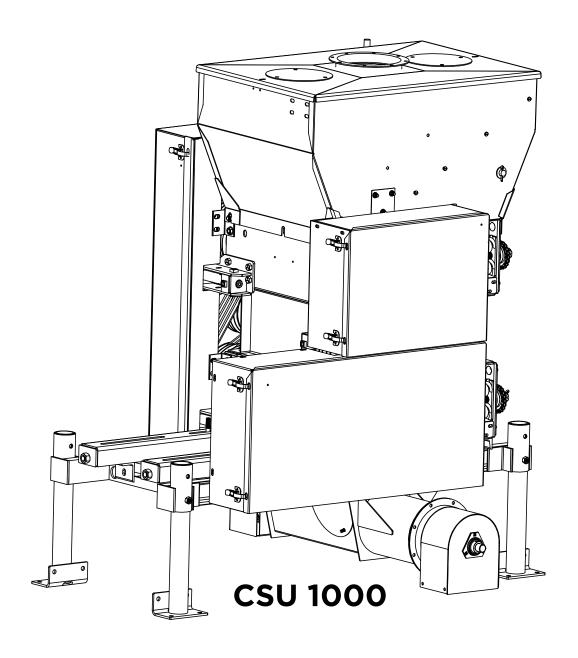
Operator & Parts Manual

1000 COMMERCIAL STACKED MODEL





10/14/15

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Introduction

Congratulations! You are now the owner/operator of America's finest roller mill. Please take a few minutes to be sure that you understand the maintenance and operation of this roller mill. Read this operator's manual carefully: you'll get better results and have fewer problems.

After your roller mill has been in operation for a few hours, check for loose bolts, setscrews, belts, etc. All are tight when the roller mill leaves the factory; however, after a break-in period, some items may require additional tightening. Like any other machine, your Automatic roller mill requires proper care and intelligence in operation. Misuse and neglect will only cause unnecessary expense and dissatisfaction.

This manual is written as a guide for owners and operators of the Automatic CSU 500 & 1000 model roller mill. Read it carefully and follow the suggestions made. Keep this manual in a convenient place for quick, easy reference, and use it whenever questions arise.

Fill in the following information now for future reference and convenience. Always give this information to your dealer when ordering new parts. If at any time it becomes necessary for you to write directly to Automatic Equipment Manufacturing Company for additional information, give the model and serial number of your machine, and as much descriptive information as possible. It will enable us to more thoroughly and quickly expedite your order.

Model No	Serial No	Date of Purchase
Name and Address of Dealer		

Exchange & Resharpening Roll Service

If your rolls ever become dull or require resharpening, you can order an exchange set of rolls. For further details on our special roll replacement program, contact your nearest dealer or distributor. If you do not have a dealer or distributor in your area, contact the factory. Credit allowance on used rolls is subject to roll inspection upon return to factory via prepaid freight.

DEALER/OPERATOR PRE-USE INSPECTION CHECKLIST

Although everything is in working order when the roller mill leaves the factory, some components may get out of adjustment in transit. The following inspection must be made prior to operation. Check each item listed and make adjustments if necessary. Refer to the corresponding sections of the manual to determine the correct settings for individual items.

- Check all belts for proper tension and alignment.
- Check to make sure the set screws in all pulleys and bearings are tight.
- Check all grease line connections and lines for damage during shipment.
- Make a general check for bolts that may have vibrated loose during shipment.
- Check greased bearings for proper lubrication.
- Check to make sure all shields and guards are in place.
- After operating the roller mill for the first few times, go through this checklist again. Some bolts, setscrews and belts may require additional adjustment during this break-in period.

DO NOT OPERATE OR USE THIS EQUIPMENT UNTIL THE FOLLOWING OPERATING AND SAFETY INSTRUCTIONS HAVE BEEN READ AND UNDERSTOOD.

SAFETY



This symbol is used to bring attention to safety precautions and instructions. When you see this symbol, be alert and pay attention to all instructions. **YOUR PERSONAL SAFETY IS INVOLVED.**

The words **CAUTION**, **WARNING**, and **DANGER** following a symbol indicate three degrees of hazard. **CAUTION** indicates a <u>potentially</u> hazardous situation which, if not avoided, <u>may</u> result in minor or moderate injury. It may also be used to alert against unsafe practices. **WARNING** indicates a <u>potentially</u> hazardous situation which, if not avoided, <u>could</u> result in **death** or serious injury. **DANGER** indicates an <u>imminently</u> hazardous situation which, if not avoided, <u>will</u> result in **death** or serious injury.



SAFETY PRECAUTIONS

FAILURE TO UNDERSTAND AND PRACTICE GOOD SAFETY PROCEDURES COULD RESULT IN PERSONAL INJURY OR DEATH.

All farm machinery is inherently dangerous to children and to persons unfamiliar with its general operation. Children should not be permitted in areas where machinery of this nature is operating.

Since mills contain numerous moving parts, some of which may not always be visible to the operator, they can be extremely dangerous. Steps should be taken to assure the safety of the operator, and any other people in the area. Automatic Equipment strongly recommends that no person be permitted to operate this mill without a <u>thorough</u> understanding of how the machine works and the precautions to be observed.

If the mill discharges into an auger, be sure the auger is covered and shields are provided between the mill discharge and the auger.

Because of the dry, highly flammable material associated with this machine, FIRE FIGHTING EQUIPMENT SHOULD BE READILY AVAILABLE DURING THE OPERATION OF THIS MACHINE.

The operator of this machine should be a responsible adult who is familiar with farm machinery, and trained in its operation. **REMEMBER!** Your best insurance against accidents is a careful and responsible operator. A careless operator is a liability to himself and those who work with him.



Before operating this equipment, be sure to read and understand this operator's manual. If there is any portion of the manual, or any phase of the hammer mill's operation you do not understand, be sure to contact your local Automatic dealer or Automatic Equipment, Pender, Nebraska. 402-385-3051.



SAFETY PRECAUTIONS - BEFORE OPERATION

- 1 Keep the mill in good repair. Good maintenance is your responsibility. A poorly maintained machine is an invitation for trouble. Always use proper tools when servicing your mill.
- 2 **DO NOT** start, operate, or attempt repair work on the mill until you carefully read and thoroughly understand this operator's manual.
- 3 Be sure all shields are in place and all bolts are tight throughout the mill.
- 4 Be sure the rolls and drive belts are properly adjusted and in good condition. (See Operation Section)
- 5 Be sure there are no tools or other foreign objects lying on or in the machine.



SAFETY PRECAUTIONS - DURING OPERATION

- 1 **DO NOT** wear loose-fitting clothing that may catch in moving parts.
- 2 Children should not be permitted in areas where machinery of this nature is operating.
- 3 **DO NOT** operate this machine until you are sure everyone is clear of the area.
- 4 **NEVER** leave the mill running unattended.
- 5 Always keep hands, feet, and clothing away from moving parts.
- DANGER Keep hands and feet out of the hopper when machine is in operation. Never remove safety grates, or use your hands or feet to dislodge any obstruction from the mill. Never try to push or force feed grain or snow that may be bridged or laying in the hopper.
- 7 **NEVER** sit or stand on the mill while it is in operation.
- 8 **NEVER** adjust or service the unit while it is in operation.
- 9 **NEVER** open shields, mill access doors or clean out doors while the mill is in operation.



- 10 **DANGER** Avoid contact between the discharge auger and overhead electrical lines. Failure to heed warning will result in serious personal injury or death.
- 11 Hydraulic fluid can cause serious burns. Hydraulic fluid escaping under pressure can have enough force to penetrate the skin and may also infect a minor cut or opening in the skin. If injured by escaping fluid, see a doctor at once. Make sure all connections are tight and that hoses are in good condition.



SAFETY PRECAUTIONS - SERVICE AND REPAIR

- SAFETY SHUTDOWN PROCEDURE: Working on the mill when it is operating is expressly prohibited. Never clean, adjust, lubricate, or otherwise service this machine until the following steps have been taken.
 - A. Disengage the power source.
 - B. Lock all switches.
 - C. Wait until all mechanical motion has stopped on the mill.

Only when these precautions have been taken, should you proceed in the adjustment or servicing of the mill. Failure to follow the above procedure could lead to death or serious personal injury.

- 2 Keep the mill in good repair. Good maintenance is your responsibility. A poorly maintained machine is an invitation for trouble. Always use proper tools when servicing machine, making certain that they are removed from the unit when services or repairs have been completed.
- 3 All mills are equipped with shielding to protect the operator from injury. **For purposes of clarity only,** some illustrations in this manual may show the mill with the shields removed or missing. Although shields may be opened or removed for servicing and repair of the mill, they **MUST** always be closed or replaced before operation resumes.

Automatic Grain Roller Mills are manufactured from the best materials and workmanship available - each has been tested and properly adjusted at the factory before shipping. Simple adjustments and minimum maintenance have been emphasized. Reasonable care and operation will assure many years of trouble-free service.

BE SURE ROLLER MILL is mounted on a firm base. The machine should be level while operating so the grain will flow evenly across the rolls. This will eliminate unnecessary strain on roll bearings and shafts, as well as doing a better job of rolling.

ELECTRIC POWERED UNITS should be operated at about 750-800 RPM. Use a pulley ratio of 2.3 to 1 on 1800 RPM motors.

IT IS IMPORTANT that all units are checked after the first few hours of service to assure that all setscrews, lock collars, and other hardware has remained secure. This operation should be performed periodically as part of the general maintenance on your roller mill.

ROLLER TENSION SPRINGS on floating rolls are set at the factory to maintain just the right amount of pressure. Never readjust compression spring tension. These springs prevent stoppage, allowing foreign objects such as nails, bolts, etc. to pass between the rolls. On all of our mills, magnets are furnished as they separate pieces of steel and iron from the feed.

HOPPER GATE CONTROL - Your roller mill will not start with grain between the rolls. Always start roller and bring rolls to full RPM before opening feed gate. Make sure feed gate in hopper is closed before putting grain in hopper. If grain is released to rolls before they are turning, grain will pile up and it will be necessary to spread rolls and run remaining kernels through before starting.

YOUR ROLLER MILL IS DESIGNED TO ELIMINATE COMPLICATED ADJUSTMENTS. There are only two major points of adjustment for any small grain or shelled corn...hopper gate control and roller spacing.

- 1. HOPPER GATE Open feed gate gradually until you reach maximum flow of grain that power will handle. If it becomes necessary to stop machine at any time before hopper is empty, be sure to close the feed door before shutting off power.
- 2. ROLLER SPACING depends upon the type of grain to be rolled. Different grain varies in size, shape, toughness and moisture content. This is also true of the same type of grain from different localities. For this reason, it is impossible for us to tell you how to set the rolls. Do not over-roll hard or dry grains, as this will cause dusting. Remember, proper adjustment keeps dust at a minimum, even when rolling the driest grain. The closest roll setting is preset at the factory and as a rule, should not require additional adjustment; however for certain types or conditions of rolling, some "fine tuning" may be required. This is done by removing the cotter pin from the slotted hex nut, (see page 12, item 19) and turning the nut counter-clockwise one slot at a time. This will move the rolls slightly closer together when the handle is rotated.



MARNING: Be sure electrical power is locked out before proceeding.

IMPORTANT: Move the nut only one slot at a time. Check to make sure the roll teeth do not come in contact with each other by turning the mill BY HAND after each adjustment.

IN ADJUSTING FEED ROLLS from fine to medium or course grind, a turn of the handle on the quick-adjust in the rear of the mill will set your rolls. To move roll inward (for finer grind), remove lock pin, (page 12, item 17), turn quick-adjust handle counter-clockwise. To move roll outward (for coarser grind), remove lock pin, turn quick-adjust handle clockwise. This will assure you of an even and proper setting, adjusting both sides of the roll at the same time. After the adjustment has been made, always place the lock pin on the right side of chain link welded to the end plate to lock your setting.

DON'T OVERCROWD THE ROLLS... just keep a ribbon of grain going between the rolls, and you'll do a better job of rolling. This is especially true of oats and barley. It is not necessary to completely flatten the kernel. The grain becomes easy to digest when the hard coat or hull is broken open, exposing the nutrients to the digestive juices.

REALIGNING ROLLS... If rolls should become out-of-alignment, (more gap on one side of the roller pair than the other side), they must be realigned to maintain feed consistency. This can be accomplished by first removing the connecting link, (see page 12, item 21), from the quick-adjust chain, and then removing the chain from the sprockets. The rolls can now be brought back into alignment by turning the quick-adjust handle. Check the gap between the rolls with a feeling gage and turn the quick-adjust handle until the gap is equal at both ends of the roll pair. Replace the chain and connecting link previously removed, to complete the procedure.

LUBRICATION

BEARING - All pillow block and cast flange bearings are sealed and as a general rule, REQUIRE NO LUBRICATION. However, the bearing manufacturer does furnish grease zerks and recommends the bearings be regreased before one-third of the bearings calculated life elapses. Usually just a pump or two of grease before starting up each harvest, or after the unit has not been in use for a month or more, will be sufficient.

IMPORTANT: DO NOT OVERGREASE. OVERGREASING CAN CAUSE DAMAGE TO THE BEARING SEAL.

DRIVE BELT TENSION - Check V-belt tension as noted below:

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New Belt - - - After 15 minutes of running
First 4 Hours of Service - - - Every hour
After first 4 hours - - - Every 8 hours service
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ROLL DRIVE BELTS are tensioned properly when they can be depressed 3/8 inch, in the middle of the longest span, using a force of 7 pounds.

AUGER BASE DRIVE BELTS ARE tensioned properly when they can be depressed 1/4 inch, in the middle of the longest span, using a force of 7 pounds.

REPLACEMENT PARTS

BASIC UNIT	8
BELT DRIVE	9
BELT SHIELD	10
FRAME	11
AUGER BASE	
HOPPER	13
MOTOR DRIVE & SHIELD	

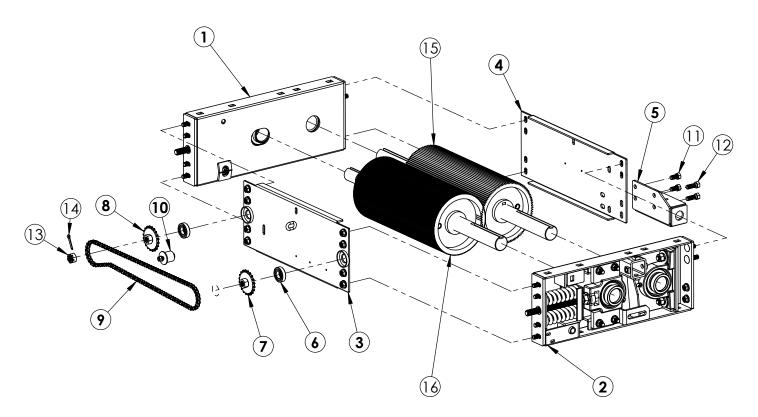
When ordering parts for your mill, please state your needs with the following information:

COMPLETE MODEL NO.	COMPLETE SERIAL NO.	PART NO.	DESCRIPTION
CSU-1000	000000	101-0101	Front End Plate, 1000

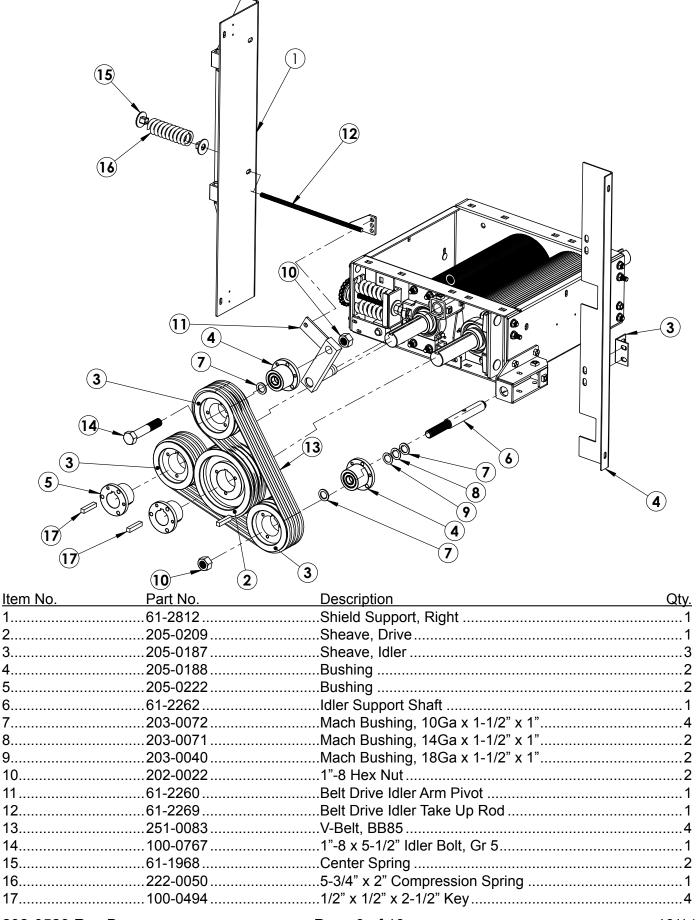
When you order in this way, you can be certain the correct part will be delivered in the shortest time possible.

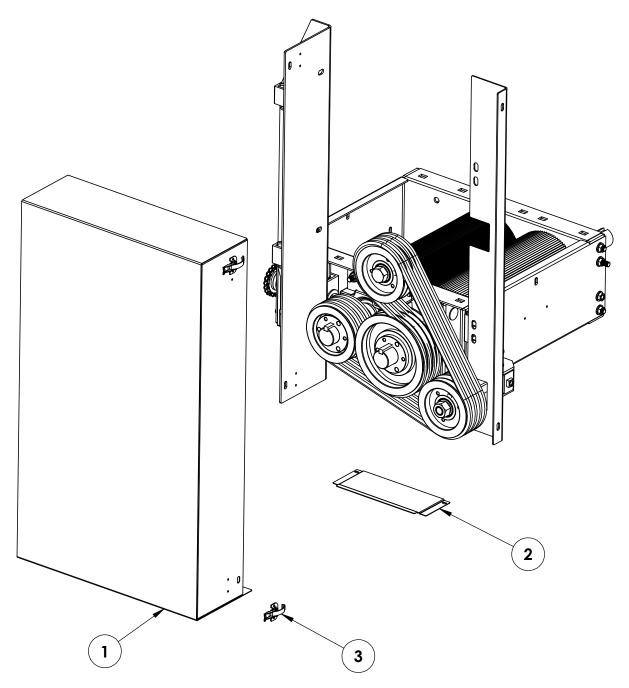
IMPORTANT: Use only genuine factory replacement parts on your mill. Do not substitute homemade or non-typical parts. If a bolt is lost or in need of replacement, for your safety and the preservation of your mill, be sure to use a replacement bolt of the same grade (Usually Grade 5).

Repair parts may be ordered through your nearest Automatic dealer. If there is no dealer in your area, write or call Automatic Equipment Mfg. Co., Pender, Nebraska 68047, phone 402-385-3051.

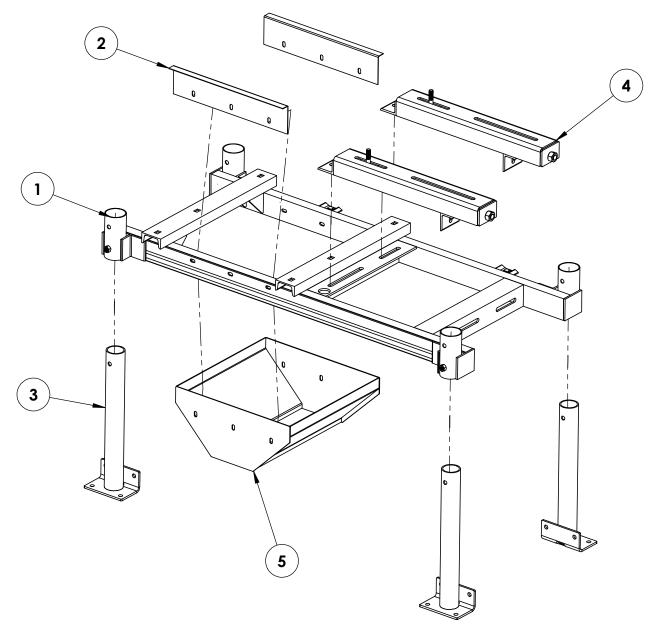


Item No.	Part No.	Description	Qt <u>v.</u>
1	62-1899	Rear Channel Assembly	1
2	62-1901	Front Channel Assembly	1
3	61-1464	Rear End Plate Assembly	1
		Front End Plate	
5		Lower Idler Support	
6		Thrust Bearing	
		Drive Sprocket	
		Idler Sprocket	
9		Drive Chain	
		Eccentric	
11	201-0060	1/2"-13 x 1" Hex Head Bolt, Grade 5, ZP	2
		1/2"-13 x 1-1/2" Hex Head Bolt, Grade 5	
		3/4"-10 Hex Slotted Nut	
		3/16" x 1-1/2" Cotter Pin	
		Drive Roll, 14 Cut	
		Idler Roll, 14 Cut	

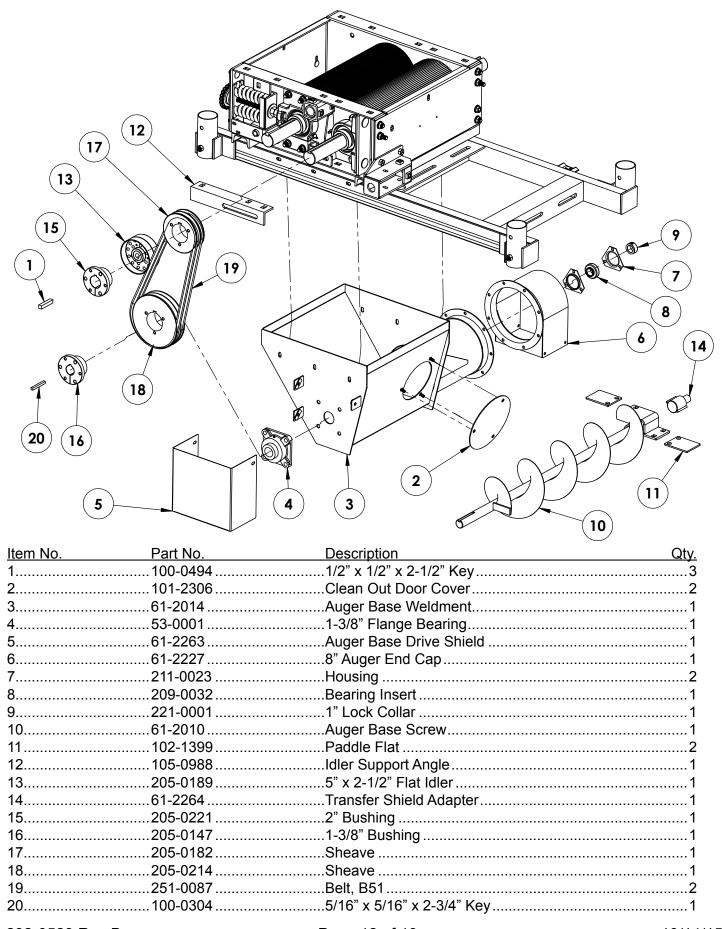


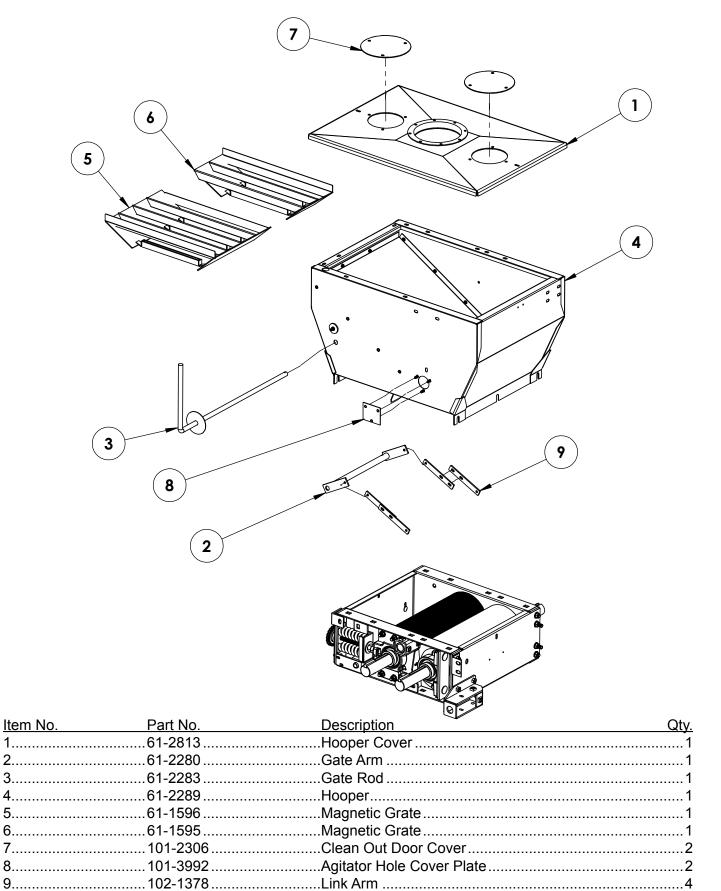


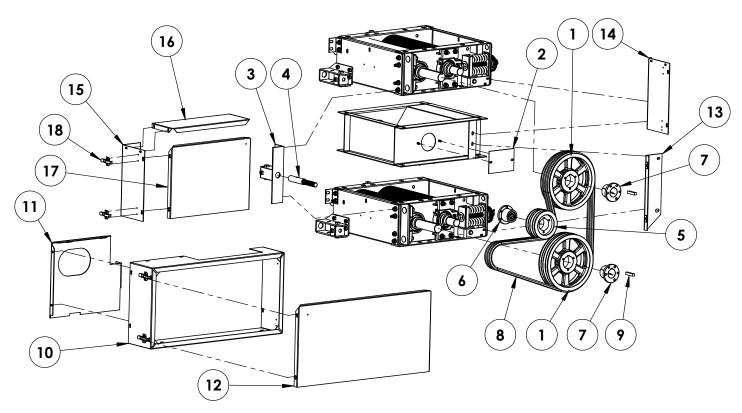
Item No.	Part No.	Description	Qt <u>v.</u>
1	61-2817	Front Shield	1
2	101-3318	Belt Shield Filler	1
3	229-0132	Tension Latch	4



Item No.	Part No.	Description	Qty.
1		Frame	
2	101-3263	Frame Filler	2
3	61-1873	Frame Leg	4
		Motor Mount	
5	61-2249	Downspout	1







Item No.	Part No.	Description	Qt <u>y.</u>
1	205-0015	Sheave	· · · · · · · · · · · · · · · · · · ·
2	101-3900	Adapter Boot Cover	2
3	61-2815	Idler Support Bracket	1
4	61-2816	Idler Support Shaft	1
5	205-0187	· ·	
6	205-0188	Bushing	1
7	205-0222		
8	251-0063		
9	100-0494		
10	61-2814	· · · · · · · · · · · · · · · · · · ·	
11	61-2811	Stacked Mill Motor Shield	1
12	101-3914	Drive Motor Shield Door	1
13	61-2810	Lower Right Shield Support	1
14	101-3910		
15	101-3908		
16	101-3911	··	
	101-3912	···	
18	229-0132	Tension Latch	6

This section is in the form of a condensed chart to help you remedy problems if unsatisfactory operation occurs. If you are unable to determine and correct the trouble, consult one of our authorized dealers.

CAUTION: NEVER ATTEMPT TO LUBRICATE, ADJUST, OR OTHERWISE SERVICE THIS MACHINE UNTIL THE POWER HAS BEEN DISENGAGED AND LOCKED OUT, AND ALL MOTION HAS BEEN STOPPED. LISTEN, AS WELL AS LOOK FOR MOTION BEFORE PROCEEDING.

POSSIBLE CAUSE PROBLEM SUGGESTED REMEDY **EXCESSIVE** 1. Overfeeding with excess grain Keep rolls "hungry". Adjust control **ROLL WEAR** Continually sliding off top gate to feed in only amount of of the rolls creates friction grain rolls will take away. Usually and excessive roll wear. overfeeding is not the cause for roll wear on deep-grooved rollers. Crushing abrasive materials Mills are designed to be used other than grain. only on grain or similar textured materials. Foreign matter, such as metal, Periodically check magnetic grate going between the rolls. for scrap metal and remove as necessary. Gravel in the grain. Sand and small gravel is difficult to remove from grain because of similar sizes as grain. Larger gravel and small rocks can be removed by screening with wire hardware cloth on frame mounted in the hopper. **EXCESS** 1. Uneven flow of grain into the Eliminate "surging of grain" into **VIBRATION** mill. mill as much as possible. 2. Excess RPM. Recommended operation 750 to 800 RPM. MILL IS Grain between rolls. Close hopper gate, and separate 1. HARD TO rolls to allow grain to fall through. **START** The best remedy is to make a practice of closing hopper gate before stopping mill so no grain is left between the rolls. 2. Low Voltage. Check line loss for low voltage.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
GRAIN TOO FINE OR DUSTING OF GRAIN	1. Over Rolling. 2. Rolling Mixed Grain.	Adjust spacing of rolls. If mixed grain of different sizes are run together, to crack or crimp the smaller grain, the rolls "over-roll" or pulverize larger kernels. As a general rule, all grains should be rolled separately and then mixed.
	3. Failure to reset rolls for different varieties of grain.4. Very dry grain, particularly when hard.	Always reset rolls every time a different grain is to be processed. Open rolls wider than normal to eliminate over-rolling. In extreme cases, grain can be tempered by sprinkling a small amount of water over grain to be rolled and let stand 8 to 12 hours. The amount of moisture depends on the dryness of the grain.
BELT BREAKAGE OR SLIPPAGE	 Overloading roller mill. Belts too loose or too tight. Using new belts and old belts together. 	Decrease load on roller mill by reducing intake rate. Tighten as recommended. (page 6) Always replace with a complete new matched set.
ABNORMAL POWER REQUIREMENT	1. Overload on mills.	Running damp, high moisture grain can cause "sticking to the rolls," and cause an abnormal power requirement on new mills. There sometimes can be some sticking of dry grain to new rolls, particularly on oats and barley. This condition should not continue after 200-300 bushels of grain has been run.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
ABNORMAL POWER REQUIREMENT	2. Opening grain control gate too fast and too far open.	Always open gate slowly and open only as far as necessary to keep rolls "hungry". Do not over-feed rolls and cause an excess building up of grain in roll pocket between the rolls.
WHOLE GRAIN COMING	1. Improper setting of rolls.	Rolls should be set closer together to crimp all grain being processed.
THROUGH MILL	2. Overfeeding.	Grain control gate opened so wide rolls will not take all the grain which then builds up above the rolls. This can cause some whole grain to go over top and not between the rolls.
	3. Uneven size kernels. Also, see factory recommendations regarding tension spring.	This could be the reason for a few small poorly developed whole kernels going through mill. It is better not to set the mill to crack these if in doing so you would "over-roll" the majority of the kernels.
	4. Rolls out of alignment.	Realign rolls. (See page 5)

COMMERCIAL ROLLER MILL WARRANTY

The manufacturer warrants all AUTOMATIC roller mills to be free from defects in material and workmanship under normal use and service for which the machine was intended.

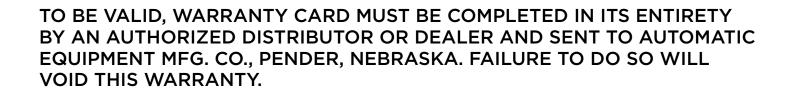
ONE YEAR WARRANTY-At any time within one year from date of delivery to the original purchaser, the manufacturer will furnish replacement parts or repair material for any portion of the roller mill found to be defective. This does not include normal wear or wear caused by improper mill size for application. Such replacement part or material shall be furnished without cost to the owner or user through an authorized dealer, or F.O.B. factory at manufacturer options. Automatic's liability under this warranty must be for part or parts but not for such labor charges involved for removing and replacing defective parts. All rolls are guaranteed for life against breakage.

This warranty does not apply to any part of an Automatic Roller Mill which has been subject to misuse, neglect, alteration, accident, or damage caused by fire, flood, or other damage caused beyond the control of the manufacturer. IN NO EVENT SHALL THE OWNER BE ENTITLED TO RECOVER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, LOSS OF CROPS, LOSS OF PROFIT OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE OR COST OF RENTAL OR REPLACEMENT EQUIPMENT. No responsibility is assumed for delays or failure caused by strikes, Government regulations, or other circumstances beyond the control of the manufacturer or authorized dealer or distributor. Further, electric motors and belts are warranted directly by the respective manufacturer only and not by Automatic Equipment Mfg. Co.

Automatic Equipment Mfg. Co. assumes no liability for any damages that might be inflicted on the operator, spectator or general public who might be in the general area while this machine is in operation, or for any cause whatsoever.

Removal of original serial number voids this warranty in its entirety.

AUTOMATIC EQUIPMENT MANUFACTURING CO., PENDER, NE 68047



Please visit us at www.automaticag.com for our complete line of agricultural equipment.

It is a continuing policy of Automatic Equipment Manufacturing Company to make improvements. The company reserves the right to make these improvements without incurring any obligation to add them to machines already in the field. Many years of research combined with experience gained through close contact with operators have been drawn upon in designing your mill.



Automatic Equipment Mfg. Co. • One Mill Road, Industrial Park Pender, Nebraska 68047 • 402-385-3051 • FAX 402-385-3360 Page 19 of 19