

SENTRY ALL-IN-ONE OPERATIONS MANUAL



TABLE OF CONTENTS

WARRANTY	1
BE A SAFE OPERATOR	2-5
FORWARD	6
PARTS ORDERING INFORMATION	7
INSTALLATION & INTRODUCTION	8
BALDOR MOTOR INFORMATION	9-13
MICRO SWITCH	14-20
SERVICE TIPS	21-22
REPLACEMENT PARTS & DRAWINGS	23-26
SENTRY 100 DROP THRU PRINTS	27
SENTRY 145 PRINTS	28
SENTRY 1000 PRINTS	29
CONTROLL PANEL INSTALLATION	30-52
COMPONENT FUNCTIONS	53-54
ELECTRICAL TROUBLESHOOTING	55-56
CALIBRATION	57-59
ROUTINE MAINTENANCE	60
SERVICING THE PROPORTIONER	61-62
SENTRY 2000	63-66
SENTRY 3000 PRINTS	67
REPLACEMENT PARTS & DRAWINGS	68-77

WARRANTY

The A. T. Ferrell Company, Inc. Manufacturer's Warranty for the following product lines:

MIX-MILL

All Sentry Line Products

Sentry 100,130, 145, 1000, 1030, 2000 and the 3000

(“MIX-MILL” IS A REGISTERED TRADEMARK OF THE A. T. FERRELL COMPANY, INC.)

A. T. Ferrell Company, Inc. warrants each new product of its manufacture when purchased from an authorized representative for a period of one year from the date of shipment. This warranty shall apply to all parts and workmanship (except products or components not manufactured by the A. T. Ferrell Company, Inc.), which shall appear to A. T. Ferrell Company to have been defective in manufacture. The A. T. Ferrell Company's sole and entire obligation under such warranty shall be satisfied by shipment to the Purchaser-User, without charge, (except for transportation costs, which shall be paid by Purchaser-User) of the part or parts returned for inspection and parts intended to replace those acknowledged by A. T. Ferrell Company to be defective.

This warranty shall not apply and shall be void under the following conditions:

1. If the product is transported from its original installation site.
2. If any part of the product has been altered, modified or changed, except at A. T. Ferrell Company's factory or is authorized by A. T. Ferrell Company in writing.
3. If attachments or devices unsuitable to the product have been used on or in conjunction with the product.
4. If the product has not been installed, used, operated, handled or serviced in accordance with the appropriate instruction manual.

A.T. Ferrell Company reserves the right to make changes in design or improvements in its products without any obligation whatsoever to prior Purchaser-User of such products.

A.T. Ferrell Company will pass on to a Purchaser-User only such warranty as it shall receive on products or components not of its manufacture from the manufacturer or supplier thereof.

We will not be liable for any consequential damages, loss or expenses arising in connection with the use or inability to use the product for any purpose whatever. Our maximum liability shall not in any case exceed the cost of replacing defective parts if returned to us within one year from date of shipment. No salesman, manufacturer's representative or other person may make or has the authority to make any guarantees or warranties expressed or implied on behalf of A. T. Ferrell Company, Inc. which are inconsistent with these terms and conditions or any catalogue or other publication of A. T. Ferrell Company, Inc.

The Warranty Registration Card must be filled in completely and signed by Purchaser-User and returned to us to validate any warranty claim.

Claims for warranty should be directed to our sales department, 1440 South Adams Street, Bluffton, IN 46714 USA or phone (260) 824-5213. The machine serial number and description of the type of failure is required to file a claim. Contact our sales department before returning warranty items for a RMO (Returned Material Order) which must accompany all returned items. All returned items are to be shipped freight pre-paid and credit will be issued after inspection and acknowledgement of warranty defect. A. T. Ferrell Company, Inc. will pass on to the purchaser/user only such warranty as it shall receive on products or components not of its manufacture from the manufacturer or supplier thereof.

BE A SAFE OPERATOR

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of some individual to follow simple and fundamental safety rules or precautions. For this reason, most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safe guarded against without interfering with reasonable accessibility and efficient operation.

A careful operator is the best insurance against an accident.

The complete observance of one simple rule would prevent many serious injuries each year. That rule is:

Never attempt to clean, oil, or adjust a machine while it is in motion!
--National Safety Council

A.T. Ferrell has made every effort to provide safe equipment, however, the following precautions should be carefully observed!

1. Disconnect main service switch before removing any housing covers or electrical boxes or switches.
2. Ground the mill frame according to local electrical codes.
3. Ground any augers or feeders where livestock might contact either augers or feeders.
4. Keep all shields and covers in place.

BE A SAFE OPERATOR

AVOID ACCIDENTS

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows. Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safe-guarded against without interfering with reasonable accessibility and efficient machine operation. A careful operator is the best insurance against an accident.



Carefully read and understand the operators' manual before operating the machine. Do not attempt to install, connect power to, operate or service machine without proper instruction and until you have been thoroughly trained in its use by your employer.



Keep children, visitors and all untrained personnel away from machine while in operation.



Make certain all electric motors and control panels are properly grounded.



Danger – Do not attempt to work on, clean or service this equipment or open or remove any protective cover, guard, or grate until power has been turned off and mechanically locked out and the machine has come to a complete stop.



Danger – Keep hands, feet and clothing clear from rotating belts, pulleys, rolls and gears when machine is operating. Failure to do so will cause severe injury or death.



Danger – Never operate machine without protective covers, guards, or grates properly installed.



Do not obscure or remove safety decals from the equipment. Replacement decals are available from the manufacturer.



This equipment was manufactured in compliance with existing OSHA regulations. It is the responsibility of the owner/user to maintain OSHA compliance when operating the equipment.



If injured by escaping fluid, see a doctor at once.



Replace all guards and shields after servicing and before starting up the machine.



Do not clean, lubricate or adjust equipment while it is in operation.







After servicing, make sure all tools, parts and service equipment are removed from the machine.






Do not start the machine until you are sure that everyone is clear.



TYPICAL SAFETY DECALS



⚠ DANGER	 	⚠ DANGER
<p>Une tension dangereuse causera des blessures graves ou la mort.</p> <p>Couper l'alimentation et verrouiller avant de faire l'entretien.</p>		<p>Hazardous voltage will cause severe injury or death.</p> <p>Turn off power and lock out before servicing.</p>
<small>©Clarion Safety Systems, LLC clarionsafety.com xxxxx</small>		<small>80003641 Reorder No. C18609-08</small>

⚠ DANGER	 	⚠ DANGER
<p>La rotation des pales de ventilateur causera des coupures et l'écrasement.</p> <p>Verrouiller l'alimentation avant de retirer le couvercle ou la porte d'inspection.</p>		<p>Rotating fan blade will cut and crush.</p> <p>Lockout power before removing cover or inspection door.</p>
<small>©Clarion Safety Systems, LLC clarionsafety.com xxxxx</small>		<small>80003642 Reorder No. C18609-09</small>

⚠ AVERTISSEMENT	 	⚠ WARNING
<p>Les pièces mobiles peuvent écraser et couper.</p> <p>Verrouiller l'alimentation avant de retirer le dispositif de protection ou d'effectuer l'entretien.</p>		<p>Moving parts can crush and cut.</p> <p>Lockout power before removing guard or servicing.</p> <p>Do NOT operate with guard removed.</p>
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⚠ AVERTISSEMENT		⚠ WARNING
<p>Débrancher le système d'alimentation principal avant l'entretien!</p> <p>Le commutateur d'alimentation de chaque section contrôle uniquement cette section!</p>		<p>Disconnect main power before servicing!</p> <p>Each section's power switch controls that section only!</p>
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⚠ DANGER	 	⚠ DANGER
<p>Faire attention de ne pas se blesser.</p> <p>Les pièces mobiles peuvent écraser et couper.</p> <p>Garder les mains et les doigts à l'écart des pièces mobiles.</p> <p>Ne pas utiliser si le dispositif de protection a été retiré.</p>		<p>Avoid injury.</p> <p>Moving parts can crush and cut.</p> <p>Keep hands and fingers clear of moving parts.</p> <p>Do not operate with guard removed.</p>
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⚠ AVERTISSEMENT	 	⚠ WARNING
<p>Une installation, un réglage, un entretien ou une maintenance inappropriés peuvent causer des dommages matériels, des blessures corporelles ou la mort.</p> <p>Lire attentivement les instructions d'installation, d'utilisation et d'entretien avant d'installer ou d'effectuer l'entretien de cet équipement.</p>		<p>Improper installation, adjustment, service or maintenance can cause property damage, injury or death.</p> <p>Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.</p>
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FORWARD

Thank you for purchasing a new **Mix-Mill** and Sentry series mixer/grinder or roller mill. More than 50 years of experience in the manufacture of feed milling equipment and grain handling systems has made Mix-Mill the leader in the field of electric powered, on the farm feed conditioning systems.

Many of the features that have provided trouble free service for thousands of owners will still be found on your new Sentry Hammer Mill. New design technology and new components have also been incorporated in your mill to further increase the reliability and the flexibility needed for today's farming needs.

Some of these features are increased horsepower sizes, state of the art electronics, new type C frame motors, larger screen and grinding chamber size. A new beater hub design, with these other features, gives you more output per hour to get the job done faster and more efficient.

We prepared this booklet for our Sentry Hammer Mill to help you install, operate and maintain your mill to the highest standard and to obtain the greatest efficiency.

If a commercial carrier shipped your mill, ensure that you check all parts carefully to see if there is any damage in the shipping. If damage is found, make a notation of such and make certain that your local agent makes a similar note on your freight bill, before you accept shipment. This is necessary to support your claim. Do not hesitate to accept damaged equipment after the agent has made the notation on the freight bill. You will be reimbursed when you present your claim. We assume no responsibility for loss or damages after the equipment leaves our dock, but we will gladly render our services to assist you in adjusting your claim. Determine the parts you require, submit an order to us and we will prepare an invoice. Upon receiving our invoice you will be in a position to file a claim against the shipping company.

The following pages of this owner's manual will provide you with the correct operating information and answer many of your questions about your new Sentry Hammer Mill. Please take a few minutes to read these instructions and keep them for future references

The parts breakdown will help you to obtain genuine factory parts when needed. Please contact your local authorized dealer any time you need parts or service. He can also provide you with other equipment and help you plan for future growth.

A.T. Ferrell Company, Inc.
Mix-Mill Division

Mix-Mill

Division of A. T. Ferrell Company, Inc.

PARTS ORDERING INFORMATION

1. Order replacements parts through your local sales representative or direct from Mix-Mill.

A. T. Ferrell Company, Inc.
1440 S. Adams St.
Bluffton, IN 46714 U.S.A.
Phone: (260) 824-5213 (800) 537-6260
Fax: (260) 824-5463
Website: www.mix-mill.com
E-Mail: info@atferrell.com

2. To expedite the order process, please have your machine description, model number, and serial number available.
3. Use the part numbers and descriptions furnished in this manual.

INSTALLATION AND OPERATION

New Installation Requirements

The mixer/grinder must be located in a weatherproof structure

Existing Installations

Some existing farm structures are suitable for mill installation. See your authorized dealer and let him work with you to develop the most efficient, most economical system for your needs.

Discharge and Feed Handling Systems

Several systems are available for grain and feed handling.

A heavy gauge-heavy duty 3 ½" auger systems with capacities up to 7500 lbs, per hour is available for both vertical and horizontal conveying of ingredients.

A 6" vertical high capacity auger system is available.

Mill Capacities

Several factors must be considered when figuring mill capacities: the type and amount of each ingredient, the amount of material ground and the amount that is bypassed, mill horsepower and screen size. An undersized discharge system can be a limiting factor on mill capacity. Hardness and variations in the hardness of different grains will have an effect on the mill capacity and in the amount of wear to replaceable parts such as screens, hub and hammers and mill wear plates.

BALDOR MOTOR INFORMATION

AC & DC Motor Installation & Maintenance NEMA (IEC) Frames to 320 (200)

Before you install, operate or perform maintenance, become familiar with the following:

- NEMA Publication MG-2, Safety Standard for Construction and guide for Selection, Installation and Use of Electric Motors and Generators.
- IEC 60072-1 Electrical and IEC72-1 Mechanical specifications
- ANSI C51.5, the National Electrical Code (NEC) and local codes and practices.

Receiving Each Baldor Electric Motor is thoroughly tested at the factory and carefully packaged for shipment. When you receive your motor, there are several things you should do immediately.

1. Observe the condition of the shipping container and report any damage immediately to the commercial carrier that delivered your motor.
2. Verify that the part number of the motor you received is the same as the part number listed on your purchase order.

Handling The weight of the motor and shipping container will vary. Use correct material handling equipment to avoid injury. Use caution when removing the motor from its packaging. Sharp corners may exist on motor shaft, motor key, sheet metal and other surfaces.

Safety Notice

Only qualified personnel trained in the safe installation and operation of this equipment should install this motor. When improperly installed or used, rotating equipment can cause serious or fatal injury. Equipment must be installed in accordance with the National Electrical Code (NEC), local codes and NEMA MG2 Safety Standards for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators. Observe the following guidelines:

1. Connect Power and Ground to the motor according to NEC or IEC and local codes.
2. Provide a permanent guard to prevent accidental contact of body parts or clothing with rotating or moving parts or burns if motor is hot.
3. Shaft key must be secured before starting motor.
4. Mounting bolts should be high tensile steel. Be sure to use a suitable locking device on each bolt (spring washer or thread lock compound).
5. Do not apply power to the motor until the motor is securely mounted by its mounting holes.
6. This motor must only be connected to the proper line voltage, line frequency and load size.
7. Motors are not to be used for load holding or restraining unless a properly sized brake is installed. If a motor mounted brake is installed, provide proper safeguards in case of brake failure.
8. Disconnect all power services, stop the motor and allow it to cool before servicing.
9. For single phase motors, discharge the start and/or run capacitors before servicing.
10. Do not by-pass or render inoperative any safety device.
11. DC series wound motors must be protected from sudden loss of load causing overspeed damage. DC shunt wound motors must be protected from loss of field voltage which can result in damage.
12. When using AC motors with frequency inverters, be certain that the motors Maximum Speed Rating is not exceeded.

Guarding

After motor installation is complete, a guard of suitable dimensions must be constructed and installed around the motor/gearmotor. This guard must prevent personnel from coming in contact with any moving parts of the motor or drive assembly but must allow sufficient cooling air to pass over the motor. If a motor mounted brake is installed, provide proper safeguards for personnel in case of brake failure. Brush inspection plates and electrical connection cover plates or lids, must be installed before operating the motor.

WARNING: Guards must be installed for rotating parts such as couplings, pulleys, external fans, and unused shaft extensions, should be permanently guarded to prevent accidental contact by personnel. Accidental contact with body parts or clothing can cause serious or fatal injury.

When this motor is installed according to these instructions, it complies with the EEC Machinery Directive. Electromagnetic Compatibility (EMC) requirements for CE compliance are met when the incoming power is purely sinusoidal. For other power source types, refer to MN1383 "Recommended Practices for Installation for EC Directive 89/336/EEC Relating to EMC".

Motor Enclosure

ODP, **Open drip proof** motors are intended for use in clean, dry locations with adequate supply of cooling air. These motors should not be used in the presence of flammable or combustible materials. Open motors can emit flame and/or molten metal in the event of insulation failure.

TEFC, **totally enclosed** motors are intended for use where moisture, dirt and/or corrosive materials are present in indoor and outdoor locations.

Explosion proof motors, as indicated by the Underwriters Laboratories, Inc. label are intended for use in hazardous areas as specified by the NEC.

Mounting

Foot mounted machines should be mounted to a rigid foundation to prevent excessive vibration. Shims may be used if location is uneven.

Flange mounted machines should be properly seated and aligned. Note: If improper rotation direction is detrimental to the load, check rotation direction prior to coupling the load to the motor shaft.

For **V-belt drive**, mount the sheave pulley close to the motor housing. Allow clearance for end to end movement of the motor shaft. Do not overtighten belts as this may cause premature bearing failure or shaft breakage.

Direct coupled machines should be carefully aligned and the shaft should rotate freely without binding.

Wiring

Connect the motor as shown in the connection diagram. If this motor is installed as part of a motor control drive system, connect and protect the motor according to the control manufacturers diagrams. Refer to MN408 for additional details on lead marking (see http://www.baldor.com/support/product_manuals.asp). The wiring, fusing and grounding must comply with the National Electrical Code or IEC and local codes.

When the motor is connected to the load for proper direction of rotation and started, it should start quickly and run smoothly. If not, stop the motor immediately and determine the cause. Possible causes are: low voltage at the motor, motor connections are not correct or the load is too heavy. Check the motor current after a few minutes of operation and compare the measured current with the nameplate rating.

Grounding

Ground the motor according to NEC and local codes. In the USA consult the National Electrical Code, Article 430 for information on grounding of motors and generators, and Article 250 for general information on grounding. In making the ground connection, the installer should make certain that there is a solid and permanent metallic connection between the ground point, the motor or generator terminal housing, and the motor or generator frame. In non-USA locations consult the appropriate national or local code applicable.

Adjustment

The neutral is adjustable on some DC motors. AC motors have no adjustable parts.

Noise

For specific sound power or pressure level information, contact your local Baldor representative.

Vibration

This motor is balanced to NEMA MG1, Part 7 standard.

Brushes (DC Motors)

Periodically, the brushes should be inspected and all brush dust blown out of the motor. If a brush is worn $\frac{1}{2}$ " (from length specified in renewal parts data), replace the brushes. If the commutator is worn or rough, the armature should be removed. The commutator should be turned in a lathe, the mica recut and the commutator polished. Reassemble and seat the new brushes using a brush seating stone. Be sure the rocker arm is set on the neutral mark.

Lubrication Information

This is a ball or roller bearing motor. The bearings have been lubricated at the factory. Motors that do not have regrease capability are factory lubricated for the normal life of the bearings.

Lubricant

Baldor motors are pregreased, normally with Polyrex EM (Exxon Mobil). If other greases are preferred, check with a local Baldor Service Center for recommendations.

Relubrication Intervals (For motors with regrease capability)

New motors that have been stored for a year or more should be relubricated. Lubrication is also recommended at these intervals:

Table 1 Relubrication Interval

NEMA (IEC) Frame Size	Rated Speed (RPM)			
	3600	1800	1200	900
Up to 210 incl. (132)	5500Hrs.	12000Hrs.	18000Hrs.	22000Hrs.
Over 210 to 280 incl. (180)	3600Hrs.	9500Hrs.	15000Hrs.	18000Hrs.
Over 280 to 320 incl. (200)	*2200Hrs.	7400Hrs.	12000Hrs.	15000Hrs.

Table 2 Service Conditions

Severity of Service	Ambient Temperature Maximum	Atmospheric Contamination	Type of Bearing
Standard	40° C	Clean, Little Corrosion	Deep Groove Ball Bearing
Severe	50° C	Moderate dirt, Corrosion	Ball Thrust, Roller
Extreme	>50° C* or Class H Insulation	Severe dirt, Abrasive dust, Corrosion	All Bearings
Low Temperature	<-30° C**		

* Special high temperature grease is recommended.

** Special low temperature grease is recommended.

Table 3 Lubrication Interval Multiplier

Severity of Service	Multiplier
Standard	1.0
Severe	0.5
Extreme	0.1
Low Temperature	1.0

Table 4 Amount of Grease to Add

Frame Size NEMA (IEC)	Bearing Description (Largest bearing in each frame size)					
	Bearing	OD D mm	Width B mm	Weight of grease to add ounce (gram)	Volume of grease to add	
					inches ³	teaspoon
Up to 210 incl. (132)	6307	80	21	0.30 (8.4)	0.6	2.0
Over 210 to 280 incl. (180)	6311	120	29	0.61 (17.4)	1.2	3.9
Over 280 to 320 incl. (200)	6313	140	33	0.81 (23.1)	1.5	5.2

Weight in grams = 0.005 DB

Maintenance Procedures

WARNING: Do not touch electrical connections before you first ensure that power has been disconnected. Electrical shock can cause serious or fatal injury.

WARNING: Surface temperatures of motor enclosures may reach temperatures which can cause discomfort or injury to personnel accidentally coming into contact with hot surfaces. Protection should be provided by the user to protect against accidental contact with hot surfaces. Failure to observe this precaution could result in bodily injury.

Lubrication Procedure

Caution: Keep grease clean. Mixing dissimilar grease is not recommended.

1. Relubrication with the shaft stationary and a warm motor is recommended.
2. Remove all dirt and wipe clean the outside of the grease fills and drains.
3. Clean the grease fitting (or area around grease hole, if equipped with slotted grease screws). If motor has a purge plug, remove it. Motors can be regreased while stopped (at less than 80°C) or running.
4. Locate the grease inlet at the top of the bearing hub, clean the area and replace the 1/8-inch pipe plug with a grease fitting if the motor is not equipped with grease fitting.
5. Remove grease drain plug located opposite the grease inlet.
6. Apply grease gun to fitting (or grease hole). Too much grease or injecting grease too quickly can cause premature bearing failure. Slowly apply the recommended amount of grease, taking 1 minute or so to apply.
7. Operate motor for 20 minutes, reinstall purge plug if previously removed.
8. Install grease drain plug located opposite the grease inlet.

Sample Relubrication Determination

This sample determination is based on a NEMA 286T (IEC 180) motor operating at 1750 RPM driving an exhaust fan in an ambient of 43°C atmosphere that is moderately corrosive.

1. Table 1 list 9500 hours for standard conditions.
2. Table 2 classifies severity of service as "Severe".
3. Table 3 lists a multiplier value of 0.5 for Severe conditions.
4. Table 4 shows that 1.2 in³ or 3.9 teaspoon of grease is to be added.

Note: Smaller bearings in size category may require reduced amounts of grease.



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5/09

Installation Instructions for the Enclosed Basic Series Limit Switches

Issue 5
88173

WARNING PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

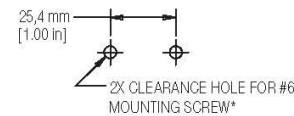
GENERAL INFORMATION

- Honeywell's Enclosed Basic Series of Limit Switches are usable in many applications. The wide variety of actuators offered and their robust diecast housing make them ideal for applications that require reliable switching and performance. There are several styles of enclosed basic switches, including side and flange mounting switches as well high capacity and double pole type.
- Refer to switch labeling for applicable electrical ratings and certifications
- For technical product support, engineering drawings, technical data, and additional information for products from Honeywell's Enclosed Basic Series of Limit Switches please visit sensing.honeywell.com, or call the support numbers on the last page of this document.

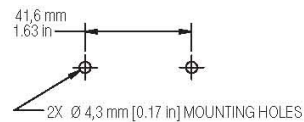
MOUNTING

1. Mount switches on flat, rigid surface.

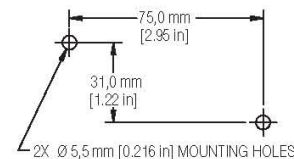
E6 Side Mounting Pattern



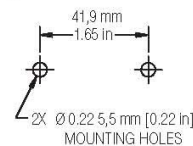
V6 Flange Mounting Pattern



G1 Side Mounting Pattern



H1 Flange Mounting Pattern



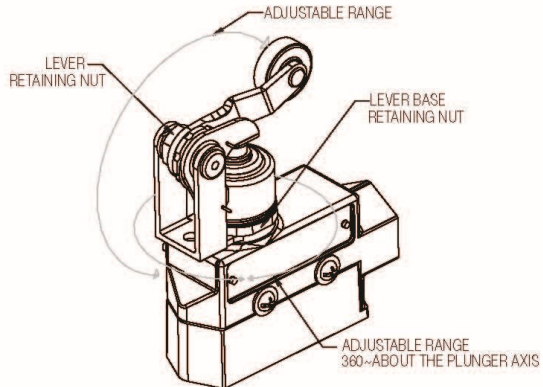
2. Boot-sealed and side-mounting switches use sealing washers under screw heads on the sides between switch and mounting surface on other side to maintain seal.
3. Unsealed, side mounting switches: Use lockwashers under screw heads on one side; under nut on other side.
4. Connect conduit to conduit opening. Apply conduit sealing if required by application.

INSTALLATION TIPS

1. **Do not lubricate any internal part of the switch.** The internal switch does not require any additional lubrication
2. When installing the switch, ensure **that it is not the low point in the conduit run.** Doing so will ensure that condensation created in the conduit will not flow into the switch housing.
3. **Do not enlarge the mounting holes on side mounting switch.** Doing so will compromise the internal switching element's seal integrity.

FIELD ADJUSTABLE ACTUATOR MODELS

Some enclosed basic switches are field adjustable. This includes models with the nomenclature "2RN2", "2RQ2", "2RN28", "2RQ28", "2RN62", "2RQ62", "RQ2X2", "RN2X1".



The lever can be adjusted in two ways. The following process details how to perform the adjustments.

Adjusting the horizontal position of the lever.

1. Loosen the lever base retaining nut, so that the lever assembly is free to rotate about the axis of the plunger.
2. Rotate the lever to the desired position. The lever is adjustable 360 degrees about the axis.
3. Once the desired position is reached re-tighten the lever base retaining nut. The lever base should not be able to rotate when properly tightened.

Adjusting the vertical position of the lever.

1. Loosen the lever retaining nut, so that the lever freely rotates.
2. Set the position of the lever to the desired position. Roller levers should be positioned so that they are able to actuate the plunger.
3. Once the desired position is reached re-tighten the lever retaining nut. When pushed the lever should act upon the lever mechanism to actuate the switch.

N18 TYPES

If actuator or basic switch is replaced, the actuator may need adjustment to duplicate original switch operating point. To adjust operating point, remove lower seal band from base of seal boot. "Peel back" seal boot to expose bushing. With basic switch **unoperated**, slowly turn bushing clockwise until basic switch operates. **Do not turn further after operating click is heard.** Turn bushing back 1/2 turn. Tighten jam nut on bushing.

MAINTAINED CONTACT (RESET) MODELS

Listings with an "X" in their part number are maintained contact switches. These switches remain actuated after the operating force on either plunger has been applied. The actuated plunger will "reset" when the opposing plunger is actuated.

NOTE: The top plungers (the plungers on the stationary portion of the housing) provide more accurate and uniform operation than the "reset" plungers and should be used when closely held operating characteristics are required.

Vertical Adjustment Range

N2 & Q2 - Roller lever	225°	To adjust: loosen hex nut, adjust arm to desired position, tighten hexnut.
N4 & Q4 - Hand op.	180°	
N62 & Q62 - Rod lever	225°	
N28 & Q28 - One way	180°	

1. One lever arm serration: 8.18°.
2. One serration of lever arm and fluted washer as a unit: 8°.
3. One serration of lever arm with one serration of fluted washer in opposite direction: 0.18°.

LUBRICATING INSTRUCTIONS for Roller Plunger Switches only (N80, N81, Q8, Q9, Q81)

For maximum life, periodically put a drop or two of lightweight oil on the roller. Specific application conditions will determine lubricating frequency.

Enclosed Basic Series Limit Switches

ISSUE 5 88173

WIRING

- Honeywell's Enclosed Basic Switches have internal terminals that allow for easy wiring and integration.
- If a side mounting switch is being wired it is possible for the switch to be mounted in place before wiring takes place. If a flange mounting switch is being used it is likely that the switching and actuator assembly will need to be wired before mounting switch.

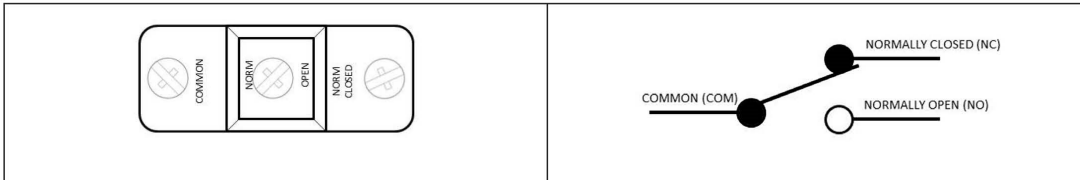
The enclosed basic series switch will have one of two contact forms available. They will either have a single pole double throw (SPDT) or a double pole double throw (DPDT) arrangement. The SPDT uses three terminals to wire a set of Common (C), Normally Open (NO), and Normally Close (NC) contacts.

- Remove the cover or the flange base by loosening the two screws that secure it.

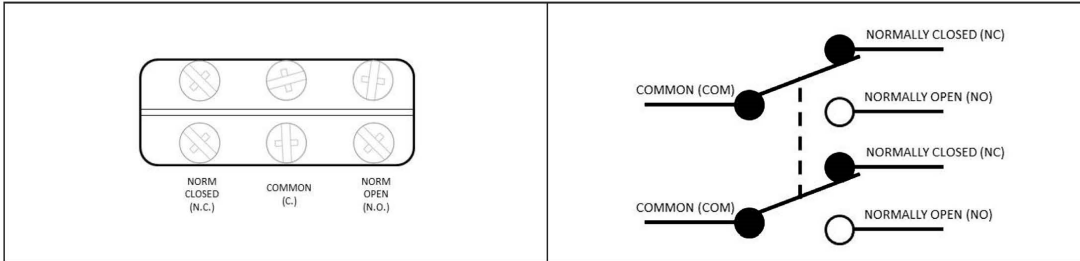
- Once the cover of the flange base is removed the switch terminals will be exposed. Switch terminals will be labeled according to the contact they connect to. Please refer the terminal layout section for more information on circuit diagrams and terminal screw layout.
- Connect wire to terminals by loosening terminal screws, looping wire around the terminal screw shaft, and inside of the cup washer on SPDT models or looping wire around the terminal screw shaft and underneath locking washer on DPDT models. Then retighten terminal screws ensuring wires and connections are made.
- Grounding Terminal, enclosed basic switches have an internal grounding screw mounted inside the removable cover or flange base.
- Replace cover or flange base and retighten cover screws

Standard Enclosed Basic Switch Terminal Layout

Single Pole Double Throw (SPDT)



Double Pole Double Throw (DPDT)



Enclosed Basic Series Limit Switches

ISSUE 5 88173

REPLACEMENT PARTS AND ACCESSORIES

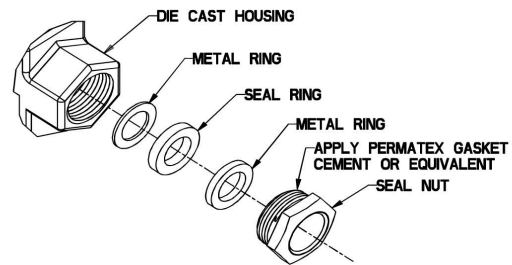
Basic switch: order according to catalog listing on basic switch being replaced. Replacement packet includes basic switch, mounting hardware, seal boot and bands where required.

Actuators or Accessories

Part	Listing
N2 actuator (roller lever)	6PA2
Q2 actuator (roller lever)	6PA1
N28 actuator (one-way roller lever)	6PA16
Q28 actuator (one-way roller lever)	6PA41
N62 actuators (rod lever)	6PA140-E6
Q62 actuators (rod lever)	6PA62
N4 actuators (manual button)	6PA9
Q4 actuators (manual button)	6PA7
N18 actuators (spring)	6PA195
N18 actuators (spring and bushing)	6PA187-E6
Conduit seal	2PA1 2PA6 2PA16
Seal boot (black elastomer)	10PA2
Seal boot (orange silicon)	10PA1
Bottom cover E6	3PA13-E6
Bottom cover V6	3PA14-V6
Pilot light for BZG/H	15LT1

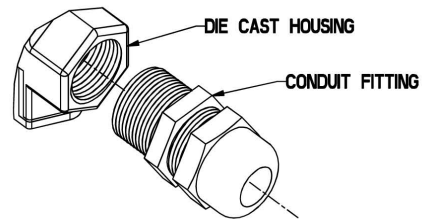
Conduit Sealing Packets

Packet Listing	Cable O.D.
2PA6	10,2 mm to 11,1 mm [0.400 in to 0.435 in]
2PA16	11,1 mm to 12,0 mm [0.435 in to 0.470 in]
2PA1	13,5 mm to 14,5 mm [0.530 in to 0.570 in]

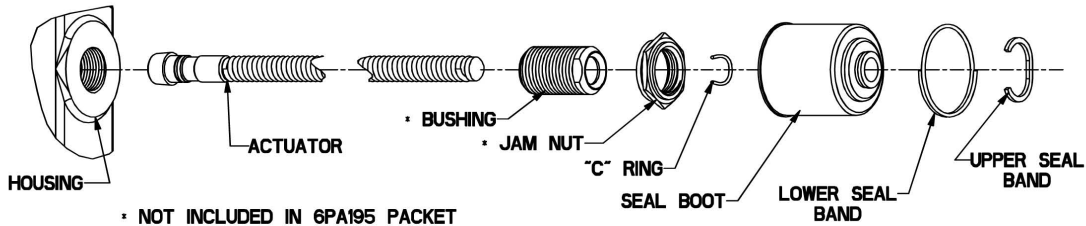


Liquid Tight Conduit Fitting

Packet Listing	Cable O.D.
2PA17	4,3 mm to 12,0 mm [0.170 in to 0.470 in] 1/2 NPT



6PA187-E6 ACTUATOR PACKET



Enclosed Basic Series Limit Switches

ISSUE 5 **88173**

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

E-mail: info.sc@honeywell.com
Internet: sensing.honeywell.com

Phone and Fax:	
Asia Pacific	+65 6355-2828 +65 6445-3033 Fax
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Honeywell

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Installation Instructions for Products with Conduit Openings Instrucciones de instalación para productos con conductos de entrada Einbau-Anweisungen für Produkte mit Kabeleinführungen Instructions d'installation pour les produits à ouvertures de conduits Istruzioni per l'installazione dei prodotti con aperture dei tubi isolanti Instruções de Instalação para Produtos com Aberturas para Conduíte

⚠ WARNING

IMPROPER INSTALLATION

- These instructions provide information that pertains to all products with conduit openings and are to be used in conjunction with the specific instructions provided with each product.
 - Strictly adhere to all installation instructions.
- Failure to comply with these instructions could result in death or serious injury.**

GENERAL INFORMATION

- Where possible, install this product with the conduit opening pointed down and do not install at the low point of a conduit run.
- Following the manufacturer's instructions, install a fitting into the conduit opening. Ensure the fitting provides strain relief to the wires/cable, as well as sealing against contaminants that is appropriate to the application.
- In applications where fluids or moisture may be present, seal the fitting threads with a product such as Teflon tape or pipe dope.

⚠ WARNUNG

UNSACHGEMÄSSER EINBAU

- Diese Anleitungen bieten Informationen, die auf alle Produkte mit Kabeleinführungen zutreffen, und sollen in Verbindung mit den Anleitungen verwendet werden, die mit dem jeweiligen Produkt mitgeliefert werden.
 - Halten Sie sich genau an die Einbau-Anweisungen.
- Das Nichtbeachten dieser Anweisungen könnte zum Tod oder zu schweren Verletzungen führen.**

ALLGEMEINE INFORMATIONEN

- Falls die Örtlichkeiten gegeben sind, das Produkt mit der Kabeleinführung nach unten installieren, und das Produkt nicht zu weit unten im Kabelverlauf montieren
- Entsprechend den Herstelleranweisungen eine Kabelverschraubung in die Kabeleinführung montieren. Sicherstellen, daß die Kabelverschraubung eine Zugentlastung für die Kabel und die Dichtung einen der Anwendung entsprechenden Schutz gegen Verunreinigungen bietet.
- Bei Anwendungen, in denen Flüssigkeiten oder Feuchtigkeit präsent ist, die Verschraubungsgewinde mit einem Produkt wie z.B. Teflonband oder Rohrdichtungskitt abdichten.

⚠ ATTENZIONE

INSTALLAZIONE SCORRETTA

- Consultare gli enti locali in materia di antinfortunistica e le rispettive normative nel momento in cui si avvia alla progettazione di un qualsiasi collegamento controllo macchina, o di un'interfaccia, o di tutti gli elementi di controllo che possano influire sulla sicurezza.
 - Attenersi rigorosamente a tutte le istruzioni di installazione.
- L'inosservanza di tali istruzioni può essere causa di gravi lesioni, con conseguenze addirittura fatali.**

INFORMAZIONI GENERALI

- Ove possibile, installare questo prodotto con l'apertura del tubo isolante rivolta verso il basso e non installarlo nel punto inferiore di un percorso di tubi isolanti.
- Attendendosi alle istruzioni del produttore, installare una protezione nel punto di apertura del tubo isolante. Accertarsi che tale protezione consenta una adeguata riduzione delle deformazioni dei conduttori/cavo e garantisca un adeguato isolamento da eventuali materiali estranei.
- Nelle applicazioni in cui possono essere presenti liquidi o umidità, sigillare le filettature della protezione con prodotti quali nastro in Teflon o vernice impermeabilizzante per tubi.

⚠ ADVERTENCIA

INSTALACIÓN INCORRECTA

- Estas instrucciones contienen información relacionada con todos los productos con conductos de entrada, y ha de utilizarse junto con las instrucciones específicas que acompañan cada producto.
 - Siga estrictamente todas las instrucciones para la instalación.
- El incumplimiento de estas recomendaciones puede ocasionar lesiones graves o peligro de muerte.**

INFORMACIÓN GENERAL

- Siempre que sea posible, instale este producto con el conducto de entrada hacia abajo y no lo instale en la parte inferior de un tramo del conducto.
- Siga las instrucciones del fabricante e instale un adaptador en el conducto de entrada. Asegúrese que el adaptador ofrece protección contra tirones al cableado así como sellado frente a los contaminantes apropiado para la aplicación.
- En aquellas aplicaciones donde pueda existir fluidos o humedad, selle las rosas del adaptador con un producto como cinta Teflón o material absorbente para tubos.

⚠ AVERTISSEMENT

INSTALLATION INCORRECTE

- Les présentes instructions apportent des informations relatives à tous les produits à ouvertures de conduits ; elles doivent être utilisées en liaison avec les instructions particulières fournies avec chaque produit.
 - Respectez scrupuleusement l'ensemble des instructions d'installation.
- L'observation de ces instructions peut entraîner la mort ou de graves blessures.**

INFORMATIONS GÉNÉRALES

- Dans la mesure du possible, installez ce produit avec l'ouverture de conduit placée en bas, et ne l'installez pas à la partie inférieure du parcours du conduit.
- En suivant les instructions du fabricant, installez un raccord dans l'ouverture de conduit. Veillez à ce que le raccord permette de réduire la tension des fils ou des cables, tout en assurant une étanchéité aux impuretés propres à l'application.
- Dans les applications susceptibles de comporter des fluides ou de l'humidité, assurez l'étanchéité du filetage du conduit à l'aide de ruban de Teflon ou de pâte lubrifiante.

⚠ ADVERTÊNCIA

INSTALAÇÃO INCORRETA

- Estas instruções fornecem informações que dizem respeito a todos os produtos com aberturas para conduíte, mas devem ser utilizadas em conjunto com as instruções específicas que acompanham cada produto.
 - Obedeça rigorosamente todas as instruções de instalação.
- Desobediência a essas instruções pode resultar em morte ou ferimentos graves.**

INFORMAÇÕES GERAIS

- Onde for possível, instale este produto com a abertura para conduíte apontada para baixo e não o instale no ponto inferior do curso de um conduíte.
 - Seguindo as instruções do fabricante, instale uma guarnição na abertura para conduíte. Certifique-se de que a guarnição alivie a tensão sobre os fios/cabos, além de fornecer vedação contra agentes contaminantes da maneira mais apropriada à aplicação.
- Em aplicações onde fluidos ou umidade possam estar presentes, vede os orifícios da guarnição com um produto como fita de Teflon ou verniz protetor para tubulação.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

GARANZIA/RISARCIMENTO

Honeywell garantisce che i propri prodotti sono esenti da difetti nei materiali e nella manodopera. Per informazioni sulla garanzia, contattare l'ufficio vendite più vicino. Durante il periodo di validità della garanzia, Honeywell provvederà alla riparazione o alla sostituzione senza alcun addebito degli articoli restituiti e riscontrati difettosi. Tale azione costituisce l'unico risarcimento per l'Acquirente e **sostituisce tutte le altre garanzie, esplicite o implicite, comprese quelle relative alla commerciabilità e all'idoneità ad uno scopo particolare.**

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Honeywell fornisce assistenza in merito alle applicazioni tramite il proprio personale, il proprio materiale informativo ed il proprio sito web, tuttavia è responsabilità del cliente verificare l'idoneità del prodotto all'applicazione.

GARANTIE UND HAFTUNGSANSPRÜCHE

Honeywell garantiert für seine hergestellten Produkte fehlerfreies Material und Qualitätsarbeit. Garantie-Informationen erhalten Sie von Ihrer nächstgelegenen Niederlassung. Wenn Produkte mit Garantie innerhalb der Garantiefrist an Honeywell zurückgesendet werden, ersetzt oder repariert Honeywell kostenlos die Teile, die als fehlerhaft angesehen werden. Das Vorgegangene gilt als einzige Entschädigung des Käufers und **ersetzt alle anderen ausdrücklichen oder stillschweigenden Garantien, einschließlich Qualitäts- und Sachmängelhaftung.**

Änderungen der technischen Daten ohne Vorankündigung sind vorbehalten. Die von uns bereitgestellten Informationen halten wir für exakt und zuverlässig, wie bei dieser Druckschrift. Wir übernehmen jedoch keine Haftung für deren Anwendung.

Obwohl Honeywell persönliche und schriftliche Anwendungshilfe sowie Informationen über die Honeywell Website bietet, ist es die Entscheidung des Kunden, ob das Produkt sich für die entsprechende Anwendung eignet.

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Honeywell garantiza que todos los productos que fabrica están libres de defectos de mano de obra o materiales. Póngase en contacto con su oficina local de ventas para obtener información sobre la garantía. Si los productos devueltos están bajo garantía, Honeywell los reparará o reemplazará una vez determinado que están defectuosos. Lo expuesto en el punto anterior **sustituye a cualquier otra garantía, ya sea explícita o implícita, incluyendo garantías comerciales y de idoneidad para un propósito específico.**

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Aunque Honeywell ofrece soporte para las aplicaciones de manera personal, mediante sus publicaciones y páginas web, el consumidor debe determinar si el producto es adecuado para la aplicación.

GARANTIE/RECOURS

Honeywell garantit que les articles de sa fabrication sont exempts de défauts de pièces et main d'oeuvre. Contactez votre bureau de vente local pour obtenir des informations sur la garantie. Si les articles garantis sont retournés à Honeywell pendant la période de couverture, Honeywell réparera ou remplacera gratuitement ceux qui auront été trouvés défectueux. Ce qui précède constitue le seul recours de l'acheteur et **se substitue à toutes autres garanties, explicites ou implicites, y compris celles relatives à la commercialisation ou la compatibilité avec une application particulière.**

Les caractéristiques techniques peuvent changer sans préavis. Les informations que nous apportons sont présumées précises et fiables au moment de la mise sous presse. Cependant, nous déclinons toute responsabilité quant à leur utilisation.

Bien que nous apportons notre aide pour les applications, de façon individuelle, par notre littérature et par le site web Honeywell, il incombe au client de déterminer si le produit convient à l'application.

GARANTIA/SOLUÇÕES

A Honeywell garante seus produtos contra defeitos de material e de fabricação. Entre em contato com seu representante local para maiores informações sobre a garantia. Quando produtos garantidos forem devolvidos à Honeywell durante o prazo de garantia, a Honeywell se compromete a reparar ou substituir por um novo aqueles que considerar defeituosos. O acima estipulado é a única garantia oferecida ao Comprador e **suplanta quaisquer outras garantias, expressas ou implícitas, incluindo as de comerciabilidade e adequação a um propósito específico.**

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Independentemente de proporcionarmos assistência pessoal, através de nossos impressos e nosso site da Web, cabe ao comprador determinar a adequação do produto à sua aplicação.

1-800-537-6945 USA
1-800-737-3360 Canada
1-815-235-6847 International

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www.honeywell.com/sensing

Service Tips

Screen and Wear Plates

The screen and wear plates have been designed so that you can get 18 different adjustments per side for extended screen life.

Hammers

The hammers, spacers and hammer bolts are replaceable items. The hammers can be reversed (using the reversing switch of single phase mills) to double their life. They can also be moved in sets of three from the point of grain entry to the back of the housing for additional life. When changing their location, care must be exercised to keep the hammers in their original sets of three to prevent imbalance. It is of great importance to inspect the hammers to see that they are wearing properly. Figure # 6 illustrates normal wear of a worn out hammer. To get the maximum life out of your hammers you should reverse the direction of travel (with reversing switch on single phase mills) or rotate the hammer 180 degrees when it wears to the middle of the end tip. The other side can be worn down to the same point, but after the length of the hammer has been affected the hammer is then wore out as illustrated in figure # 6.

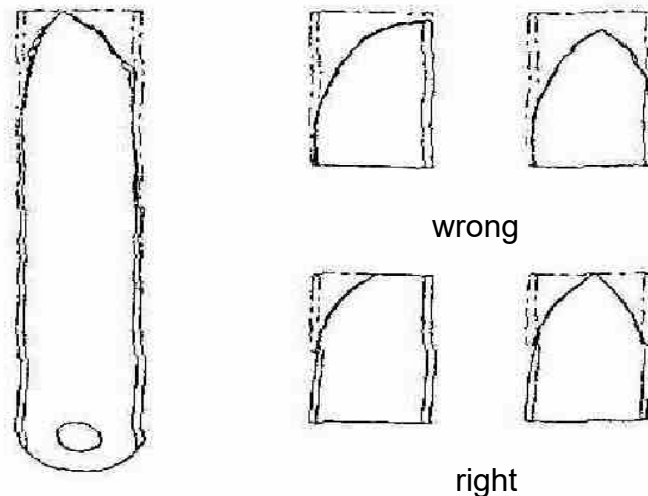


Figure 6

Worn out hammer
(Normal Wear)

By continually using a worn out hammer it could cause the following:

1. Poor quality of ground feed due to inconsistent particle size.
2. Loss in grinding capacity, therefore causing higher cost per ton to process feed.
3. Motor bearing failure due to vibration.
4. Screen and housing damage due to broken hammer.

Vibration is hard on the motor bearings and can cause premature failure. An out of balance condition can result from vibration caused by a broken hammer.

When tightening nuts on the hammer bolts, they should be tight enough so that the hammers cannot swing freely but can still be moved with hand pressure.

Vibration can be caused by uneven wear of the hammer on the hammer bolts. The wear is not always uniform, in spite of carefully controlled heat-treating of the hammers and bolts. The bolts that wears the fastest permits the hammers to move farther from the center of rotation, causing imbalance. It is important that you carefully examine hammer bolts for wear replacing a set of hammers.

The cost of hammer replacement is inexpensive when compared to the damage that can occur by using worn out hammers.

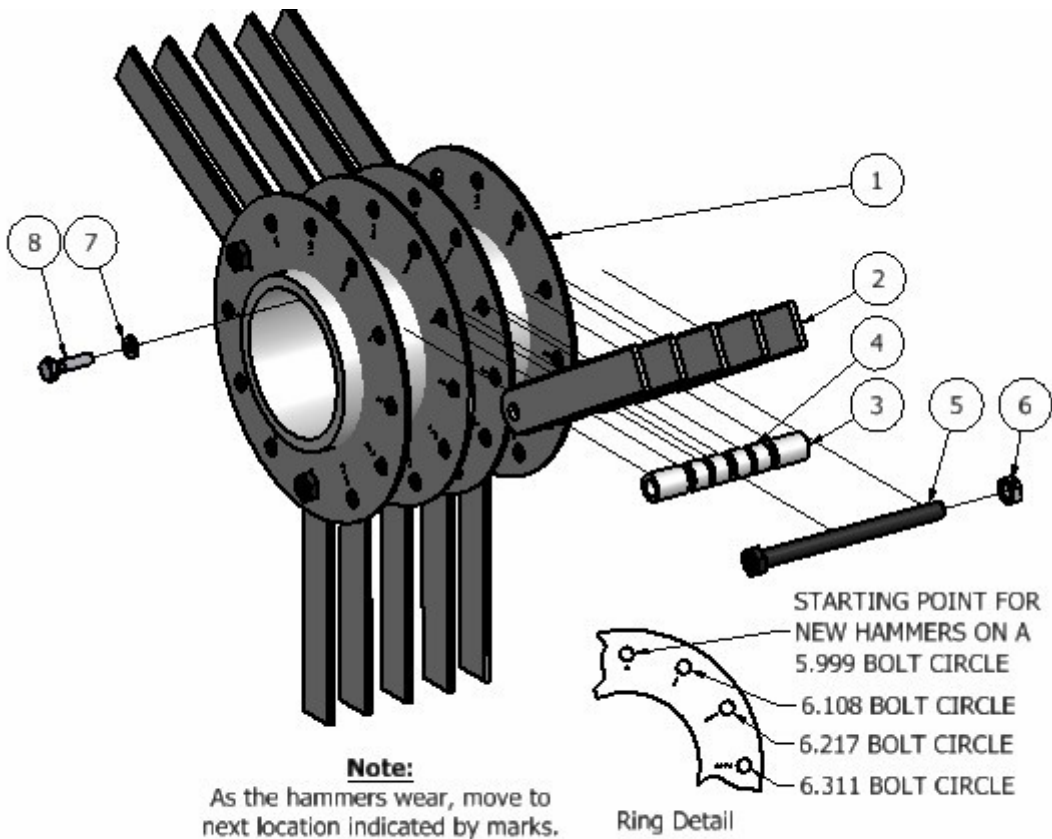
REPLACEMENT PARTS & DRAWINGS

Beater Hub Assembly

Complete part # 92000234

<u>Item #</u>	<u>Part number</u>	<u>Quantity</u>	<u>Description</u>
1	90000104	1	Beater hub welded assembly
2	92000278	1	Hammers (set of 15)
3	80013502	6	Hub spacer
4	80013501	12	Hub spacer
5	70011504	3	3/8-24 Hub Stud
6	66754500	3	3/8-24 Jam Nut
7	66443300	3	¼ lock washer
8	62583322	3	HHCS ¼-20 x 1

Note: Items # 3 and 4 are packaged together in part number 92000582



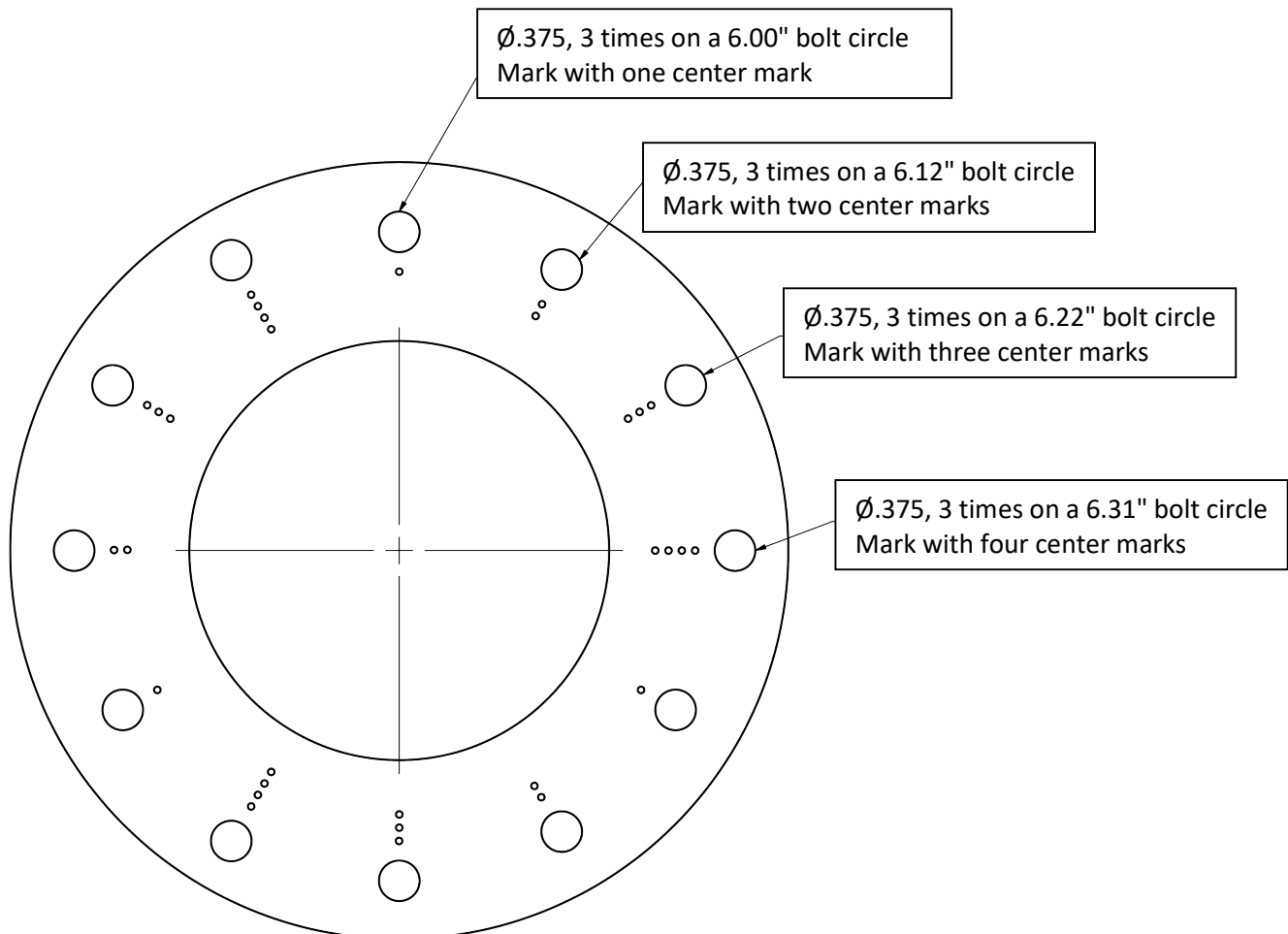
TECHNICAL BULLETIN

In order to accommodate different grinding requirements and different raw materials we have modified our Sentry Mill hubs to allow the end user to easily adjust the clearance between the tip of the hammers and the screen.

Instead of the original six holes punched in the hub washers the new washers will have twelve holes in four sets of three, each different set is a different diameter. The matching holes marked with one Dot mark is the original diameter of the older hubs. Each successive set of holes marked with two, three, or four Dots; moves the hammers approx 3/32 of an inch closer to the screen.

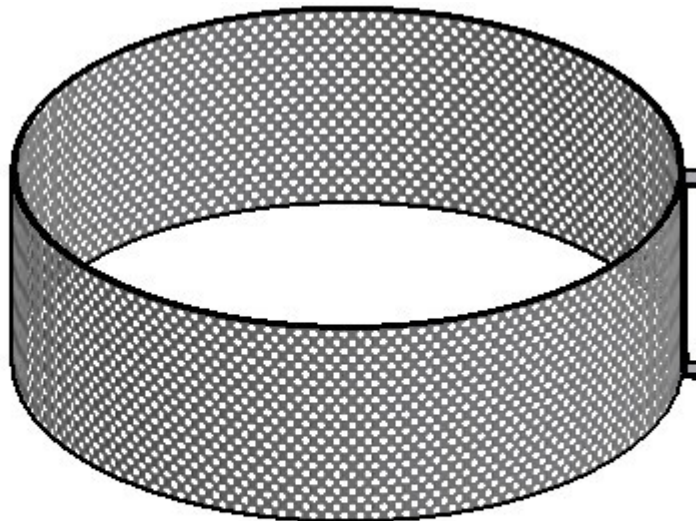
CAUTION!!

When moving hammers to different sets of holes it is critical to maintain balance by placing the hammers evenly spaced around the hub. To confirm balance, **be sure the hammers are in positions with the same numbers of marks**. Also before starting the mill, rotate hub by hand to ensure that the hammers do not contact the screen at any point.



Sentry Screen Options

Part number	Quantity	Description
92001071	1	18" diameter screen with 3/32" holes
92000221	1	18" diameter screen with 1/8" holes
92000211	1	18" diameter screen with 5/32" holes
92000212	1	18" diameter screen with 3/16" holes
92000214	1	18" diameter screen with 1/4" holes
92000215	1	18" diameter screen with 5/16" holes
92000216	1	18" diameter screen with 3/8" holes
92000218	1	18" diameter screen with 1/2" holes
92000219	1	18" diameter screen with 5/8" holes
92000220	1	18" diameter screen with 3/4" holes
92000208	1	18" diameter screen with 1/16" holes
92000209	1	18" diameter screen with 7/64" holes
92000217	1	18" diameter screen with 7/16" holes
92001070	1	18" diameter screen with 9/64" holes
92000213	1	18" diameter screen with 7/32" holes

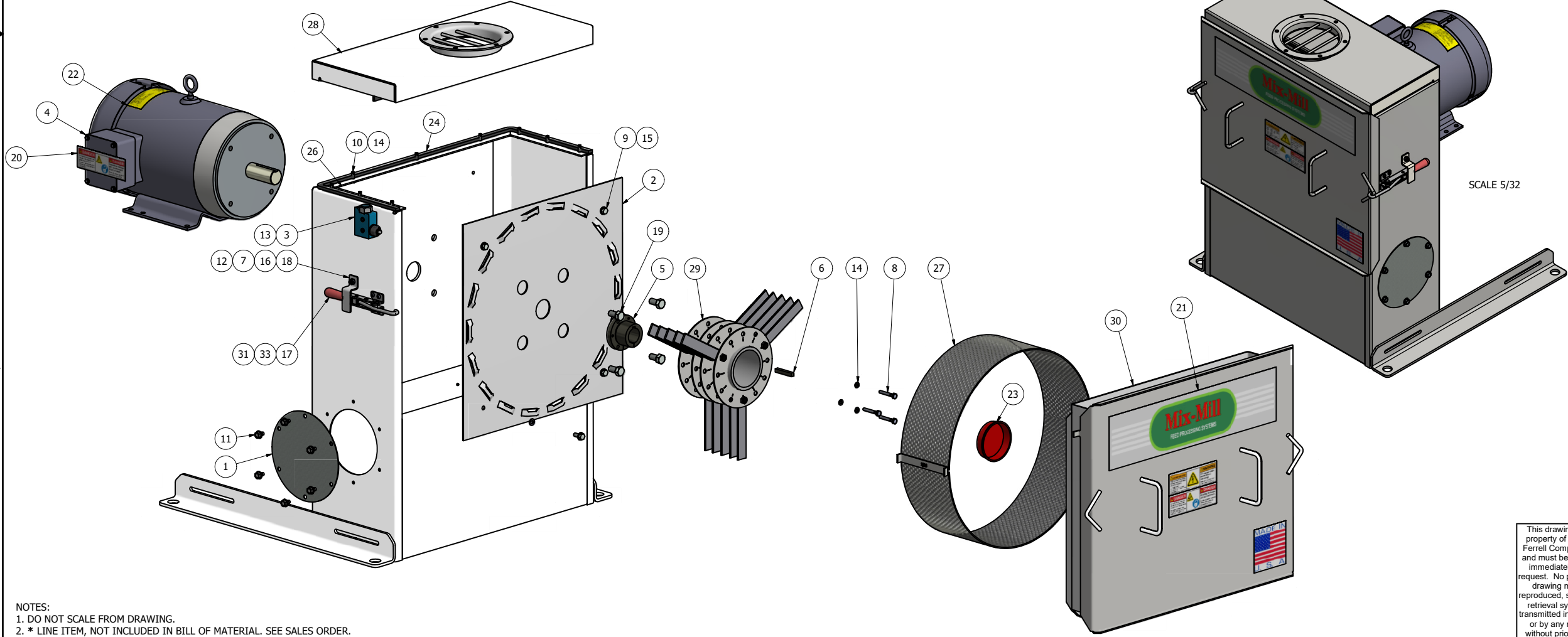
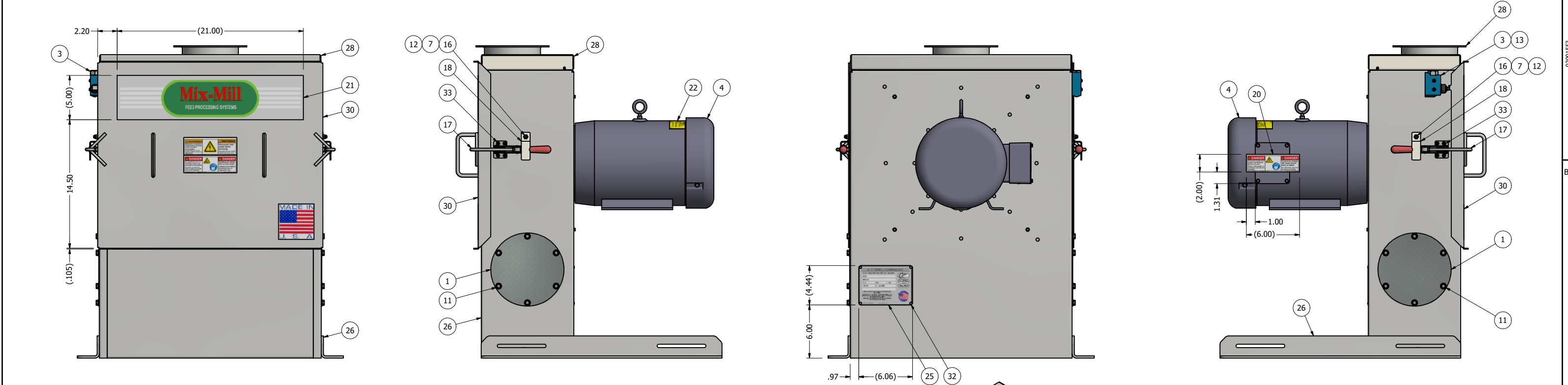




SENTRY 100 DROP THRU

PRINTS: 92001553
92001554

REV	ECN	DESCRIPTION	DATE	APPROVED
A	090245	RELEASE	8/21/2009	dmjohnson
B	090315	ADD 'INCLUDED WITH BUSHING' NOTE. DEL 62583330, 66443300 WAS 12 PCS	11/3/2009	dmjohnson
C	K160125	65483812 WAS 65683812	10/3/2017	dmjohnson



ITEM	PART NUMBER	QTY	DESCRIPTION	
33	F83841002	8	SCW, MACH 10-32 X 5/8" PAN CROSS HEAD	
32	F83200010	4	RIVET, POP SDS44 .125 X .188-.250"	
31	F82631032	1	NUT, KEPS 10-32	
30	92000806	1	DOOR ASSY, GRINDER, SENTRY	
29	92000234	1	HUB ASSY, BEATER W/HAMMERS, D MILL	
28	90000871	1	INLET WLDMT, 6" DIA, SENTRY 1000	
27	90000142	1	SCREEN WLDMT, 3/16" D	
26	90000099	1	HOUSING WLDMT, DROP THRU, SENTRY 100	
25	80020017	1	PLATE, BUILD: A. T. FERRELL COMPANY	
24	80014002	3.7	TAPE, POLY OPEN CELL, .38 X .50 X 45.00"	
23	80010509	1	CAPLUG-D HUB	
22	80006517	1	DECAL, MOTOR WARRANTY SERVICE	
21	80003662	1	DECAL, MIX-MILL 5 x 21	
20	80003641	1	DECAL, DANGER HIGH VOLTAGE	
19	70010504	4	HHCS,W/LOCK 1/2-13 X 1.00"	
18	70004513	2	GUARD, LATCH, D MILL	
17	70004510	2	LATCH, MILL DOOR CL-250-PA	
16	67003300	2	NUT, HEX NYLOCK 1/4-20	
15	66443800	4	WASHER, LOCK HELICAL 5/16"	
14	66443300	12	WASHER, LOCK HELICAL 1/4"	
**	13	66441800	2	WASHER, LOCK HELICAL, #6
12	66403300	2	WASHER, FLAT 1/4"	
11	65483812	12	SCW, MACH HX WSH HD T/C, 5/16-18 X 1/2"	
10	65483317	9	SCW, MACH HX WSH HD T/C 1/4-20 X 3/4"	
9	65403817	4	SCW, MACH HX WSHR HD T/C 5/16-18 X .75"	
**	8	62583330	3	HHCS, 1/4-20 X 1.75"
**	7	62583317	2	HHCS, 1/4-20 X 3/4"
*	6	49000732	1	KEY, SQUARE 5/16 X 2.00"
*	5	44010716	1	BUSHING, QD SD 1.375"
*	4	33000703	1	MTR, 10 HP 3D36 0/6 208-230/460 TEFC 215TC
*	3	31008025	1	SWITCH, MICRO, DOOR
2	11195910	1	PLATE, WEAR, HOUSING, D MILL	
1	11194880	2	PLATE, COVER 8.25"	

NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. * LINE ITEM, NOT INCLUDED IN BILL OF MATERIAL. SEE SALES ORDER.
 3. ** REFERENCE ONLY, 3 PIECES 62583330 & 3 PIECES 66443300 INCLUDED WITH BUSHING. NOT INCLUDED IN BILL OF MATERIAL.

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CAD
 NO MANUAL CHANGES
 TOLERANCES EXCEPT AS NOTED

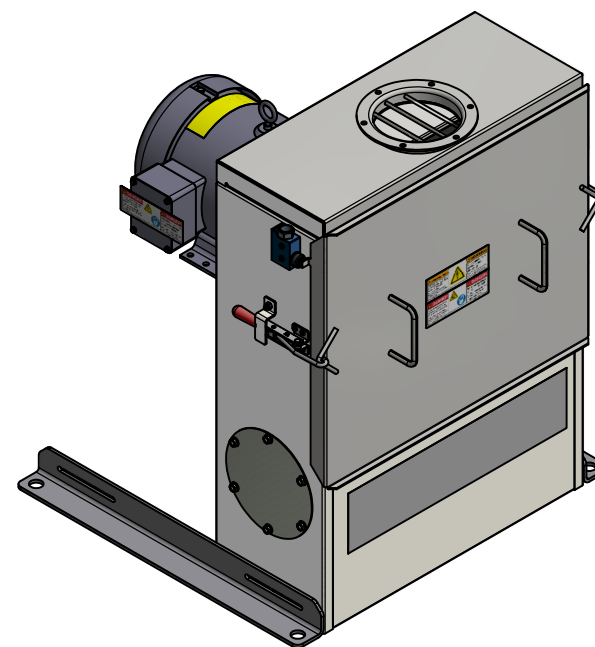
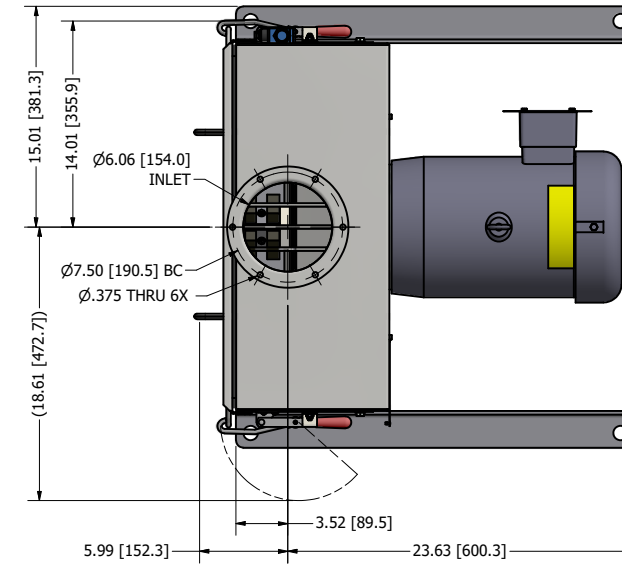
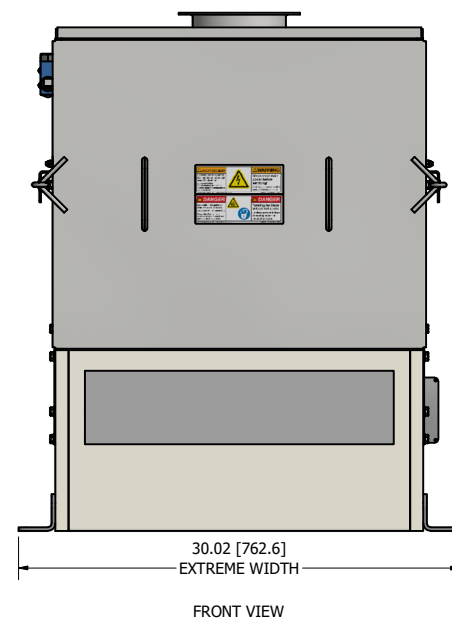
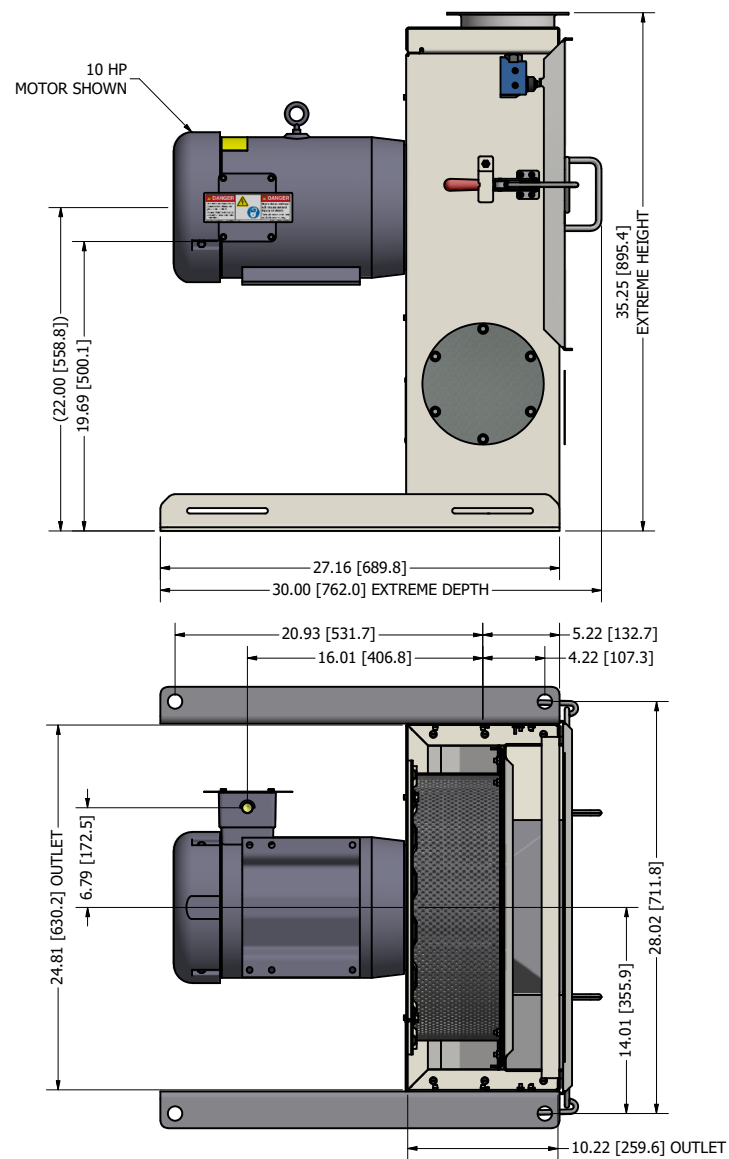
DECIMAL: .005
 .010
 .020
 .030
 FRACTIONAL: 1/32
 ANGLUAR: 1/2

FINISH: TOUCH UP PAINT
 SCALE: 0.19:1
 DRAWN BY: dmjohnson
 APPROVED BY: DMJ


DIVISION OF A. T. FERRELL COMPANY
 BLUFFTON, INDIANA - USA

TITLE: HAMMER MILL ASSY, 5-10 HP, SENTRY 100
 DATE: 8/20/2009
 SIZE: D
 PART NUMBER: 92001553
 SHEET: 1 of 1

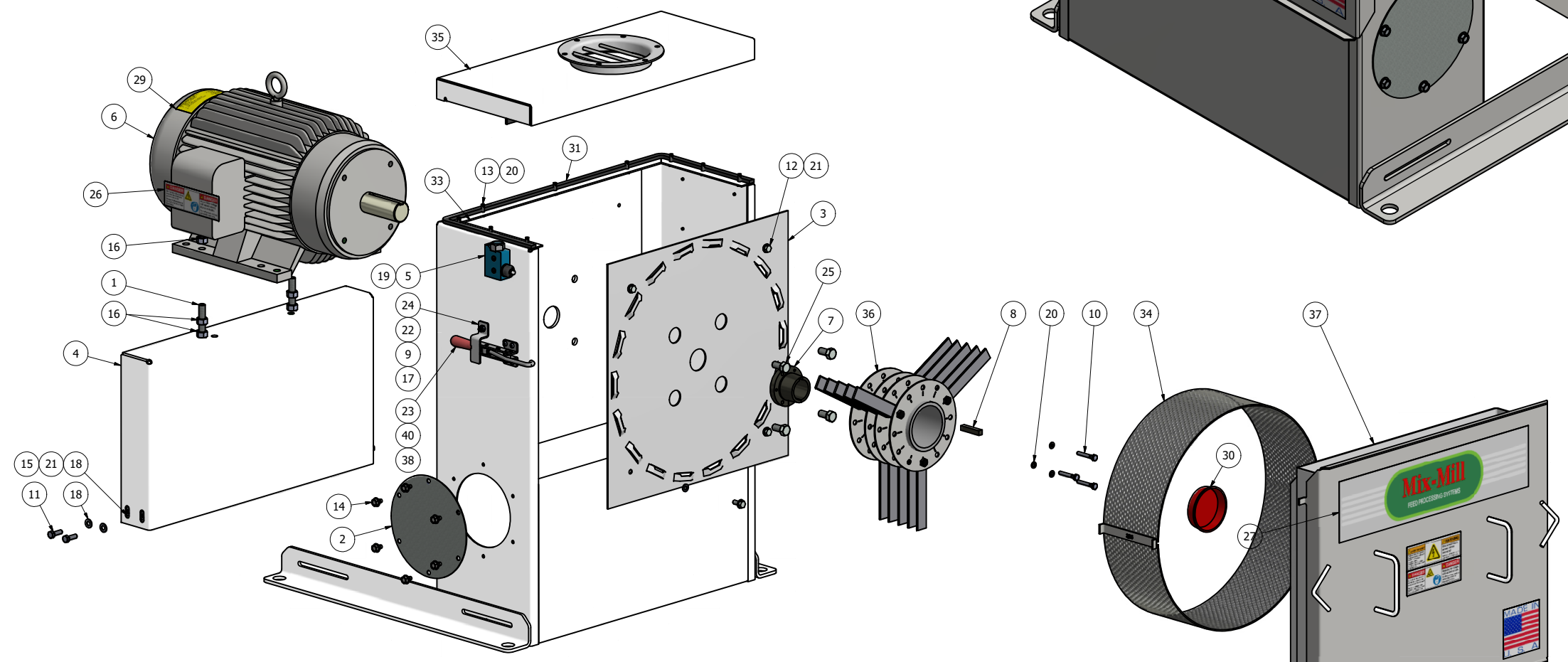
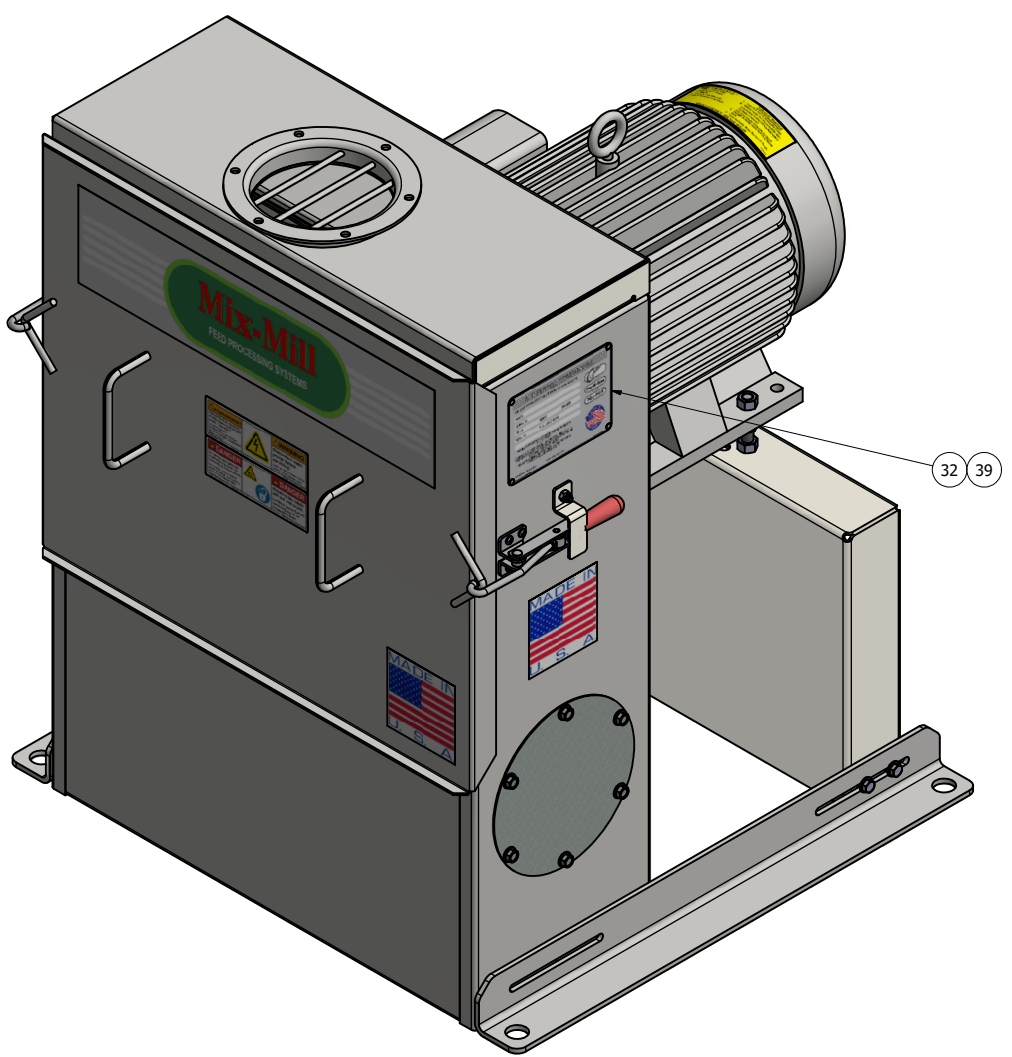
REVISION HISTORY				
REV	ECN	DESCRIPTION	DATE	APPROVED
A	090245	RELEASE	8/21/2009	dmjohnson



- NOTES:
- DO NOT SCALE FROM DRAWING.
 - ALT DIMENSIONS [X.X] IN MILLIMETERS.
 - RECOMMENDED MAINTENANCE CLEARANCE: FRONT 36.00 [914.4], SIDE & REAR: 24.00 [609.6].
 - WEIGHT AS SHOWN 350 lbs / 159 kg.

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	TOLERANCES EXCEPT AS NOTED			FINISH: xxx ± .005 xx ± .030	SCALE: 0.16:1
	DECIMAL: xxx ± .005 xx ± .030	TOUCH UP PAINT		TITLE: HAMMER MILL ASSY, 5-10 HP, SENTRY 100	
	FRACTIONAL: ± 1/32 ANGULAR: ± 1/2	DATE: 8/20/2009	SIZE: D	PART NUMBER: 92001553-I	SHEET: 1 of 1

REV	ECN	DESCRIPTION	DATE	APPROVED
A	090208	RELEASE	7/21/2009	sahamman
B	K160125	65483812 WAS 65683812	10/3/2017	dmjohnson



ITEM	PART NUMBER	QTY	DESCRIPTION
40	F83841002	8	SCW, MACH 10-32 X 5/8" PAN CROSS HEAD
39	F83200010	4	RIVET, POP SDS44 .125 X .188-.250"
38	F82631032	8	NUT, KEPS 10-32
37	92000806	1	DOOR ASSY, GRINDER, SENTRY
36	92000234	1	HUB ASSY, BEATER W/HAMMERS, D MILL
35	90000871	1	INLET WLDMT, 6" DIA, SENTRY 1000
34	90000142	1	SCREEN WLDMT, 3/16" D
33	90000099	1	HOUSING WLDMT, DROP THRU, SENTRY 100
32	80020017	1	PLATE, BUILD: A. T. FERRELL COMPANY
31	80014002	3.7	TAPE, POLY OPEN CELL, .38 X .50 X 45.00"
30	80010509	1	CAPLUG-D HUB
29	80006517	1	DECAL, MOTOR WARRANTY SERVICE
28	80003697	1	DECAL, MADE IN THE USA
27	80003662	1	DECAL, MIX-MILL 5 x 21
26	80003641	1	DECAL, DANGER HIGH VOLTAGE
25	70010504	4	HHCS,W/LOCK 1/2-13 X 1.00"
24	70004513	2	GUARD, LATCH, D MILL
23	70004510	2	LATCH, MILL DOOR CL-250-PA
22	67003300	2	NUT, HEX NYLOCK 1/4-20
21	66443800	8	WASHER, LOCK HELICAL 5/16"
20	66443300	12	WASHER, LOCK HELICAL 1/4"
19	66441800	2	WASHER, LOCK HELICAL, #6
18	66403800	8	WASHER, FLAT, 5/16" TYPE A
17	66403300	2	WASHER, FLAT 1/4"
16	66085200	8	NUT, HEX PLT, 1/2-13
15	66083800	4	NUT, HEX PLT, 5/16-18
14	65483812	12	SCW, MACH HX WSH HD T/C, 5/16-18 X 1/2"
13	65483317	9	SCW, MACH HX WSH HD T/C 1/4-20 X 3/4"
12	65403817	4	SCW, MACH HX WSHR HD T/C 5/16-18 X .75"
11	62583822	4	HHCS, 5/16-18 X 1.00"
10	62583330	3	HHCS, 1/4-20 X 1.75"
9	62583317	2	HHCS, 1/4-20 X 3/4"
* 8	49000832	1	KEY, SQUARE 3/8 X 2.00"
* 7	44010720	1	BUSHING, QD SD 1.625"
* 6	33000705	1	MTR, 20HP 3D36 0/6 208-230/460 TEFC 256TC
5	31008025	1	SWITCH, MICRO, DOOR
4	11221531	1	SUPPOT, MOTOR 10/20HP, DROP THRU, SENTRY
3	11195910	1	PLATE, WEAR, HOUSING, D MILL
2	11194880	2	PLATE, COVER 8.25"
1	10691406	2	ROD, THD 1/2-13 X 4.00

NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. * LINE ITEM, NOT INCLUDED IN BILL OF MATERIAL. SEE SALES ORDER.

Mix-Mill
FLUID PROCESSING SYSTEMS

DIVISION OF
 A.T.FERRELL COMPANY
 1440 S ADAMS ST
 BLUFFTON, INDIANA
 46714 - USA
 PH: 260-824-3400
 FAX: 260-824-5463

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TOLERANCES EXCEPT AS NOTED

DECIMAL: FRACTIONAL:

XX ± .030 ± 1/32

XXX ± .005 ± 1/64

XXXX ± .001 ± 1/256

TITLE:
 HAMMER MILL ASSY, 20 HP, SENTRY 100

FINISH:
 TOUCH UP PAINT

DRAWN BY: sahamman

APPROVED BY: DMJ

CAD NO MANUAL CHANGES

SCALE: 0.19:1

SHEET: 1 OF 1

SIZE: D

PART NUMBER: **92001554**

REV: **B**

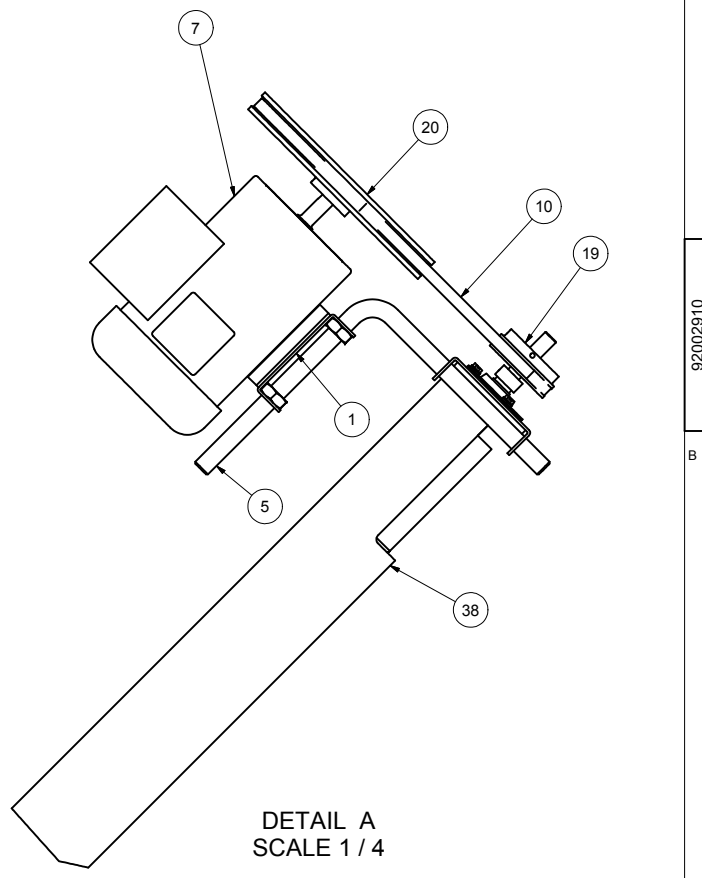
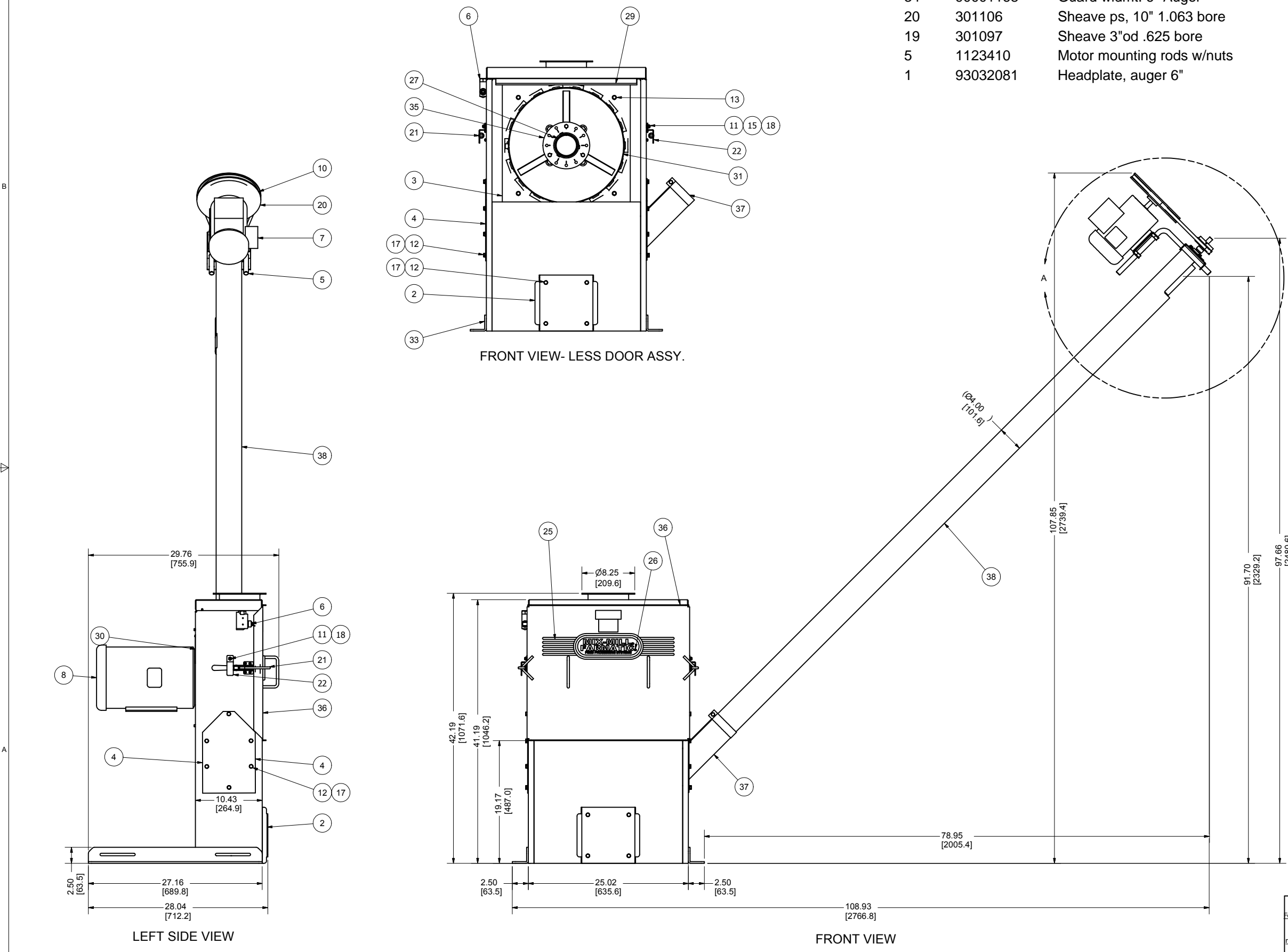


SENTRY 145

6" Auger items

REV	LTR	DESCRIPTION	DATE	APPROVED
A	070036	RELEASED	3/14/2007	PGGALEA
B	070036	ADDED DETAIL # 33 AS LINE ITEM	5/22/2007	PGGALEA
C	070036	ADDED DETAILS # 8, 36 & 37	7/16/2007	PGGALEA
D	090154	70004510 PLATE, CLAMP (2)	5/27/2009	pggalea

Item	Part#	Description
38	93032240	Auger assy. 6"x10"
37	92002920	Guide assy. 6"
34	90001168	Guard wldmt. 6" Auger
20	301106	Sheave ps, 10" 1.063 bore
19	301097	Sheave 3"od .625 bore
5	1123410	Motor mounting rods w/nuts
1	93032081	Headplate, auger 6"



ITEM	PART NUMBER	QTY	DESCRIPTION
40	F83841002	8	SCW, MACH 10-32 X 5/8" PAN CROSS HEAD
39	F82631032	8	NUT, KEPS 10-32
*	38	93005226	1 AUGER ASSY, 4.0" X 10.0', SENTRY 145
*	37	92002916	1 GUIDE ASSY, 4.00", SENTRY 145
	36	92000799	1 GRINDER DOOR ASSY
	35	92000234	1 BEATER HUB W/HAMMERS-D
*	34	90001166	1 GUARD WLDMT, 4.0" AUGER, SENTRY 145
	33	90001136	1 HOUSING WLDMT, SENTRY 145
	32	90000871	1 INLET WLDMT, 6" DIA SENTRY 1000
	31	90000142	1 SCREEN, 3/16 "D" WLDMT ASSY
*	30	80020017	1 PLATE, BUILD: CLIPPER, FERRELL-ROSS
	29	80014003	1 SPONGE, RUBBER .313 X .75" X 25'
	28	80014002	1 TAPE, POLYURETHANE, .38X.50"
	27	80010509	1 CAPPLUG-D HUB
	26	80006517	2 DECAL, MOTOR WARRANTY SERVICE
*	25	80003662	1 DECAL, MIX-MILL / FARMATIC 5 X 21
	24	70010504	4 HHCS,W/LOCK 1/2-13 X 1.00"
	23	70007001	4 RIVET, POP SDS54 .156X.13-.38"
	22	70004513	2 PLATE, CLAMP LATCH ACTION
	21	70004510	2 LATCH, MILL DOOR CL-250-PA
*	20	6A9 *****	1 SHEAVE **42108104
*	19	6A5 *****	1 SHEAVE, 3.1 OD x 5/8 BORE **301097
	18	67003300	2 NUT, HEX NYLOCK 1/4-20
	17	66443800	14 WASHER, LOCK HELICAL 5/16"
	16	66443300	11 WASHER, LOCK HELICAL 1/4"
	15	66403300	2 WASHER, FLAT 1/4"
	14	65483317	9 HEX SLT HD T/C 1/4-20 X 3/4"
	13	65403817	4 SCW, HX HD T/C 5/16-18 X 3/4"
	12	62583815	10 HHCS, 5/16-18 X 5/8"
	11	62583317	2 HHCS, 1/4-20 X 3/4"
*	10	45001041	1 V-BELT STANDARD A SECT-41
	9	44010716	1 BSHG, QD SD 1.375"
*	8	33000602	1 MTR, 7.5 HP 1S36 O/6 TEFC C-F
*	7	33000300	1 MTR, .75 HP 1D18 0/6 TEFC FT
*	6	31008025	1 MICRO SWITCH - DOOR
*	5	2A63G2	2 MOTOR MOUNTING ROD W/NUTS
	4	11195929	1 PLATE, COVER, HOUSING, 45 DEG AUGER
	3	11195910	1 PLATE, WEAR, HOUSING, D MILL
	2	11195740	1 DOOR, CLEAN OUT, SENTRY 145
*	1	10045210	1 HEADPLATE, AUGER, 4.00"

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CAD

NO MANUAL CHANGES TO TOLERANCES EXCEPT AS NOTED

DECIMAL: xxx = .005
xx = .030
FRACTIONAL: +1/32
ANGULAR: = 1/2-

DIVISION OF A. T. FERRELL COMPANY

SCALE: 1:8

DRAWN BY: pggalea

APPROVED BY:

TITLE: HOUSING ASSY, SENTRY 145

DATE: 12/24/2006

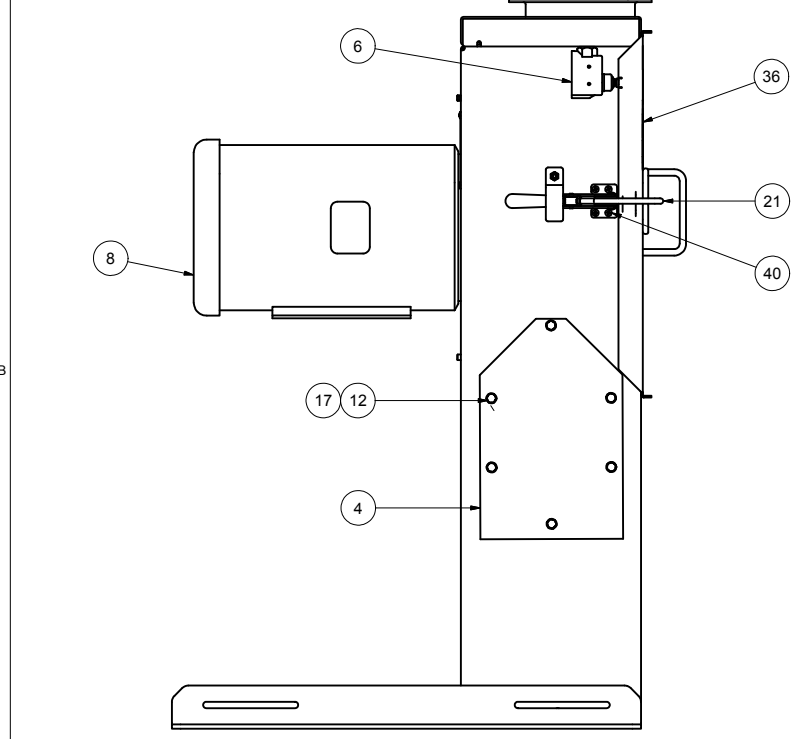
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PART NUMBER: 92002910

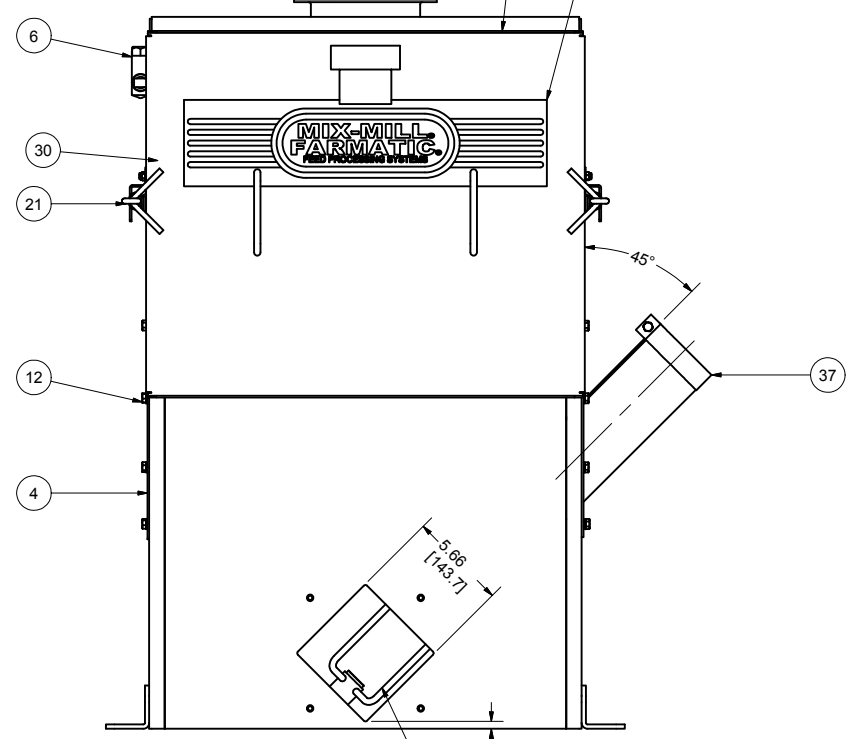
SHEET: 1 of 2

NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. ALTERNATIVE DIMENSION (XX.XX) IN MILLIMETERS.
 3. * LINE ITEM ON SALES ORDER, NOT INCLUDED IN MANUFACTURING BILL OF MATERIALS, SEE SALES ORDER.

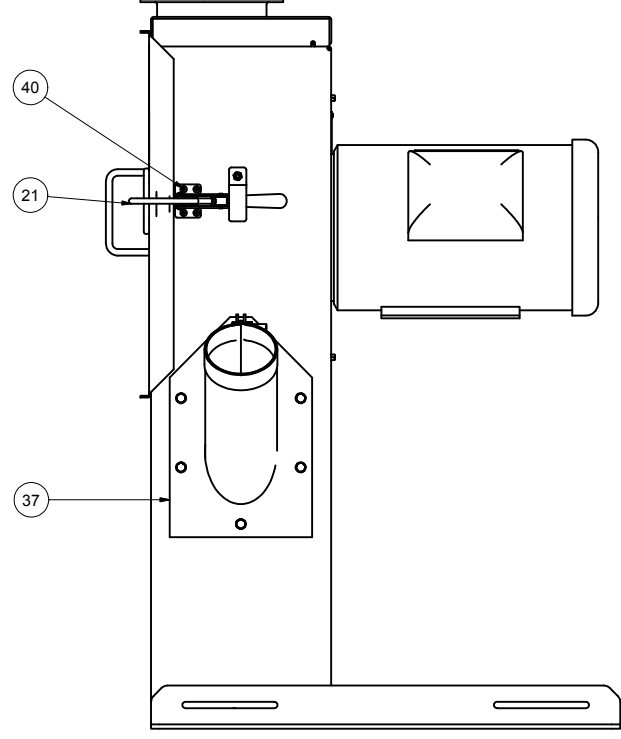
REV	LTR	DESCRIPTION	DATE	APPROVED
A	070036	RELEASED	3/14/2007	PGGALEA
B	070036	ADDED DETAIL # 33 AS LINE ITEM	5/22/2007	PGGALEA
C	070036	ADDED DETAILS # 8, 36 & 37	7/16/2007	PGGALEA
D	090154	70004510 PLATE, CLAMP (2)	5/27/2009	pggalea



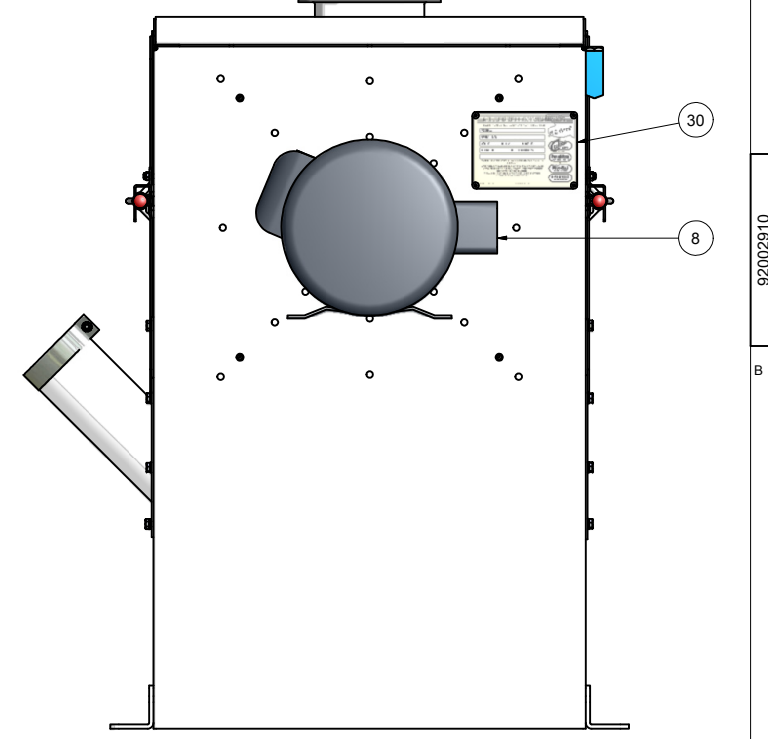
LEFT SIDE VIEW



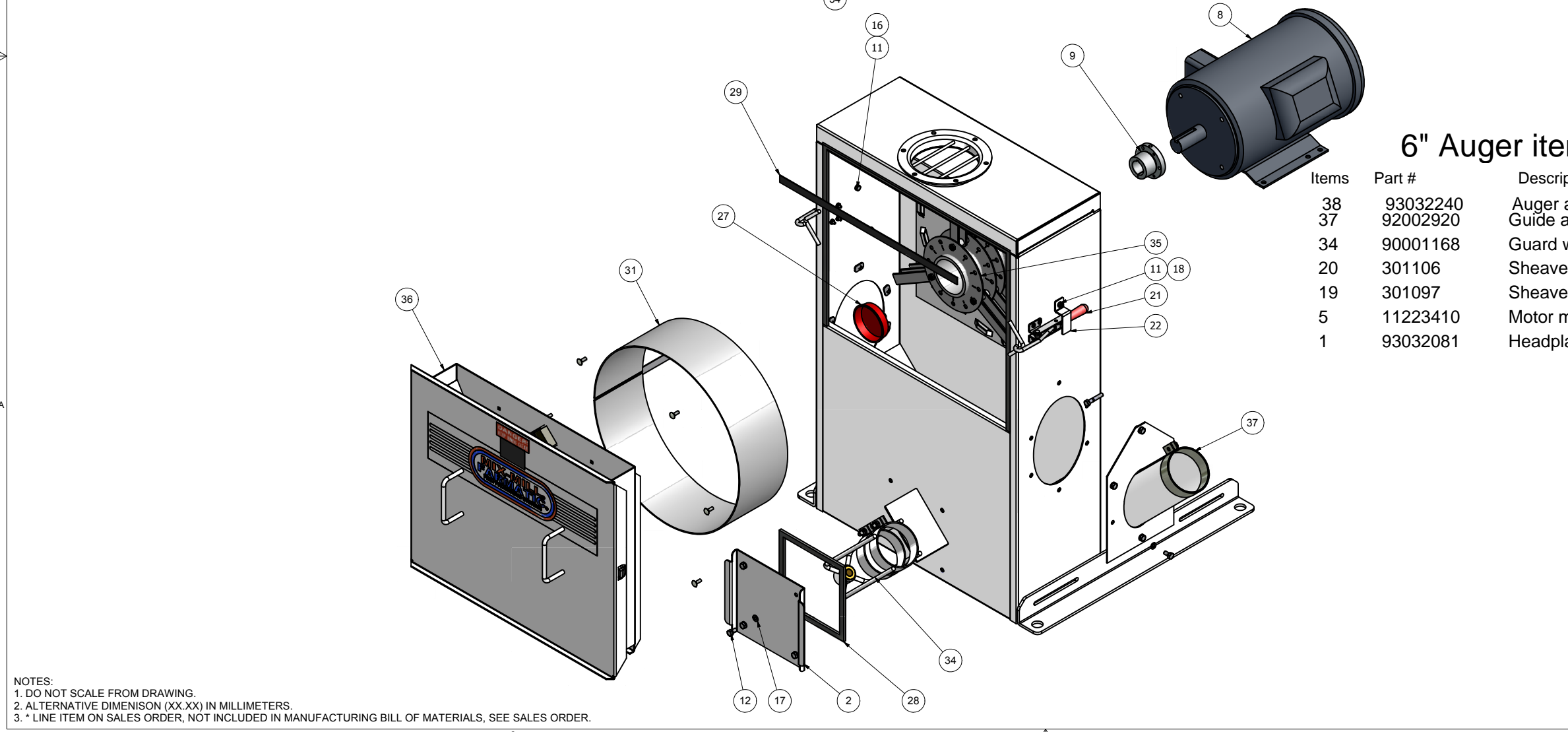
FRONT VIEW



RIGHT SIDE VIEW



REAR VIEW



6" Auger items

Items	Part #	Description
38	93032240	Auger assy. 6"x10'
37	92002920	Guide assy. 6"
34	90001168	Guard wldmt. 6"
20	301106	Sheave 10" w/1.063
19	301097	Sheave 3" w/.625"
5	11223410	Motor mounting w/nuts
1	93032081	Headplate 6"

40	F83841002	8	SCW, MACH 10-32 X 5/8" PAN CROSS HEAD
39	F82631032	8	NUT, KEPS 10-32
*	93005226	1	AUGER ASSY, 4.0" X 10.0', SENTRY 145
*	92002916	1	GUIDE ASSY, 4.00", SENTRY 145
	92000799	1	GRINDER DOOR ASSY
	92000234	1	BEATER HUB W/HAMMERS-D
*	90001166	1	GUARD WLDMT, 4.0" AUGER, SENTRY 145
	90001136	1	HOUSING WLDMT, SENTRY 145
	90000871	1	INLET WLDMT, 6" DIA SENTRY 1000
	90000142	1	SCREEN, 3/16 "D" WLDMT ASSY
*	80020017	1	PLATE, BUILD: CLIPPER, FERRELL-ROSS
	80014003	1	SPONGE, RUBBER .313 X .75" X 25'
	80014002	1	TAPE, POLYURETHANE, .38X.50"
	80010509	1	CAPLUG-D HUB
	80006517	2	DECAL, MOTOR WARRANTY SERVICE
*	80003662	1	DECAL, MIX-MILL / FARMATIC 5 X 21
	70010504	4	HHCS, W/LOCK 1/2-13 X 1.00"
	70007001	4	RIVET, POP SDS54, .156X.13-.38"
	70004513	2	PLATE, CLAMP LATCH ACTION
	70004510	2	LATCH, MILL DOOR CL-250-PA
*	6A9	1	SHEAVE ***42108104
	6A5	1	SHEAVE, 3.1 OD x 5/8 BORE ***301097
	67003300	2	NUT, HEX NYLOCK 1/4-20
	66443800	14	WASHER, LOCK HELICAL 5/16"
	66443300	11	WASHER, LOCK HELICAL 1/4"
	66403300	2	WASHER, FLAT 1/4"
	65483317	9	HEX SLT HD T/C 1/4-20 X 3/4"
	65403817	4	SCW, HX HD T/C 5/16-18 X 3/4"
	62583815	10	HHCS, 5/16-18 X 5/8"
	62583317	2	HHCS, 1/4-20 X 3/4"
*	45001041	1	V-BELT STANDARD A SECT-41
	44010716	1	BSHG, QD SD 1.375"
*	33000602	1	MTR, 7.5 HP 1S36 O/6 TEFC C-F
*	33000300	1	MTR, .75 HP 1D18 O/6 TEFC FT
*	31008025	1	MICRO SWITCH - DOOR
*	2A63G2	2	MOTOR MOUNTING ROD W/NUTS
	11195929	1	PLATE, COVER, HOUSING, 45 DEG AUGER
	11195910	1	PLATE, WEAR, HOUSING, D MILL
	11195740	1	DOOR, CLEAN OUT, SENTRY 145
*	10045210	1	HEADPLATE, AUGER, 4.00"

NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. ALTERNATIVE DIMENSION (XX.XX) IN MILLIMETERS.
 3. * LINE ITEM ON SALES ORDER, NOT INCLUDED IN MANUFACTURING BILL OF MATERIALS, SEE SALES ORDER.

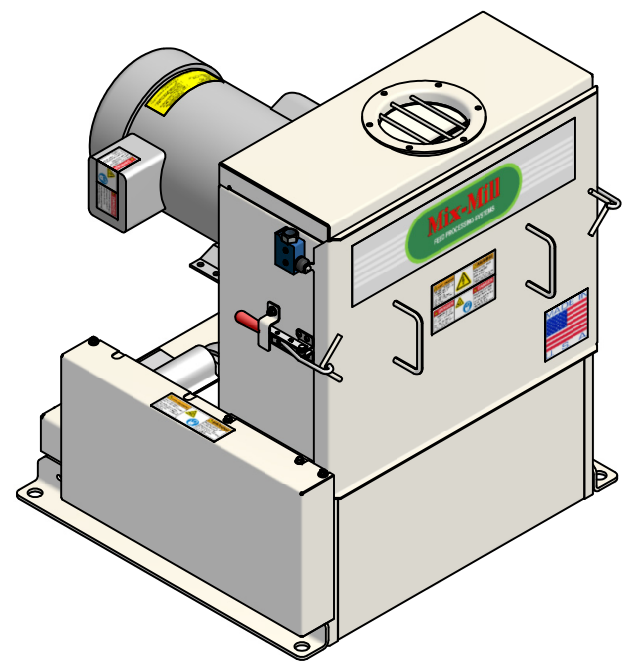
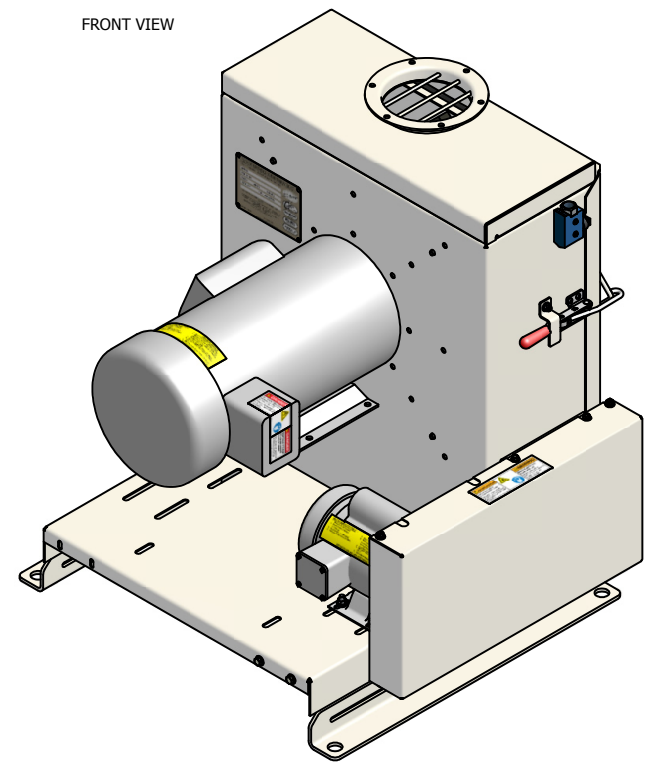
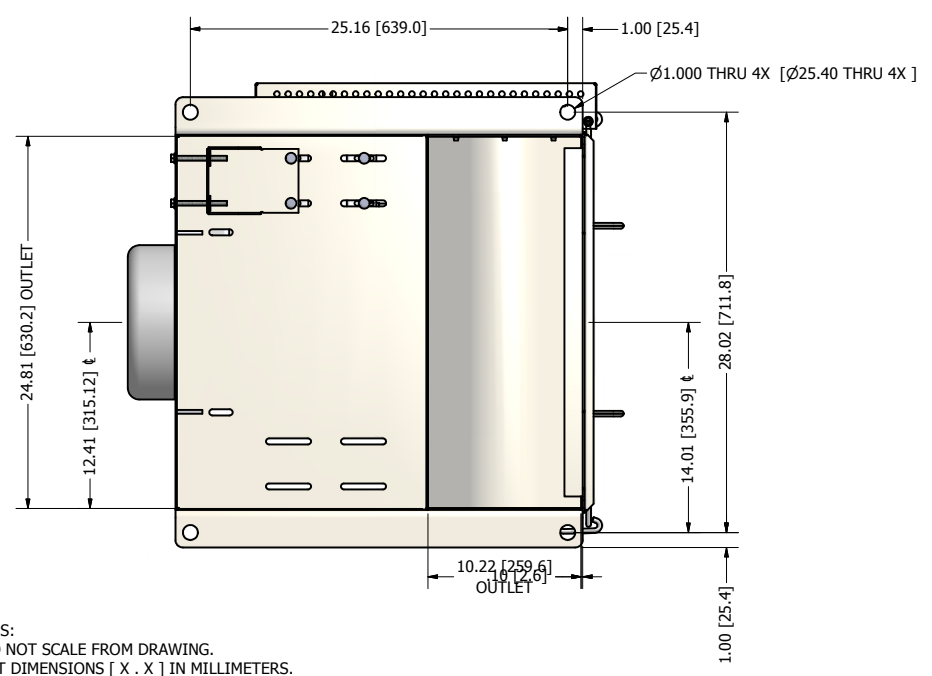
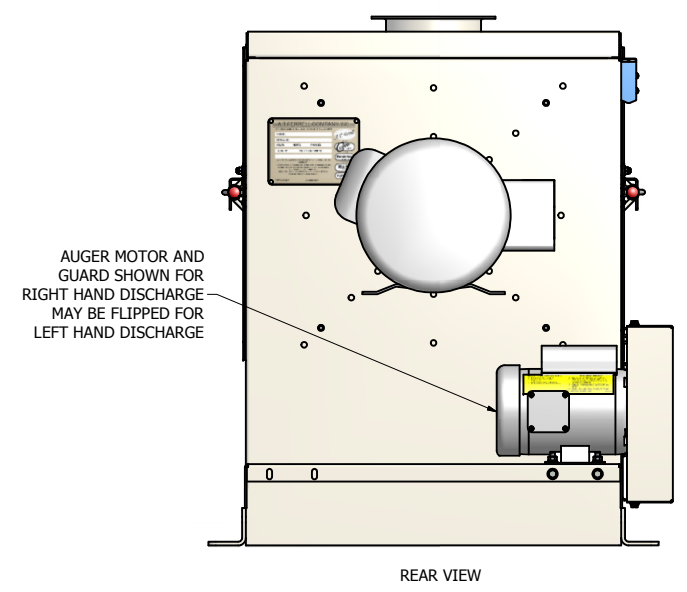
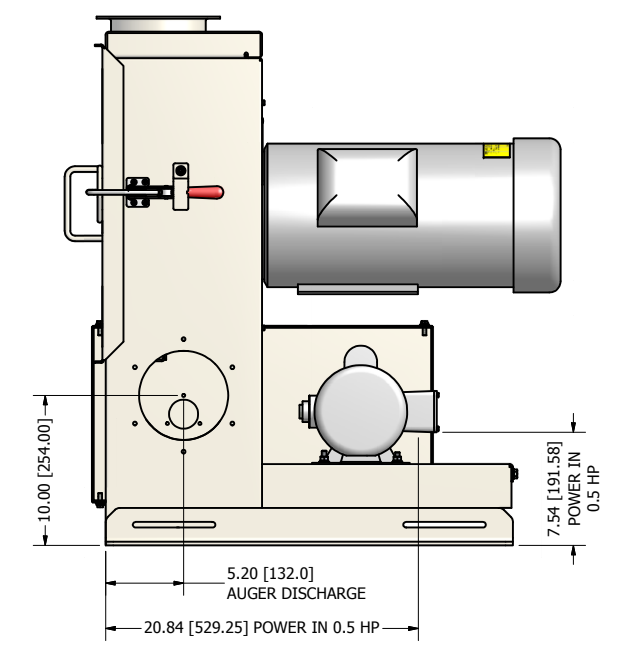
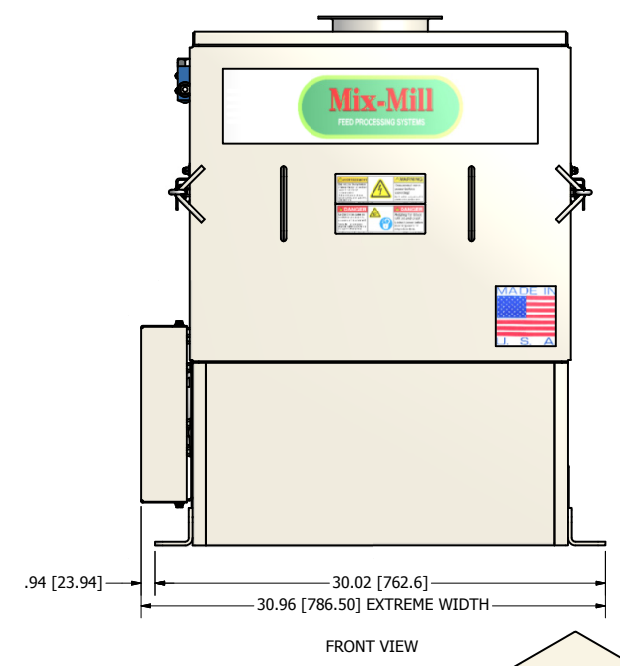
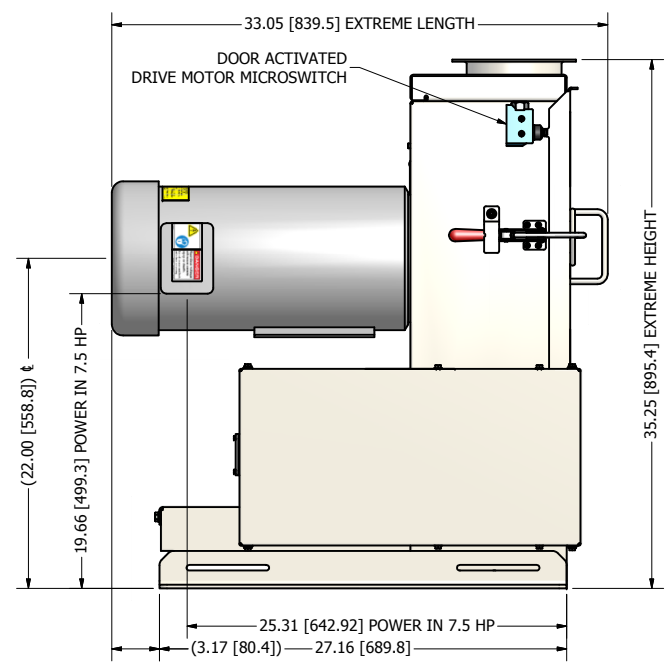
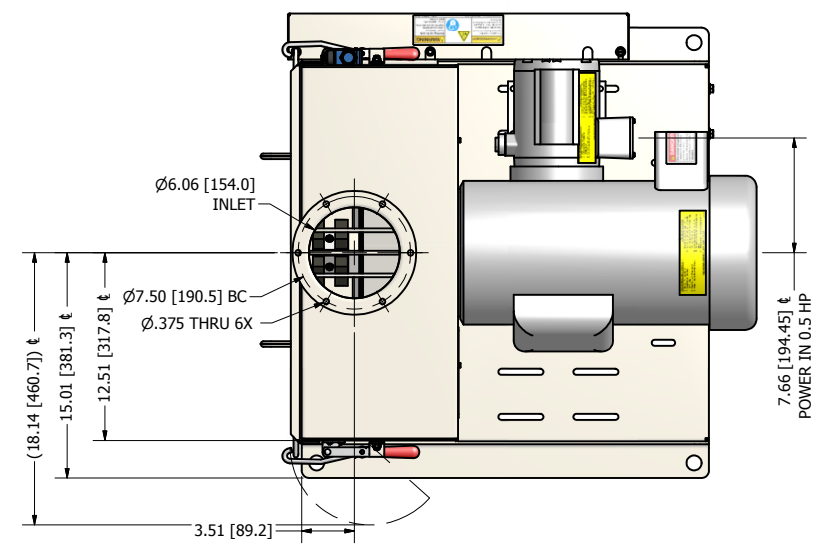
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DIVISION OF A. T. FERRELL COMPANY FINISH: NONE DECIMAL: .005 FRACTIONAL: 1/32 ANGULAR: 1/2°	SCALE: 1:8 DRAWN BY: pggalea TITLE: HOUSING ASSY, SENTRY 145	BLUFETON, INDIANA - USA APPROVED BY:	DATE: 12/24/2006 SIZE: D PART NUMBER: 92002910	SHEET: 2 of 2	



SENTRY 1000

PRINTS: 92001517
92001517-I
92001552-I
92001552

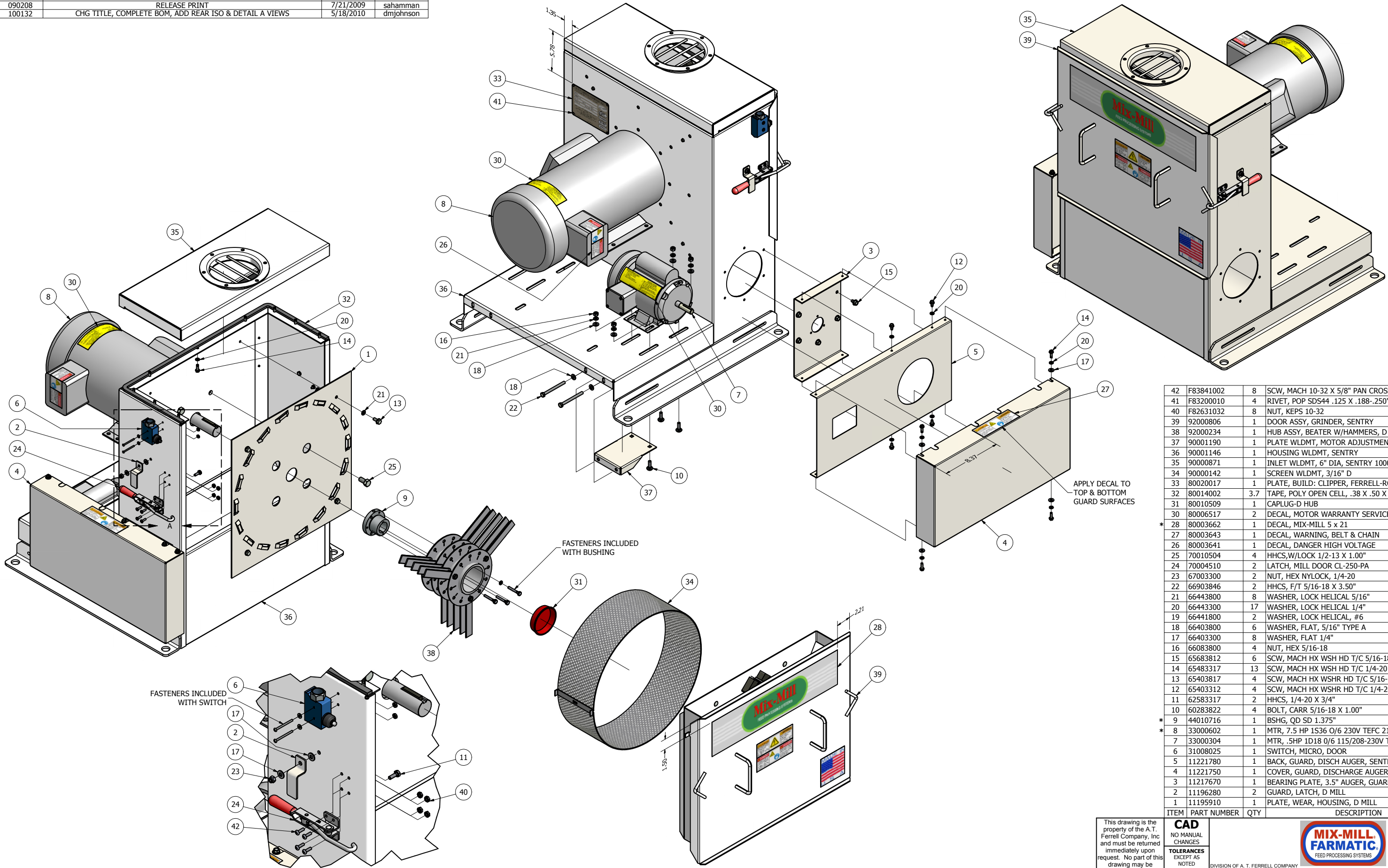
REVISION HISTORY				
REV	ECN	DESCRIPTION	DATE	APPROVED
A	090208	RELEASE PRINT	7/21/2009	sahamman
B	100132	CHG TITLE, ADD MOTORS	5/14/2010	dmjohnson



- NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. ALT DIMENSIONS [X . X] IN MILLIMETERS.
 3. RECOMMENDED MAINTENANCE CLEARANCE; FRONT: 36.00 [914.4], SIDE & REAR: 24.00 [609.6]
 4. WEIGHT AS SHOWN WITH 7.5 HP DRIVE MOTOR: 410 LBS [186 KG].

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	NO MANUAL CHANGES		
	TOLERANCES EXCEPT AS NOTED	DIVISION OF A. T. FERRELL COMPANY	BLUFFTON, INDIANA - USA
	DECIMAL: $\pm .005$ FRACTIONAL: $\pm 1/32$ ANGULAR: $\pm 1/2$	FINISH: TOUCH UP PAINT SCALE: 0.16:1 DATE: 9/28/2009 SIZE: D	DRAWN BY: dmjohnson APPROVED BY: DMJ TITLE: HAMMER MILL ASSY, 5-10 HP 1 PH, SENTRY 1000 PART NUMBER: 92001552-I

REV	ECN	DESCRIPTION	DATE	APPROVED
A	090208	RELEASE PRINT	7/21/2009	sahamman
B	100132	CHG TITLE, COMPLETE BOM, ADD REAR ISO & DETAIL A VIEWS	5/18/2010	dmjohnson



ITEM	PART NUMBER	QTY	DESCRIPTION
42	F83841002	8	SCW, MACH 10-32 X 5/8" PAN CROSS HEAD
41	F83200010	4	RIVET, POP SDS44 .125 X .188-.250"
40	F82631032	8	NUT, KEPS 10-32
39	92000806	1	DOOR ASSY, GRINDER, SENTRY
38	92000234	1	HUB ASSY, BEATER W/HAMMERS, D MILL
37	90001190	1	PLATE WLDMT, MOTOR ADJUSTMENT, SENTRY
36	90001146	1	HOUSING WLDMT, SENTRY
35	90000871	1	INLET WLDMT, 6" DIA, SENTRY 1000
34	90000142	1	SCREEN WLDMT, 3/16" D
33	80020017	1	PLATE, BUILD: CLIPPER, FERRELL-ROSS
32	80014002	3.7	TAPE, POLY OPEN CELL, .38 X .50 X 45.00"
31	80010509	1	CAPLUG-D HUB
30	80006517	2	DECAL, MOTOR WARRANTY SERVICE
28	80003662	1	DECAL, MIX-MILL 5 x 21
27	80003643	1	DECAL, WARNING, BELT & CHAIN
26	80003641	1	DECAL, DANGER HIGH VOLTAGE
25	70010504	4	HHCS,W/LOCK 1/2-13 X 1.00"
24	70004510	2	LATCH, MILL DOOR CL-250-PA
23	67003300	2	NUT, HEX NYLOCK, 1/4-20
22	66903846	2	HHCS, F/T 5/16-18 X 3.50"
21	66443800	8	WASHER, LOCK HELICAL 5/16"
20	66443300	17	WASHER, LOCK HELICAL 1/4"
19	66441800	2	WASHER, LOCK HELICAL, #6
18	66403800	6	WASHER, FLAT, 5/16" TYPE A
17	66403300	8	WASHER, FLAT 1/4"
16	66083800	4	NUT, HEX 5/16-18
15	65683812	6	SCW, MACH HX WSH HD T/C 5/16-18 X 1/2"
14	65483317	13	SCW, MACH HX WSH HD T/C 1/4-20 X 3/4"
13	65403817	4	SCW, MACH HX WSHR HD T/C 5/16-18 X .75"
12	65403312	4	SCW, MACH HX WSHR HD T/C 1/4-20 X .50"
11	62583317	2	HHCS, 1/4-20 X 3/4"
10	60283822	4	BOLT, CARR 5/16-18 X 1.00"
9	44010716	1	BSHG, QD SD 1.375"
8	33000602	1	MTR, 7.5 HP 1S36 O/6 230V TEFC 213TC
7	33000304	1	MTR, .5HP 1D18 O/6 115/208-230V TEFC 56
6	31008025	1	SWITCH, MICRO, DOOR
5	11221780	1	BACK, GUARD, DISCH AUGER, SENTRY
4	11221750	1	COVER, GUARD, DISCHARGE AUGER, SENTRY
3	11217670	1	BEARING PLATE, 3.5" AUGER, GUARD BACK, SENTRY
2	11196280	2	GUARD, LATCH, D MILL
1	11195910	1	PLATE, WEAR, HOUSING, D MILL

NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. * LINE ITEM, NOT INCLUDED IN BILL OF MATERIAL. SEE SALES ORDER.

DETAIL A
 SCALE 3/10

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CAD
 NO MANUAL CHANGES

TOLERANCES
 EXCEPT AS NOTED

DECIMAL: .005
 .01 ± .005
 .030 ± .005

FRACTIONAL: 1/32 ± 1/32

ANGULAR: ± 1/2

DIVISION OF A. T. FERRELL COMPANY
 BLUFFTON, INDIANA - USA

FINISH: TOUCH UP PAINT

SCALE: 0.19:1

DRAWN BY: dmjohnson

APPROVED BY: DMJ

TITLE: HAMMER MILL ASSY, 5-10 HP 1 PH, SENTRY 1000

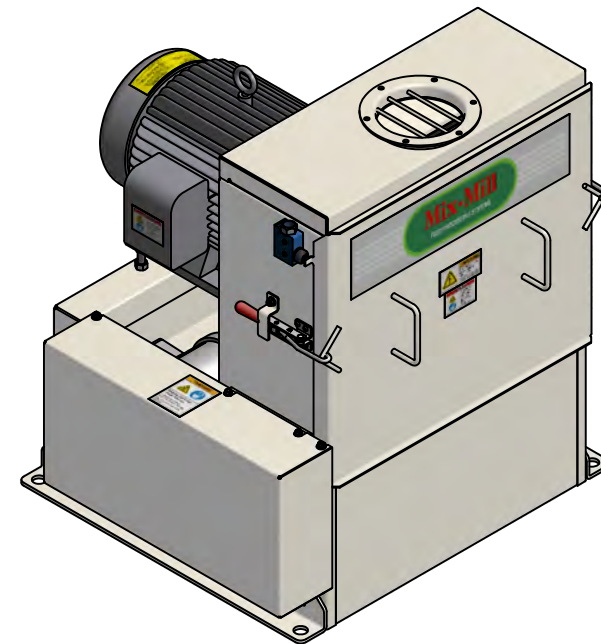
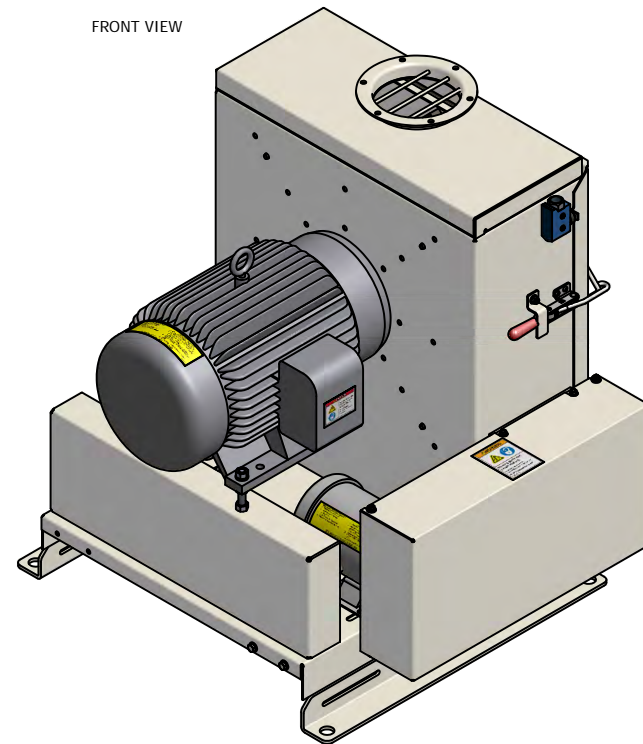
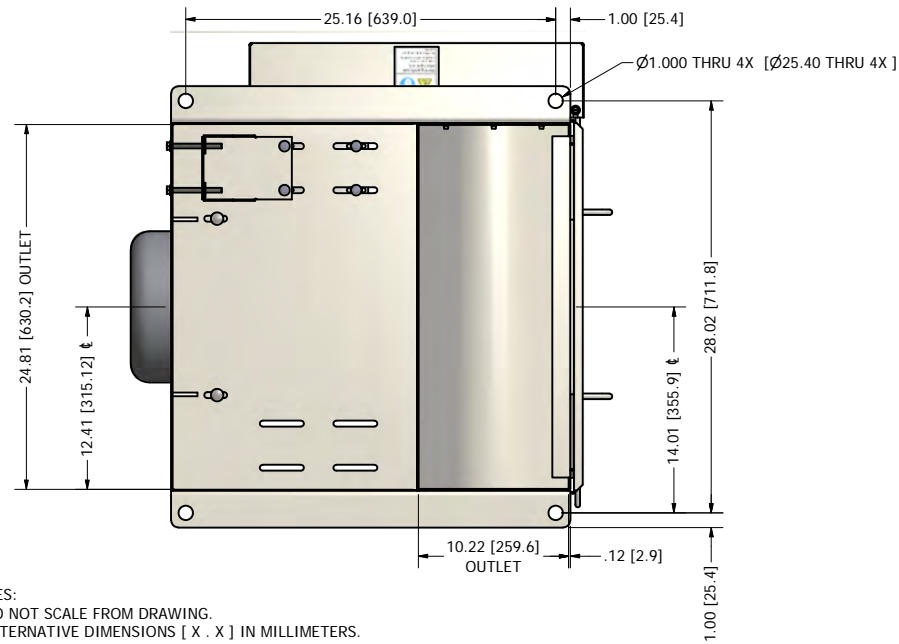
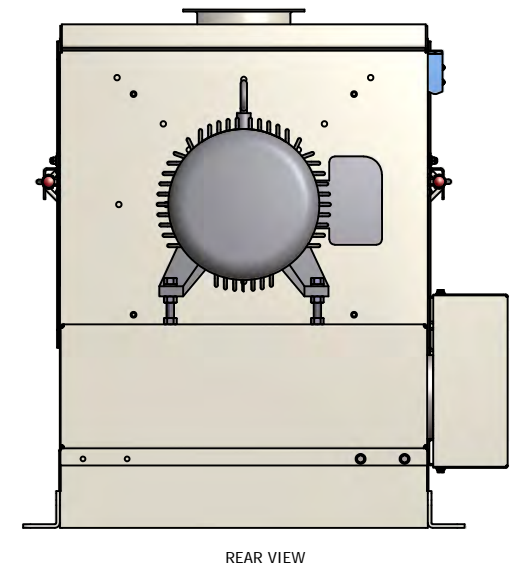
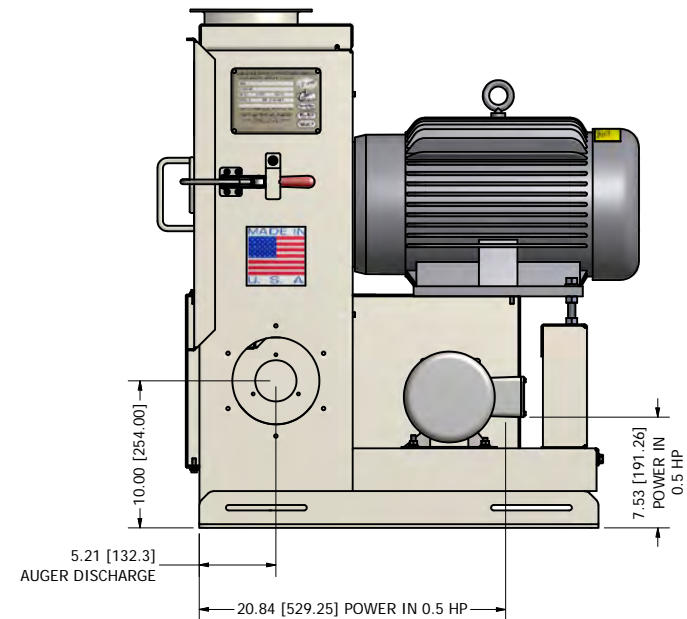
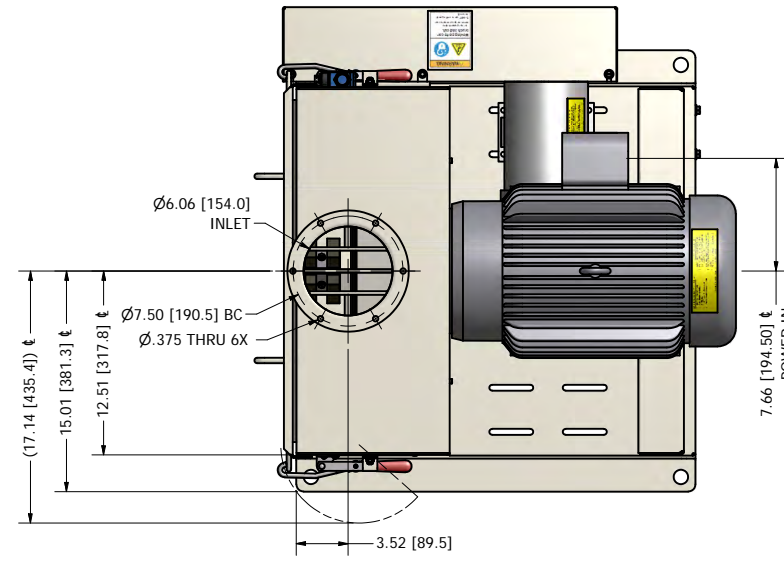
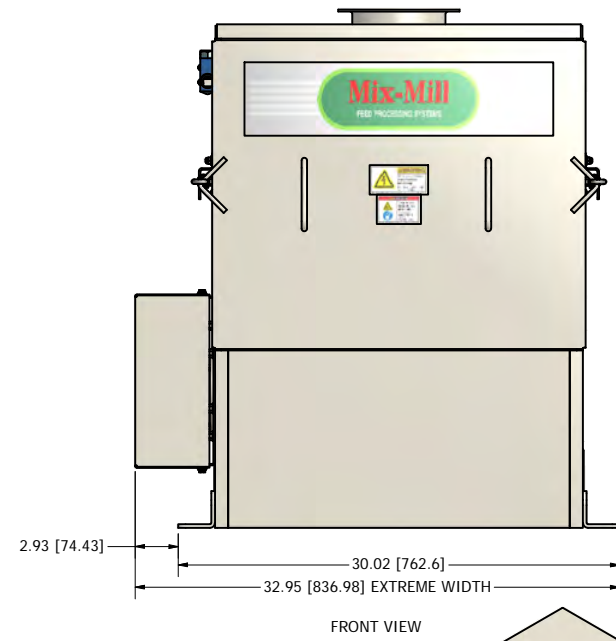
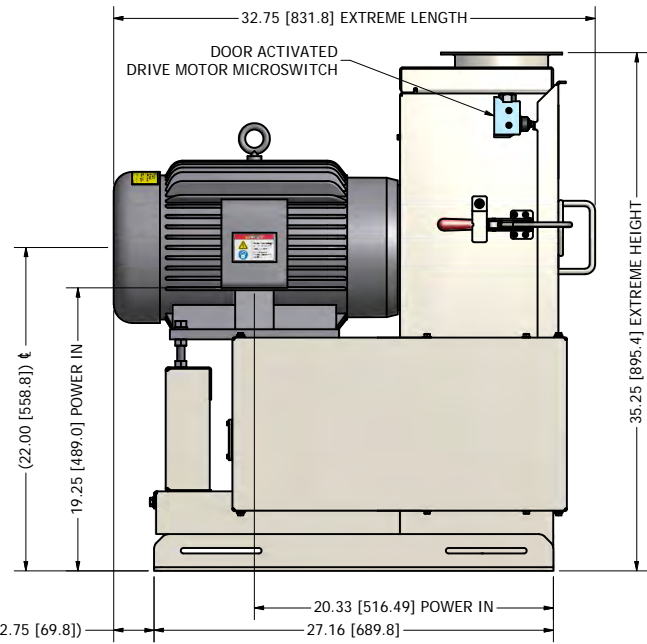
DATE: 9/28/2009

SIZE: D

PART NUMBER: 92001552

SHEET: 1 of 1

REVISION HISTORY				
REV	ECN	DESCRIPTION	DATE	APPROVED
A	100143	RELEASE	5/21/2010	dmjohnson

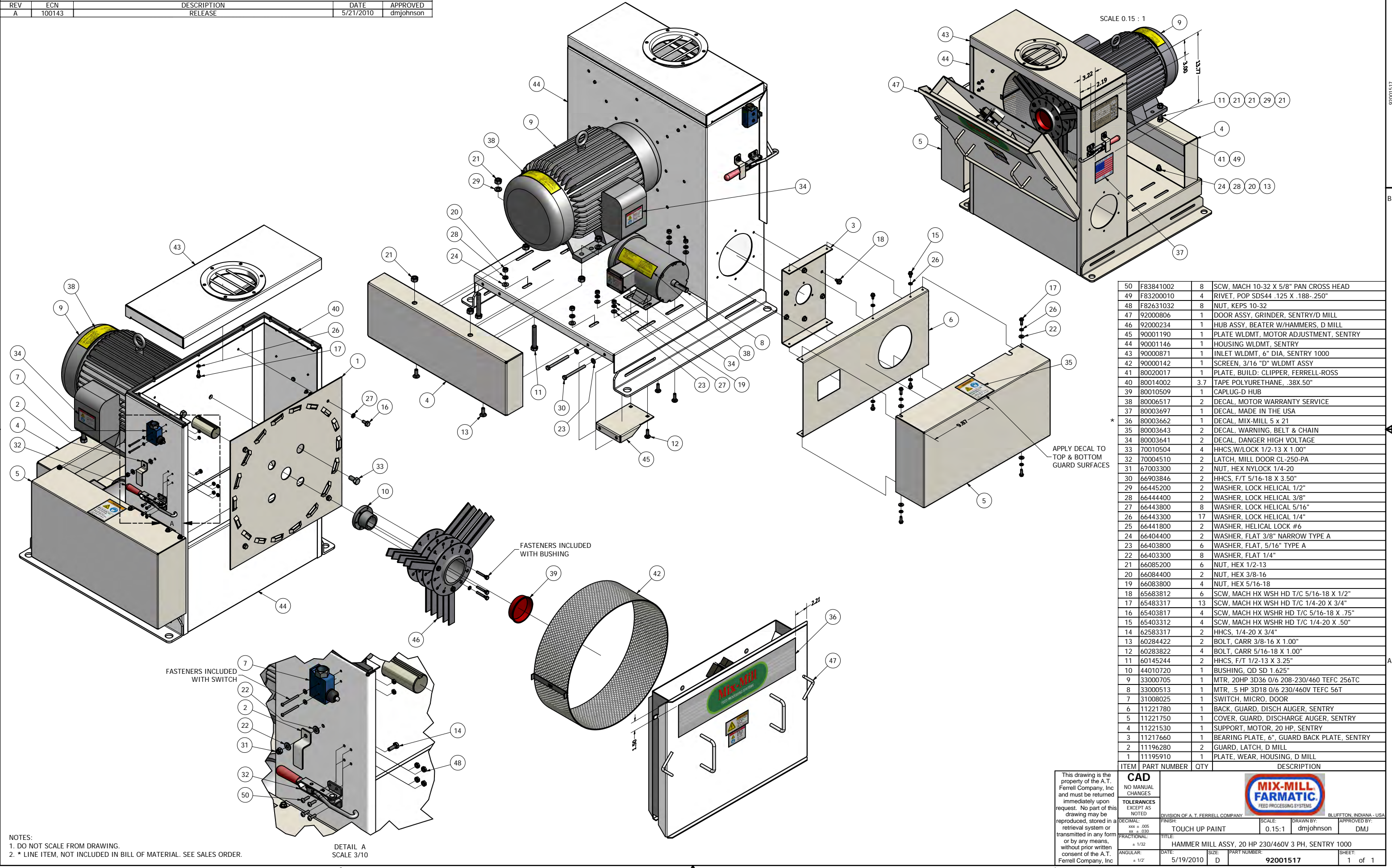


- NOTES:
- DO NOT SCALE FROM DRAWING.
 - ALTERNATIVE DIMENSIONS [X . X] IN MILLIMETERS.
 - RECOMMENDED MAINTENANCE CLEARANCE; FRONT: 36.00 [914.4], SIDE & REAR: 24.00 [609.6]
 - WEIGHT AS SHOWN WITH 10 HP DRIVE MOTOR: 545 LBS [247 KG].

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	NO MANUAL CHANGES	FINISH: TOUCH UP PAINT	SCALE: 0.16:1	DRAWN BY: dmjohnson	APPROVED BY: DMJ
	TOLERANCES EXCEPT AS NOTED	TITLE: HAMMER MILL ASSY, 20 HP 230/460V 3 PH, SENTRY 1000			
	DECIMAL: .005 xx ± .030	DATE: 5/19/2010	SIZE: D	PART NUMBER: 92001517-1	SHEET: 1 of 1



REVISION HISTORY				
REV	ECN	DESCRIPTION	DATE	APPROVED
A	100143	RELEASE	5/21/2010	dmjohnson



50	F83841002	8	SCW, MACH 10-32 X 5/8" PAN CROSS HEAD
49	F83200010	4	RIVET, POP SDS44 .125 X .188-.250"
48	F82631032	8	NUT, KEPS 10-32
47	92000806	1	DOOR ASSY, GRINDER, SENTRY/D MILL
46	92000234	1	HUB ASSY, BEATER W/HAMMERS, D MILL
45	90001190	1	PLATE WLDMT, MOTOR ADJUSTMENT, SENTRY
44	90001146	1	HOUSING WLDMT, SENTRY
43	90000871	1	INLET WLDMT, 6" DIA, SENTRY 1000
42	90000142	1	SCREEN, 3/16" D" WLDMT ASSY
41	80020017	1	PLATE, BUILD: CLIPPER, FERRELL-ROSS
40	80014002	3.7	TAPE POLYURETHANE, .38X.50"
39	80010509	1	CAPLUG-D HUB
38	80006517	2	DECAL, MOTOR WARRANTY SERVICE
37	80003697	1	DECAL, MADE IN THE USA
36	80003662	1	DECAL, MIX-MILL 5 X 21
35	80003643	2	DECAL, WARNING, BELT & CHAIN
34	80003641	2	DECAL, DANGER HIGH VOLTAGE
33	70010504	4	HHCS, W/LOCK 1/2-13 X 1.00"
32	70004510	2	LATCH, MILL DOOR CL-250-PA
31	67003300	2	NUT, HEX NYLOCK 1/4-20
30	66903846	2	HHCS, F/T 5/16-18 X 3.50"
29	66445200	2	WASHER, LOCK HELICAL 1/2"
28	66444400	2	WASHER, LOCK HELICAL 3/8"
27	66443800	8	WASHER, LOCK HELICAL 5/16"
26	66443300	17	WASHER, LOCK HELICAL 1/4"
25	66441800	2	WASHER, HELICAL LOCK #6
24	66404400	2	WASHER, FLAT 3/8" NARROW TYPE A
23	66403800	6	WASHER, FLAT, 5/16" TYPE A
22	66403300	8	WASHER, FLAT 1/4"
21	66085200	6	NUT, HEX 1/2-13
20	66084400	2	NUT, HEX 3/8-16
19	66083800	4	NUT, HEX 5/16-18
18	65683812	6	SCW, MACH HX WSH HD T/C 5/16-18 X 1/2"
17	65483317	13	SCW, MACH HX WSH HD T/C 1/4-20 X 3/4"
16	65403817	4	SCW, MACH HX WSHR HD T/C 5/16-18 X .75"
15	65403312	4	SCW, MACH HX WSHR HD T/C 1/4-20 X .50"
14	62583317	2	HHCS, 1/4-20 X 3/4"
13	60284422	2	BOLT, CARR 3/8-16 X 1.00"
12	60283822	4	BOLT, CARR 5/16-18 X 1.00"
11	60145244	2	HHCS, F/T 1/2-13 X 3.25"
10	44010720	1	BUSHING, QD SD 1.625"
9	33000705	1	MTR, 20HP 3D36 0/6 208-230/460 TEFC 256TC
8	33000513	1	MTR, .5 HP 3D18 0/6 230/460V TEFC 56T
7	31008025	1	SWITCH, MICRO, DOOR
6	11221780	1	BACK, GUARD, DISCH AUGER, SENTRY
5	11221750	1	COVER, GUARD, DISCHARGE AUGER, SENTRY
4	11221530	1	SUPPORT, MOTOR, 20 HP, SENTRY
3	11217660	1	BEARING PLATE, 6", GUARD BACK PLATE, SENTRY
2	11196280	2	GUARD, LATCH, D MILL
1	11195910	1	PLATE, WEAR, HOUSING, D MILL

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CAD
NO MANUAL CHANGES
TOLERANCES EXCEPT AS NOTED

FINISH: TOUCH UP PAINT
SCALE: 0.15:1
DRAWN BY: dmjohnson
APPROVED BY: DMJ

MIX-MILL FARMATIC
FEED PROCESSING SYSTEMS
BLUFFTON, INDIANA - USA

DIVISION OF A.T. FERRELL COMPANY

DATE: 5/19/2010
SIZE: D
PART NUMBER: 92001517
SHEET: 1 of 1

NOTES:
1. DO NOT SCALE FROM DRAWING.
2. * LINE ITEM, NOT INCLUDED IN BILL OF MATERIAL. SEE SALES ORDER.

DETAIL A
SCALE 3/10

Control Panel Installation

1. Mount control panel in desired location.
2. Electrician must install a wire harness containing the appropriate wires as per wiring diagram on page 33 and 34.
3. Connect the color-coded wires as indicated by the diagram on page 19 and 20.
4. The discharge auger motor is prewired to junction box. Connect to control panel as shown on page 31-33 by field-installed wiring.
5. Mill motor (230V-1 Phase-3 wire) (230V-3 Phase-4 Wire) (575V-3 Phase-4 Wire) is prewired to the junction box on the mill. Connect to the control panel with field installed wiring to the terminal block that shows mill motor. The mill motor may be operated with either CW or CCW rotation. To change rotation, use the reversing switch supplied in the junction box on the mill 1 phase models only.

Incoming Power

A wire harness will have to be field supplied containing lines L1, L2, (L3 if 3 Phase) and a neutral, on three phase mills a separate 110V control circuit will also be needed. This harness needs to be connected from the circuit breaker box to the Sentry mill panel. These leads should be sized accordingly to the amps on the mill nameplate and any other additional motors that are added. Connect lines L1, L2, (and L3) of the incoming power to L1, L2, (and L3) of the terminal block. All equipment must be grounded according to local electrical codes.

Installation Procedures

WARNING!

Failure to properly ground this machine could lead to serious injury to animals or persons operating the equipment. Grounding of all equipment is recommended. Grounding should be in accordance with the national electrical code and should be consistent with should local practice.

Before attempting repairs to any equipment, disconnect and “**lock out**” the incoming power to that equipment. An electrical shock can be obtained from an electric motor even though the incoming power is shut off. This could be caused by capacitor discharge in single phase or capacitor type motors.

2

REVISION HISTORY

REV	ECN	DESCRIPTION	DATE	APPROVED
A	100071	RELEASE	3/8/2010	dmljohnson
B	110181	DIN RAIL WITH TERM BLOCKS WAS TERMINAL STRIPS AND GROUND LUG	8/18/2011	dcclark
C	110221	UPDATED ASSY, CLEANED UP BUILD	11/2/2011	SH

1

REV	ECN	DESCRIPTION	DATE	APPROVED
A	9200255			

B

ITEM	PART NUMBER	QTY	DESCRIPTION
28	8A350G1	4	SCREW, 8-32 X 3/8 TRUSS TC
27	80006556	1	DECAL, 3 PHASE
26	70001021	1	CLAMP, LOOP, EPDM CUSHION ZINC, 3/4"
25	66401800	2	WASHER, FLAT #6
24	66082200	1	NUT, HEX 8-32
23	65502208	2	SCW, HEX WASHER HEAD T/C A, #8-32 X .38"
22	65482217	1	SCW, MACH HK SLT HD T/C 8-32 X 3/4"
21	64681822	2	SCW, MACH PAN SLT HD T/C 6-32 X 1.00"
20	31018649	1	JUMPER, SCREW CENTER 2 POLE YELLOW (AB1492-CJ10-2)
19	31018648	1	CKT FEED (AB1492J100R) BLK 10MM
18	31018636	2	CKT FEED (AB1492J10G) BLK, 10MM
17	31018635	2	CKT FEED (AB1492J10B) BLK 10MM
16	31018634	1	END BARRIER (AB1492-N37)
15	31009014	4	TERM BLOCK AB1392W4
14	31009013	4	TERM BLOCK AB1492EA135
13	31009010	2	TERM BLK AB1492WG4 MOD GND TERM M 4/6
12	31008530	1	TERMINAL, #10 RING 8GA INSULATED
11	31008526	1	TERMINAL, RING #8 INSUL, 14-16 AWG
10	31008504	3	TERMINAL, FORK #8 INSUL, 14-16 AWG
9	31008001	1	SWITCH, MICRO, STR LEVER 2.5 OZ
8	30371600	1	WIRE, STRANDED TFFN 16GA PURPLE X 7.50"
7	30361600	1	WIRE, STRANDED TFFN 16GA ORANGE X 7.50"
6	30351600	1	WIRE, STRANDED TFFN 16GA YELLOW X 7.50"
5	30331400	1	WIRE, STRANDED 14GA GREEN X 5"
4	30330800	1	WIRE, #8 LEAD GREEN X 7"
3	11223060	1	INSERT, JUNCTION BOX, SENTRY
2	11222450	2	RAIL, DIN 3, 35 MM X 4.00"
1	11195950	1	INSULATOR, SWITCH

A

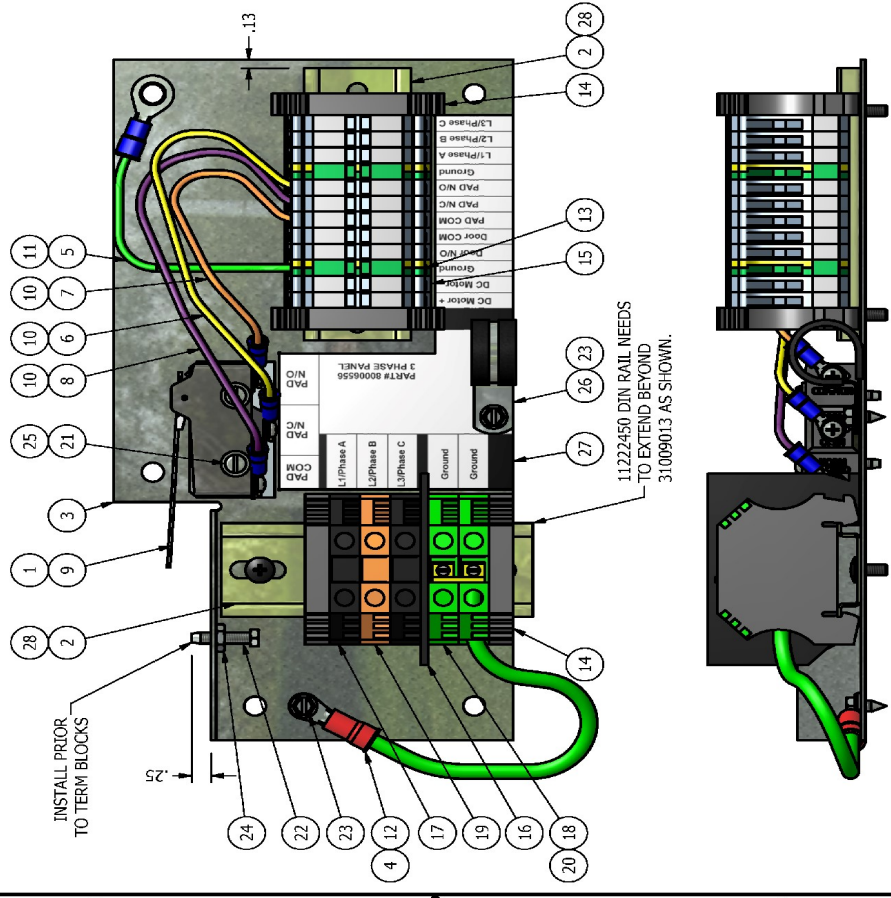


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DRAWN BY: dmljohnson
APPROVED BY: DMJ
DRAWN DATE: 3/5/2010

TOLERANCES EXCEPT AS NOTED:
DECIMAL: FRACTIONAL: FINISH
XX ± .030 ± .162
XXX ± .005 ANGULAR
XXXX ± .001 ± .12"

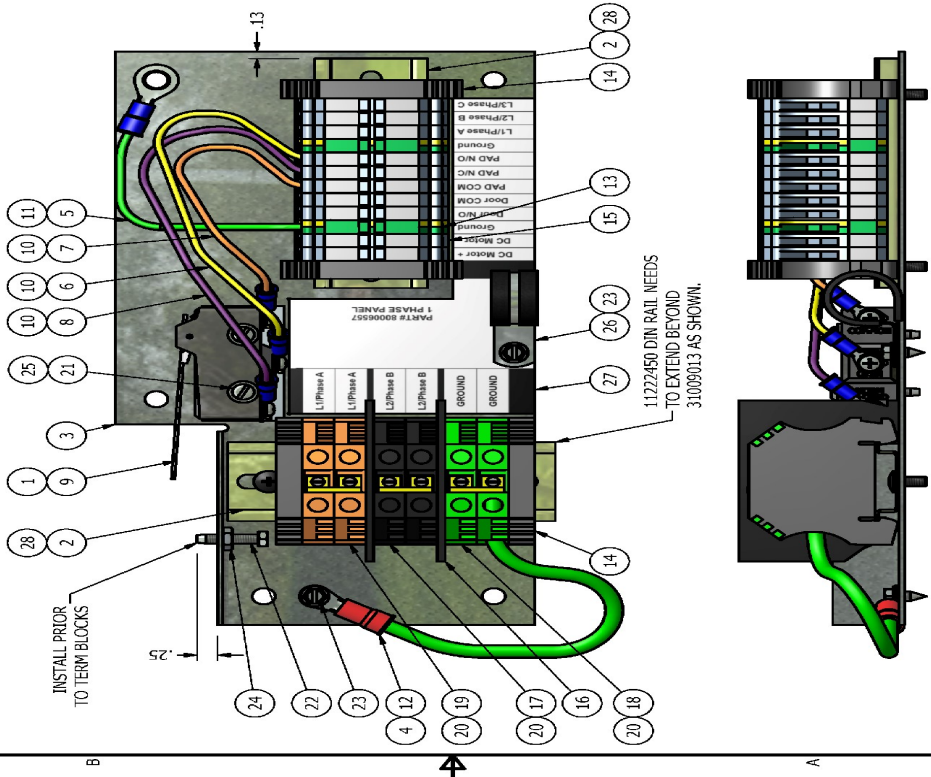
CAD NO MANUAL CHANGES
SCALE: 0.62:1
SHEET: 1 OF 1
SIZE: B
PART NUMBER: 92000255
REV: C



- NOTES:
- DO NOT SCALE FROM DRAWING.
 - ONE PIECE REQUIRED PER 92000248: HOPPER ASSY, PROPORTIONER 30, SENTRY.

REV	EON	DESCRIPTION	DATE	APPROVED
A	100071	RELEASE	3/8/2010	dmj@inelson
B	110181	DIN RAIL WITH TERM BLOCKS WAS TERMINAL STRIPS AND GROUND LUG UPDATED ASSY, CLEANED UP BUILD	8/18/2011	dcclerk
B	110221		11/2/2011	SH

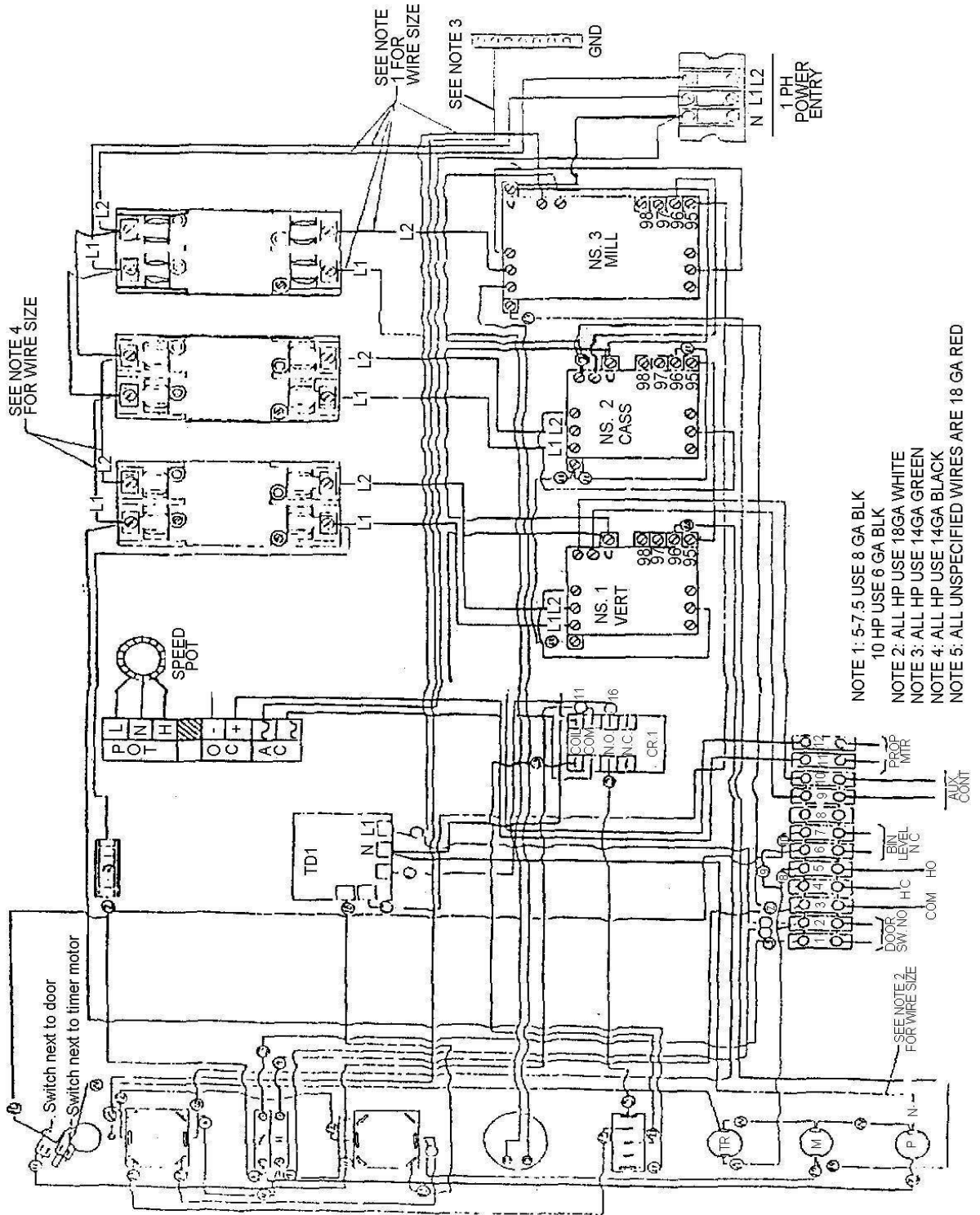
28	8A3510G1	4	SCREW, 8-32 X 3/8 TRUSS TC
27	80006557	1	DECAL, 1 PHASE
26	70001021	1	CLAMP, LOOP, EPDM CUSHION ZINC, 3/4"
25	66401800	2	WASHER, FLAT #6
24	66082200	1	NUT, HEX 8-32
23	65502208	2	SCW, HEX WASHER HEAD T/C A, #8-32 X .38"
22	65482217	1	SCW, MACH HX SLT HD T/C 8-32 X 3/4"
21	64681822	2	SCW, MACH PAN SLT HD T/C 6-32 X 1.00"
20	31018649	3	JUMPER, SCREW CENTER 2 POLE YELLOW (AB1492-CJ10-2)
19	31018648	2	CKT FEED (AB1492J10CR) BLK 10MM
18	31018636	2	CKT FEED (AB1492J10G) BLK 10MM
17	31018635	2	CKT FEED (AB1492J10BL) BLK 10MM
16	31018634	2	END BARRIER (AB1492-AB37)
15	31009014	10	TERM BLOCK AB1392W4
14	31009013	4	TERM BLOCK AB1492EA135
13	31009010	2	TERM BLK AB1492WGH MOD GND TERM M 4/6
12	31008530	1	TERMINAL, #10 RING 8GA INSULATED
11	31008526	1	TERMINAL, RING #8 INSUL, 14-16 AWG
10	31008504	3	TERMINAL, FORK #8 INSUL, 14-16 AWG
9	31008001	1	SWITCH, MICRO, STR LEVER 2.5 OZ
8	30371600	1	WIRE, STRANDED TFFN 16GA PURPLE X 7.50"
7	30361600	1	WIRE, STRANDED TFFN 16GA ORANGE X 7.50"
6	30351600	1	WIRE, STRANDED TFFN 16GA YELLOW X 7.50"
5	30331400	1	WIRE, STRANDED 14GA GREEN X 5"
4	30330800	1	WIRE, #8 LEAD GREEN X 7"
3	11223060	1	INSERT, JUNCTION BOX, SENTRY
2	11222450	2	RAIL, DIN 3, 35 MM X 4.00"
1	11195950	1	INSULATOR, SWITCH



NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. ONE PIECE REQUIRED PER 92000251: HOPPER ASSY, PROPORTIONER 10, SENTRY.

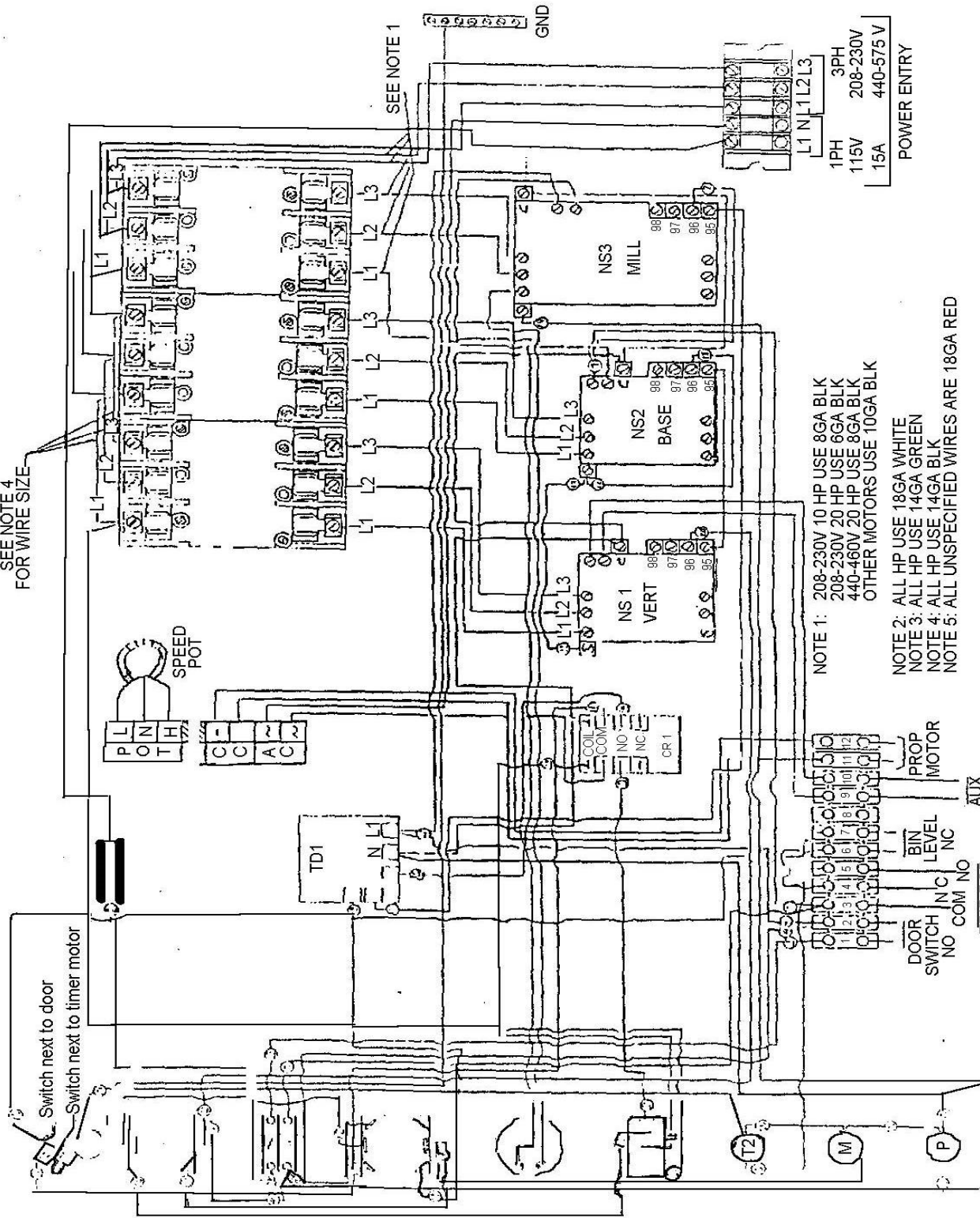
		DIVISION OF A.T. FERRELL COMPANY 1440 S ADAMS ST BLUFFTON, INDIANA 46714 - USA PH: 260-824-3400 FAX: 260-824-5463	
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TOLERANCES EXCEPT AS NOTED: DECIMAL: XX ± .030 FRACTIONAL: XX ± .132 FINISH: XXX ± .005 ANGULAR: ± .12° XXXX ± .001		TITLE: PANEL ASSY, JUNCTION BOX, 1 PHASE, SENTRY	
CAD NO MANU CHANGES		SCALE: 0.62:1 SHEET: 1 OF 1 SIZE: B PART NUMBER: 92000256 REV: B	

PANEL WIRING SENTRY 3000, 2000 SINGLE PHASE



- NOTE 1: 5-7.5 USE 8 GA BLK
10 HP USE 6 GA BLK
- NOTE 2: ALL HP USE 18GA WHITE
- NOTE 3: ALL HP USE 14GA GREEN
- NOTE 4: ALL HP USE 14GA BLACK
- NOTE 5: ALL UNSPECIFIED WIRES ARE 18 GA RED

PANEL WIRING SENTRY 3000, 2000 THREE PHASE



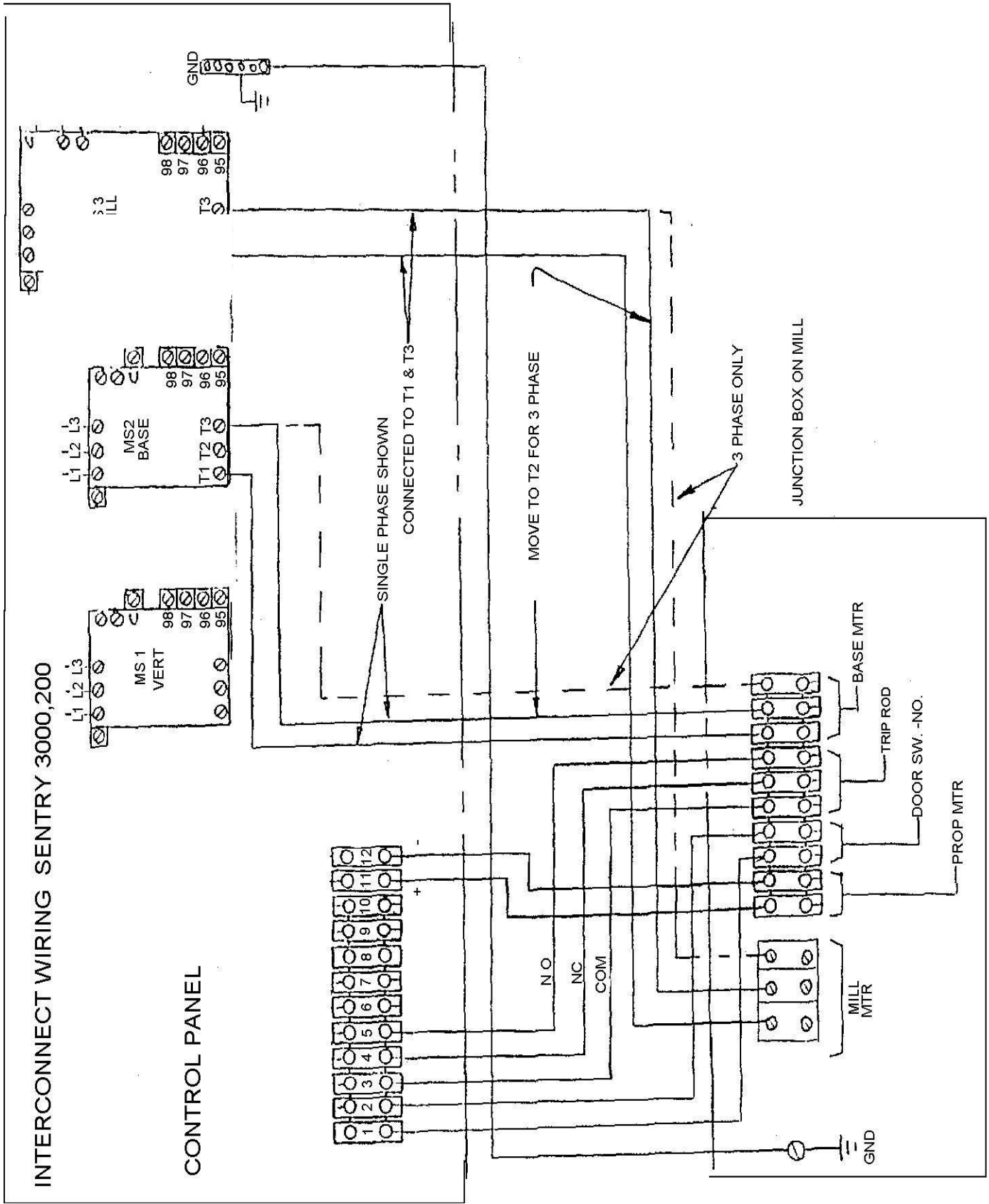
SEE NOTE 4
FOR WIRE SIZE

SEE NOTE 1

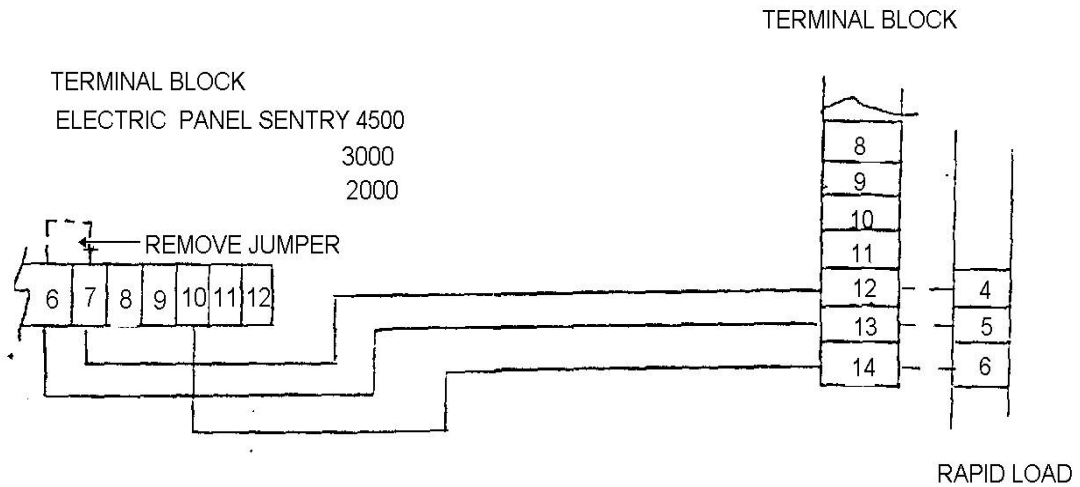
NOTE 1: 208-230V 10 HP USE 8GA BLK
 208-230V 20 HP USE 6GA BLK
 440-460V 20 HP USE 8GA BLK
 OTHER MOTORS USE 10GA BLK

NOTE 2: ALL HP USE 18GA WHITE
 NOTE 3: ALL HP USE 14GA GREEN
 NOTE 4: ALL HP USE 14GA BLK
 NOTE 5: ALL UNSPECIFIED WIRES ARE 18GA RED

SEE NOTE 2
FOR WIRE SIZE



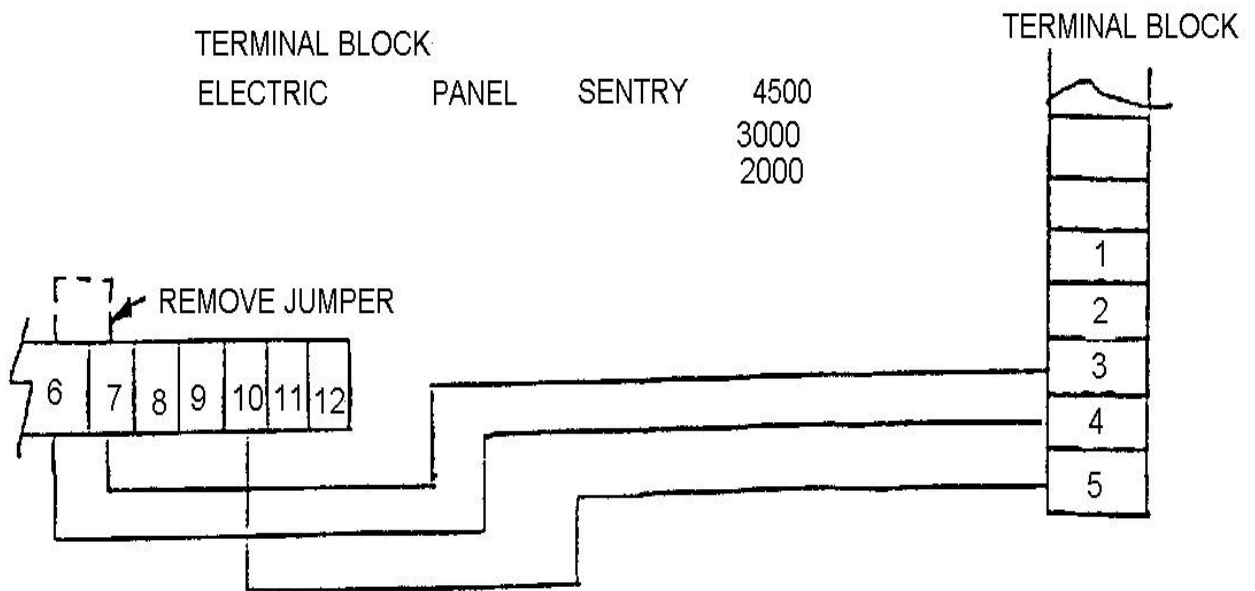
PNEUMATIC PANEL 2", 3-1/2", OR RAPID LOAD TO ELECTRIC PANEL SENTRY



JUMPER MUST BE INSTALLED BETWEEN 15 amp FUSES LOAD SIDE LINE 1 AND TERMINAL 9 IN MILL PANEL

NOTE: BE CERTAIN THAT L1 OF MILL AND L1 OF AIR CONVEYOR ARE ON THE SAME LINE. DAMAGE TO PANEL COMPONENTS WILL RESULT IF VOLTAGE DIFFERENCE BETWEEN L1 OF MILL AND L1 OF AIR CONVEYOR IS 230 VOLTS.

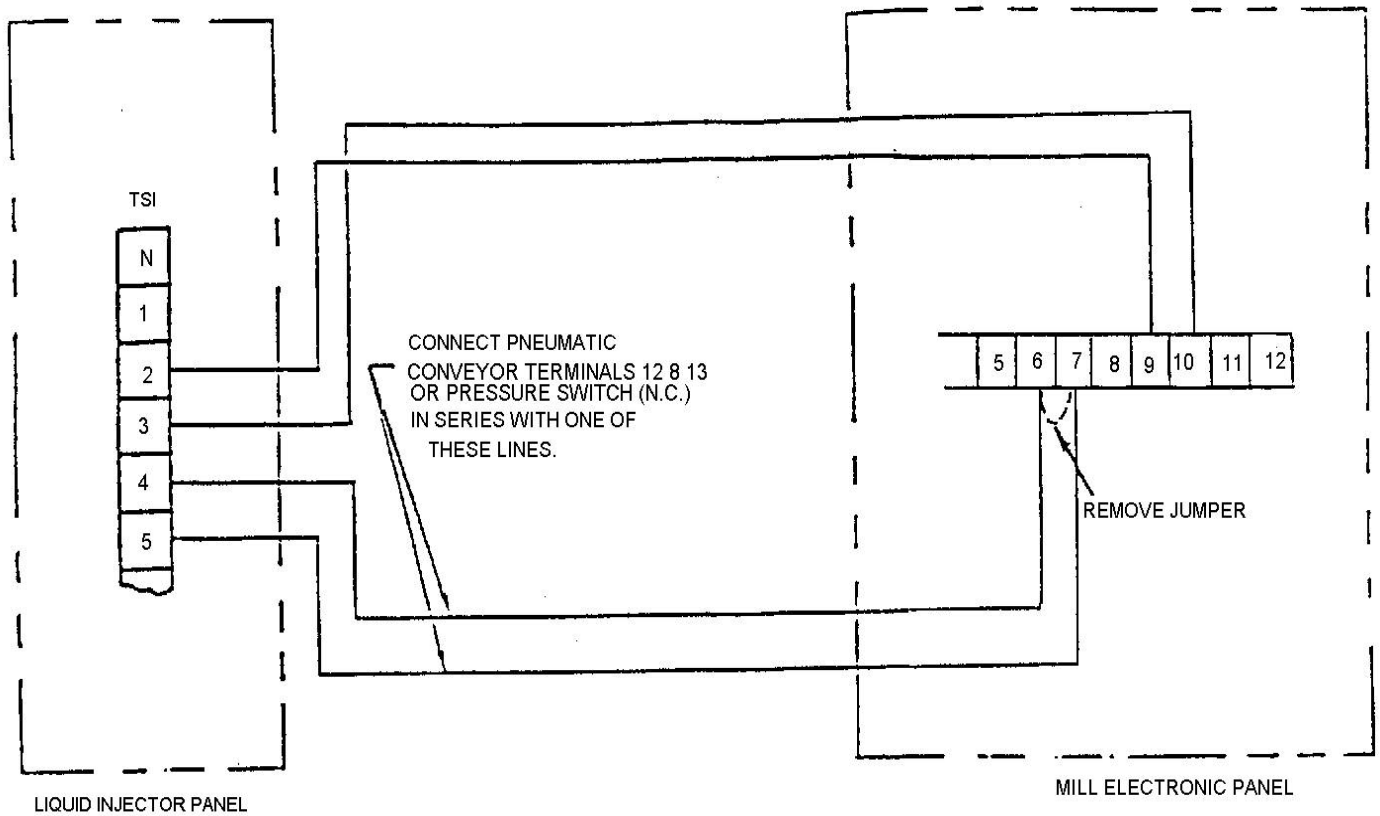
CABINET STYLE PNEUMATIC PANEL 2" TO ELECTRIC PANEL SENTRY



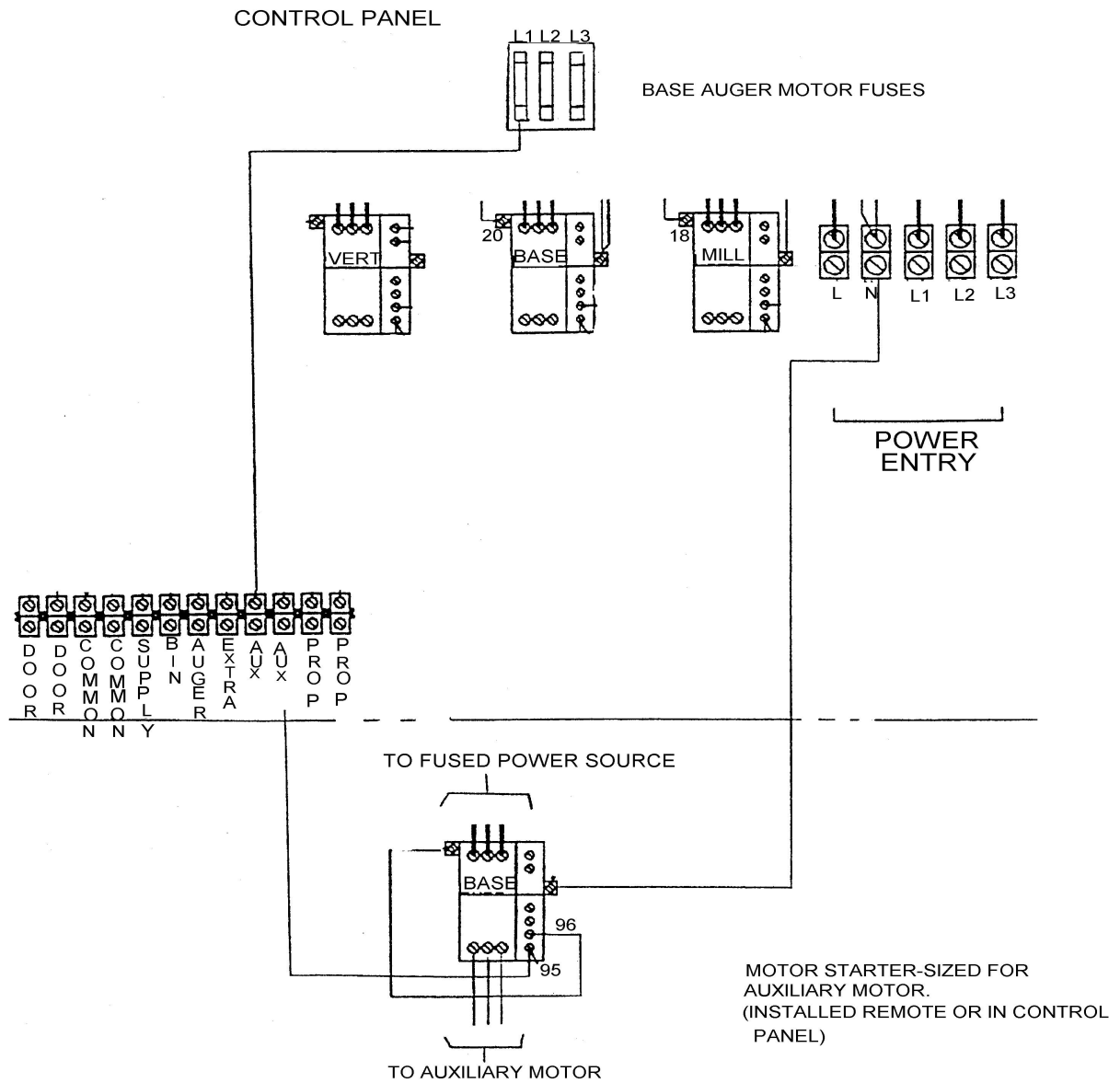
Jumper must be installed between 15 amp
Fuses load side line 1 and terminal 9
In mill panel.

Note: Be certain that L1 of mill and L1
of air conveyor are on the same
line. Damage to panel
components
will result if voltage difference
between L1 of mill and L1 of air
conveyor is 230 volts.

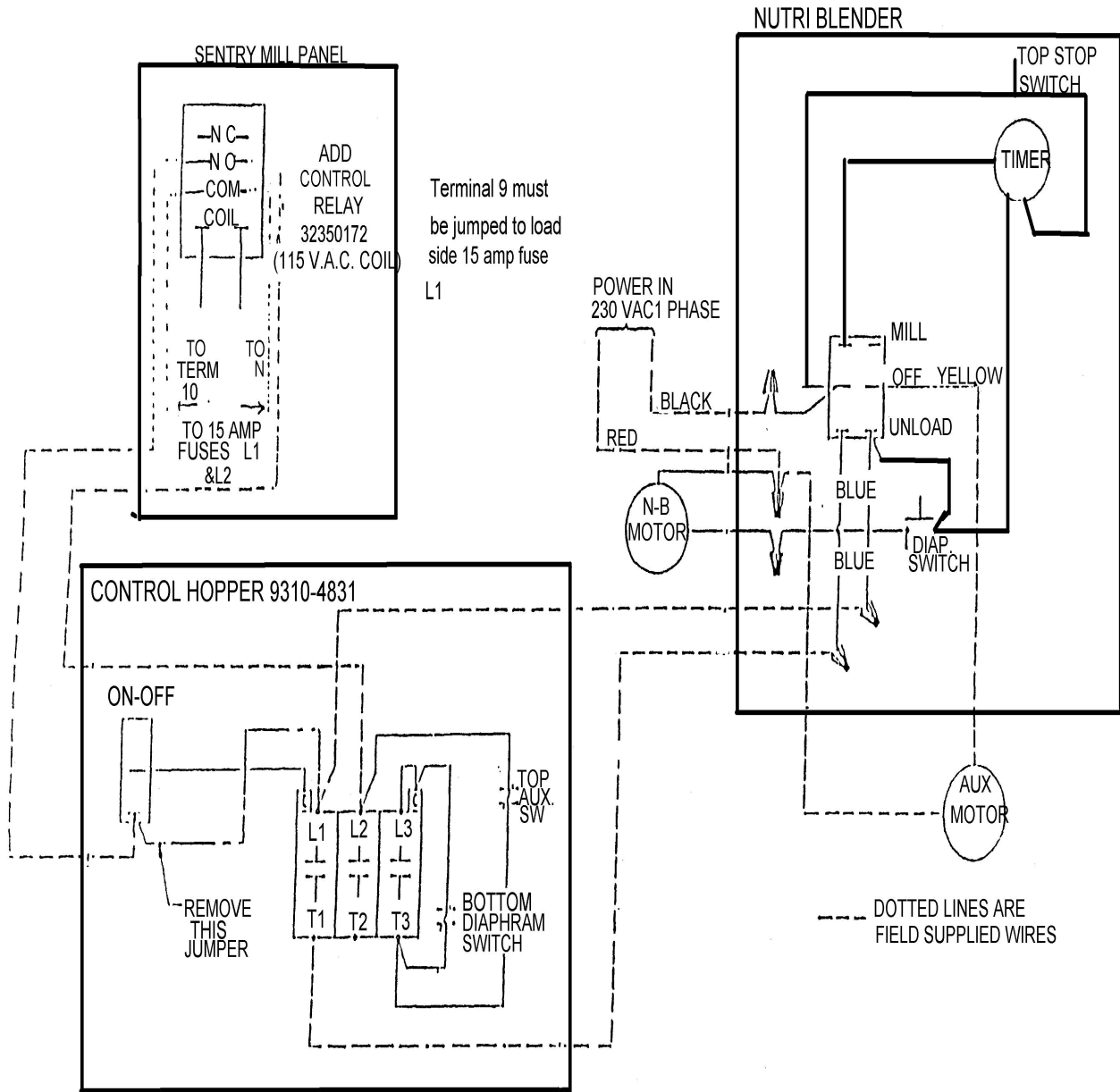
INJECTOR TO ELECTRIC PANEL SENTRY



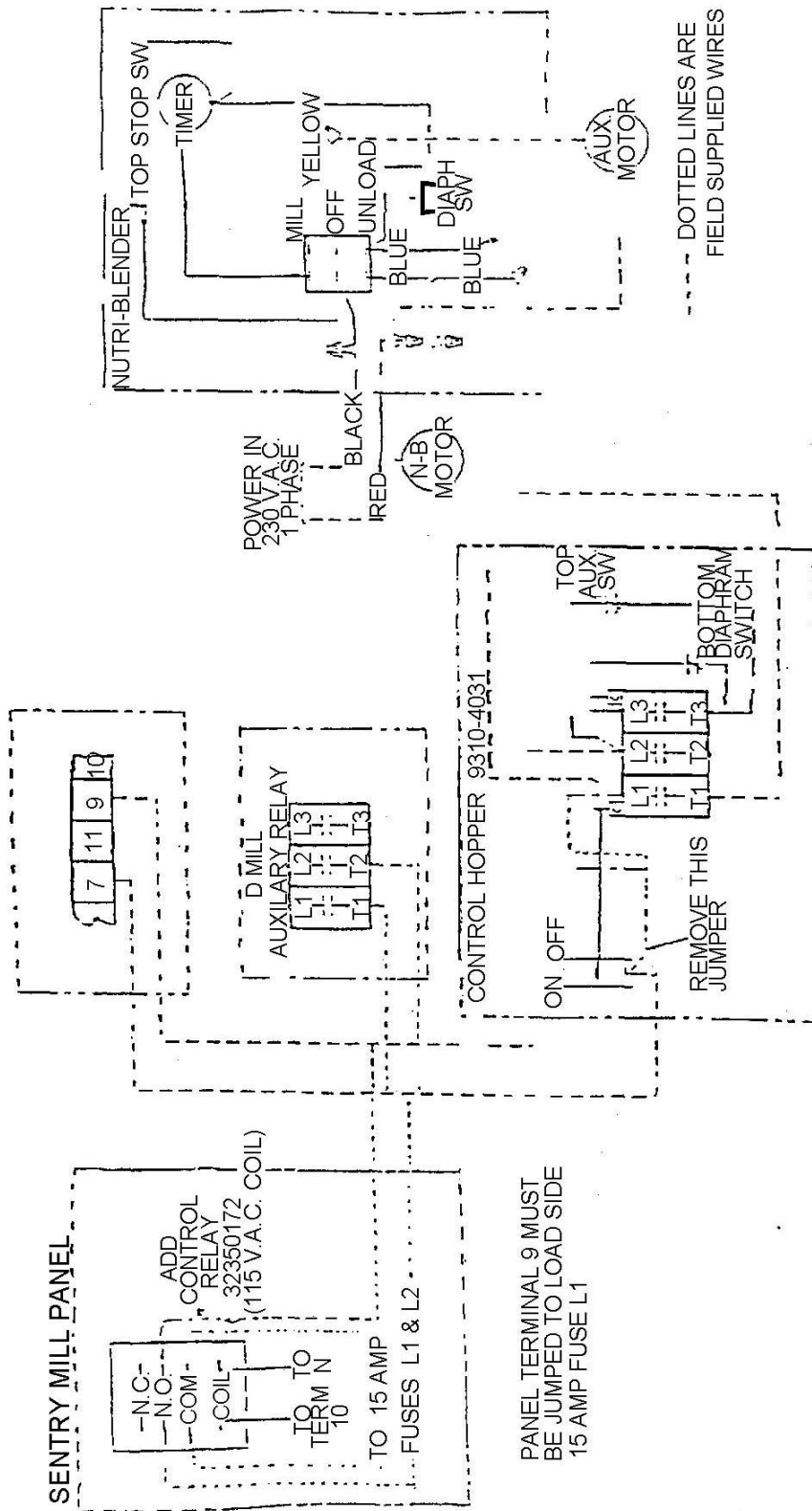
AUXILLARY AUGERS TO SENTRY PANEL



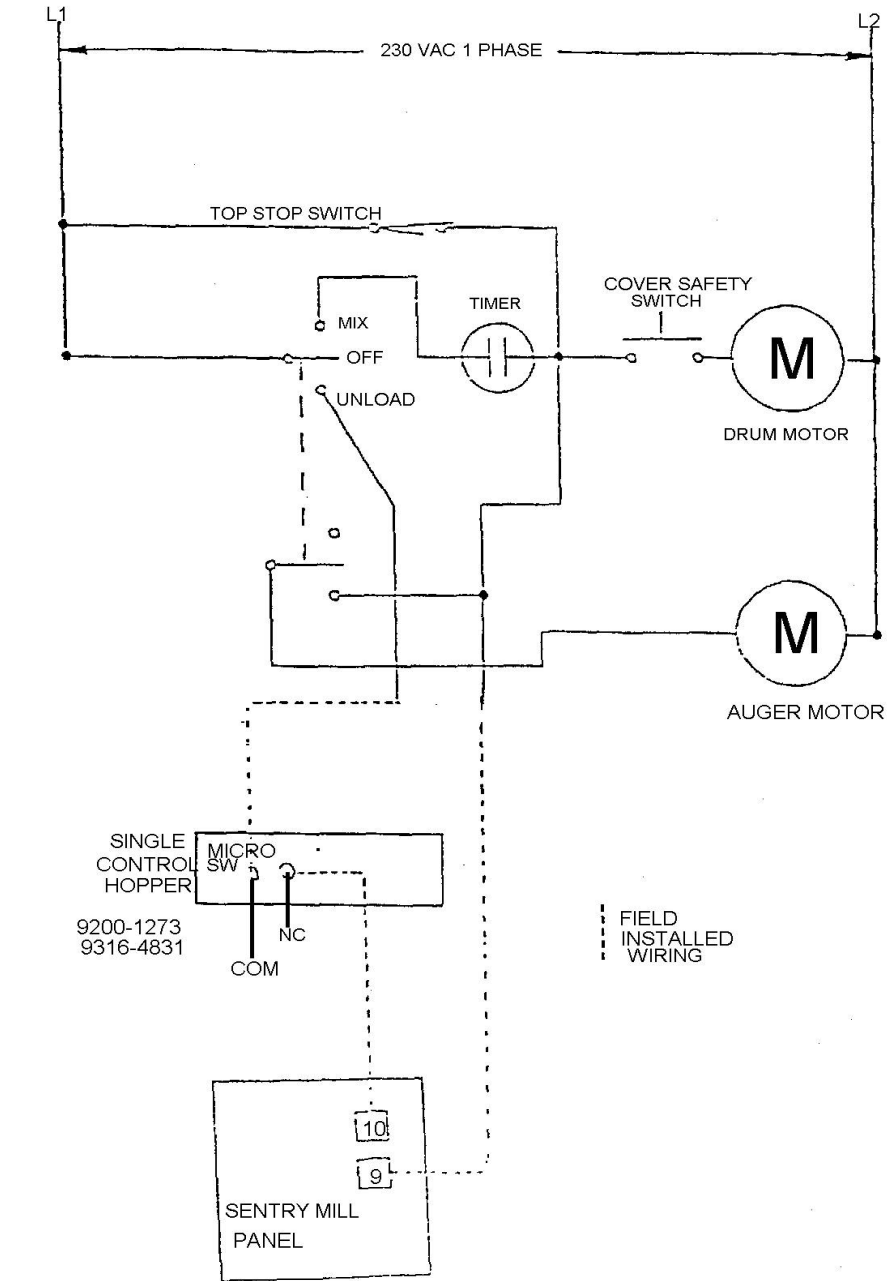
SENTRY MILL WITH NUTRI-BLENDER AND CONTROL HOPPER CONNECTIONS

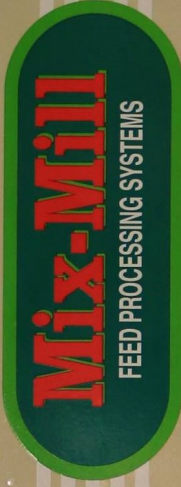


Nutri-blender for gravity mills and double diameter control Hopper



Nutri-blender for Sentry mill and single control hopper





SPEED POT
91000509

AUTOM BOOT PROCESSING SYSTEMS FOR LIVESTOCK AND Poultry

RED LIGHT
302013

AMBER-2 LIGHTS
302012

AMBER-2 SEAL
80011521

AMMETER
302017

SWITCH BLOCK
3-POS
31008052

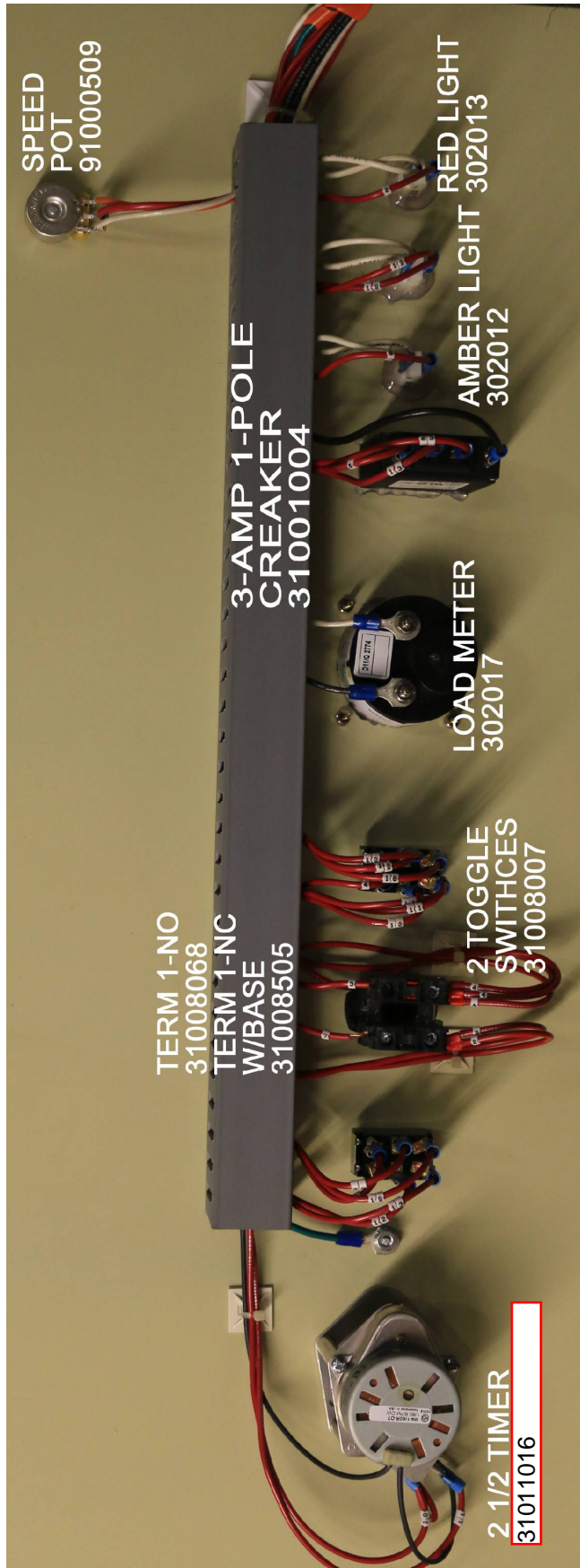
TIMER KNOB
31011009

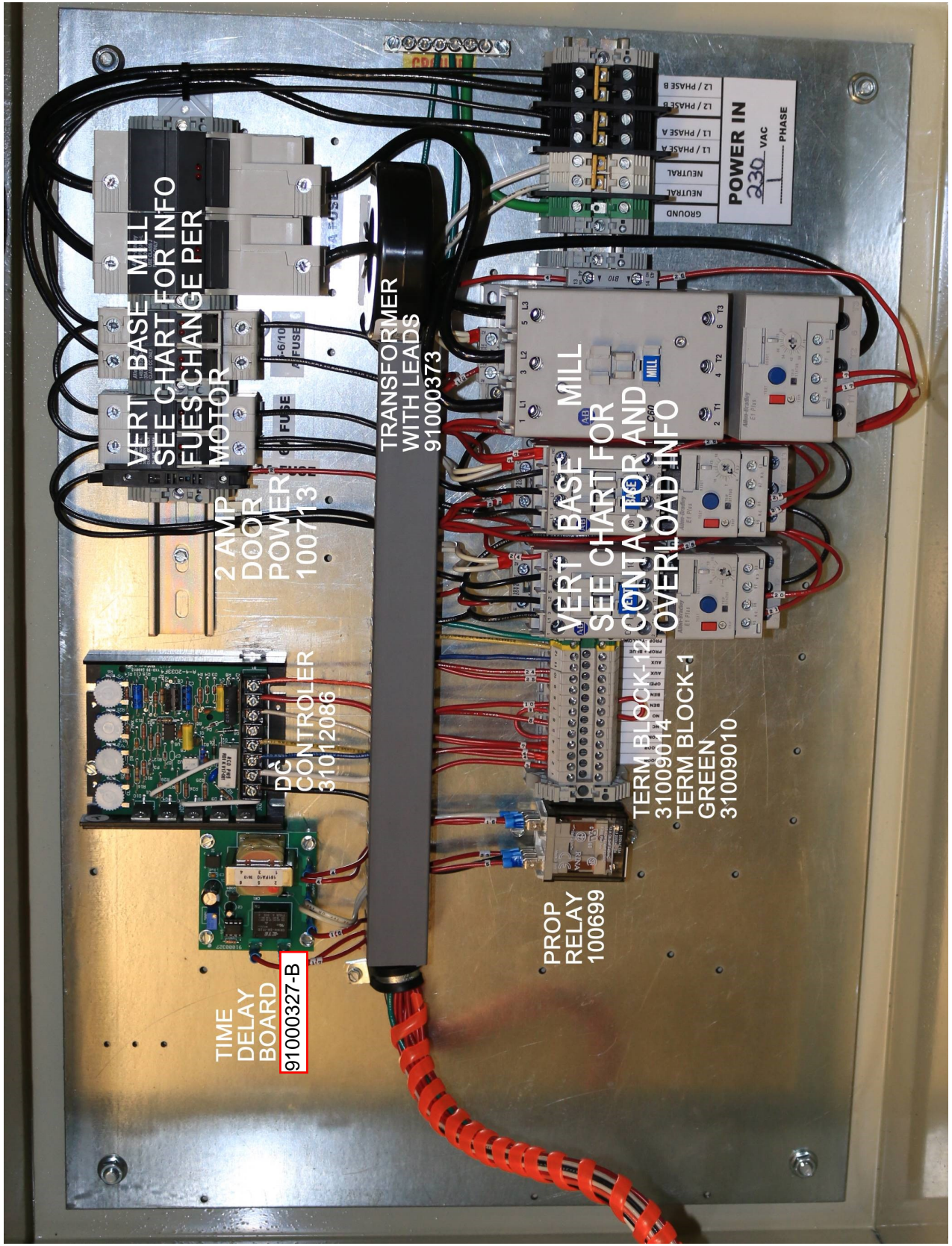
2-SILICON COVER
100945

POWER
PHOTO-EYE
AC AMPERES
MILL MOTOR CURRENT
AUTO
CALIBRATE
START
OFF
CLEAN OUT
TIMER

<p>⚠ DANGER</p> <p>Une tension dangereuse causera des blessures graves ou la mort. Couper l'alimentation et couper le courant avant de faire l'entretien.</p>	<p>⚠ DANGER</p> <p>Hazardous voltage will cause serious injury or death. Turn off power and lock out before servicing.</p>	<p>⚠ PELIGRO</p> <p>El voltaje peligroso provocará lesiones graves o la muerte. Desconecte el suministro de energía y asegure con un candado antes de hacer el mantenimiento.</p>
<p>⚠ DANGER</p> <p>Disconnect main power before servicing!</p> <p>Each section's power switch controls that section only!</p>	<p>⚠ WARNING</p> <p>Disconnect main power before servicing!</p> <p>Each section's power switch controls that section only!</p>	<p>⚠ ADVERTENCIA</p> <p>Desconecte el interruptor principal de energía antes de hacer el mantenimiento. Cada interruptor de las secciones controla solo esa sección.</p>







VERT BASE MILL
SEE CHART FOR INFO
FUSES CHANGE PER
MOTOR

2 AMP
DOOR
POWER
100713

DC
CONTROLLER
31012086

TIME
DELAY
BOARD
91000327-B

TRANSFORMER
WITH LEADS
91000373

PROP
RELAY
100699

VERT BASE MILL
SEE CHART FOR
CONTACTOR AND
OVERLOAD INFO

TERM BLOCK-2
31009014
TERM BLOCK-1
GREEN
31009010

POWER IN
230 VAC
PHASE

Motor Horsepower	Component	1 phase 115 v	1 phase 220 v	3 phase (208)-230 v	3 phase 380 v	3 phase 460 v	3 phase 575 v
1/4	FuseHolder	31001093/1492-FB1C30-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L		31001095/1492-FB3C30-L	
	Fuse	31001112 / LP-CC-7	31001108/ LP-CC-4-1/2	31001104 / LP-CC-2		31011100 / LP-CC-1	
	Contactora	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10		31019101 / 100-C09D10	
	Overload	31019305 / 193-EEDB	31019304 / 193-EECB	31019304 / 193-EECB		31019302 / 193-EEBB	
Motor Current	4.6	2.3	1.3a		0.65a		
1/3	FuseHolder	31001093/1492-FB1C30-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L		31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
	Fuse	31001114 / LP-CC-9	31001108/ LP-CC-4-1/2	31001106 / LP-CC-2-1/2		31011101 / LP-CC-1-1/4	31011100 / LP-CC-1
	Contactora	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10		31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019305 / 193-EEDB	31019304 / 193-EECB	31019304 / 193-EECB		31019302 / 193-EEBB	31019302 / 193-EEBB
Motor Current	6.0a	3.0a	1.6a		0.8a	0.64a	
1/2	FuseHolder	31001093/1492-FB1C30-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
	Fuse	31001115 / LP-CC-10	31001110 / LP-CC-5-6/10	31001107 / LP-CC-3	31001103 / LP-CC-1-8/10	31011102 / LP-CC-1-6/10	31011101 / LP-CC-1-1/4
	Contactora	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019305 / 193-EEDB	31019304 / 193-EECB	31019304 / 193-EECB	31019304 / 193-EECB	31019302/ 193-EEBB	31019302 / 193-EEBB
Motor Current	7.4a	3.7	1.4	1.2a	0.77	0.8a	
3/4	FuseHolder	31001093/1492-FB1C30-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
	Fuse	31001116 / LP-CC-12	31001111 / LP-CC-6	31001108 / LPJ-4-1/2SP	31001106 / LP-CC-2-1/2	31011105 / LP-CC-2-1/4	31011103 / LP-CC-1-8/10
	Contactora	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019305 / 193-EEDB	31019305 / 193-EEDB	31019304/ 193-EECB	31019304 / 193-EECB	31019304 / 193-EECB	31019304 / 193-EECB
Motor Current	8.2a	4.1a	3.1	1.6a	1.5a	1.2a	
1	FuseHolder	31001093/1492-FB1C30-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
	Fuse	31001118 / LP-CC-20	31001114 / LP-CC-9	31001109 / LP-CC-5	31001107 / LP-CC-3	31001106 / LP-CC-2-1/2	31011104 / LP-CC-2
	Contactora	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019305 / 193-EEDB	31019305/ 193-EEDB	31019305 / 193-EEDB	31019304 / 193-EECB	31019304 / 193-EECB	31019304 / 193-EECB
Motor Current	12.8a	6.4a	3.1	1.8a	1.5a	1.5a	
1 1/2	FuseHolder	31001093/1492-FB1C30-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
	Fuse	31001119 / LP-CC-25	31001116 / LP-CC-12	31001112 / LP-CC-7	31001108 / LP-CC-4-1/2	31001107 / LP-CC-3	31001106 / LP-CC-2-1/2
	Contactora	31019105 / 100-C30D10	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019310 / 193-EEFD	31019308 / 193-EEEB	31019305 / 193-EEDB	31019304 / 193-EECB	31019304 / 193-EECB	31019304 / 193-EECB
Motor Current	18a	8.0a	(4.2) 5.0a	2.5a	2.9a	1.8a	

	FuseHolder	31001090/1492-FB1J60-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
2	Fuse	31001121 / LPJ-35SP	31001118 / LP-CC-20	31001113 / LPJ-8SP	31001109 / LP-CC-5	31001108 / LP-CC-4-1/2	31001107 / LP-CC-3
	Contactora	31019105 / 100-C30D10	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019310 / 193-EEFD	31019308 / 193-EEEB	31019305 / 193-EEDB	31019304 / 193-EECB	31019304 / 193-EECB	31019304 / 193-EECB
	Motor Current	22a	11a	(6a) 5.8	3.5a	2.9a	2.4a
	FuseHolder	31001090/1492-FB1J60-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
3	Fuse	31001123 / LPJ-45SP	31001118 / LP-CC-20	31001116 / LP-CC-12	31001112 / LP-CC-7	31001111 / LP-CC-6	31001109 / LP-CC-5
	Contactora	31019105 / 100-C30D10	31019103 / 100-C16D10	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019310 / 193-EEFD	31019308 / 193-EEEB	31019305 / 193-EEDB	31019305 / 193-EEDB	31019305 / 193-EEDB	31019304 / 193-EECB
1750rpm	Motor Current	28a	14.5a	8.2a	4.4a	4.1a	3.3a
	FuseHolder	31001090/1492-FB1J60-L	31001094/1492-FB2C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
3	Fuse	31001123 / LPJ-45SP	31001118 / LP-CC-20	31001116 / LP-CC-12	31001112 / LP-CC-7	31001111 / LP-CC-6	31001109 / LP-CC-5
	Contactora	31019105 / 100-C30D10	31019103 / 100-C16D10	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019310 / 193-EEFD	31019305 / 193-EEDB	31019305 / 193-EEDB	31019305 / 193-EEDB	31019305 / 193-EEDB	31019304 / 193-EECB
3450rpm	Motor Current	29a	14.5a	8.2a	4.7a	4.1a	2.8a
	FuseHolder	31001090/1492-FB1J60-L	31001091/1492-FB2J60-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
5	Fuse	31001126 / LPJ-60SP	31001121 / LPJ-35SP	31001118 / LP-CC-20	31001116 / LP-CC-12	31001115 / LP-CC-10	31011113 / LP-CC-8
	Contactora	31019108 / 100-C60D10	31019107 / 100-C43D10	31019105 / 100-C30D10	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD	31019305 / 193-EEDB	31019305 / 193-EEDB	31019305 / 193-EEDB
1750rpm	Motor Current	44a	20.5a	(13.9) 13.4	8.6a	6.7a	5.3a
	FuseHolder	31001090/1492-FB1J60-L	31001091/1492-FB2J60-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
5	Fuse	31001126 / LPJ-60SP	31001121 / LPJ-35SP	31001118 / LP-CC-20	31001116 / LP-CC-12	31001115 / LP-CC-10	31011113 / LP-CC-8
	Contactora	31019108 / 100-C60D10	31019107 / 100-C43D10	31019105 / 100-C30D10	31019103 / 100-C16D10	31019101 / 100-C09D10	31019101 / 100-C09D10
	Overload	31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD	31019305 / 193-EEDB	31019305 / 193-EEDB	31019305 / 193-EEDB
3450rpm	Motor Current	46a	23a	11.8	7.6a	5.9a	4.7a
	FuseHolder		31001091/1492-FB2J60-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
7 1/2	Fuse	31001130 / LPJ-100SP	31001124 / LPJ-50SP	31001120 / LP-CC-30	31001118 / LP-CC-20	31001117 / LP-CC-15	31011116 / LP-CC-12
	Contactora	31019110 / 100-C85D10	31019108 / 100-C60D10	31019105 / 100-C30D10	31019105 / 100-C30D10	31019103 / 100-C16D10	31019103 / 100-C16D10
	Overload	31019313 / 193-EEGE	31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD	31019305 / 193-EEDB	31019305 / 193-EEDB
1750rpm	Motor Current	64	29a	18.8a	11.7a	9.4a	7.6a

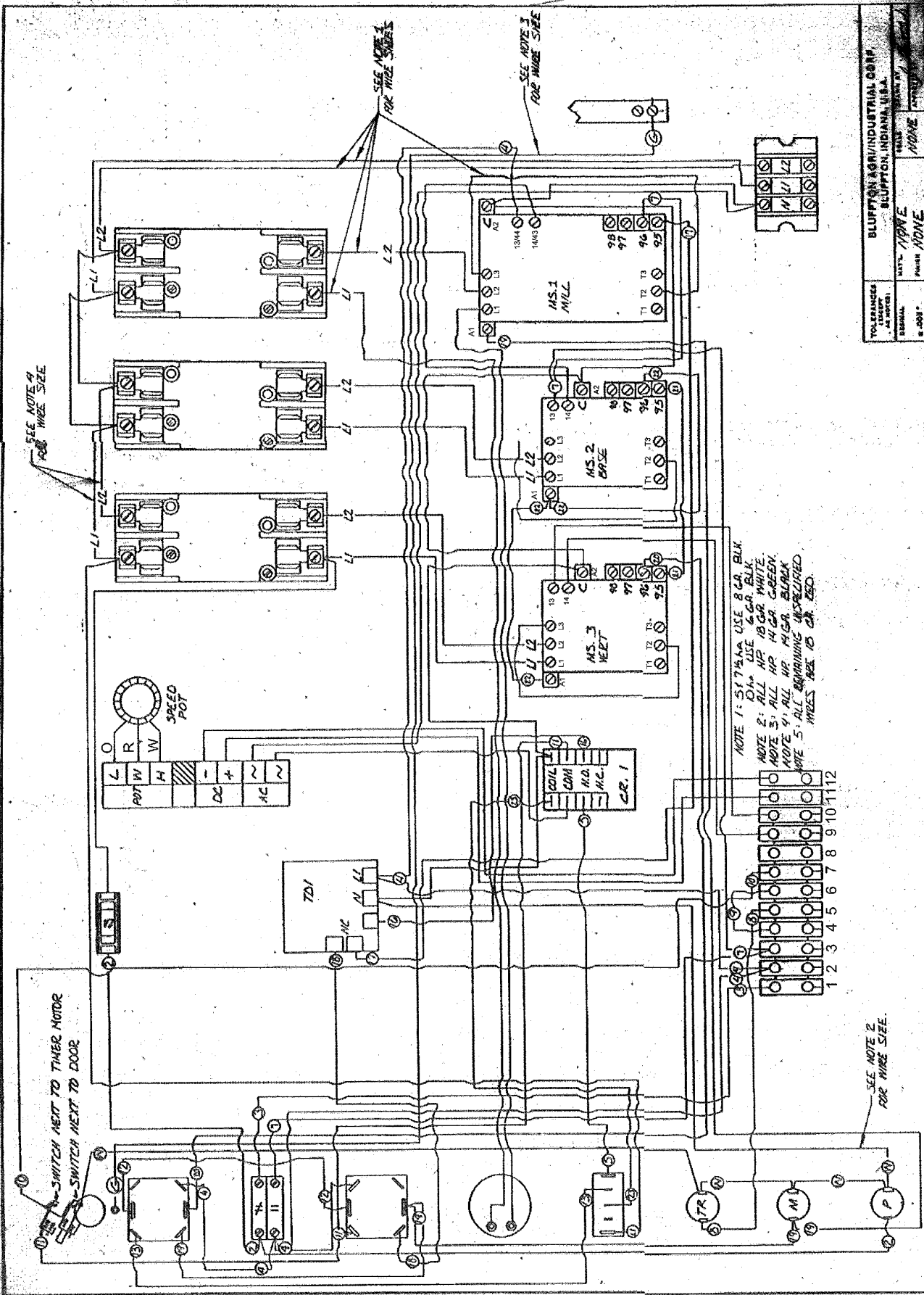
	FuseHolder		31001091/1492-FB2J60-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
7 1/2	Fuse	31001130 / LPJ-100SP	31001124 / LPJ-50SP	31001120 / LP-CC-30	31001118 / LP-CC-20	31001117/ LP-CC-15	31011116 / LP-CC-12
	Contactora	31019110 / 100-C85D10	31019108 / 100-C60D10	31019105 / 100-C30D10	31019105 / 100-C30D10	31019103 / 100-C16D10	31019103 / 100-C16D10
	Overload	31019313 / 193-EEGE	31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD	31019305 / 193-EEDB	31019305 / 193-EEDB
3450rpm	Motor Current	66	33a	17.8a	11.3a	8.9a	6.9a
	FuseHolder		31001091/1492-FB2J60-L	31001091/1492-FB2J60-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
10	Fuse		31001126 / LPJ-60SP	31001121 / LPJ-35SP	31001119 / LP-CC-25	31001118 / LP-CC-20	31001117/ LP-CC-15
	Contactora		31019108 / 100-C60D10	31019107 / 100-C43D10	31019105 / 100-C30D10	31019105 / 100-C30D10	31019103 / 100-C16D10
	Overload		31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD	31019310 / 193-EEFD	31019305 / 193-EEDB
	Motor Current		40a	(24.9a) 23.6a	14.5a	11.8a	9a
	FuseHolder			31001092/1492-FB3J60-L	31001092/1492-FB3J60-L	31001095/1492-FB3C30-L	31001095/1492-FB3C30-L
15	Fuse		31001130 / LPJ-100SP	31001126 / LPJ-60SP	31001121 / LPJ-35SP	31001120 / LP-CC-30	31001118 / LP-CC-20
	Contactora		31019110 / 100-C85D10	31019108 / 100-C60D10	31019107 / 100-C43D10	31019105 / 100-C30D10	31019105 / 100-C30D10
	Overload		31019313 / 193-EEGE	31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD	31019310 / 193-EEFD
	Motor Current		70a	(36a) 33a	24.2a	16.6a	13.2a
	FuseHolder			31001092/1492-FB3J60-L	31001092/1492-FB3J60-L	31001092/1492-FB3J60-L	31001095/1492-FB3C30-L
20	Fuse			31001127 / LPJ-60SP	31001124 / LPJ-50SP	31001121 / LPJ-35SP	31001120 // LP-CC-30
	Contactora			31019108 / 100-C60D10	31019108 / 100-C60D10	31019107 / 100-C43D10	31019105 / 100-C30D10
	Overload			31019313 / 193-EEGE	31019313 / 193-EEGE	31019310 / 193-EEFD	31019310 / 193-EEFD
	Motor Current			46a	32a	23a	18.2a
	FuseHolder				31001092/1492-FB3J60-L	31001092/1492-FB3J60-L	31001092/1492-FB3J60-L
30	Fuse			31001130 / LPJ-100SP	31001126 / LPJ-60SP	31001126 / LPJ-60SP	31001123 / LPJ-45SP
	Contactora			31019110 / 100-C85D10	31019108 / 100-C60D10	31019108 / 100-C60D10	31019107 / 100-C43D10
	Overload			31019313 / 193-EEGE	31019313 / 193-EEGE	31019313 / 193-EEGE	31019310 / 193-EEFD
	Motor Current			68a	46a	34a	26.5a



= Motor not available



= NOT ENGINEERED Fuse Block too large



SEE NOTE 4 FOR WIRE SIZE

SEE NOTE 1 FOR WIRE SIZE

SEE NOTE 3 FOR WIRE SIZE

NOTE 1: 5171AAA USE 8 GA. BLK.
 DAA USE 6 GA. WHITE
 NOTE 2: ALL HP 18 GA. WHITE
 NOTE 3: ALL HP 14 GA. GREEN
 NOTE 4: ALL HP 14 GA. BLACK
 NOTE 5: ALL WIRING UNCLAMPED
 WIRES ARE 10 GA. WED.

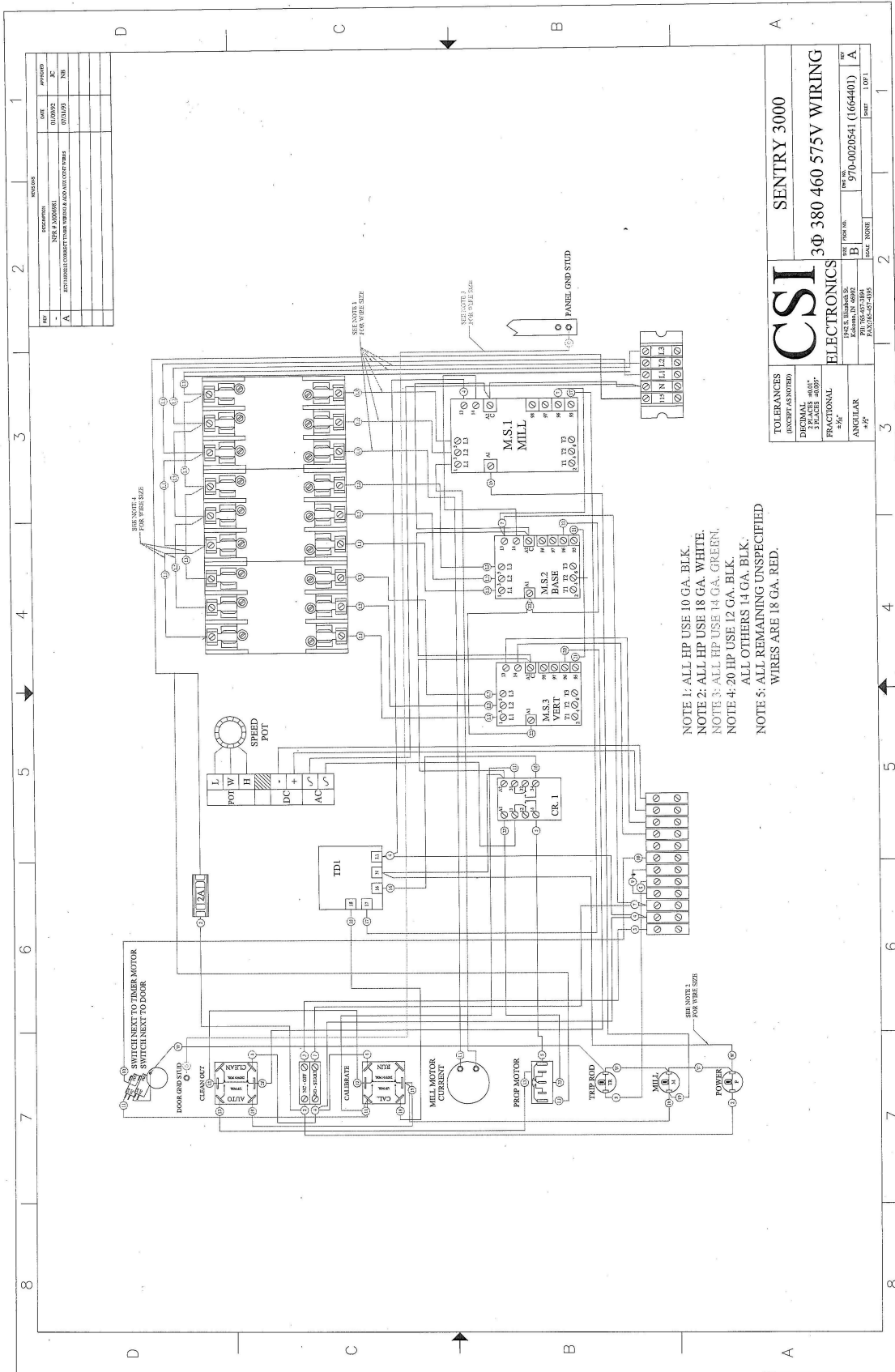
SEE NOTE 2 FOR WIRE SIZE

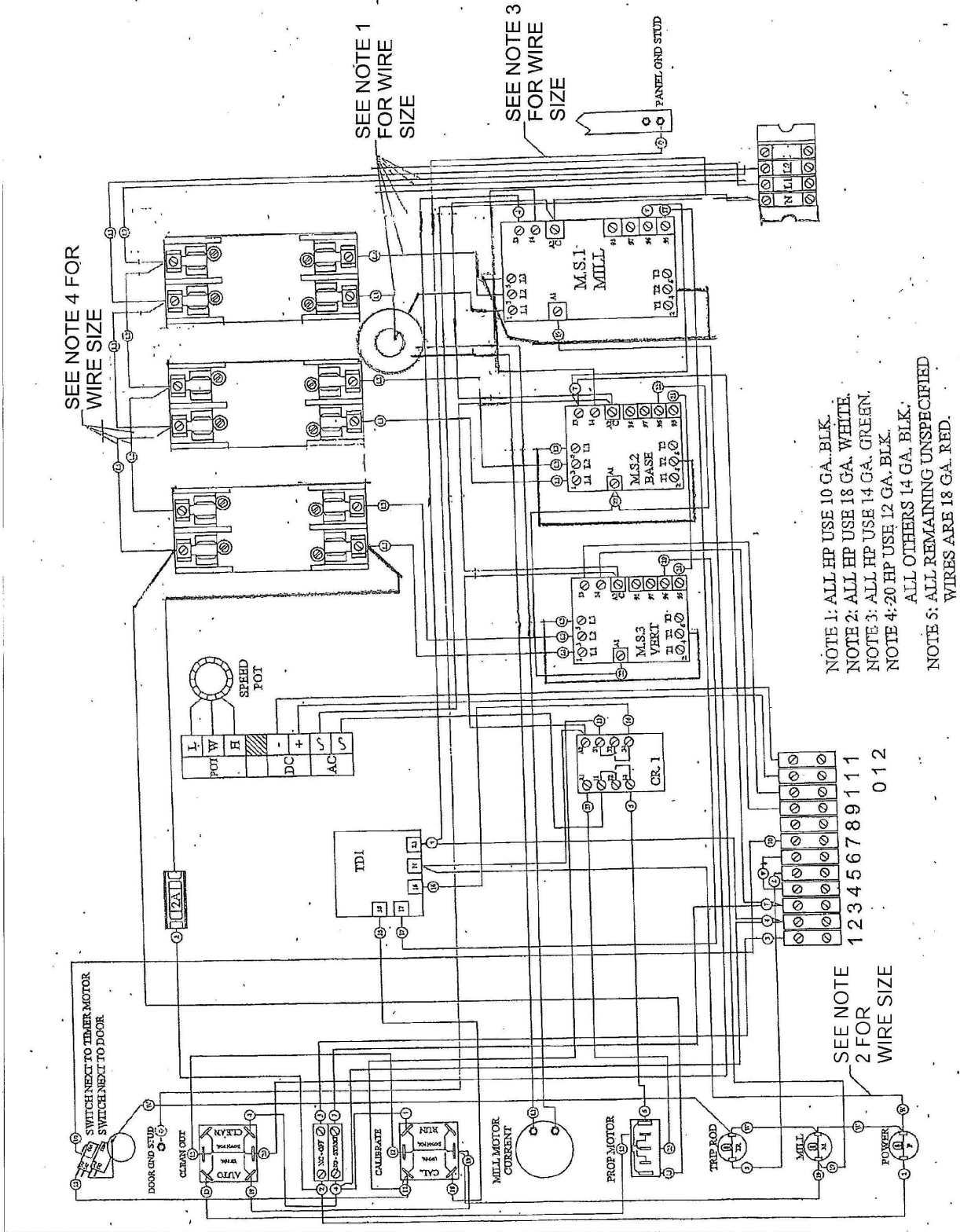
SWITCH NEXT TO TIMER MOTOR
 SWITCH NEXT TO DOOR

TOLERANCES UNLESS NOTED		BLUFFTON AGR/INDUSTRIAL CORP.	
FRACTIONAL		BLUFFTON, INDIANA, U.S.A.	
DECIMAL	WIRE GA.	TITLE	DATE
0.008"	14	WIRING	12/16/67
0.015"	12	WIRING	
0.031"	10	WIRING	
0.062"	8	WIRING	
0.125"	6	WIRING	
0.250"	4	WIRING	
0.500"	3	WIRING	
1.000"	2	WIRING	
2.000"	1	WIRING	
4.000"	0	WIRING	
8.000"	-1	WIRING	
16.000"	-2	WIRING	
32.000"	-3	WIRING	
64.000"	-4	WIRING	
128.000"	-5	WIRING	
256.000"	-6	WIRING	
512.000"	-7	WIRING	
1024.000"	-8	WIRING	
2048.000"	-9	WIRING	
4096.000"	-10	WIRING	
8192.000"	-11	WIRING	
16384.000"	-12	WIRING	
32768.000"	-13	WIRING	
65536.000"	-14	WIRING	
131072.000"	-15	WIRING	
262144.000"	-16	WIRING	
524288.000"	-17	WIRING	
1048576.000"	-18	WIRING	
2097152.000"	-19	WIRING	
4194304.000"	-20	WIRING	
8388608.000"	-21	WIRING	
16777216.000"	-22	WIRING	
33554432.000"	-23	WIRING	
67108864.000"	-24	WIRING	
134217728.000"	-25	WIRING	
268435456.000"	-26	WIRING	
536870912.000"	-27	WIRING	
1073741824.000"	-28	WIRING	
2147483648.000"	-29	WIRING	
4294967296.000"	-30	WIRING	
8589934592.000"	-31	WIRING	
17179869184.000"	-32	WIRING	
34359738368.000"	-33	WIRING	
68719476736.000"	-34	WIRING	
137438953472.000"	-35	WIRING	
274877906944.000"	-36	WIRING	
549755813888.000"	-37	WIRING	
1099511627776.000"	-38	WIRING	
2199023255552.000"	-39	WIRING	
4398046511104.000"	-40	WIRING	
8796093022208.000"	-41	WIRING	
17592186444416.000"	-42	WIRING	
35184372888832.000"	-43	WIRING	
70368745777664.000"	-44	WIRING	
140737491555328.000"	-45	WIRING	
281474983110656.000"	-46	WIRING	
562949966221312.000"	-47	WIRING	
1125899932442624.000"	-48	WIRING	
2251799864885248.000"	-49	WIRING	
4503599729770496.000"	-50	WIRING	
9007199459540992.000"	-51	WIRING	
18014398919081984.000"	-52	WIRING	
36028797838163968.000"	-53	WIRING	
72057595676327936.000"	-54	WIRING	
14411519135265584.000"	-55	WIRING	
28823038270531168.000"	-56	WIRING	
57646076541062336.000"	-57	WIRING	
115292153082124672.000"	-58	WIRING	
230584306164249344.000"	-59	WIRING	
461168612328498688.000"	-60	WIRING	
922337224656997376.000"	-61	WIRING	
1844674449313994752.000"	-62	WIRING	
3689348898627989504.000"	-63	WIRING	
7378697797255979008.000"	-64	WIRING	
14757395594511958016.000"	-65	WIRING	
29514791189023916032.000"	-66	WIRING	
59029582378047832064.000"	-67	WIRING	
118059164756095664128.000"	-68	WIRING	
236118329512191328256.000"	-69	WIRING	
472236659024382656512.000"	-70	WIRING	
944473318048765313024.000"	-71	WIRING	
1888946636097530626048.000"	-72	WIRING	
3777893272195061252096.000"	-73	WIRING	
7555786544390122504192.000"	-74	WIRING	
15111573088780245008384.000"	-75	WIRING	
30223146175760490016768.000"	-76	WIRING	
60446292351520980033536.000"	-77	WIRING	
120892584703041960067072.000"	-78	WIRING	
241785169406083920134144.000"	-79	WIRING	
483570338812167840268288.000"	-80	WIRING	
967140677624335680536576.000"	-81	WIRING	
1934281355248671361073152.000"	-82	WIRING	
386856271049734272214624.000"	-83	WIRING	
773712542099468544429248.000"	-84	WIRING	
1547425084198937088858496.000"	-85	WIRING	
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6189700336795748355433984.000"	-87	WIRING	
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50706025159030770559971180928.000"	-100	WIRING	

REV.	REVISION	DATE
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4	WIRING	12/16/67
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100	WIRING	12/16/67

Wiring 3000 Panel



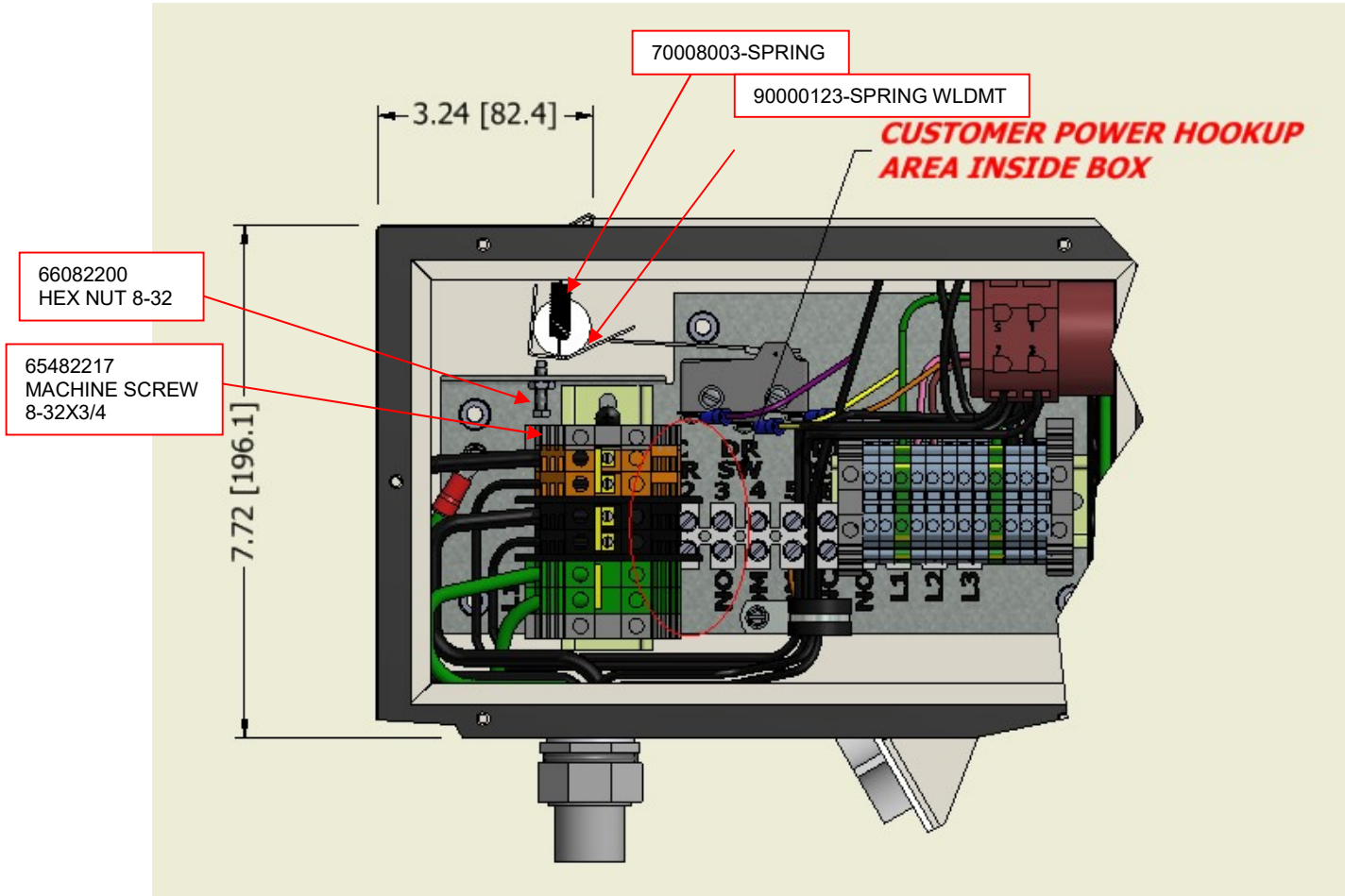


NOTE 1: ALL HP USE 10 GA. BLK.
 NOTE 2: ALL HP USE 18 GA. WHITE.
 NOTE 3: ALL HP USE 14 GA. GREEN.
 NOTE 4: 20 HP USE 12 GA. BLK.
 ALL OTHERS 14 GA. BLK.
 NOTE 5: ALL REMAINING UNSPECIFIED
 WIRES ARE 18 GA. RED.

123456789111
 012

SEE NOTE
 2 FOR
 WIRE SIZE

Paddle Switch and Actuator Adjustment



1. Back out the 65482217 adjusting screw and remove the 70008003 spring.
2. Position the actuator so that an allen screw may be inserted thru the back of the junction box into the setscrew. Loosen the setscrew.
3. Position the trip rod 9/16" from the back surface of the proportioner hopper. Tighten the setscrew in the actuator and replace the 70008003 spring.
4. Turn the 65482217 adjusting screw back in far enough to hold the out 9/16" out from the proportioner hopper back. Lock the screw in place with the 66082200 jam nut. The micro switch lever may have to be bent to make the switch actuate when the trip rod is pushed in toward the mill by a switch paddle.

Component Functions

Proportioner Hopper

Switch Paddles

A weighted switch paddle is provided for each ingredient hopper. The paddle is inserted into the filled hopper by sliding the paddle blade down inside the sloping hopper on the proportioner side. An alternate method is to hold the paddle in contact with the inside face of the empty hopper and then fill the hopper. As long as there is grain in the hopper, the paddle in the hopper will be held in this position. If the supply of grain is exhausted and the hopper is empty, the paddle blade will swing up; the weighted end will swing down, trip the rod, and cause the mill to stop. A paddle is needed for each hopper being used; switch paddles should be removed if hopper is empty. A full hopper with the gearbox knob set on zero will stop a lot of dust flow back

Ingredient Flow Switch

The trip rod on the hopper engages an over center actuator finger that trips a micro switch.

Magnetic Separator

All Mills are provided with magnets that remove tramp iron from the grain being delivered by the proportioner to the grinding chamber. These magnets function whether the material bypasses the grinding chamber or not.

IMPORTANT The magnets should be checked every day, if possible, as metal caught by them will eventually work itself off if not removed. If steel parts are forced off of the magnets by the constant flow of grain they will enter the grinding chamber and destroy a screen and a set of hammers. This type of damage is NOT covered by warranty.

Proportioner Gear Box

Standard proportioner

A new Sentry proportioner is a five-auger model. Compartment numbers one, three, and four are all of equal size with each ingredient feed auger being controlled by an adjustable knob. Auger five is smaller, and is also controlled by an adjustable knob. These knobs are numbered from one to twenty-five. Augers are available in other sizes to adjust ingredient feed amounts.

The number two auger is a double capacity compartment. An adjustable knob numbered one to twenty-five is also controlling this auger.

Gearbox oil is a non-poisonous lubricant. Contact your local dealer for proper gearbox lubricant. (10W mineral based oil). Change oil every 500 hours or six months.

Proportioner Drive Motor

A variable speed DC motor is used to direct drive the proportioner gear train. This eliminates the need for a belt drive. The DC variable voltage is provided by an electronic control located on the main control panel for the mill. The input voltage into the control is 115V AC 60 HZ. The output is continuously variable from 0 to 90V DC.

Mill Door

Bypass Valves

The built-in bypass valves on the mill door give the operator the option of bypassing three ingredients around the grinding chamber. Either the material from the left hand (No. 1) auger, the material from the right hand (No. 4 and 5) augers, or all three can be bypassed.

Contactors

Because all of the motor contactors are equipped with overload relays, all motors are installed without their manual reset overloads. When installing the optional vertical motor, be sure that its manual reset overload has been removed.

The overload current is set by the black dial on the overload relay's top face to match the full load current indicated on the motor's nameplate.

The overload relay has three operating modes, which can be selected by gently turning the gray mode selector switch. The AUTO mode is for normal operation. The overload will trip when the motor current exceeds the dial setting amperage, and will reset automatically within two minutes. In the MAN mode, the overload will trip at the same amperage, but must be reset manually by pressing the blue reset button. In the TEST position, pressing the reset button can simulate an overload.

Fuses

Two 2 amp fast acting fuses protect the control board power supply and the 110-volt control circuit.

A 3 amp fast acting fuse protects the DC controller in the electronic panel. In the electric panel, the DC controller is protected by a circuit breaker mounted in the faceplate.

All motors are independently fused.

All replacement fuses must be identical to the ones supplied with the mill.

Electrical Troubleshooting

Symptom	Probable Cause	Corrective Action
Motor will not start	Bad connection in display strap	See “Partial Clock/Counter display.”
	Failed contactor	Check for contactors not engaging during cycle-up. Test and replace if necessary.
	Blown motor fuse	Check and replace fuses. Inspect motor for cause of overload.
	Loose connection	Tighten all motor wiring.
	Failed motor	Test and replace if necessary.
Frequent motor overload	Mechanical obstruction	Remove obstruction. Check bearings.
	Loose connection	Tighten all motor Wiring.
	Failed contactor	Test and replace if necessary.
	Low overload	Check overload adjustment against motor’s full load amperage.
Frequent SHEAR PIN Tripping	Feed restriction	Check back of accuportioner for build-up feed or foreign material
	Internal accuportioner failure	Service accuportioner for seized or broken component.

	PROBABLE CAUSE	CORRECTIVE ACTION
No clock/counter display	No power to mill	Turn all breakers on
	No power to control board	Check and replace 2 amp fuses. Look for possible shorts in 110/120-volt control circuits.
Partial clock/counter display	Bad connection in display strap	Wiggle connectors gently. Display will flicker and become complete
No response to ON/OFF, CALIBRATE or CLEANOUT	Trouble light on	Correct the cause of trouble. Reset light, try again
	Timer reads "0:00"	Set timer to grinding time.
	Damaged Faceplate	Inspect touch pads for scratches and dimples. Replace if necessary.
No response to Clock/counter buttons	See "Partial clock/counter display" above	
	See "Damaged faceplate" above.	
Overload light will not reset	Overload has not reset itself	Wait 2 minutes, try again
	Failed overload	Test overload contacts. Replace if necessary.
Shutoff indicator light will not reset	Switch is still tripped	Reset switch, reset light
	Faulty wiring	Check for open switch circuit

Note: All connections should be checked one month after installation, six months after installation and one a year thereafter.

Calibration Instructions

A

Facing the accuportioner dials, write down the names of the ingredients in Compartments 1 through 5 on the worksheet (next page).

B

Write down the desired amount per tonne/ton of each ingredient to come from each compartment. If an ingredient is in more than one compartment, divide the total amount desired evenly between the compartments.

C

Write down the % protein of each ingredient in the appropriate space. See Appendix A or test figures from your supplier.

D

Write down the dial settings for the present formula or turn all the dials to 20 and write "20" in each space provided.

E

- a) Hang an empty canister (one that you will fill with premix or concentrate) on the calibration scale and set the scale's adjustable needle to "0"
- b) Attach the calibration chute to the mill and set all the canisters under it.
- c) Start the proportioner using the CALIBRATE button. When one of the canisters is filled without spilling, stop the proportioner by pushing the mill's trip rod.

F

Weigh each canister on the scale and write down each net weight in the space provided. Add up all of the canister weights and write this figure in the total weight box at the right hand side of this line.

G

$0.375 = 375$ kg divide each of the weights in step F by the total sample weight and write this "decimal number" under the associated test weight.

The numbers to the right of the decimal point are the kilograms or pounds of each ingredient per tonne/ton (example: /tonne or lbs./ton). If you wish to have your weights in pounds per imperial ton, simply multiply these numbers by 2.

H

For each compartment, multiply the protein figures of step C by the "decimal number" of step G. This gives the % protein contributed to the ration by each compartment. Add these figures up and write the total in the total protein box at the right hand side of this line.

I
To obtain primary dial settings for your desired ration, multiply step B by step D, then divide by step G and finally divide by 1000. Do this calculation for each compartment and write these new settings in the spaces provided. If the settings are too high (If some are higher than 25) or too low for good accuracy, use the dial multiplier steps J and K. If the settings seem reasonable, go to step F below and then with steps G and H if necessary.

J
Divide the number "23" by the highest dial setting step I. Write this number in the box provided at the right.

K
Multiply the dial multiplier number by each setting in step I and enter these calculated settings in the spaces provided. Remember to round off these figures to the nearest whole number. Use these settings to go through steps F, G and H once more. After that, slightly readjust your dials to "fine tune" the ration if necessary. NOTE It is a good idea to check your rations periodically. Go through steps F, G and H and calculate your rations on a regular basis.

NOTE: It is a good idea to check your rations periodically. Go through steps F, G and H and calculate your rations on a regular basis.

CALIBRATION WORKSHEET

Date: _____ Name of ration: _____ Desired Protein: _____ %

Compartment	1	2	3	4	5	
A Ingredient name						
B Desired amount per ton						Total= 1000Kg or 2000lbs Load Dial Settings
C % Protein of each ingredient						
D Dial Settings						
E Run proportioner						
F Weight of each ingredient (Kg. or lbs.)						Total Weight
G Fraction of a ton(ne) (each ingredient weight/total weight)						Total = 1 ton(ne)
H Protein contribution (step C x step G)						Total protein= _____ %
I Primary dial settings (B x D/G/1000)						
If primary dial settings are too high (greater than 25) or too low for accuracy, use the dial multiplier below to obtain more suitable settings .						
J Dial multiplier	23/ _____ (highest setting from step I)					
K Calculated dial settings (step I x dial multiplier)						
Run proportioner						
F Weight of each ingredient (Kg. or lbs.)						Total Weight
G Fraction of a ton(ne) (each ingredient weight/total weight)						Total= 1 ton(ne)
H Protein contribution (step C x step G)						Total protein=
If the weights per ton(ne) are not close enough to the desired amounts in step B, readjust the appropriate dials						
Recalibration check date.						
F Weight of each ingredient (Kg. or lbs.)						Total Weight
G Fraction of a ton(ne) (each ingredient weight/total weight)						Total= 1 ton(ne)
H Protein contribution (step C x step G)						Total protein=
Recalibration check date.						
F Weight of each ingredient (Kg. or lbs.)						Total Weight
G Fraction of a ton(ne) (each ingredient weight/total weight)						Total= 1 ton(ne)
H Protein contribution (step C x step G)						Total protein=

ROUTINE MAINTENANCE

1. Change proportioner oil every 500 hours or 6 months use 10W mineral based oil.
2. Check hammers for wear weekly or every 15 hours of operation which ever occurs first.
3. When changing hammers check bolts for wear.
4. Check screen for wear weekly or every 15 hours of operation whichever occurs first.
5. Check door seals monthly.
6. Check all belts for alignment and tension weekly.
7. Inspect proportioner every 2,000 hours.
8. Check mill magnets for tramp iron daily.
9. All electrical connections should be checked one month after installation, six months after installation and once a year thereafter.
10. Check proportioner auger for build up weekly and clean as necessary, build up on augers can severely affect calibration.
11. Recalibrate at periodic intervals or any time a new ingredient is brought in.

Servicing the Proportioner

To replace pawl and spring:

1. Make sure power to mill is shut off.
2. Drain oil by removing pipe plug from bottom of proportioner gearbox.
3. Remove the 20 washer head cap screws from cover.
4. Do not remove the knobs from cover
5. Use screwdriver under cover to break seal. Pry up gently and remove cover.
6. Remove push on fasteners.
7. You can now remove and inspect pawls and springs. If pawls are worn or broken replace, if springs are bent replace. If pawls are springs are not worn or bent you can put them back into the proportioner. Always use new push on fasteners.
8. If you only need to inspect or replace a pawl or spring reverse the above steps.

To rebuild a proportioner complete or to replace a shaft and ratchet, pawl carrier, nylon bearing, or auger then the gearbox must be removed from the mill as in the following steps:

1. Seal off grain flow to proportioner hopper.
2. Remove all grain from hopper.
3. Disconnect D.C. motor.
4. Remove nuts from bolts holding proportioner to hopper.
5. Drain Oil
6. Remove washer head screws (20).
7. Do not remove knobs from cover.
8. Remove cover.

To replace a shaft and ratchet, pawl carrier, or nylon bearing:

1. Remove auger from shaft on back of proportioner.
2. Remove set collar from shaft.
3. Clean shaft before removing.
4. Carefully remove shaft and ratchet out of the front of proportioner, twisting slightly as it is removed.
5. Remove pawl carrier from bearing.
Note: pawl carriers 2,3,4, and 5 can be removed after removing shaft and ratchet. To remove pawl carrier 1, idler gear 1,2 and 3 must be removed at the same time.
6. Inspect nylon bearing for wear or grooves inside and outside. If marked replace.
7. Remove 4 screws holding nylon bearing. Remove bearing cap and gaskets from the backside of proportioner.
Note: Clean inside of proportioner gearbox thoroughly.

Reassemble gearbox:

1. Using new nylon bearing, bearing cap and gasket reassemble with 4 screws to the proportioner back. NOTE: Assemble nylon bearing, gasket and bearing cap as show on Page 49.

2. Pawl carriers 2, 3, 4 and 5 can be reassembled by replacing them over the nylon bearing in the same way they came off. Pawl carrier 1 and idler gears 1, 2, and 3 must be assembled at the same time as shown in figure 7. NOTE: All idler gear assemblies are assembled with the weld facing the cover.
3. If using any old ratchets make sure that the teeth are not chipped, and replace with 2 new "O" rings. It is necessary to use oil when sliding "O" ring onto the shaft. If installing new shaft and ratchets you need to install 2 new "O" rings on each shaft. The oil on the "O" rings will help to slide the shaft into the bearing also.

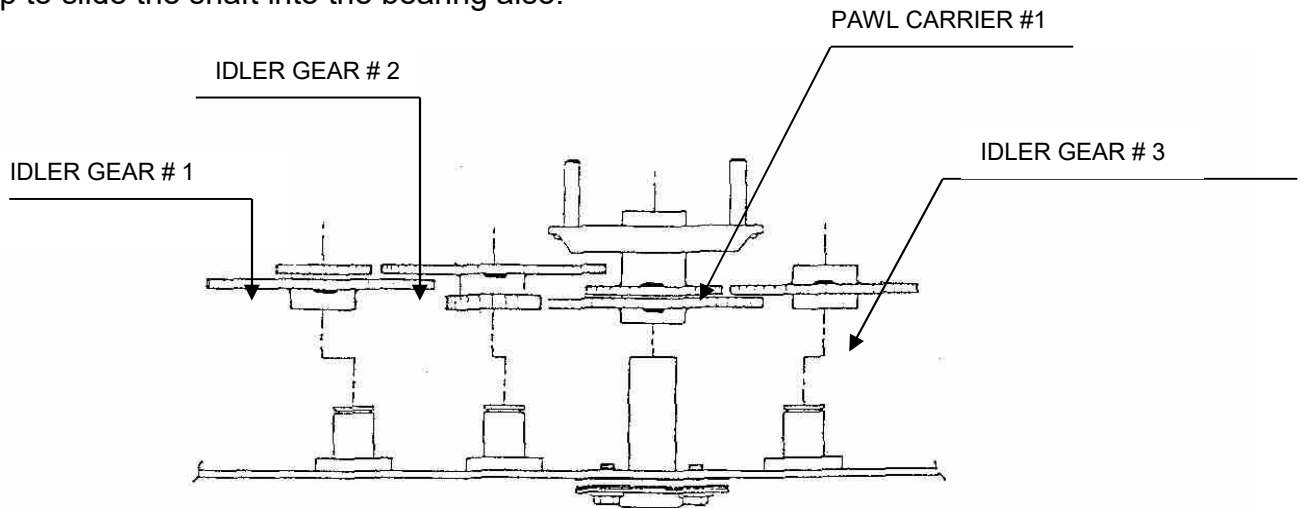


FIGURE 7

4. Replace the set collar on the auger shaft and ratchet at the back of the proportioner allowing only enough end play in the auger shaft and ratchet to let it turn without binding.
5. Replace the augers on the shafts.
6. Assemble the proportioner on the mill—auger must fit over the shaft in the bottom of the proportioner hopper. Starting at left side slide one auger at a time over the shaft until the proportioner is down on the hopper.
7. Install 4 nuts and lock washers on the back side of the proportioner.
8. Rewire the D.C. motor.
9. Install pawls and pawl springs held in place with push on fasteners. The pawl should engage with the full width of the ratchet which would require the push on fastener to be $\frac{31}{32}$ " from the top of the pawl carrier. See figure # 8

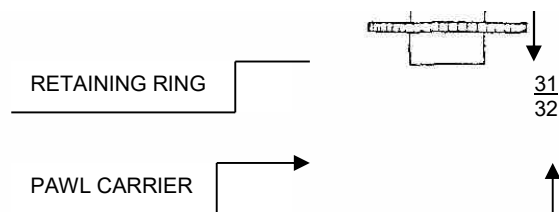


Figure 8

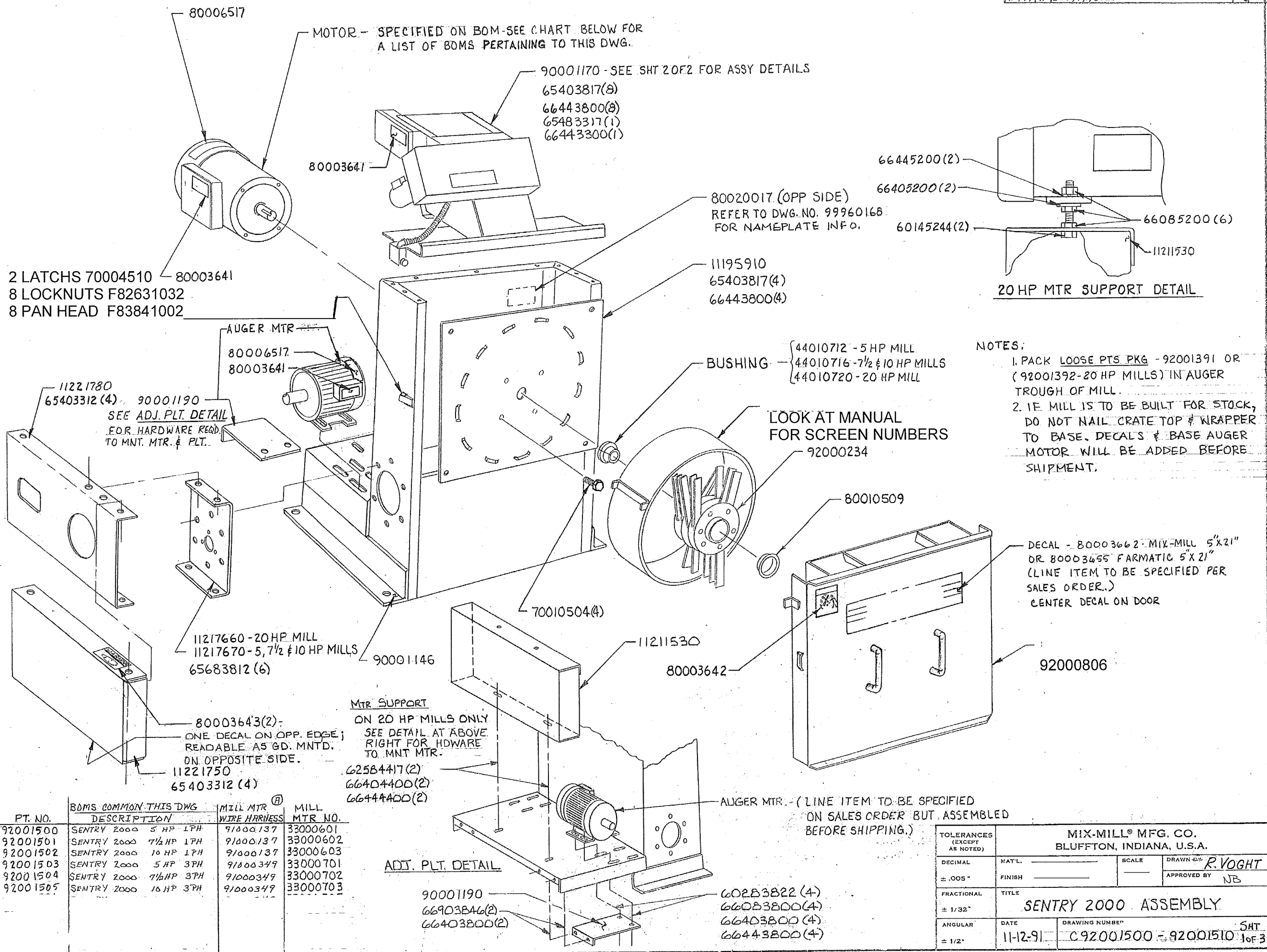
10. Replace cover assembly starting at the left side one at a time turn knob # 1 until cam drops into place on the ratchet. Do this on all knobs until the cover is in place. Replace all 20 washer head screws and tighten.
Note: DO NOT FORCE THE COVER DOWN it will drop in place with a little care.



SENTRY 2000

C 92001500 3 PG

DATE	SYM	DESCRIPTION OF CHANGE	DR	CK
11-19-91	-	NTR M006920	RV	
1/12/94	R	ECN M940001	RV	



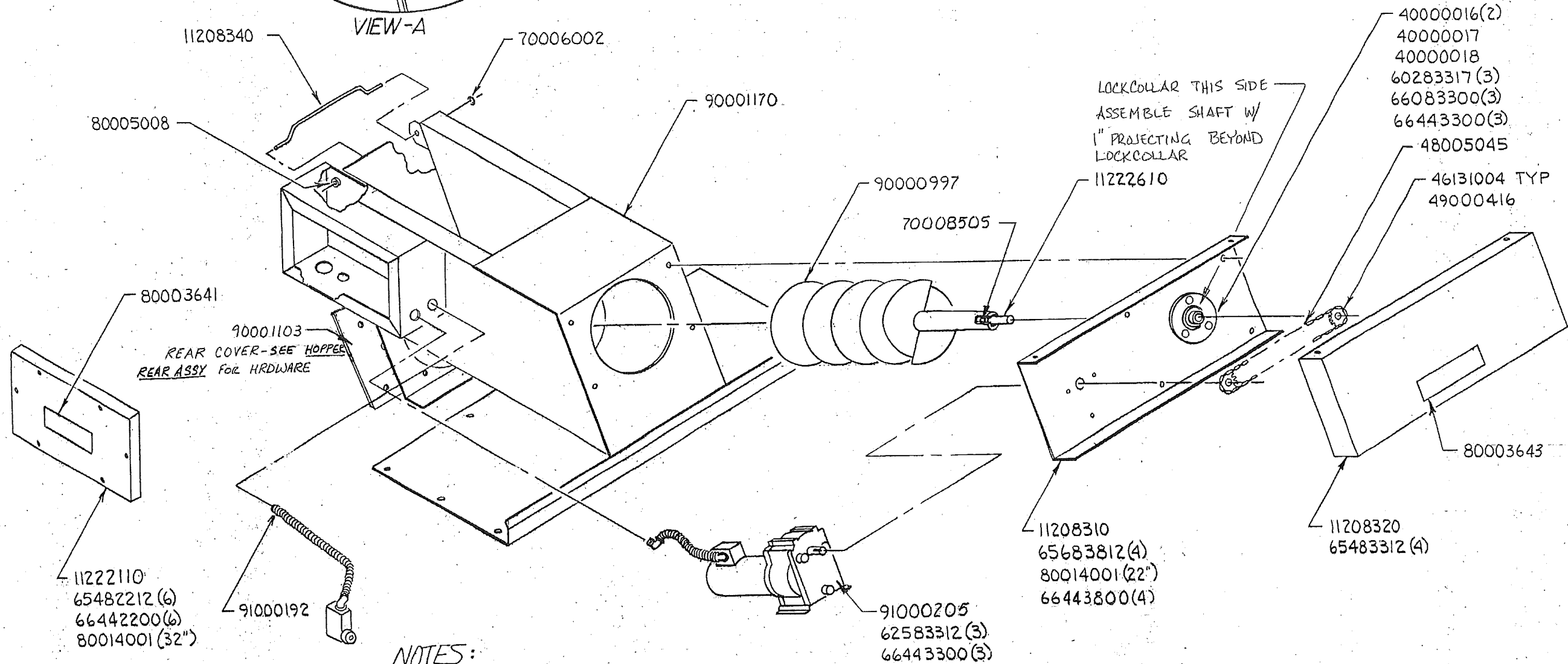
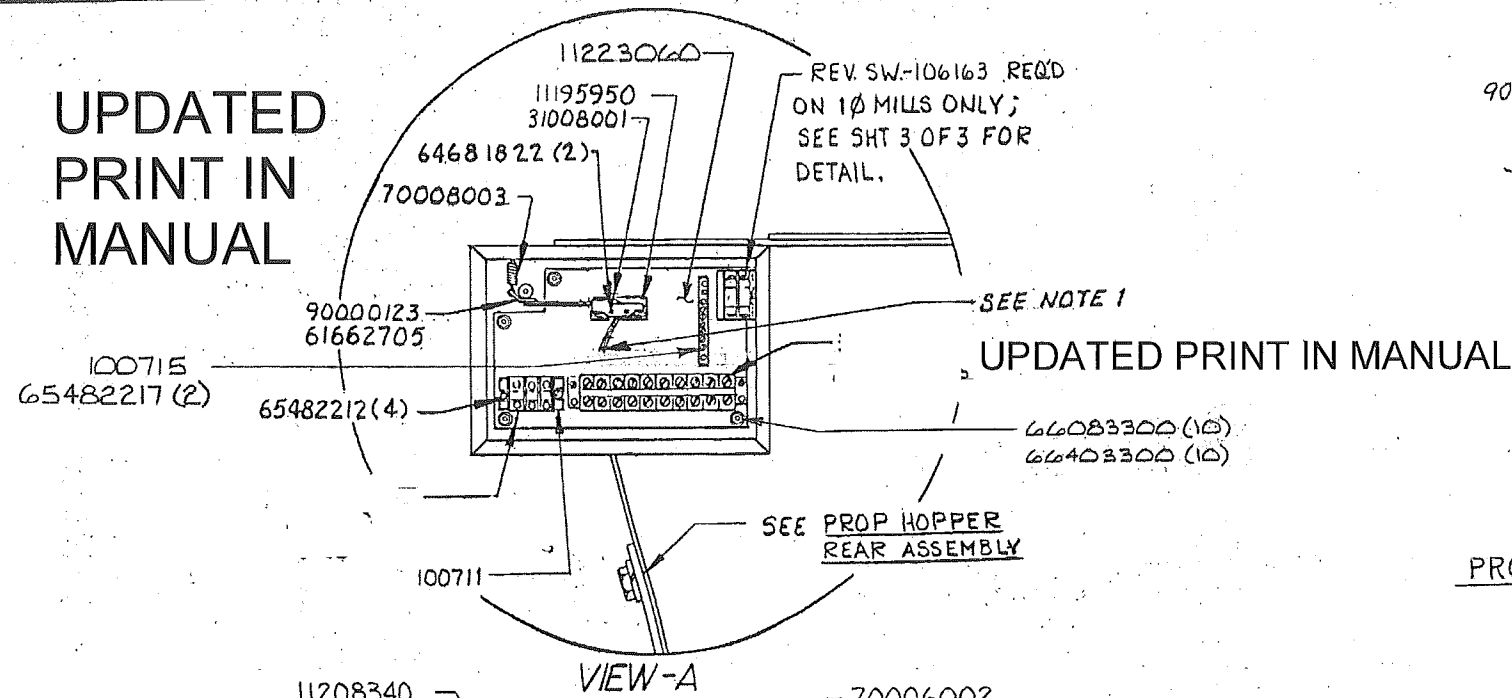
NOTES:
1. PACK LOOSE PTS PKG - 92001391 OR
(92001392-20 HP MILLS) IN AUGER
TROUGH OF MILL.
2. IE MILL IS TO BE BUILT FOR STOCK,
DO NOT NAIL CRATE TOP & WRAPPER
TO BASE. DECALS & BASE AUGER
MOTOR WILL BE ADDED BEFORE
SHIPMENT.

PT. NO.	BOMS COMMON THIS DWG DESCRIPTION	MILL MTR WIRE HARNESS	MILL MTR NO.
92001500	SENTRY 2000 5 HP 1PH	91000137	33000601
92001501	SENTRY 2000 7 1/2 HP 1PH	91000137	33000602
92001502	SENTRY 2000 10 HP 1PH	91000137	33000603
92001503	SENTRY 2000 5 HP 3PH	91000349	33000701
92001504	SENTRY 2000 7 1/2 HP 3PH	91000349	33000702
92001505	SENTRY 2000 10 HP 3PH	91000349	33000703

MIX-MILL® MFG. CO. BLUFFTON, INDIANA, U.S.A.			
TOLERANCES (EXCEPT AS NOTED)	MAT'L.	SCALE	DRAWN BY R. VOGHT
DECIMAL	FINISH		APPROVED BY JB
FRACTIONAL	TITLE	SENTRY 2000 ASSEMBLY	
ANGULAR	DATE	DRAWING NUMBER	SHT
± .005"	11-12-91	C92001500 - 92001510	1 OF 3

DATE	SYM	DESCRIPTION OF CHANGE	DR	CK
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01/12/94	A	ECN M940001		

UPDATED
PRINT IN
MANUAL

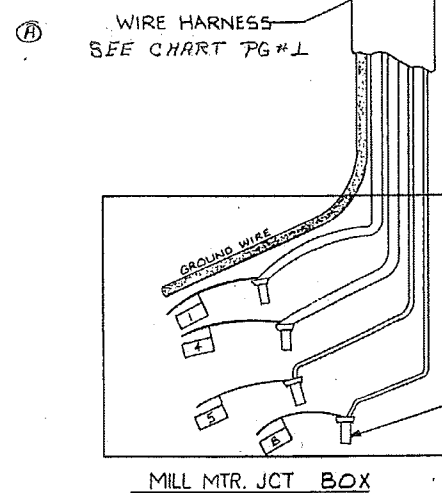
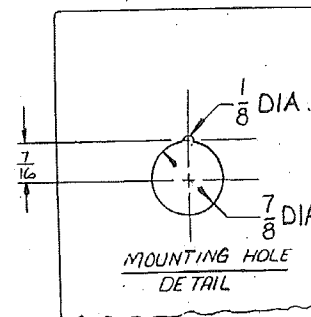
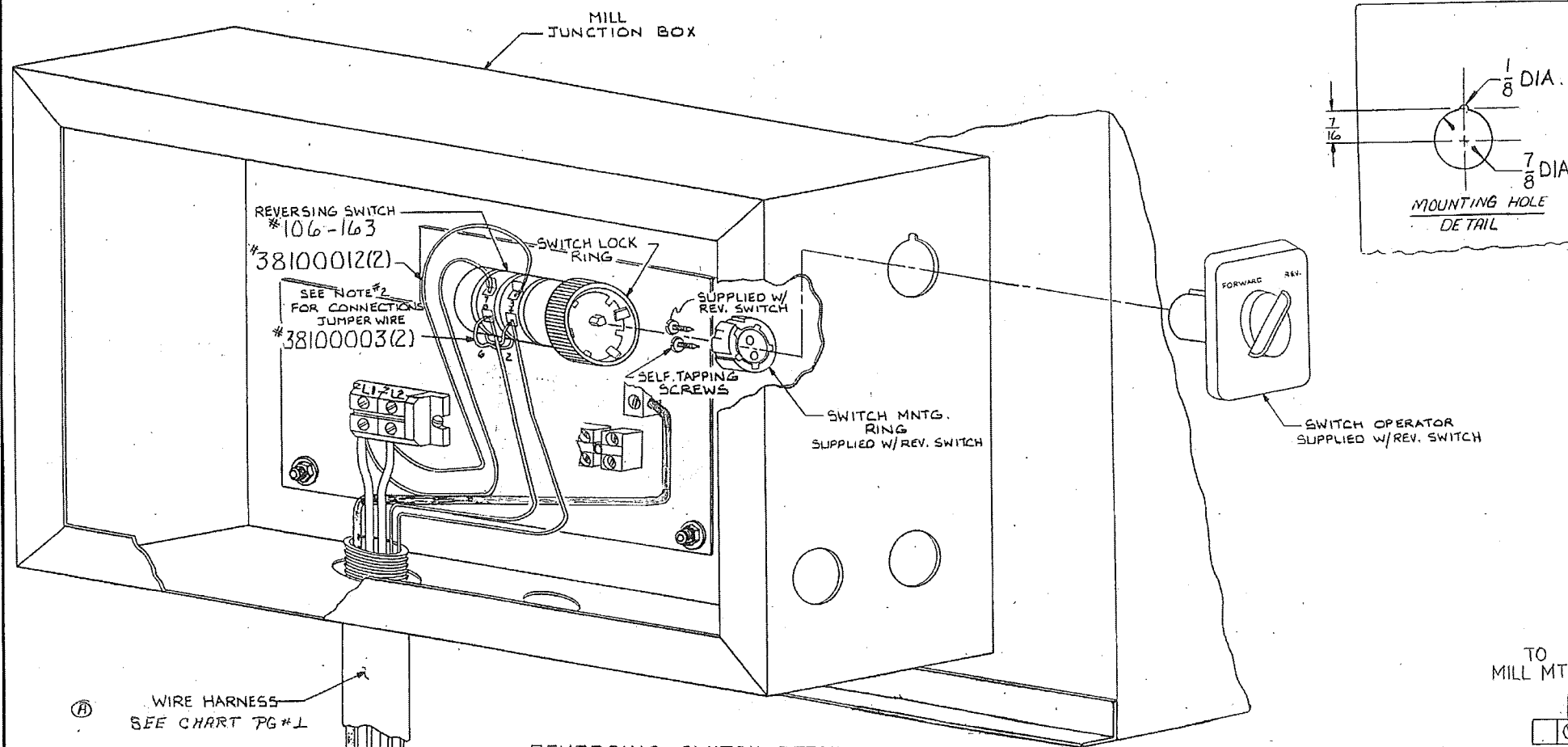


NOTES:

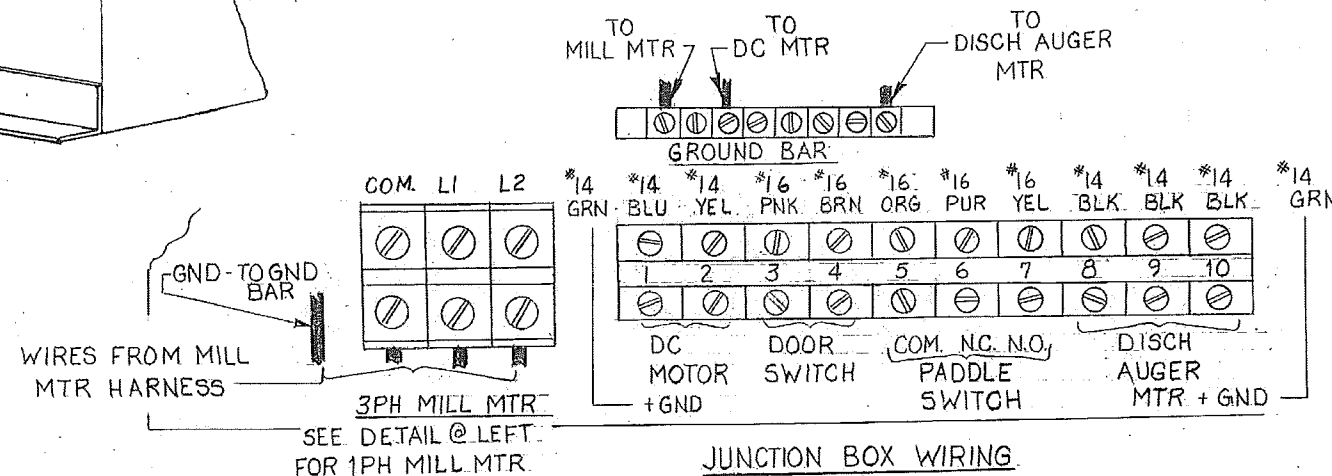
1. TO COMMON ON PADDLE SW.-36600405-ORANGE
TO N.C. ON PADDLE SW.-36700405-PURPLE
TO N.D. ON PADDLE SW.-36500405-YELLOW

MIX-MILL® MFG. CO. BLUFFTON, INDIANA, U.S.A.			
TOLERANCES (EXCEPT AS NOTED)	MAT'L.	SCALE	DRAWN BY VOGHT
DECIMAL ± .005"	FINISH		APPROVED BY NB
FRACTIONAL ± 1/32"	TITLE	SENTRY 2000 ASSY	
ANGULAR ± 1/2°	DATE	DRAWING NUMBER	SHT.
	10/28/91	C.92001500-92001510	2 OF 3

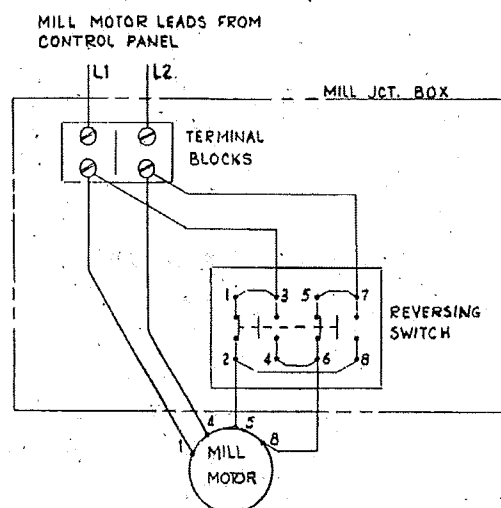
REV.	REVISION	DATE	BY
✓	NPR M006920	11-25-91	DM
R	ECN M940001	11-12-94	DVS



REVERSING SWITCH DETAIL
REQ'D. ONLY ON 1 PHASE MILLS



SCHEMATIC - COMPLETED WIRING



NOTES:

1. MOUNT THE SWITCH BODY BY TURNING THE LOCKING RING ON THE SWITCH BODY UNTIL THE SLOTS IN THE RING ARE LINED UP WITH THE FOUR TABS ON THE SWITCH BODY. PRESS THE SWITCH BODY ON TO THE MOUNTING RING WITH THE TABS IN THE BODY LINED UP WITH THE SLOTS ON THE MOUNTING RING. TURN THE OPERATOR HANDLE UNTIL THE IRREGULAR SHAPED SHAFT IN THE BODY SLIDES INTO THE OPERATOR. THE BODY MAY HAVE TO BE REMOVED, TURNED, AND RE-ASSEMBLED SO THE OPERATOR HANDLE IS IN THE CORRECT POSITION. TURN THE LOCKING RING TO LOCK THE SWITCH BODY INTO THE MOUNTING RING.
2. JUMPER WIRE CONNECTED FROM TERMINAL 8 TO TERMINAL 2.
JUMPER WIRE CONNECTED FROM TERMINAL 4 TO TERMINAL 6.

BLUFFTON AGRI/INDUSTRIAL CORP. BLUFFTON, INDIANA, U.S.A.			
TOLERANCES (EXCEPT AS NOTED)	MAT'L	SCALE	DRAWN BY
DECIMAL	FINISH		APPROVED BY
± .005"			
FRACTIONAL	TITLE		
± 1/32"	SENTRY 2000 ASSEMBLY		
ANGULAR	DATE	DRAWING NUMBER	SHT
± 1/2°	11-25-91	C92001500-92001510	3 OF 3

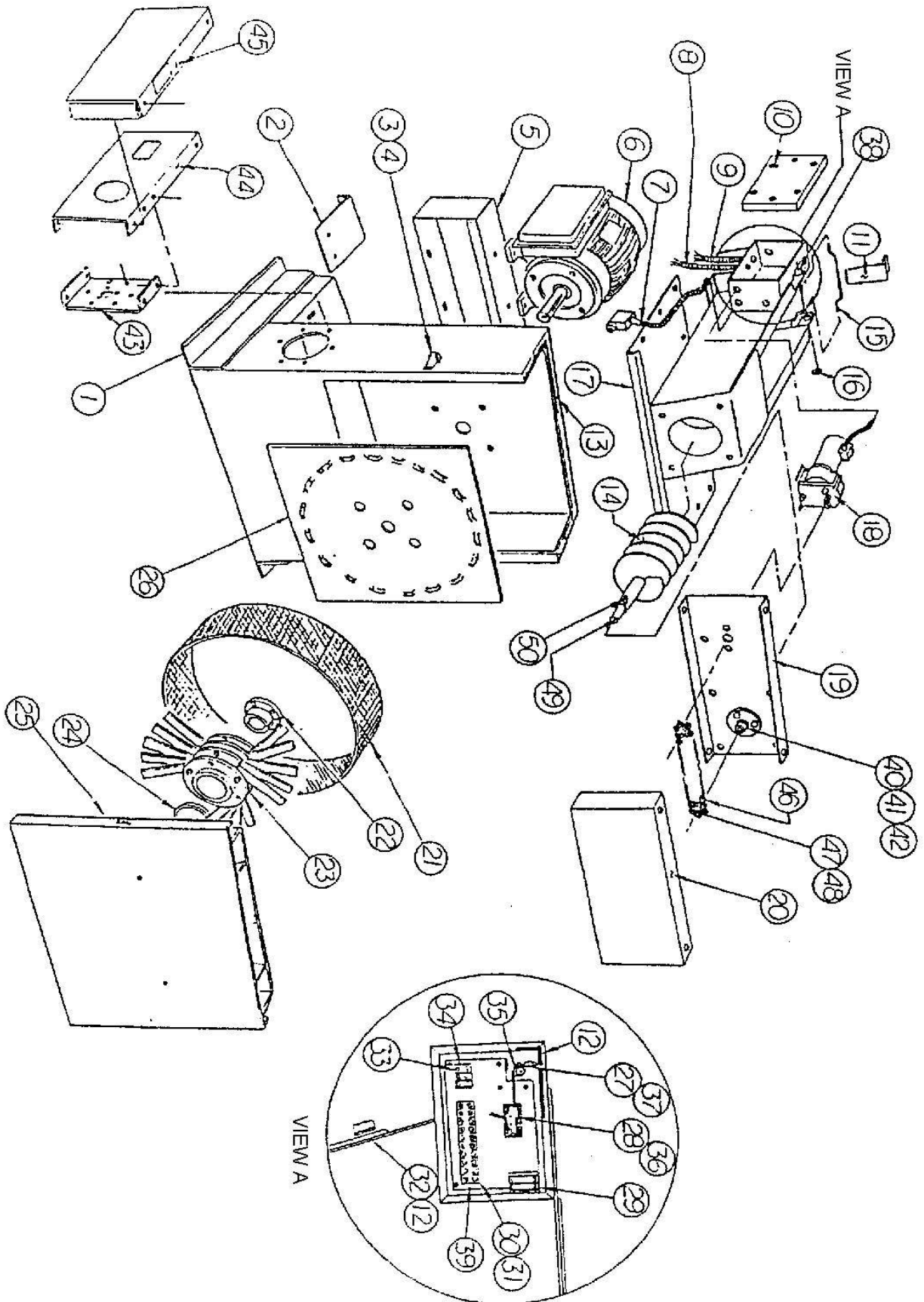
General mill assembly Sentry 2000

Item #	Part number	Quantity	Description
1	90001146	1	Housing weldment Sentry mill
2	90001190	1	Adjustment plate assembly
3	70004506	2	Sentry mill door latch
4	F83200011	4	Rivet,pop3/16 x 1/8-1/4
5	11221530	1	Motor stand 20 HP Sentry mill (20 HP mill only)
6	33000601	1	Mill motor, 5HP, 1 phase option
6	33000602	1	Mill motor, 7-1/2HP 1 phase option
6	33000603	1	Mill motor, 10 HP, 1 phase option
6	33000701	1	Mill motor, 5HP, 3 phase option
6	33000702	1	Mill motor, 7-1/2HP 3 phase option
6	33000703	1	Mill motor, 10 HP, 3 phase option
6	33000705	1	Mill motor, 20HP, 3 phase option
6	33000708	1	Mill motor, 5HP 575 volt option
6	33000709	1	Mill motor, 7-1/2HP 575 volt option
6	33000710	1	Mill motor, 10 HP 575 volt option
6	33000712	1	Mill motor, 20HP, 575 volt option
7	91000192	1	Wire harness (door switch)
8	91000346	1	Wire harness auger motor, 1 phase
8	91000347	1	Wire harness auger motor, 3 phase
9	91000349	1	Wire harness mill motor, 1 phase
9	9100136	1	Wire harness mill motor, 3 phase
10	11222110	1	Cover, junction box-Sentry
11	90000131	1	Switch, paddle assembly
12	80014001	11 ft.	Polyurethane tape 3/16 x 1/2
13	80014002	4 ft.	Polyurethane tape 3/8 x 1/2
14	90000997	1	6" auger
15	11208340	1	Trip rod
16	70006002	1	Push-on fastener
17	90001170	1	Prop hopper, welded, Sentry 2000
18	33999801	1	DC motor
19	11208310	1	Mount plate, gear motor
20	11208320	1	Drive cover
21	92000212	1	Screen, welded assembly 3/16 dia.
22	44010712	1	Bushing, QD SD 1.125 bore (5HP mill)
22	44010716	1	Bushing, QD SD 1.375 bore (7-1/2 & 10 HP mill)
22	44010720	1	Bushing, QD SD 1.625 bore (20 HP mill)
23	921000234	1	Sentry beater hub assembly
24	80010509	1	Caplug Sentry Hub
25	92000806	1	Door assembly Sentry mill
26	11195910	1	Sentry back wear plate
27	70008003	1	Spring, micro switch
28	31008001	1	Micro switch #BA-2RU-A2
29	106163	1	Reversing switch (required on 1 phase mills only)
30	31009007	1	Terminal block 10 term

General mill assembly Sentry 2000 cont.

31	80006537	1	Label, terminal block N-11
32	90001103	1	Assembly, 6" prop hopper rear
33	31009026	2 or 3	Terminal block #22Z (2 req'd on 3 phase mills, 3 req'd on 1 phase mills)
34	100711	1	Terminal block end
35	90000123	1	Trip assembly,micro switch
36	11195950	1	Insulation, switch
37	61662705	1	10-32x1/4 hex sckt hd set screw
38	80005008	1	Grommet, 15/32" diameter hole
39	11223060	1	Insert junction box, Sentry mill
40	40000016	2	Stamping
41	40000017	1	Roller bearing (includes lock collar)
42	40000018	1	Lock collar
Note: Item # 40,41,and 42 are packaged in part number 93022900			
43	11217660	1	Sentry gd. Mnt brg plate (standard on 20 HP mill only, 6" discharge)
43	11217670	1	Sentry gd. Mnt offset brg plate (standard on 5,7-1/2, & 10 HP mills, 3-1/2" discharge)
44	11211780	1	Gd. Bac, Sentry discharge auger
45	11221750	1	Gd. Cover, Sentry discharge auger
46	48005045	1	#40 roller chain (1/2" pitch, 45 pitches)
47	46131004	2	Sprocket, lot #40x .625' bore
48	49000416	1	Key, 3/16" square x 1.000
49	11222610	1	End shaft, Sentry Prop
50	70008505	1	3/16 x 1 spring pin

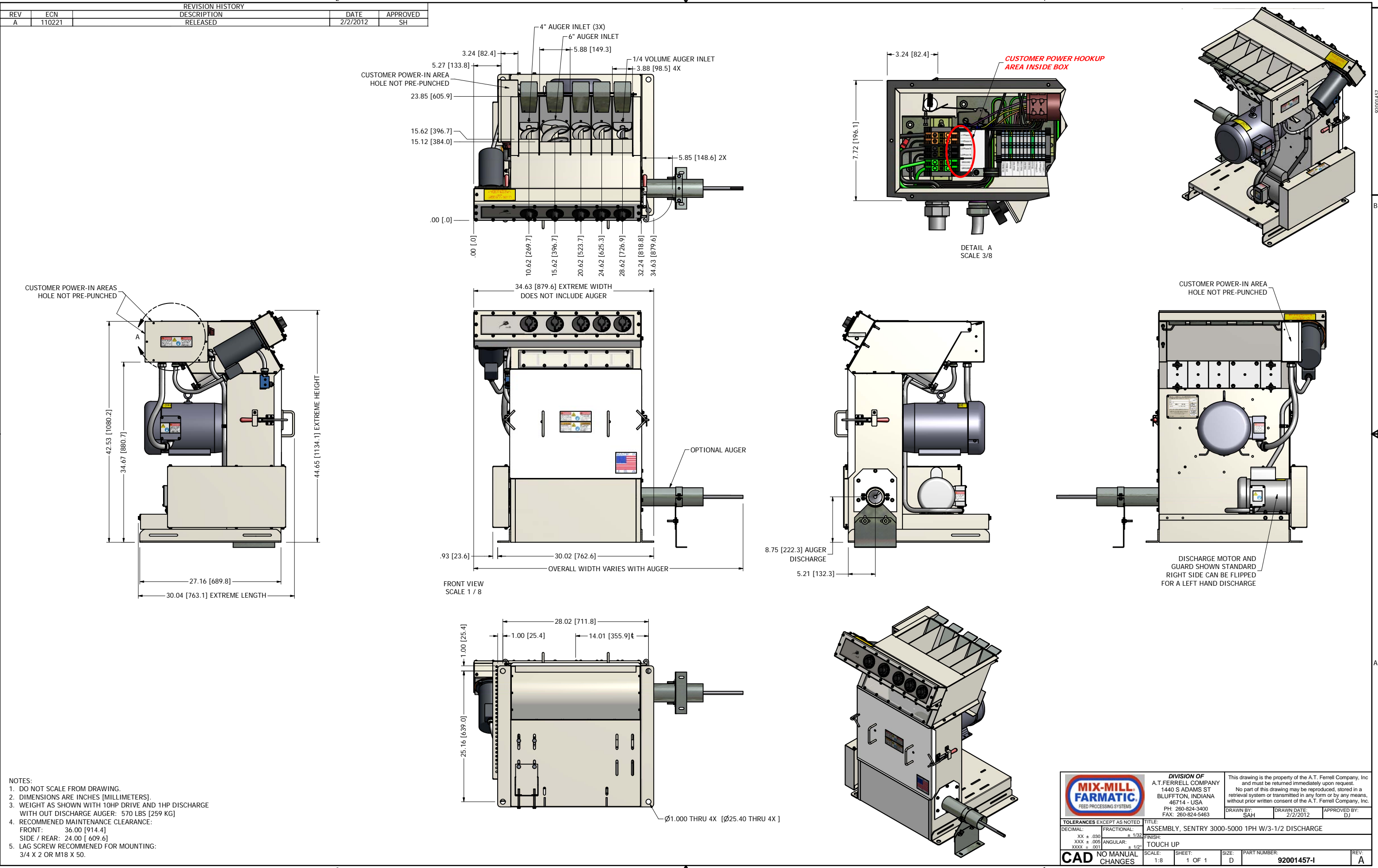
General mill assembly Sentry 2000





**SENTRY
3000**

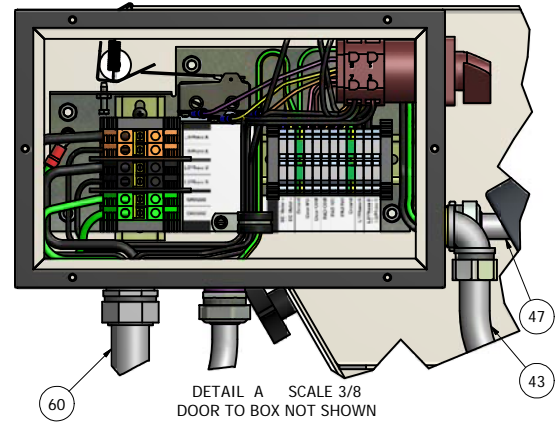
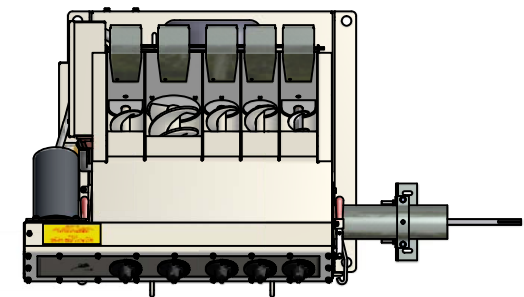
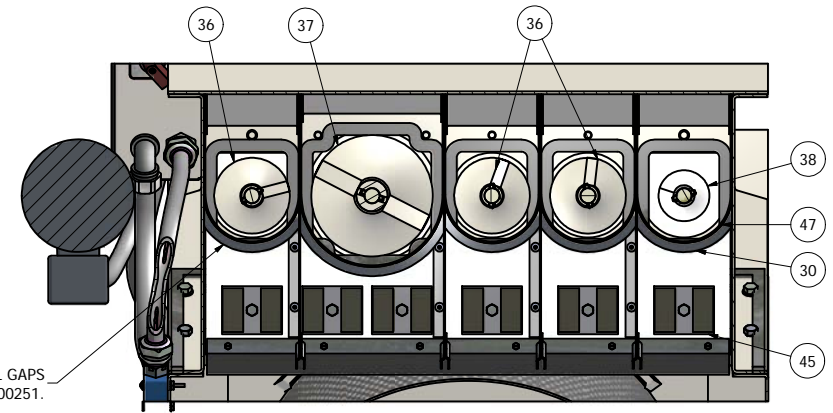
REVISION HISTORY				
REV	ECN	DESCRIPTION	DATE	APPROVED
A	110221	RELEASED	2/2/2012	SH



- NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. DIMENSIONS ARE INCHES [MILLIMETERS].
 3. WEIGHT AS SHOWN WITH 10HP DRIVE AND 1HP DISCHARGE WITH OUT DISCHARGE AUGER: 570 LBS [259 KG]
 4. RECOMMENED MAINTENANCE CLEARANCE:
 FRONT: 36.00 [914.4]
 SIDE / REAR: 24.00 [609.6]
 5. LAG SCREW RECOMMENED FOR MOUNTING:
 3/4 X 2 OR M18 X 50.

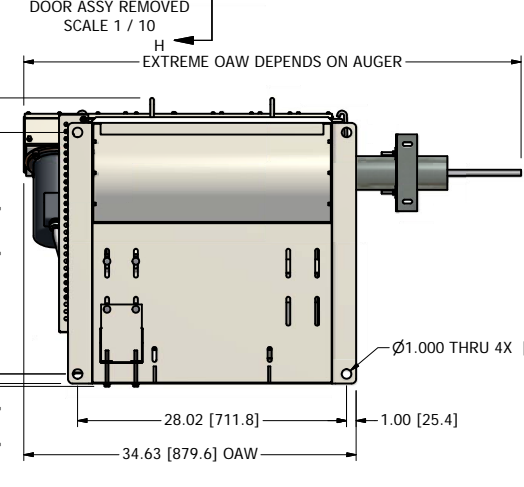
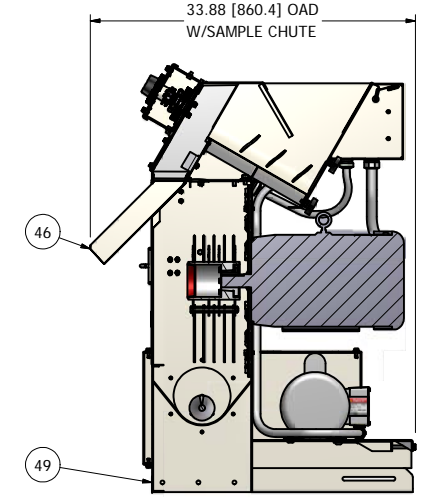
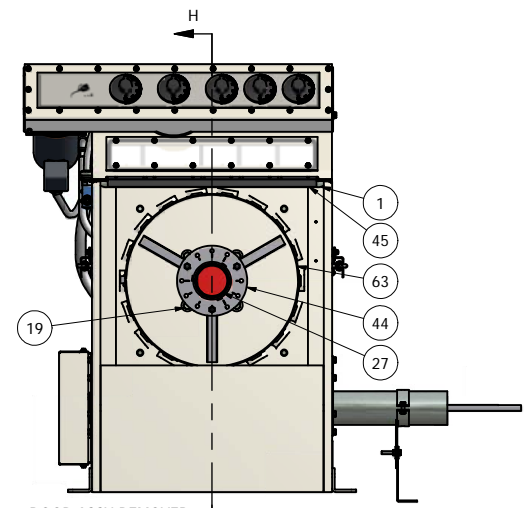
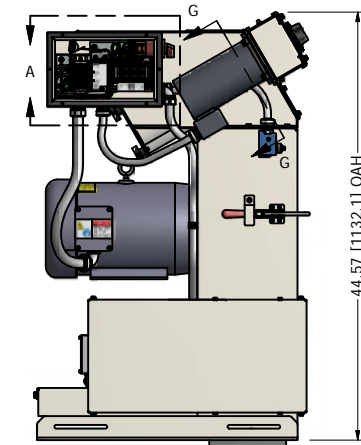
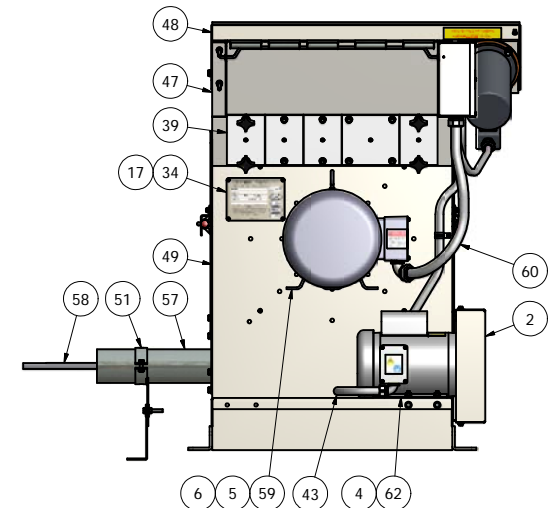
		DIVISION OF A.T.FERRELL COMPANY 1440 S ADAMS ST BLUFFTON, INDIANA 46714 - USA PH: 260-824-3400 FAX: 260-824-5463		This drawing is the property of the A.T. Ferrell Company, Inc and must be returned immediately upon request. No part of this drawing may be reproduced, stored in a retrieval system or transmitted in any form or by any means, without prior written consent of the A.T. Ferrell Company, Inc.	
TOLERANCES EXCEPT AS NOTED DECIMAL: .XX ± .030 .XXX ± .005 .XXXX ± .001		FRACTIONAL: ± 1/32 ANGLAR: ± 1/2°		TITLE: ASSEMBLY, SENTRY 3000-5000 1PH W/3-1/2 DISCHARGE FINISH: TOUCH UP	
CAD NO MANUAL CHANGES		SCALE: 1:8	SHEET: 1 OF 1	SIZE: D	PART NUMBER: 92001457-1
				DRAWN BY: SAH DRAWN DATE: 2/2/2012	APPROVED BY: DJ

REV	ECN	REVISION HISTORY	DATE	APPROVED
A	110221	RELEASED, UPDATED BUILD	11/30/2011	SH

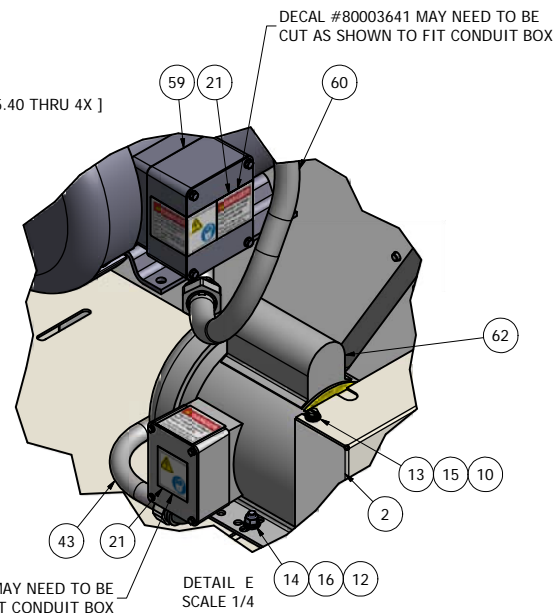
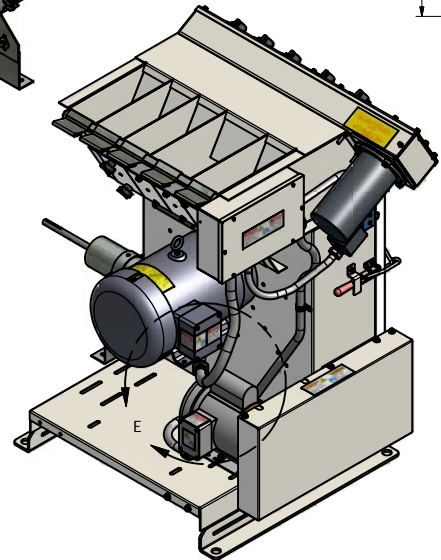
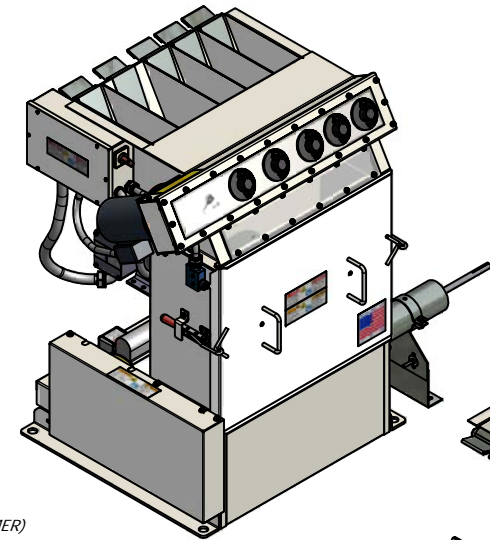


INSTALL 80014002 X 31" FILLING ALL GAPS AS WELL AS POSSIBLE ON 92000251.

SECTION G-G
SCALE 1/4




- NOTES:
- DO NOT SCALE FROM DRAWING.
 - DISCHARGE PACKAGE ASSEMBLIES (LINE ITEM NOT ON BUILD):
 92001447: 3.5 x 12
 92001448: 3.5 x 50
 FOR 6" DISCHARGE ASSEMBLY SEE 92001458
 - MAIN DRIVE MOTOR, BUSHING & WIRE HARNESS (LINE ITEM NOT ON BUILD):
 5HP: 33000601, 44010712 & 91000150
 7.5HP: 33000602, 44010716 & 91000150
 10HP: 33000603, 44010716 & 91000349
 - DISCHARGE MOTOR (LINE ITEM NOT ON BUILD):
 .50HP: 33000304
 .75HP: 33001106
 1.0HP: 33000301
 - SCREEN OPTIONS (92000212 STANDARD UNLESS SPECIFIED BY CUSTOMER)
 92000208: 1/16 HOLE SCREEN
 92001071: 3/32 HOLE SCREEN
 92000209: 7/64 HOLE SCREEN
 92000221: 1/8 HOLE SCREEN
 92001070: 9/64 HOLE SCREEN
 92000211: 5/32 HOLE SCREEN
 92000212: 3/16 HOLE SCREEN
 92000213: 7/32 HOLE SCREEN
 92000214: 1/4 HOLE SCREEN
 92000215: 5/16 HOLE SCREEN
 92000216: 3/8 HOLE SCREEN
 92000217: 7/16 HOLE SCREEN
 92000218: 1/2 HOLE SCREEN
 92000219: 5/8 HOLE SCREEN
 92000220: 3/4 HOLE SCREEN
 - ASSEMBLY SHOWN IS A 10HP DRIVE MOTOR WITH A 1HP DISCHARGE MOTOR AND A 3 1/2" DISCHARGE. SCREEN 3/16" D" WELDMENT ASSY



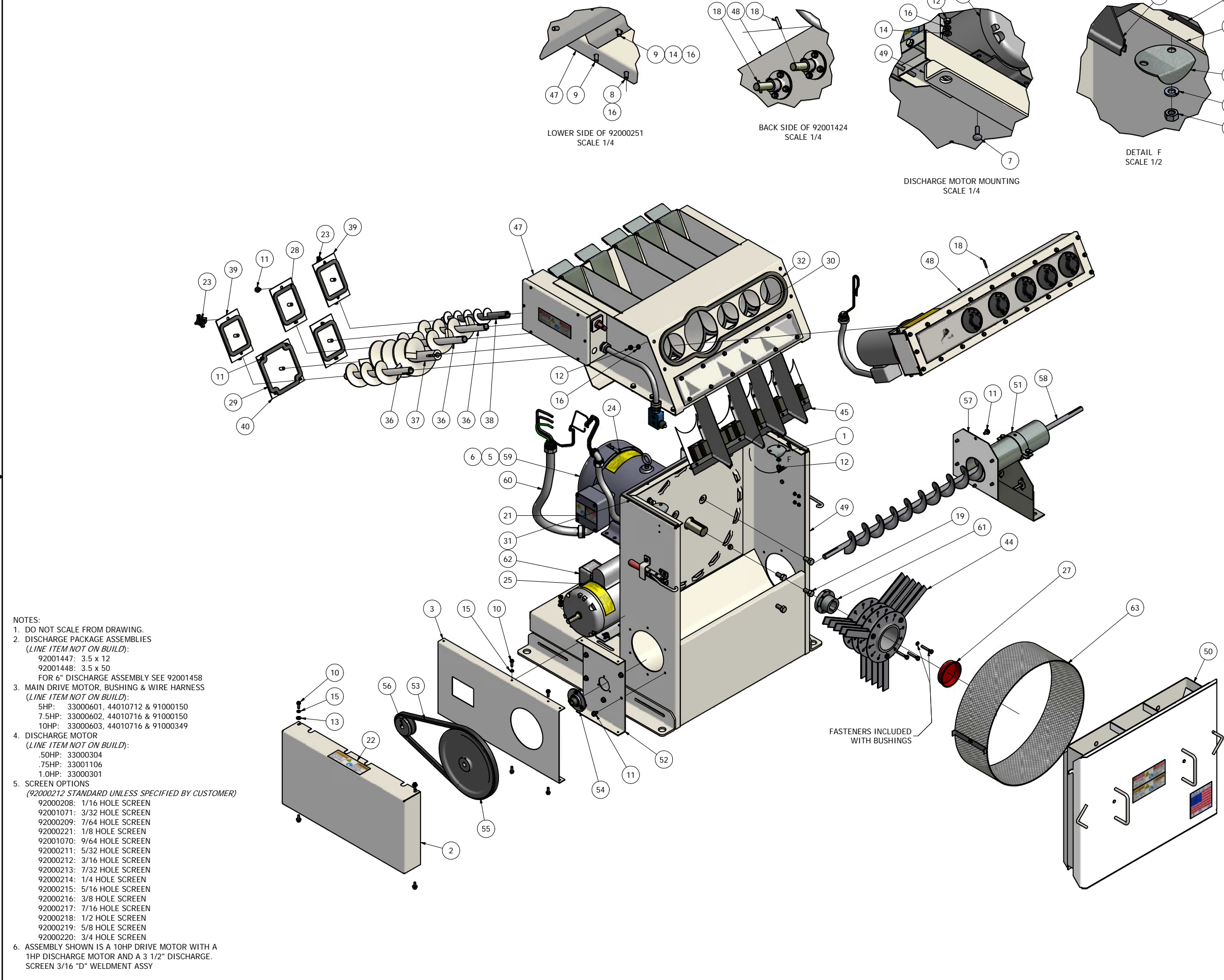
DECAL #80003641 MAY NEED TO BE CUT AS SHOWN TO FIT CONDUIT BOX

DETAIL E
SCALE 1/4

63	SEE NOTE 5	1	SCREEN, "D" WLDMT ASSY
62	SEE NOTE 4	1	DISCHARGE MOTOR
61	SEE NOTE 3	1	OD BUSHING
60	SEE NOTE 3	1	DRIVE MOTOR WIRE HARNESS
59	SEE NOTE 3	1	DRIVE MOTOR
58	SEE NOTE 2	1	WLDMT ASSY, SHAFT & FLIGHT
57	SEE NOTE 2	1	TUBE & OFFSET PLATE
56	SEE NOTE 2	1	SHEAVE, 3.0 OD x 5/8 BORE
55	SEE NOTE 2	1	SHEAVE, 1 GRV 10"
54	SEE NOTE 2	1	BRNG ASSY, SEALED BALL W/FLANGES
53	SEE NOTE 2	1	BELT, B-42
52	SEE NOTE 2	1	BEARING PLATE, GUARD BACK PLATE, SENTRY
51	SEE NOTE 2	1	ASSY, COMPLETE SUPPORT
50	92001478	1	DOOR ASSY, D MILL
49	92001426	1	ASSY, COMMON SENTRY LOWER
48	92001424	1	SENTRY PROP W/ MOTOR ASSY
47	92000251	1	HOPPER ASSY, PROPORTIONER 1 PHASE, SENTRY
46	92000240	1	DOOR ASSY, SAMPLE CHUTE, SENTRY
45	92000237	1	MAGNET PLATE ASSY, PROP, SENTRY
44	92000234	1	HUB ASSY, BEATER W/HAMMERS, D MILL
43	91000346	1	HARNESS, WIRE AUGER MOTOR 1 PHASE
42	90001162	1	WELDMENT, CALIBRATION 6" CAN (NOT SHOWN)
41	90001161	4	WELDMENT, CALIBRATION 4" CAN (NOT SHOWN)
40	90001103	1	COVER WLDMT, 6" PROP AUGER, SENTRY
39	90001102	4	COVER WLDMT, 4" PROP AUGER, SENTRY
38	90001033	1	AUGER WLDMT, 1/4 VOL, PROP, SENTRY
37	90000997	1	AUGER WLDMT, 6" FULL PITCH, PROPORTIONER, SENTRY
36	90000996	3	AUGER WLDMT, 4", PROPORTIONER, SENTRY
35	80024004	1	SCALE, GOLD BRAND 40LB (NOT SHOWN)
34	80020017	1	PLATE, BUILD: CLIPPER, FERRELL-ROSS
33	80019002	1	TIE WIRE (NOT SHOWN)
32	80014002	1	TAPE POLYURETHANE, .38 X .50 X 51" LG
31	80014002	1	TAPE POLYURETHANE, .38 X .50 X 45" LG
30	80014002	1	TAPE POLYURETHANE, .38 X .50 X 31" LG
29	80014002	1	TAPE POLYURETHANE, .38 X .50 X 27" LG
28	80014002	4	TAPE POLYURETHANE, .38 X .50 X 16" LG
27	80010509	1	CAPLUG-D HUB
26	80007002	2	OIL-PROPORTIONER (NOT SHOWN)
25	80006517	1	DECAL, MOTOR WARRANTY SERVICE
24	80006517	1	DECAL, MOTOR WARRANTY SERVICE
23	80006004	4	KNOB, PLASTIC 5/16-18 THRU
22	80003643	1	DECAL, WARNING, BELT & CHAIN
21	80003641	2	DECAL, DANGER HIGH VOLTAGE
20	80000002	1	BAG, BURLAP 10x17 10OZ (NOT SHOWN)
19	70010504	4	HHCS,W/LOCK 1/2-13 X 1.00"
18	70008505	5	3/16 X 1 SPRING PIN
17	70007001	4	RIVET, POP SDS54 .156X.13-.38"
16	66443800	15	WASHER, LOCK HELICAL 5/16"
15	66443300	8	WASHER, LOCK HELICAL 1/4"
14	66403800	7	WASHER, FLAT, 5/16" TYPE A
13	66403300	4	WASHER, FLAT 1/4"
12	66083800	10	NUT, HEX 5/16-18
11	65683812	20	SCW, MACH HX WSH HD T/C 5/16-18 X 1/2"
10	65483317	8	SCW, MACH HX WSH HD T/C 1/4-20 X 3/4"
9	65403817	7	SCW, MACH HX WSHR HD T/C 5/16-18 X .75"
8	62583817	2	HHCS, 5/16-18 X .75"
7	60283822	4	BOLT, CARR 5/16-18 X 1.00"
6	31011505	2	WIRE NUT #30-454 BLUE
5	31011504	2	WIRE NUT #30-076 RED
4	31011503	4	WIRE NUT #30-174 YELLOW
3	11221780	1	BACK, GUARD, DISCH AUGER, SENTRY
2	11221750	1	COVER, GUARD, DISCHARGE AUGER, SENTRY
1	11195940	2	BRACKET, MAGNET, D MILL

ITEM	PART NUMBER	QTY	DESCRIPTION
Parts List			
			
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TOLERANCES EXCEPT AS NOTED		TITLE:	
DECIMAL:	FRACTIONAL:	ASSEMBLY, SENTRY 3000-5000 1PH W/3-1/2 DISCHARGE	
XX ± .030	± 1/32	FINISH:	
XXX ± .005	ANGULAR: ± 1/2°	DRAWN BY: SAH	
XXXX ± .001	± 1/2°	DRAWN DATE: 11/28/2011	
APPROVED BY: DJ		REV: A	
CAD NO MANUAL CHANGES		SCALE: 1:10	SHEET: 1 OF 2
		SIZE: D	PART NUMBER: 92001457

REV	ECN	DESCRIPTION	DATE	APPROVED
A	110221	RELEASED, UPDATED BUILD	11/30/2011	SH



- NOTES:
- DO NOT SCALE FROM DRAWING.
 - DISCHARGE PACKAGE ASSEMBLIES
 (LINE ITEM NOT ON BUILD):
 92001447: 3.5 x 12
 92001448: 3.5 x 50
 FOR 6" DISCHARGE ASSEMBLY SEE 92001458
 - MAIN DRIVE MOTOR, BUSHING & WIRE HARNESS
 (LINE ITEM NOT ON BUILD):
 5HP: 33000601, 44010712 & 91000150
 7.5HP: 33000602, 44010716 & 91000150
 10HP: 33000603, 44010716 & 91000349
 - DISCHARGE MOTOR
 (LINE ITEM NOT ON BUILD):
 .50HP: 33000304
 .75HP: 33001106
 1.0HP: 33000301
 - SCREEN OPTIONS
 (92000212 STANDARD UNLESS SPECIFIED BY CUSTOMER)
 92000208: 1/16 HOLE SCREEN
 92001071: 3/32 HOLE SCREEN
 92000209: 7/64 HOLE SCREEN
 92000221: 1/8 HOLE SCREEN
 92001070: 9/64 HOLE SCREEN
 92000211: 5/32 HOLE SCREEN
 92000212: 3/16 HOLE SCREEN
 92000213: 7/32 HOLE SCREEN
 92000214: 1/4 HOLE SCREEN
 92000215: 5/16 HOLE SCREEN
 92000216: 3/8 HOLE SCREEN
 92000217: 7/16 HOLE SCREEN
 92000218: 1/2 HOLE SCREEN
 92000219: 5/8 HOLE SCREEN
 92000220: 3/4 HOLE SCREEN
 - ASSEMBLY SHOWN IS A 10HP DRIVE MOTOR WITH A
 1HP DISCHARGE MOTOR AND A 3 1/2" DISCHARGE.
 SCREEN 3/16 "D" WELDMT ASSY

63	SEE NOTE 5	1	SCREEN, "D" WLDMT ASSY
62	SEE NOTE 4	1	DISCHARGE MOTOR
61	SEE NOTE 3	1	OD BUSHING
60	SEE NOTE 3	1	DRIVE MOTOR WIRE HARNESS
59	SEE NOTE 3	1	DRIVE MOTOR
58	SEE NOTE 2	1	WLDMT ASSY, SHAFT & FLIGHT
57	SEE NOTE 2	1	TUBE & OFFSET PLATE
56	SEE NOTE 2	1	SHEAVE, 3.0 OD x 5/8 BORE
55	SEE NOTE 2	1	SHEAVE, 1 GRV 10"
54	SEE NOTE 2	1	BRNG ASSY, SEALED BALL W/FLANGES
53	SEE NOTE 2	1	BELT, B-42
52	SEE NOTE 2	1	BEARING PLATE, GUARD BACK PLATE, SENTRY
51	SEE NOTE 2	1	ASSY, COMPLETE SUPPORT
50	92001478	1	DOOR ASSY, D MILL
49	92001426	1	ASSY, COMMON SENTRY LOWER
48	92001424	1	SENTRY PROP W/ MOTOR ASSY
47	92000251	1	HOPPER ASSY, PROPORTIONER 1 PHASE, SENTRY
46	92000240	1	DOOR ASSY, SAMPLE CHUTE, SENTRY
45	92000237	1	MAGNET PLATE ASSY, PROP, SENTRY
44	92000234	1	HUB ASSY, BEATER W/HAMMERS, D MILL
43	91000346	1	HARNESS, WIRE AUGER MOTOR 1 PHASE
42	90001162	1	WELDMT, CALIBRATION 6" CAN (NOT SHOWN)
41	90001161	4	WELDMT, CALIBRATION 4" CAN (NOT SHOWN)
40	90001103	1	COVER WLDMT, 6" PROP AUGER, SENTRY
39	90001102	4	COVER WLDMT, 4" PROP AUGER, SENTRY
38	90001033	1	AUGER WLDMT, 1/4 VOL, PROP, SENTRY
37	90000997	1	AUGER WLDMT, 6" FULL PITCH, PROPORTIONER, SENTRY
36	90000996	3	AUGER WLDMT, 4", PROPORTIONER, SENTRY
35	80024004	1	SCALE, GOLD BRAND 40LB (NOT SHOWN)
34	80020017	1	PLATE, BUILD: CLIPPER, FERRELL-ROSS
33	80019002	1	TIE WIRE (NOT SHOWN)
32	80014002	1	TAPE POLYURETHANE, .38 X .50 X 51" LG
31	80014002	1	TAPE POLYURETHANE, .38 X .50 X 45" LG
30	80014002	1	TAPE POLYURETHANE, .38 X .50 X 31" LG
29	80014002	1	TAPE POLYURETHANE, .38 X .50 X 27" LG
28	80014002	4	TAPE POLYURETHANE, .38 X .50 X 16" LG
27	80010509	1	CAPLUG-D HUB
26	80007002	2	OIL-PROPORTIONER (NOT SHOWN)
25	80006517	1	DECAL, MOTOR WARRANTY SERVICE
24	80006517	1	DECAL, MOTOR WARRANTY SERVICE
23	80006004	4	KNOB, PLASTIC 5/16-18 THRU
22	80003643	1	DECAL, WARNING, BELT & CHAIN
21	80003641	2	DECAL, DANGER HIGH VOLTAGE
20	80000002	1	BAG, BURLAP 10x17 100Z (NOT SHOWN)
19	70010504	4	HHCS,W/LOCK 1/2-13 X 1.00"
18	70008505	5	3/16 X 1 SPRING PIN
17	70007001	4	RIVET, POP SDS54 .156X.13-.38"
16	66443800	15	WASHER, LOCK HELICAL 5/16"
15	66443300	8	WASHER, LOCK HELICAL 1/4"
14	66403800	7	WASHER, FLAT, 5/16" TYPE A
13	66403300	4	WASHER, FLAT 1/4"
12	66083800	10	NUT, HEX 5/16-18
11	65683812	20	SCW, MACH HX WSH HD T/C 5/16-18 X 1/2"
10	65483317	8	SCW, MACH HX WSH HD T/C 1/4-20 X 3/4"
9	65403817	7	SCW, MACH HX WSHR HD T/C 5/16-18 X .75"
8	62583817	2	HHCS, 5/16-18 X .75"
7	60283822	4	BOLT, CARR 5/16-18 X 1.00"
6	31011505	2	WIRE NUT #30-454 BLUE
5	31011504	2	WIRE NUT #30-076 RED
4	31011503	4	WIRE NUT #30-174 YELLOW
3	11221780	1	BACK, GUARD, DISCH AUGER, SENTRY
2	11221750	1	COVER, GUARD, DISCHARGE AUGER, SENTRY
1	11195940	2	BRACKET, MAGNET, D MILL

Parts List

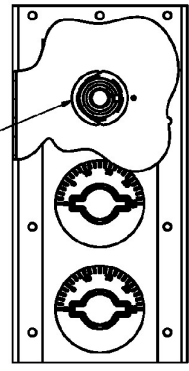
ITEM	PART NUMBER	QTY	DESCRIPTION
DIVISION OF A.T.FERRELL COMPANY 1440 S ADAMS ST BLUFFTON, INDIANA 46714 - USA PH: 260-824-3400 FAX: 260-824-5463			
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TOLERANCES EXCEPT AS NOTED		TITLE:	
DECIMAL:	FRACTIONAL:	ASSEMBLY, SENTRY 3000-5000 1PH W/3-1/2 DISCHARGE	
XX ± .030	± 1/32	FINISH:	
XXX ± .005	ANGULAR: ± 1/2°		
XXXX ± .001	± 1/2°		
CAD NO MANUAL CHANGES	SCALE: 1:10	SHEET: 2 OF 2	SIZE: D
		PART NUMBER: 92001457	REV: A

13/09/2011 11:26:22 AM Last Saved By: sakhaman
 TimeStamp
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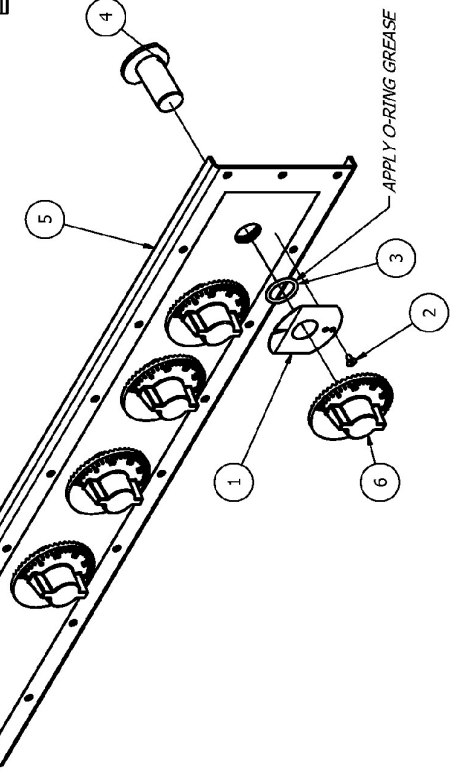
REVISION HISTORY

REV	ECN	DESCRIPTION	DATE	APPROVED
A		RELEASED	9/7/1974	BOOTH
B	100077	REDRAWN IN INVENTOR	3/15/2010	AJGAGER
C	110221	ADDED ASSY NOTES	12/19/2011	SH

CAMS OPPOSITE EACH OTHER WITH 0 AT 12 O'CLOCK



CAULK INNER FACES AND RIVET



APPLY O-RING GREASE

ITEM	PART NUMBER	QTY	DESCRIPTION
6	92000235	5	KNOB ASSEMBLY
5	90000121	1	D PROP WLDMNT
4	90000119	5	MOVEABLE CAM & SLEEVE ASS'Y
3	80008502	5	O-RING, 1.00 I.D X 1.25 O.D X .125 THK
2	70007001	5	RIVET, POP SDS54 .156X.13-.38"
1	11195780	5	SPRING, KNOB, PROPORTIONER

Perts List

DIVISION OF
A. T. FERRELL COMPANY
 1440 S ADAMS ST
 BLUFFTON, INDIANA
 46714 - USA
 PH: 280-624-3400
 FAX: 280-624-5463

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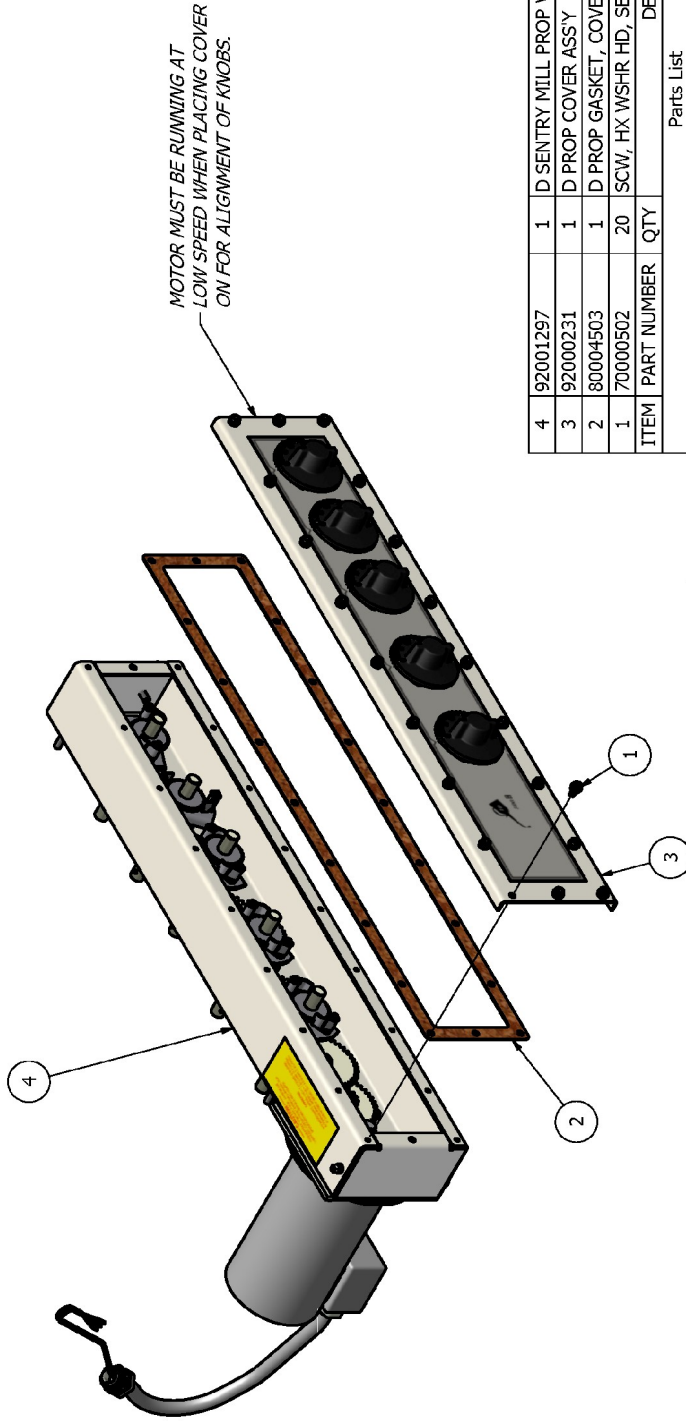
DRAWN BY: ajgager
 DRAWN DATE: 3/15/2010
 APPROVED BY: DMJ

TOLERANCES EXCEPT AS NOTED	TITLE
DECIMAL: XX ± .030 XXX ± .005 XXXX ± .001	D PROP COVER ASS'Y
FRACTIONAL: ± 1/32	FINISH
ANGULAR: ± 1/2°	NONE

CAD NO CHANGES	NO MANUAL CHANGES	SCALE	SHEET	1 OF 1	SIZE	PART NUMBER	REV
1:4	1:4	1:4	1	1	B	92000231	C

NOTES:
 1. DO NOT SCALE FROM DRAWING.

REV	ECN	DESCRIPTION	DATE	APPROVED
A	990076	CHANGE IN PART NUMBER 92001297	9/17/1999	J1
B	100077	REDRAWN IN INVENTOR	5/10/2010	AGAGER
C	100077	UPDATED BUILD, ADDED ASSY NOT	12/19/2011	SH



ITEM	PART NUMBER	QTY	DESCRIPTION
4	92001297	1	D SENTRY MILL PROP W/ MTR. ASSY
3	92000231	1	D PROP COVER ASSY
2	80004503	1	D PROP GASKET, COVER
1	70000502	20	SCW, HX WSHR HD, SELF SEALING 1/4-20 X .50"

Parts List



DIVISION OF
A. T. FERRELL COMPANY
1440 S ADAMS ST
BLUFFTON, INDIANA
46714 - USA
PH: 260-824-3400
FAX: 260-824-5483

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DRAWN BY: AllenG
DRAWN DATE: 5/10/2010
APPROVED BY: DMJ

TOLERANCES EXCEPT AS NOTED:
DECIMAL: .XX ± .030
 XXX ± .005
 XXXX ± .001
FRACTIONAL: ± .032
FINISH: NONE
ANGULAR: ± .12°

TITLE: SENTRY PROP W/ MOTOR ASSY

NO MANUAL CHANGES
SCALE: 0.19:1
SHEET: 1 OF 1
SIZE: B
PART NUMBER: 92001424
REV: C

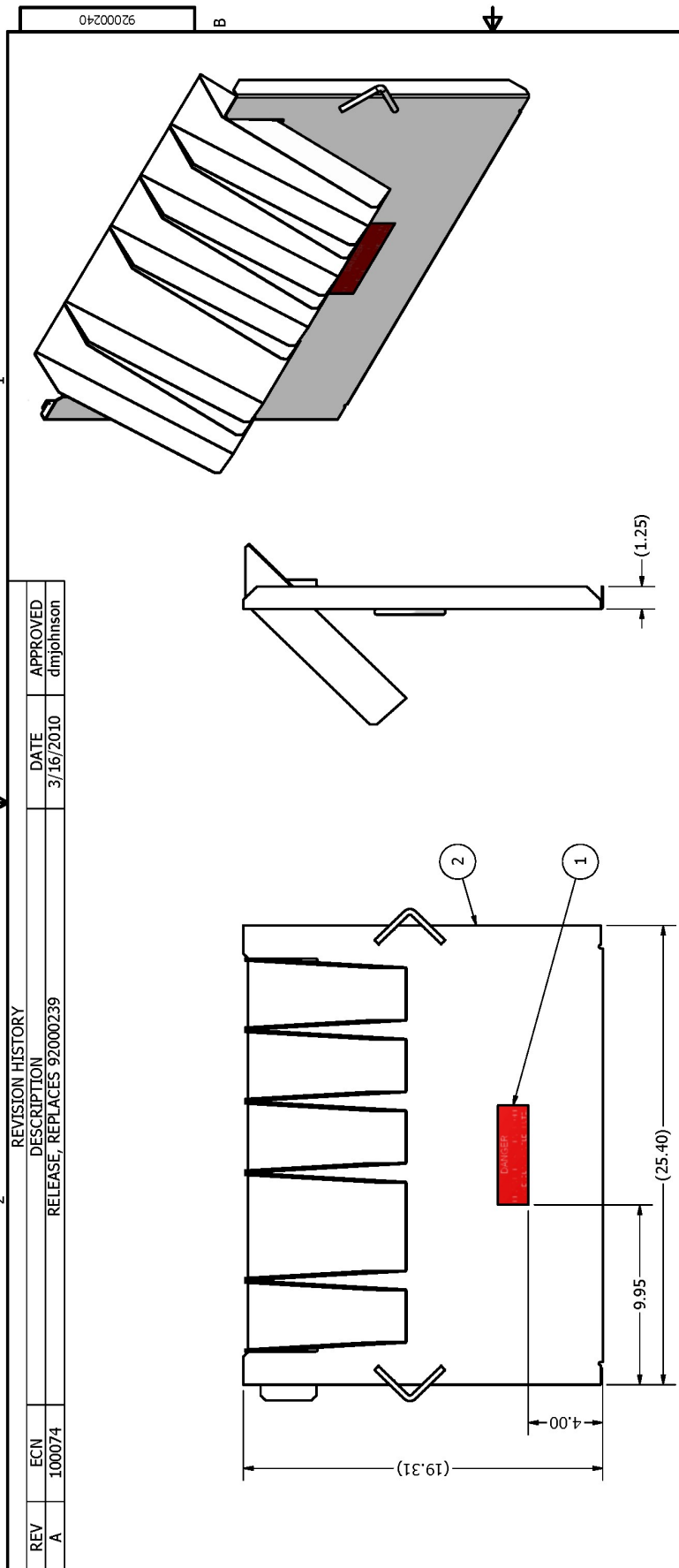
NOTES:
1. DO NOT SCALE FROM DRAWING.

Reference File: C:\Inventor\Workspace\Inventor Files\MixMill\92000240\92000240.dwg

5/8/2010 10:31:31 AM Last Saved By: djm TimeStamp

REV	ECN	DESCRIPTION	DATE	APPROVED
A	100074	RELEASE, REPLACES 92000239	3/16/2010	djmjohnson

REVISION HISTORY



ITEM	PART NUMBER	QTY	DESCRIPTION
2	90001134	1	DOOR WILDMT, SAMPLE CHUTE, SENTRY
1	80006514	1	DECAL - MILL SCREEN REMOVAL

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CAD
NO MANUAL CHANGES
TOLERANCES EXCEPT AS NOTED

DECIMAL: .XX ± .005
FRACTIONAL: ± 1/32
ANGULAR: ± 1/2°

DIVISION OF A. T. FERRELL COMPANY
FINISH: NONE
SCALE: 0.19:1
DRAWN BY: dmjohnson
APPROVED BY: DMJ

BLUFTON, INDIANA, USA

MIX-MILL FARMATIC
FEED PROCESSING SYSTEMS

TITLE: DOOR ASSY, SAMPLE CHUTE, SENTRY

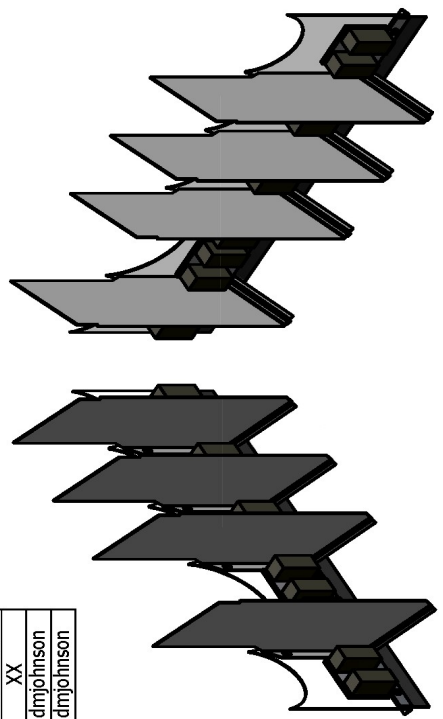
DATE: 3/10/2010
PART NUMBER: 92000240

SHEET: 1 of 1

NOTES:
1. DO NOT SCALE FROM DRAWING.

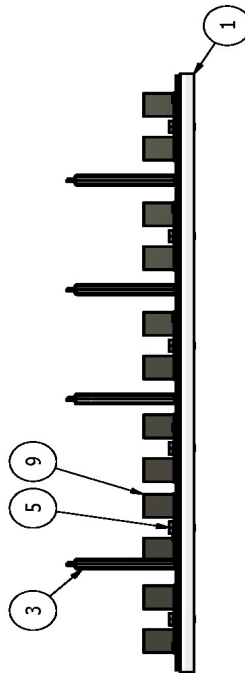
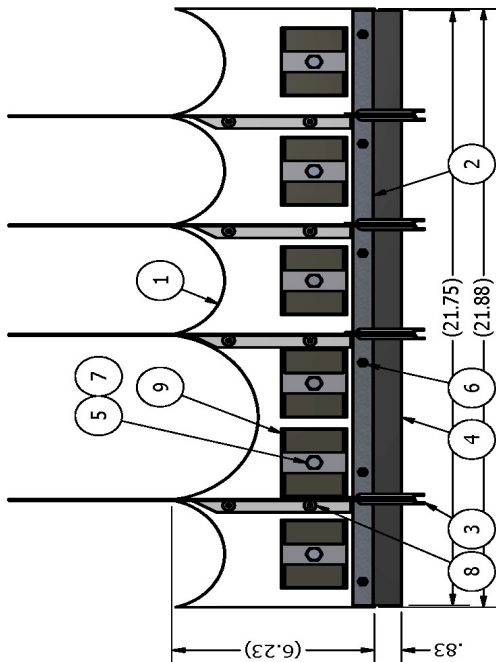
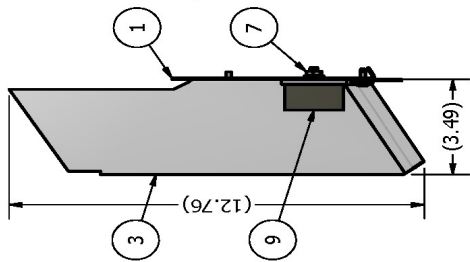
REVISION HISTORY

REV	ECN	DESCRIPTION	DATE	APPROVED
A	XXXXXX	RELEASE	4/3/1974	dbooth
B	XXXXXX	800004505 WAS 11196070	11/27/1974	dbooth
C	XXXXXX	65683812 REPLACES BY 62583317, 66083300 & 66443300	2/11/1975	RF
D	XXXXXX	REDESIGN	3/17/1977	DDP
E	XXXXXX	11205300 WAS 80004505	1/20/1981	nbroman
F	850019	ADD RIVET ORIENTATION NOTE	1/25/1985	XX
G	050002	11196070 REPLACES 11196080, 11204390 & 70007001	1/12/2005	dmjohnson
H	100098	62583315 WAS 62583317, 66783300 REPLACES 66083300 & 66443300	4/1/2010	dmjohnson



SCALE 3/16

SCALE 3/16



ITEM	PART NUMBER	QTY	DESCRIPTION
9	80008001	6	MAGNET, MILL, CERAMIC STEEL
8	70007001	8	RIVET, POP SDS54 .156X.13-.38"
7	66783300	6	NUT, HEX SERR LOCK 1/4-20
6	65482212	6	SCW, MACH HX SLT HD T/C 8-32 X 1/2"
5	62583315	6	HHCS, 1/4-20 X 5/8"
4	11205300	1	SEAL, MAGNET PLATE, PROP, SENTRY
3	11196070	4	DIVIDER WLDMT, MAGNET PLT, PROP, SENTRY
2	11196060	1	STRIP, HOLDDOWN, MAGNET PLATE, SENTRY
1	11196050	1	MAGNET PLATE, PROPORTIONER, SENTRY

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CAD
NO MANUAL CHANGES
TOLERANCES EXCEPT AS NOTED

DIVISION OF A. T. FERRELL COMPANY
SCALE: 1:4
FINISH: NONE
DECIMAL: .XXX ± .005
FRACTIONAL: XX ± .030
ANGULAR: ± 1/32
± 1/2

BLUFFTON, INDIANA - USA
DRAWN BY: dmjohnson
APPROVED BY: DMJ

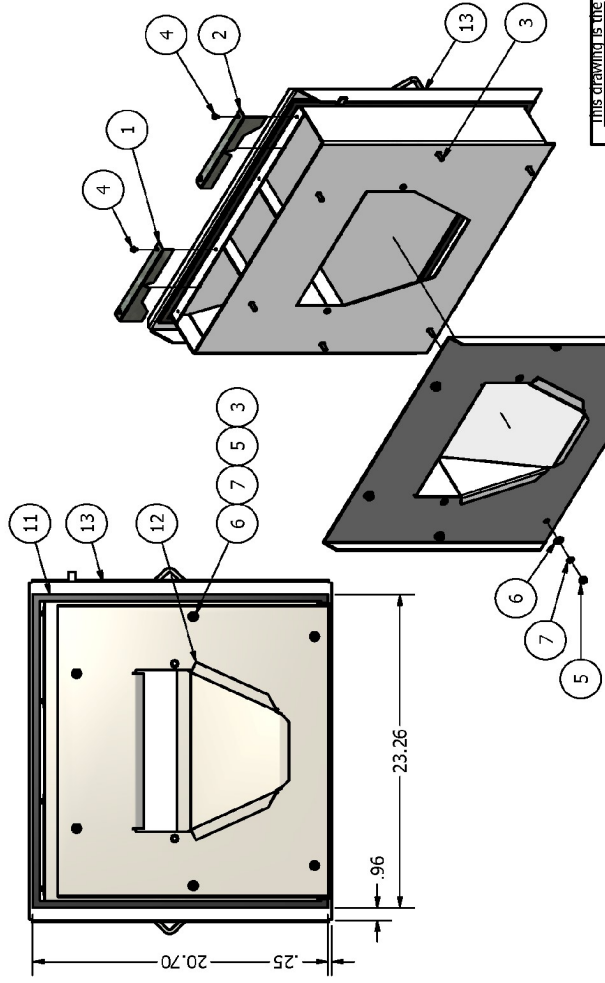
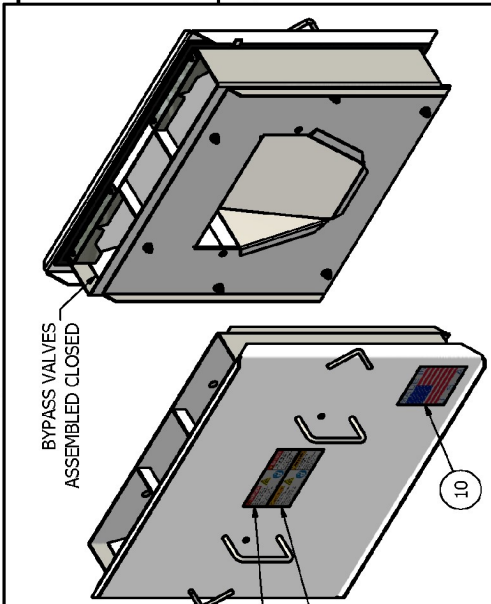
TITLE: MAGNET PLATE ASSY, PROPORTIONER, SENTRY

DATE: 4/1/2010
PART NUMBER: 92000237
SIZE: B
SHEET: 1 of 1

NOTES:
1. DO NOT SCALE FROM DRAWING.

REV	ECN	DESCRIPTION	DATE	APPROVED
A	060058	RELEASE	6/12/2006	dmyjohnson
B	100074	REDRAWN CAD	3/11/2010	dmyjohnson
C	110221	ADDED 80003642, 80003643 & 80003697	11/18/2011	SAH

ITEM	PART NUMBER	QTY	DESCRIPTION
13	90001993	1	DOOR WLDMT, D MILL
12	90000440	1	WEAR PLATE WLDMT, D-MILL
11	80014002	7.500 ft	TAPE POLYURETHANE, .38 X .50"
10	80003697	1	DECAL, MADE IN THE USA
9	80003643	1	DECAL, WARNING, BELT & CHAIN
8	80003642	1	DECAL, WARNING, FAN BLADE
7	66443300	6	WASHER, LOCK HELICAL 1/4"
6	66403300	6	WASHER, FLAT 1/4"
5	66083300	6	NUT, HEX 1/4-20
4	65502208	4	SCW, HEX WASHER HEAD T/C A, #9-32 X .38"
3	60283317	6	BOLT, CARR 1/4-20 X 3/4"
2	11217212	1	RETAINER ANGLE, RH, BYPASS VALVE
1	11217211	1	RETAINER ANGLE, LH, BYPASS VALVE



ITEM	PART NUMBER	QTY	DESCRIPTION
13	90001993	1	DOOR WLDMT, D MILL
12	90000440	1	WEAR PLATE WLDMT, D-MILL
11	80014002	7.500 ft	TAPE POLYURETHANE, .38 X .50"
10	80003697	1	DECAL, MADE IN THE USA
9	80003643	1	DECAL, WARNING, BELT & CHAIN
8	80003642	1	DECAL, WARNING, FAN BLADE
7	66443300	6	WASHER, LOCK HELICAL 1/4"
6	66403300	6	WASHER, FLAT 1/4"
5	66083300	6	NUT, HEX 1/4-20
4	65502208	4	SCW, HEX WASHER HEAD T/C A, #9-32 X .38"
3	60283317	6	BOLT, CARR 1/4-20 X 3/4"
2	11217212	1	RETAINER ANGLE, RH, BYPASS VALVE
1	11217211	1	RETAINER ANGLE, LH, BYPASS VALVE

MIX-MILL FARMATIC
 FEED PROCESSING SYSTEMS

DIVISION OF A. T. FERRELL COMPANY
 PUNISH, INDIANA, USA
 APPROVED BY: dmyjohnson
 SCALE: 1:8
 DRAWN BY: DMJ

NO MANUAL CHANGES TOLERANCES EXCEPT AS NOTED
 ORIGINAL: NONE
 DIMS: NONE
 FRACTIONAL: NONE
 ANGULAR: +.1/32
 DATE: 3/11/2010
 PART NUMBER: 92001478
 SHEET: 1 of 1

- NOTES:
 1. DO NOT SCALE FROM DRAWING.
 2. REPLACES 92001276: DOOR ASSY, W/LANCES, D MILL.

DISCHARGE PACKAGES

3 1/2" x 12" Discharge package, Sentry hammer mill- Part # 92001447

Item #	Part number	Quantity	Description
1	93048021	1	Support assembly
2	90001105	1	Tube and offset plate, Sentry 12"
3	90002150	1	3-1/2" shaft and flight assembly LH
4	11217670	1	3-1/2" bearing mounting plate
Note: Item # 4 is shipped mounted on the Sentry mill			
5	93022900	1	5/8" bore, dust proof ball bearing assembly
6	42108104	1	Sheave, pressed steel, 10.0", .625" bore w/keyway
7	F91162042	1	V belt, B-42
8	301097	1	Sheave, 3" OD, .625" bore, keyway/2 screws

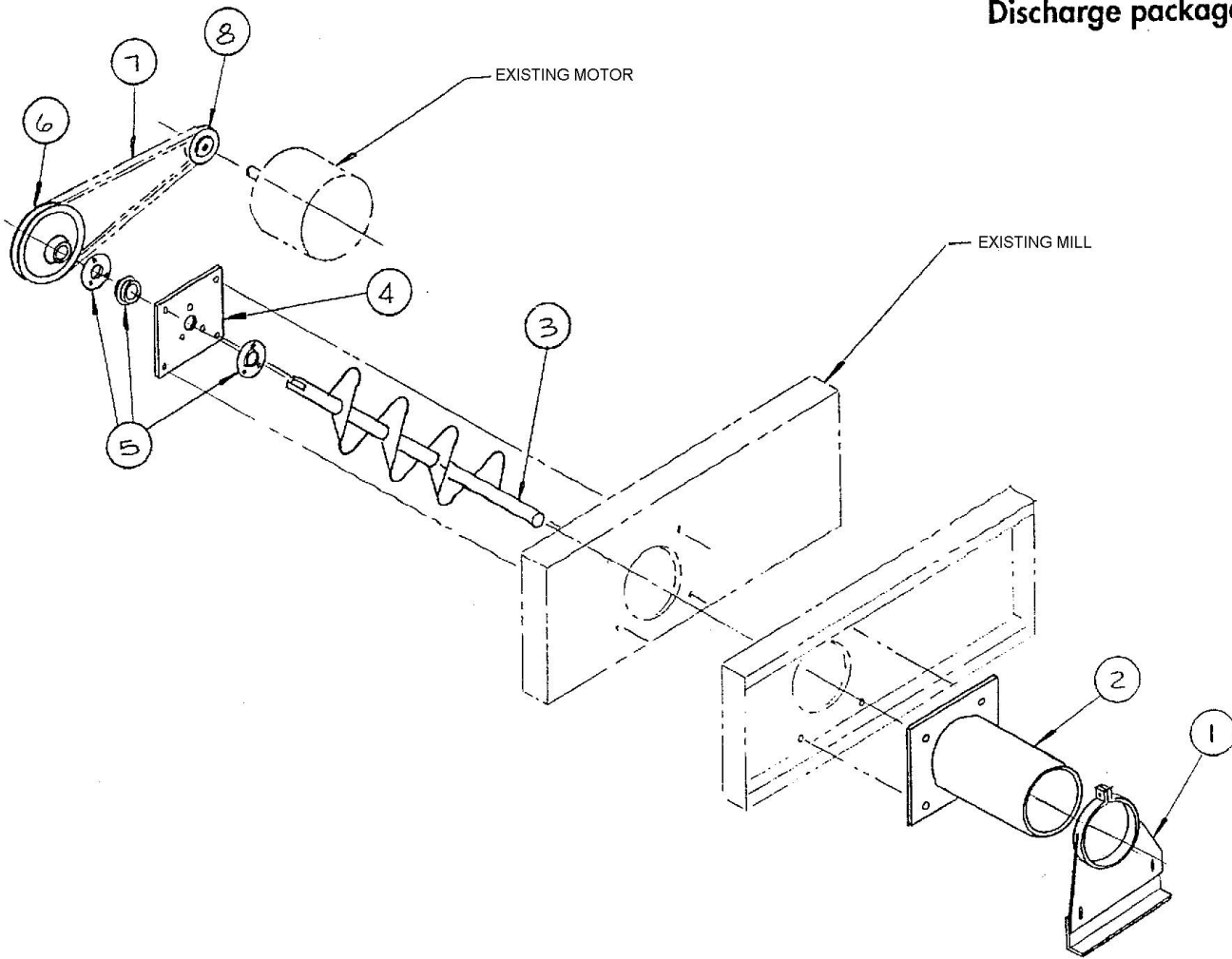
3 1/2" x 50" Discharge package, Sentry hammer mill-Part # 92001448

Item #	Part Number	Quantity	Description
1	93048021	1	Support assembly
2	90001106	1	Tube and offset plate, Sentry 12"
3	90002153	1	3-1/2" shaft and flight assembly LH
4	11217670	1	3-1/2" bearing mounting plate
Note: Item # 4 is shipped mounted on the Sentry mill			
5	93022900	1	5/8" bore, dust proof ball bearing assembly
6	42108104	1	Sheave, pressed steel, 10.0", .625" bore w/keyway
7	F91162042	1	V belt, B-42
8	301097	1	Sheave, 3" OD, .625" bore, keyway/2 screws

6" x 12" Discharge package, Sentry hammer mill - Part # 92001449

Item #	Part number	Quantity	Description
1	106136	1	6' corner support
2	90001107	1	Tube and offset plate, Sentry 6" x 12"
3	90000943	1	Cross auger 6"
4	11217660	1	6" bearing mounting plate
Note: Item # 4 is shipped mounted on the Sentry mill			
5	93032230	1	1-1/16" bore, dust proof ball bearing assembly
6	301106	1	Sheave, pressed steel, 10.0", 1.063" bore, kw/2scw
7	F91162042	1	V belt, B-42
8	301097	1	Sheave, 3" OD, .625" bore, keyway/2 screws

Discharge packages



Appendix A

Book value of common feed stuffs on "as fed" basis

Ingredient	% Protein	% Moisture	% Calcium	% Phosphorus
Corn	8.5	14	0.05	0.25
Corn, High Moisture	7.4	27	0.04	0.22
Oats	11	10	0.1	0.35
Barley	11.5	11	0.08	0.42
Wheat	13.5	12	0.05	0.41
Mixed Grain	11.3	12	0.09	0.39
Brewers Grains, Dried	27	7	0.3	0.6
Soybeans, Raw Full-Fat	37	13	0.25	0.6
Soybeans, Roasted	38	10	0.25	0.6
Soybean Meal, Western	46.5	12	0.3	0.6
Soybean Meal, Lo Protein	44	12	0.25	0.6
Soybean Meal, Hi Protein	48	12	0.2	0.65
Corn Gluten Feed	21	12	0.2	0.9
Corn Gluten Meal	60	10	0.2	0.7
Corn Distillers	27	9	0.35	1.3
Limestone	0	2	38	0
Molasses, Dried	7	9	1.2	0.9

B

50 Amp Ammeter Replacement Kit
Part Number: 91000372

This kit replaces the existing 50 amp meter with a replacement, lower amperage unit that will provide the same readings without the high motor current wiring running directly to the panel door. This kit does require some basic understanding of electrical wiring and the use of basic tools such as a volt meter, wire strippers and terminal connectors. Seek the assistance of a certified electrician if required.

Improper installation can lead to equipment damage and personal injury or death. Do not wire the replacement meter directly into the original panel wiring as full current will be directed into the meter and destroyed. Seek the assistance of a certified electrician if unsure of proper installation!

Kit consists of:

- Qty. 1 – 91000373 Transformer & Lead assembly
- Qty. 2 – 302017 Amp meter & mounting hardware
- Qty. 2 – 80019006 Adhesive mounting pads
- Qty. 2 – 7 in. tie straps
- Qty. 1 – 99960006 Kit installation instruction

Installation and operation:

1. Disconnect all power from the panel and verify that power has been removed by first trying to operate the equipment as normal. If the equipment does not start, open panel door and check for incoming voltages. Multiple voltage inputs may be present due to motors and controls in the system.

High Voltage! - To reduce the risk of electrical shock when servicing, turn off all power to all equipment. In addition to incoming power, AC power can feed back into a shut off panel when other systems or components share a common control or power circuit.


2. Disconnect and remove old amp meter from panel door.
3. Remove heavy gauge wires that were disconnected from old meter and retain.

↖

A

NOTES:

1. DO NOT SCALE FROM DRAWING.

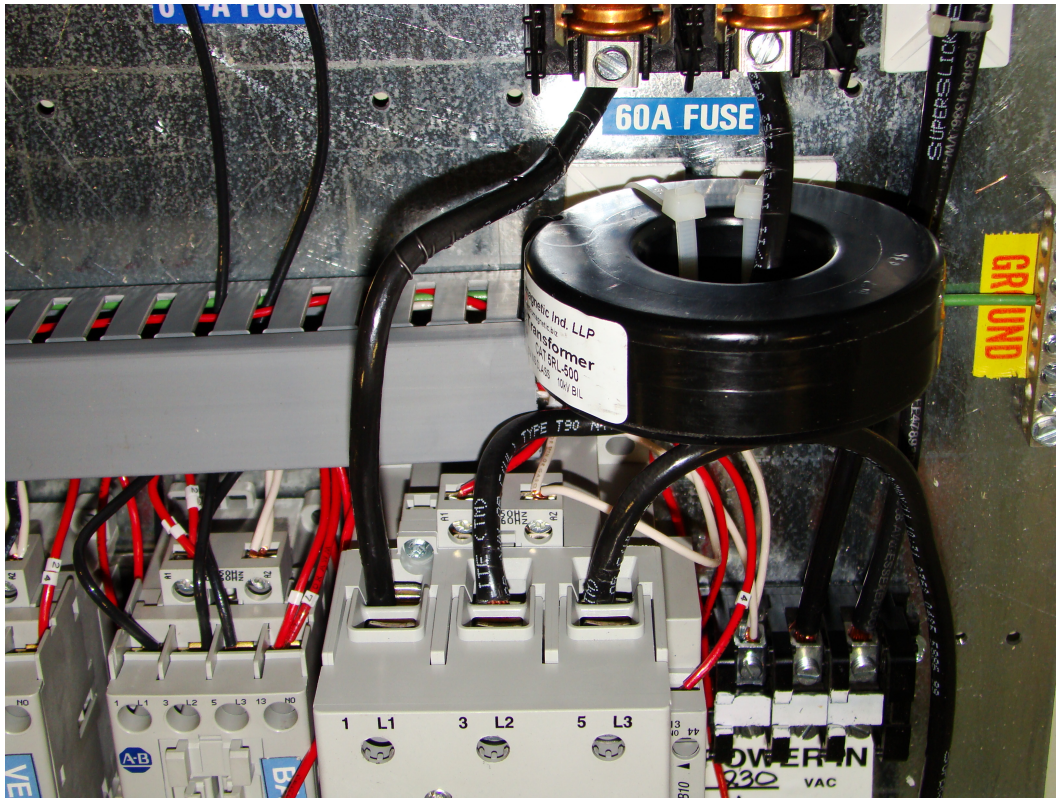
		DIVISION OF A.T.FERRELL COMPANY 1440 S ADAMS ST BLUFFTON, INDIANA 46714 - USA PH: 260-824-3400 FAX: 260-824-5463		This drawing is the property of the A.T. Ferrell Company, Inc and must be returned immediately upon request. No part of this drawing may be reproduced, stored in a retrieval system or transmitted in any form or by any means, without prior written consent of the A.T. Ferrell Company, Inc.	
		DRAWN BY: dmjohnson	DRAWN DATE: 3/29/2012	APPROVED BY: DMJ	
TOLERANCES EXCEPT AS NOTED		TITLE: INSTRUCTIONS, 50 AMP AMMETER REPLACEMENT KIT			
DECIMAL: XX ± .030 XXX ± .005 XXXX ± .001	FRACTIONAL: ± 1/32 ANGULAR: ± 1/2°	FINISH: NONE			
CAD NO MANUAL CHANGES		SCALE: NONE	SHEET: 1 OF 2	SIZE: B	PART NUMBER: 99960006
					REV: A

2

▲

1


4. Install new meter with mounting hardware provided. Please note that if filing is required to install new meter into existing hole, ensure that metal filings do not fall into panel or onto components that could result in a short.
5. Install donut transformer in front of main motor fuses as shown in picture. Use adhesive mounts and wire ties to hold the transformer in place.



6. Run wires from transformer through wire ways and connect to new meter. Polarity does not matter.
7. Pieces of the heavy gauge wire removed earlier need to be cut and stripped at both ends to run from motor fuse terminals to starter contractor. One of the two heavy gauge conductors needs to run through the hole in the transformer. This now measures the current running to the motor without full load current running to the meter in the panel. Refer to photo.
8. Inspect all terminals for tightness, remove any tools and components from the panel and close door prior to testing.
9. Restore power to system and verify proper operation.

NOTES:

1. DO NOT SCALE FROM DRAWING.

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		DRAWN BY: dmjohnson	DRAWN DATE: 3/29/2012	APPROVED BY: DMJ	
TOLERANCES EXCEPT AS NOTED DECIMAL: XX ± .030 XXX ± .005 XXXX ± .001		FRACTIONAL: ± 1/32 ANGULAR: ± 1/2°		TITLE: INSTRUCTIONS, 50 AMP AMMETER REPLACEMENT KIT	
FINISH: NONE		SCALE: NONE	SHEET: 2 OF 2	SIZE: B	PART NUMBER: 99960006
CAD NO MANUAL CHANGES					REV: A



Division of:

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