of the equipment to another location.

NOTE: Lift weight of machine off all load cells before shipping.

LOAD CELL

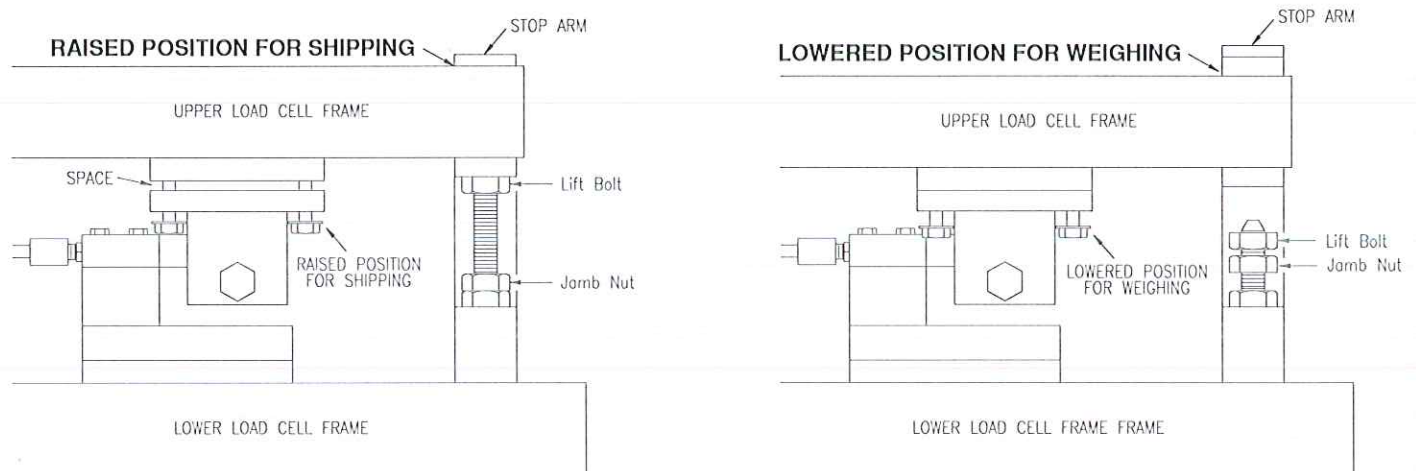


Illustration II-C

- 3.) Raise the amber flashing light so it can be seen by refilling personnel and plant controller in booth.
- 4.) Connect the fiber hose to output tube of the machine and secure firmly with hose clamps

CONTROLLER INSTALLATION

IMPORTANT: Any additional hookup and interface with plant computer must be performed by a qualified technician. The manufacturers of the Model #9000 unit assume no liability for damages incurred. PLANT TECHNICIAN IS RESPONSIBLE FOR ANY DAMAGES TO MODEL #9000 RATE CONTROL DEVICES OR ELECTRICAL PANEL, if not properly installed by factory trained technician.

The console with the accompanying Krendl control panel, provides the ability to select automatic or computer controlled operations.

- 1.) Connect control cables to console. **NOTE:** Make sure Main Disconnect is off on model #9000 Main Control Panel.
- 2.) Plug console into a grounded 120 volt outlet. Preferably into a UPS/Battery backup for power protection.
- 3.) If model #9000 is to be controlled by asphalt plant computer. **NOTE:** Provisions have been made inside the Console for asphalt plant control of process.
 - a.) Inside the Console, plant run command is connected through input I:00/00 and wire 1071. This is merely a contact closure from the asphalt plant.
 - b.) Set point signal will be connected to the terminal strip provided inside the console. If using 4-10MA use input I:01.00+ and I:01.00- for connections. If using 0-10VDC use input I:01.01+ and I:01.01- for connections.
 - c.) The fault shut down signal requires connections to the PLC at VacVdc 0 and 0:00/00.
- 4.) Connect printer cable to printer. (optional)

Console Fiber Metering System Computer Interface Model

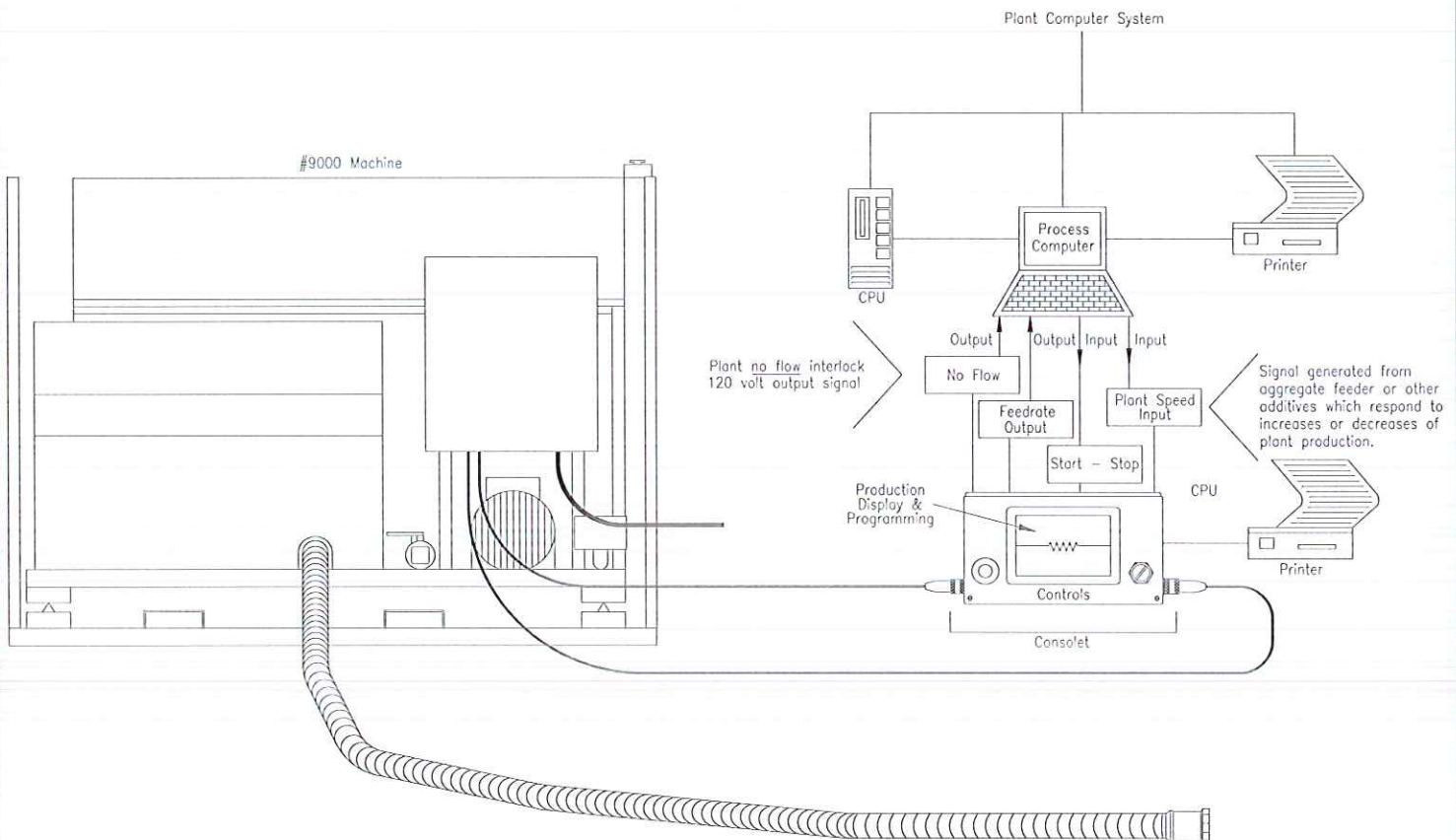


Illustration II-D

POWER SUPPLY

This unit operates on 3-phase, 480 volt 40 amp service unless otherwise specified in the enclosed electrical schematic. Unit must have a proper "Earth Ground" attached to frame of machine. **NOTE:** Refer to the electrical schematic located in Owners Manual for information pertaining to the Main Control Panel and proper electrical requirements.

WARNING: Power connection must be performed by a qualified electrician.

- 1.) To open the Main Control Panel:
 - a.) Place the power lever in "OFF" position.
For Main Control Power Box: Loosen the seven hold down clips on panel door. Turn the disconnect handle counterclockwise and pull the door open. (See Illustration II-E)
For Console: Loosen screws.
- 2.) Run main power source to Main Control Panel.
 - a.) Make sure power source is off and locked out.
 - b.) Run main power source thru bottom of Main Control Panel.
 - c.) Connect three main power source wires to top of main disconnect and ground wire to ground bar. (See Illustration II-F)
- 3.) Turn on main power source and verify incoming voltage is correct on top of main disconnect before machine is turned on. **Important:** If improper voltage is applied it may cause damage to electrical components.
- 4.) Turn off main power source and lock out. **Preferably: Confirm power is off with a voltmeter.**
- 5.) Verify connections are tight and close Main Control Panel.
- 6.) Turn on main power then turn the disconnect switch (clockwise) to supply power to the Main Control Panel. (See Illustration II-E)
- 7.) **IMPORTANT:** This machine must operate in the correct direction. (See Illustration I-B on page 2 in Pre-Installation section of manual.) The model #9000 has a phase monitor. If the phasing is correct no action is required. If the phase monitor detects an error it will give a fault signal on the electrical panel and console screens. To correct this fault, two of the phases will need reversed at the top of main disconnect. Because the direction cannot be assured when hooking up to 3-phase electric, do not turn machine on or add material until the direction of rotation is checked. Clear faults off the electrical panel and console screens. (See page 5 in User Screens section of manual.)

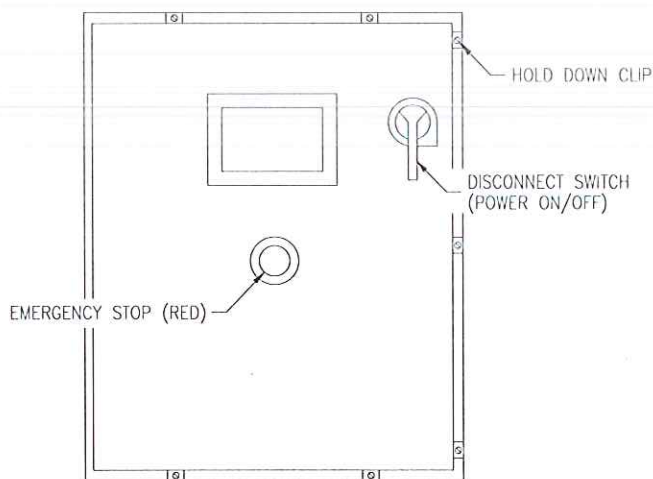


Illustration II-E

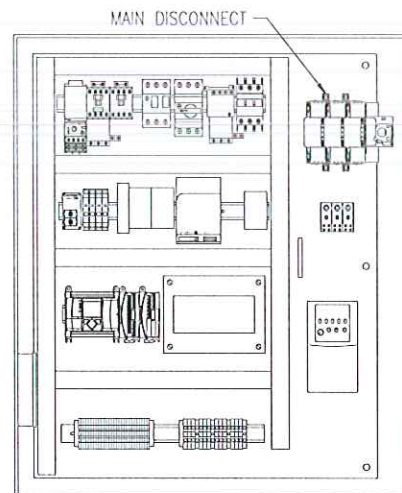


Illustration II-F

START-UP INSTRUCTIONS

CAUTION: When the machine is running, do not touch or disturb the "live weighing" hopper area, as this will incorrectly affect the automatic feed rate amount.

- 1.) Once power is provided to the machine and the Console has been connected at the control area, turn the main disconnect switch (clockwise) to supply power to the Main Control Panel. (See Illustration II-E) **NOTE:** All four emergency shut-off switches must be in the release (out) position and the shredder box cover limit switch engaged.
- 2.) The unit will go through a series of checks. **NOTE:** This will take a few minutes.
- 3.) The first operation after a new install is to zero the scale. **IMPORTANT:** To zero machine be sure machine is clear of tools and items on or leaning against live weight area. Also make sure lift bolts have been lowered. (See Illustration II-C)
 - a.) Press the lower left hand soft key on the screen. This will take you to the setup display.
 - b.) Press zero scale calibration key. Follow the instructions on the panel view to zero scale and press accept key when finished.
 - c.) Press previous key to return to setup panel.
 - d.) Press weight calibration key. Follow the instructions on this screen for the procedure and press accept key when finished.
- 4.) To Fill/Refill machine:
 - a.) Press and hold the manual fill key located at the lower right of the main screen until lift begins to advance upwards. The lift will cycle up, then delay while up for approximately three seconds, then will proceed down until the down limit switch is made. This will complete the manual fill and shut off the hydraulic pump.
- 5.) To Fill/Refill machine (Controller Mode):
 - a.) Go to setup screen.
 - b.) Press hopper parameters key. A new screen will appear.
 - c.) Press auto refill key located at top of screen until it reads auto fill ON.
- 6.) To run machine in local mode:
 - a.) Go to setup screen.
 - b.) Press set point selection key. The set point selection screen allows the operator to select local, plant 4-20 MA and plant 0-10 VDC.
 - c.) Press local key and return to home page.
 - d.) Press set point key. A screen should appear where you will be able to enter the pounds per minute you wish to run. **NOTE:** This key is located at the bottom and right of the home key.
 - e.) Press home key (lower left) to return to the main HMI screen.
 - f.) To start machine press the (green) start key (upper right). Machine will run at selected set point (feed rate). If auto refill switch is "ON" machine will go into refill mode when the heel point (low weight) is reached.
 - g.) To stop machine press the (red) stop key. If machine is in refill mode and stop button pressed the refill cycle will stop.
- 7.) To run machine in plant control mode:
 - a.) Go to setup screen.
 - b.) Press set point selection key. The set point selection screen allows the operator to select local, plant 4-20 MA, plant 0-10 VDC and manual.
 - c.) Select plant 4-10 MA or plant 0-10 VDC and return to home page.
 - d.) Machine will start and stop from customer supplied dry contact closure using proper wiring.

AIR CONTROL

- 1.) A ball valve, located by the side of the Main Control Panel, is used to control the proper amount of air into the fiber stream. (See Illustration II-G)
 - a.) Maximum air (valve lever 90° to line) will provide maximum velocity and movement of fiber.
 - b.) Minimum air (valve lever parallel to line) will provide slow movement of fiber.
- 2.) When connecting to a batch facility, maximum air may be necessary to facilitate fast injection of material. **CAUTION:** Too much air into system may cause unnecessary dust into mixing area.

FRONT VIEW

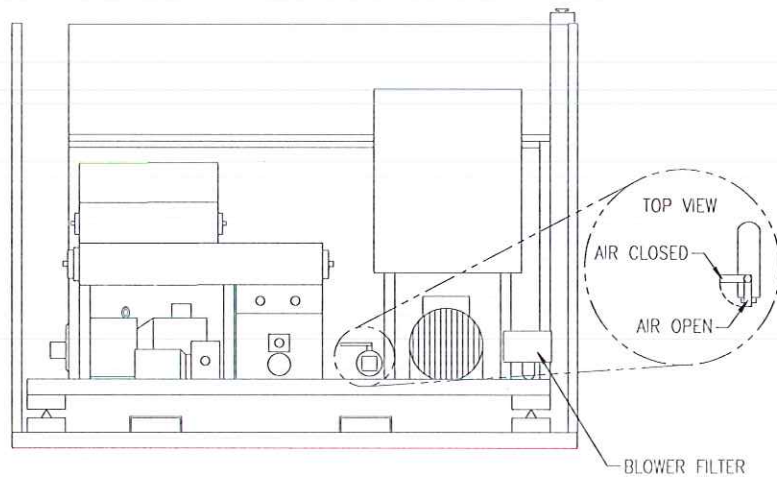
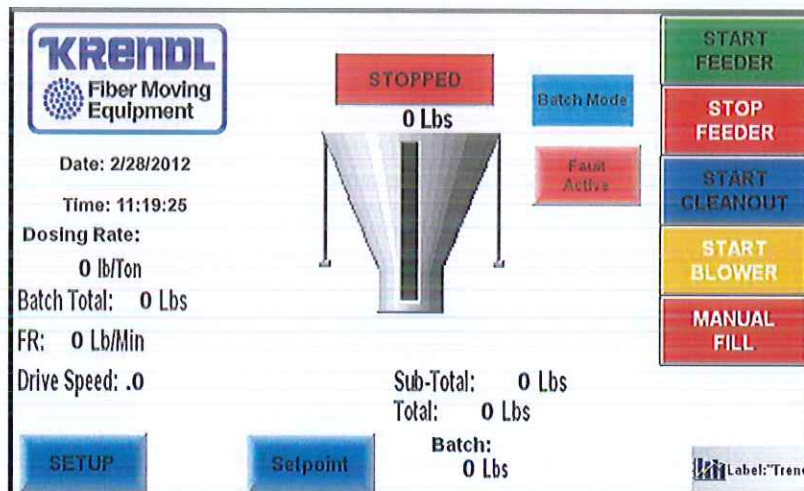


Illustration II-G

PANEL VIEW USER SCREENS

This section of the manual provides a view of the many panel view user screens along with a brief description of each. **Note:** Use the screen information from this section as a reference guide when going through the start-up operations.



Main or Home Screen:

Setup Button - Takes you to the Setup screen.

Setpoint Button - Takes you to the Setpoint screen.

Start Feeder / Stop Feeder Buttons - Controls local function of feeder.

Clean Out Button - Allows machine to empty.

Start Blower Button - Runs blower only. This is used to blow out hose from machine to asphalt plant.

Manual Fill Button - Runs hydraulic lift. This is used to start the hydraulic lift cycle.

Krendl Logo Button - Takes you to the Tech support screen.



Setup Screen:

Reset Subtotal / Reset Total Buttons - Reset the values displayed on the home page to zero.

Home Button - Lower left of screen, returns user to the home page.

Previous Button - Lower right of screen, returns user to previous displayed page.

Note: All other buttons on setup page will navigate to another page under that button heading.

BATCHING PARAMETERS

Dive Speed%:

.0

Pre-Act

.0 lbs

Home

Previous

Batching Parameters Screen:

Used to set percentage of drive needed. Pre-Act will adjust dose for machine.

ZERO PROCEDURE

Verify NO Cal Weight Is on Scale,
Press Start to Proceed

New Zero Load: .00000

Difference: .00000%

ACCEPT?

REJECT?

START

Home

CANCEL

Previous

Zero Weight Calibration Screen:

Directions on the screen will prompt user on how to proceed.


WEIGHT PROCEDURE

Verify no Weight on Scale
Press Start to proceed

Cal. Weight
.0 Lbs

Last Calibration
2/28/2012
11:59

New Scale Factor: .00000
 Difference: .00000%


 Waiting on Weight

ACCEPT?

REJECT?

START

Home

CANCEL

Previous


WEIGHT PROCEDURE

Verify input Cal weight of 350. LBS
Press Start to Proceed

Cal. Weight
.0 Lbs

Last Calibration
2/28/2012
11:59

New Scale Factor: .00000
 Difference: .00000%


 Waiting on Weight

ACCEPT?

REJECT?

START

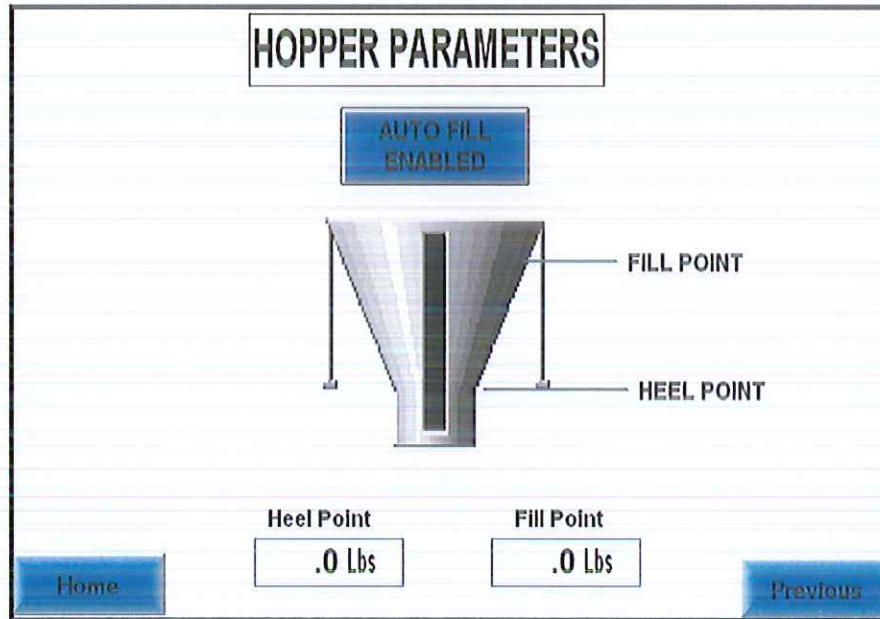
Home

CANCEL

Previous

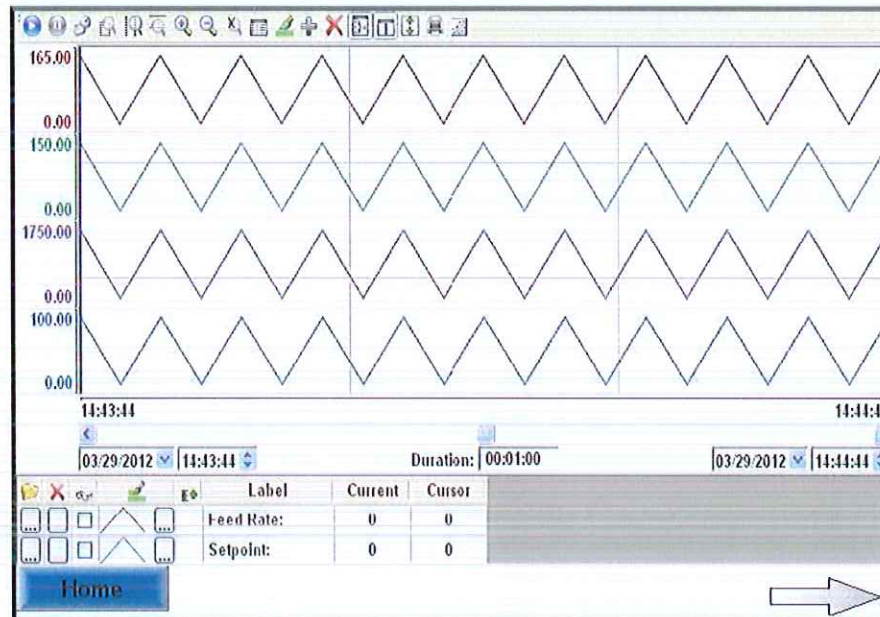
Weight Calibration Screen:

Directions on the screen will prompt user on how to proceed.



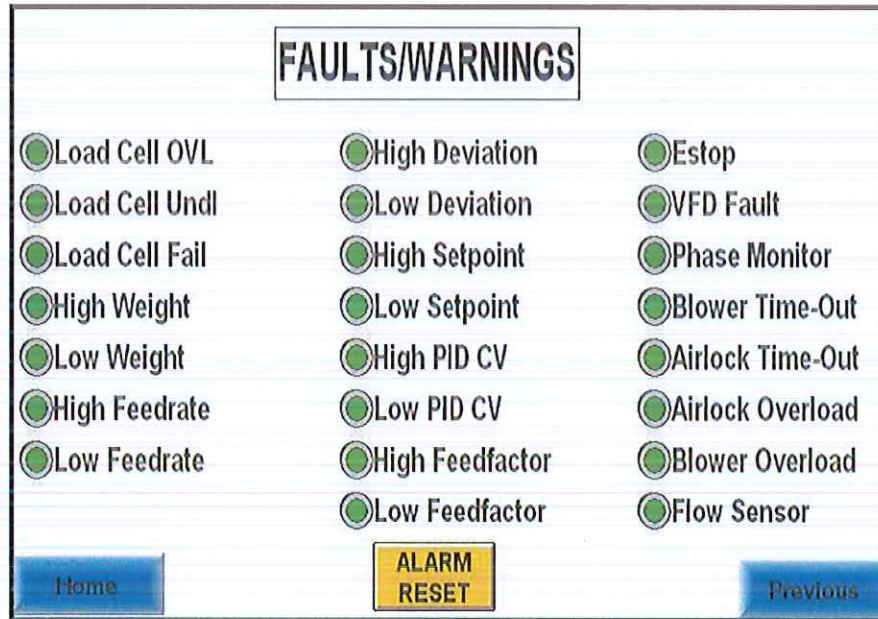
Fill Parameters Screen:

- Heel Point Button** - Sets the weight that the user wants the feeder to start an auto refill.
- Fill Point Button** - Sets the weight that the user wants the feeder to stop an auto refill.
- Auto Fill Button** - Enables or disables auto refill.



Trend Screen:

Bar graph displays feedrate, setpoint and weight.



Faults / Warnings Screen:

If a Fault Active warning symbol should appear on home page go to this screen to verify warning. Then correct issue and reset.

Load Cell OVL - Indicates at least 1 load cell input is overloaded high.

Load Cell UNDL - Indicates at least 1 load cell input is overloaded low.

Load Cell Fail - Communication to load cells has failed.

High Weight - Indicates weight has exceeded the set limit.

Low Weight - Indicates weight has gone below the set limit.

High Feed Rate - Indicates the feed rate has exceeded the set limit.

Low Feed Rate - Indicates the feed rate has gone below the set limit.

High Deviation - Indicates the difference between the feed rate and set point has exceeded the set limit.

Low Deviation - Indicates the difference between the feed rate and set point has lag set limits.

High Set Point - Set point is above design feed rate.

Low set point - Set point is below " low set point" limit.

High PID CV - PID Control Voltage is too high.

Low PID CV - PID Control Voltage is too low.

High Feed Factor- Feed Factor has reached allowed upper limit.

Low Feed Factor - Feed Factor has reached allowed lower limit.

E-Stop - E-Stop circuit is broken, check for engaged e-stops and reset.

VFD Fault - A fault has occurred in the VFD drive, check VFD in main panel.

Phase Monitor - Three phase power is not in correct rotation, reverse phases to correct.

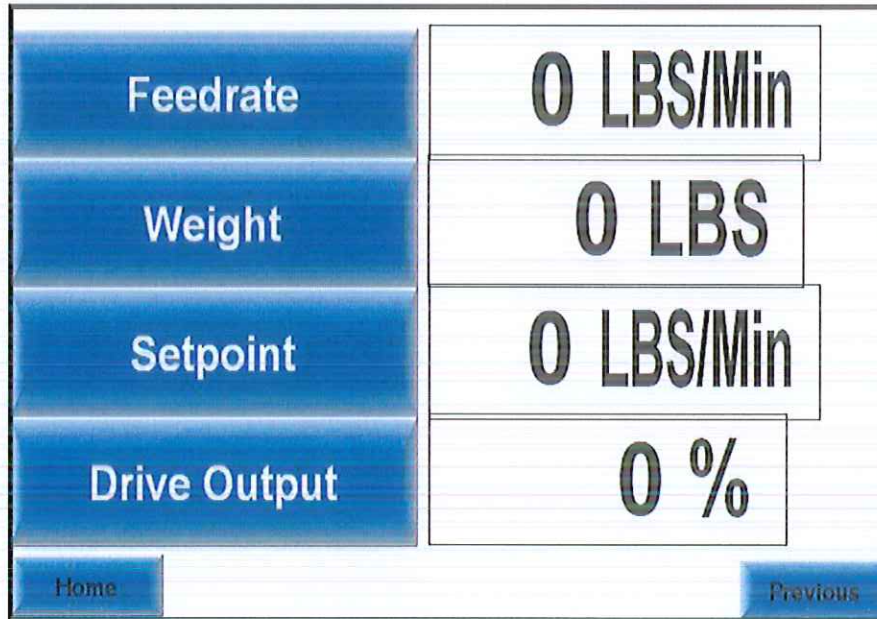
Blower Time-Out - Blower motor has run a preset time and has timed out.

Airlock Time-Out - Airlock has run a preset time and has timed out.

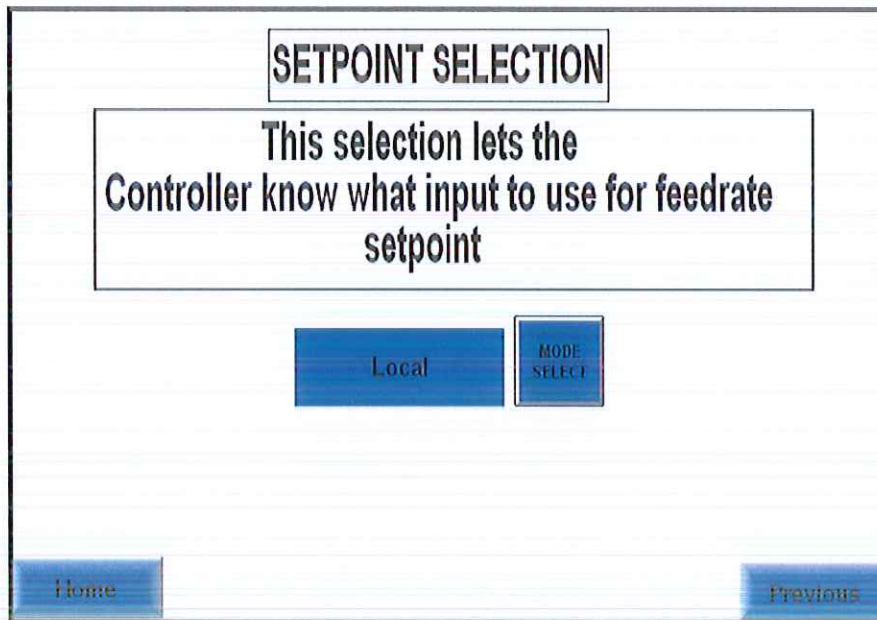
Airlock Overload - Airlock motor overload has tripped, reset in main panel.

Blower Overload - Blower overload has tripped, reset in main panel.

Flow Sensor - Flow Sensor is not detecting any flow of material. (Optional)



Digital Display Screen:
Shows the bar graph in a digital display.



Setpoint Selection Screen:
This screen is used to set the feeder in local control or remote control.

FEEDRATE SETPOINT

Local

Setpoint:
.0 Lbs/Min

Press To
Enter New
SetPoint

Home

Previous

Feedrate Setpoint Screen:

This screen is used to control the setpoint of the feeder.

Note: Enabled only when in local control.

DATA LOGGING

Data log will store up to 500 events via USB memory stick.
Adjust log interval time and enable data log to use this feature.
Data log will store Feedrate, Setpoint, Drive Output, and Material Weight

Log Interval

0 Secs

Data Logging
Disabled

Home

Report to USB
Drive

Previous

Data Logging Screen:

This screen controls the time interval of the data log.

It also enables the logging function.

To use logging function:

Enable data logging and press "Report to USB Drive" at the end of the day.

SET TIME & DATE

2/28/12
11:59:59

MONTH 0	DAY 0	YEAR 0
HOUR 0	MINUTE 0	SECS 0

Home
Press to
Set Time and Date
Previous

Set Time and Date Screen:

This screen is used to set the time and date of the controller.

PRINTING

Print Interval:

0 Minutes

Printing
Disabled

Home
Previous

Printing Screen:

This screen enables the printer function.
It also establishes the print interval.

ANALOG I/O DIAGNOSTICS

Analog Inputs

4-20 mA A/D Counts: 0	0-10V A/D Counts: 0
Scaled Setpoint: .00	Scaled Setpoint: .00
Scaling Factor: <input style="width: 80px;" type="text"/>	Scaling Factor: <input style="width: 80px;" type="text"/>

Analog Outputs

4-20 mA A/D Counts: 0	0-10V A/D Counts: 0
Scaling Factor: <input style="width: 80px;" type="text"/>	Scaling Factor: <input style="width: 80px;" type="text"/>

Home
Previous

Analog I/O Diagnostics Screen:

This screen is used for scaling or adjusting the feeder signal.
This makes the feeder signal more compatible with the asphalt plants.

LOAD CELL DIAGNOSTICS

Load Cell Input

Weight : .0 Lbs

A/D Count: 0

Home
Previous

Load Cell Diagnostics Screen:

This screen displays the weight in the hopper
and the raw data count from the summing box.

PLC I/O DIAGNOSTICS

Inputs	Outputs
<input type="radio"/> E-Stop Okay	<input type="radio"/> Totalizer Pulse
<input type="radio"/> VFD Ready	<input type="radio"/> Flow Sensor
<input type="radio"/> Phase Monitor	
<input type="radio"/> Blower Running	<input type="radio"/> Blower Motor
<input type="radio"/> Airlock Running	<input type="radio"/> Airlock Motor
<input type="radio"/> Blower Overload	<input type="radio"/> VFD Starter
<input type="radio"/> Airlock Overload	<input type="radio"/> Start VFD
	<input type="radio"/> Fill Relay
	<input type="radio"/> Green Light
	<input type="radio"/> Red Light
	<input type="radio"/> Amber Light

Home
Previous

PLC I/O Diagnostics Screen:

This screen is used to troubleshoot the feeder by showing states of various functions of the PLC and I/O.

CLEANOUT PARAMETERS

Empty Weight	Cleanout Time
.0 Lbs	0 Secs

Home
Previous

Cleanout Parameters Screen:

This screen sets the desired empty weight and the time permitted for this function to occur. This is entered by the user.

CONTACT INFORMATION

KRENDL MACHINE COMPANY
1201 SPENCERVILLE AVE
DELPHOS, OHIO 45833
web: www.krendlmachine.com

Sales**Office: 800-459-2069****Cell: 419-979-9866****Fax: 419-695-9301****Tech Support****800-459-2069****After Hours (5 P.M.)****419-203-1279****or****419-979-9866**[Home](#)**Contact Screen:**

This screen provides the user with the Manufactures contact information.

ROUTINE MAINTENANCE

CAUTION: Disconnect power to machine before servicing or injury may result.

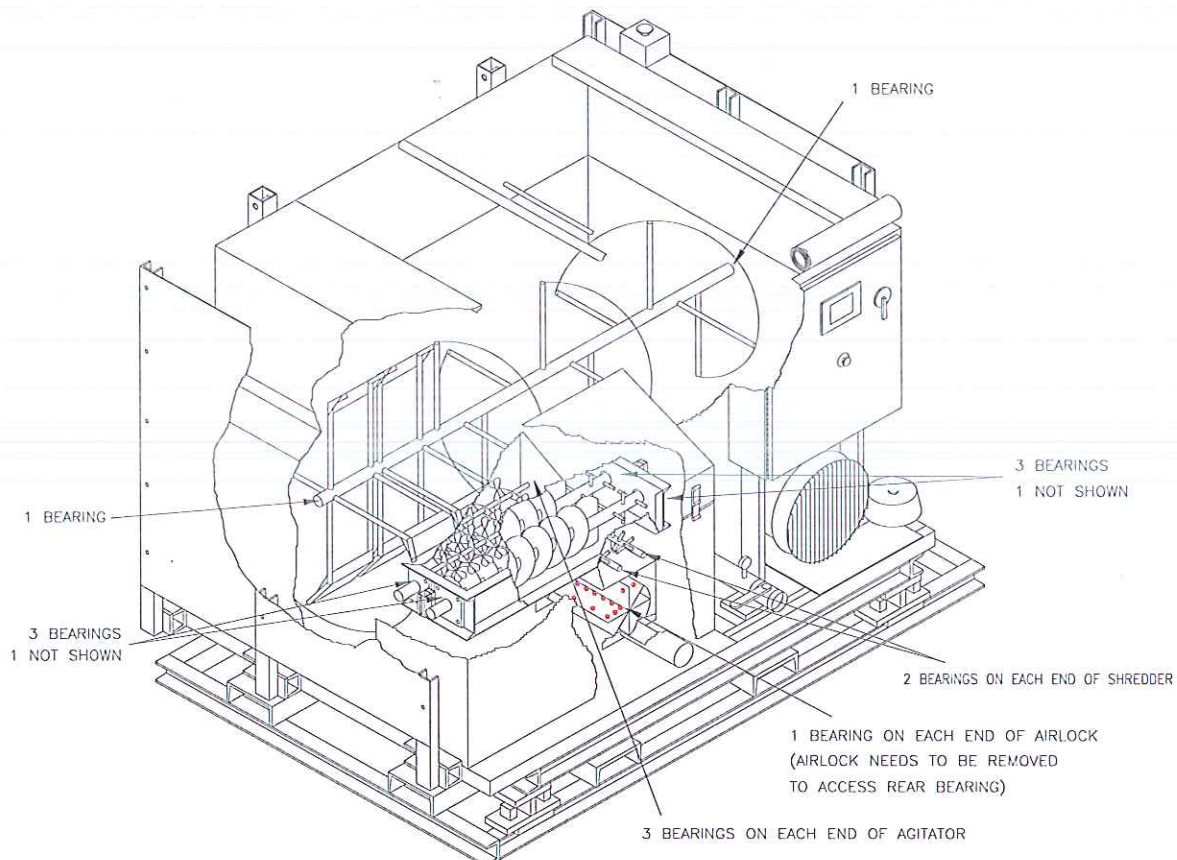
- 1.) Occasionally open guards and check chain tension and alignment. Chains should be snug to slightly loose. Do not overtighten. Re-lube with dry film lubricant or soak in pan of 30 weight oil.

NOTE: Chains can be inspected by opening upper guard housing.

- 2.) Blower filter should be cleaned, or blown out every few days as needed with compressed air.

EVERY 3 TO 6 MONTHS (200 hours Depending on use)

- 1.) Re-lube bearings with lithium base grease.
- 2.) Check airlock seals. (When seals become worn or damaged, the blower setting will have to be increased to compensate for air leakage at the airlock.)
Place hand over output tube; if the air bypass valve releases air, the seals remain adequate. Also check pressure gage to confirm at least 2.5 p.s.i. in airlock.
- 3.) Periodically check oil level in reducers. 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 small speed reducer (Part: 109028-R1) has been filled with Mobil 600 XP 220 and your large reducer (Part: 8106) has been filled with Modil SHC 634. Consult speed reducer manufacturer's manual for lubricant replacement intervals.



MODEL #9000-A WINTERIZATION AGENDA
Before disconnecting power from Main Panel Box

EXTERNAL INSPECTION

- 1.) Overall inspection of complete external unit. (i.e. rust, wear, damage, and alignment)
 - a.) Lid/Cover
 - b.) Tires (if applicable)
 - c.) Load cell bolts
 - d.) Under structure
 - e.) Machine enclosures
- 2.) Run unit through various operations. (If unit doesn't have any fiber, simulate by adding additional weight)
 - a.) Check for accurate weighing.
 - b.) Operate all functions. (i.e. refill light)
 - c.) Take load cell readings at all four corners with same test weight. (approx. 350 lbs.) check for scale drift.
 - d.) Take "note" of serial numbers of each load cell and entire machine.
 - e.) Take "note" of running hours and date (If unit has hour meter).
 - f.) Add desiccant to machine electrical box, load cell junction box and console (Be sure to fasten enclosure lids securely).
- 3.) Remove all fiber from machine.
- 4.) Blow out fiber hose, check for cracks and brittleness, (if necessary, repair or replace) and place hose in storage.
- 5.) Remove compacted fiber from under structure and around load cells (live to dead weigh areas). Clean out drain holes beneath each end of main hopper (curved) section.
- 6.) Remove drain plugs if in storage. Drain plugs need to be installed before use, to prevent material drainage.
- 7.) Assess need for hopper repainting.
- 8.) Make sure fasteners on all parts are tight.
- 9.) Cover top of machine with roll tarp. Check for holes and tares in tarp and replace if needed.

INTERNAL INSPECTION

CAUTION: Disconnect power to machine before servicing or injury may result.

- 1.) Remove Wind Guard assembly - 2 panels and 2 posts at drive end of machine (if applicable).
- 2.) Raise Top Guard and fasten to upper hopper hook (Illustration IV-A).
- 3.) Remove End Guard and Front Guard (Illustration IV-A) for easy access to visually inspect vital areas and to apply proper lubrication.

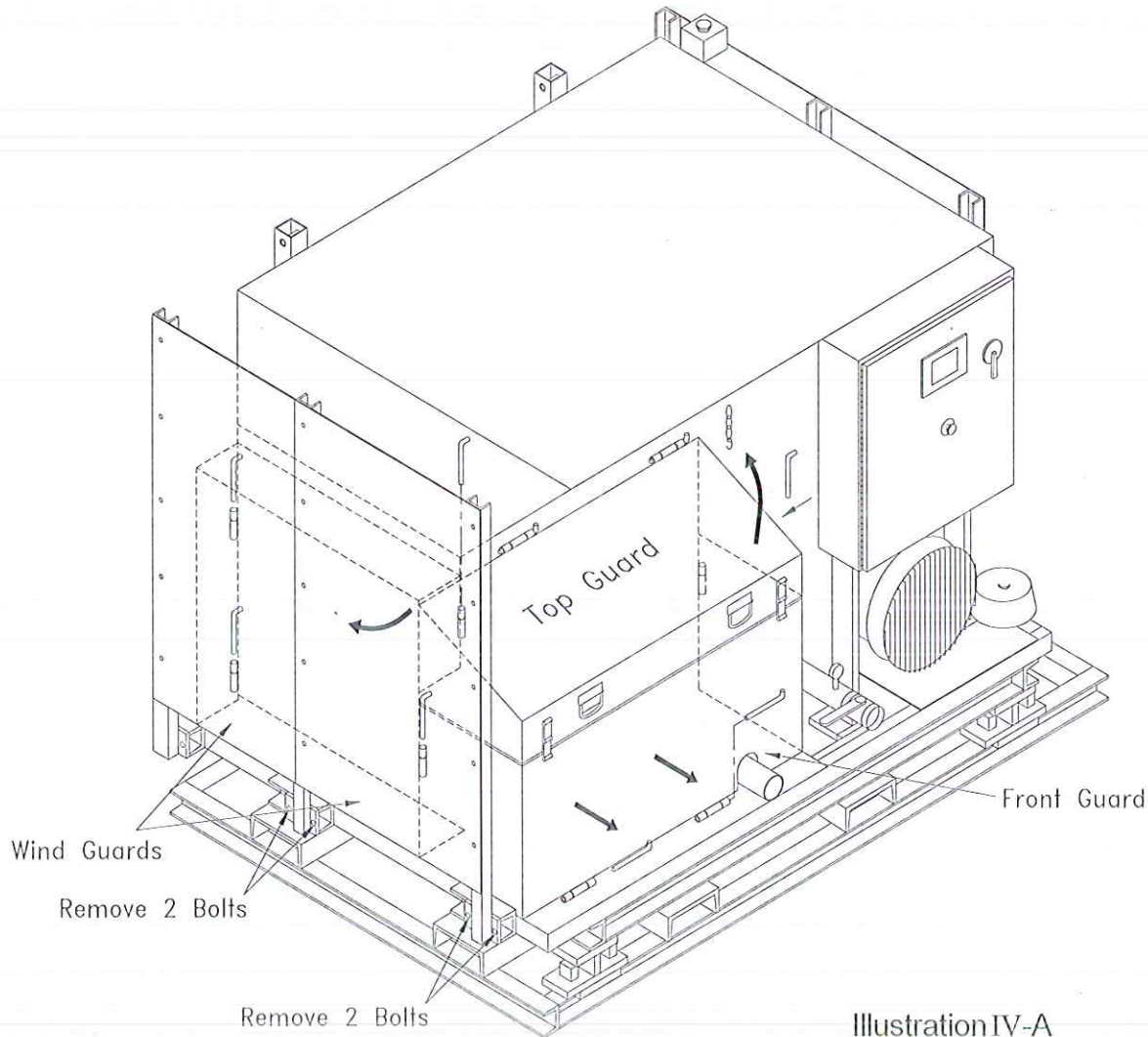


Illustration IV-A

- 4.) Coat all exposed metal parts with a light film of oil (WD-40 or other rust inhibiting product). This would include such parts as:
 - a.) Main hopper area and ribbon auger (A in Illustration IV-B).
 - b.) Staging area: (Open access panels) agitators (B), augers (C), shredder (D), and airlock (E) (Illustration IV-B). **NOTE:** Use putty-knife to remove residual fiber from corners and around agitator/shredder tines.
 - c.) Sprockets, chains and drive shafts (A and B) (Illustration IV-C).

NOTE: If hopper needs to be drained, remove drain plugs located at each end of main hopper (curved) section.

Illustration IV-B

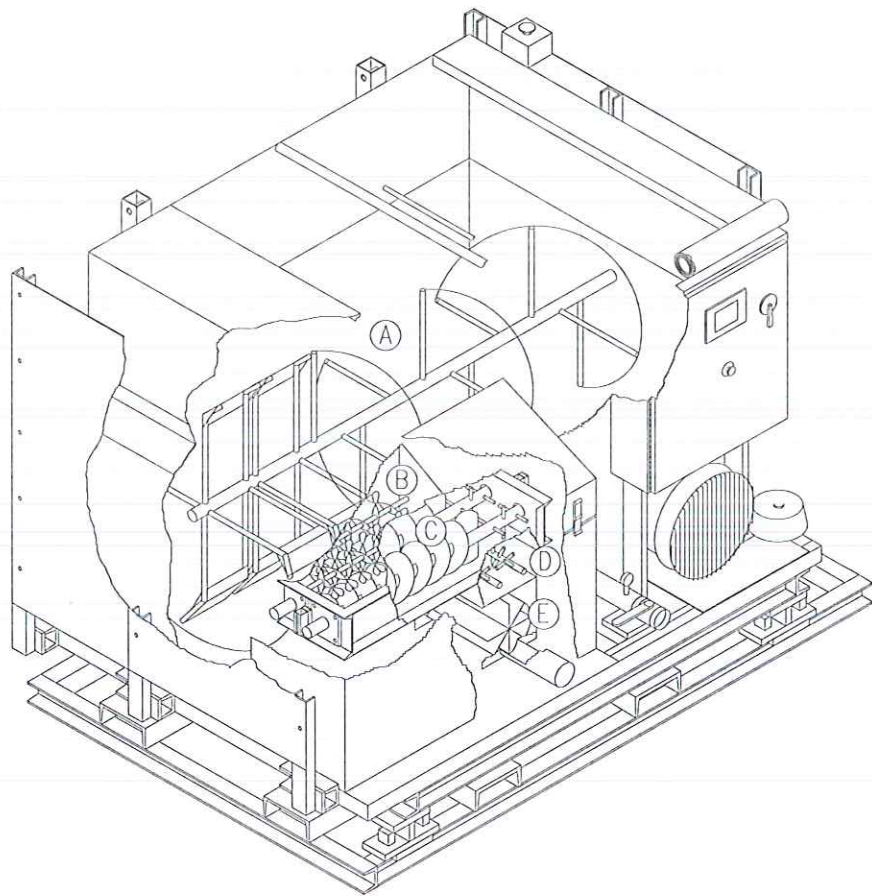
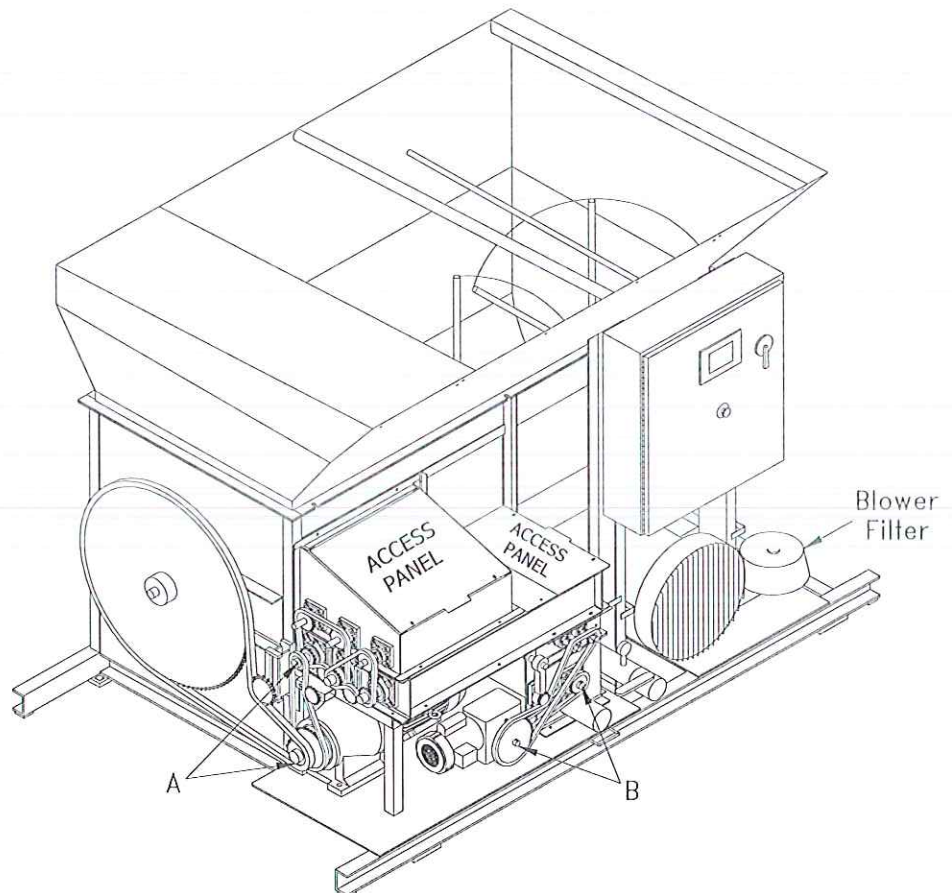


Illustration IV-C



NOTE: It is especially important to put a film of oil in the airlock assembly. This can be accomplished by spraying WD-40 or equivalent into airlock area, then running machine/airlock under power to spread the oil film evenly. (Upper guard and/or safety limit switch needs to be in the proper position to allow machine to run.)

- 5.) Visually inspect all moving or rotating components.
 - a.) Look for bent fingers, shafts, or misaligned components (Illustration IV-B).
- 6.) Visually inspect all transmission components for:
 - a.) Alignment (sprocket to sprocket alignment and possible bent shafts especially the twin agitators above augers in staging area). (Illustration IV-C)
 - b.) Firm/tight attachment (sprockets loose on shafts or loose tension on idler brackets).
 - c.) Wear (sprocket teeth chipped or worn on side of teeth indicating improper sprocket alignment).
 - d.) Chain tension (**NOTE:** If chain is badly corroded or poorly lubricated, remove chain and soak in 30W oil bath overnight or replace.)
- 7.) Grease all bearings (13) with a lithium base grease until grease purges bearings. (**NOTE:** A thin bead of grease will ooze from the bearing seal when filled.)
 - A long flexible tube with a swivel grease fitting on end will be needed on grease gun to better access difficult to reach bearings (See Illustration IV-D).
 - A few bearings (3) will be inaccessible without minor disassembly. (i.e. rear airlock and shredder bearings. However these can be greased when airlock is removed for routine airlock seal replacement.)
 - **NOTE:** As development of the machine has progressed, more attention was given to grease fitting selection and orientation on bearings. Therefore some units may be difficult to access for easy introduction of grease. When performing routine maintenance on equipment, rotating/removing the bearing on its mount or inserting a 45° or 90° fittings may prove more convenient for future maintenance.

360° SWIVEL FITTING

- Swivels in a full 360° circle with 8 position locks
- 45° fitting angle allows easy access to hard to reach grease fittings
- Grease coupler and extension pipe are included
- 1/8" female inlet allows for easy assembly to standard grease guns
- For use with hand grease guns only

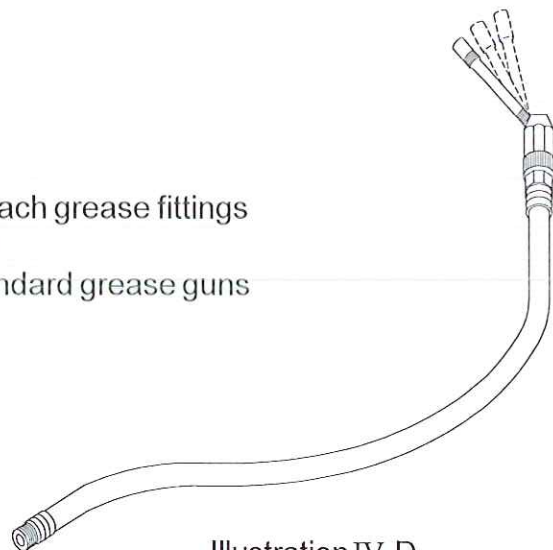


Illustration IV-D

- 8.) Remove and check blower intake filter. (In some instances filter can be cleaned by back-blowing with compressed air. If in doubt, replace filter.) (Illustration IV-C)

- 9.) Check airlock seals.
 - a.) Visually inspect for torn or ripped seals. Use flashlight to view seals from top shredder access area (See Illustration IV-E) or from 4" output tube end.
 - Airlock seals should be replaced approximately every 300-500 hours of normal wear and tear.
 - Visual inspection - If contact edge of rubber seal is severely worn, replace seals.
 - Pressure test airlock assembly by holding airtight restriction or plate against airlock output tube while running machine manually with Panel View Key in Blower/Airlock position. The pressure gauge (located adjacent to blower "bleed-off control") should register above 2.5 p.s.i. when bleed-off control is closed. (If machine doesn't have a pressure gauge, pressure may be checked at output tube with a pressure tester. Check with factory.)

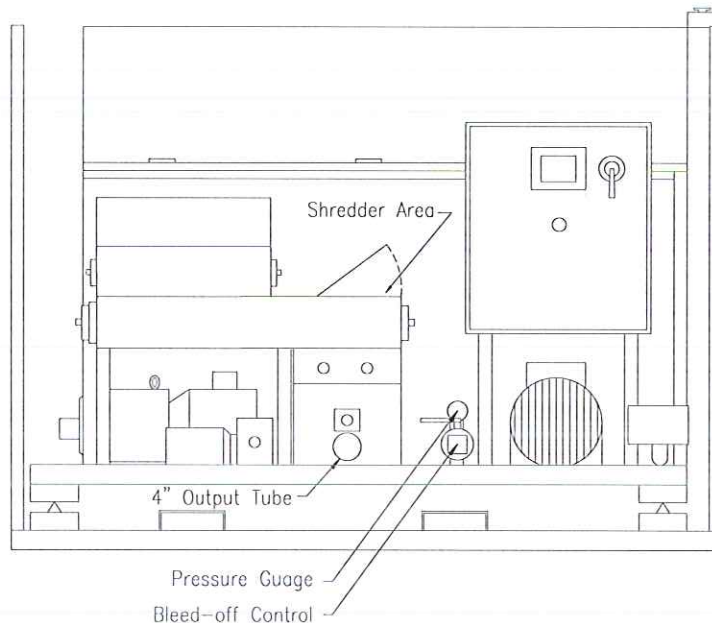
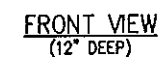
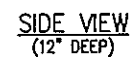
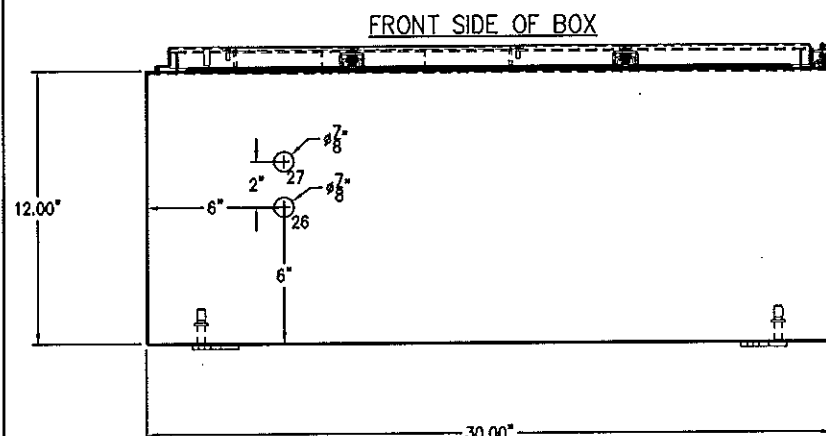
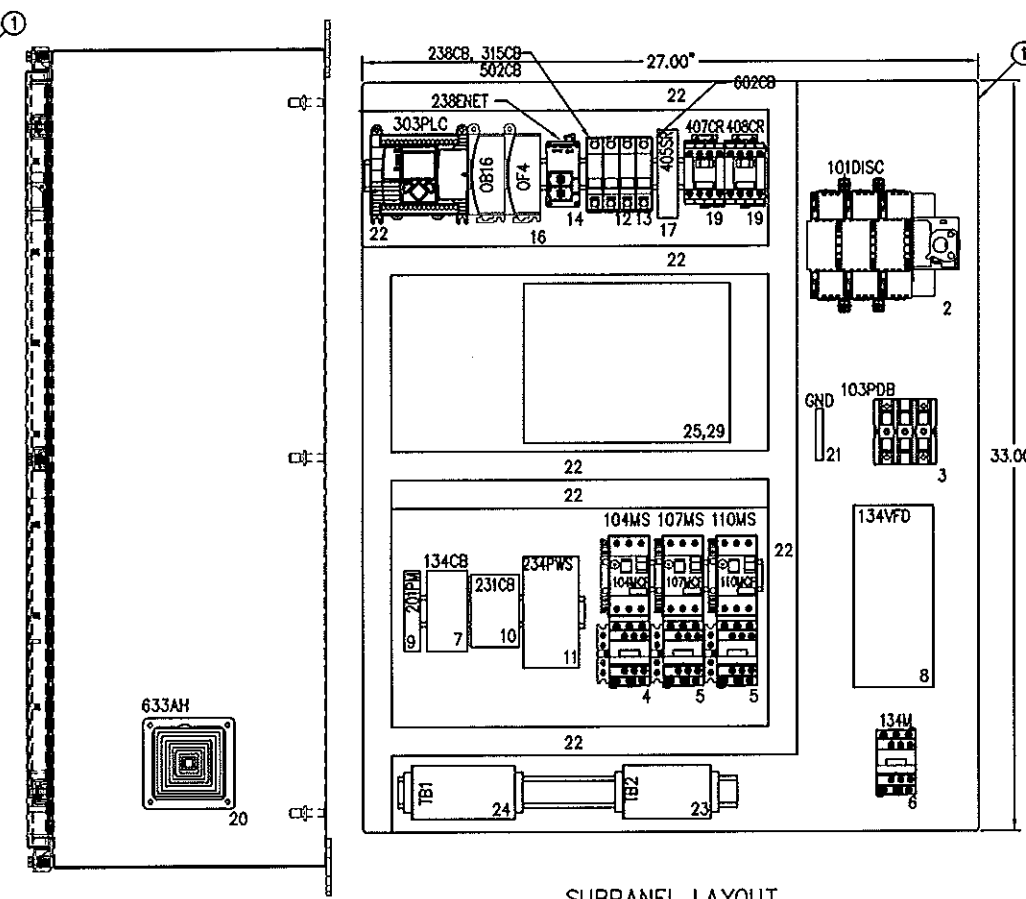
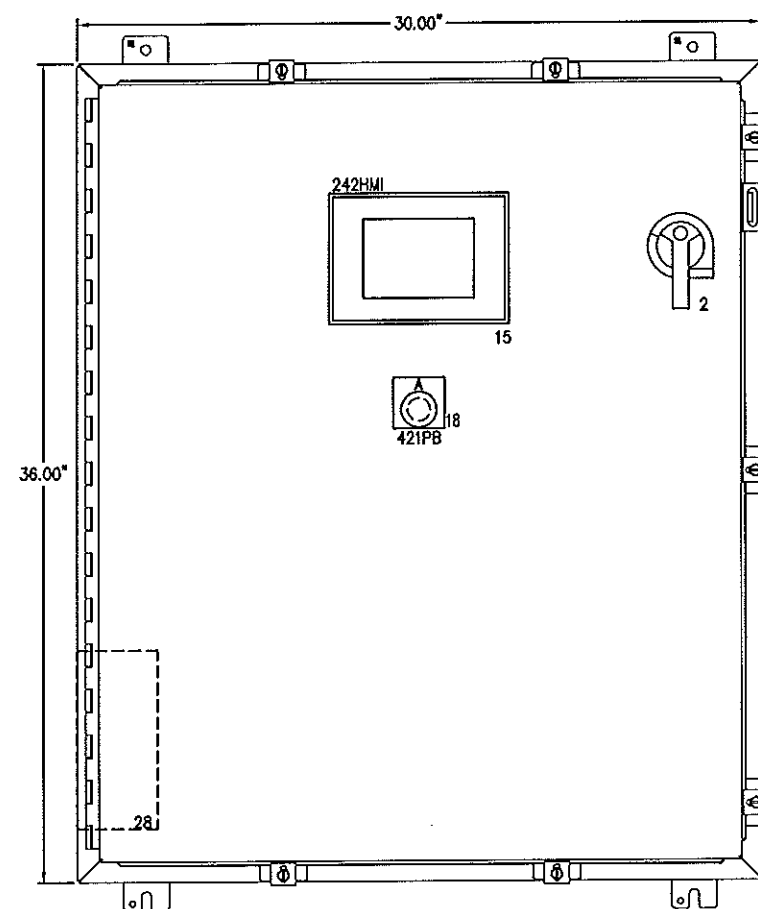


Illustration IV-E

- 10.) Check all electrical and conduit connections for tightness (**NOTE:** To maintain the watertight system, all connections must be tight.)
- 11.) Main Control Panel must be tightly closed and fastened to prevent seepage of moisture while in storage.
- 12.) Replace all access panels, guards, and covers in opposite order of removal.
- 13.) Check the Cat 5 and Safety Cable that run from the Main Control Panel to the Consolet for damage or worn spots.
- 14.) Gather all hose clamps and hose connectors and store with hose and unit.
- 15.) Place Consolet in a clean, dry, heated (above freezing temperature) environment.
- 16.) **IMPORTANT:** When placing machine in storage, it should be located in elevated area, free from flooding and completely covered with a heavy duty tarp. This will protect equipment from harsh environment conditions and possible long term moisture damage. **NOTE:** Make sure weight of machine has been removed from load cells (load cell lift blocks tensioned) before moving machine.




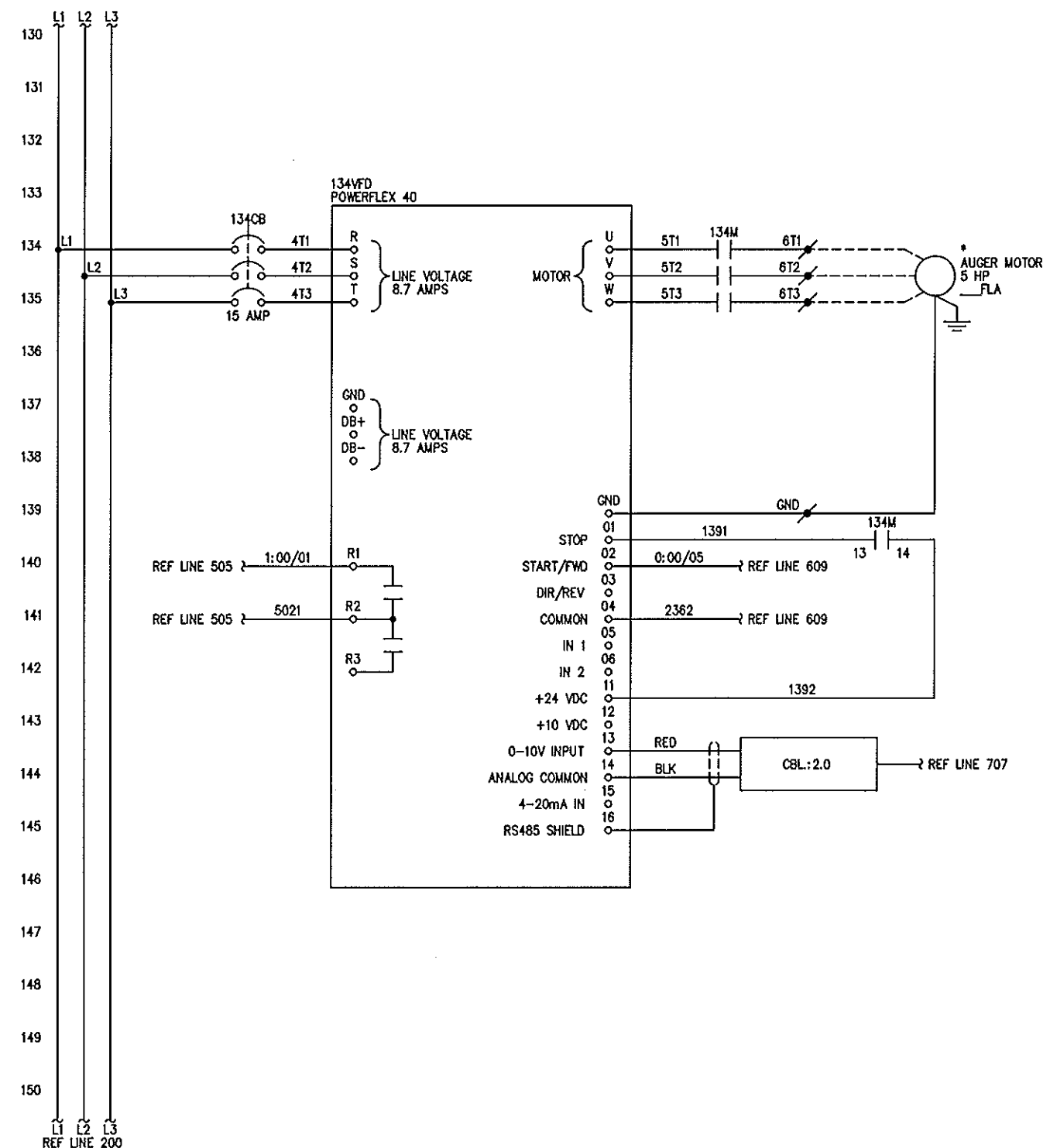
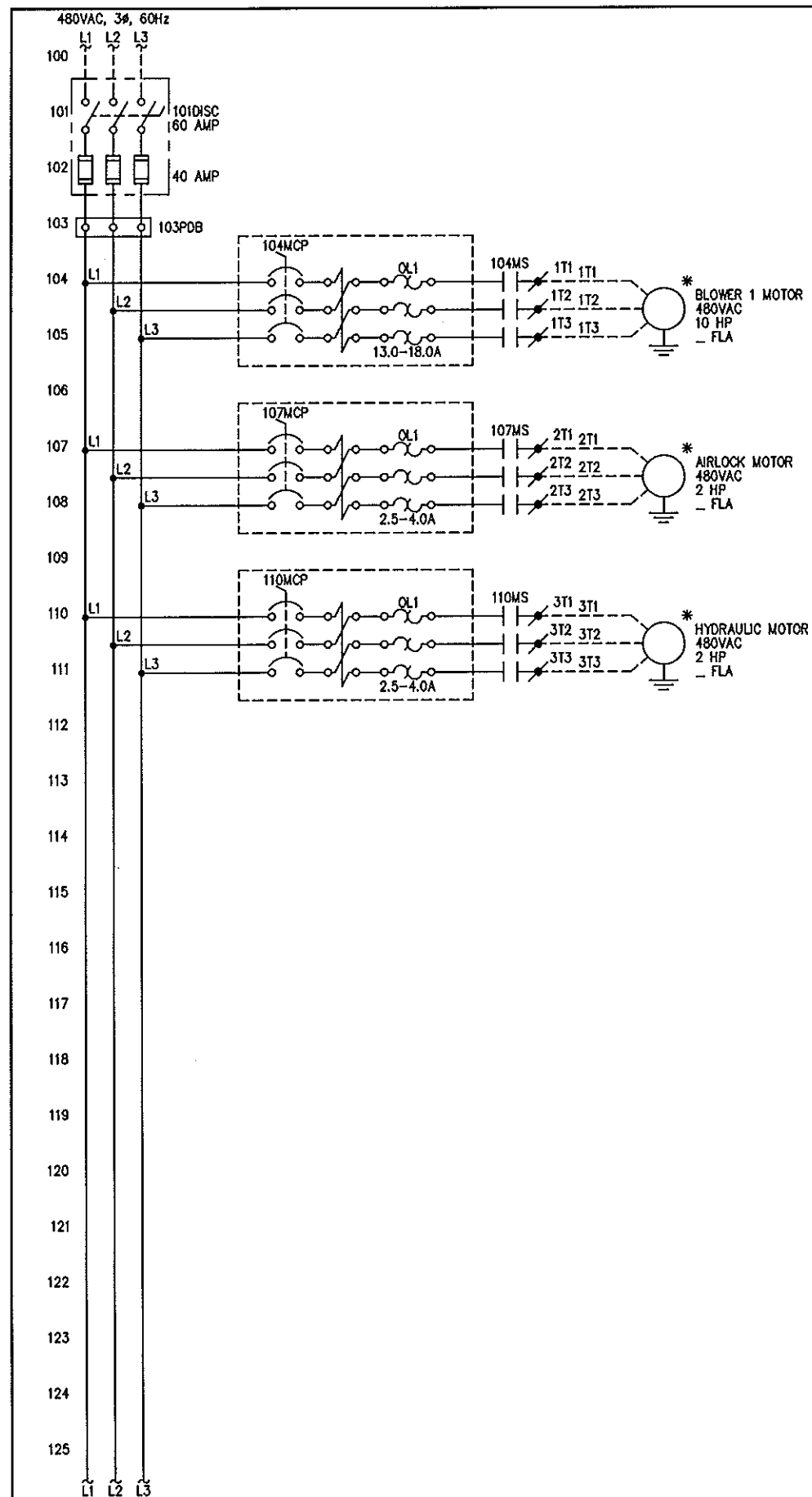
TB1	TB2
2362	1T1
2362	1T2
2362	1T3
2381	GND
2381	2T1
3151	2T2
4101	2T3
4102	GND
4111	3T1
4121	3T2
4211	3T3
4212	GND
4213	6T1
4214	6T2
4231	6T3
4232	GND
4233	
4234	
5021	
1:00/08	
1:00/09	
0:01/00	
0:01/01	
0:01/03	
0:01/10	
0:01/11	

ENGRAVING SCHEDULE						
ID NO.	QTY.	TYPE	SIZE	PLATE COLOR	LETTER COLOR	FIRST LINE \ SECOND LINE, ETC.
A	1	LP	2-1/4" SQ.	YELLOW	BLK	EMERGENCY STOP

BILL OF MATERIAL				
ITEM	QTY.	MANUFACTURER AND CATALOG NUMBER		DESCRIPTION
1	1	HOFFMAN	A36H30DLP	ENCLOSURE, SINGLE DOOR, WALLMOUNT, 36" X 30" X 12"
	1	HOFFMAN	A36P30	SUBPANEL 33" X 27"
2	1	SQUARE D	GS1GU3	60A FUSED MAIN DISCONNECT
	3	BUSSMANN	LPS-40SP	FUSE, TIME-DELAY, 40A, 600V, CLASS J
	1	SQUARE D	GS1AE2	SHAFT KIT, 12"
	1	SQUARE D	GS1AH420	ROTARY HANDLE
3	1	SQUARE D	9080LBA362104	POWER DISTRIBUTION BLOCK
4	1	SQUARE D	LC1D32BD	IEC CONTACTOR, 10 HP
	1	SQUARE D	GV2AF3	CONNECTOR FOR GV2 PROTECTION WITH LC1D CONTACTOR
	1	SQUARE D	GV2ME20	MANUAL MOTOR PROTECTOR, 10HP, 480VAC, 13.0A-18.0A
	1	SQUARE D	GVAD0110	FAULT INDICATION AUXILIARY BLOCK, 1 N.C., AND 1 N.O.
5	2	SQUARE D	LC1D09BD	IEC MOTOR STARTER, 2 HP
	2	SQUARE D	GV2AF3	CONNECTOR FOR GV2 PROTECTION WITH LC1D CONTACTOR
	2	SQUARE D	GV2ME08	MANUAL MOTOR PROTECTOR, 2HP, 480VAC, 2.5A-4.0A
	2	SQUARE D	GVAD0110	FAULT INDICATION AUXILIARY BLOCK, 1 N.C., AND 1 N.O.
6	1	SQUARE D	LC1D18BD	IEC MOTOR STARTER, 5 HP
7	1	ALLEN-BRADLEY	140M-C2E-C16	MOTOR PROTECTION CIRCUIT BREAKER, 10-16A, 480VAC
	1	ALLEN-BRADLEY	140M-C-TE1	SPACING ADAPTER
8	1	ALLEN-BRADLEY	22A-D8P7N104	POWERFLEX 4 VFD, 480V, 5 HP
9	1	SQUARE D	RM17TG00	PHASE MONITOR RELAY
10	1	SQUARE D	MG24466	MINIATURE CIRCUIT BREAKER, 10A, 3-POLE
11	1	PULS	CT10.241	POWERSUPPLY, 480VAC/24VDC, 10A
12	3	SQUARE D	MG24112	CIRCUIT BREAKER, 1 POLE, 3A, 240VAC
13	1	SQUARE D	MG17404	CIRCUIT BREAKER, 1 POLE, 5A, 240VAC
14	1	N-TRON	104TX	ETHERNET SWITCH, (4) RJ-45 PORTS, 24VDC
15	1	MAPLE SYSTEMS	HWI5070TH	OPERATOR INTERFACE TERMINAL, TOUCHSCREEN, 7.0" DISPLAY
16	1	ALLEN-BRADLEY	1763-L16BBB	MICROLOGIX 1100
	1	ALLEN-BRADLEY	1762-OF4	4 AO MODULE
	1	ALLEN-BRADLEY	1762-OB16	16 DO MODULE
17	1	ALLEN-BRADLEY	440R-N23132	MSR1271P SAFETY RELAY
18	1	SQUARE D	9001-SKR9R	PUSHBUTTON, 30mm, RED, 2-POSITION, MAINTAINED, PUSH/PULL
	1	SQUARE D	9001-KA3	CONTACT BLOCK, RED COVER, 1 NC
19	2	ALLEN-BRADLEY	700S-CF8440ZJC	RELAYS
20	1	EDWARDS	871P-G1	ALARM HORN, 24VDC
21	1	SQUARE D	PK5GTA	GROUND BAR KIT
22	A/R	PANDUIT	TYPE F	WIRE DUCT, RIGID GRAY VINYL
23	12	WEIDMULLER	1020200000	TERMINAL BLOCK, FEED THROUGH, 16-8 AWG
	4	WEIDMULLER	1010200000	TERMINAL BLOCK, GROUND, WPE 6, GREEN/YELLOW, 22-8 AWG
24	26	WEIDMULLER	1020100000	TERMINAL BLOCK, FEED THROUGH, WDU 4,600V, 22-10 AWG
25	1	MERRICK		GENETEX WEIGH SCALE AND LCD DISPLAY
26	1	B&B ELECTRONICS	ENSPIFS	BULKHEAD PASS THRU, RJ45
27	1	ALLEN BRADLEY	880-F4AC1-1	6C MICRO STYLE RECEPTACLE, 4 PIN, 22 AWG, 1M CABLE LENGTH
28	1			SUMMING BOX
29	1	HOFFMAN	A1008CH	ENCLOSURE, 10" X, 08" X, 08"

Δ DENOTES ITEMS SUPPLIED BY OTHERS

 <h1>KRENDL</h1>	
1-800-347-8168	Web: WWW.KRENDLMACHINE.COM
MODEL: MODEL 9000 GRAVIMETRIC FIBER CONTROL SYSTEM	
<h2>KRENDL MACHINE COMPANY</h2>	
1-419-692-3060	DELPHOS, OH FAX 1-419-695-9301
DRAWN BY: DLH	DATE: 02/27/12
CHECKED: CON	SCALE: 1/4"=1"
JOB NO.	DWG. NO. KMCN0155A01 1/9



LEGEND:

- ✂ DENOTES A TERMINAL BLOCK POINT
- * DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL

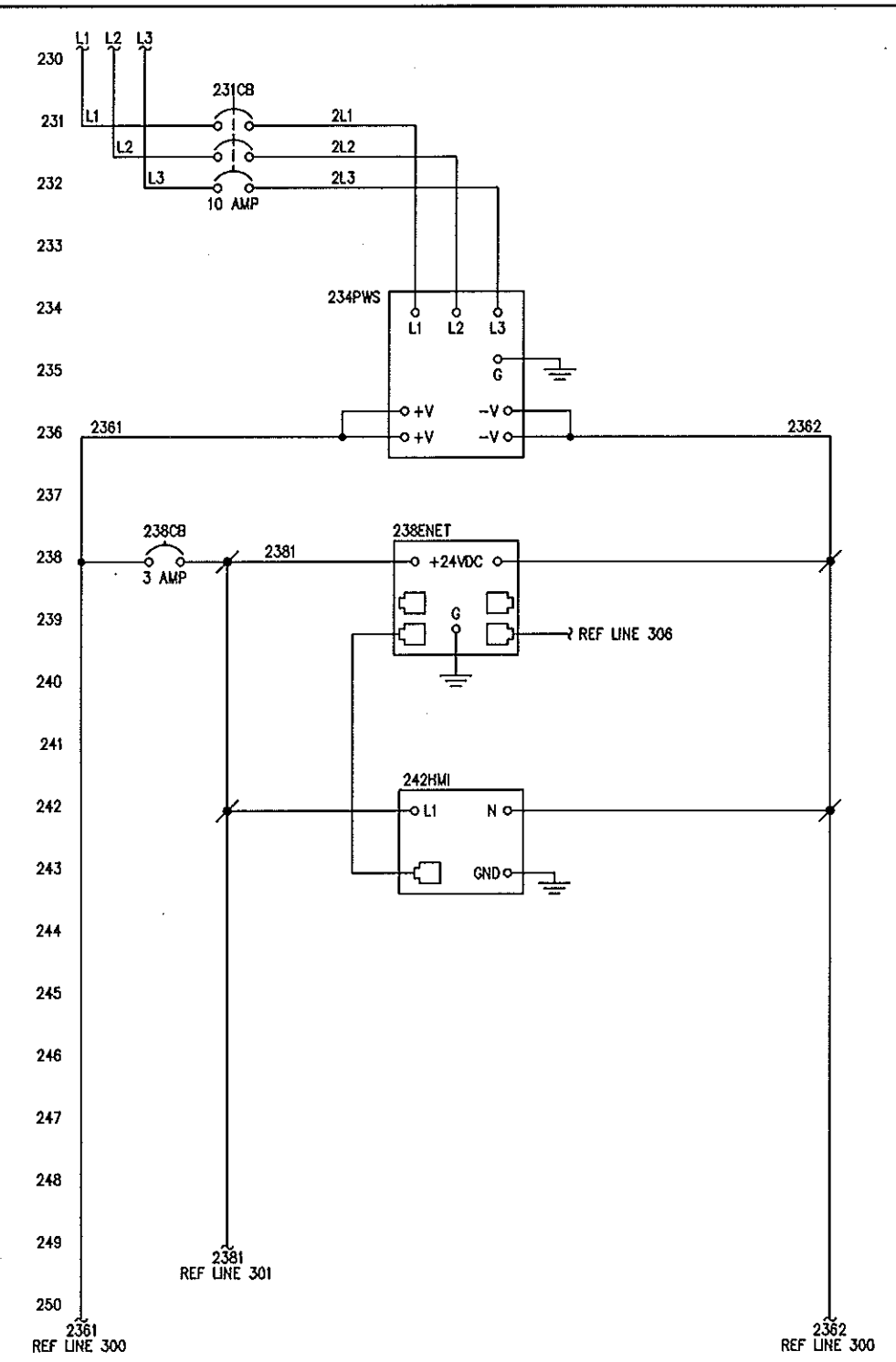
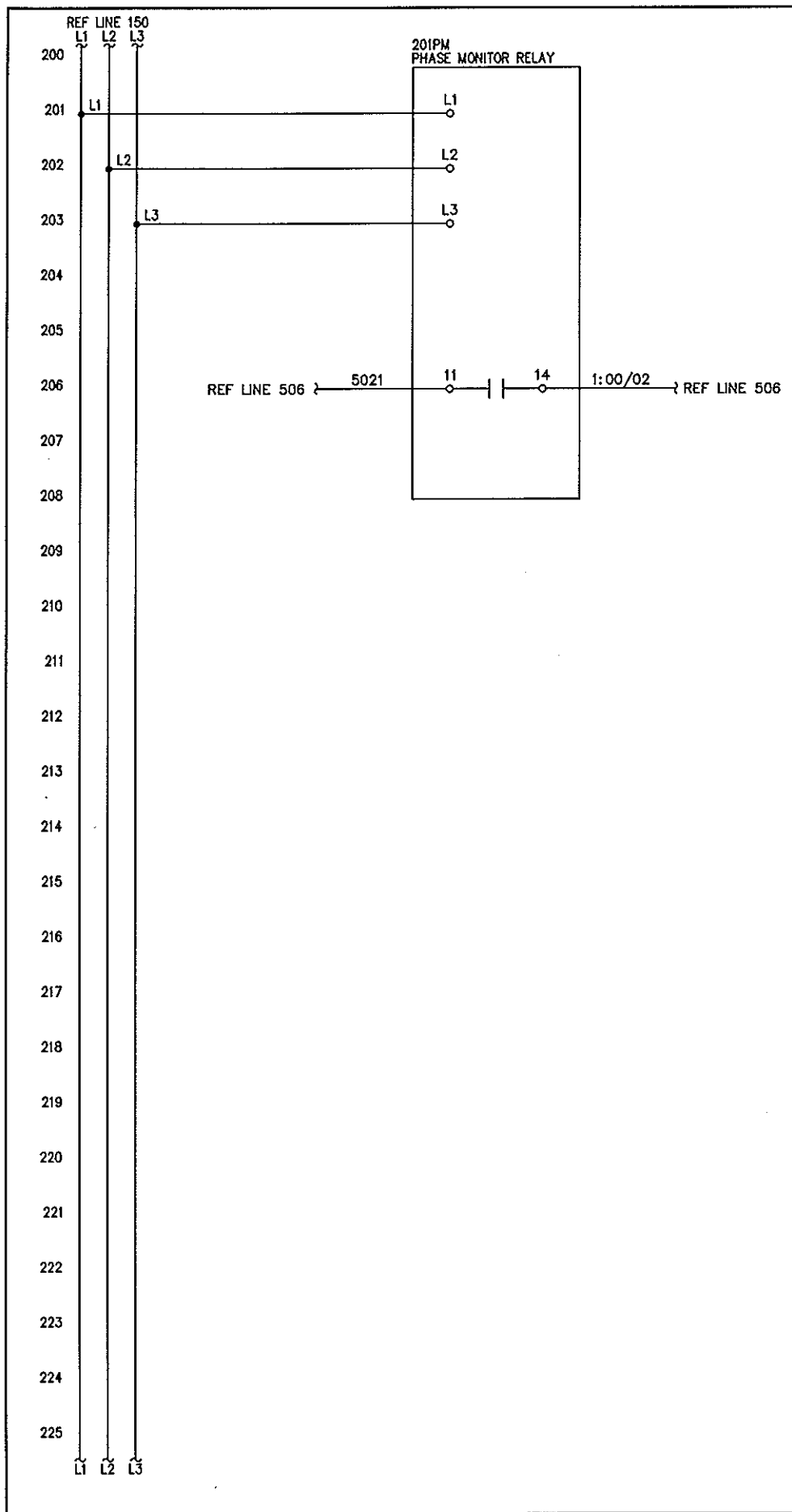
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NO.	DATE	DESCRIPTION	BY	CHECKED: CDW	SCALE: NONE
		REVISION		JOB NO.	DWG. NO.
				KMCN0155A02 2/9	

KRENDL

1-800-347-8168 Web: WWW.KRENDLMACHINE.COM

MODEL: MODEL 9000 GRAMMETRIC FIBER CONTROL SYSTEM

KRENDL MACHINE COMPANY
DELPHOS, OH 44824
1-419-692-3060 FAX 1-419-695-9301



LEGEND:

✱ DENOTES A TERMINAL BLOCK POINT

* DENOTES ITEM REMOTE FROM CONTROL PANEL

--- DENOTES WIRING EXTERNAL TO CONTROL PANEL

NO.	DATE	DESCRIPTION	BY
1	03-23-12	FOR RECORD	DLH
REVISION			

1-800-347-8168 Web: WWW.KRENDLMACHINE.COM

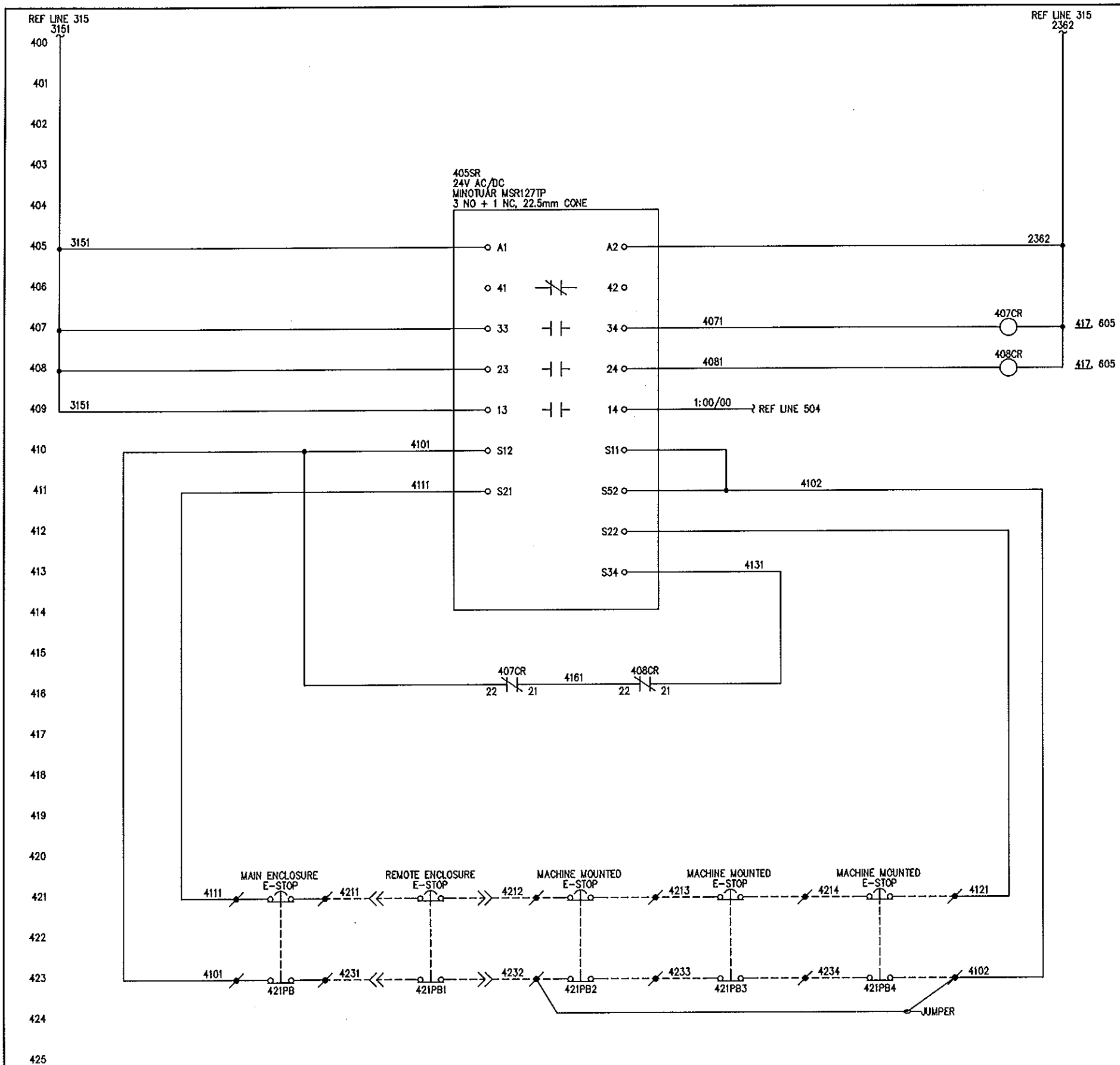
MODEL: MODEL 9000 GRAVIMETRIC FIBER CONTROL SYSTEM

KRENDL MACHINE COMPANY
DELPHOS, OH
1-419-692-3060 FAX 1-419-895-9301

DRAWN BY: DLH DATE: 02/27/12

CHECKED: CDN SCALE: NONE


JOB NO. DWG. NO. KMCN0155A03 3/9



LEGEND:

- DENOTES A TERMINAL BLOCK POINT
- * DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL

1	03-23-12	FOR RECORD	DLH	DRAWN BY: DLH	DATE: 02/27/12
NO.	DATE	DESCRIPTION	BY	CHECKED: CDN	SCALE: NONE
		REVISION		JOB NO.	DWG. NO.
					KMCN0155A05 5/9

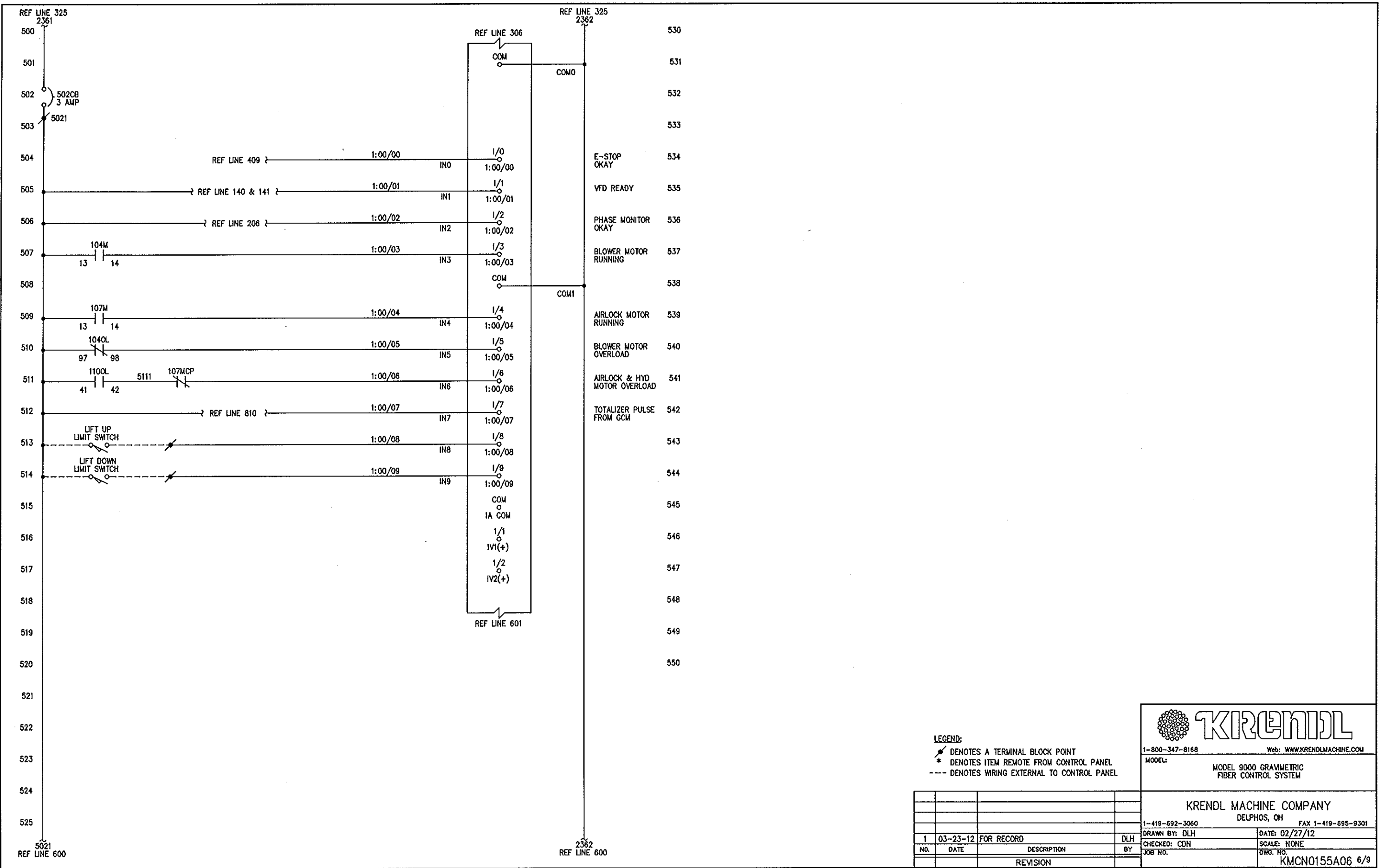
**KRENDL**

1-800-347-8168 Web: WWW.KRENDLMACHINE.COM


MODEL: MODEL 9000 GRAVIMETRIC FIBER CONTROL SYSTEM

KRENDL MACHINE COMPANY
DELPHOS, OH FAX 1-419-895-9301

1-419-892-3060



LEGEND:
/ DENOTES A TERMINAL BLOCK POINT
* DENOTES ITEM REMOTE FROM CONTROL PANEL
--- DENOTES WIRING EXTERNAL TO CONTROL PANEL

**KRENDL**
1-800-347-8168 Web: WWW.KRENDLMACHINE.COM

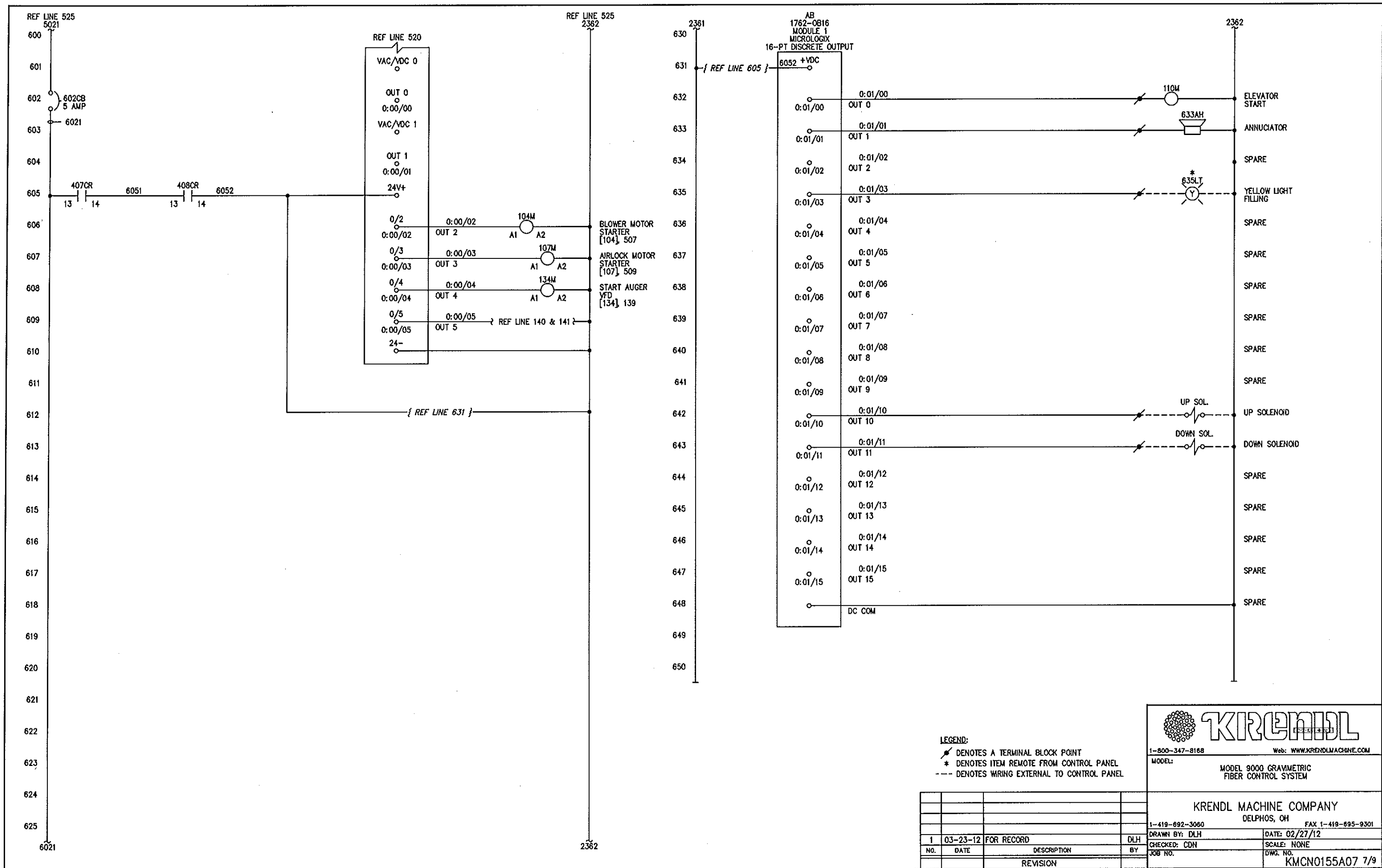
MODEL: MODEL 9000 GRAMMETRIC FIBER CONTROL SYSTEM

KRENDL MACHINE COMPANY
DELPHOS, OH
1-419-692-3060 FAX 1-419-695-9301

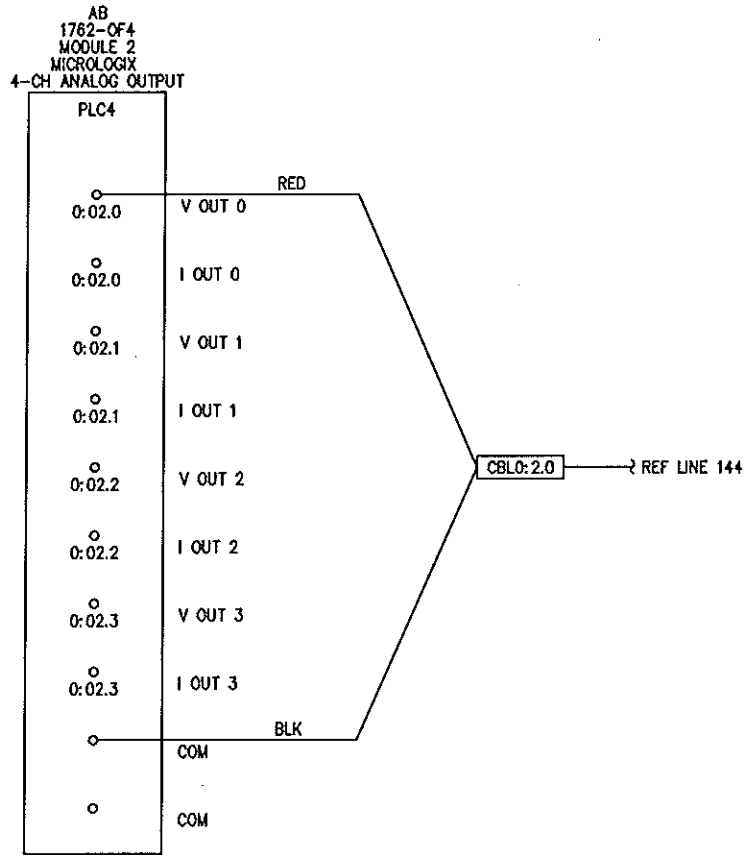
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NO.	DATE	DESCRIPTION	BY
REVISION			

DRAWN BY: DLH
CHECKED: CDH
JOB NO.

DATE: 02/27/12
SCALE: NONE
DWG. NO.
KMCN0155A06 6/9




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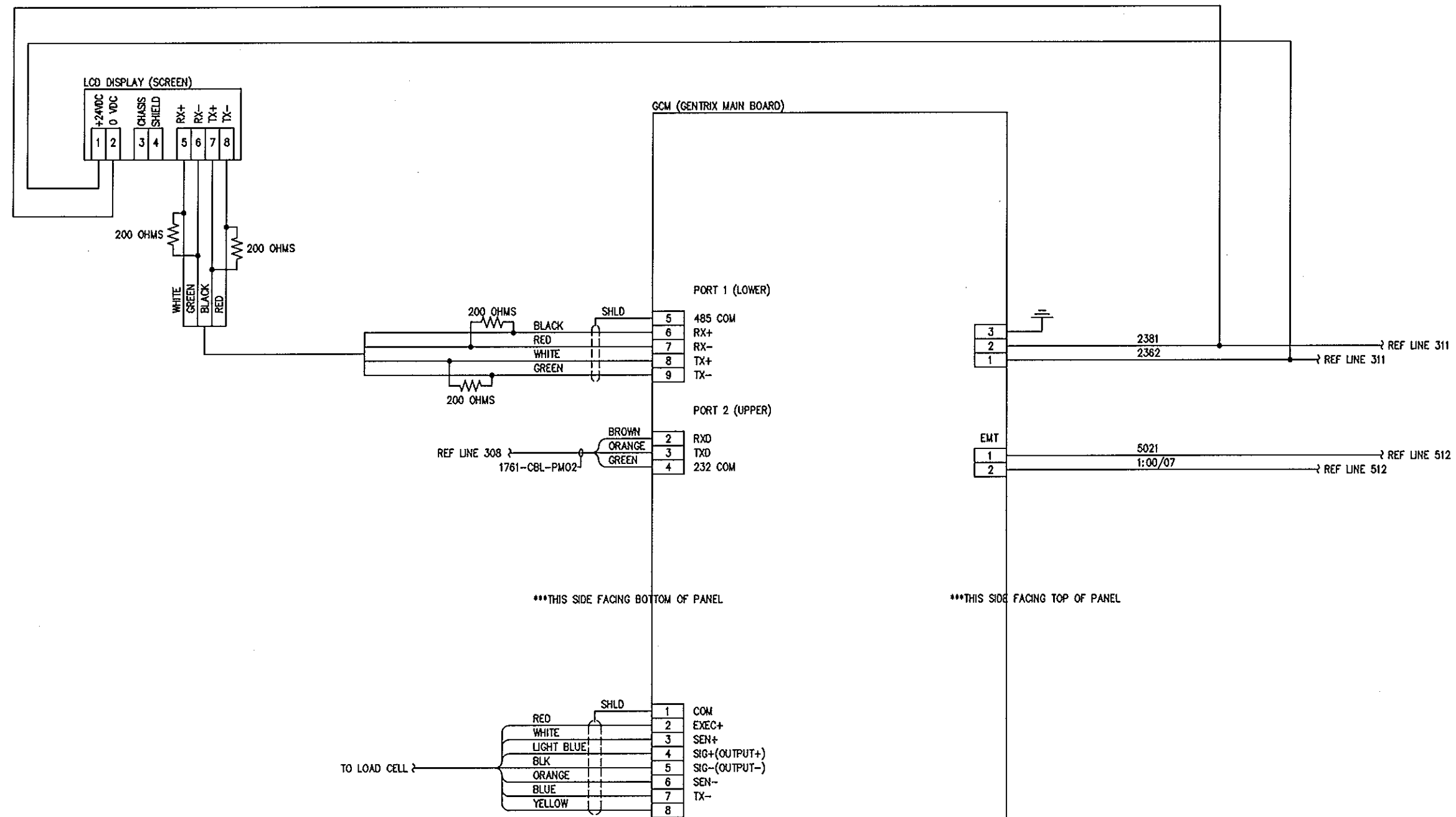


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LEGEND:
✱ DENOTES A TERMINAL BLOCK POINT
* DENOTES ITEM REMOTE FROM CONTROL PANEL
--- DENOTES WIRING EXTERNAL TO CONTROL PANEL

1	03-23-12	FOR RECORD	DLH
NO.	DATE	DESCRIPTION	BY
		REVISION	

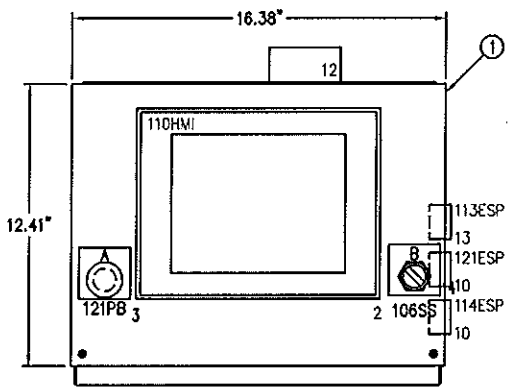
		KRENDL	
1-800-347-8168		Web: WWW.KRENDLMACHINE.COM	
MODEL: MODEL 9000 GRAMMETRIC FIBER CONTROL SYSTEM			
KRENDL MACHINE COMPANY DELPHOS, OH			
1-419-692-3060		FAX 1-419-895-9301	
DRAWN BY: DLH		DATE: 02/27/12	
CHECKED: CDH		SCALE: NONE	
JOB NO.		DWG. NO. KMCN0155A08 8/9	



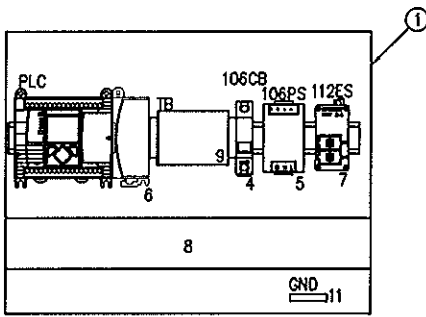
LEGEND:
 * DENOTES A TERMINAL BLOCK POINT
 * DENOTES ITEM REMOTE FROM CONTROL PANEL
 --- DENOTES WIRING EXTERNAL TO CONTROL PANEL

1	03-23-12	FOR RECORD	DLH	DRAWN BY: DLH	DATE: 02/27/12
NO.	DATE	DESCRIPTION	BY	CHECKED: CDH	SCALE: NONE
				JOB NO.	DWG. NO.
				KMCN0155A09 9/9	

KRENDL
 1-800-347-8168 Web: WWW.KRENDLMACHINE.COM
 MODEL: MODEL 9000 GRAVIMETRIC FIBER CONTROL SYSTEM
 KRENDL MACHINE COMPANY
 DELPHOS, OH
 1-419-692-3080 FAX 1-419-695-9301
 DRAWN BY: DLH DATE: 02/27/12
 CHECKED: CDH SCALE: NONE
 JOB NO. DWG. NO. KMCN0155A09 9/9



FRONT VIEW



SUBPANEL LAYOUT

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TERMINAL BLOCK LAYOUT

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER AND CATALOG NUMBER		DESCRIPTION
1	1	SAGINAW	SCE-12C16	ENCLOSURE, SINGLE DOOR, CONSOLE, 12" X 16" X 9.09"
2	1	MAPLE SYSTEMS	OMI5100A-CE	HMI
	1	MAPLE SYSTEMS	WEB-15002CE-RT	RUNTIME LICENCE
3	1	SQUARE D	9001-SKR9R	PUSHBUTTON, 30mm, RED, 2-POSITION, MAINTAINED, PUSH/PULL
	1	SQUARE D	9001-KA3	CONTACT BLOCK, RED COVER, 1 NC
4	1	SQUARE D	MG24112	CIRCUIT BREAKER, 120/240 VAC, 3 AMP, 1 POLE
5	1	PULS	ML50.100	POWER SUPPLY, 120VAC / 24VDC
6	1	ALLEN BRADLEY	1763-L16BBB	MICROLOGIX 1100
	1	ALLEN BRADLEY	1762-IF2OF2	COMBINATION 2-CHANNEL INPUT/2-CHANNEL OUTPUT
7	1	N-TRON	104TX	NETWORK SWITCH, 4 PORT, 24 VDC POWER, DIN MOUNT
8	A/R	PANDUIT	TYPE F	WIRE DUCT, RIGID
9	13	WEIDMULLER	1020100000	TERMINAL BLOCK, WDU4, 600 V, 35 AMP, #22 - #10 AWG
10	2	B&B ELECTRONICS	ENSP1F5	BULKHEAD PASS THROUGH, RJ45
11	1	SQUARE D	PK4GTA	GROUND BAR
12	1	GRACEPORT	P-P22Q3-K1RM0	PROGRAMMING PORT, 1 USB TYPE A F/F, 1 DB9 F/F
13	1	ALLEN-BRADLEY	88D-F4AC1-1	6C MICRO STYLE RECEPTACLE, 4 PIN, 22 AWG, 1m CABLE LENGTH
14	1	SQUARE D	9001SKS11BH13	2 POS SELECTOR SWITCH MAINTAINED, 1 N.O. AND 1 N.C. CONTACT

ENGRAVING SCHEDULE

ID NO.	QTY.	TYPE	SIZE	PLATE COLOR	LETTER COLOR	FIRST LINE \ SECOND LINE, ETC.
A	1	LP	2-1/4" SQ.	YELLOW	BLK	EMERGENCY STOP
B	1	LP	2-1/4" SQ.	WHITE	BLK	CONTROL \ OFF ON



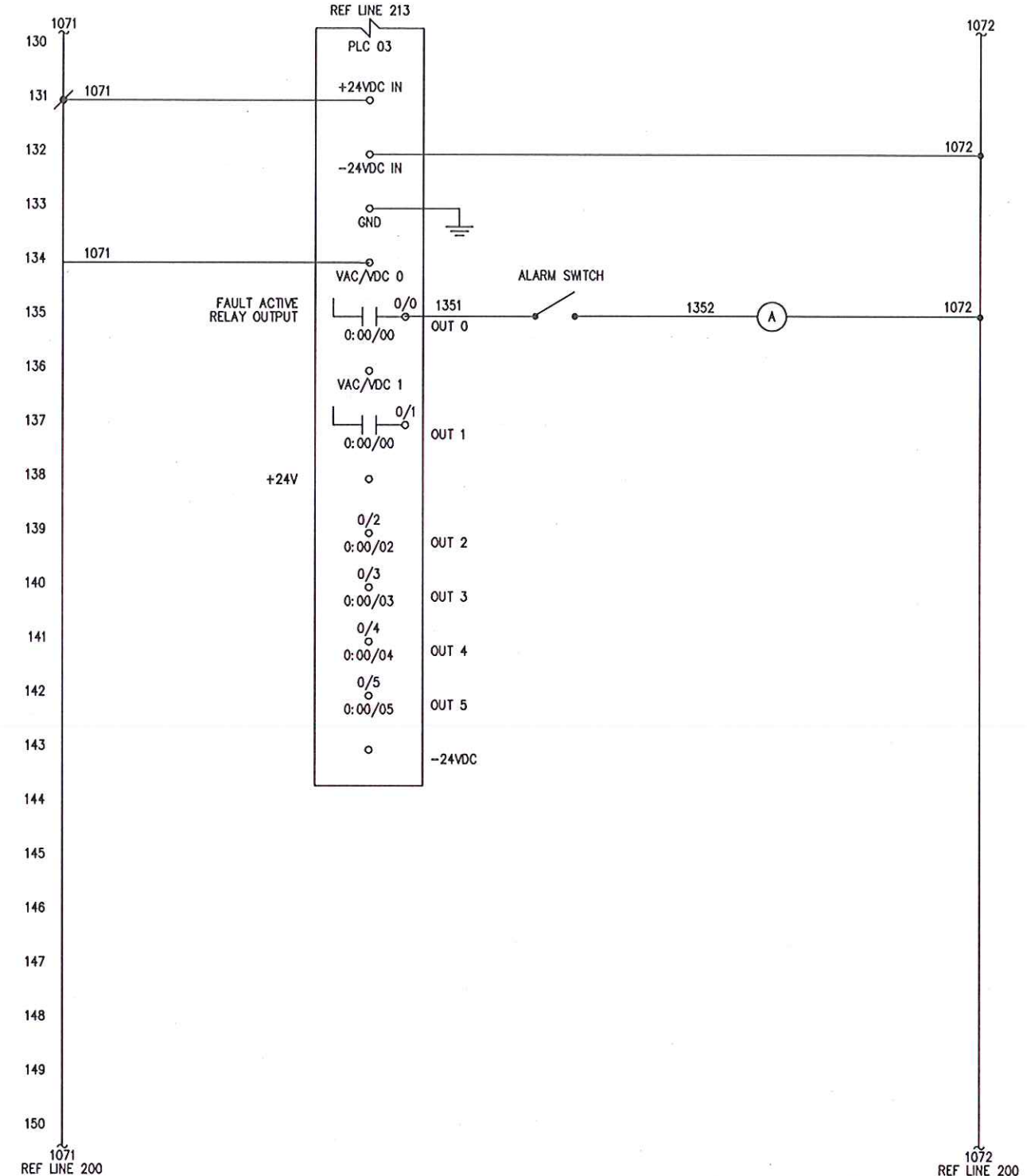
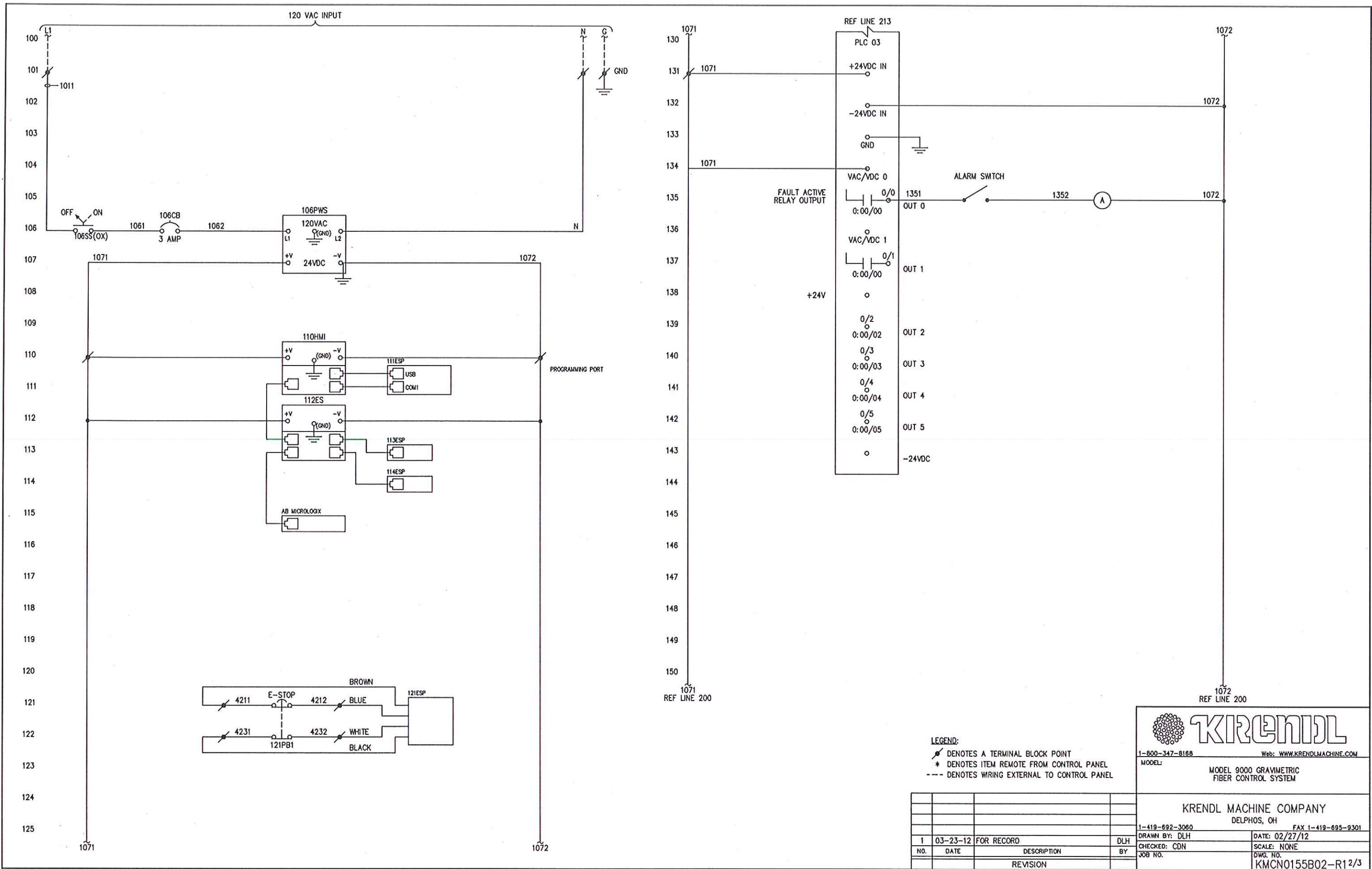
1-800-347-8188 Web: WWW.KRENDEL.MACHINE.COM

MODEL: MODEL 9000 GRAYMETRIC FIBER CONTROL SYSTEM


KRENDEL MACHINE COMPANY

DELPHOS, OH FAX 1-419-895-9301

1	03-23-12	FOR RECORD	DLH
NO.	DATE	DESCRIPTION	BY
REVISION			
DRAWN BY: DLH		DATE: 02/27/12	
CHECKED: CON		SCALE: 1/4"=1"	
JOB NO.		DWG. NO. KMCN0155B01 1/3	



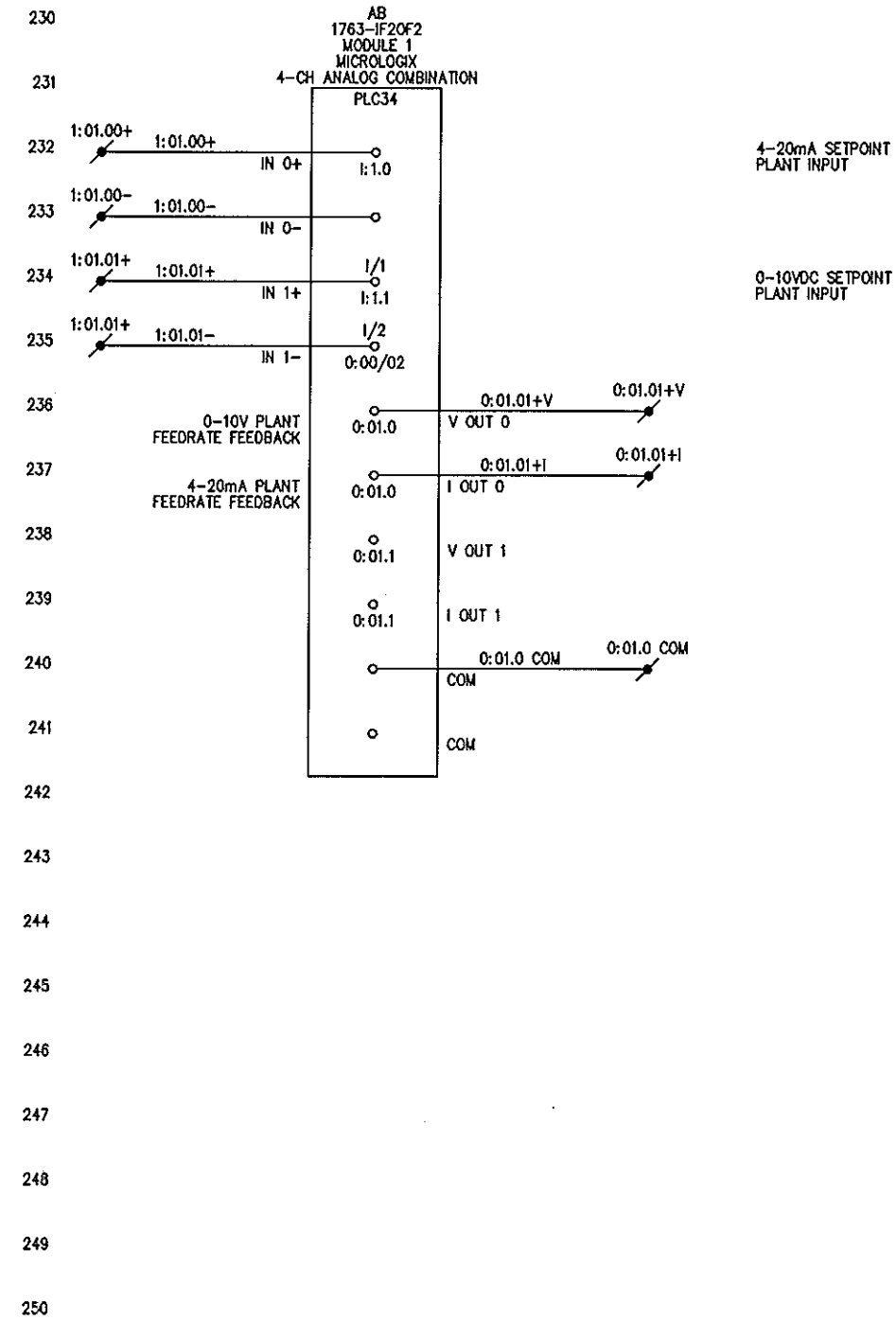
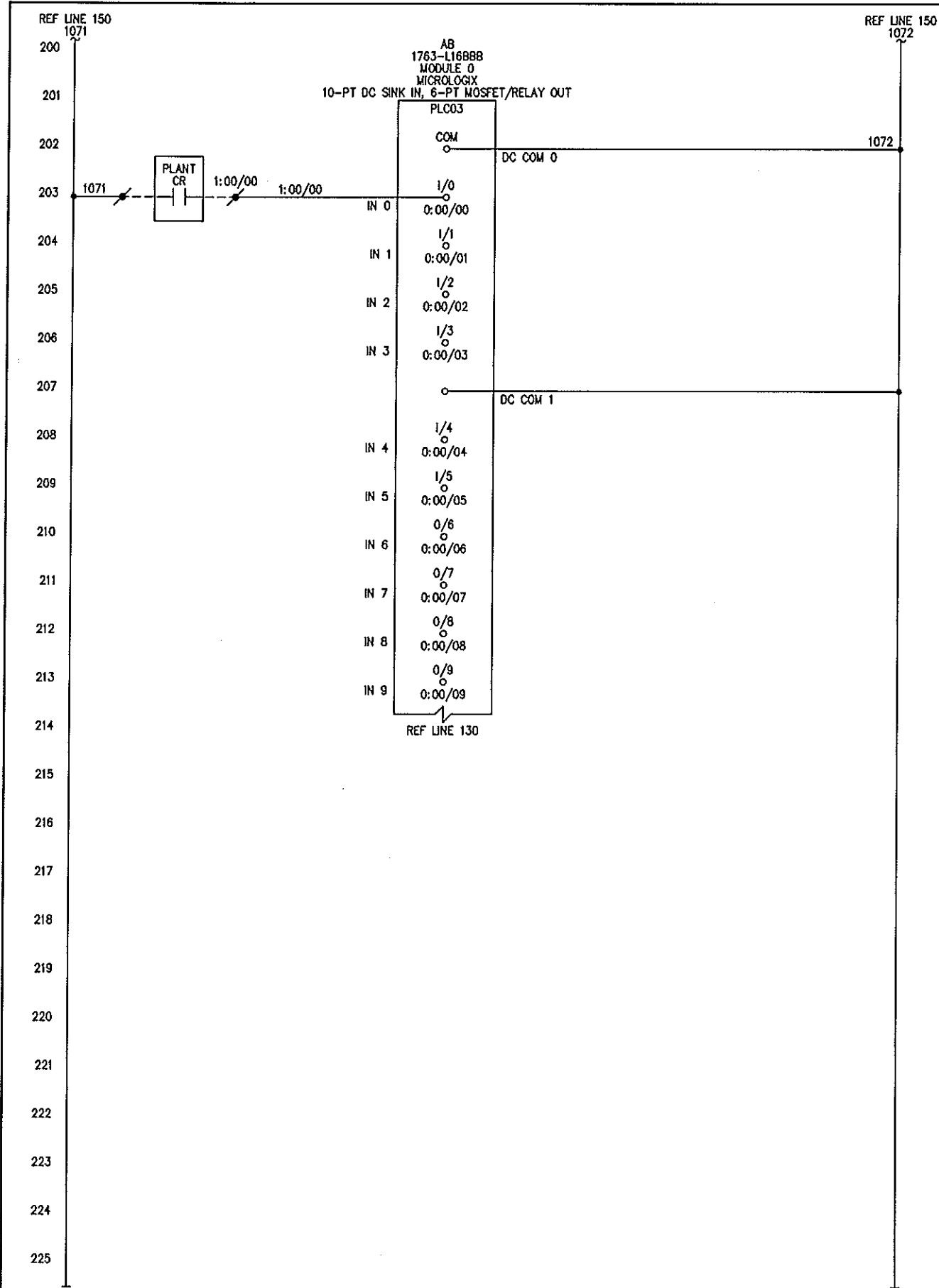
LEGEND:
/ DENOTES A TERMINAL BLOCK POINT
* DENOTES ITEM REMOTE FROM CONTROL PANEL
--- DENOTES WIRING EXTERNAL TO CONTROL PANEL

**KRENIDL**
1-800-347-8168 Web: WWW.KRENIDLMACHINE.COM

MODEL: MODEL 9000 GRAVIMETRIC FIBER CONTROL SYSTEM

KRENIDL MACHINE COMPANY
DELPHOS, OH
1-419-692-3060 FAX 1-419-695-9301


1	03-23-12	FOR RECORD	DLH	DRAWN BY: DLH	DATE: 02/27/12
NO.	DATE	DESCRIPTION	BY	CHECKED: CDN	SCALE: NONE
		REVISION		JOB NO.	DWG. NO.
					KMCN0155B02-R1 2/3



LEGEND:

- ✱ DENOTES A TERMINAL BLOCK POINT
- * DENOTES ITEM REMOTE FROM CONTROL PANEL
- DENOTES WIRING EXTERNAL TO CONTROL PANEL

1	03-23-12	FOR RECORD	DLH
NO.	DATE	DESCRIPTION	BY
		REVISION	

		KRENDL	
1-800-347-8168		Web: WWW.KRENDLMACHINE.COM	
MODEL: MODEL 9000 GRAMMETRIC FIBER CONTROL SYSTEM			
KRENDL MACHINE COMPANY DELPHOS, OH			
1-419-692-3060		FAX 1-419-695-9301	
DRAWN BY: DLH		DATE: 02/27/02	
CHECKED: CDH		SCALE: NONE	
JOB NO.		DWG. NO.	
		KMCN0155B03 3/3	

SHIPPING INSTRUCTIONS

- 1.) Run machine until most of the fiber is out of machine.
- 2.) Unplug console from 110 volt power supply.
- 3.) Disconnect ethernet and emergency stop connectors and any plant computer wires from controller.
- 4.) Disconnect 480 volt power from machine.
- 5.) Disconnect the fiber hose from plant.
- 6.) Lower the amber flashing light.
- 7.) Raise the load cell lift bolts until the machine hits the upper stop. The upper load cell bracket should be able to wiggle. Tighten jamb nut down to prevent lift bolt from loosening.

NOTE: Lift weight of machine off all load cells before shipping.

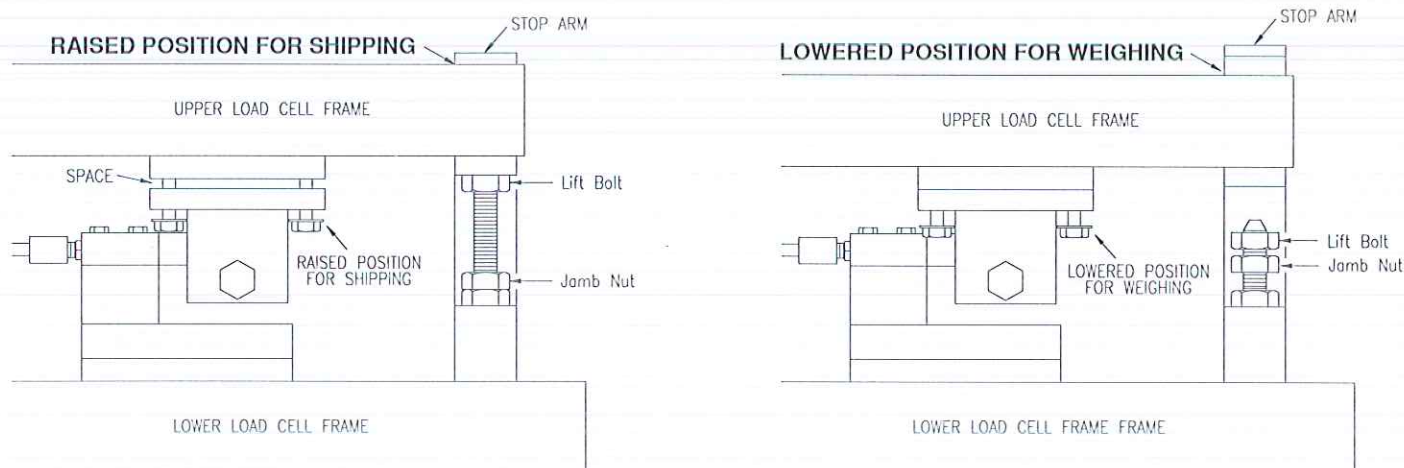


ILLUSTRATION VII-A

- 8.) Insert the braces between the wind guard and the upper hopper area.
- 9.) Unbolt and remove side extensions for lift.
- 10.) Carefully package accessories in hopper.

These items should be included:

- Hose and hose clamps
- Plant Adapter male and female
- Owners manual
- Console
- Tarp crank handle
- Side extensions for lift

These items might have come with your machine:

- No-flow detector box and tube
- Printer
- Cord connector

- 11.) Fold up platform if machine has one.
- 12.) Wrap cable on machine and secure with straps.
- 13.) Close tarp and secure with tie downs.

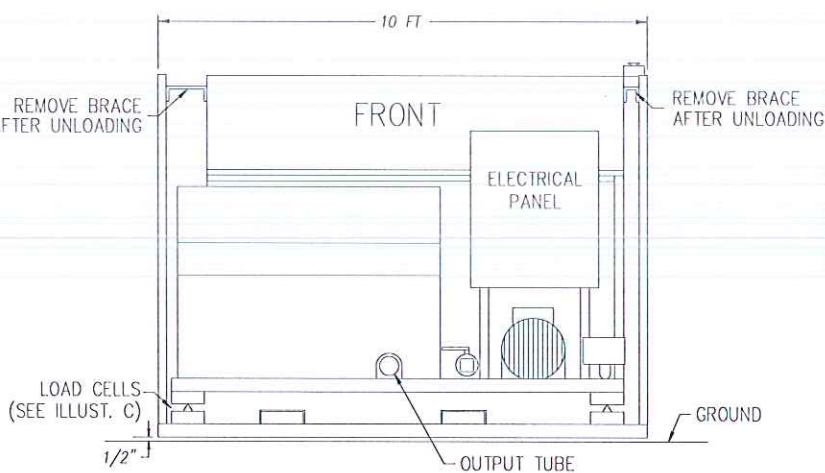
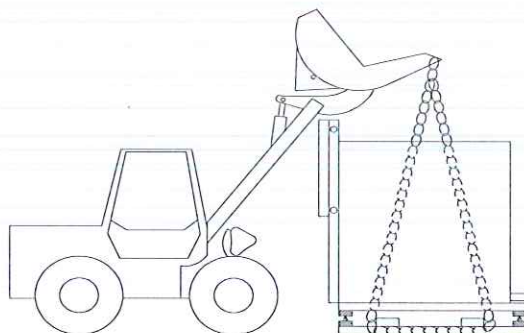
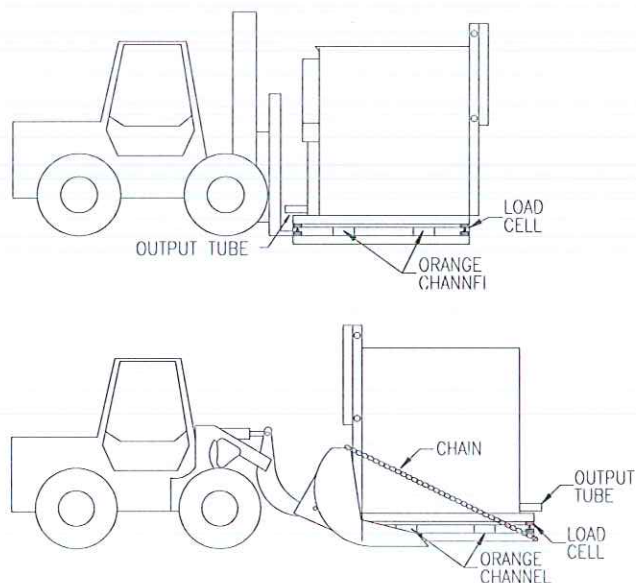


Illustration VI-B

SHIPPING INSTRUCTIONS CONTINUED

14.) Unit requires a forklift or front-end bucket loader with a lifting capacity of 10-12,000 lbs. because of the overhung load of the machine. (Use only the **orange areas** on the channels to insert forks or attach chains for lifting machine.)

NOTE: Do not lift unit from top (above load cells) or damage to load cells will occur.

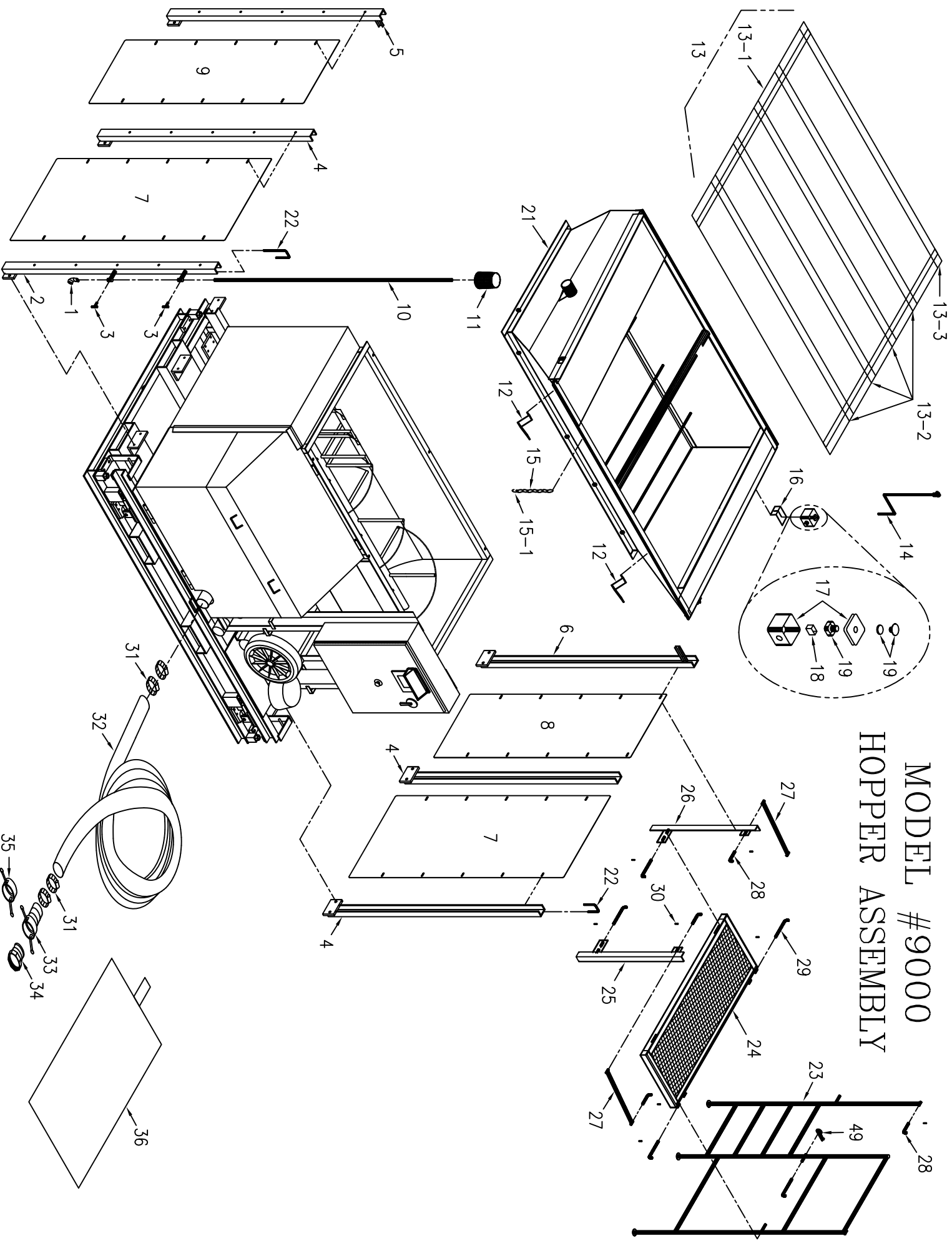


CHAIN IS WRAPPED AROUND THE CHANNELS BETWEEN THE WIND GUARD AND THE MACHINE.

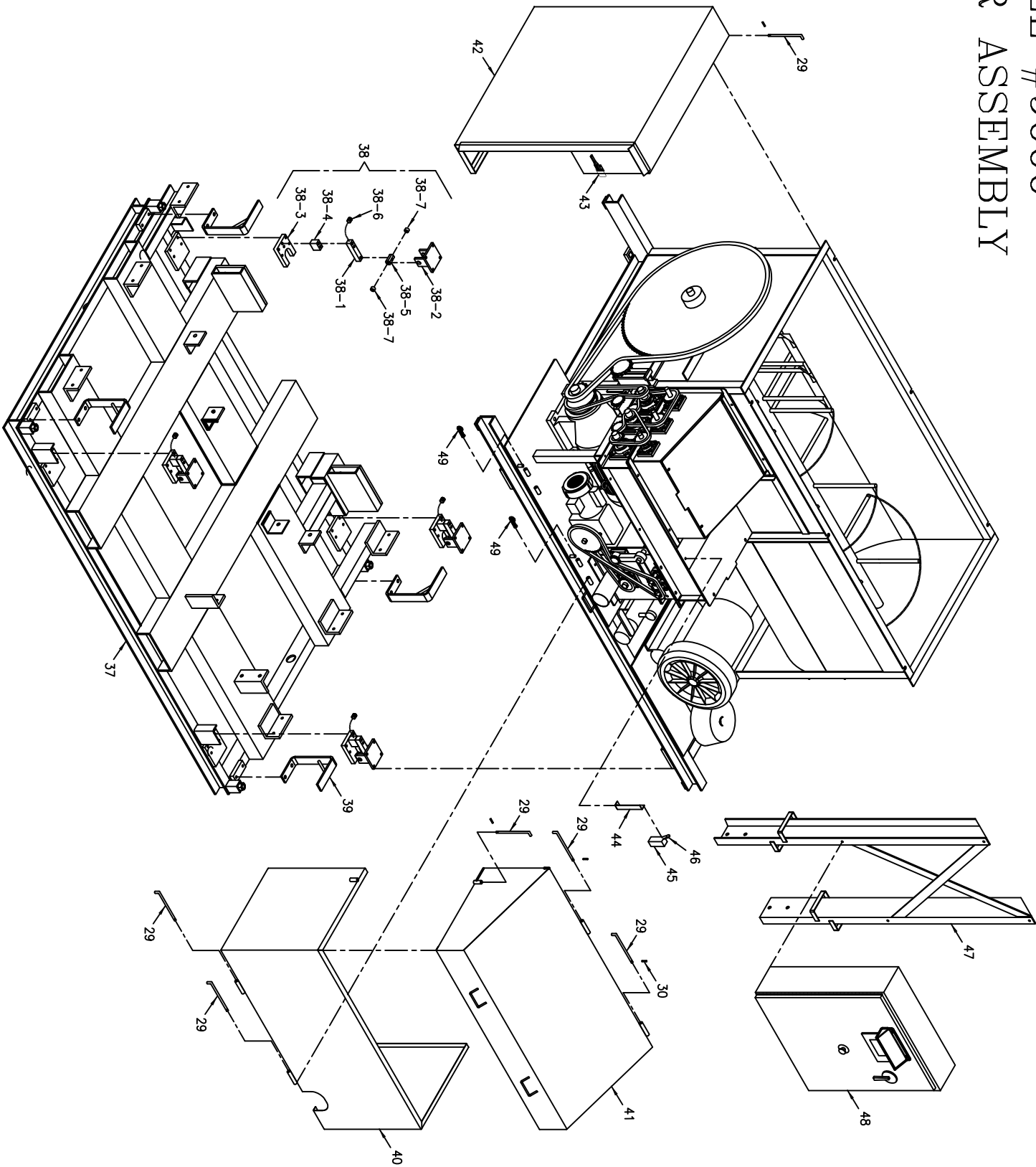
NOTE: ADDITIONAL CHAIN ATTACHED SAME WAY ON OPPOSITE SIDE OF MACHINE.

Illustration VI-C

MODEL #9000 HOPPER ASSEMBLY



MODEL #9000
HOPPER ASSEMBLY



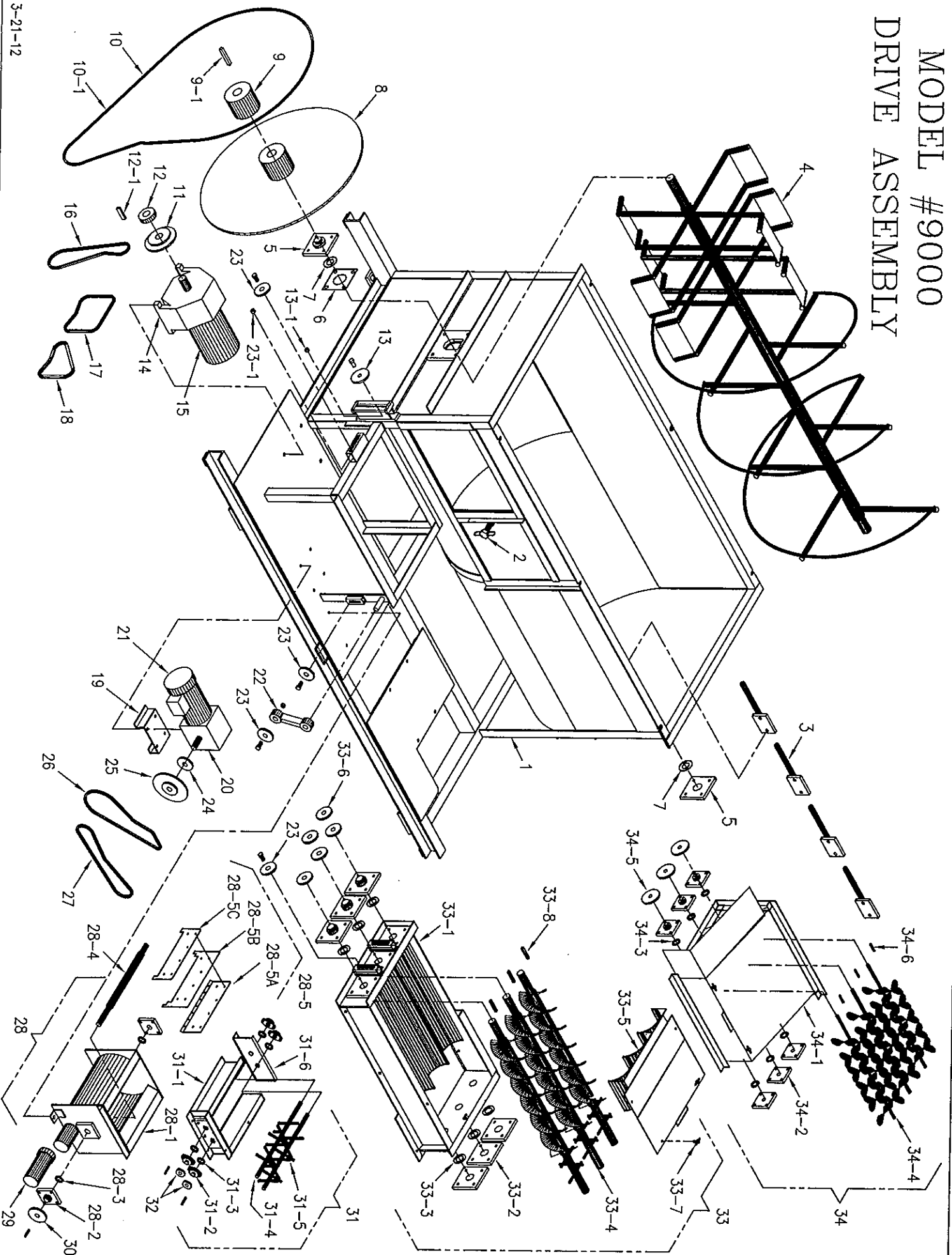
HOPPER ASSEMBLY #9000

Item#	Part#	Description
1	8001	ELBOW, 1/2"
2	9002	WIND GUARD POST F/ STROBE LIGHT
3	8002-1	T-BOLT F/ STROBE LIGHT, 5/16" (2)
4	9003	WIND GUARD POST (3)
5	9060	WIND GUARD POST, BACK (LEFT)
6	9061	WIND GUARD POST, BACK (RIGHT)
7	9006	WIND GUARD SHEET, FRONT SIDES (2)
8	9007	WIND GUARD SHEET, BACK SIDE (RIGHT)
9	9141	WIND GUARD SHEET, BACK SIDE (LEFT)
10	8008	STROBE LIGHT POST, 1/2"
11	8009-R1	STROBE LIGHT, 24VDC
12	8071	TARP BRACKET (2)
13	8072-A	TARP COMPLETE W/SUPPORT
13-1	8072-1	TARP, BLUE
13-2	8072-2	PIPE SUPPORT 3/4" F/ TARP(4)
13-3	8072-3	PIPE SUPPORT, 1" W/ SOCKET
14	8073-1	TARP CRANK, SHORT
15	8074	CHAIN F/AGITATOR GUARD
15-1	8077	S-HOOK
16	8026	KILL SWITCH BRACKET
17	8076	BOX, PLASTIC ENCLOSURE
18	8075-1	CONTACT BLOCK, KILL SWITCH
19	508-2	KILL SWITCH
20	250530-2	BUSHING, 3/4"-1/2" (NOT SHOWN)
21	9093	UPPER HOPPER
22	8010	WIND GUARD U-BRACKET (2)
23	8139-1	PLATFORM SIDE
24	8139-2-R1	PLATFORM STAND
25	8139-3L	BRACKET, PLATFORM LEFT MOUNTING
26	8139-3R	BRACKET, PLATFORM RIGHT MOUNTING
27	8139-4	PLATFORM SIDE ARM (2)
28	8025	MOUNTING PIN, 3 1/2" LONG (4)
29	541	HINGE PIN (19)
30	FSB080	ROLL PIN F/ HINGE PIN 5/32" X 5/8" (16)
31	340	HOSE CLAMP, 4" (4)
32	H423	HOSE, 4" TIGERFLEX, 50 FT.
32	H400	HOSE, 4" SMOOTH BORE, 50 FT. (OPTIONAL)
33	8011	CAM LOCK, HOSE ADAPTER (OPTIONAL)
34	8012	CAM LOCK, PLANT ADAPTER (OPTIONAL)
35	8011-B	CAM LOCK, CAP (OPTIONAL)
36	9876	FILTER BAG, 3FT x 6FT WHITE (OPTIONAL)
37	9080	FRAME, BOTTOM LOAD CELL
38	8013-R1-A	LOAD CELL ASSEMBLY ARTECH (4)
38-1	8013-R1	LOAD CELL, ARTECH (4 PER MACHINE)
38-1	8013-5	LOAD CELL, ARTECH, 5000 LB (F/ CRUMB RUBBER) (4 PER MACHINE)
38-2	8014	LOAD CELL MOUNT, TOP (F/ ARTECH)
38-3	8015	LOAD CELL MOUNT, BOTTOM (F/ ARTECH)
38-4	8017	LOAD CELL BASE PLATE BLOCK (F/ ARTECH)
38-5	8018	LOAD CELL MIDDLE BLOCK (F/ ARTECH)

HOPPER ASSEMBLY #9000

Item#	Part#	Description
38-6	IWS-7	COUPLER, 1/4-1/2
38-7	8016	LOAD CELL BUSHING (2)
39	8086-R2	LOAD CELL LIFT STOP (4)
40	8082	GUARD F/AIRLOCK
41	8083	GUARD F/AGITATOR
42	9084	GUARD F/ DRIVE END
43	150502	LATCH ASSY, HOLD DOWN
44	9085	LIMIT SWITCH BRACKET F/ GUARD
45	8094	LIMIT SWITCH
46	8095	LIMIT SWITCH LEVER ARM, CAST
47	9089-R1	CONTROL PANEL STAND
48	PLC-R1	COMPLETE, ELECTRICAL BOX
49	8201	PIN, CLEVIS (3)

MODEL #9000 DRIVE ASSEMBLY



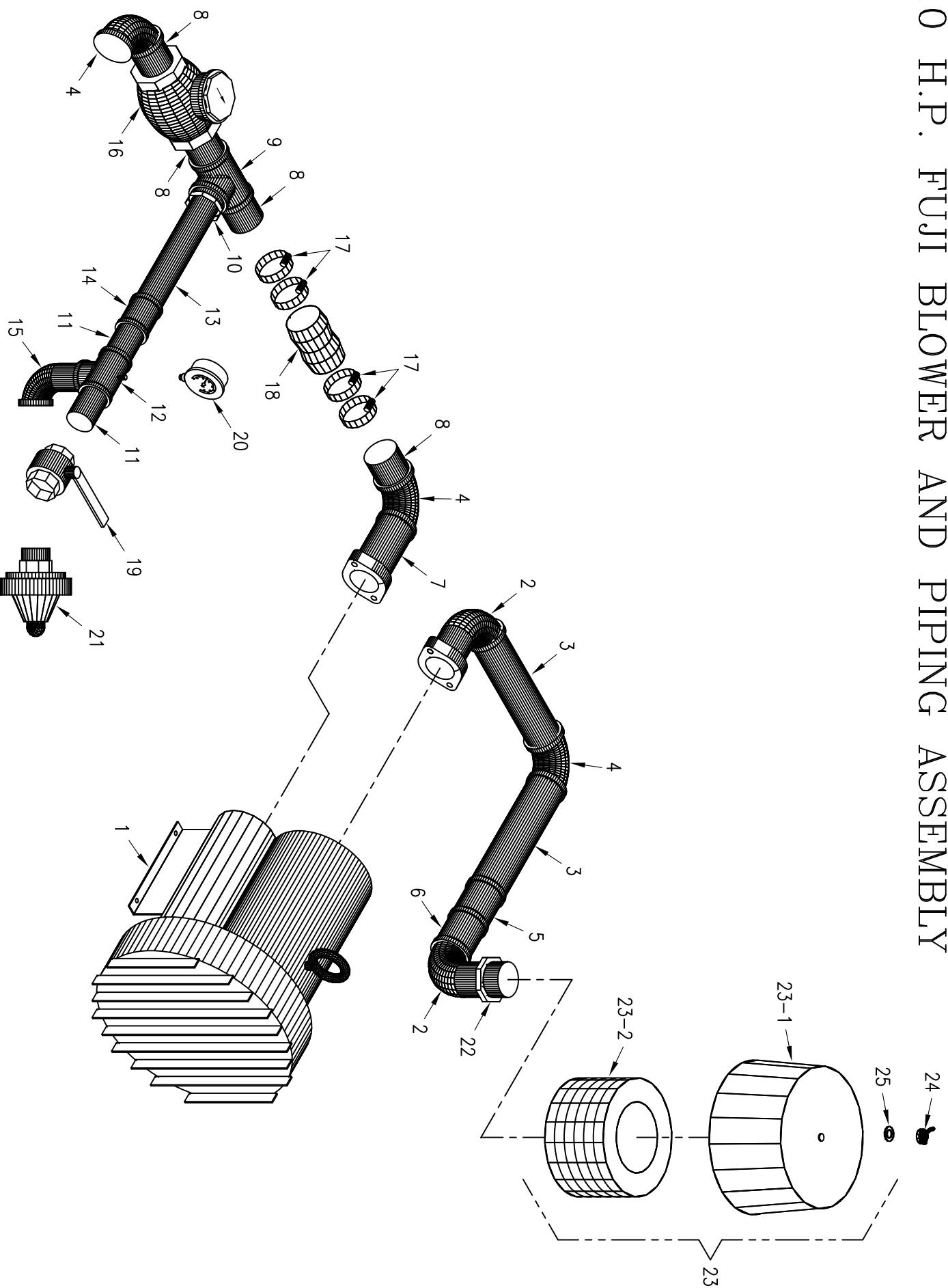
DRIVE ASSEMBLY #9000

Item#	Part#	Description
1	9078	HOPPER
2	FSB225	SLIDEGATE WING SCREW
3	8092	HOPPER FINGER (4)
4	8091	RIBBON AUGER 2 11/16" SHAFT
5	8102	BEARING 4-BOLT 2 11/16" (2)
6	8302	PLATE, FOR 2 11/16" BEARING
7	8096	FELT SEAL 2 11/16" (2)
8	8097	SPROCKET #80X112T
9	8100	TAPER LOCK BUSHING 2 11/16"
9-1	8091-16	KEYSTOCK, 5/8 x 5/8 x 4 1/2" LONG
10	8101	CHAIN, #80 X 12'
10-1	8934	#80 MASTER LINK
11	8103	SPROCKET, #8020-#5045 X 2 1/8"
12	8104	TAPER LOCK BUSHING, 2 1/8" BORE
12-1	- - - -	1/2" x 3/4" KEYSTOCK
13	8105	SPROCKET, IDLER, #8012X3/4"
13-1	FN028	NUT, 3/4-10 SQUARE ZP
14	8106	REDUCER, IN-LINE, 37RPM
14	9106	REDUCER, IN-LINE, 17RPM
15	8107	MOTOR, 5 HP 3-PHASE
16	8034	#50 CHAIN, F/ 45T SPROCKET 52"
17	109805	#50 CHAIN, AGITATOR INSIDE 40"
18	8035	#50 CHAIN, AGITATOR OUTSIDE 36"
18-1	150526	#50 MASTER LINK (5) (NOT SHOWN)
19	109019-5-R8	BRACKET, MOTOR
20	109028-R1	REDUCER, BOSTON
21	150509-1	MOTOR, 2 HP 3-PHASE
22	8043	SATH IDLER ARM
23	150513	SPROCKET, IDLER #5015 X 5/8" (5)
23-1	40052	NUT, 1" x 1" x 1/2" (4)
24	S-50BS15-B	SPROCKET, #5015 X 1 1/8"
25	8203	SPROCKET, #5040 X 1 1/8"
26	109809	#50 CHAIN, SHREDDER 55"
27	109801	#50 CHAIN, AIRLOCK 38 1/2"
28	9032-A	AIRLOCK ASSEMBLY, 20" W/ 4" OUTPUT
28-1	9032-1-R1	AIRLOCK CHAMBER, 20" W/4" OUTPUT
28-2	250503-8	BEARING, 4-BOLT, 1 1/4" BORE (2)
28-3	250503-7	FELT SEAL, 1 1/4" BORE (2)
28-4	9032-3	AIRLOCK SHAFT, F/ 20" W/ 1 1/4"
28-5	9032-5A	SEAL ASSEMBLY, RHINOHYDE 20" (6)
28-5A	9032-4	AIRLOCK BASE PLATE, 20" (6)
28-5B	9032-5	AIRLOCK RUBBER SEAL, 20" RHINOHYDE (6)
28-5C	9032-6	AIRLOCK TOP PLATE, 20" (6)
29	8030-2	TUBE, OUTPUT W/ 3 1/2 HALF COUPLER
30	8033	SPROCKET, #5018X1 1/4" (9000)
31	9036-A	SHREDDER BOX ASSEMBLY, 1" BARS
31-1	9036-1	SHREDDER BOX F/ 1"
31-2	8036-2	BEARING, 2-BOLT 1" (4)
31-3	517-7	FELTSEAL, 1" (4)

DRIVE ASSEMBLY #9000

Item#	Part#	Description
31-4	9036-3	SHREDDER AGITATOR, 1", LEFT
31-5	9036-4	SHREDDER AGITATOR, 1", RIGHT
31-6	8036-5	SHREDDER BOX REMOVABLE END
32	8037	SPROCKET, #5011X1" (2)
33	9066-A	AUGER BOX ASSEMBLY, TRIPLE
33-1	9066-1-R1	AUGER BOX, TRIPLE
33-2	8065-2	BEARING, 4-BOLT, 1 1/2" (6)
33-3	8065-3	FELT SEAL, 1 1/2" (6)
33-4	8065-4	AUGER, 6" STAINLESS D.F. (3)
33-5	9066-2-R1	AUGER BOX SLIDING LID, TRIPLE
33-6	8147	SPROCKET, #5015X1 1/2" (5)
33-7	FSB227	WING SCREW, 5/16-18 x 1" LONG (4)
33-8	8322	KEYSTOCK, 3/8" x 3/8" x 2 1/2" LONG (3)
34	9069-A	AGITATOR BOX ASSEMBLY, TRIPLE 1
34-1	9069-1-R1	AGITATOR BOX, TRIPLE
34-2	517-6	BEARING, 4-BOLT 1" (6)
34-3	517-7	FELT SEAL, 1" (6)
34-4	8140-1	AGITATOR, 1" (3)
34-5	8148	SPROCKET, #5018X1" (3)
34-6	109080	KEYSTOCK, 1/4" x 1/4" x 2 1/8" LONG (6)

MODEL #9000 10 H.P. FUJI BLOWER AND PIPING ASSEMBLY

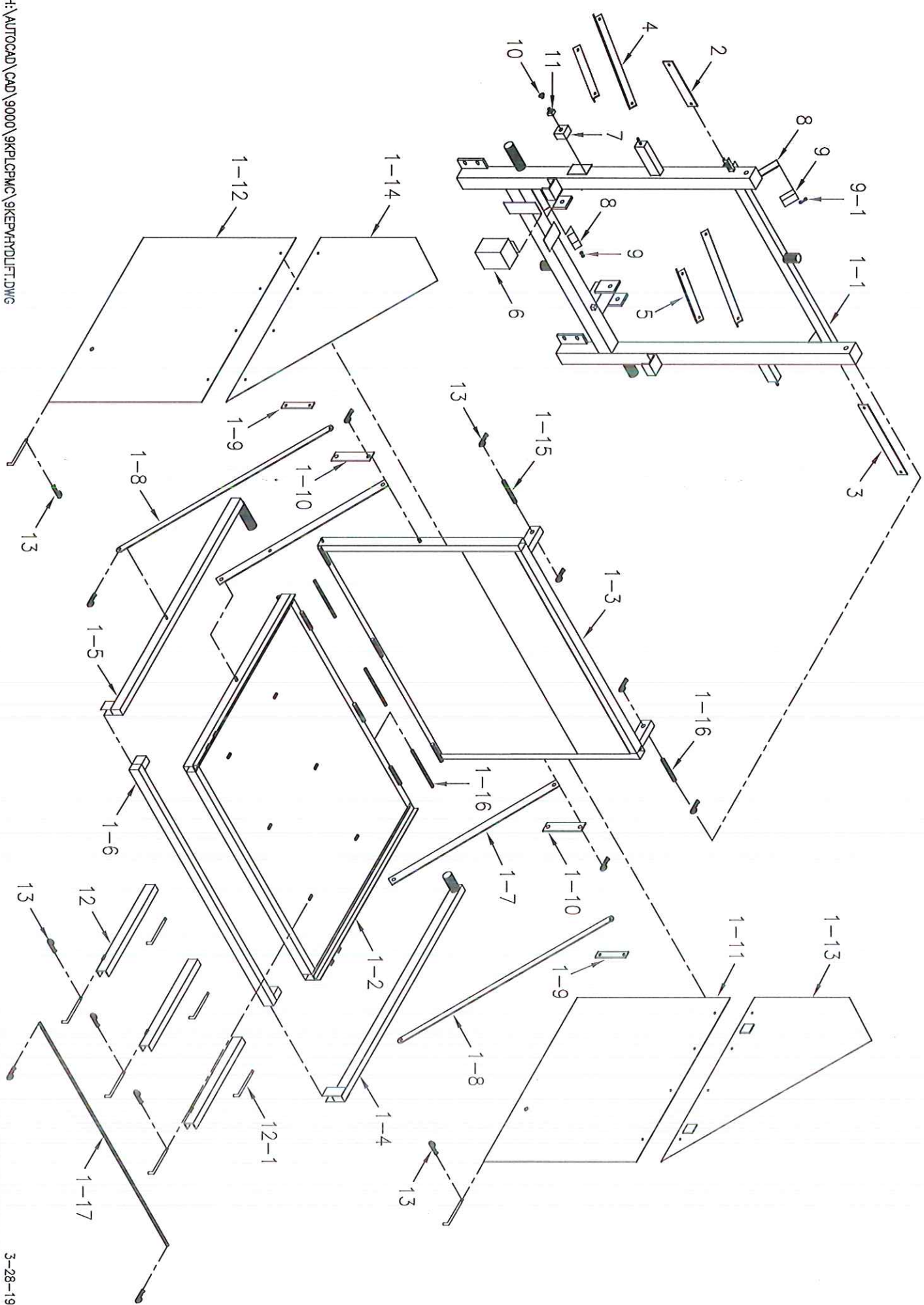


BLOWER ASSEMBLY #9000

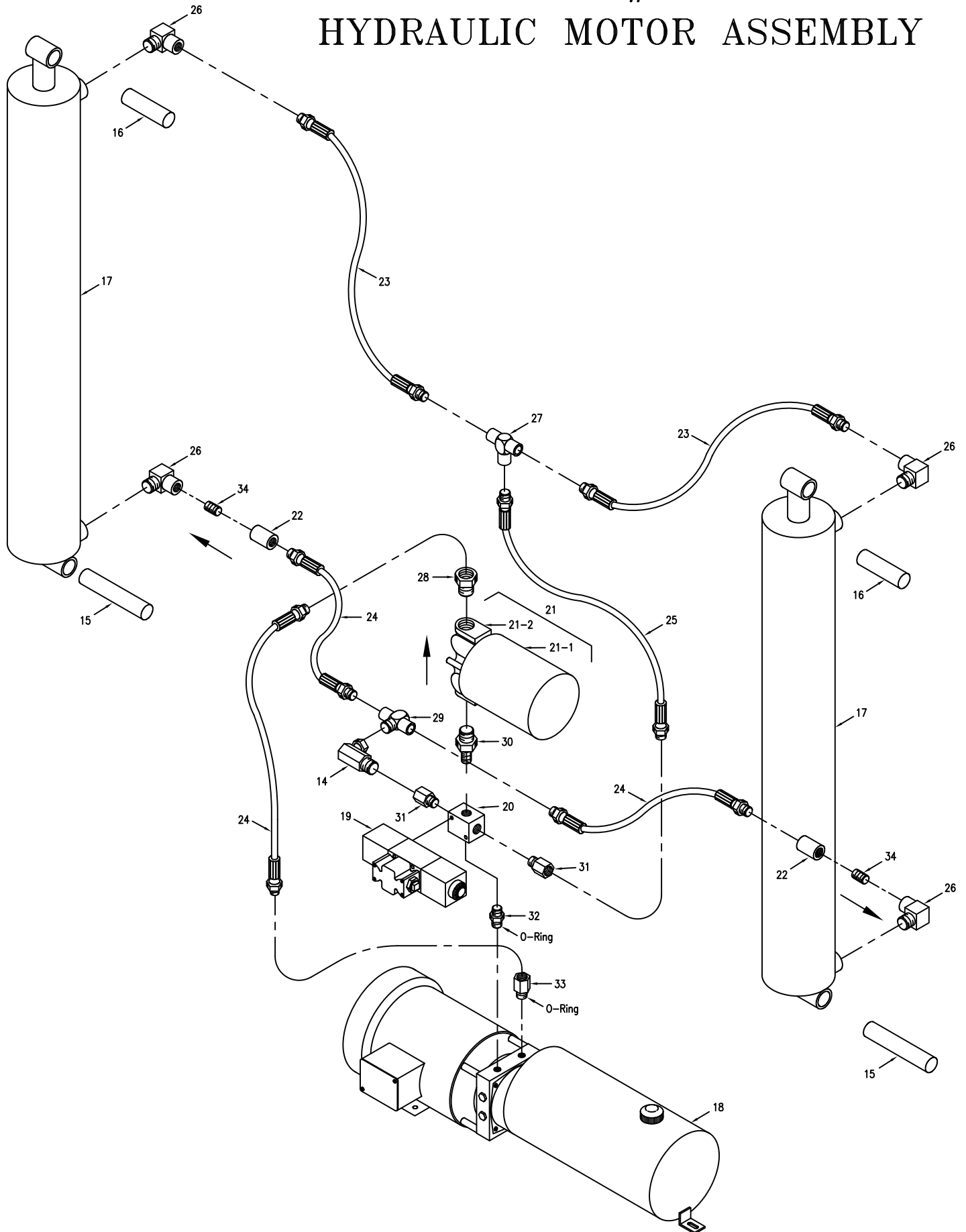
Item#	Part#	Description
1	8039	BLOWER, REGENERATIVE FUGI 10 HP
2	8054	ELBOW 90 DEG. 2 1/2" STREET ELBOW (2)
3	8055	PIPE NIPPLE 2 1/2" X 12" LONG (2)
4	8044	ELBOW 90 DEG. 2 1/2" (3)
5	8030-1-5X	PIPE NIPPLE 2 1/2" X 3" LONG
6	8056	COUPLER 2 1/2"
7	8046	PIPE NIPPLE 2 1/2" X 5" LONG
8	8067	PIPE NIPPLE 2 1/2"CLOSE (4)
9	8045	TEE 2 1/2"
10	250300-12-2*	BUSHING 2 1/2" - 2"
11	250338-3	PIPE NIPPLE 2" X 3" (2)
12	8049	TEE 2" W/ 1/4 COUPLER
13	8048	PIPE NIPPLE 2" X 12"
14	8066	COUPLER 2"
15	5200-64	ELBOW 90 DEG. 2" STREET ELBOW
16	8068	CHECK VALVE, 2 1/2"
17	339-A	HOSE CLAMP 3" (4)
18	109040-C	3" HOSE 8" LONG
19	8051	VALVE, BALL, 2"
20	299-1	PRESSURE GAUGE 0-10 PSI
21	4200-12	VALVE, PRESSURE RELIEF, 6 PSI
22	2100-10	BUSHING, 3" TO 2 1/2"
23	250300-2-R1	SILENCER ASSY, INTAKE FILTER (BLUE)
23-1	- -	COVER, FILTER
23-2	81-1063	FILTER FOR 250300-2-R1 (BLUE)
24	FN029	WING NUT 3/8"
25	FW034	WASHER, NEOPRENE FLAT

NOTE: HOSE ADAPTER AND HOSE IS NEEDED TO HOOK UP ADDITIONAL BLOWER FOR PELLETS. 2 1/2" SMOOTH BORE HOSE 50 FT IS ALSO RECOMMENDED TO HOOK TO DRUM.

MODEL #9000 HYDRAULIC FRAME ASSEMBLY



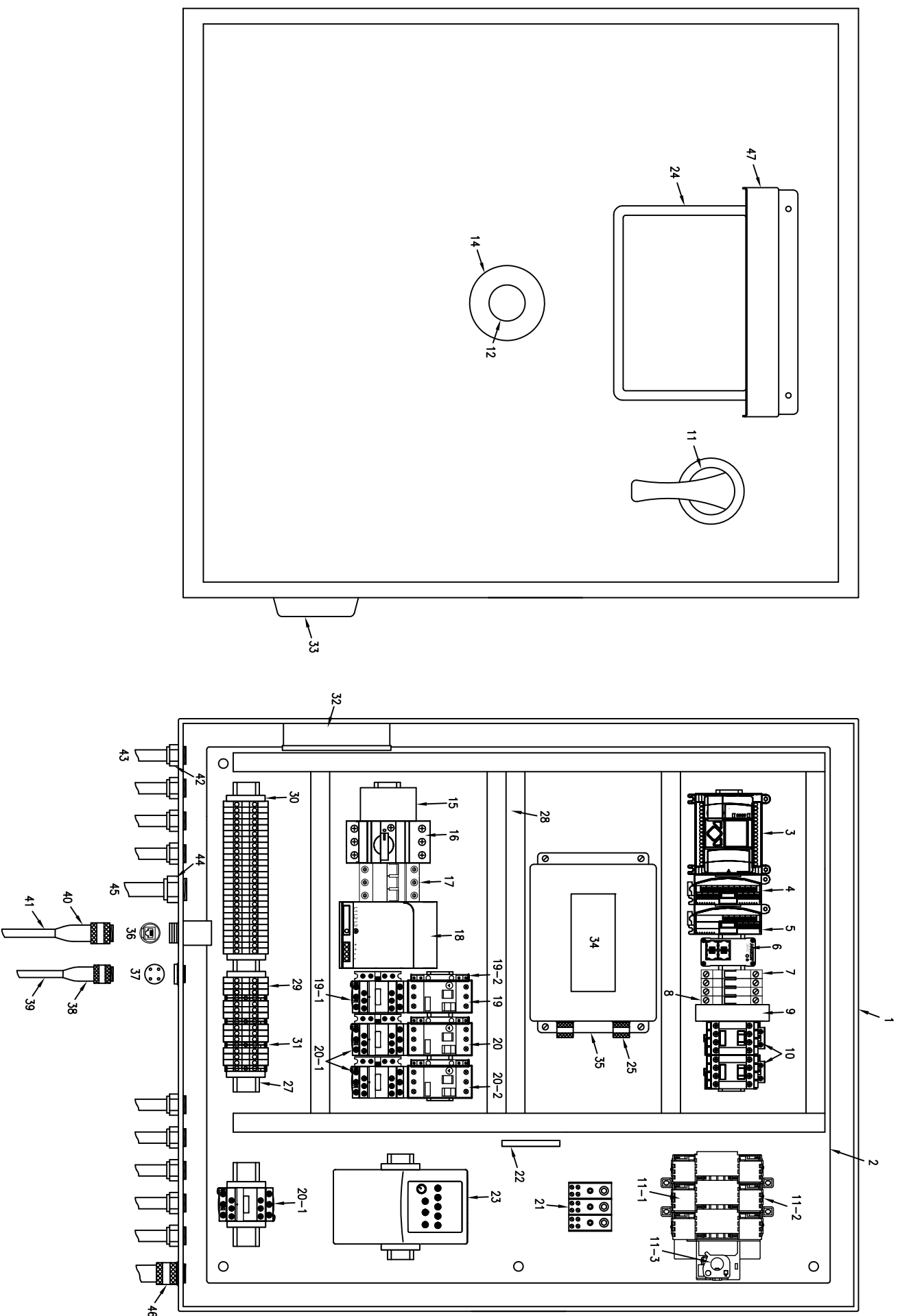
MODEL#9000 HYDRAULIC MOTOR ASSEMBLY



HYDRAULIC ASSEMBLY #9000

Item#	Part#	Description
1	9200-A	HYDRAULIC LIFT ASSY
1-1	9152	STAND, HYDRAULIC LIFT
1-2	8154	PLATFORM BOTTOM, HYDRAULIC LIFT
1-3	8155	PLATFORM BACK, HYDRAULIC LIFT
1-4	8158-1	GUARD, LIFT RIGHT SIDE
1-5	8158-2	GUARD, LIFT LEFT SIDE
1-6	8158-3	GUARD, LIFT END
1-7	8160	PLATFORM STRAP, HYDRAULIC LIFT, 3" x 52" (2)
1-8	8161	PLATFORM STRAP, HYDRAULIC LIFT, 2" x 67" (2)
1-9	8162	PLATFORM STRAP, HYDRAULIC LIFT, 2" x 9 1/2" (2)
1-10	8163	PLATFORM STRAP, HYDRAULIC LIFT, 3" x 12" (2)
1-11	8165	DOOR, HYDRAULIC LIFT PLATFORM RIGHT
1-12	8166	DOOR, HYDRAULIC LIFT PLATFORM LEFT
1-13	8167	EXTENSION, HYDRAULIC LIFT RIGHT SIDE
1-14	8168	EXTENSION, HYDRAULIC LIFT LEFT SIDE
1-15	8170	PIN, HYDRAULIC LIFT PIVOT, 1" x 7 1/2" (2)
1-16	8171	PIN, HYDRAULIC LIFT, 3/4" x 13 1/2" (3)
1-17	8323	PALLET BAR, 80" LONG
2	8156	STRAP, WIND GUARD, SHORT
3	8159	STRAP, WIND GUARD, LONG
4	9164	BRACKET, HYDRAULIC LIFT STABILIZER, LONG (2)
5	9172	BRACKET, HYDRAULIC LIFT STABILIZER, SHORT (2)
6	8126	J-BOX, 8" X 6" X 4"
7	8076	ENCLOSURE, PLASTIC
8	9152-20	LIMIT SWITCH BRACKET (2)
9	8094	LIMIT SWITCH (2)
9-1	8095	LIMIT SWITCH LEVER ARM, CAST (2)
10	508-2	KILL SWITCH
11	8075-1	CONTACT BLOCK, KILL SWITCH
12	8169	STANDOFF, FORKLIFT (3)
12-1	541	PIN, HINGE (8)
13	8201	PIN, CLEVIS (24)
14	8127	ELBOW, 90 DEG STREET, 3/8M X 3/8F SWIVEL
15	8023	CYLINDER PIN 3/4" x 6" LONG (2)
16	8024	CYLINDER PIN 3/4" x 4 1/16" LONG (2)
17	8112	CYLINDERS, 2 1/2" X 42" STROKE (2)
18	8113	PUMP & MOTOR, 2 HP 3 PHASE (BEFORE APRIL 2018)
18	8113-R1	PUMP & MOTOR, 3 HP 3 PHASE (AFTER APRIL 2018)
19	8114-A	SOLENOID, 24VDC
20	8115	SUBPLATE, D03
21	8110	FILTER, OIL COMPLETE
21-1	8110-1	FILTER REPLACEMENT
21-2	8110-2	FILTER HEAD MOUNT
22	8087	FLOW RESTRICTOR 2 GPM (2)
23	8088	HOSE, HYDRAULIC 16" W/ENDS (2)
24	8116	HOSE, HYDRAULIC 20" W/ENDS (3)
25	8117	HOSE, HYDRAULIC 42" W/ENDS
26	8119	ELBOW, 90 DEG ST. ELBOW, 3/8M X 3/8F (2)
26	8119-R1	ELBOW, 90 DEG ST. ELBOW, 1/2M X 3/8F (2)
27	8118	TEE, 3/8F-F-F
28	8120	BUSHING, 3/4-3/8
29	8121	TEE, 3/8F-M-F
30	8122	NIPPLE, CLOSE 1/4M X 3/4M
31	8123	EXPANDER, 1/4M X 3/8F (2)
32	8124	NIPPLE, 9/16M SAE X 1/4M
33	8125	BUSHING, 9/16M SAE X 3/8F
34	P-1G	NIPPLE, CLOSE, 3/8" BRASS (2)

MODEL #9000 MAIN CONTROL PANEL



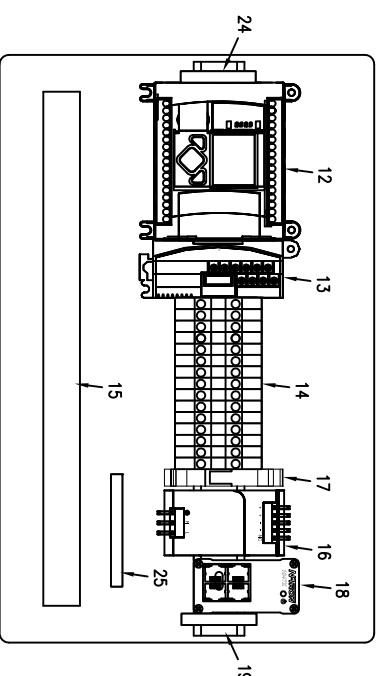
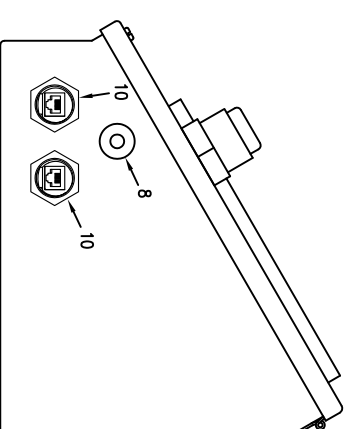
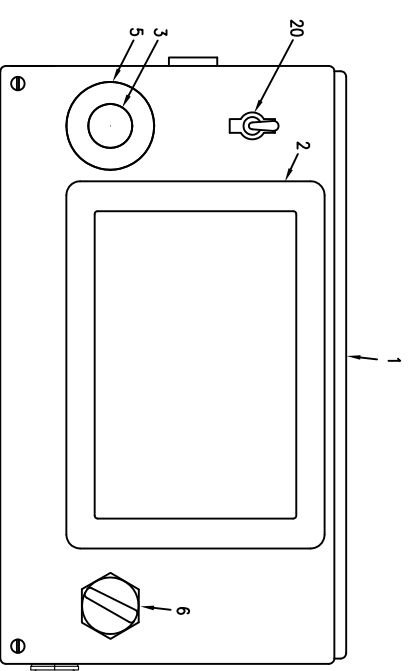
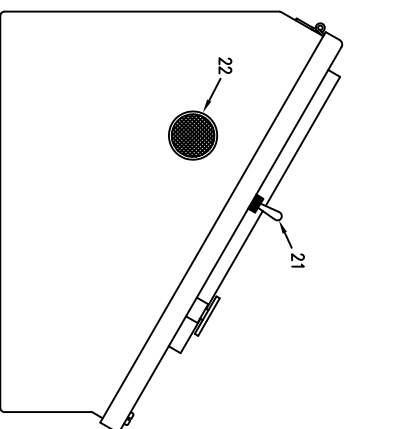
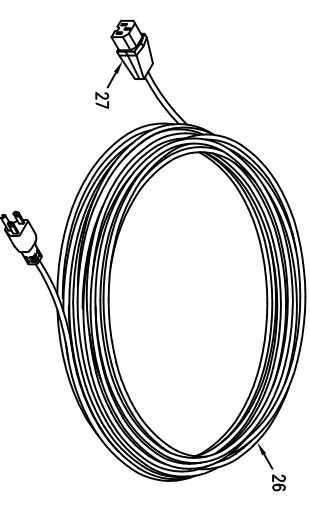
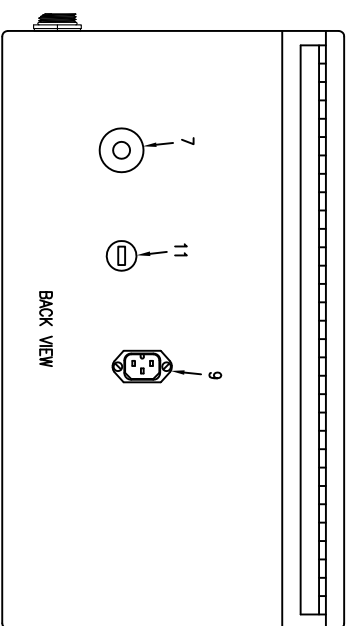
MAIN CONTROL PANEL ASSEMBLY #9000

Item#	Part#	Description
1	9001	PANEL BOX
2	9011	ELECTRICAL PLATE, MOUNTING PANEL
3	PLC20	PLC AB 1100 MICRO LOGIC
3	PLC20-P-M	PLC AB 1100 MICRO LOGIC (PROGRAMMED)
4	PLC27	DIGITAL MODULE 16 OUTPUTS 24DC
5	PLC32	ANALOG / DIGITAL MODULE
6	PLC18	SWITCH 4-PORT ETHERNET
7	PLC17	BREAKER 3A 1P 250VAC 65VDC (3)
8	PLC16	BREAKER 5A 1P 250VAC 65VDC
9	PLC14	SAFETY RELAY 1NC 3NO 24VAC DC
10	PLC13	SAFETY CONT. RELAY 10A 8P 24DC (2)
11	PLC82	RED/YELLOW DISCONNECT HANDLE
11-1	PLC83	FUSE, 40 AMP, 600V (3)
11-2	PLC80	DISCONNECT SWITCH, FUSE, 60AMP
11-3	PLC81	DISCONNECT SHAFT
12	508-2	KILL SWITCH BUTTON
13	8075-1	KILL SWITCH CONTACTOR (NOT SHOWN)
14	KMC-203	DECAL, EMERGENCY CIRCLE
15	PLC12	PHASE MONITOR
16	PLC75	ROTARY KNOB CIRCUIT BREAKER
17	PLC77	BREAKER 3P 10A 480/277 VAC
18	PLC19	POWER SUPPLY 10A 24-28VDC
19	PLC65	MANUAL MOTOR PROTECTOR, 13-18A
19-1	PLC4	CONTACTOR, 3P 50A
19-2	PLC66	OVERLOAD AUXILLARY BLOCK (3)
20	PLC9	MANUAL MOTOR PROTECTOR, 2.5-4A
20-1	PLC78	24VDC CONTACTOR (3)
20-2	PLC91	MANUAL MOTOR PROTECTOR, 4-6.5A (USED WITH 8113-R1 ONLY)
21	251080-20	POWER DISTRIBUTION BLOCK, 3-POLE
22	251080-2	GROUND BAR
23	PLC21	VAR. FREQ DRIVE 5HP 3 PH 8.7A
24	PLC22	MAPLE SYSTEMS HMI (5070TH)
24	PLC22-P	MAPLE SYSTEMS HMI (5070TH) (PROGRAMMED)
25	543-M-17	CONNECTOR, CORD, 1/2" LIQUID TITE (2)
26	391N-A-3	LOCKNUT, STEEL, CONDUIT, 1/2" (2) (NOT SHOWN)
27	RM-DINRAIL-A	DINRAIL, 1 3/8"
28	RM-CHL_COV-MI	COVER, CHANNEL 1", COMBO
29	PLC44	TERMINAL BLOCK GREY 50A (38)
30	DN-EB35	TERMINAL BLOCK END (8)
31	DN-G10	TERMINAL GROUNDING BLOCK (4)
32	8028	SUMMING BOARD
33	PLC73	HORN ALARM
34	PLCGEN-1	GENETIX CORE MODULE
34	PLCGEN-1-P	GENETIX CORE MODULE (PROGRAMMED)
	PLCGEN-2	LCD INTERFACE
	PLCGEN-3	DINRAIL ADAPTER KIT
	PLCGEN-5	GEN RESISTOR
35	PLC67	ENCLOSURE, 10" X 10" X 8", HOFFMAN
36	PLC28	RJ45 ETHERNET PANEL RECEPTACLE

MAIN CONTROL PANEL ASSEMBLY #9000

Item#	Part#	Description
37	PLC52	RECEPTACLE 4P FE PANEL MOUNT
38	PLC55	CONNECTOR MALE STRAIGHT 4P
39	PLC36	FLEXIBLE TC-ER PVC UNSHIELDED CABLE
40	PLC29	RJ45 ETHERNET CORD RESTRAINT
41	PLC30	CAT 5 TWISTED PR CABLE PVC
42	543-M-18	1/2" STRAIGHT CONDUIT CONNECTOR (11)
43	543-M-75	1/2" FLEX CONDUIT
44	151080-64	CONNECTOR, 3/4" CONDUIT, STRAIGHT
45	543-M-68	CONDUIT, 3/4" CARFLEX
46	8021-6	CONNECTOR, CORD, 3/4" LIQUID TITE
47	9173	GUARD, TOUCHSCREEN

MODEL #9000 CONSOLE



CONSOLE ASSEMBLY #9000

Item#	Part#	Description
1	9013	ENCLOSURE SLOPED
2	PLC69	HMI 10" TOUCHSCREEN
2	PLC69-P	HMI 10" TOUCHSCREEN (PROGRAMMED)
3	508-2	KILL SWITCH
4	8075-1	CONTACT BLOCK (NOT SHOWN)
5	KMC-203	DECAL, EMERGENCY CIRCLE
6	543-M-52	2-POSITION SWITCH
6-1	543-M-54	CONTACT, KA2 (NOT SHOWN)
7	543-M-17	CONNECTOR, CORD, LIQUID TITE, 1/2" BLUE
7-1	391N-A-3	LOCKNUT, STEEL, CONDUIT, 1/2" (NOT SHOWN)
8	PLC52	RECEPTACLE 4P FEMALE PANEL MOUNT
9	543-M-2	RECEPTACLE, RC, PLUG
10	PLC28	RJ45 ETHERNET PANEL RECEPTACLE (2)
11	PLC38	USB PANEL CABLE 1M BLACK
12	PLC20	PLC AB 1100 MICRO LOGIC
12	PLC20-P-C	PLC AB 1100 MICRO LOGIC (PROGRAMMED)
13	PLC46	INPUT MODULE 4-CHANNEL
14	PLC44	TERMINAL BLOCK GREY 50A (15)
15	RM-CHL_COV-MI	COVER, CHANNEL 1", COMBO
16	PLC48	POWER SUPPLY DC 24-28 / 30W
17	PLC17	BREAKER 3A 1P 250VAC 65VDC
18	PLC18	SWITCH 4-PORT ETHERNET
19	ELU12-A	DINRAIL, 1 3/8", 16" LONG
20	1536-8	ON/OFF TOGGLE SWITCH PLATE
21	1536-3	SWITCH TOGGLE SPST
22	543-M-38	PRE-ALARM SYSTEM
23	543-M-38-1	VOLUME CONTROL, ALARM (NOT SHOWN)
24	PLC33	END BARRIER TERMINAL BLOCK 5MM (2)
25	251080-2	GROUNDING BAR
26	128	CORD, MOLDED 120V, 10' LONG
27	543-M-8	PLUG, 509-1215