

ST-250 Operations Manual

ST-250 Operations Manual

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Preface

Thank you for purchasing a **KRENDL FIBER MOVING MACHINE**. With over forty years experience in manufacturing fiber 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 fibers 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 fibers. Our interest lies only in the proper performance of the equipment we manufacture. We make no recommendations or guarantees concerning various fibers.

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, Inc.
1201 Spencerville Ave.
Delphos, Ohio 45833 U.S.A.


Telephone: 419-692-3060
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.



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 machine's suitability, ask your dealer/distributor or consult the factory. The manufacturers' could not possibly anticipate every circumstance that might involve a hazard. For that reason, warnings in the manual and warning tags or decals affixed to the unit, are **not** all-inclusive. If you intend to handle, operate, or service the unit by a procedure or 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)



Safety/Caution

- **Be Safe** - Keep away from moving parts.
- **Be Safe** - Make sure all guards, hopper bars, hopper extensions, and doors are in proper place **before** operating machine.
- **Be Safe** - Do not remove motors or lift hopper when unit is connected to power supply.
- **Be Safe** - Make sure motor controls and remote control hand pendant switch are in **off** position **before** connecting and turning on 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.

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- **Be Safe** - Disconnect and lockout power supply **before** inspecting or adjusting unit. Generator must be off.
- **Be Safe** - Consult a qualified technician to answer questions **before** attempting to operate, or injury may result.
- **Be Safe** - Wear an **approved** dust mask or respirator for operator comfort and protection.
- **Be Safe** - **Emergency Kill Switch** - In case of emergencies, always use red stop button located on top and front of Main Control Panel. It will stop all feeding and agitation.
- **Be Safe** - Use proper and secure clamping method for all fiber hoses to prevent uncontrolled fiber stream bursts around operator.
- **Be Safe** - Check all pressure line connections for wear and durability to avoid potential rupture in area of operator.



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.
- Blower is turned off **immediately** if hose is plugged, or blower will overheat.
- 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 or damage airlock seals.

Open Account Status/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, Inc.
1201 Spencerville Ave.
Delphos, Ohio 45833 U.S.A.

Telephone: 419-692-3060
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.

As an insulation contractor, you depend on your equipment to keep your business operating smoothly and profitably, which is one of the main reasons you are choosing the Krendl ST-250 system. Our goal is to design and build the most efficient and durable equipment and to provide immediate and superb service.

We would like to set up an account for you in case your ST-250 needs warranty-covered parts (your account will also be available if you need to order non-warranty-covered parts) Your account will allow you to receive replacement parts faster and easier - just complete the included forms and return them to us. We will take care of everything and let you know when your account has been activated.

Please give our staff a call if you have any questions or if we can help in any way. We appreciate your business and the opportunity to help keep it running as smoothly as possible. If you have any questions about our warranty procedures or if you want information regarding how your account will help you, please take a few minutes to review the following:

Warranty Procedure

With an open account: the warranted part is shipped to the customer, (ground freight prepaid by Krendl), with an invoice for payment. A return goods authorization number, (RGA #), is assigned to the defective part that is to be returned to Krendl, prepaid by the customer. The invoice is cancelled after Krendl receives and evaluates the part.

Without an open account: the warranted part is shipped C.O.D. or charged to the customer's credit card. Credit is issued after Krendl receives and evaluates the part.

As you can see, the process is much easier with an open account, so I urge you to take this opportunity to fill out and submit/fax/email to Krendl the necessary information to establish an open account.

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Warranty

WARRANTY

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

The Krendl Machine Company, Inc. guarantees each new applicator only against defects in workmanship or materials for 12 months from date of purchase. Liability in all events is limited to the purchase price paid. Liability under the aforesaid guarantee is limited to replacing or repairing any part or parts which are defective in materials or workmanship and are returned to our factory, **shipping costs prepaid**. No warranty, express or implied, other than the aforesaid guarantee is made or authorized by Krendl. The Krendl Machine Company, Inc. shall not be liable for any personal injuries or damage to property caused directly or indirectly 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.

WHAT THIS WARRANTY DOES NOT INCLUDE

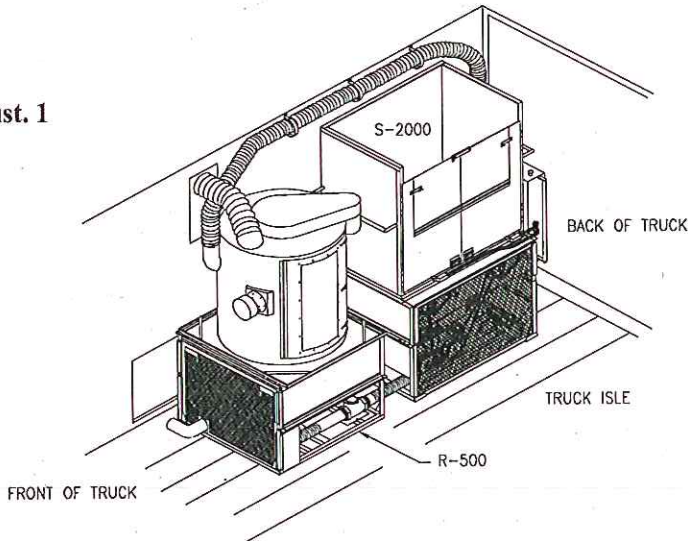
This guarantee shall not be effective if the product has been subjected to misuse, negligence or accident, nor if the product has been repaired or altered outside of our factory. This guarantee does not cover the free replacement of parts that become inoperative because of **wear**, nor does it cover the labor costs of replacing parts by some other than the factory. This guarantee does not cover free adjustment of this product if this product was adjusted by the purchaser.

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.

INTRODUCTION

The Modular System contains four distinct parts: a dry hopper machine (S-2000), a recycle machine (R-500), an under the truck blower system (B-400), and a 15 hp under the truck vacuum system (V-15).

Illust. 1

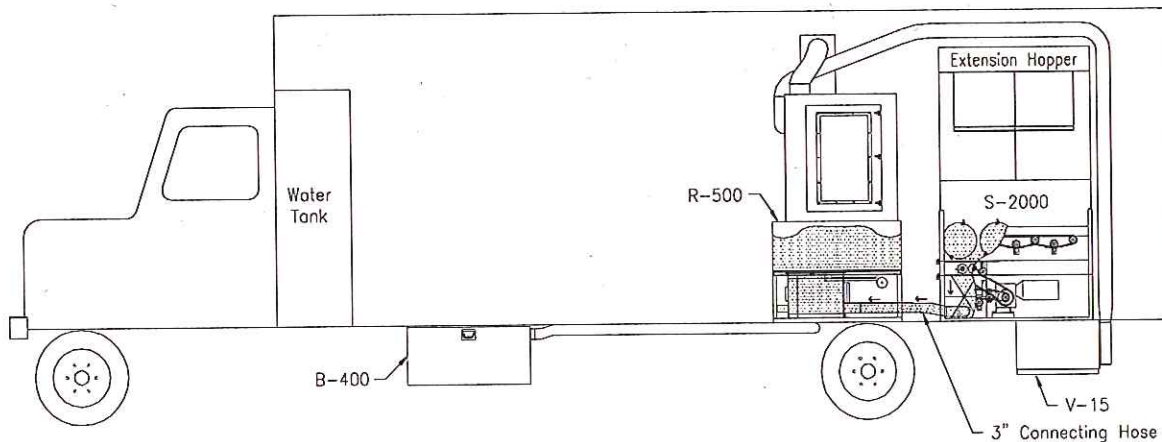


Objective:

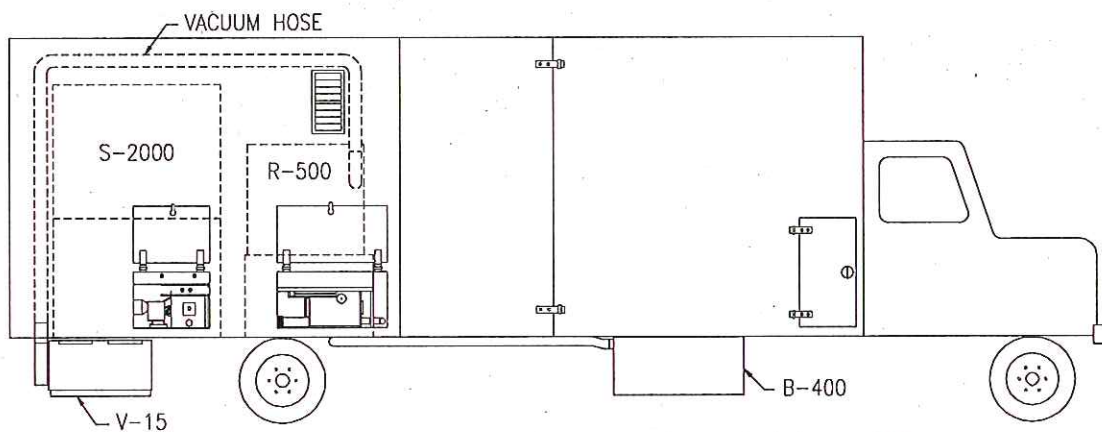
to familiarize spray technicians with the features and use of the ST-250 system.

A 3" hose connects the S-2000 dry machine and the R-500 recycle machine. (Illust. 2A) When the system is spraying (i.e., both machines are running) the blower system (B-400) blows the dry cellulose from the S-2000, through the 3" connecting hose and into the R-500 airlock. As the material passes through the R-500 airlock, it blends with the recycle fiber metered from the R-500. This homogeneous blend of dry material and recycled material continues up the hose and out the wall spray nozzle. Both machines can be adjusted independently for material feed. In the wall spray mode, all the air is coming from the B-400, thru the S-2000 and R-500 and discharging out the hose.

The Vacuum System (V-15), provides a fast method of evacuating recycle material from the job site to the R-500 machine. This recycle is filtered inside the cannister unit and metered back into the spray system. This provides a dust free environment inside the truck.



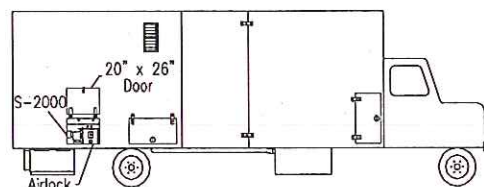
Viewed from inside truck (driver streetside) (Illust. 2A)



Viewed from outside truck (passenger curbside) (Illust. 2B)

S-2000

The S-2000 unit is located inside the truck on the passengers side. The airlock faces the wall, and is accessible through an 20" x 26" door located on the truck exterior. (Illust. 3) This side door should remain open when the machine is operating for open blow attics. The maintenance side of the machine faces the inside of the truck for easy access. (See Maintenance section pg.20 for better access.) Located at the rear of the truck are the controls for blower air, dry fiber feed rate, and the main electrical panel for selection of functions.



Illust. 3

Airlocks

The airlock of the S-2000 is accessible through the 20" x 26" door. (Illust. 3) When blowing attics, the 3" outside blowing hose should be connected directly to this airlock. When spraying walls, the 3" **outside** blowing hose should first be connected to the R-500 airlock at the 3" elbow connected at the R-500 airlock output. (Illust. 4) The 3" **inside** connecting hose connects directly into the back side of the R-500 airlock. The dry material passes through the airlock of the R-500 (which is running while spraying) and the recycle blends into the flow of dry material.

Hopper

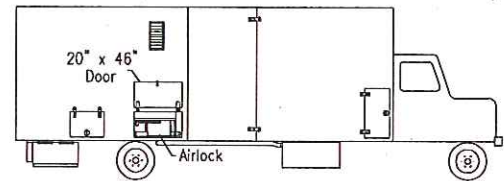
(Facing machine from inside truck) An extension hopper is located on top of the S-2000. The extension hopper on the S-2000 provides a capacity of twelve to fifteen 30-pound bags of insulation material. For best operation and holding capacity, bags should be slid into the machine so they lay flat, rather than broken up.

The airlock of the Krendl S-2000 is accessible through the 20 x 26 door.

Bags should not be broken up. They should be slid into the machine so that they lay flat.

R - 500

The R-500 is accessible through the 20" x 46" door on the passenger side of the truck. (Illust. 4) Feed adjustments can also be made at this location with the crankgate handle. On top of the R-500 is a canister, or sealed tank top. Together, the machine and the canister provide approximately 32 cubic feet of holding tank capacity for the recycle (3-4 bags). The unit is sealed with gaskets to prevent dust from leaking out and entering the truck.



Illust. 4

Inside the canister, a stainless steel mesh screen filters out small particles. A wiper edge keeps this screen open to air passage. (**IMPORTANT:** At the end of each job, open the access door of the cannister and remove fiber build-up from stainless steel mesh screen. This will prevent any loss of vacuum power and reduce pressure build-up inside cannister.)

An agitation system inside the canister prevents material from bridging. On the side of the canister is a paddle wheel sensor (bin level indicator), which shuts the vacuum off when the canister becomes full of recycle. As material is used, the sensor begins to rotate again and turns the vacuum system back on. A timing mechanism in the main electrical panel box delays starting so that the motor will not short-cycle. During operation, the vacuum automatically turns on and off as needed to keep the hopper from overloading and packing the canister.

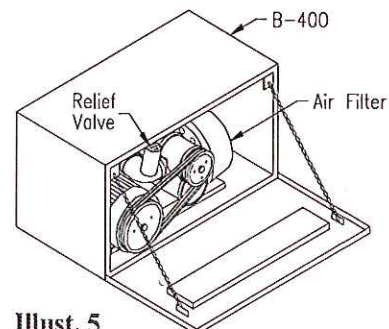
The clean-up crew should keep a close eye on the level of material in the hopper, and not allow it to run empty. During spraying operations, the hopper can empty out in 1 to 2 minutes. The clean-up crew should stay about 10 feet behind the spraying. When the vacuum system starts, the crew should begin vacuuming before the hopper empties.

The Krendl R-500 is accessible through the 20x46 door on the passenger side of the truck.

The clean-up crew should stay about 10 feet behind the spraying.

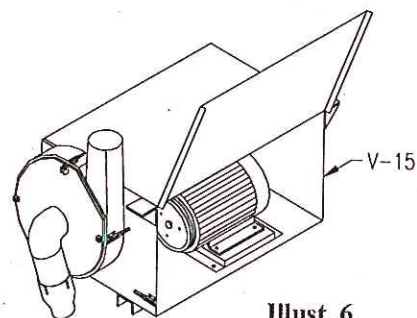
B - 400

The B-400 under the truck blower module (located on the drivers side of the truck) consist of a 400 CFM, 4 p.s.i. rotary positive blower. This unit supplies the necessary air pressure for open blowing and spraying fibers over 200 ft. The blower system is protected with a check valve, pressure relief valve, and air filter components.



Illust. 5

The V-15 under the truck vacuum module (located on the rear passenger side of the truck) draws in recycle material from the job site and delivers it directly into the R-500 recycle machine cannister. Once the recycle material has been deposited into the cannister, the air passes through the stainless steel mesh screen in the R-500 cannister, where it is filtered, and exhausted outside the truck.

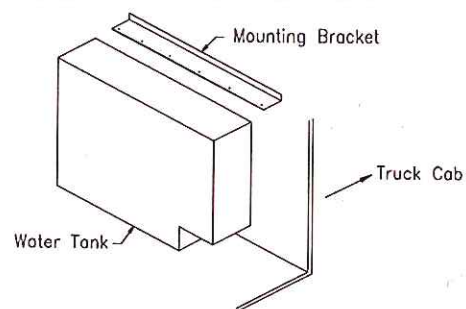


Illust. 6

Water Tank System

Note: Water Tank Systems may vary with different suppliers.

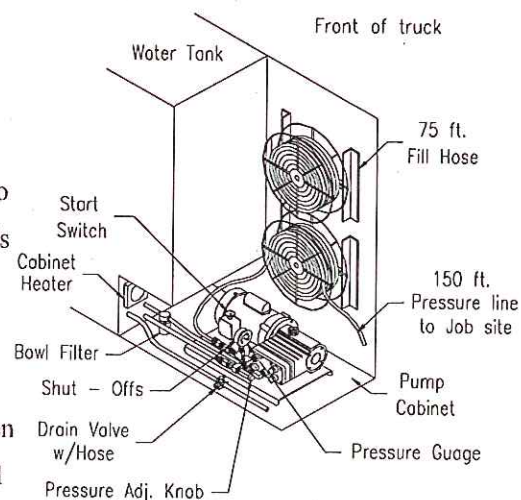
The water tank system consists of a 230-gallon plastic water tank and a cabinet which contains the water pump, heaters, hose reels, hoses, and controls. (Illust. 7) The water tank is covered by two inches of rigid board foam insulation inside of a metal frame. This frame facilitates securing the tank to the floor and stabilizing it to the front of the truck with the mounting bracket. In the center of the tank is a tube that acts as an air vent. This tube equalizes the pressure in the tank when filling or while running the pump. It also doubles as an overflow pipe, extending down below the bottom of the truck box. Built into one end of the tank (passenger side) is a pump cabinet. This contains the water pump, pressure line, fill hose, hose reels, a submersible heating element with thermostat, and a pump cabinet heater with thermostat.



Illust. 7

Pump Cabinet

The supply (suction) line from the tank to the pump has a clear bowl filter with an 80-mesh screen, while the return line runs directly back into the tank. This arrangement allows the system to operate for long periods of time with the nozzle turned off without causing any pump damage. Both suction and return lines use shut-off ball-valves and quick couplers which allow the pump to be removed without first draining the water tank. The pump cabinet also contains a drain valve and hose which when pulled out of the cabinet, protrudes about 6" beyond the door. This could also be used for washing hands at the end of a job. (There is also a



Illust. 8

valve on the fill hose which must be opened when filling tank.)

The combination of 2" foam insulation surrounding the tank, along with the submersible water heater and cabinet heater, allow the use of this system in subzero weather conditions. (Note: Drop pressure hose thru floor to keep door closed tight in sub-zero temperature.)

Pump Controls

Controls for the water pump system include a Start switch, a pressure-adjustment knob, and a water pressure gauge. (See illust. 8 on page 9) The Start switch is located directly on the pump. The brass, hexagon-shaped knob located near the cabinet door adjusts system water pressure, while the nearby gauge allows precise monitoring.

Water Pressure

When wall spraying, system water pressure should be adjusted as follows:

- For a 2" nozzle, use water pressure of approximately 150 psi.
- For a 2 1/2" nozzle, pressure will range from 200 to 300 psi depending on the volume of material being sprayed. A 300 psi setting is used for spraying volumes of 20 seconds per cavity on a 2 x 4 wall 16" OC or 30 seconds per cavity on a 2 x 6 wall 16" center-to-center.

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DIESEL GENERATOR

Power for the ST-250 is delivered by a 60KW 3-phase generator, which is driven by a diesel engine. Note: Size of the generator is determined by Vacuum system horse power. Note: only factory approved and installed generators can be used to enforce warranties. The generator features an automatic safety system to shut down in case of a low oil alarm or high temperature. It also sports a quiet, industrial-grade muffler, with rubber base-mounts to attach to the engine base for extra sound and vibration control.

The diesel generator is surrounded by a special air tight metal cowling with outside venting, which directs intake air through the engine radiator for cooling, and protects the unit from dust. The cowling contains a side door, which allows easy access during oil and filter changes. Though the cowling is hard-mounted to the floor and wall, it can be easily removed to allow more complete engine or generator access.

Fuel Pump

The diesel engine utilizes a fuel pump, making it possible to mount the fuel line to the existing diesel fuel tank or to an optional DOT-approved tank.

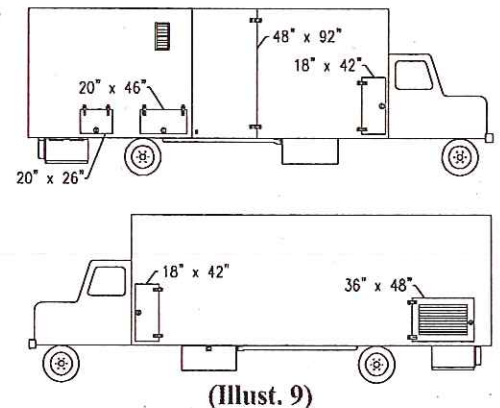
Diesel Generator Controls and Starting

At the radiator end of the generator (rear of truck) is a switch box that contains a key ignition and a push-button. (See illust. 10) The push-button must be held in and the key turned clockwise to activate the Starter. Do not release the push-button until the generator is up to speed. **Note: Generator may vary with different manufactures.** The switch box also contains an hour meter, which is used to measure the run time of the engine. **Note: Oil changes are determined by the number of hours the engine has been running.**

Access Doors

Four access doors are located on the passenger side of the truck body. (Illust. 9) The first door (20" x 26") allows access to the airlock for the S-2000. The second door (20" x 46") allows access to the R-500. The third door (48" x 92") allows access for quick loading of fiber. The fourth door (18" x 42") allows access to the pump hoses and controls.

There are two access doors located on the drivers side of the truck body. The first door a (36" x 48") louvered access door provides cooling air ventilation to the generator while allowing quick access for service. The second door (18" x 42") allows access to the wall scrubber and accessories in the storage compartment.



(Illust. 9)

Control Panel Module

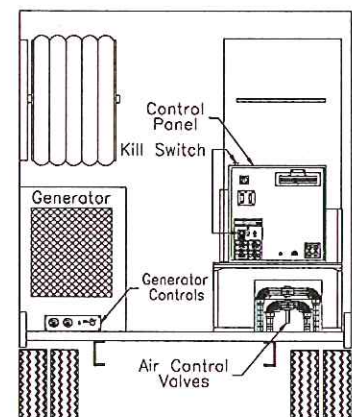
The Control Panel Module is located at the back end of the S-2000 machine, and is accessible from ground level at the back of the truck. (Illust. 10) The Control Panel Module contains the Main Panel Power Box and the system operating controls.

The Control Panel Module is located at the end of the S-2000.

Main Panel Power Box

On top of the Main Panel Power Box is a red Kill Switch. (Illust. 10) When pushed in, this switch shuts down all power to the machine. In case of a safety-related emergency, foreign material is dropped into the hopper, or if any strange noises are heard from the equipment, push this Kill Switch to immediately shut down the system. (**IMPORTANT:** Do not open panel box until main power disconnect is locked out and generator is off.)

A second Kill Switch is located on the face of the control panel on the left side. (Illust. 10) This switch performs the same job as the one located on top of the box: it shuts down the entire system in the event of an emergency. The top switch is positioned for easy access from **inside the truck**, while the switch on the panel is positioned for easy access from the **ground**.



(Illust. 10)

- To engage the Kill Switch, push the red button.
- To disengage the Kill Switch, turn the red button until it pops back out.
- The green Power/Reset button must be pushed after resetting any Kill Switch to resume power supply. (See illust. 12 below)

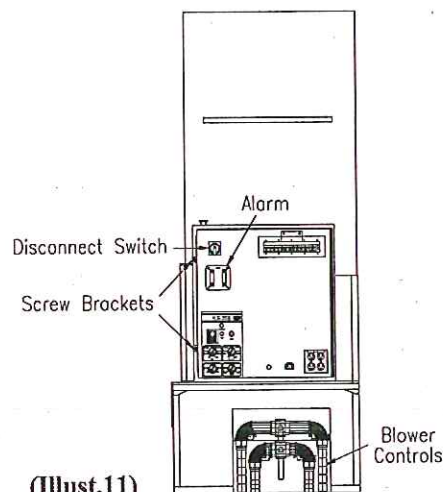
The Kill Switch shuts down the entire system in the event of an emergency.

On the upper left side of the Main Power Panel Box is a Disconnect switch. (Illust. 11) This switch shuts down all power inside the Main Panel Box. The Disconnect switch must first be turned Off ("O" shows in the indicator window) and the Generator shut-off, before the panel box door can be opened.

Only qualified, trained personnel should access this box.

Once the panel box has been closed, the Disconnect switch must be turned back to On ("I" shows in the indicator window) and the green Power/Reset button pushed before power will be restored, and the system can begin operation. Be sure to retighten the two screw brackets on the left side of panel to prevent water and fiber from leaking into the box.

Just below the Disconnect switch is an alarm. (Illust. 11) This alarm will sound for a few seconds whenever the machine is turned on; and before agitators move. Warning! When the alarm sounds, be sure that all hands and clothing are clear from the machine, since the unit is about to turn on.



(Illust.11)

System Operating Controls

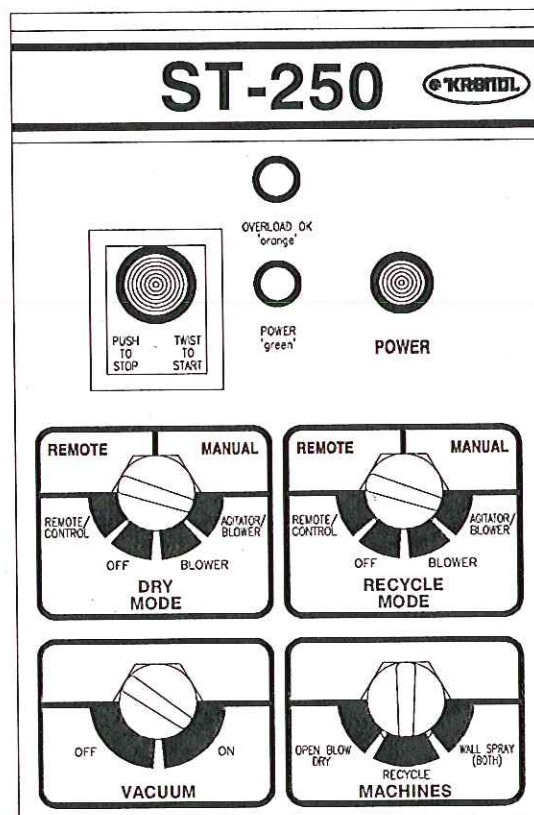
At the bottom of the control panel Module are the operating controls for the Modular System. (Illust. 12)

These include:

- a red, push-button-type Kill Switch,
- a green Power/Reset button,
- two indicating lights ('green' Power On and 'orange' Overload OK),
- two Mode selector switches, (S-2000/Dry Mode, R-500/Recycle Mode)
- a Machines selector switch, (Open Blow, Recycle, Wall Spray)
- a Vacuum switch,

Power/Reset Button

The green Power/Reset button turns on the Control Panel. After starting the engine, the Power/Reset button must be engaged. It is also necessary to reset the system after any Kill Switch has been engaged. (Illust. 12)



The System operating controls. (Illust. 12)

Mode Switches

There are two Mode switches (see illust. 12 on page 12):

- The S-2000 switch operates the Dry Machine.
- The R-500 switch operates the Recycle Machine.

Each Mode switch contains four settings:

- **Manual: Agitator/Blower** (On/Off)
- **Manual: Blower** On/Off
- **System off**
- **Remote** (using either the corded remote or the radio control remote)

When wall spraying, turn both the S-2000/Dry Mode and the R-500/Recycle Mode switches to **Remote**, while setting 'Machines Switch' to **Wall Spray**.

When blowing attics, turn the 'Machines Switch' to **Open Blow**. This will prevent the recycle machine from running while operating the dry machine and blower with remote control.

Machines Switch

The Machines switch makes it possible to use each machine independently, or to operate both machines together as a system (wall spraying). This switch has three settings: (See operating controls diagram illust. 12 on page 12).

- **Open Blow Dry** (S-2000)
- **Recycle** (R-500)
- **Wall Spray** (R-500 & S-2000)

Vacuum Switch

This switch turns the vacuum system on and off. (Note: If Vacuum does not turn on when activating Vacuum Switch the cannister may be full.)

Fuse Protection - Breakers

The (4) 120 volt outlets located at the bottom of the control panel, the water pump and inputs and outputs of transformers are protected by manual breakers located at the upper right-hand side of the control panel. (Illust. 13)

Blower Controllers

Located at the rear of the truck at the base of the

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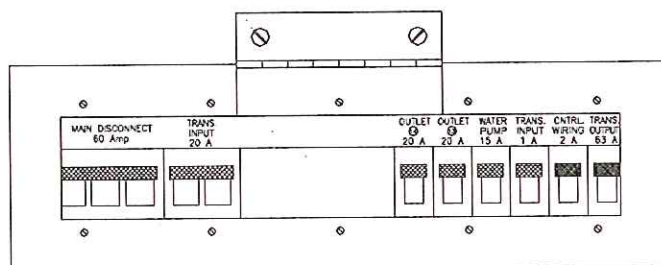
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The fuse protection - breakers. (Illust. 13)

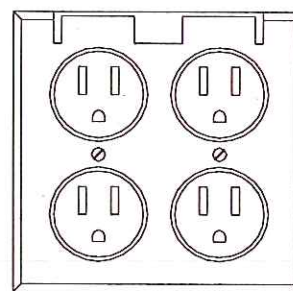
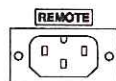
S-2000 dry machine; and accessible from the ground, are two different sized air by-pass valves. These valves provide for accurate control of blower air. The lower (larger) valve is for a general, (approximate) control setting of the air in the system. The upper (smaller) valve with a pointer gauge is for finer, specific adjustments in the air stream.

Panel Outlets

At the top right of the panel Box are a series of breakers which protect the pump and the four 120V outlets (see illust. 13 on page 13).

At the bottom right of the Panel Box are a series of outlets (Illust. 14):

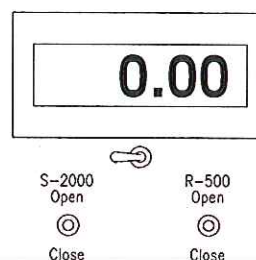
- one remote outlet,
- and four 120V outlets.



The ST-250 panel outlets (Illust. 14)

Power Slidegates - Optional

Systems provided with the optional power slidegates, offer a method to automatically adjust each machines feedrate from the main control panel at the rear of the truck. A digital panel meter is also provided which allows for precise adjustment and calibration of the feed on each machine. A toggle switch is used to select the readout setting for each machine (S-2000 Dry or R-500 Recycle). Individual toggle switches are used to open or close each machines slidegate. (Illust. 15)



(Illust. 15)

REMOTE CONTROL UNITS

Wireless Radio Controller

The wireless radio controller contains three control switches:

- Blower/Feed
- Blower
- Off

When switching from Blower/Feed to blower you do not have to push Off. Simply push Blower and the control will automatically switch the machine to air-only while the blower continues to run.

When the control panel Manual switch is being used, the remotes will not work. When the remote control cord is plugged in, the manual switches will override and work.

Corded Controllers

One corded remote control pendant, provided with the machine, can be used instead of the wireless radio system. These corded controllers have only three functions:

- Blower/Feed
- Off
- Blower (only)

ST-250 OPERATING INSTRUCTIONS

Hoses

The normal recommended length of hose is 150 feet. Longer lengths of hose increase back pressure and decrease the material flow rates. Machine settings will vary with longer hose (i.e. more air, less feed).

Additional lengths of hose can be added if necessary to reach a distant area. After completing these sections, remove extra hose to speed up production.

Recommended hose sizes: Vacuum: 4" I.D. hose (150 ft. maximum)
Open Blow & Stabilized: 3" I.D. open blow attic
Note: 4" can also be used and may increase efficiency when using stabilized.
Wall Spray: 3" I.D. x 150 ft. long connected to 2 1/2" I.D. x 15 ft. (light weight hose) for all cavity spray.

Using a longer hose decreases spray pressure and velocity.

Wall Spray

Machine Settings for Wall Spray

- Locate the starter panel at the radiator end of the diesel generator.
- Hold the toggle switch **On** (this starts the oil circulator).
- In cold temperatures, turn the key counterclockwise to the Glow Plug position for 5 to 10 seconds to preheat the engine.
- Turn the key clockwise to Start the engine. (Make sure the main disconnect switch is on.) Note: starting switches and/or buttons may vary with different generators.
- Press the green Power/Reset button at the control panel. ('green' power light 'on')
- At the main Control Panel, set the S-2000/Dry Mode switch to **Remote**.
- Set the R-500/Recycle Mode switch to **Remote**.
- Set the Machines switch to **Wall Spray**.

Feed gate settings may vary from one machine to another.

Air and Feed Settings

150' Hose Length

- For high volume spraying, close lower (large) air by-pass valve and open the upper (small) valve 1/4.
- Open the feed gate on the S-2000 to 4 1/2" or 5" on the scale gauge viewed from inside isle of truck. (3.5 to 4.0 on digital gauge)
- Open the feed gate on the R-500 to 4" on the scale gauge viewed from outside access door of truck. (3.5 to 4.0 on digital scale).

Note: this setting could vary from machine to machine.

- For first time use, begin with a low feed setting, then gradually increase until proper spray is achieved.

Attic Blowing

Machine Settings for Attic Blowing

- Locate starter panel at the back of the diesel generator and hold the toggle switch **On** (this starts the oil circulator).
- In cold temperatures, turn the key counterclockwise to the Glow Plug position for 5 to 10 seconds to preheat the engine.
- Turn the key clockwise to Start the engine.
- Press the green Power/Reset button at the control panel.
- At the Main Control Panel, set the S-2000 Mode selector switch to **Remote**.
- Turn the Vacuum switch to **Off**.
- Set the Machines selector switch to **Open Blow**.

Air and Feed settings (stabilized)

150' Hose Length

Close both air by-pass valves to direct all the air into the attic hose. **Note: If dry is being blown, a lower air setting may be possible.**

- For 150' hose, open the slide gate (feed) wide open. Continue to adjust until open flow is correct. **Note: Different material grinds will require different settings.**

To begin blowing attics, turn the Remote cord switch or Wireless Radio Control Feed switch **On**. To stop the material feed, switch or push the Blower button **Off**. The feed and water (see Attic nozzle assembly below) will automatically turn off, while the air should continue until the

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Do not shut the blower off until all material has stopped flowing.

material stops flowing. (Note: Machines selector switch should be on "Open Blow" to properly actuate attic nozzle)

Attic nozzle Assembly

When blowing attics with a 3" hose using stabilized product, use the expansion hose assembly. If a 4" hose is being used to blow the attics, use only a 4" nozzle. This assembly consists of (in the sequence given) (Illust. 16):

- a reducer tube (3" up to 4"),
- a 6" piece of 4" hose,
- an attic nozzle (water tips eject water in the direction of material flow),
- 24 feet of 4" hose, and
- a reducer tube (4" down to 3").

Positioning the Attic Nozzle on the S-2000

- Cut about 20 feet of 3" hose.
- Connect (and clamp) this hose to the S-2000 airlock.
- Place the attic nozzle assembly onto this hose with the nozzle closest to the truck. Jets directed **with** flow.
- Hook the remainder of the hose to the attic nozzle assembly.
- Connect the high pressure hose from the hose reel (remove the wall cavity spray nozzle) to the Internal Wetting module (using a quick-coupler connection). Located near pump base.
- Connect the hose from the Internal Wetting Module to the attic nozzle on ground.
- Machines selector switch to 'Open Blow'.

Make sure the cord on the Internal Wetting module is plugged into the 24V outlet on the small junction box inside pump cabinet. When the S-2000 is turned on, the water will automatically turn on. When the feed is turned off, the water will automatically turn off. When the Internal Wetting Module is not in use, unplug the 24V cord from the outlet. **Note: In freezing temperatures attach power cord to outlet below pump cabinet, and flip toggle switch inside pump cabinet to "line". This will maintain a higher temperature inside tank and pump cabinet.**

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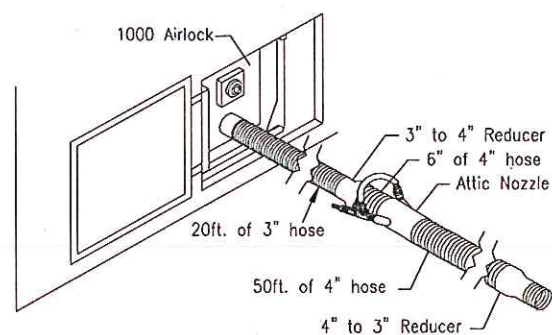
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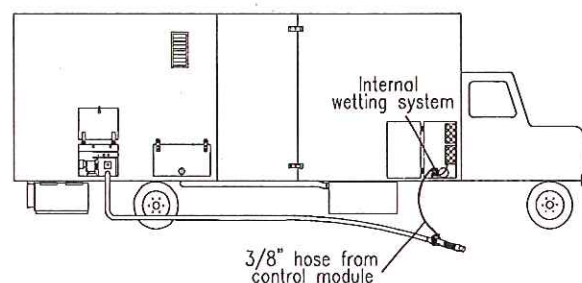
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(Illust. 16)



(Illust. 17)

Cleaning the Attic Nozzle

Near the end of the job (or every 50 bags), and while the machine is still operating, tap the 4" hose firmly to clear out sludge. Begin tapping the hose about 4 feet down line from the nozzle, and continue moving towards the nozzle.

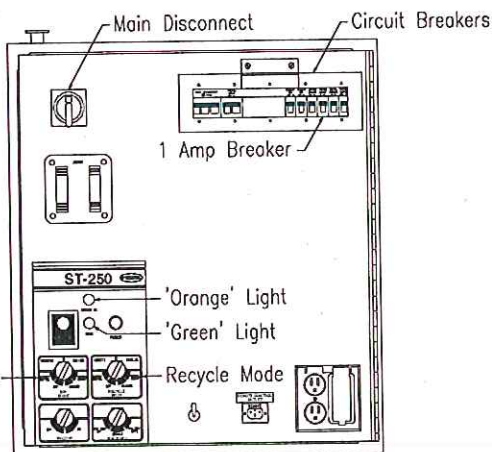
After Completion of the Attic

- Remove the water harness.
- If the nozzle will not be used until the next day or longer, leave the nozzle uncoupled and water harness off to properly dry out.

ST-250 TROUBLE SHOOTING

TROUBLE SHOOTING

Problem	Corrective Action
1) Overload Ok light (orange) is off. (Illust. 18)	<ul style="list-style-type: none">• Check generator - must be running• Check Main Disconnect On• Vacuum, Dry Machine, Blower, or Recycle horizontal and vertical agt. motors may have overheated. Wait a few minutes to cool down. - Starters should automatically reset and orange light will illuminate. (Except vacuum starter which must be manually reset) (Press 'green' power button to restart)• If 'orange' light does not illuminate... Vacuum thermal overload tripped. Turn off power at Disconnect switch.• Open Main Panel box, press red reset bar on lower part of large starter. (C-11)
2) Power light (green) does not turn on when Power button is pressed. (Illust. 18)	<ul style="list-style-type: none">• Kill switch(s) actuated; twist to release.• Make sure overload OK light is ON (see #1)• Light burned out. Turn R-500 or S-2000 mode switch to Manual, Blower/Airlock. If machine runs, light bulb needs replaced.
3) Remote Doesn't work.	<ul style="list-style-type: none">• Check both Dry and Recycle machine Mode Switch to be sure they are in Remote Position. (Illust. 18)• Make sure machine will run manually.• Check the 1 Amp transformer breaker. (Illust. 18)• Check remote control cord for continuity.



(Illust. 18)

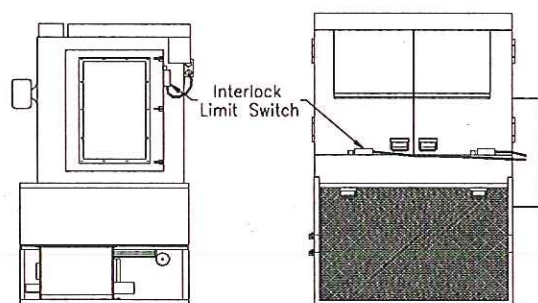
Problem

4) Wireless Remote doesn't work.

5) 110 Volt Outlets do not work.

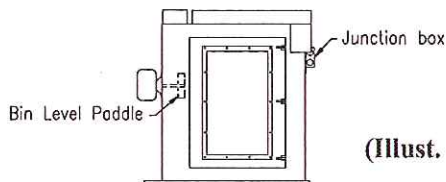
6) Blower does not work.

7) Recycle or Dry Machine Airlock doesn't turn.



(Illust. 19)

8) Vacuum Blower doesn't start.



(Illust. 20)

9) Vertical Agitator on 500 recycle cannister doesn't work.

Corrective Action

- Does the LED light on pendant light when button is pressed? Replace battery if it doesn't.
- Make sure Wireless is plugged in and there is 110 Volt power.
- Try corded remote to confirm wireless Remote malfunction. If corded Remote doesn't work, see problem #3.

- Make sure generator is on.
- Make sure Main Disconnect Switch is **ON**. (see illust. 18 on page 18)
- Check Circuit Breakers. (see illust. 18 on page 18)

- Check main blower starter and manual thermal overload
- Make sure overload ok 'orange' light and power 'green' lights are on. (see illust. 18 on page 18)

- Check to make sure access doors are closed and depress interlock switches. (Illust. 19)
- If R-500 or S-2000 motor attempts to turn or chain jumps, **airlock** or **hose** could be plugged. Turn machines switch to **Recycle**. Turn blower on High. Turn Recycle and Dry Machine Mode Switch to **blower** and check for air coming out of either airlock.
- With blower running on high (valves closed): jog each airlock to clear out debris.

- Check recycle canister - full. (if full, unit will not run)
- Bin level paddle clogged or restricted inside Recycle Machine cannister. (Illust. 20)
- Bin level indicator plugged into outlet at junction box.
- See problem #2.

- Access door on cannister, 'limit switch' depressed.
- Check manual reset on motor starter in panel box.
- Check motor cord plugged in below Main Panel Box.

ST-250 Maintenance

Daily

- Empty fiber from recycle unit at end of day.
- Check for excessive fiber build-up on recycle cannister screen and scrape screen with a wire brush to remove any buildup.
- Check fluid levels (oil and coolant) on generator.
- Close slidegates of Dry and Recycle Machines to prevent buildup of material in the slidegate track.

Weekly

- Remove blower filter and blow with compressed air.
- Visually check chain tension on all drive systems.
- Clean out inside vacuum chamber.
- Blow off all motors.
- Blow out radiator and generator with compressed air.

Monthly

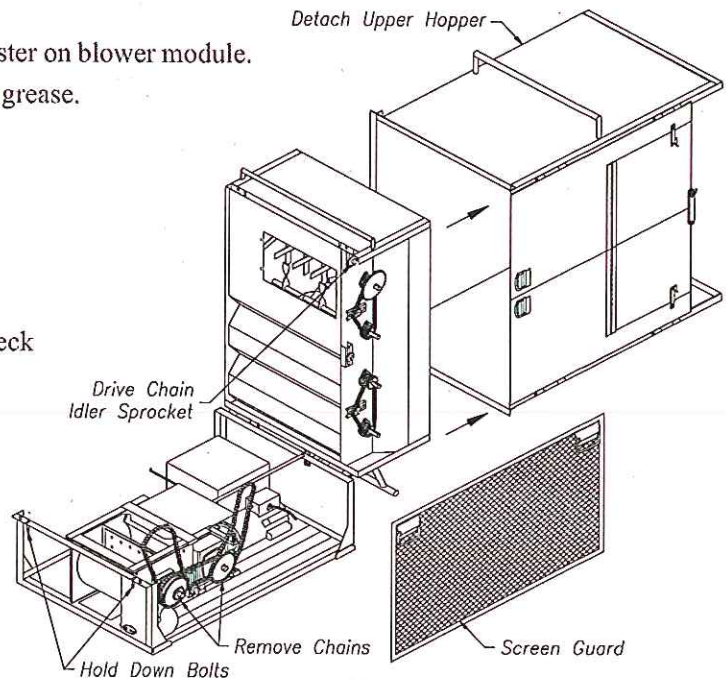
- Check vacuum motor pulley and belt tension.
- Check blower motor pulley and belt tension.
- Check and/or replace filter media in filter cannister on blower module.
- Grease vacuum shaft bearings with high speed grease.

Quarterly

- Grease all bearings with high speed grease.
- Check condition of airlock seals.
- Check all hoses and connections for leaks.
- Generator maintenance every (250 hours) - Check filters (air & fuel) and change oil and oil filter.

S-2000 Maintenance

Note: When servicing individual components of this system, the separate modules can be easily accessed by removing the "floor" bolts from inside isle of truck and sliding unit away from the truck wall!! (When servicing the S-2000 airlock seals, be sure to remove any hoses, cords, or other attachments first.)



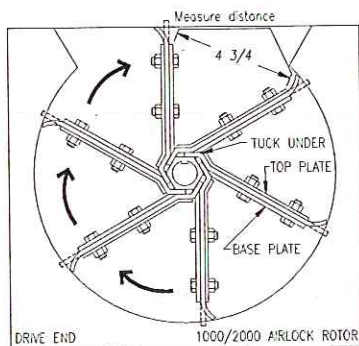
(Illust. 21)

Periodic preventive maintenance will add years of life to your equipment. Reviewing the information in this manual will go along way in reducing downtime and lost income. **Flip hopper up** for easy maintenance of lower base unit. (Illust. 21) Remove side screen guard of machine. Loosen idler sprocket and remove (2) two vertical drive chains. Make sure crank handle is in downward position. Release hold down bolts at airlock end of machine and lift hopper back gently until it rests safely on the floor. (Note: The upper hopper may have to be removed before flipping up the agitator/hopper unit. This will allow greater clearance when flipping agitator/hopper unit upward.)

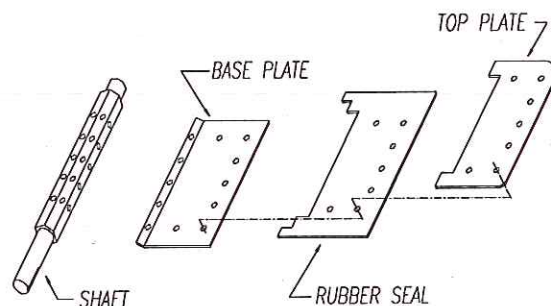
Airlock: (Seal Replacement)

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

Airlock rotor plates that are damaged (bent) will need replaced. (Refer to Rotor Plate Replacement below.) Take out rubber seal by removing seven plate fastening bolts and nuts and top plate. The base plate will remain attached to airlock shaft. To install a new seal, reverse procedure. Seal should be inserted tight against the back base plate, pressing the lower tabs of the seal down under the adjacent seal with a flat blade screwdriver. (See illustration 22) Make sure all bolt holes are aligned while each side of seal is equally pressed against the end plates, before tightening bolts. Seal should be bent backwards for **clockwise** rotation.



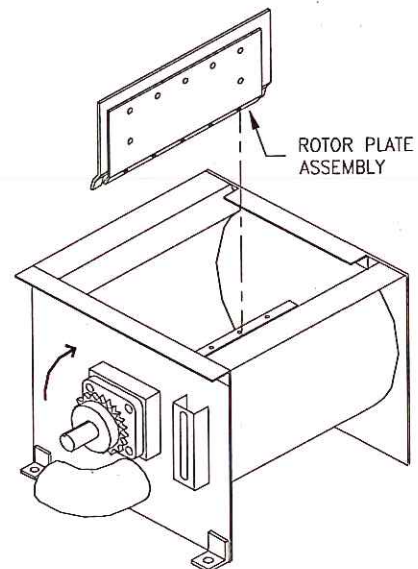
(Illust. 22)



(Illust. 23)

Rotor Plate Replacement:

1. To check plates for proper angle, measure distance between outer edge of metal plates. (Illust. 22) This measurement should be 4 3/4". Measure all six plates and replace as needed.
2. Remove damaged baseplate assembly from shaft using ratchet drive wrench with extension and 1/2" socket.
3. Check seal for wear and damage. (Installing seal and top plate on the bench is quick and easy). Remove bolts from plate assembly and replace with new seal. Make sure seal and top plate are assembled on **correct** side of base plate before assembling in airlock. Seal should press backward towards top plate when installed correctly into airlock chamber. (Illust. 22)
4. Install the rotor plate assembly into the airlock. The airlock runs **clockwise** viewing it from the sprocket drive shaft. (Illust. 24) Align the base plate with holes on airlock shaft



(Illust. 24)

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



using a tapered punch. **Caution:** Do not mount rotor plate backwards. 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 **clockwise** rotation of rotor.

5. As rotor plate is installed, press bottom tab of seal under adjacent seal with flat blade screwdriver. (See illust. 22 on page 21)

Chain: (Adjustment) (#50 Nickel Plated)

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

Sprockets:

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



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

Bearings:

Agitator Bearings in hopper are prelubricated, double-sealed, self aligning ball bearings. Some bearings do not have grease fittings and are lubricated for life. Others have grease fittings and should be periodically lubricated. At least every 3 months. If bearings produce noise or heat (*too-hot-to-touch*), the bearings should be replaced.

Agitator Bearing Replacement:

Spray area with rust penetrant (WD-40). Remove sprocket (See SPROCKET section above). Remove the two bolts from bearing flange and outer flange from bearing insert. Loosen set screws on bearing hub at each

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end of agitator shaft. Since all set screws are installed with a medium grade Loctite, a propane hand torch maybe used to assist in removing them. Do not overheat unit, causing shaft to expand. Using a rubber mallet, drive agitator shaft an inch in one direction, creating a space between hopper and bearing unit. A bearing puller can then be used to remove the bearing. Eliminate any metal burrs from shaft with file and install new bearings with felt seals. Use a medium grade Loctite on set screws before securing bearing to shaft. (Check shaft diameter before ordering bearings)

Airlock, Shredder and (drive side) Agitator 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. **(Note: Make sure a high speed / high temperature grease is used on vacuum bearings.)** 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.

Airlock, Shredder, and Agitator (drive side) Bearing Replacement:

Remove four bolts from airlock bearing flange (two bolts from shredder bearing flange) and follow steps above for agitator bearing replacement.

Speed Reducer: (Lubrication)

Periodically check oil level in reducer. Do not lay machine on its side as lubricant from unit will drain from vent plug. 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 (Mobil SHC-634). Consult speed reducer manufacturer's manual for lubricant replacement intervals.

Agitator Motor:

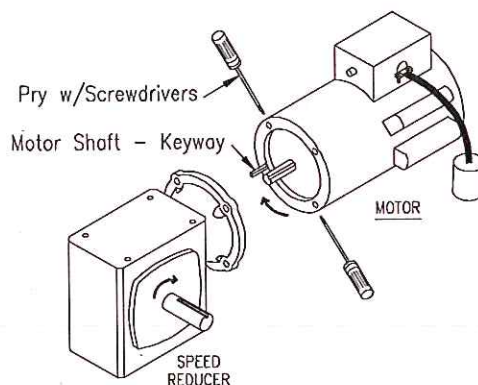
If agitator motor runs hot, activating the manual reset located in main panel box, or if unit does not run properly, refer to troubleshooting sections of manual. The agitator motor should start quickly and run smoothly. If not, shut motor off **immediately** and check the cause. Low voltage, incorrect 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:

Remove conduit and wire connectors from wires inside conduit box on motor. (tag wires for easy hook-up) Remove drive chain and flip hopper up as described at the beginning of General Maintenance section. Place a support block under motor to reduce stress while removing four reducer flange bolts with a 9/16" socket wrench. (If rear bolts are difficult to reach, remove reducer unit from lower frame for better access.) Pry motor from

speed reducer a slight distance, using two large flat blade screwdrivers placed in the slots (180° apart) where they join together. Pull motor unit straight away from speed reducer, retaining key. (Illust. 25) Before installing replacement motor, refer to motor nameplate. Check connection of new wires for correct voltage (low or high) and PROPER ROTATION of motor output shaft (clockwise facing output shaft). Rotate keyways of motor shaft and quill (input) of speed reducer to 12:00 o'clock position. (To turn speed reducer shaft, chain on output of speed reducer will need to be removed.) Assemble the key 3/4 inch in from 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.) 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. Connect motor cord to Junction Box and check for correct rotation of speed reducer output shaft (clockwise). Reconnect drive chain and assemble unit for manual operation.

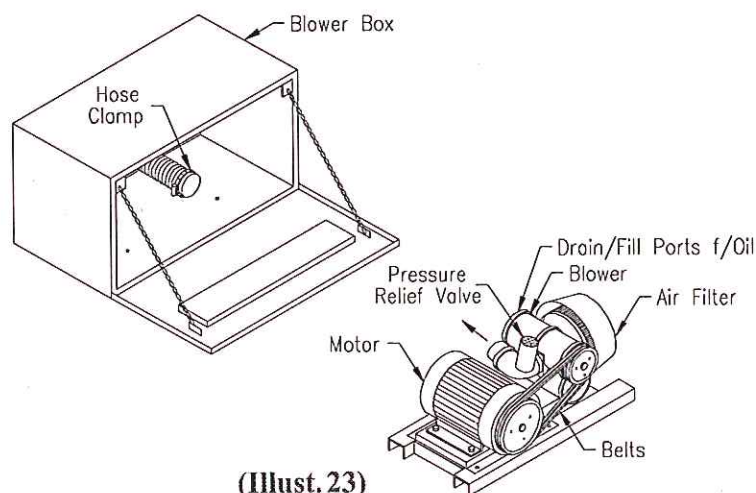


(Illust. 25)

Blower Module: Motor and Blower

Periodically remove Blower Filter and vacuum any material that has accumulated inside of blower box and 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 back or reverse 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.

Check belt tension and possible air leaks in the hose line to the machines. Check for secure clamps. Line pressure can be increased if needed by removing cap of pressure relief valve and turn allen head screw clockwise. Check and/or change oil in the blower pump housing. Refer to owners manual (separate component literature.) The internal blower assembly mounted to 'C' channel base, is removed from box enclosure to change oil. Drain ports are located at the rear of blower housing. Adequate electrical conduit is available to remove this unit **without** detaching electrical connections.



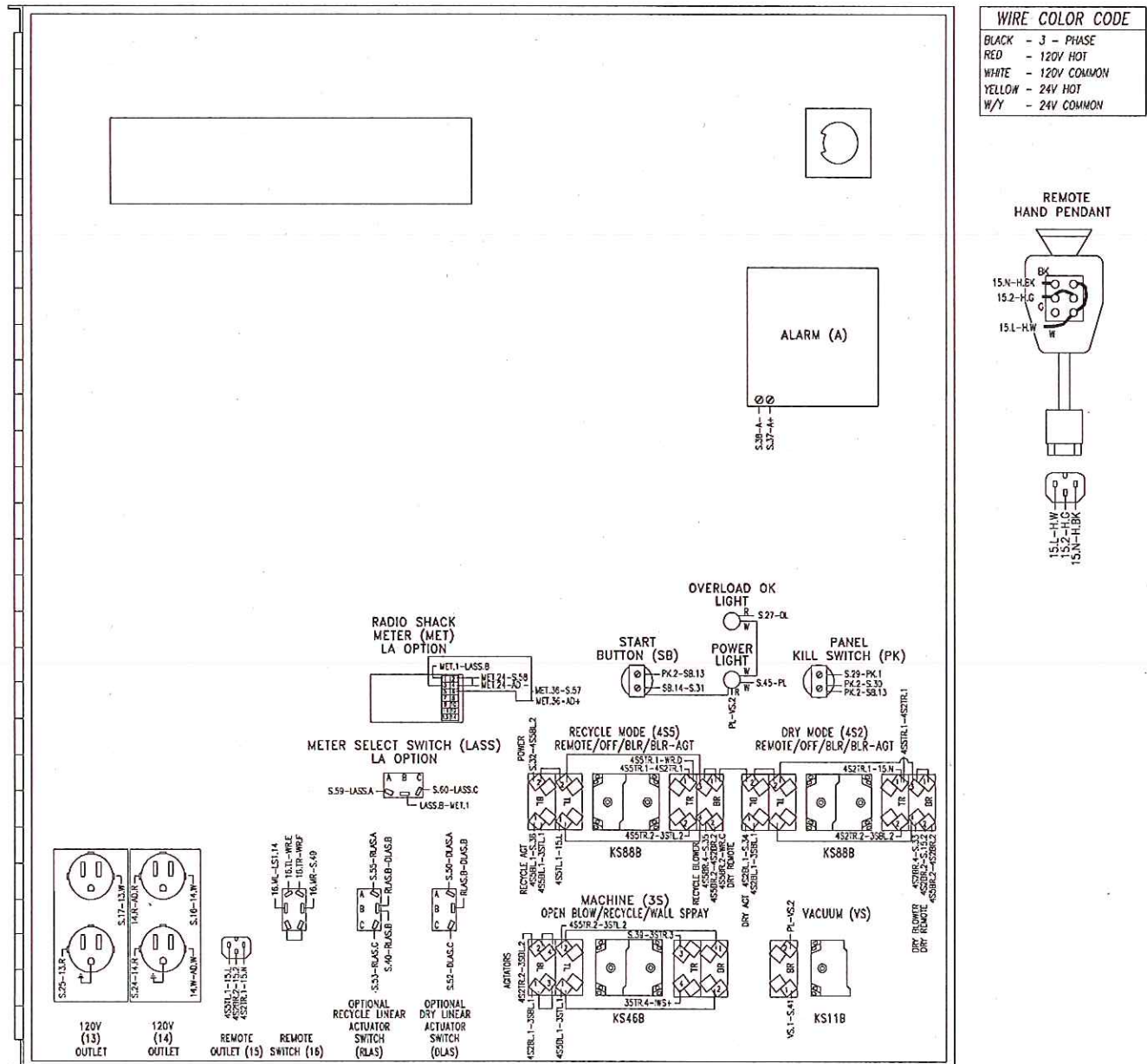
(Illust. 23)

ST-250 Electrical Schematic

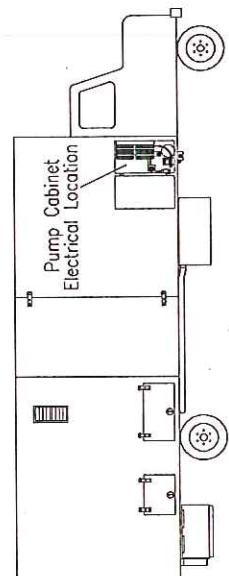
Electrical Diagram:

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

ST-250 CONTROL PANEL DOOR (Inside)



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

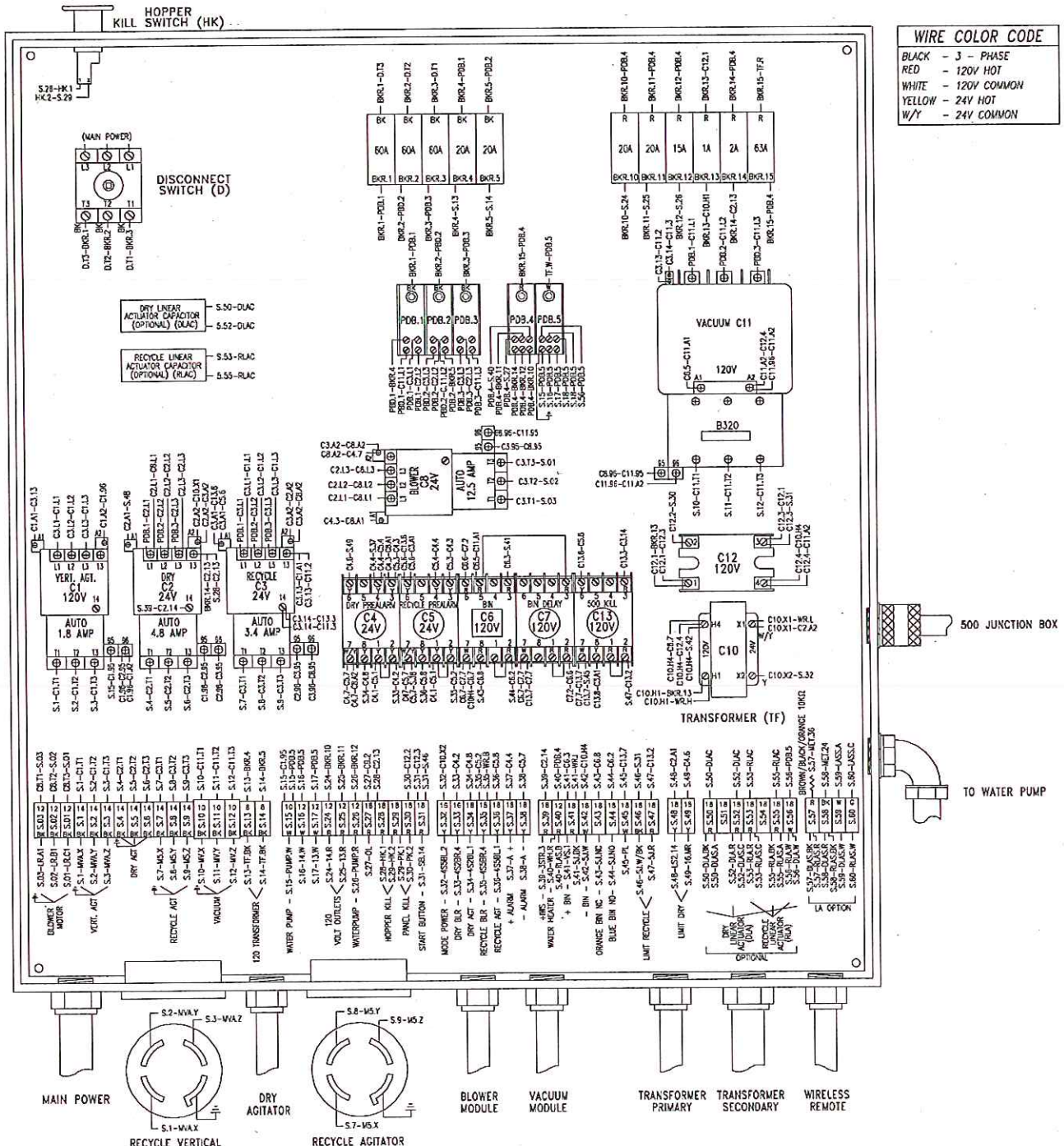


ST-250 Electrical Schematic

Electrical Diagram:

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

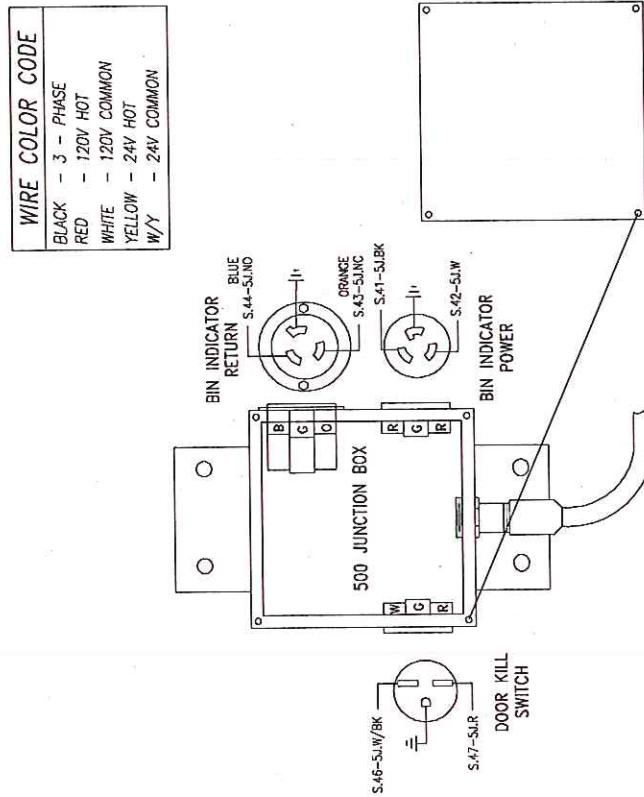
ST-250 CONTROL PANEL BOX



Electrical Diagram:

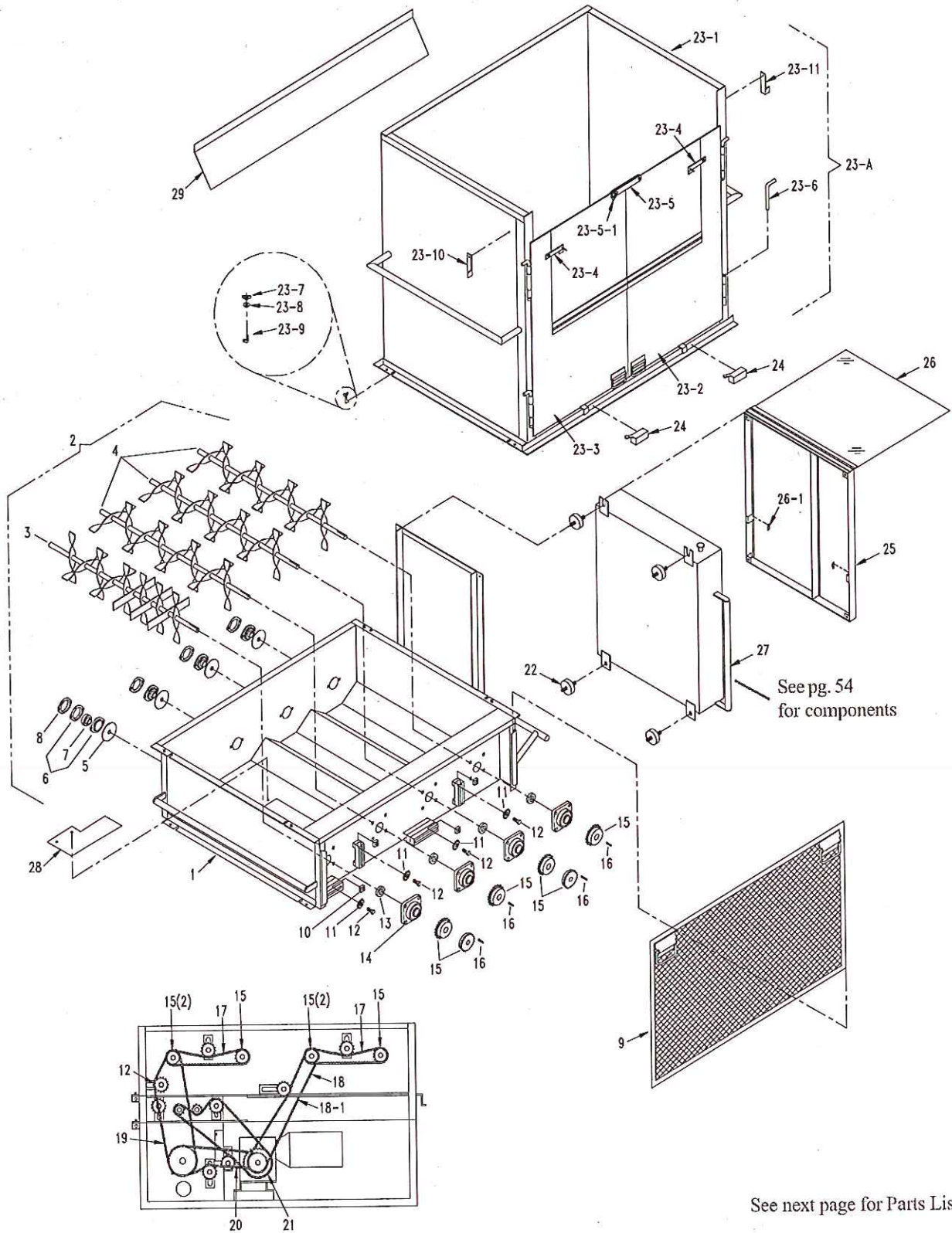
Periodically, disconnect machine from power source and check all electrical connections and components for broken or loose wires.

ST-250 JUNCTION BOX



S-2000 Exploded Parts View

UPPER HOPPER AND DRIVE ASSEMBLY



S-2000 Exploded Parts List

Item#	Part#	Description
1	2502009-1	Frame, Hopper Btm.
2	2502009-A	Hopper Bottom Assy
3	250503-2	Agitator, Shredder (1)
4	250503-3	Agitator, Middle (3)
5	250503-5	1 1/4" Felt washer (4)
6	250503-4	1 1/4" 2-Bolt Flange Bearing (8)
7	250503-6	1 1/4" Bearing Insert (4)
8	250503-9	1 1/4" Bearing Guard (4)
9	2502012	Chain Guard
10	40052	1" x 1" Nut (4)
11	150513	Sprocket, #50 Idler (4)
12	FSB120	3/4" Shoulder Bolt (3)
13	250503-7	1 1/4" Felt Seal (4)
14	250503-8	1 1/4" 4-Bolt Flange Bearing (4)
15	250504	#50 Sprocket 20T x 1 1/4" (6)
16	561	1/4" x 1/4" x 1" Key (6)
17	109811	#50 Chain, 37 1/2" (2)
18	50NP	#50 Chain 56"
18-1	190	Link, Chain, 1/2 #50 NP
19	109807	#50 Chain, 50"
20	2502028	#50 Chain, 41"
21	109809	#50 Chain, 55"
22	2502029	Vibration Isolater (4)
--	--	3/8" Lock Washer (8) (Not Shown)
--	--	3/8" Nut (8) (Not Shown)
--	--	3/8" Flat Washer (4) (Not Shown)
23-A	2502015-A	Hopper, Top Assy
23-1	2502015-1	Hopper Top
23-2	2502015-2	Door, Right Hopper
23-3	2502015-3	Door, Left Hopper
23-4	2502015-4	Door Latch, Upper Swing (2)
23-5	2502015-5	Door Latch, Upper Swing (Top)
23-5-1	2502015-6	1/2" Wing Nut w/Bolt
23-6	541	Hinge Pin (4)
23-7	FN013	5/16" Wing Nut
23-8	FW007	5/16" Flat Washer
23-9	2530-1	J-Bolt
23-10	2502015-1-13	Door Latch, Swing - Lock, Left Side
23-11	2502015-1-14	Door Latch, Swing - Lock, Right Side
24	250523-1	Limit Switch (2)
25	251080-10	Guard, Panel Box
26	251080-51	Rain, Cover (Lexan)
26-1	251080-67	Latch, Panel Box (2)
27	251080-34	Panel Box
28	250528	Conversion Plate, Airlock
29	ST354	Guard, Splash

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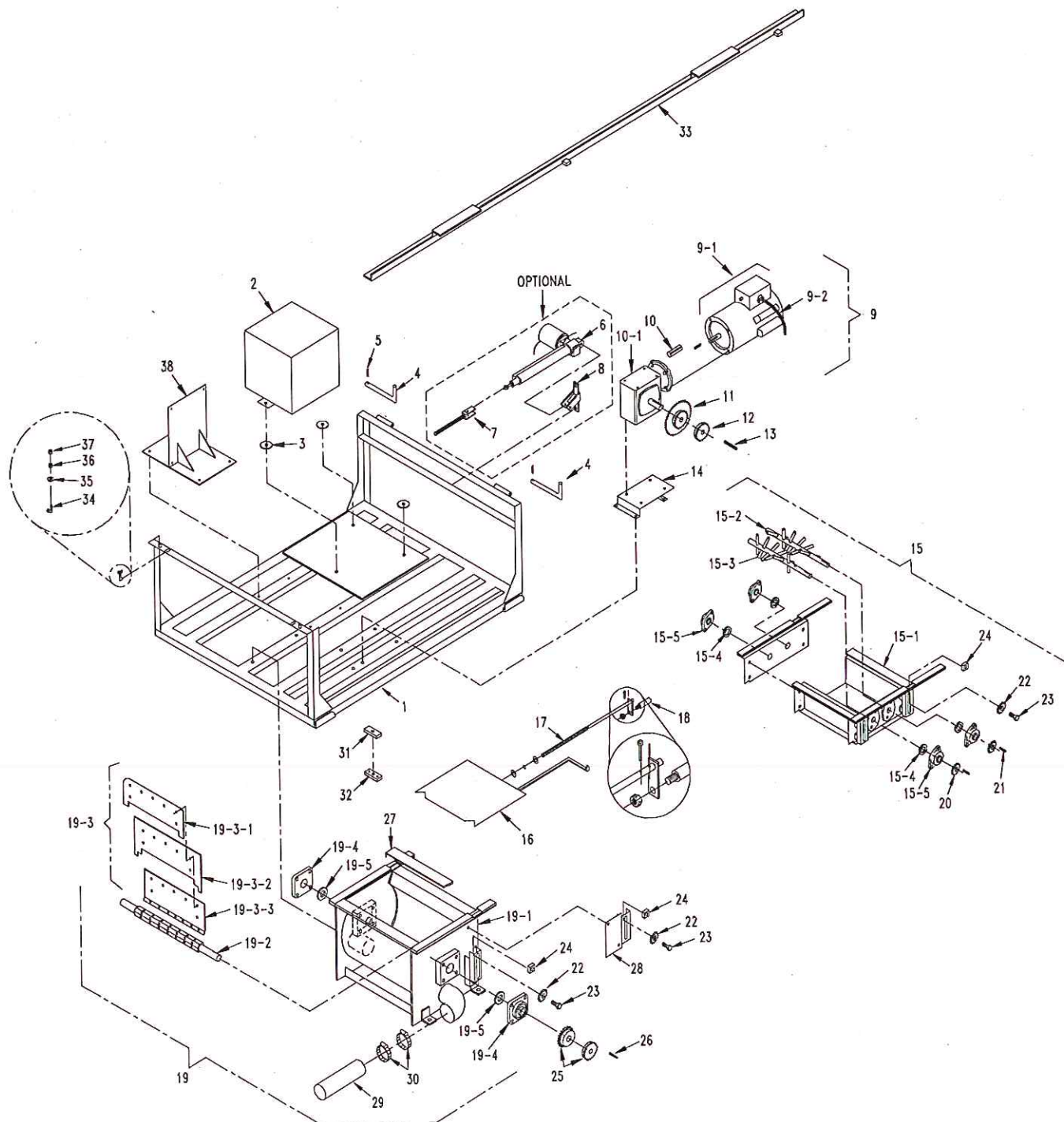
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S-2000 Exploded Parts View

LOWER BASE UNIT ASSEMBLY



See next page for Parts List.

S-2000 Exploded Parts List

Item#	Part#	Description
1	2502002	Base Frame
2	151010-Assy	Transformer Assy, 10 KVA
3	--	Rubber Washers
4	541	Hinge Pin (2)
5	FSB080	5/32" x 5/8" Roll Pin (2)
6	2502020-A	Actuator Assy (Optional)
7	2502020-3	Crank Rod (for Linear Actuator) (Optional)
8	2502003	Brace, Actuator Bracket (Optional)
9	2502007-A	Motor Assy, 3 H.P. 3-Phase
9-1	2502007	Motor 3 H.P. 3-Phase
9-2	543-M-75	Cord Conduit 1/2" (3 feet)
10	2502006	Gear Reducer Bushing
10-1	2502005	Reducer, Gearbox
11	2502025-A	Sprocket #50 40T x 22T x 1 3/8"
12	2502023	Sprocket #50 25T x 1 3/8"
13	--	Key, 5/16" x 5/16" x 2 3/8"
14	2502021	Bracket, Gear Reducer
15	2502016-A	Shredder Box Assy
15-1	2502016-2	Shredder Box w/Removeable End
15-2	209019-1-B	Agitator, Shredder Box
15-3	209019-2-B	Agitator, Shredder Box
15-4	426-7	3/4" Felt Seal (4)
15-5	426-6	Bearing 3/4" 2-Bolt (4)
16	2502004-2	Slidegate (KS250, 2000)
17	2502004-1	Crankrod w/Handle Bracket
18	4507	Handle, Crankrod
19	2502001-A	Airlock Assy
19-1	2502001-1	Airlock Chamber
19-2	209031-6	Shaft, Airlock, 23 1/2"
19-3	209031-8-Assy	Seal Assy, Airlock 16" (6)
19-3-1	209031-9	Top Plate, 16" (6)
19-3-2	209031-8M	Seal, Airlock Rhinohyde, 16" (6)
19-3-3	209031-7	Base Plate, 16" (6)
19-4	517-6	4-Bolt 1" Bearing (2)
19-5	517-7	Seal, Felt, Airlock 1" (2)
20	S-50BS10	Sprocket, #50 10T x 3/4" (2)
21	448	Key 3/16" x 3/16" x 7/8" (2)
22	150513	Sprocket #50 Idler (3)
23	FSB120	3/4" Shoulder Bolt (3)
24	40052	Nut (3)
25	150510	Sprocket, #50 25T x 1" (2)
26	561	Key 1/4" x 1/4" x 1" (2)
27	209031-10	Spacer, Airlock, 16"
28	109019-9	Idler Bracket
29	RM-OTH095-MI	Hose, Radiator, 3" x 23"
30	339A	3" Hose Clamp (2)
31	ST349	Block, Hold Down, Top
32	ST348	Block, Hold Down, Bottom
33	ST250-7	Track, Mounting
34	2530-1	Latch Bolt, 2" Bent
35	FW007	5/16" Flat Washer (2)
36	FN011	5/16 - 18 Nut, Hex (2)
37	FN014	5/16 - 18 Lock Nut (2)
38	2502002-A	Bracket, Soft Start

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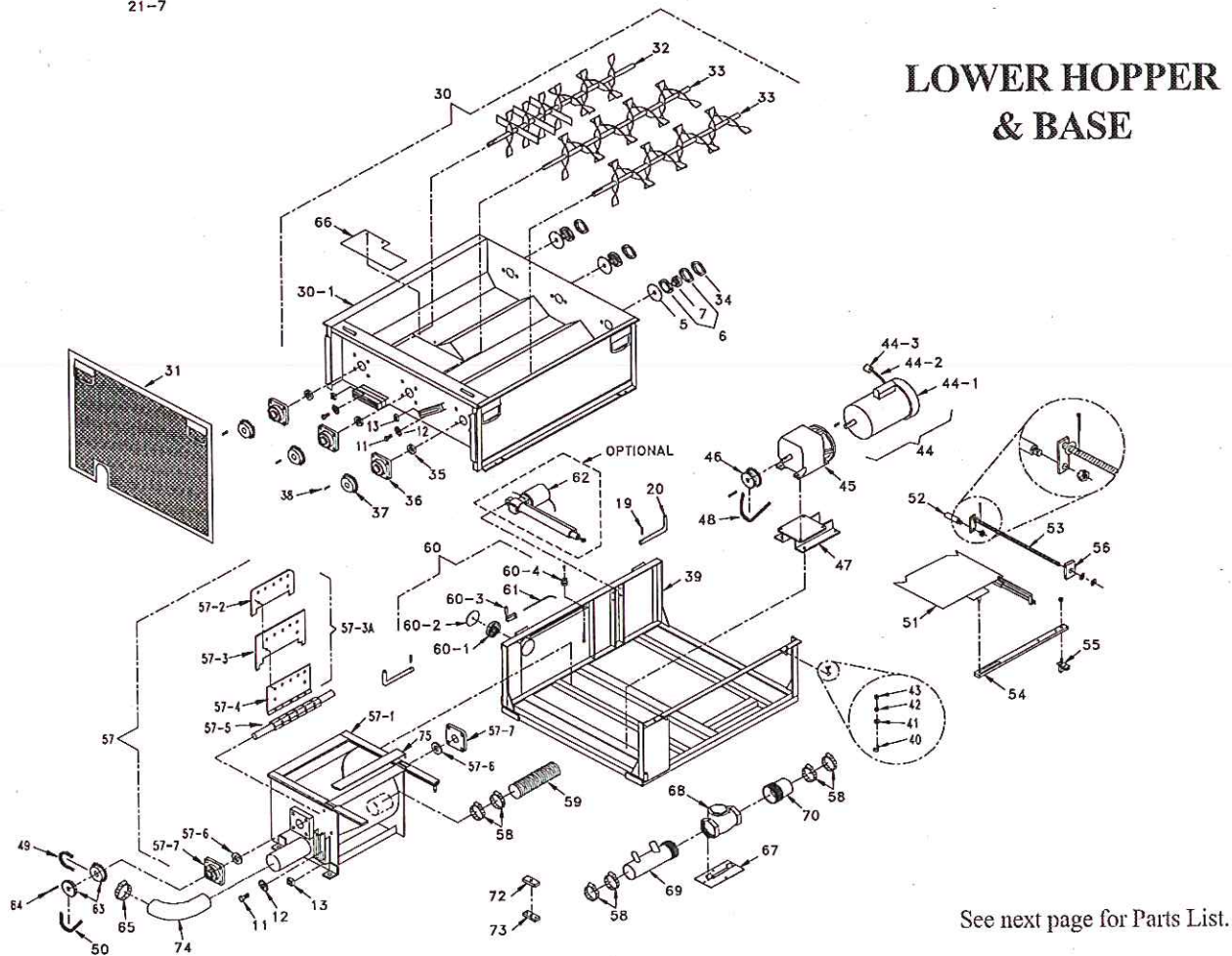
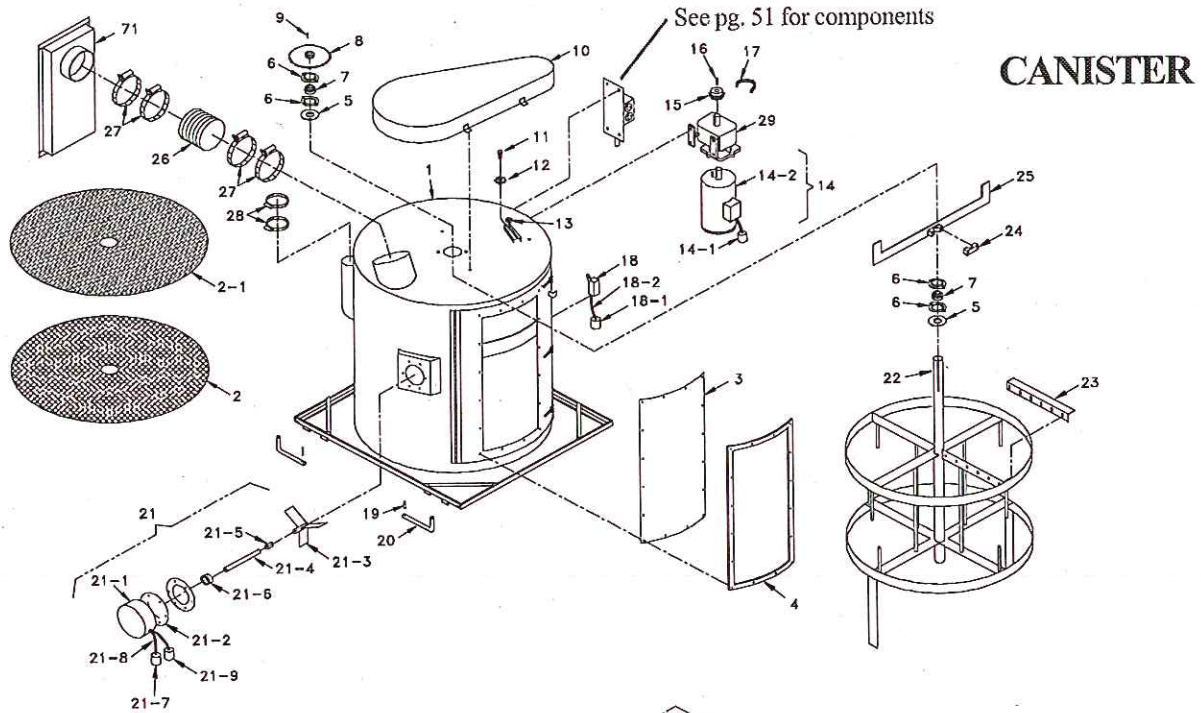
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Exploded Parts List

R-500 Exploded Parts View



R-500 Exploded Parts List

Item#	Part#	Description
1	250512	Barrel, Canister
2	250512-3	Backing Screen, Canister
2-1	RM-OTH101-MI	Mesh, Stainless Steel
3	250512-1	Window, Canister
4	250512-4	Molding Frame f/Canister Window
5	250503-5	Washer, Felt 3 1/2" O.D. x 1 1/8" (5)
6	250503-4	Flange, 1 1/4" (10)
7	250503-6	Bearing Insert 1 1/4" (5)
8	250515	Sprocket, #50 60T x 1 1/4"
9	562	Key 1/4" x 1/4" x 1 1/4"
10	250520	Guard, Chain
11	FSB120	3/4" Shoulder Bolt
12	150513	Sprocket, Idler #50 x 5/8"
13	40052	Nut, 1" x 1/2" (Plated)
14	250514-A	Motor & Cord Assy
14-1	250522	Plug, 3-Phase, 20 Amp
14-2	250514-1	Motor, 1 H.P., 3-Phase
15	S-50BS14-A	Sprocket #50 14T x 1"
16	561	Key, 1/4" x 1/4" x 1"
17	109810	Chain #50 x 64 1/2"
18	250523-1	Limit Switch
18-1	126-B	Plug, (5666C)
18-2	18-3 SJ	Wire, 18-3 SJ, 26" Long
19	FSB080	5/32" x 5/8" Roll Pin (4)
20	541	Hinge Pin (4)
21	250530-A	Bin Level Indicator Assy
21-1	150523-3	Bin Level Indicator
21-2	150523-7	Flange Assy w/Gasket
21-3	150523-6	Paddle, Indicator
21-4	150523-4	Nipple, Pipe 1/4" x 3 1/2"
21-5	150523-5	Coupling, Pipe 1/4"
21-6	250527	Bushing Reducer, 1 1/4" - 1/2" PVC
21-7	250530-A1-1	Connector (4579C)
21-8	18-3 SJ	Wire, 18-3 SJ 3ft Long (2)
21-9	1538	Plug NEMA# L5-15P
22	250513-4	Agitator, Vertical
23	250513-4-4	Wiper, Vertical Agitator
24	250513-5	Clamp, Wiper
25	250513-6	Plate, Wiper
26	H430	Hose, Flexhaust, 6", 15" long
27	341	6" Hose Clamp (4)
28	340	4" Hose Clamp (2)
29	513-R2	Reducer, Gearbox
30	250503-A	Hopper Assy, #500 ST-250
30-1	250503-1	Hopper, #500 ST-250
31	250517	Guard, Chain
32	250503-2	Agitator, Shredder (1)
33	250503-3	Agitator, Standard (2)
34	250503-9	Guard, Bearing 1 1/4" (3)
35	250503-7	Seal, Felt 1 1/4" (3)
36	250503-8	Bearing Flange 4-Bolt, 1 1/4" (3)
37	250504	Sprocket, #50 20T x 1 1/4" (3)
38	561	Key, 1/4" x 1/4" x 1" (3)

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R-500 Exploded Parts List

Item#	Part#	Description
39	250501	Base, 500 (ST250)
40	2530-1	Latch Bolt, 2" Bent (2)
41	FW007	5/16" Flat Washer (2)
42	FN011	5/16 - 18 Nut, Hex (2)
43	FN014	5/16 - 18 Lock Nut (2)
44	250509-A	Motor & Cord Assy 2 Hp., 3-Phase
44-1	150509-1	Motor, 2 H.P., 3-Phase
44-2	250509-A2	Cord & Plug Assy
44-3	250522	Plug, 20 Amp, 3-Phase
45	250529	Reducer, Gearbox (After 10-23-00)
46	250505-A	Sprocket, #50 25T x 26T x 1 1/4"
47	250518-R1	Bracket, Reducer (After 10-23-00)
48	109810	#50 Chain, Inside Agitator, 64 1/2"
49	250506	#50 Chain, Airlock Drive, 48 1/2"
50	109805-A	#50 Chain, Outside Agitator, 40 1/2" w/ 1/2 link
51	250508-1	Slidegate, (Stainless Steel)
52	4507	Handle, Crankrod
53	250508-3	Crankrod w/handle bracket
54	250508-4	Arm, Slidegate
55	250508-5	Adapter, Crankrod, Slidegate
56	250508-3-2	Support, Handle, Crankrod
57	250507-A	Airlock Assy
57-1	250507-1	Chamber, Airlock
57-2	209031-9	Plate, Top, 16" (6)
57-3	209031-8M	Seal, Airlock, Rynohide, 16" (6)
57-3A	209031-8-Assy	Seal Assy, 16" (6)
57-4	209031-7	Plate, Base f/16" Airlock
57-5	209031-6	Shaft, Airlock 23 1/2"
57-6	517-7	Seal, Felt, Airlock 1" (2)
57-7	517-6	Bearing, 4-Bolt, 1" (2)
58	339A	3" Hose Clamp (6)
59	H319	Hose, Flexhaust 3" x 50"
60	250501-1A	Pointer Body Assy.
60-1	250501-1A-1	Spring, Coil
60-2	250501-1A-2	Cover, Coil Spring
60-3	250501-1A-3	Pointer Indicator
60-4	250501-1A-4	Pulley, Cable
61	250521	Cable, 27"
62	250510	Actuator (Optional)
63	150510	Sprocket #50 25T x 1" (2)
64	562	Key 1/4" x 1/4" x 1 1/4" (2)
65	2502030	3" Hose Clamp w/Wing Nut
66	250528	Bracket, Airlock
67	250535	Mount, Check Valve, Directional
68	250539	3" Check Valve
69	250532	Inlet, Air, 3" Dia. x 1 1/4" & 1 1/2" bypass outlets
70	250300-13	Adapter, Hose, Male, 3" Dia.
71	250996	6" Vent
72	ST349	Block, Hold Down, Top
73	ST348	Block, Hold down, Bottom
74	250534	Elbow, Sweep, 3" w/Bolt Clamps
75	209031-10	Airlock Spacer, 16"

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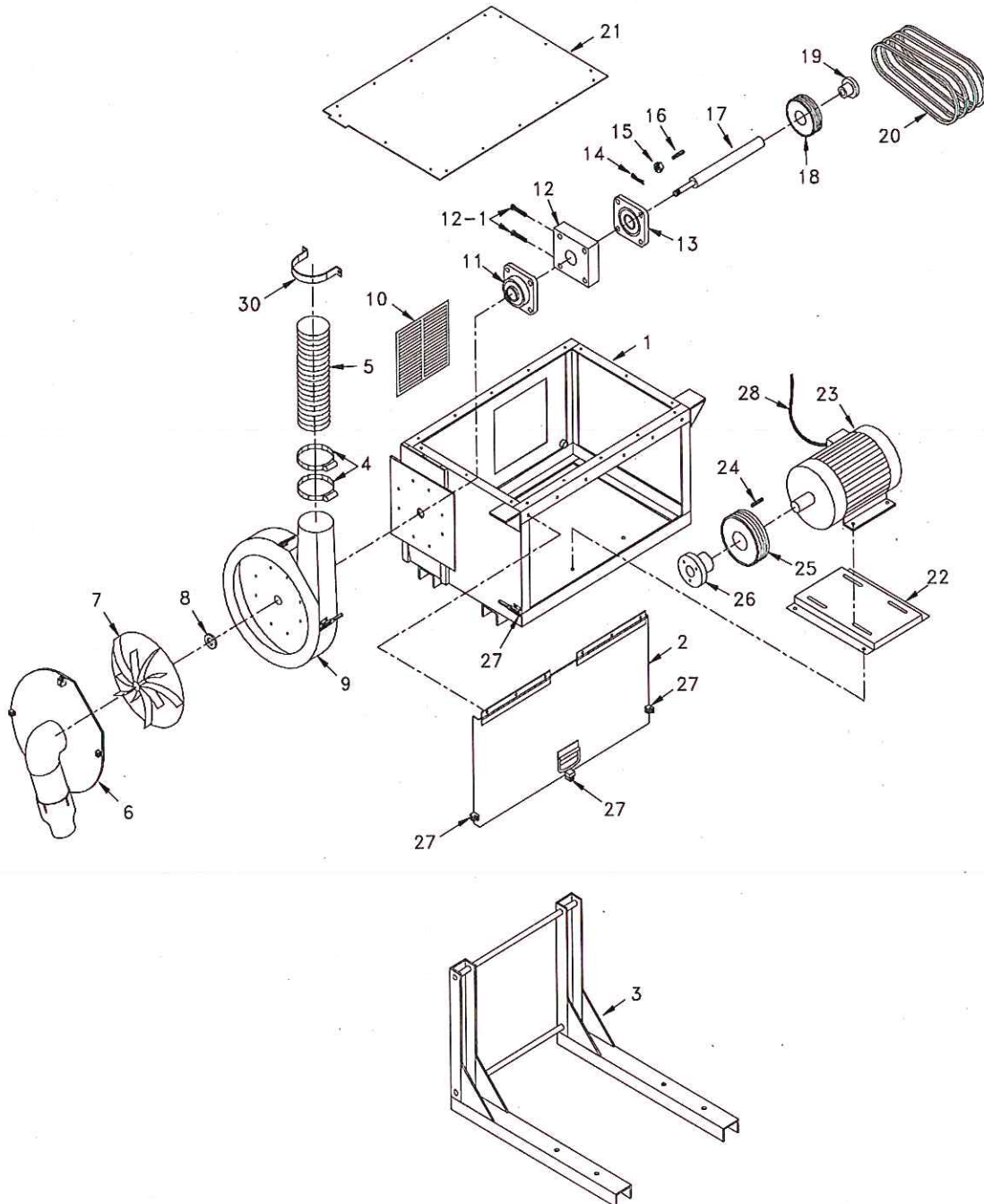
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Exploded Parts List

V-15 Exploded Parts View

V-15 VACUUM



See next page for Parts List.

V-15 Vacuum Module Exploded Parts List

Item#	Part#	Description
1	250358	Box Enclosure, F/Under Truck Vacuum
2	250360	Door, Vacuum Box Enclosure
3	250361	Frame, Mounting, Vacuum Box
4	340	Clamp, Hose 4" (2)
5	H420	Hose 18ft., 4" Spiralite
6	250308-2	Cover Plate, Fan Chamber
7	250307	Fan, 16"
8	250306	Spacer, 2Ply Rubber
9	250308-1-R1	Chamber, Fan, 16"
10	250359	Grill, Return Air 12" x 14"
11	250365	Milled Bearing, Link Belt (FU324)
12	250367	Bearing Support, 6 1/2" x 6" x 2"
12-1	FSB084	Bolts 1/2 - 13 x 1 1/2" Hex HD (2)
13	250355	Bearing, Link Belt (FU324)
14	150310	Pin, Cotter, 1/8" x 2"
15	FN034	Lock Nut, Fan Shaft, 1"-14
16	250325	Key, 1/4" x 1/4" x 2"
17	250345-R2	Shaft, Fan, 14", Vac. Chamber 15 H.P., (used on 16" fan)
18	250312	Pulley, (4P3V36) 15 H.P. Motor
19	250309	Bushing, 15 H.P. Motor (P1 1 1/2")
20	250356	V-Belt, (3VX315) (4)
21	250362	Lid, Vacuum Box Enclosure
22	250315	Motor Mount Assy
23	250321-1	Motor 15 H.P., 3 Phase (3500 rpm)
24	250332	Key, 3/8" x 3/8" x 2 7/8"
25	250349	Pulley, (4Q3V69)
26	250351	Bushing 15 H.P. (Q1 1 5/8")
27	150502	Latch Assy, Hold Down (3)
28	543-M-75	1/2" Flex Conduit
29	543-M-25	1/2" 90° Conduit Connector (Not Shown)
30	ST342	Clamp, Hose, Wall (4)

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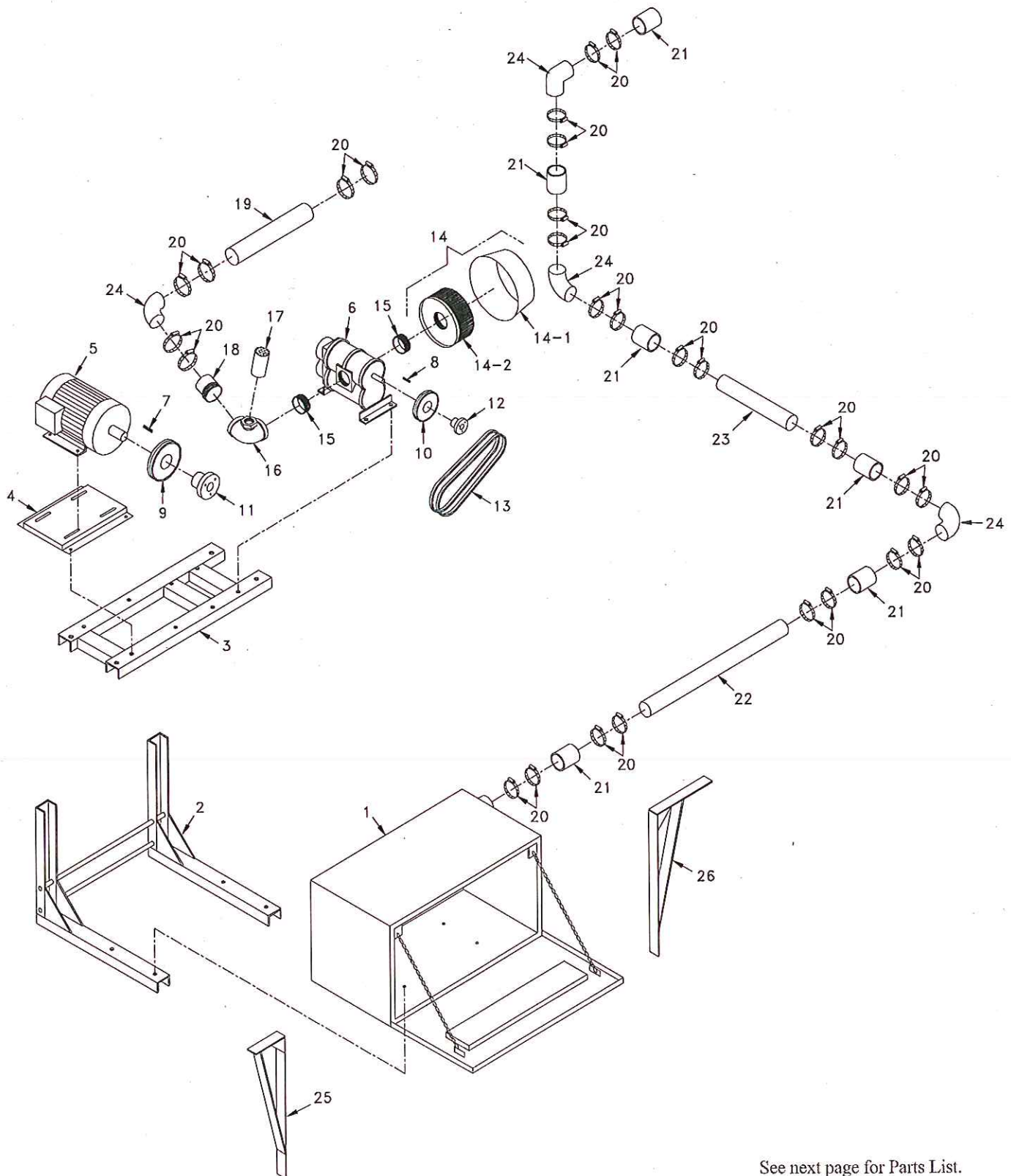
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Exploded Parts List

B-400 Exploded Parts View

B-400 BLOWER



See next page for Parts List.

B-400 Exploded Parts List

Item#	Part#	Description
1	250300-9-R1	Blower Box, Aluminum (22" x 24" x 48")
2	250300-14	Mounting Frame, Blower Box
3	250300-17	Mount, Base, Positive Pressure Blower System
4	150315-1	Mount, Motor
5	250300-8	Motor 10 H.P., 3 Phase 1750 r.p.m
6	250300-1	Blower, Rotary Positive Pressure Blower (4006)
7	--	Key, 5/16" x 5/16" x 2 3/8"
8	449-R1	Key, 3/16" x 3/16" x 1 7/8"
9	250300-3	Pulley, 2Q3V80
10	250300-4	Pulley, 2Q3V69
11	250300-6	Bushing, Q1 7/8"
12	250300-5	Bushing, Q1 3/8"
13	250300-7	V-Belt, 56" (3VX560) (2)
14	250300-2	Silencer Assy., Intake Filter (Gray) (Before 5/7/01)
14	250300-2-R1	Silencer Assy., Intake Filter (Blue) (After 5/7/01)
14-1	--	Cover, Filter
14-2	--	Cartridge, Filter
15	250300-11	Nipple, 3" Close
16	250300-12	Elbow, 3" 90
17	8052	Pressure Relief Valve
18	250300-13	Adapter, Male Hose
19	109040-C	Hose, Flexflyte, 3" x 26"
20	339A	Clamp, Hose, 3" (28)
21	RM-OTH095-MI	Hose, Radiator, 3" (4" Long) (6)
22	RM-OTH070-MI	Aluminum Tubing, 3" Dia. (4ft-6ft Long)
23	RM-OTH070-MI	Aluminum Tubing, 3" Dia. (29" Long)
24	2502001-1-1	Elbow, 3" Dia. x 5" Long (4)
25	ST352	Bracket, 7" Support
26	ST351	Bracket, 13" Support

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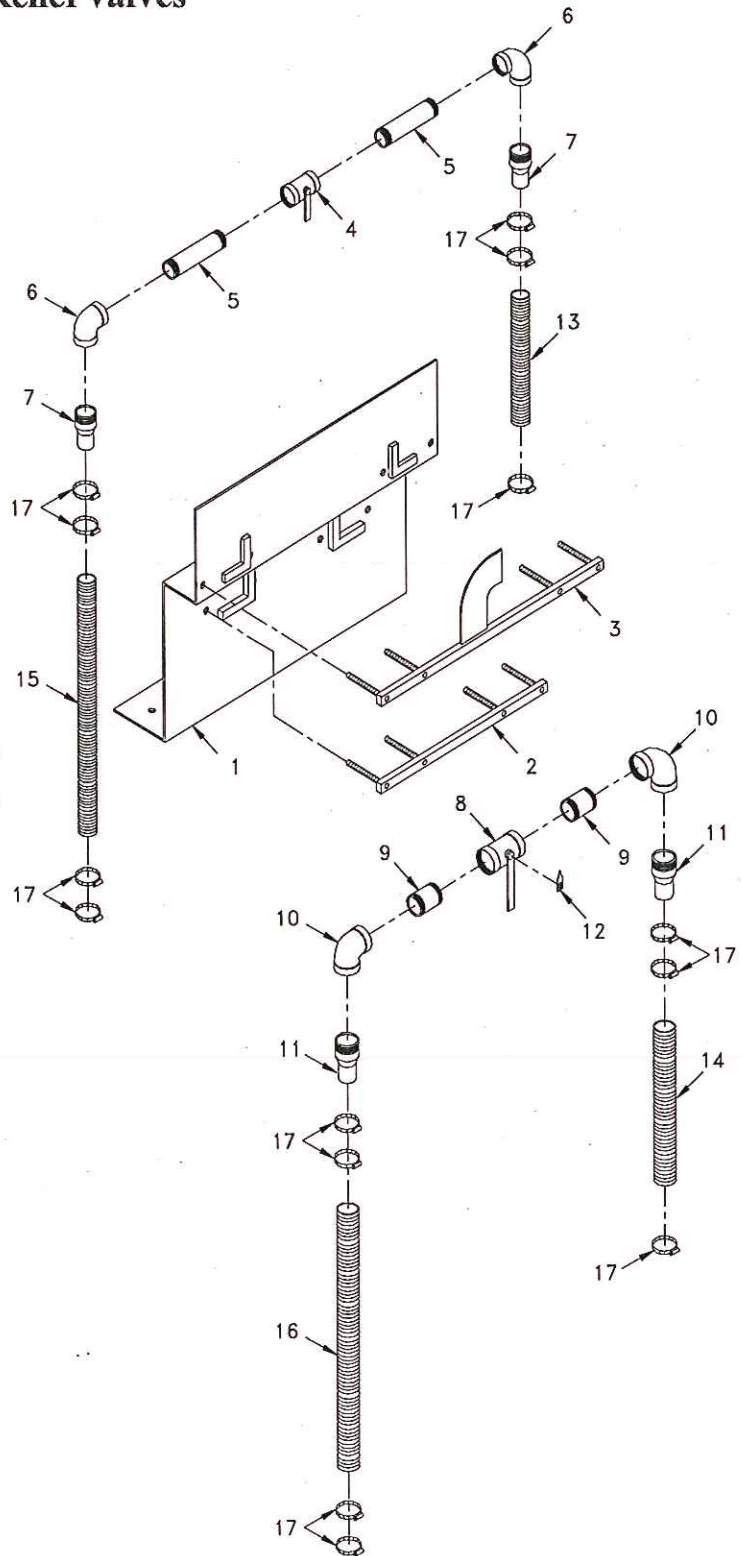
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Air Relief Valve Exploded Parts View

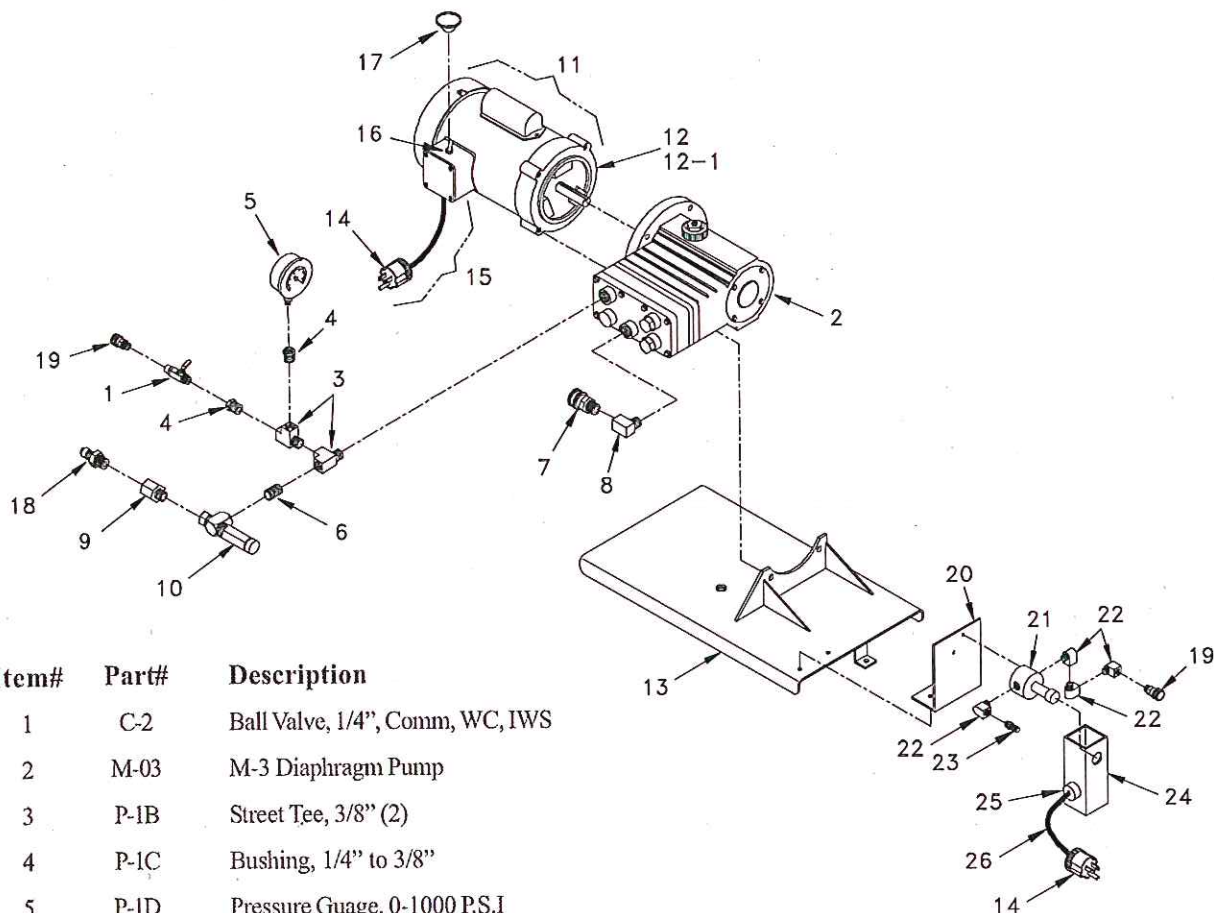
Air Relief Valves

Item#	Part#	Description
1	ST250-1	Bracket, Gauge
2	ST250-2	Clamp, Gauge Bracket, Short
3	ST250-3	Clamp, Gauge Bracket, Long
4	ST250-5-2	Ball Valve, 1 1/4"
5	ST250-5-1	Nipple, Pipe, 1 1/4" x 5" (2)
6	ST250-5-3	Elbow, 90 Degree, 1 1/4" (2)
7	ST250-5-4	Adapter, 1 1/4" Barb (2)
8	ST250-6-2	Ball Valve, 1 1/2"
9	ST250-6-1	Nipple, Pipe, 1 1/2" x 2" (2)
10	ST250-6-3	Elbow, 90 Degree, 1 1/2" (2)
11	ST250-6-4	Adapter, 1 1/2" Barb (2)
12	ST250-5-6	Pointer Indicator
13	RM-OTH083-MI	Hose, 1 1/4" Spiralite (35" Long)
14	RM-OTH082-MI	Hose, 1 1/2" Spiralite (35" Long)
15	RM-OTH083-MI	Hose, 1 1/4" Spiralite (10ft Long)
16	RM-OTH082-MI	Hose, 1 1/2" Spiralite (10ft Long)
17	337	Clamp, Hose, 2" (14)



Pump Assembly Exploded Parts View

PUMP ASSEMBLY

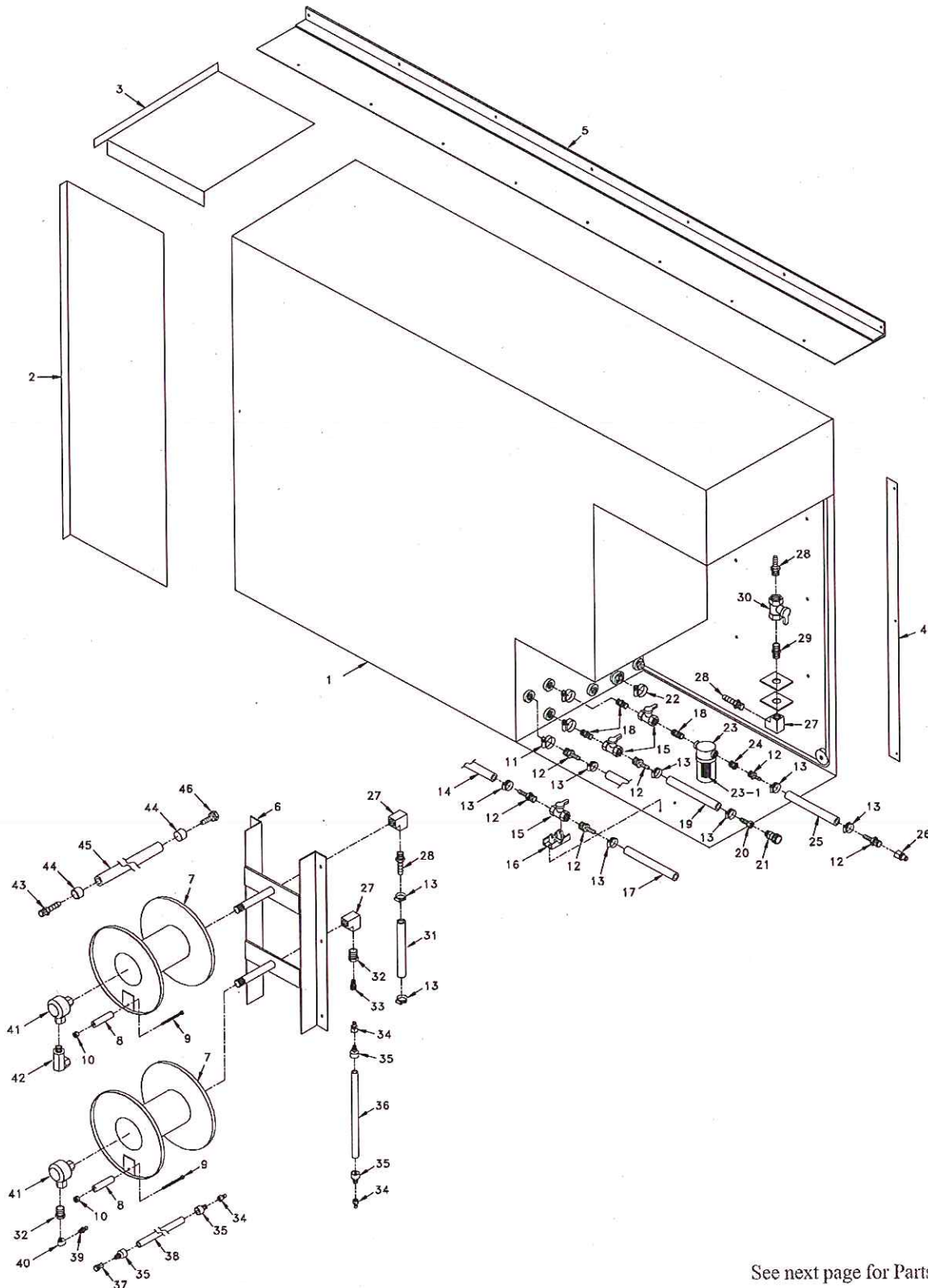


Item#	Part#	Description
1	C-2	Ball Valve, 1/4", Comm, WC, IWS
2	M-03	M-3 Diaphragm Pump
3	P-1B	Street Tee, 3/8" (2)
4	P-1C	Bushing, 1/4" to 3/8"
5	P-1D	Pressure Guage, 0-1000 P.S.I
6	P-1G	Close Nipple, 3/8"
7	P-1H	Coupler, Female, QD, 1/2", P&M Assy (2)
8	G-P-16	Elbow, 1/2" Brass, Street
9	P-1J	Adapter, 1/2" to 3/8"
10	P-1K	Pressure Regulator, 3/8"
11	P-2C-ASSY	Motor, 1 H.P. Assy, 1-Phase
12	583	Motor, 1 H.P. 120/230 V., 60 Hz.
12-1	585	Motor, 1 H.P. 120/230 V., 50 Hz.
13	P-3A-M	Base, Pump Assembly
14	127	Plug, NEMA# 5-15P
15	P-8-ASSY	Cord Assy (Includes: Cord & Plug)
16	1536-3	Switch, Toggle (SPST)
17	1536-6	Switch Guard (Cone)
18	P-14	Nipple, Male, QD, 1/2" MPT

Item#	Part#	Description
19	W-2	Coupler, Female, QD, 1/4"
20	ST250-IWS-3	Mounting Bracket, IWS
21	IWS-4C	Solenoid Valve, 300 PSI
22	IWS-38	Elbow, 1/4" Brass (4)
23	IWS-32	Male Connector
24	IWS-4D	Solenoid Coil, 120V
25	391N-A-2	1/2" Liquid Tite Connector
26	18-3SJ	Cord, 18-3(SJ) (12" Long)
27	348D-DIA	Diaphragm (Not Shown)
28	348D-KIT	Diaphragm Repair Kit (Not Shown)

Pump Cabinet Exploded Parts View

PUMP CABINET



See next page for Parts List.

Pump Cabinet Exploded Parts List

Item#	Part#	Description
1	250700-1-20	Tank, Water (Enclosed)
2	250993-2	Enclosure, Tool Box Side
3	250993-3	Enclosure, Tool Box Top
4	250700-10	Flashing, Side (2)
5	ST343	Support Bracket, Water Tank
6	250700-1-25-2	Mount, Hose Reel, Water Tank
7	250700-1-25-1	Hose Reel, Water Tank (2)
8	250700-1-25-3	Handle, Hose Reel (2)
9	FSB189	Carriage Bolt, 5/16 - 18 x 4" (2)
10	FN038	Lock Nut, 5/16 - 18 (2)
11	250700-1-14	Clamp, Constant Torque, Small (3)
12	250700-1-4	Hose Barb, 1/2" - 1/2" (6)
13	250700-1-11	Clamp, Hose, 1/2" (11)
14	HH-1/2	Heater Hose, 1/2" (20" Long)
15	250700-1-3	Valve, Gas, 1/2" (3)
16	250700-1-18	Valve Hold Down, Pump Cabinet
17	HH-1/2	Heater Hose, 1/2" (24" Long)
18	250700-1-7	Nipple, Hex, 1/2" x 1 1/2" (3)
19	HH-1/2	Heater Hose, 1/2" (10 1/2" Long)
20	G-33	Hose Barb, Female, 1/2" - 1/2"
21	P-1H	Coupler, (Female) QD, 1/2"
22	250700-1-13	Clamp, Constant Torque, Large
23	250700-1-12	Filter Assy, 3/4"
23-1	--	Filter Screen
24	250700-1-5	Bushing, Hex, 3/4" - 1/2"
25	HH-1/2	Heater Hose, 1/2" (9 1/2" Long)
26	P-1P	Nipple, Male, FPT, 1/2"
27	250700-1-9	Elbow, 3/4", 90° (4)
28	250700-1-1	Hose Barb, 3/4" - 3/4" (3)
29	250700-1-21	Nipple, Hex, 3/4" - 2"
30	250700-1-2	Valve, Gas, 3/4"
31	HH-3/4	Heater Hose, 3/4" (24" Long)
32	250700-1-8	Bushing, Hex, 3/4" - 1/4" (2)
33	W-2	Coupler, (Female) QD, 1/4"
34	250700-4	Nipple, (Male) QD, 1/4" (3)
35	250700-3-R1	Fitting, Hose End (4)
36	HH-3/8-SP	Terminator Hose, Yellow, 3/8" (44" Long)
37	250700-1-25-7	Coupler, 1/4" NPTF Female
38	HH-3/8-SP	Terminator Hose, Yellow, 3/8" (150ft. Long)
39	W-4	Nipple, Male, 1/4" QD, Male Thread
40	IWS-38	Elbow, 1/4" Brass
41	250700-1-15	Swivel, Live, 3/4" (2)

Item#	Part#	Description
42	250700-1-17	Elbow, Swivel, Hyd. 3/4" Male & Female
43	G-26	Hose Barb, MPT 3/4" - 3/4"
44	250700-8	Ferrule, Brass (2)
45	HH-3/4	Heater Hose, 3/4" (75ft Long)
46	250700-7	Fitting, Female, Garden Hose
47	HH-3/4	Heater Hose, 3/4" (23 1/2" Long)
48	250700-2-5	Bracket, Overflow
49	250700-2-1	Mounting Plate, Thermostat Outlet
50	250700-2-2	Bracket, Heater Fan
51	250700-2-3	Mounting Plate, Temperature Control
52	250700-11	Flashing, Bottom
53	250993-1	Enclosure, Tool Box Inside
54	251080-45	Fan, Pump Cabinet
55	251080-44	Heater, Pump Cabinet, 400 Watt
56	--	Electrode, 750 Watt Heater
57	ST357	Enclosure, Side, Water Tank
58	ST356	Enclosure, Top, Water Tank
59	ST346	Nipple, 1 1/2" x 8" Galv. (Not Shown)
60	ST347	Nipple, 1" x 8" Galv. (Not Shown)

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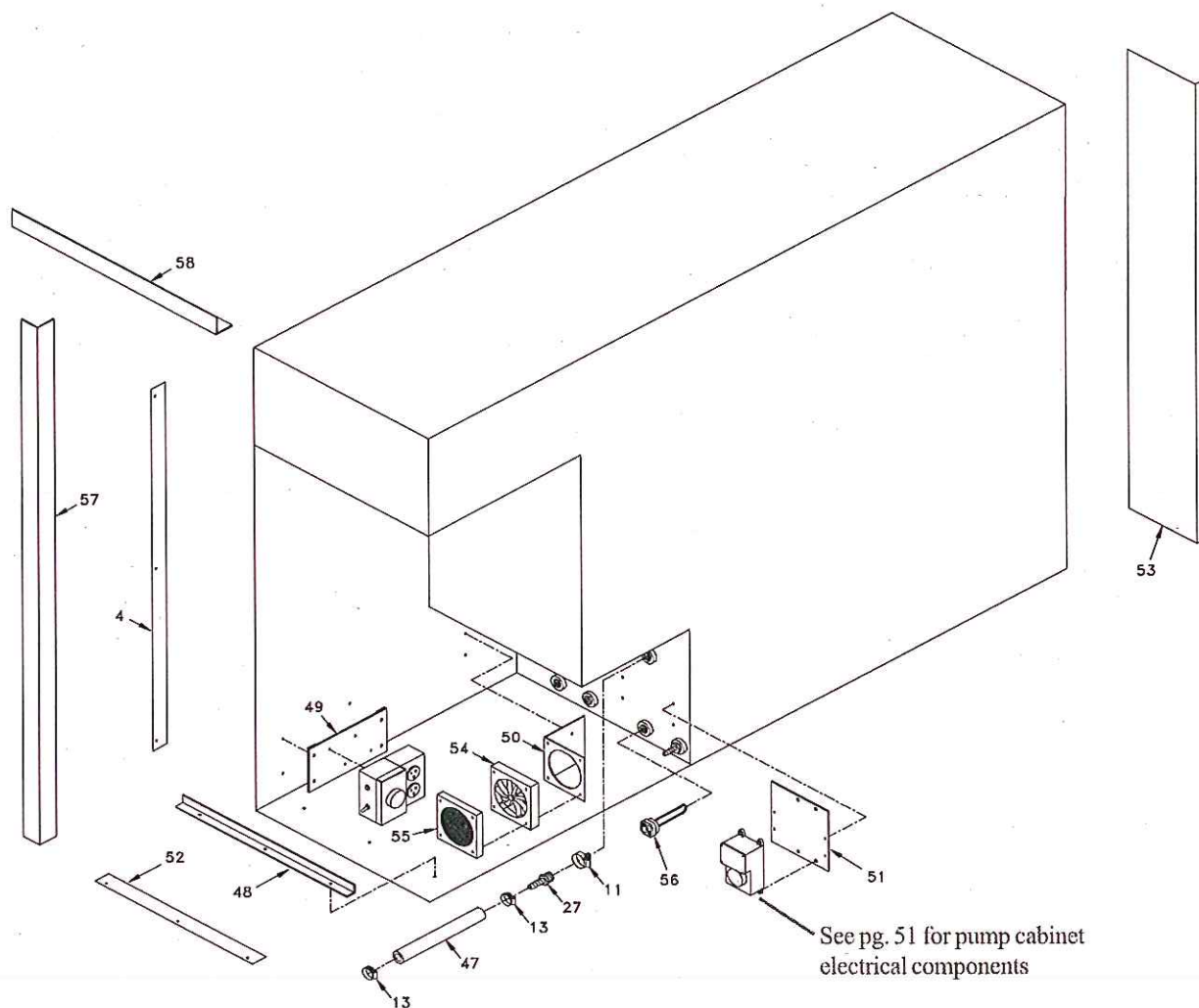
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Exploded Parts List

Pump Cabinet Exploded Parts View

PUMP CABINET



See next page for Parts List.

Pump Cabinet Exploded Parts List

Item#	Part#	Description
1	250700-1-20	Tank, Water (Enclosed)
2	250993-2	Enclosure, Tool Box Side
3	250993-3	Enclosure, Tool Box Top
4	250700-10	Flashing, Side (2)
5	ST343	Support Bracket, Water Tank
6	250700-1-25-2	Mount, Hose Reel, Water Tank
7	250700-1-25-1	Hose Reel, Water Tank (2)
8	250700-1-25-3	Handle, Hose Reel (2)
9	FSB189	Carriage Bolt, 5/16 - 18 x 4" (2)
10	FN038	Lock Nut, 5/16 - 18 (2)
11	250700-1-14	Clamp, Constant Torque, Small (3)
12	250700-1-4	Hose Barb, 1/2" - 1/2" (6)
13	250700-1-11	Clamp, Hose, 1/2" (11)
14	HH-1/2	Heater Hose, 1/2" (20" Long)
15	250700-1-3	Valve, Gas, 1/2" (3)
16	250700-1-18	Valve Hold Down, Pump Cabinet
17	HH-1/2	Heater Hose, 1/2" (24" Long)
18	250700-1-7	Nipple, Hex, 1/2" x 1 1/2" (3)
19	HH-1/2	Heater Hose, 1/2" (10 1/2" Long)
20	G-33	Hose Barb, Female, 1/2" - 1/2"
21	P-1H	Coupler, (Female) QD, 1/2"
22	250700-1-13	Clamp, Constant Torque, Large
23	250700-1-12	Filter Assy, 3/4"
23-1	--	Filter Screen
24	250700-1-5	Bushing, Hex, 3/4" - 1/2"
25	HH-1/2	Heater Hose, 1/2" (9 1/2" Long)
26	P-1P	Nipple, Male, FPT, 1/2"
27	250700-1-9	Elbow, 3/4", 90° (4)
28	250700-1-1	Hose Barb, 3/4" - 3/4" (3)
29	250700-1-21	Nipple, Hex, 3/4" - 2"
30	250700-1-2	Valve, Gas, 3/4"
31	HH-3/4	Heater Hose, 3/4" (24" Long)
32	250700-1-8	Bushing, Hex, 3/4" - 1/4" (2)
33	W-2	Coupler, (Female) QD, 1/4"
34	250700-4	Nipple, (Male) QD, 1/4" (3)
35	250700-3-R1	Fitting, Hose End (4)
36	HHI-3/8-SP	Terminator Hose, Yellow, 3/8" (44" Long)
37	250700-1-25-7	Coupler, 1/4" NPTF Female
38	HH-3/8-SP	Terminator Hose, Yellow, 3/8" (150ft. Long)
39	W-4	Nipple, Male, 1/4" QD, Male Thread
40	IWS-38	Elbow, 1/4" Brass
41	250700-1-15	Swivel, Live, 3/4" (2)

Item#	Part#	Description
42	250700-1-17	Elbow, Swivel, Hyd. 3/4" Male & Female
43	G-26	Hose Barb, MPT 3/4" - 3/4"
44	250700-8	Ferrule, Brass (2)
45	HH-3/4	Heater Hose, 3/4" (75ft Long)
46	250700-7	Fitting, Female, Garden Hose
47	HH-3/4	Heater Hose, 3/4" (23 1/2" Long)
48	250700-2-5	Bracket, Overflow
49	250700-2-1	Mounting Plate, Thermostat Outlet
50	250700-2-2	Bracket, Heater Fan
51	250700-2-3	Mounting Plate, Temperature Control
52	250700-11	Flashing, Bottom
53	250993-1	Enclosure, Tool Box Inside
54	251080-45	Fan, Pump Cabinet
55	251080-44	Heater, Pump Cabinet, 400 Watt
56	--	Electrode, 750 Watt Heater
57	ST357	Enclosure, Side, Water Tank
58	ST356	Enclosure, Top, Water Tank
59	ST346	Nipple, 1 1/2" x 8" Galv. (Not Shown)
60	ST347	Nipple, 1" x 8" Galv. (Not Shown)

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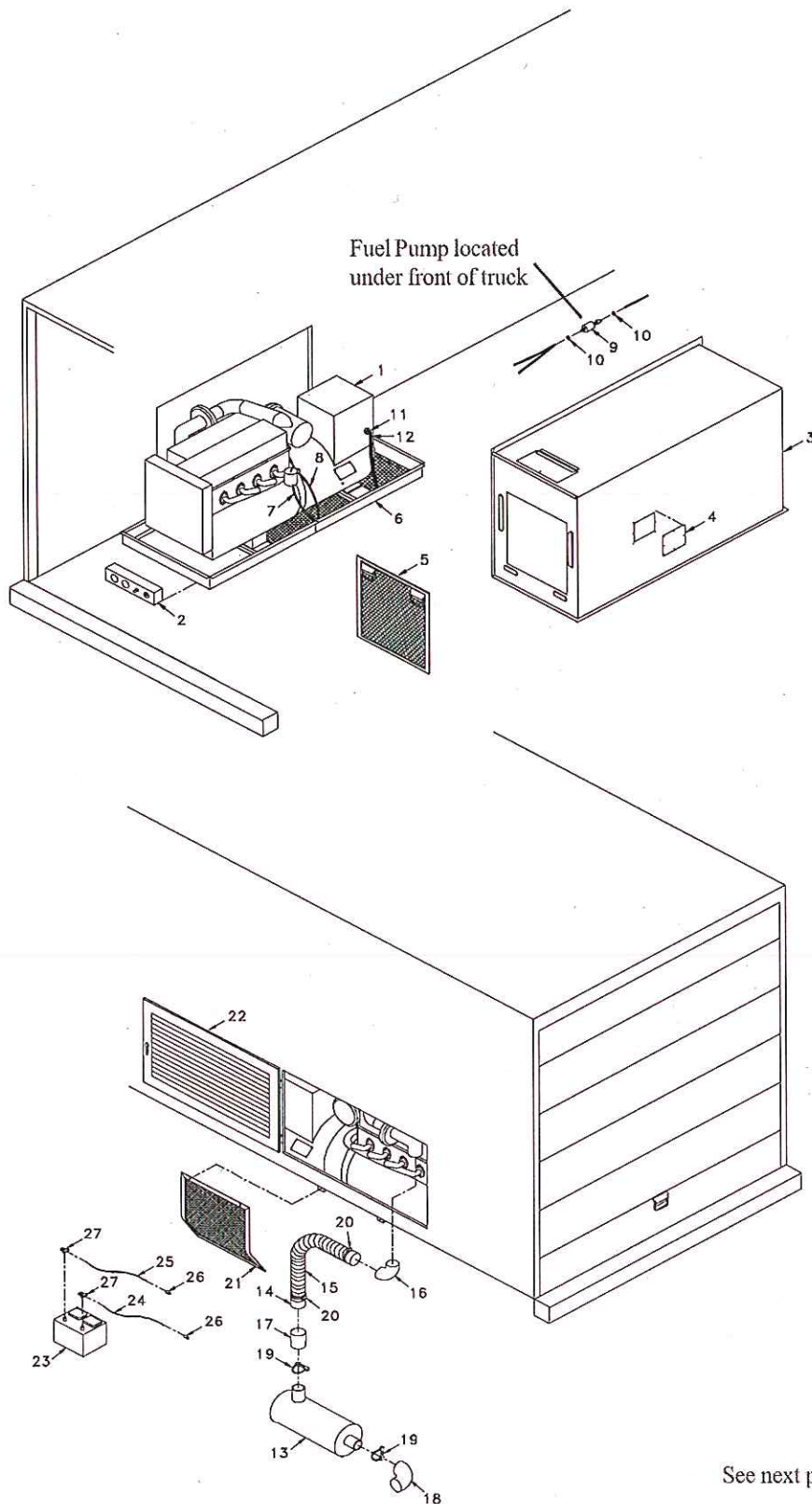
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Exploded Parts List

Cummins Generator Assembly Exploded Parts View

GENERATOR ASSEMBLY



See next page for Parts List.

Cummins Generator Exploded Parts List

Item#	Part#	Description
1	ST301-1B	Generator, EPS
2	--	Controls, Engine
3	ST304	Cover, Engine, Generator
4	ST304-2-1	Cover, Access Hole
5	ST303	Guard, Radiator
6	ST301-7	Base, Engine Cover
7	RM-OTH203-MI	Fuel Line, 5/16" (Supply)
8	RM-OTH202-MI	Fuel Line, 1/4" (Return)
--	ST301-13	Hose Barb, Brass, 5/16" (Not Shown) (Fuel Line)
--	ST301-14	Hose Bar, Brass, 1/4" (Not Shown) (Return Line)
9	ST301-16	Fuel Pump
10	ST301-17	Clamp, Hose, 7/32" - 5/8"
11	251080-30	Connector, 1", 90 Degree
12	251080-31	Conduit, Flexible 1", 12 Ft
13	ST301-8-B	Muffler
14	RM-OTH097-MI	Pipe, Exhaust, Flex, 3", 4 Ft
15	RM-OTH022-MI	Heat Wrap, f/Generator, 60 Ft
16	250340-4	Elbow, 3", 90 Degree
17	ST301-19	Adapter, Exhaust, (Straight)
18	ST301-18	Pipe, Tail Exhaust (Elbow) 5"
19	ST301-30	Clamp, 3" Muffler
20	339A	Clamp, Hose, 3"
21	ST353	Guard, Muffler
22	ST301-10	Door, Louver, Generator, 36" x 48"
23	ST301-2	Battery, Generator, 700 CCA
24	RM-OTH002-BK	Wire, 2 Ga. Black, 5 Ft
25	RM-OTH002-RD	Wire, 2 Ga. Red, 7 Ft
26	ST301-4	Connector, Wire, Battery (2)
27	ST301-3	Connector, Battery Terminal (2)

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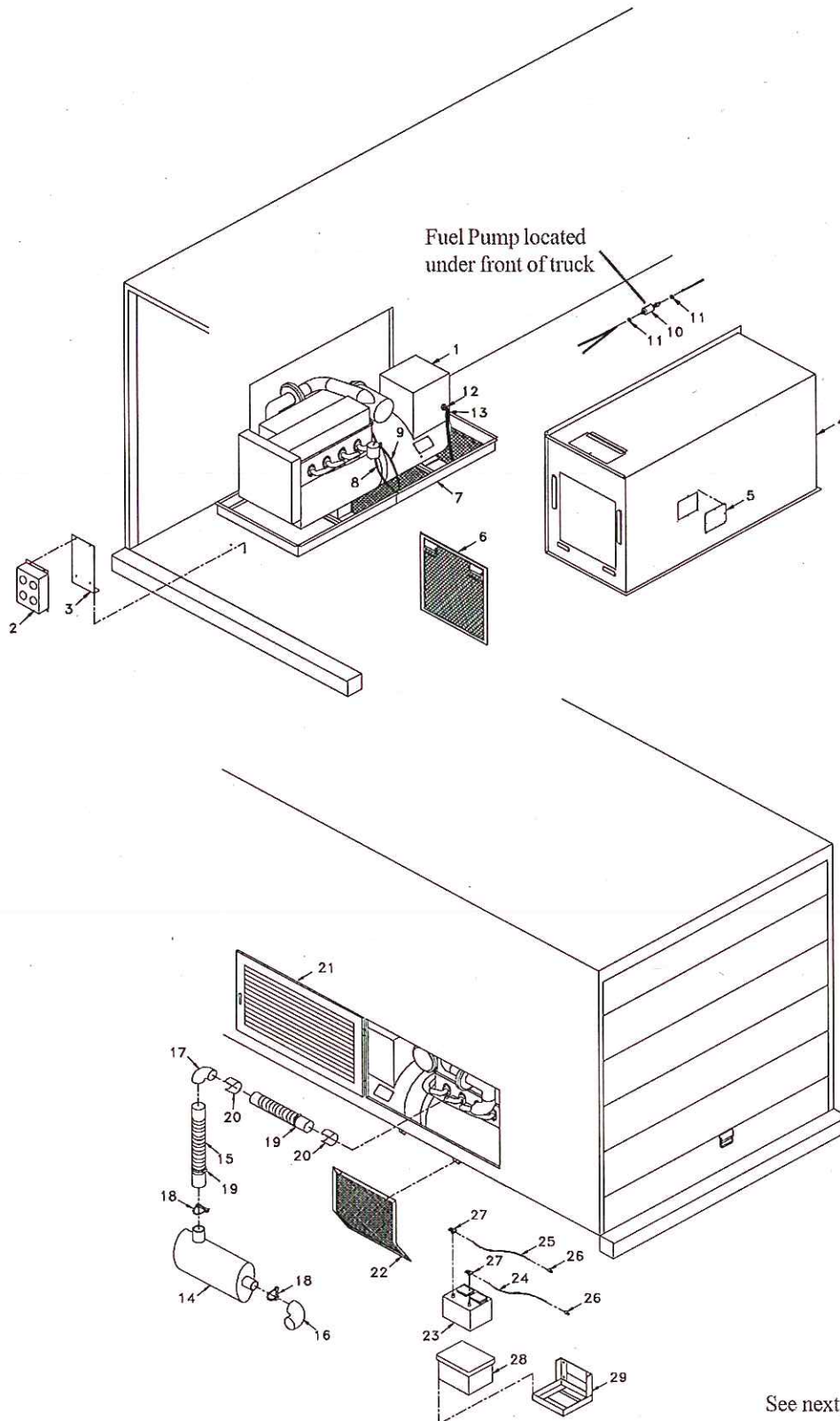
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Exploded Parts List

John Deer Generator Assembly Exploded Parts View

GENERATOR ASSEMBLY



See next page for Parts List.

John Deer Generator Exploded Parts List

Item#	Part#	Description
1	ST301-1	Generator, 59 KW
2	--	Controls, Engine
3	ST250-4	Bracket, Engine Control
4	ST304	Cover, Engine, Generator
5	ST304-2-1	Cover, Access Hole
6	ST303	Guard, Radiator
7	ST301-7	Base, Engine Cover
8	RM-OTH203-MI	Fuel Line, 5/16" (Supply)
9	RM-OTH202-MI	Fuel Line, 1/4" (Return)
--	ST301-13	Hose Barb, Brass, 5/16" (Not Shown) (Fuel Line)
--	ST301-14	Hose Bar, Brass, 1/4" (Not Shown) (Return Line)
10	ST301-16	Fuel Pump
11	ST301-17	Clamp, Hose, 7/32" - 5/8"
12	251080-30	Connector, 1", 90 Degree
13	251080-31	Conduit, Flexible 1"
14	ST301-8	Muffler
15	RM-OTH022-MI	Heat Wrap, f/Generator, 60 Ft
16	--	Pipe, Tail Exhaust (Elbow) 5"
17	250340-4	Elbow, 3", 90 Degree
18	ST301-20	Clamp, 5" Muffler
19	339A	Clamp, Hose, 3"
20	ST301-5	Clamp, Band
21	ST301-10	Door, Louver, Generator, 36" x 48"
22	ST353	Guard, Muffler
23	ST301-2	Battery, Generator, 700 CCA
24	RM-OTH002-BK	Wire, 2 Ga. Black, 5 Ft
25	RM-OTH002-RD	Wire, 2 Ga. Red, 7 Ft
26	ST301-4	Connector, Wire, Battery (2)
27	ST301-3	Connector, Battery Terminal (2)
28	ST301-15	Box, Battery
29	ST301-7-7	Holder, Battery

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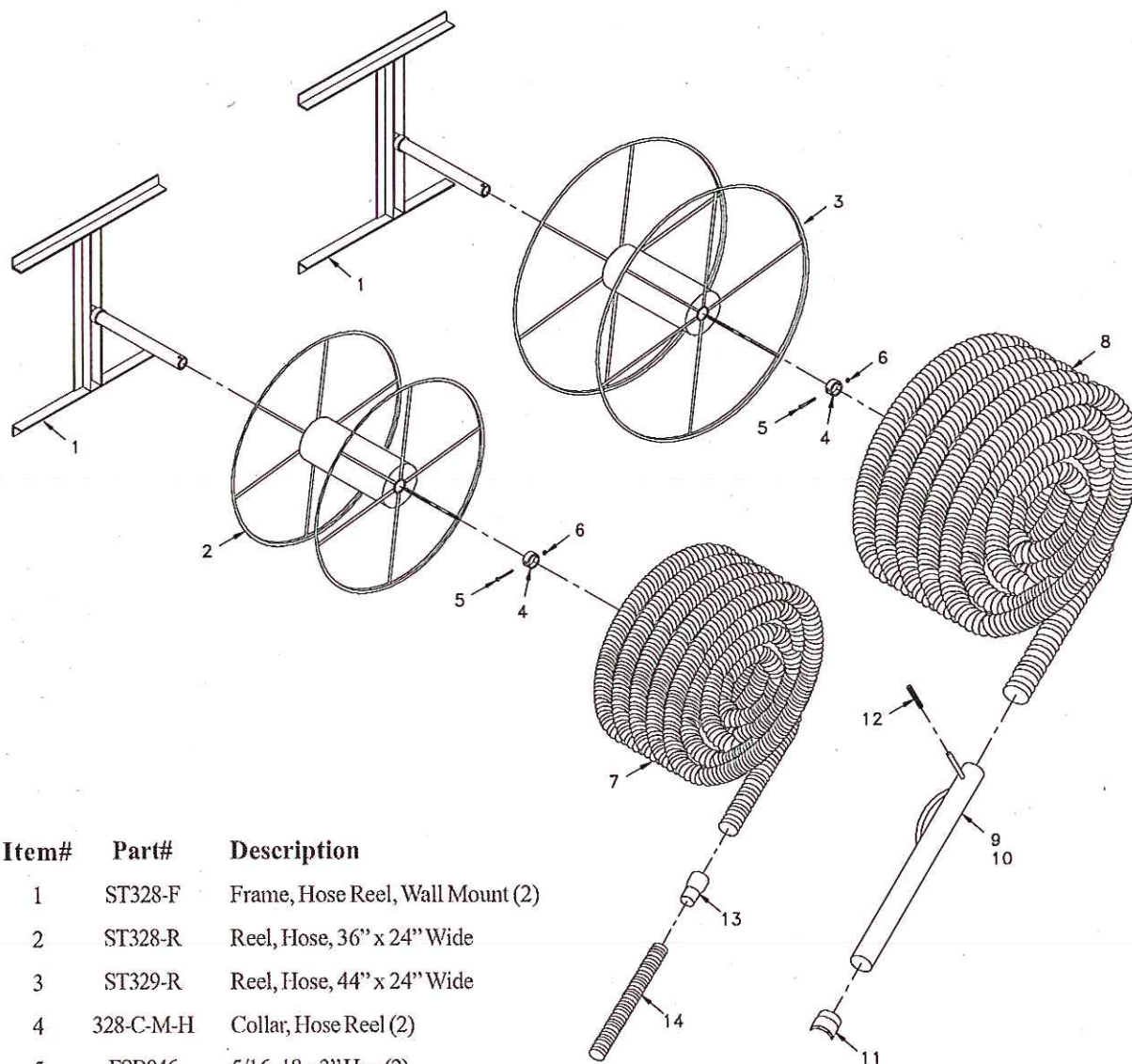
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Exploded Parts List

Hose Reel Exploded Parts View

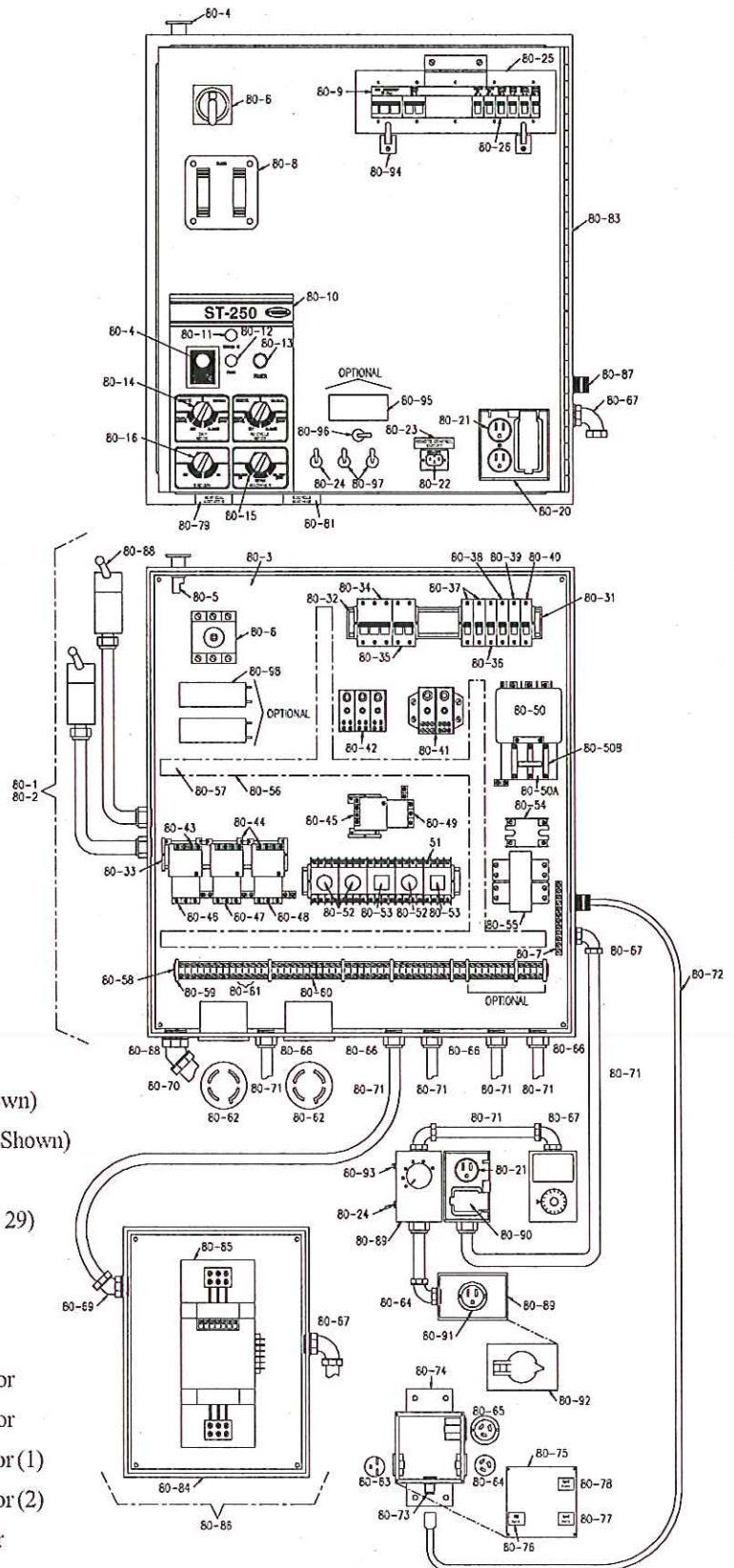
HOSE REEL



Item#	Part#	Description
1	ST328-F	Frame, Hose Reel, Wall Mount (2)
2	ST328-R	Reel, Hose, 36" x 24" Wide
3	ST329-R	Reel, Hose, 44" x 24" Wide
4	328-C-M-H	Collar, Hose Reel (2)
5	FSB046	5/16 - 18 x 3" Hex (2)
6	FN014	5/16 - 18 Lock Nut (2)
7	HB19	Hose, Flexhaust, 3" x 150'
8	H400	Hose, Smooth Bore, 4" x 150'
9	250600	Wand, Vacuum, 4" x 4'
10	250600-L	Wand, Vacuum, 4" x 5'
11	250600-1	Coupler, 3" PVC
12	WS-14	Grip, Handle
13	359	Reducer Tube, 3" to 2 1/2"
14	H419	Hose, Vaccuflex, 10'

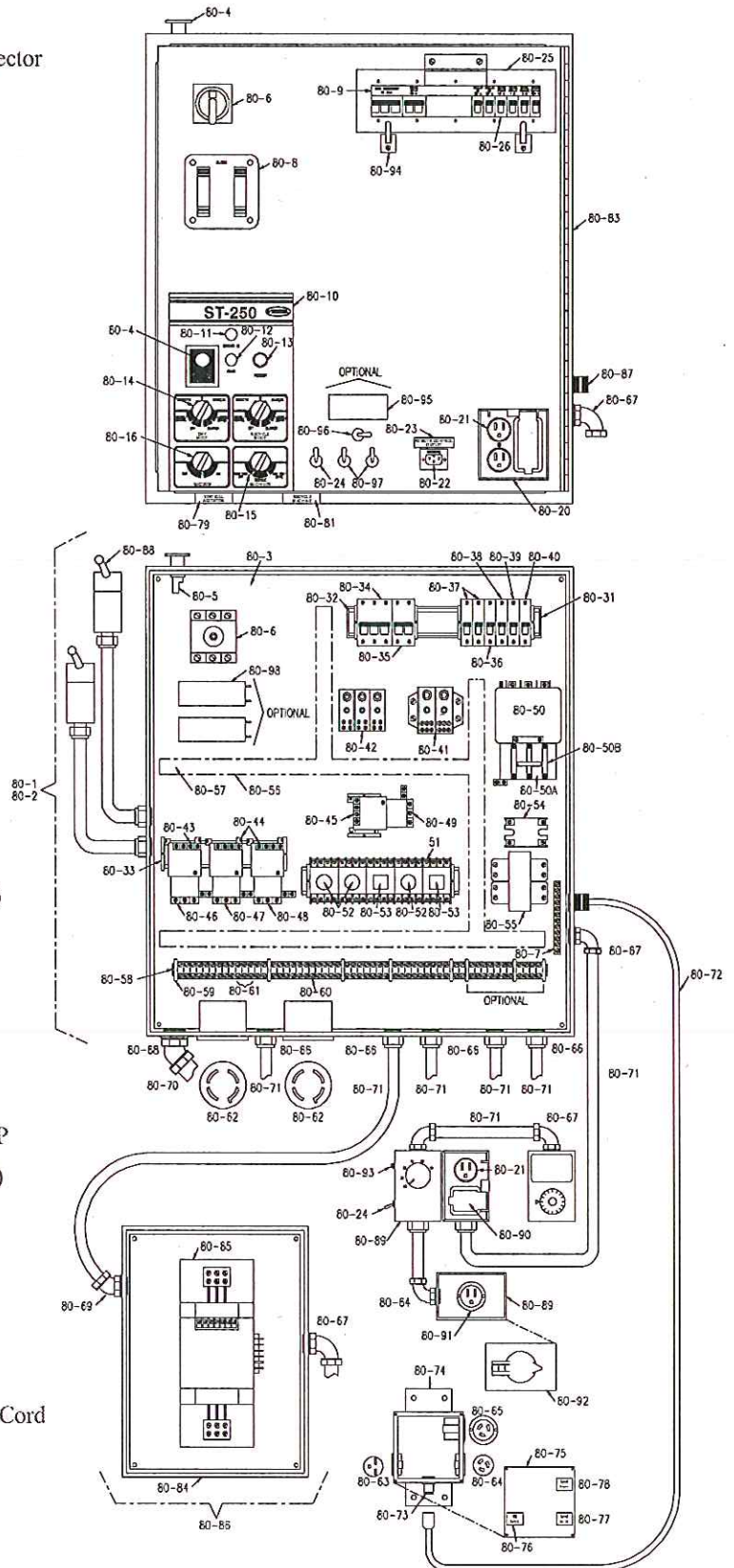
Electrical Box Exploded Parts View

Item#	Part#	Description
80-1	251080-A-R1	Electrical Assy w/o Actuator
80-2	251080-B-R1	Electrical Assy w/Actuator
80-3	251080-1	Electrical Plate, Mounting Panel
80-4	504-2	Kill Switch Button (2)
80-5	504-1	Kill Switch Contactor (2)
80-6	151080-4	Disconnect Switch 80 Amp (1)
80-7	251080-2	12 Terminal Grounding Bar
80-8	151080-6	Alarm 24 Volt
80-9	KMC-101	Breaker Decal
80-10	KMC-102	Operating Controls Decal
80-11	251080-35	Amber Pilot Light 1/2" Neon
80-12	251080-36	Green Pilot Light 1/2" Neon
80-13	543-M-59	Push Button (Green)
80-14	543-M-22	4 Pos. Selector Switch (2)
80-15	251080-3	3 Pos. Selector Switch
80-16	543-M-52	2 Pos. Selector Switch
80-17	543-M-16	Contactor, KA-3 (9) (Not Shown)
80-18	543-M-54	Contactor, KA-2 (Not Shown)
80-19	543-M-15	Contactor, KA-1 (3) (Not Shown)
80-20	251080-4	Weatherproof 2-Gang Cover Plate
80-21	251080-5	Heavy Duty Duplex 15 Amp (3)
80-22	543-M-2	Receptacle, RC Plug #509-1050 (1)
80-23	KMC-024	Remote Control Outlet Decal
80-24	251080-40	Toggle Switch, DPDT (2)
80-25	251080-6	Circuit Breaker Door
80-26	251080-7	Circuit Breaker Door Plexiglass
80-27	251080-8	Circuit Breaker Top Protector (Not Shown)
80-28	251080-9	Circuit Breaker Bottom Protector (Not Shown)
80-29	251080-10	Panel Box Guard (See Page 29)
80-30	251080-51	Cover, Plexiglass, Panel Box (See Page 29)
80-31	251080-11	Circuit Breaker Standoff
80-32	RM-DINRAIL-A	1 3/8" Din Rail
80-33	151080-49	1 3/8" Din Rail Clamp (4)
80-34	251080-12	3-Pole 60 Amp Supplementary Protector
80-35	251080-65	2-Pole 20 Amp Supplementary Protector
80-36	251080-14	1-Pole 15 Amp Supplementary Protector (1)
80-37	251080-15	1-Pole 20 Amp Supplementary Protector (2)
80-38	251080-16	1-Pole 1 Amp Supplementary Protector
80-39	251080-17	1-Pole 2 Amp Supplementary Protector



Electrical Box Exploded Parts View

Item#	Part#	Description
80-40	251080-56	1-Pole 63 Amp Supplementary Protector
80-41	251080-19	2-Pole Power Distribution Block
80-42	251080-20	3-Pole Power Distribution Block
80-43	251080-21	120 Volt 5 Hp Starter
80-44	251080-22	24 Volt 5 Hp Starter (2)
80-45	251080-53	24 Volt 10 Hp Starter
80-46	251080-23	1.6 - 2.5 Amp Thermal Overload
80-47	251080-24	4-6 Amp Thermal Overload
80-48	251080-25	2.5-4 Amp Thermal Overload
80-49	8021-15	12-18 Amp Thermal Overload
80-50	251080-26	NEMA Size 2 Starter
80-50A	251080-49	Thermal Overload Relay
80-50B	251080-50	Thermal Units (3)
80-51	543-M-41	8 Pin Sockets (5)
80-52	543-M-39	Pre-Alarm Relays (3)
80-53	543-M-51	Cube Relay 120 Volt (2)
80-54	543-M-69	Solid State Relay 120 Volt
80-55	1530-D	Transformer, 4 Amp
80-56	RM-CHL001-MI	Wire Channel 1" x 2"
80-57	RM-COV001-MI	Wire Channel Cap 1"
80-58	RM-DINRAIL-B	3/4" Din Rail
80-59	151080-63	3/4" Din Rail End Clamp (White) (6)
80-60	151080-61	Small Terminal Block 30 Amp (43)
80-61	151080-62	Large Terminal Block 60 Amp (3)
80-62	151080-33	Receptacle NEMA #L16-20R (2)
80-63	132-B	Receptacle NEMA #6-15R
80-64	1542-A	Receptacle NEMA #L5-15R
80-65	251080-28	Receptacle Flanged NEMA# L6-15P
80-66	543-M-18	1/2" Straight Conduit Connector (7)
80-67	543-M-25	1/2" 90° Conduit Connector (5)
80-68	251080-29	1" 45 Straight Conduit Connector
80-69	151080-67	1/2" 45 Conduit Connector
80-70	251080-31	1" Flex Conduit
80-71	543-M-75	1/2" Flex Conduit
80-72	251080-32	12 ft. 7 pin Female Mini-Connector Cord
80-73	251080-33	12" 7 Pin Male Mini-Receptacle
80-74	1560	Junction Box (1)
80-75	1561	Junction Box Lids (1)
80-76	KMC-012	Kill Switch Decal



Electrical Box Exploded Parts View

Item#	Part#	Description
80-77	KMC-103	"Level On/Off" Decal
80-78	KMC-104	"Level Power" Decal
80-79	KMC-105	"Vertical Agitator" Decal
80-80	KMC-106	"Vacuum" Decal (Not Shown)
80-81	KMC-107	"Recycle Machine" Decal
80-82	KMC-108	"Caution Door Must Be Closed" Decal (Not Shown)
80-83	251080-34	Panel Box
80-84	2502033	Box for 30Amp Soft Start
80-84	2502034	Box for 16Amp Soft Start
80-85	2502031	Soft Start (30Amp)
80-85	2502032	Soft Start (16Amp)
80-86	2502031-Assy	Soft Start Assy (30 Amp)
80-86	2502032-Assy	Soft Start Assy (16 Amp)
80-87	251080-60	Cord Connector, Liquid-Tite Brown
80-88	250523-1	Limit Switch, Miniature (2)
80-89	251080-48	Outlet Box (3)
80-90	251080-47	Duplex Outlet Cover
80-91	251080-43	Receptacle NEMA #5-15P
80-92	251080-46	Outlet Cover
80-93	433-F	12 Amp Reset
80-94	151015	Retainer Clips (2)

Used only with linear actuator

80-95	251080-62	Meter, Digital, Slidegate
80-96	251080-37	Toggle Switch, SPDT On-On Maintained
80-97	251080-38	Toggle Switch, SPDT On-Off Momentary
80-98	251080-39	Capacitor, Linear Actuator (2)
80-99	251080-61	Power Adapter (Not Shown)

