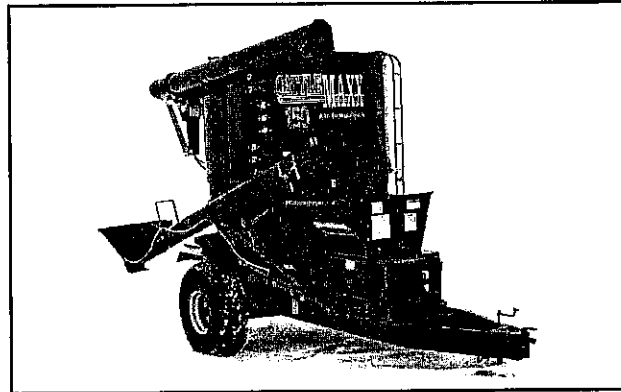
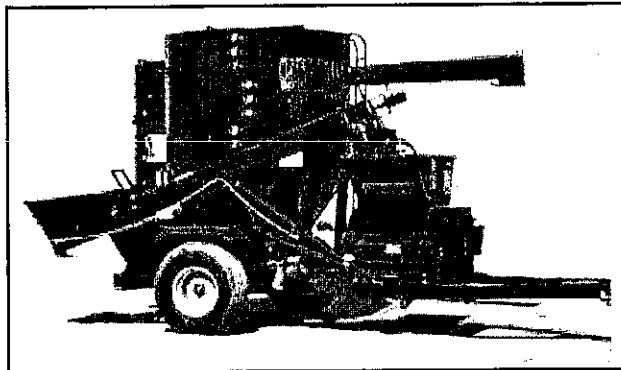




# CattleMaxx 105 & 150



## Operator's Manual

468720 (-)  
0401

Art's-Way Manufacturing Co., Inc.



# **TO THE OWNER**

Congratulations on the purchase of your new Art's-Way CattleMaxx. You have selected a top quality machine that is designed and built with pride to ensure you many years of efficient, reliable service.

Many people have worked on the design, production, and delivery of this roller mixer. The information in this Manual is based on the knowledge, study and experience of these people through years of manufacturing specialized farming machinery. This Manual is designed to provide you with important information regarding safety, maintenance and machine operation so you can get the best possible performance from your Art's-Way CattleMaxx.

Even if you are an experienced operator of this or similar equipment, we ask you to *read this Manual before running this CattleMaxx*. The way you operate, adjust and maintain this unit will have much to do with its successful performance. Any further questions you may have about this piece of Art's-Way equipment should be directed to your local Art's-Way dealer or to Art's-Way Manufacturing Co., Inc., Armstrong, Iowa 50514. (712) 864-3131.

## **Specifications And Design Are Subject To Change Without Notice**

Art's-Way Manufacturing Co., Inc. is continually making product improvements. In doing so, we reserve the right to make changes or add improvements to our products without obligation for equipment previously sold.

Because modifications to the CattleMaxx may effect the performance, function and safety of its operation, no modifications are to be made without the written permission of Art's-Way Manufacturing Co., Inc. Any modifications made without the written permission of Art's-Way Mfg. Co. shall void the warranty of this product.

In the interest of continued safe operation of this roller mixer, pay particular attention to the safety alert symbol throughout this Manual.

## **Art's-Way Manufacturing Co., Inc. Statement Of Product Liability**

Art's-Way Manufacturing Co., Inc. recognizes its responsibility to provide its customers with a safe and efficient product. Art's-Way attempts to design and manufacture its products in accordance with accepted engineering practices in effect at date of design. This statement should not be interpreted to mean that our products will protect against the user's own carelessness or failure to follow common safety practices, as set forth in this Manual, nor will Art's-Way be liable for any such act. In addition, Art's-Way assumes no liability for product altered or modified in any way by users or anyone other than an authorized dealer.

## **Important Warranty Information**

The warranty for the CattleMaxx appears on page 1 of this manual. In order to establish a proper warranty, the Warranty Registration and Dealer Pre-Delivery Checklist must be completed and returned to the factory. Failure to comply with this requirement will result in reduced warranty allowances.

## **Limitations Of This Manual**

This manual contains operating instructions for your CattleMaxx only. It does not replace the manual(s) for any machine that it may be attached to or used with.

# PARTS & SERVICE

As the new purchaser of your CattleMaxx, it is very important to consider the following factors:

- A. Original Quality
- B. Availability of Service Parts
- C. Availability of Adequate Service Facilities

Art's-Way Manufacturing Co., Inc. has an excellent dealership network ready to answer any questions you may have about your CattleMaxx. Parts for your machine may be ordered through our dealers. When placing a parts order, please have the *model* and *serial number* ready. This will allow the dealer to fill your order as quickly as possible.

For your convenience, we have provided this space for you to record your model number, serial number and the date of purchase, as well as your dealer's name and address.

Owner's Name: \_\_\_\_\_

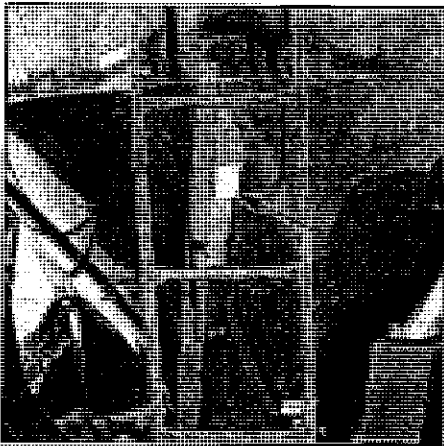
Owner's Address: \_\_\_\_\_

Purchase Date: \_\_\_\_\_

Dealership Name: \_\_\_\_\_

Dealership Address: \_\_\_\_\_

Dealership Phone No.: \_\_\_\_\_



<div>Building on a <i>Art's-Way</i> Tradition of Quality</div>	
SERIAL NO.	<input type="text"/>
MODEL NO.	<input type="text"/>
Manufactured By Art's-Way Manufacturing Co., Inc. Armstrong, IA	

## Machine Serial Number Location

(The serial number is located behind ladder left hand side.)

Enter the serial number and model number of your CattleMaxx in the space provided above.

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# NOTES

# LIMITED WARRANTY

**Art's-Way Manufacturing Co., Inc.** warrants the products it sells to be free from defects in material and workmanship for a period of one (1) year after the date of delivery to the first purchaser, subject to the following conditions:

- **Art's-Way Manufacturing Co., Inc.** obligation and liability under this warranty is to repair or replace (at the company's option) any parts which upon manufacture were defective in material or workmanship.
- All parts and repairs under this warranty shall be supplied at an authorized **Art's-Way Manufacturing Co., Inc.** dealer or at the factory, at the option of **Art's-Way Manufacturing Co., Inc.**
- **Art's-Way Manufacturing Co., Inc.** warranty does not extend to parts and elements not manufactured by **Art's-Way Manufacturing Co., Inc.** and which carry the warranty of the other manufacturer.
- Transportation or shipping to an authorized dealer for necessary repairs is at the expense of the purchaser.
- **Art's-Way Manufacturing Co., Inc.** makes no other warranty expressed or implied and makes no warranty of merchantability or fitness for any particular purpose beyond that expressly stated in this warranty. **Art's-Way Manufacturing Co., Inc.** liability is limited to the terms set forth in this warranty and does not include any liability for direct, indirect, incidental or consequential damages or expenses of delay and the Company's liability is limited to repair or replacement of defective parts as set forth herein.
- Any improper use, and maintenance, including operation after discovery of defective or worn parts, operation beyond the rated capacity, substitution of parts not approved by **Art's-Way Manufacturing Co., Inc.** or any alteration or repair by other than authorized **Art's-Way Manufacturing Co., Inc.** dealer which affects the product materially and adversely, shall void this warranty.
- No dealer, employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of **Art's-Way Manufacturing Co., Inc.** at its home office.
- Some states do not allow limitations on how long an implied warranty lasts or exclusions of, or limitations on relief such as incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you the specific legal rights and you may have other rights which vary from state to state.

# SAFETY FIRST

***“A careful operator is the best insurance against an accident.”***

(National Safety Council)

Most accidents can be prevented if the operator:

- fully understands how the machine functions
- can anticipate situations which may produce problems
- can make necessary corrections before problems develop.



**Figure 1: The Universal Safety Alert Symbol**

The American Society of Agricultural Engineers has adopted the *Universal Safety Alert Symbol* (Figure 1) as a way to identify areas of potential danger if the equipment is not operated correctly. ***Please be alert whenever you see this symbol in the manuals or on your CattleMaxx.***

Art's-Way Manufacturing Co., Inc. strives to make our equipment as safe as it can possibly be. The CattleMaxx conforms to applicable safety standards at the time of manufacturing. A safety conscious equipment operator makes an effective accident-prevention program complete.

Safety features and instructions for the CattleMaxx are detailed elsewhere in the Operator's Manual. It is the responsibility of the owner to ensure that *all* operators read and understand the manual before they are allowed to operate the CattleMaxx. (*Occupational Safety and Health Administration (OSHA) regulation 1928.57.*)

---

## **Notices of Danger, Warning and Caution**

Watch for these words on the CattleMaxx and in this manual to alert you to important safety messages:



**DANGER:** Immediate and specific hazard which *will* result in severe personal injury or death if proper precautions are not taken.



**WARNING:** Specific hazard or unsafe practice *could* result in severe personal injury or death if proper precautions are not taken.



**CAUTION:** A reminder of good safety practices. Personal injury *could* result if proper procedures are not followed.



# SAFETY GUIDELINES



**CAUTION: Remember, a careful operator is the best insurance against an accident.**



**CAUTION: READ and UNDERSTAND the Operator's Manual and all the safety decals before operating the CattleMaxx. Review safety instructions with all operators annually.**

## **Before Operating**

- **Do not** wear loose fitting clothing as it may catch in moving parts.
- Make sure to install and/or secure all guards and shields, including the tractor power take-off master shield, before starting or operating the machine.
- Be sure that the correct implement driveline parts are used and that they are properly secured.
- Install the tractor safety chain when attaching the mixer to the tractor.
- **Do not** allow riders while transporting.
- Put all tractor and machine controls in "neutral" and disengage the PTO before starting. Follow the starting instructions according to your tractor manual.
- Operate the mixer only while seated on the tractor seat.

## **During Operation**

- Shut off the tractor engine, put key in pocket, and be sure to wait until all rotation has come to a complete stop before opening any covers/shields, adjusting, cleaning or lubricating.
- Keep hands, feet, hair and clothing away from moving parts.
- Keep all shields and guards in place and in good repair.
- Keep all children and bystanders away from the machine while in operation.
- Always disengage the auger feeder before transporting.
- **Do Not** allow riders while the mixer is in operation.
- **Do Not** attempt to unclog, clean or adjust the mixer/mill while it is running.

- Stay away from overhead power lines and obstructions. Check for clearances when positioning discharge auger. Electrocutation can occur without direct contact.
- Keep all hydraulic lines, fittings, and couplers tight and free of leaks. (See the "Hydraulic Safety" section below.)
- Be careful when ascending or descending on the mixer ladder, wet shoes or boots are slippery.

## **Maintenance Safety**

- Follow all operating, maintenance and safety instructions found in this manual.
- Before servicing, adjusting, repairing or unplugging the machine, stop the tractor engine, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop.
- Use only the tools, jacks and hoists that are of sufficient capacity for the job.
- Use support blocks or safety stands when changing tires or working under the machine.
- Before applying pressure to the hydraulic system, make sure all lines, fittings and couplers are tight and in good condition (see "Hydraulic Safety" below).
- Relieve pressure from hydraulic circuit before servicing or disconnecting from tractor.
- Follow the good shop practices of keeping the service area clean and dry and use adequate light for the job at hand.
- Make sure all shields/guards are in place and properly secured when maintenance work is complete.

## **Hydraulic Safety**

- Make sure all components in the hydraulic system are kept clean and in good condition.
- Replace any worn, cut, abraded, flattened or crimped hoses.
- **Do not** make any temporary repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous situation.

# SAFETY GUIDELINES

- Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to identify and isolate a leak. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop if hydraulic fluid penetrates the surface of the skin.
- Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.

## Transportation Safety

- Be sure to comply with all local regulations regarding transporting equipment on public roads and highways.
- Make sure the Slow Moving Vehicle (SMV) emblem and all lights and reflectors required by local highway and transportation authorities are in place, clean and clearly visible to all oncoming or following traffic.
- **Do not** allow riders while transporting.
- Make sure the CattleMaxx is securely attached to the tractor and install a safety chain to the machine. Install a retainer through the drawbar pin and attach the safety chain (see Figure 10, page 11 in the "Preparing for Operation" section).
- **Do not** fail to latch the tractor brake pedals together.
- **Do not** exceed 20 mph (32 km/h) when transporting the CattleMaxx. Always reduce speed to a maximum of 10 mph on rough roads and surfaces, or when going down inclines.



**CAUTION:** Always transport a loaded CattleMaxx at slow speed (10 mph or less).

- Drive slow when turning and always use turn signals on the tractor to indicate your turning intentions to other traffic.
- A dealer installed Road Light Kit is available. It includes warning lights that plug into your tractor's light connector. The red tail lights will illuminate whenever the tractor road lights are turned on.
- The weight of the trailed machine should **NEVER** exceed the weight of the towing vehicle.

- Stay away from overhead obstructions and power lines during transport. Electrocutation can occur even without direct contact.
- Check for clearances carefully wherever the machine is towed.

## Storage Safety

- Store the mixer in an area away from human activity.
- **Do Not** permit children to play on or around the stored machine.

## Tire Safety

- Have a qualified tire dealer or repair service perform tire repairs.
- **Do not** attempt to install a tire on a wheel or rim unless you have the proper equipment and experience to do the job.
- Follow proper procedures when installing a tire on a wheel or rim to prevent an explosion which could result in serious injury or death.
- **Do not** substitute tires of lesser road rating and capacity for the original equipment tires.



**CAUTION:** Failure to follow proper procedures when installing a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to install a tire unless you have the proper equipment and experience to perform the job. Have it done by your dealer or a qualified tire repair service.

## Assembly Safety

- Use adequate manpower to perform assembly procedures safely.
- Use only forklifts, lift cranes, jacks and tools with sufficient capacity for the loads.
- **Do not** allow spectators in the working area.

**Remember:**

**"The Best Operator is a Safe Operator"**

# SAFETY DECALS

The different types of safety decals for your CattleMaxx are illustrated on the following pages. Please familiarize yourself with the appearance of each decal, the warning it describes and the area where it is located on the CattleMaxx. Refer to Figure 2 below for decal locations. The number preceding the description is the part number of that decal. (This part number also appears in the lower right corner of the decal.)

Safety awareness is the responsibility of each operator of the CattleMaxx. Keep safety decals and signs clean and legible and be sure replacement parts display the current safety decals and signs as well. **Remember:** Always replace missing, damaged or illegible safety decals. New decals and signs are available from your dealer.

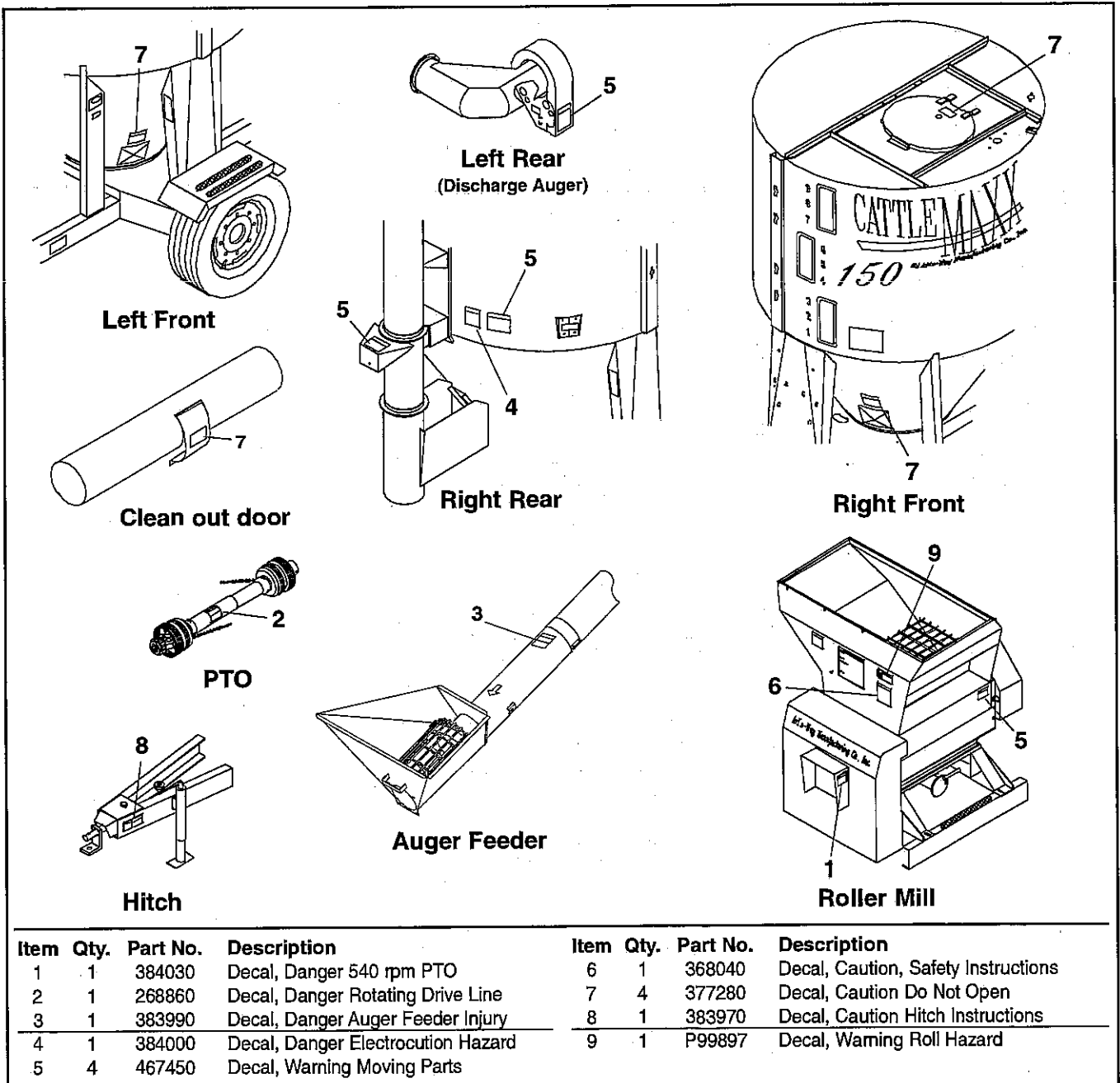
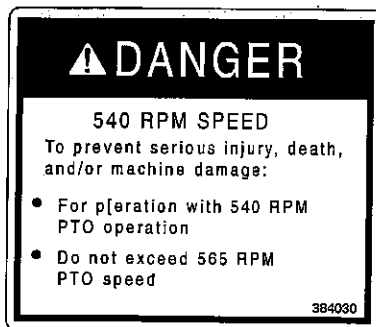


Figure 2. CattleMaxx safety decal locations.

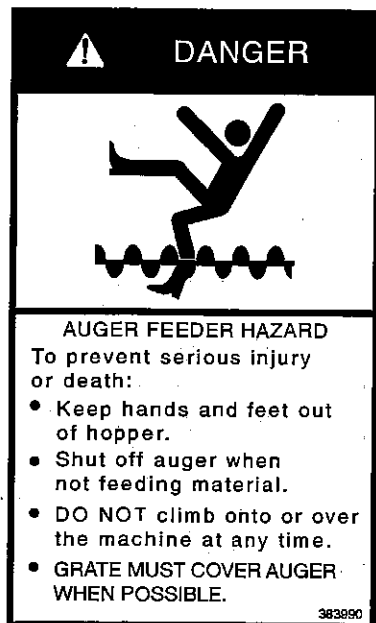
# SAFETY DECALS



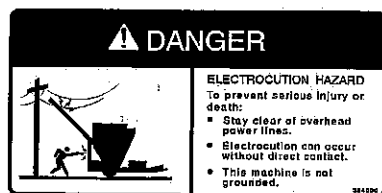
No. 1 - "Danger" - For standard 540 rpm PTO operation. Part No. 384030.



No. 2 - "Danger" - Rotating drive line (located on PTO). Part No. 268860.



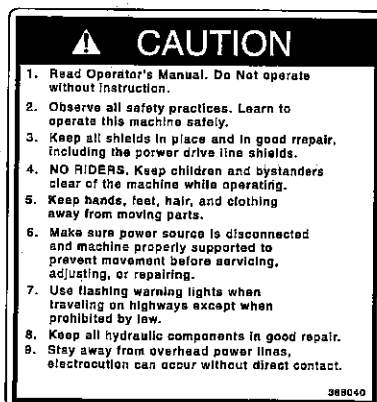
No. 3 - "Danger" - Auger feeder hazard. Part No. 383990.



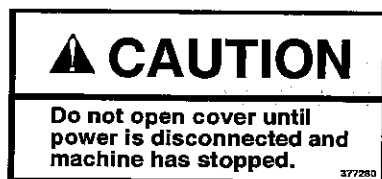
No. 4 - "Danger" - Electrocution hazard. Part No. 384000.



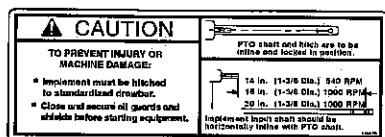
No. 5 - "Warning" - Moving part hazard. Part No. 467450.



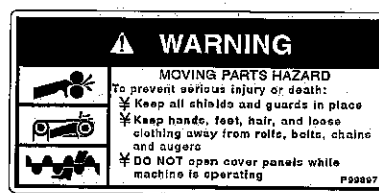
No. 6 - "Caution" - Safety instructions. Part No. 389040.



No. 7 - "Caution" - Do not open cover until power is disconnected. Part No. 377280.



No. 8 - "Caution" - Hitch instructions. Part No. 383970.



No. 9 - "Warning" - Roll Hazard. Part No. P99897.

*Note: Keep all decals clean and free of dirt for maximum visibility. Replace any and all decals that are no longer legible. Read and obey all safety decals.*

# NOTES

# INTRODUCTION

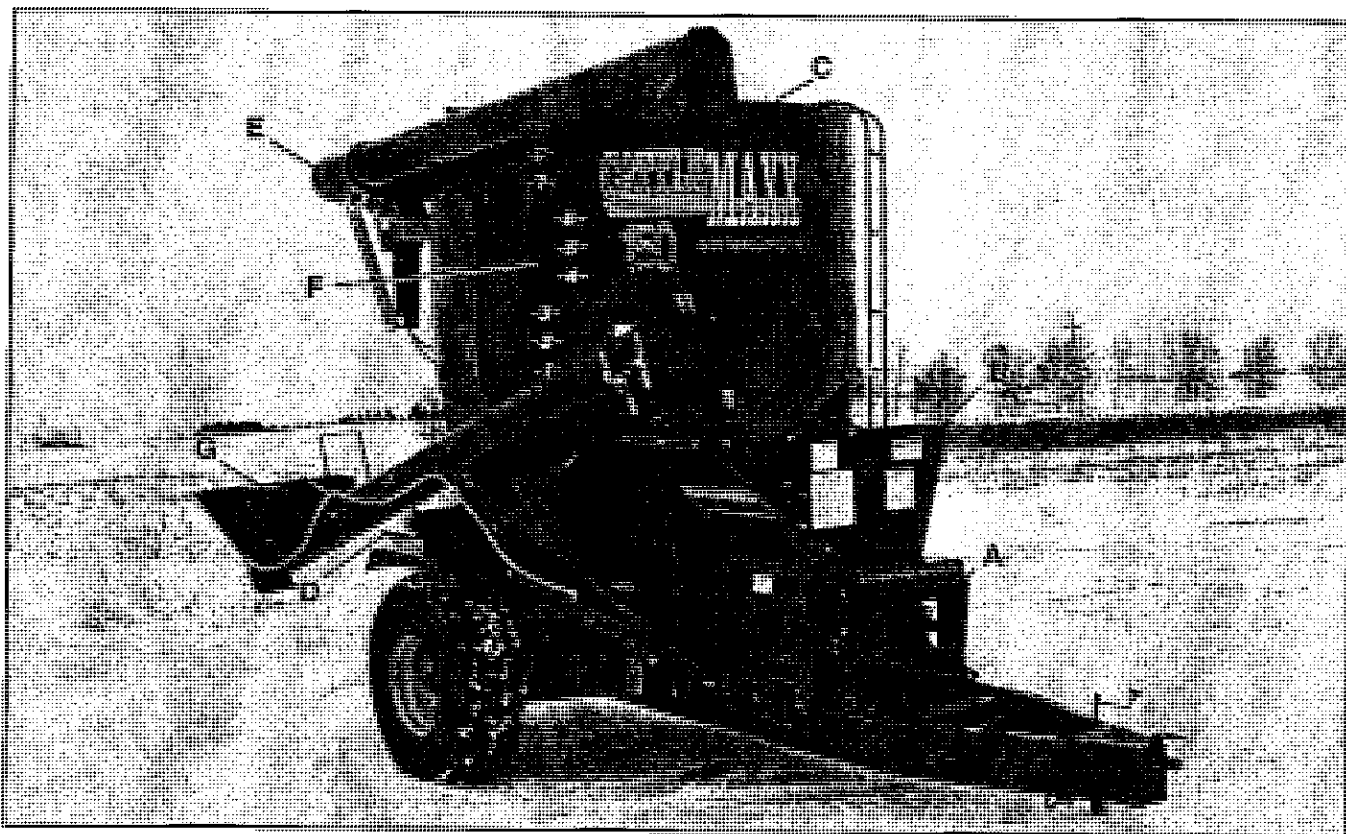


Figure 3: Model CattleMaxx 150 with auger feeder (Model CattleMax 105 on page 9). A - PTO driveline input; B - Rollermill; C - Mixing tank; D - Supplement hopper; E - Unloading auger; F - Viewing windows; G - Auger feeder.

This manual has been prepared to acquaint you with the proper operation, adjustment, lubrication and service of your CattleMaxx. Take the time to be careful and better understand the efficient operation and care of your machine.

Whenever the terms "Left" and "Right" are used, it should be understood to mean standing behind the machine and facing the direction of forward travel.

*Some pictorials used show guards and shields removed for easy identification. Be sure that all shields and guards are in place before operating. These are for your protection.*

The Art's-Way CattleMaxx is PTO driven by 40 hp to 130 hp tractors and is factory available with a 540 RPM drive.

Always operate at full speed while rolling grain.



**CAUTION: Never operate 540 RPM processor with 1000 RPM tractor.**

The rollermill (B - rollermill) is precision built of tough, cast iron construction, designed to give a high degree of control over the quality of feed produced.

It is important that you become acquainted with your rollermill before operating at full capacity. The rollermill will not start with grain between the rolls.

If supplement is to be added to the ration, a hopper (D - supplement hopper) with a sack cutter is located at the right rear of the mixing tank. Best mixing will result if supplement is added before rolling.

The rolled feed is mixed continuously until the tractor PTO is disengaged.

The unloading auger (E) pivots at the rear center of the mixing tank and can swing 324° on the CattleMaxx 105 or 316° on the CattleMaxx 150 in a horizontal arc and in a vertical arc to the limit of the lift assist spring. The unloading auger tube can be positioned either to the right or left side tank for transport. Unloading rates up to 28 bushels per minute can be obtained depending on the type of material processed.

Three viewing windows (F) are located at the front right corner on the mixing tank to observe the feed level while processing and mixing.

A ladder is located at the front left corner of the mixing tank to obtain access to the spring-loaded mixing tank lid.

# INTRODUCTION



**CAUTION: Do NOT open spring-loaded mixing tank lid while PTO is engaged and tractor is running.**

Many convenient features are standard equipment on the CattleMaxx including:

1. Heavy Duty 540 RPM implement driveline with shear clutch.
2. 20" heavy duty rollermill.
3. Roll scrapers.
4. Rollermill hopper magnet system.
5. Feed inspection tube under rollermill.
6. Ingredient supplement hopper.
7. Tongue jack and safety chain.
8. Ladder and fenders.
9. Three large inspection windows in tank.
10. Spring loaded tank lid.
11. Discharge lift assist and brake.
12. 8" diameter x 10' long unloading auger.
13. Discharge auger hood with spring loaded relief baffle.

## **105 bu. - CattleMaxx 105**

1. 10.00 x 15 tires.
2. 29" vertical discharge.

## **150 bu. - CattleMaxx 150**

1. 13.5 x 16.1 tires.

A number of optional attachments are available:

1. Auger feeder, hydraulic.
2. Electronic scale with digital readout. Micro-processor model is also available.
3. Horn, light or horn and light for electronic scale.
4. Unloading auger extensions; 3' to 6' folding or bolt-ons.
5. Highway light kit.
6. Mechanical or hydraulic discharge.
7. Roll speed differential drive rollermill.
8. 29" or 45" vertical discharge (CM150 only).

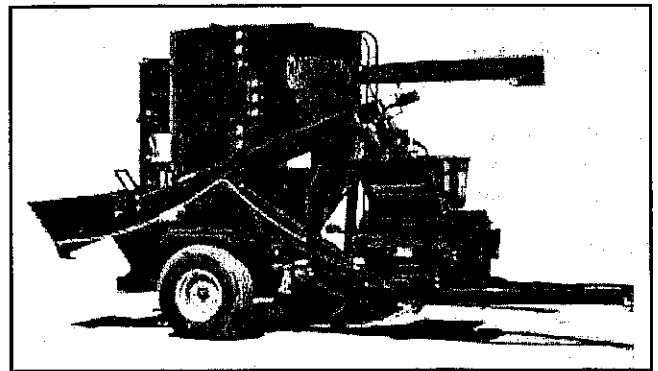


Figure 4: Model 105 CattleMaxx.

# PREPARING CATTLEMAYX FOR OPERATION

Remove the shipping banding or wire from the auger feeder (if so equipped), rear discharge cover and unloading tube to saddle at the side of the tank.

Remove the bag from supplement hopper. A wrench is provided for adjusting the roll gap spacing of the roller-mill. Keep this wrench with the mill at all times. If equipped with mechanical lift and swing, the crank for the unloading auger is in the bag. Place it in the hanger near the crank position for lift and swing. Install the PTO driveline storage bracket under front hitch with 1/2" x 1-1/2" bolt and lock nut (see Figure 5). Maintain tension with lock nut to allow movement with 15 lbs. pull.

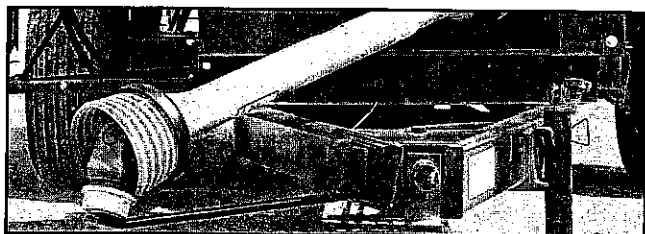


Figure 5: PTO driveline storage bracket.

Install any option that was ordered with the machine and shipped loose. See instructions packaged with options for installation.

Install the implement end of the PTO driveline by fastening it to the drive roll shaft with the 5/16" x 3-1/2" clevis pin and cotter pin provided. Spread cotter pin. Make sure the proper PTO is used.



**CAUTION: Never operate 540 rpm CattleMaxx with a 1000 rpm tractor.**

On units with a hydraulic controlled back auger, the hydraulic drive ring and worm gear reservoir should be filled with SAE 90 weight gear oil up to the worm shaft (see Figure 6).

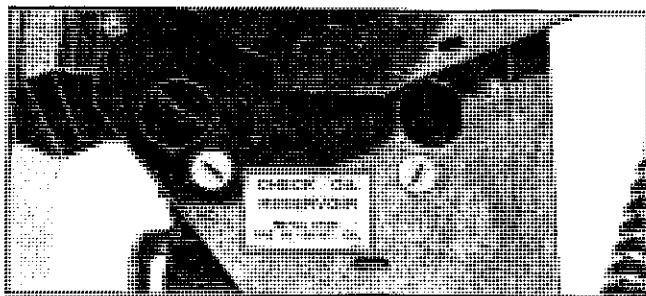


Figure 6: Ring and worm gear hydraulic reservoir.

**NOTE:** Height of the unloading auger tube needs to be checked. Move the saddle on the side of the mixing tank so tube properly clears tractor and cab. This is especially important with bolt-on auger extension.

If equipped with tractor hydraulic auger feeder see pages 21 - 22 for additional instructions.

## Tires

Keep tires properly inflated. Lack of pressure can result in torn valve stems, fabric breaks and uneven tread wear. Too much pressure causes undue strain on fabric, excessive tread wear and allows the tire to cut in more on wet surfaces. Equal tire pressure reduces mixer sway when towing.

Recommended tire inflation pressure is:

10.00 x 15      8-PR tires - 40 psi

13.5 x 16.1      8-PR tires - 28psi.

## Shields

Make sure that all shields are in place and functioning.

## Bolts & Nuts

Before starting to operate the CattleMaxx check all nuts and bolts for tightness. Also check that all cotter pins are spread. After operating the CattleMaxx for several hours, check all the bolts for proper torque. See Torque Guide Figure 7.

SIZE	CLAMP LOAD	PLAIN	PLATED
1/4 - 20(.250)	2,025	8 ft. lbs.	76 in. lbs.
5/16 - 18(.3125)	3,338	17 ft. lbs.	13 ft. lbs.
3/8 - 16(.375)	4,950	31 ft. lbs.	23 ft. lbs.
7/16 - 14(.4375)	6,788	50 ft. lbs.	37 ft. lbs.
1/2 - 13(.500)	9,075	76 ft. lbs.	57 ft. lbs.
9/16 - 12(.5625)	11,625	109 ft. lbs.	82 ft. lbs.
5/8 - 11(.625)	14,400	150 ft. lbs.	112 ft. lbs.
3/4 - 10(.750)	21,300	266 ft. lbs.	200 ft. lbs.
7/8 - 9(.875)	29,475	430 ft. lbs.	322 ft. lbs.
1 - 8(1.00)	38,625	644 ft. lbs.	483 ft. lbs.
1-1/8 - 7(1.125)	42,375	794 ft. lbs.	596 ft. lbs.

Figure 7: Torque specification guide.

Cap screws, except for shear bolts, used in the CattleMaxx are Grade 5 and if replaced, cap screws of equal or higher strength should be used. Grade 5 cap screws are identified by three radial dashes on the hex head (see SAE Bolt Identification Figure 8, page 11).

# PREPARING CATTLEMAYX FOR OPERATION

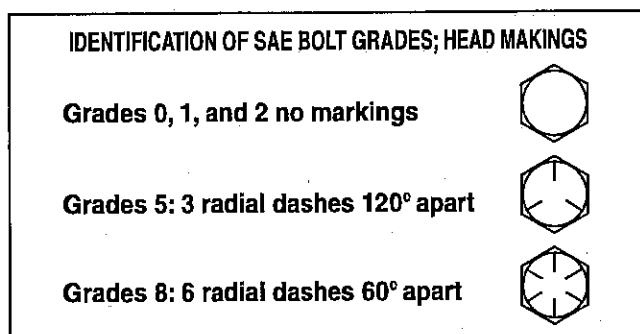


Figure 8: SAE bolt identification.

**IMPORTANT:** Shear bolts must be replaced with bolts of same grade. See "Service" section on page 33.

Lubricate CattleMaxx at regular intervals as instructed in lubrication sections. See "Lubrication" section beginning on page 28.

## Preparing The Tractor

The tractor must be equipped with a 540 rpm PTO to match the CattleMaxx as described in the previous section. Make sure the CattleMaxx and tractor are set up for the proper rpm.



**CAUTION:** Never operate 540 rpm grinder mixer with a 1000 rpm tractor PTO.

## Tractor Hitch

The hitch for the CattleMaxx is designed to attach to any SAE-ASAE standardized tractor drawbar. Adjust the drawbar so that it is 13" to 17" above the ground (see Figure 9). Extend or shorten the tractor drawbar so that the horizontal distance from the end of the tractor power take-off shaft (PTO) to the center of the hitch pin hole is 14" for 540 rpm drive. Lock the drawbar in its crossbar, parallel with the centerline of the PTO. Place locking pins on each side of the drawbar. If the tractor has an offset drawbar, the offset should be down for PTO work.

**IMPORTANT:** An improperly located hitch point may cause damage to the universal joints of the PTO drive-line.

## Attaching To The Tractor

**NOTE:** Height of the unloading auger needs to be checked. Move the saddle on the side of the mixing tank so the tube properly clears tractor and cab.

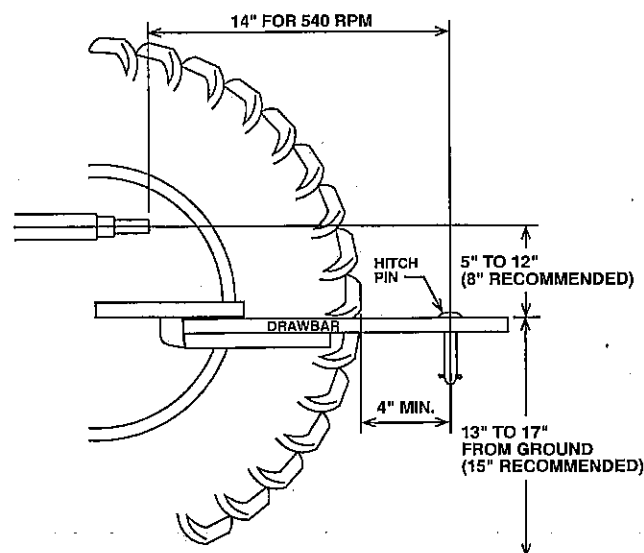


Figure 9: Hitch point locations.

Back the tractor up to the hitch. Use the crank of the jack to raise or lower the CattleMaxx hitch into position to engage the tractor drawbar. Fasten the CattleMaxx hitch to the drawbar with a hitch pin that can not bounce out. Raise the jack and lock into transport position (see Figure 10). Install safety chain (see Figure 11).



**CAUTION:** Always follow state and local regulations regarding a safety chain when towing farm equipment on public highways.

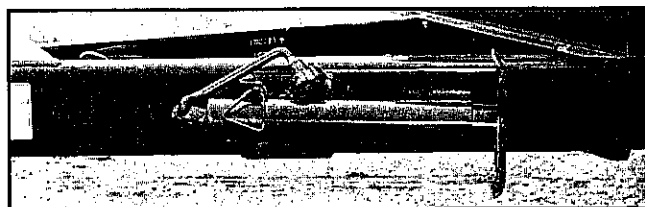


Figure 10: Jack in transport position.



Figure 11: CattleMaxx attached to tractor with safety chain.

# PREPARING CATTLEMAYX FOR OPERATION

If the CattleMaxx is equipped with an electronic scale, plug the scale power supply cord into the electrical outlet on the tractor or to battery on the mixer frame.

**IMPORTANT:** On electronic scale applications, if a bolt and nut are used in place of a hitch pin, the nut must not be tightened such that it hits against the underside of the weigh bar clevis.

If the CattleMaxx is equipped with a tractor hydraulic function, install the proper male ends on the hoses and plug the hydraulic hoses into the tractor outlets. See page 26 for open and closed center instructions.

Connect the PTO driveline to the tractor PTO shaft. The PTO operating speed of the tractor and processor mixer must be the same. The tractor half of the PTO is equipped with 6 splines for 540 rpm operation.



**CAUTION: Never operate 540 rpm CattleMaxx with a 1000 rpm tractor.**

After connecting PTO driveline to tractor, anchor driveline implement shield chain in main shield base slot and the tractor shield chain to the tractor drawbar.

## Rollermill

Check that the rollermill feed control gate is closed and remove any debris on top of the gate. The rollermill will not start if there is any material or debris in the rolls (see Figure 12).

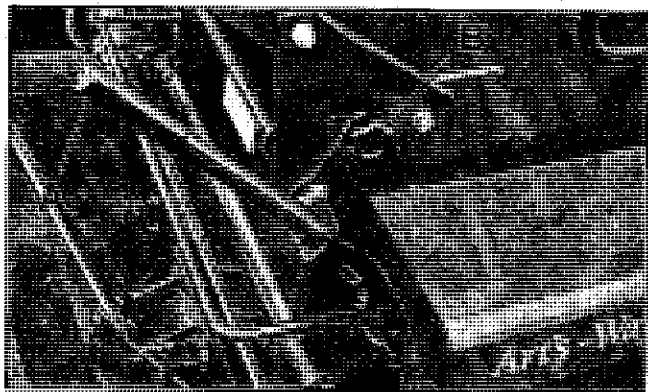


Figure 12: Rollermill in closed position. A - Gate Lever; B - Gate Locking Knob.

## Before Processing

New machines should be operated before preparing feed. A few hundred pounds of coarse material, such as shelled corn or ground corn cobs, should be run through the rollermill and mixer. This will remove the protective oil coating from the mixer cone and any

metal particles that may be in the machine. This helps polish the cone and prevent bridging. After several minutes of running, unload the mixture and discard. *Do not feed this material to livestock.*

## Detaching From Tractor



**CAUTION:** Be sure the tractor engine is shut off and remove key from tractor and place in pocket.

Disconnect the PTO driveline and front shield anchor chain from the tractor and place it on the PTO driveline support bracket (see Figure 13). PTO driveline support should be tight enough to remain in position when rotated from storage against frame to use position.

Disconnect the electronic scale power cord from the tractor if so equipped.

Disconnect the hydraulic hoses from the tractor outlets if equipped with tractor hydraulic functions.

Make sure the discharge auger and auger feeder are in their saddles before disconnecting.

Block the tires. Lower the jack stand to the ground. Turn the handle of the jack stand to raise the CattleMaxx tongue off the tractor hitch. Remove the hitch pin and safety chain.

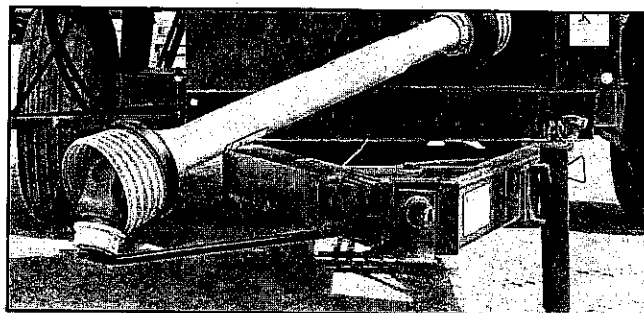


Figure 13: PTO support.

# OPERATION OF CATTLEMAXX



**CAUTION:** Keep well clear of moving parts. Before running the CattleMaxx, keep all children and bystanders away from the machine.

## Tractor PTO Engagement

The mixer may be operated by engaging the PTO. Always engage the tractor PTO with the tractor engine at an idle speed. After it is engaged, increase the engine speed gradually until operating speed is obtained. Reverse the engagement procedure to disengage.

Before processing, position the tractor straight with the frame of Cattlemaxx. This will allow smoother PTO operation and prolong PTO driveline life.

**IMPORTANT:** *If mixing during transport, avoid sharp turns which may damage the PTO driveline.*

The CattleMaxx does not have a main drive clutch, so the rollermill, supplement hopper auger and mixing tank auger will run whenever the tractor PTO is engaged. The unloading auger will only operate when the unloading auger clutch is engaged.

## Processing

A rollermill processor is designed to process grains without the fines and deviation in particle size experienced with hammermills. However, a rollermill is limited in capacity compared to a hammermill in that the rate of feed processing is restricted by the roll gap and roll selection, and more horsepower will not increase capacity of the mill. It is important that you become familiar with the rollermill before operating it at full capacity.

All projected particle sizes will vary depending on the quality and moisture content of the grain, roll gap, power input, roll speed differential drive and the general operation of the mill.

Always operate the rollermill at full speed (540 RPM) when processing. Slower speeds will increase power requirements and may cause damage or excessive wear to mill components.

## Rollermill

The rollermill drive is a direct drive without a drive clutch, so the rolls will turn at all times. The drive consists of a direct driven drive roll, which drives the eccentric (adjustable) roll and hopper agitator shaft through a rear belt drive. Always start and stop the CattleMaxx at low speeds so as not to damage any drive components.

To operate the rollermill, engage the tractor PTO at a low RPM and increase speed to the full rated 540 RPM. Start to fill the hopper with grain, allowing the full width of the hopper to fill to just above the magnet before operating the grain control gate. Open the grain control gate to the desired opening and lock the knob (Figure 14). When processing is complete, allow the hopper to empty completely and close the grain control gate fully, locking the knob to keep the gate closed. Stop the rollermill and disengage the PTO at a low RPM only after the grain control gate has been closed and all grain in the rollermill has been processed.

**IMPORTANT:** *Never stop the rollermill with grain in the rolls. The rollermill will not start if any grain is wedged in the apex of the rolls.*

The rollermill will not start if there is any material between the rolls. If material does get into the rolls without the PTO engaged, the roll gap must be opened or the material cleaned from the rolls before the rolls can be turned.

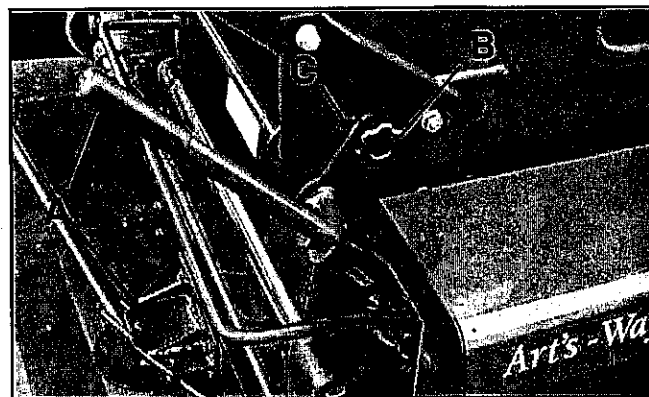


Figure 14: Grain control gate operation. A - Gate lever; B - Gate locking knob; C - Lever gauge.

# OPERATION OF CATTLEMAXX

## Driveline Protection

The CattleMaxx driveline is protected from overloading by a shear clutch located at the end of the PTO driveline on the drive roll (see Figure 15). Always replace the shear clutch bolt with a metric M10-1.5 x 60 bolt. Use of any other type or size of shear bolt will compromise the driveline protection of the machine.

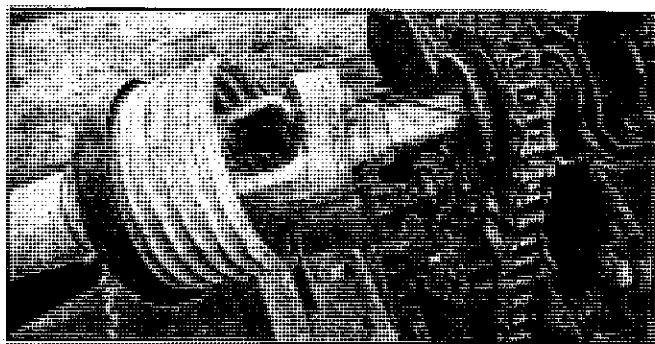


Figure 15: Shear clutch bolt.

## Hopper Magnets

Two plate magnets are located in the hopper above the rollermill (see Figure 16). Always load the hopper from the right hand side to utilize these magnets. A magnet assembly is also located in the hopper throat just above the rollermill rolls. This is standard equipment on all machines to help protect the mill from tramp metal. It is important to keep the magnets clean and monitor their condition.

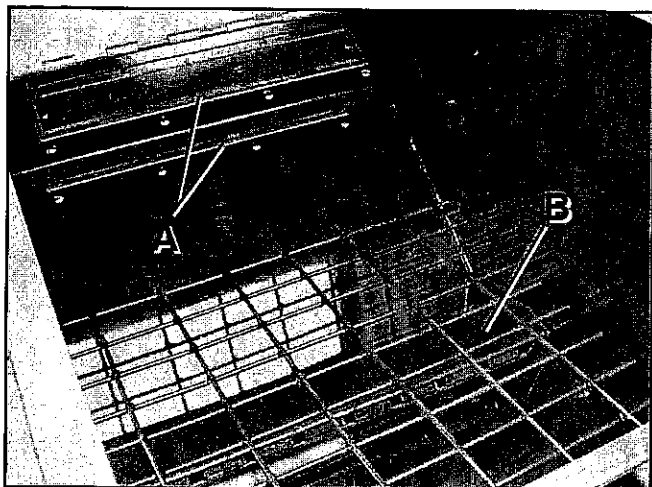


Figure 16: Plate magnet in hopper (Viewed from left side of hopper - magnet on right hand side). A - Plate Magnets; B - Throat Magnet.

## Grain Control Gate

The grain control gate is used to regulate the flow of grain into the rollermill. The grain control gate lever is located at the front right corner of the mill (see Figure 14, page 13). To adjust the grain control gate, loosen the knob and push or pull the lever to close or open the gate. Each slot on the grain control gate lever gage is approximately 1/4" of gate opening. Tighten the knob to hold the gate in place once the desired opening is set.

Open the grain control gate after the rollermill has been started and the hopper as about half full (grain showing in the hopper inspection window). Open the control gate enough to allow a smooth grain flow into the rollermill. Recommended control gate opening is 1/2" to 1". A high grain flow rate will cause grain to boil on top of the rolls and decrease capacity of the rollermill.

**IMPORTANT:** *The grain control gate should be opened only enough to provide the rate of processing required, with a maximum gate opening of 1".*

Opening the grain control gate more than 1" will overload the mill and cause mill vibrations, and also result in lower capacity, larger grain particle size, undo drive stress, shortened roll life and excessive power requirements. When the CattleMaxx is operated for the first time, the feed rate from the auger feeder or bin should be restricted until you become acquainted with the capacity of the unit.

Always ensure that the grain control gate is closed during transport or when not in use. This will prevent material from falling into the apex of the rolls and preventing the rollermill from starting.

## Roll Gap

Roll gap is the space between the rollermill rolls, which is used to control the particle size of the rolled feed. A roll gap of 0.010" is set at the factory, and should never be set less than 0.008". This setting is determined by the adjustment of the eccentric roll handle stops (see Figure 17, page 15). Use this minimum setting for fine processing, and open the roll gap for coarser processing. Use the pointer on the front bearing housing of the eccentric roll for wider roll gap setting reference.

# OPERATION OF CATTLEMAXX

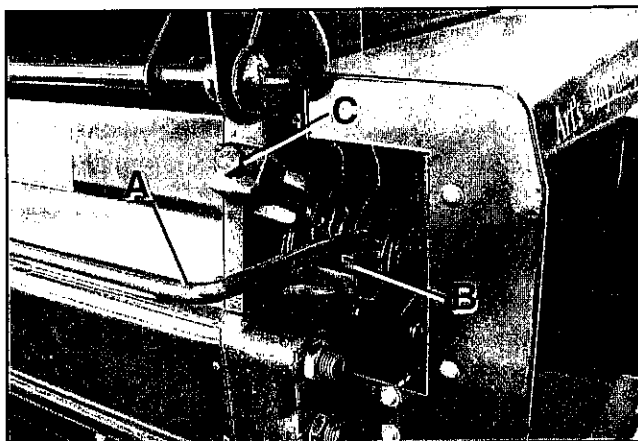


Figure 17: Eccentric roll settings. A - Eccentric handle; B - Eccentric handle stops; C - Eccentric roll lock bolt.

The minimum roll gap on the roller mill must be maintained to ensure a consistent particle size. This should be monitored as the rolls wear, and will also need to be adjusted for any replacement or regrooved rolls.

Roll gap should be set for each type of grain. It is not recommended to process mixed grains as greater particle size deviation will occur. You are encouraged to experiment with the roll gap setting to meet the requirements of rolling different grains in your operation. Particle size can be monitored by using the grain inspection trough under the left hand side of roller mill to take feed samples (see Figure 18).

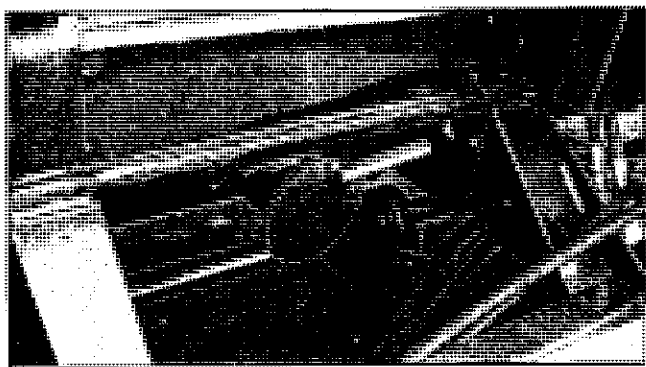


Figure 18: Grain inspection trough.

Be careful not to over roll grains with too small of a roll gap setting on the roller mill. Over rolling takes more power, reduces capacity and causes unnecessary roll wear. The roller mill should be ordered with the rolls grooved for the smallest grains to be rolled.

Be careful when adjusting the roll gap to always pull on the eccentric roll handle evenly, either from both ends or from the center. Do not pull up on the eccentric roll handle from only one end, as twisting or bending

the handle will move one end of the eccentric roll more than the other and cause the rolls to become out of parallel with each other. Parallel rolls must be maintained to achieve uniformity in the feed particle size.



**Caution:** Never adjust the roll gap while the CattleMaxx is running.

## Eccentric Roll Release

The roller mill is equipped with a positive pressure eccentric roll release to automatically open the gap between the rolls. This is to minimize damage to the rolls and drive train from the induction of tramp metal or other foreign objects into the rolls. Opening the grain control gate too far and overloading the rolls can also cause the eccentric roll release to trip. Indications that the eccentric roll release has been tripped are a sudden higher particle size in the processed feed and the eccentric roll handle has moved up. The eccentric roll release must be reset if this occurs.

The eccentric roll release is set by tightening the eccentric lock bolts after the eccentric roll handle has been positioned for desired roll gap (see Figure 17). The lock bolts tighten down on a brass plug, which push against a knurled surface on the eccentric roll bearing housing. Excessive pressure between the rolls will shear the brass plug and open the roll gap.

Do not overtighten the eccentric lock bolts, as this will render the eccentric roll release ineffective. Tighten the eccentric lock bolts only until they are snug. Use only the wrench provided to tighten the eccentric lock bolts so as not to over torque the bolts.

## Roller mill Rolls

The roller mill rolls in the CattleMaxx are made of heat treated cast iron. The rate of wear on the rolls is dependent upon the hardness or abrasiveness of the grain, the amount of overloading done, and damage resulting from foreign objects such as tramp metal, stones, etc. Increase in particle size and horsepower requirements are signs of increased roll wear. Rolls should be replaced when they become worn down and the surface is slick and shiny.

Worn rolls can be regrooved and re-heat treated by Art's Way. See the "Service" section of this manual for information on replacement rolls.

# OPERATION OF CATTLEMAXX

## Roll Selection

Rollermill rolls can be purchased with either a sharp or flat groove cut. The sharp groove rolls offer a higher capacity and finer particle size, while the flat groove rolls are for flaking or cracking grains.

Rollermill rolls can be cut with 10, 7 or 5 grooves per inch. The 10 groove roll will take any small grain, and is recommended for wheat, milo, barley, oats, etc. The 7 groove roll will also take these small grains, as well as shell corn; however smaller kernels may pass through the rolls uncracked. It is suggested to use a combination of one 7 and one 10 groove roll when using multiple grains such as corn and milo. The 5 groove roll is recommended for use with shell corn. The courser groove rolls will have a higher capacity than the fine groove rolls (see Figure 19).

When using roll combinations with different grooves (sharp to sharp or flat to flat) the coarser grooved roll is the drive roll. When combining sharp and flat rolls with same number of grooves the drive roll is the sharp roll.

Capacity of the rollermill is dependent upon the roll selection, as well as roll gap, roll speed differential, condition of rollermill and quality of material.

CAPACITY CHART		
Rolls	Material	Approx. Bu./Hr.
10 Groove . . . . .	Oats . . . . .	200 - 300
	Wheat/Barley . . . . .	200 - 300
	Milo/Corn . . . . .	300 - 400
7 Groove . . . . .	Milo/Corn-Dry . . . . .	350 - 450
	Milo/Corn-Hi. Moisture . . . . .	300 - 400
5 Groove . . . . .	Milo/Corn-Dry . . . . .	400 - 600
	Milo/Corn-Hi Moisture . . . . .	350 - 550

Figure 19: Capacity chart.

## Roll Speed Differential

Your CattleMaxx rollermill may be equipped with a belt driven roll speed differential. This increases the speed of the eccentric roll, which causes a scrubbing effect on the rolls helping to keep them clean. The CattleMaxx rollermill should be equipped with a roll speed differential if high moisture grain is to be used. A roll speed differential has also been found to decrease particle size and increase capacity of the rollermill.

## Roll Scrapers

The CattleMaxx rollermill is equipped with roll scrapers to help prevent material from packing onto the rolls. With course or dry material, the spiral design of the roll groove cut keeps the rolls clean and roll scraper setting is not as critical. For fine or high moisture material a higher tolerance roll scraper setting should be maintained. Allowing material to build up on the rolls will cause a loss of capacity and excess load on the drive components.

Roll scraper setting needs to be monitored as the rolls wear, and should be adjusted after changes in a minimum roll gap setting or when replacing rolls. The main drive roll scraper should be set at 0.006" clearance and the eccentric roll scraper should be set at 0.050" clearance.

## Processing Without Mixing

To process any material without mixing, engage the unloading auger lever, open the tank unloading door and start the processing operation. The feed will be augered into the mixing tank cone and then out through the unloading augers without mixing. Position the unloading auger tube as needed to direct the feed.

## Adding Concentrate Or Supplement

Concentrate or supplement should be added to the ground feed through the supplement hopper located at the right rear corner of the CattleMaxx. A serrated sack cutter is located in the hopper opening. A grate is positioned below the sack cutter to keep the bag from dropping into the auger. *For best results, add the concentrate or supplement prior to the processing operation or within a minute or two after processing has begun.*



**CAUTION: Keep hands and feet clear of auger. Make sure grate is always in place.**

Addition of very fine ingredients or commodities that do not need to be processed should be added to the mixer either through the supplement hopper or through the rollermill with an increased roll gap. Fine ingredients or commodities will tend to pack onto rolls set with a narrow roll gap and may cause the eccentric roll release to trip if the roll gap is less than the roll scraper clearance.

# OPERATION OF CATTLEMAYX

If micro-ingredients are to be added to the feed, the best results are obtained with a premix, or by adding the supplements and micro-ingredients simultaneously. If the micro-ingredients are desired without a premix or other supplement, open the mixing tank lid and put the ingredients directly into the mixer. This should be done at the beginning of the operation. Be sure to close the lid before starting. The supplement hopper lid should be closed when not in use.

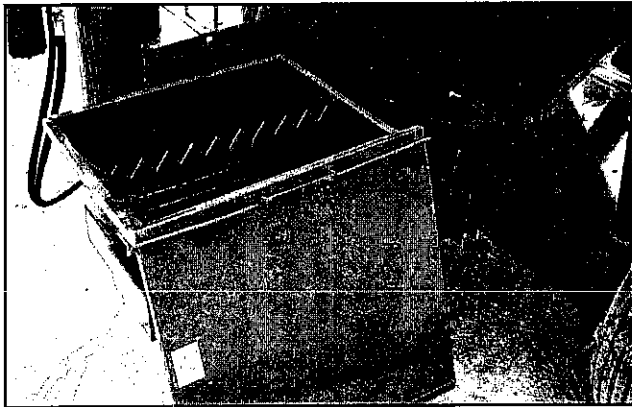


Figure 20. Supplement hopper located on right hand side of machine.

If strong additives are not wanted in the next batch, clean out the tank cone and unloading augers through clean-out doors (see Figure 21 and 22).

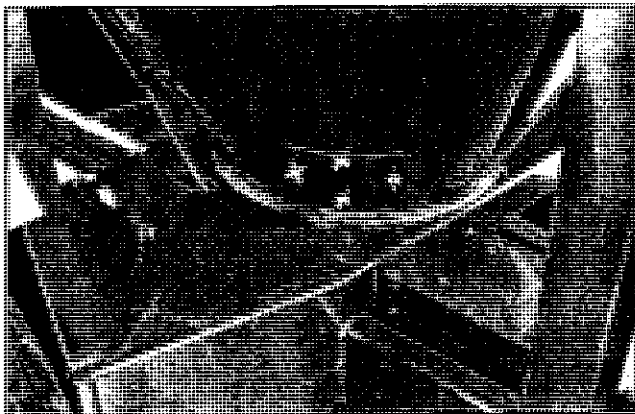


Figure 21. Tank cone clean-out door (right side).



**CAUTION:** Make sure PTO is disengaged, tractor is shut off and key is in your pocket before opening or closing clean-out door.

Located under the right side of frame and tank assembly is a hinged door on the bottom of the auger trough. Release two spring clamps and drop door. Keep away from opening. Run mixer slowly until trough and mix-

ing tank are cleaned out. Keep all persons away from under and around the machine.

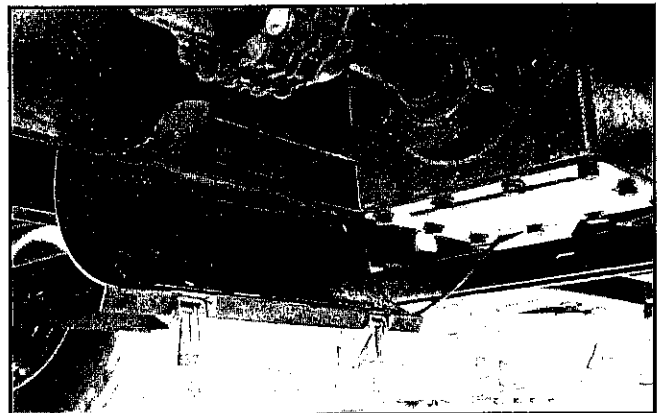
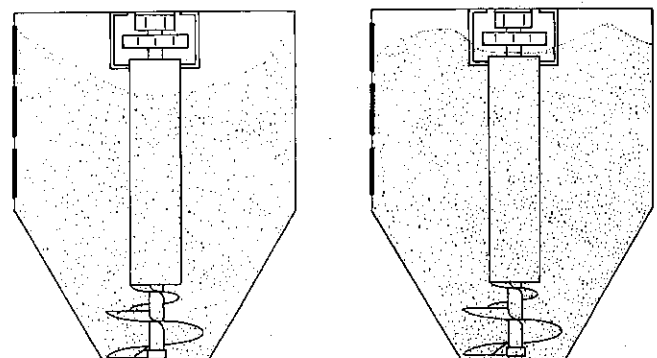


Figure 22. Clean-out door located under right side of tank assembly.

## Filling Mixer Tank

Be sure the mixing tank unloading door is closed. As the mixing tank is filling, watch the ground feed through the mixing tank windows. When the top window first becomes covered, the tank is not full since the mixing auger throws material away from the center of the tank. Continue loading until the top window clears (feed drops), then becomes covered again about half-way (see Figure 23). Stop feeding material into the mixer at this point, but continue operating until the rollermill has had time to clear. Do not overload the mixer: overloading can cause damage to the machine. To estimate how many bushels are in the tank see Figure 24, page 18.

For best mixing results, always add lightweight bulky materials first. Always add high moisture corn or grain last. Excessive amounts of wet material or bulky material may cause bridging in the mixing tank.



**Filling**

**Full**

Figure 23: Filling pattern.

# OPERATION OF CATTLEMAYX

## 105 BU. - APPROXIMATE CAPACITY CALIBRATION - IN POUNDS\*

(Actual Weights Vary with Material, Moisture, Roll Groove; ration weight is not included and is highly variable.)

Window Number	Ground Oats 22.5 lbs./bu.	Ground Barley 36 lbs./bu.	Ground Milo 56 lbs./bu.	Ground Shelled Corn 50 lbs./bu.	Ground Ear Corn 38 lbs./bu.	Un-ground Shelled Corn 50 lbs./bu.
Full	2346	3754	5839	5213	3962	5839
9	2219	3549	5521	4930	3747	5521
8	2046	3274	5092	4547	3456	5092
7	1874	2998	4664	4164	3165	4664
6	1659	3654	4129	3687	2802	4129
5	1487	2379	3701	3304	2511	3701
4	1315	2103	3272	2921	2220	3272
3	1100	1760	2737	2444	1857	2737
2	928	1484	2038	2061	1566	2038
1	756	1208	1880	1678	1276	1880

## 150 BU. - APPROXIMATE CAPACITY CALIBRATION - IN POUNDS\*

(Actual Weights Vary with Material, Moisture, Roll Groove; ration weight is not included and is highly variable.)

Window Number	Ground Oats 22.5 lbs./bu.	Ground Barley 36 lbs./bu.	Ground Milo 56 lbs./bu.	Ground Shelled Corn 50 lbs./bu.	Ground Ear Corn 38 lbs./bu.	Un-ground Shelled Corn 50 lbs./bu.
Full	3427	5483	8529	7615	5787	8529
9	3254	5206	8098	7230	5495	8098
8	3002	4802	7470	6670	5069	7470
7	2747	4396	6838	6105	4640	6838
6	2468	3949	6143	5485	4169	6143
5	2228	3564	5544	4950	3762	5544
4	1987	3179	4945	4415	3355	4945
3	1685	2696	4194	3745	2846	4194
2	1444	2311	3595	3210	2440	3595
1	1204	1926	2996	2675	2033	2996

\*Above weights are approximate; to be used as a guide only. Large variations may occur due to test weight of grain, slope that machine may be on, moisture content, or roll configuration. For best ration control, use an electronic scale.

Figure 24. Tank capacity for 105 and 150.

### Spring Loaded Tank Lid



**CAUTION:** Disengage all drives and shut off tractor engine and place key in pocket before opening mixing tank lid.

If the tank is accidentally over filled, it is equipped with a spring loaded tank lid (see Figure 25). This lid also allows access to the inside of the mixing tank. Keep the lid latched down at all times.

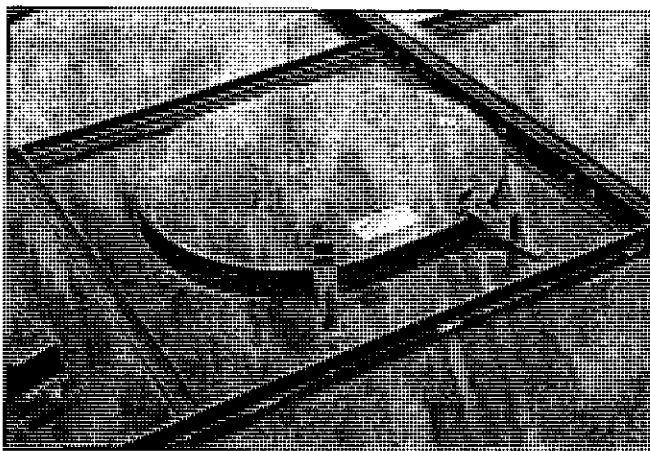


Figure 25: Spring loaded tank lid.



**CAUTION:** If entering tank, make sure tractor engine is shut off and place key in your pocket and disconnect PTO driveline.

After the processing is completed and the desired ration is in the mixing tank, allow the mixer to operate until ready to unload. Run the mixer 2 to 3 minutes to insure a thorough mixing of feed and supplements.

**IMPORTANT:** Do not make sharp turns with PTO running while transporting.

### Unloading Auger Positioning

After mixing, the finished feed may be unloaded into storage bins, wagons or feeders. Positioning (Lift and Swing) of the unloading auger and drive for the unloading auger may be controlled in two ways.

1. **MANUAL CRANK:** (See Figure 26 and 27, page 19) Insert crank on the shaft next to channel to lift, and on the shaft at the rear of lower auger housing to swing the unloading auger. A brake is provided to prevent movement after positioned (see Figure 28, page 19).

# OPERATION OF CATTLEMAXX

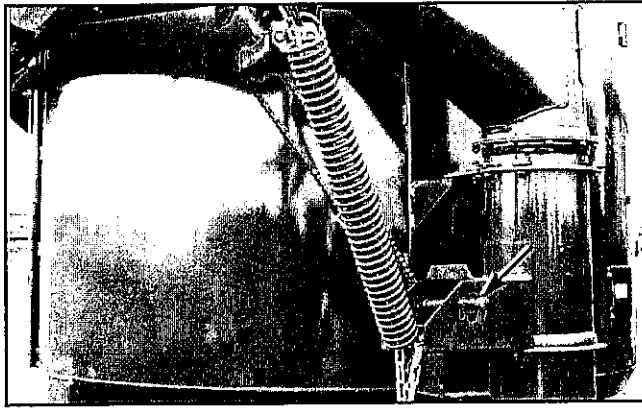


Figure 26: Manual lift.

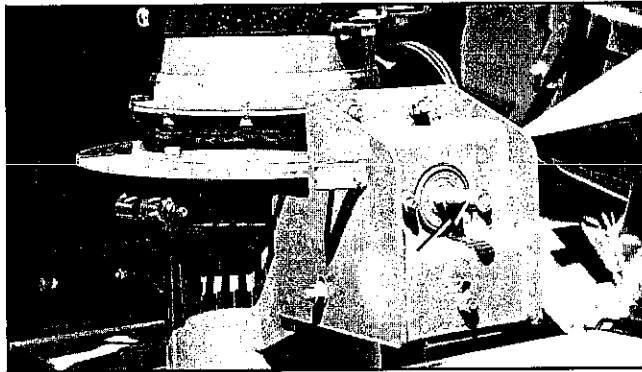


Figure 27: Manual swing.

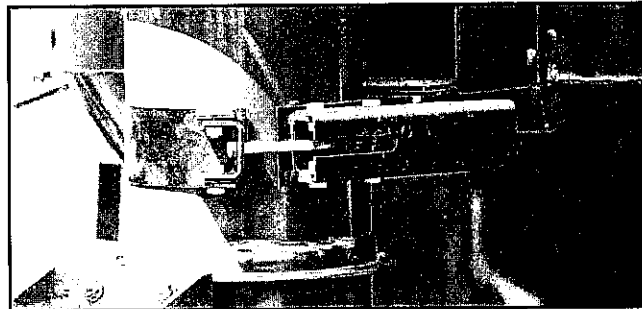


Figure 28: Manual brake.

## 2. TRACTOR HYDRAULIC LIFT & SWING:

Hydraulic lift and swing using tractor hydraulic system valves. If a hydraulic auger feeder is present, a double selector valve is required to direct the flow of hydraulic oil. Either the swing motor or the auger feeder may be operated independently, but not at the same time (see Figure 29). Position the selector valve control "IN" to direct oil to discharge swing function.

Connect four hydraulic hoses with appropriate male connectors to the tractor. Make sure the proper hoses are paired to same tractor hydraulic circuit. Activate the appropriate tractor valve to lift the unloading auger then using the other valve to swing the unloading auger to the desired position.

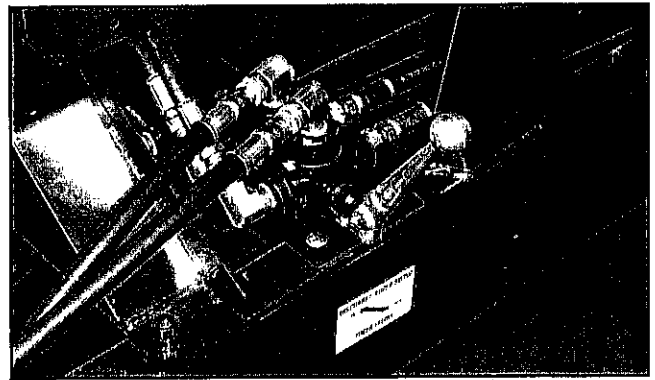


Figure 29: Hydraulic selector valve (lever in the "IN" position - hydraulic swing).

When finished unloading always bring the discharge auger back to rest in the saddle before transport. Take care not to damage the auger by hitting the side of the mixing tank. Use the flow control valves on hydraulic units if a different swing speed is required.

## Unloading Auger Engagement

Operate tractor at a minimum of 2/3 throttle for unloading. This allows the discharge augers to move the feed through the discharge elbows more efficiently with lower driveline stress.

**UNLOADING CLUTCH DRIVE:** (See Figure 30). Move the clutch handle ahead and down to engage the augers. Open the unloading door, the eccentric may be used to hold open. (See Figure 31, page 20). When tank is unloaded, reverse procedure.

If unloading in more than one location, close discharge door and empty auger before moving machine. Transporting or adjusting the discharge auger height with material in the discharge auger will cause excessive wear to the ring and worm gear assembly and discharge auger system.

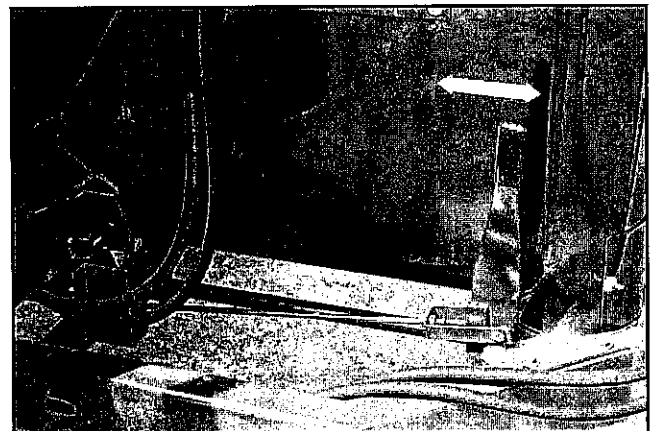


Figure 30: Unloading clutch operation.

# OPERATION OF CATTLEMAYX

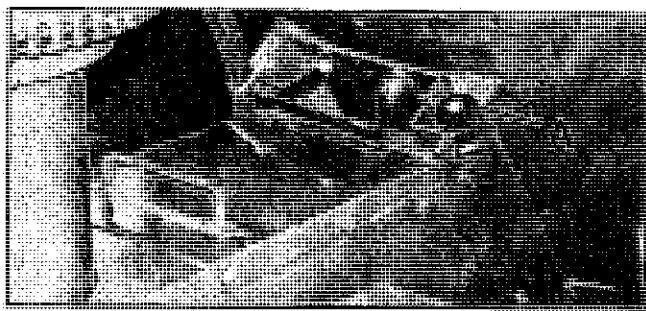


Figure 31: Unloading door. A - Eccentric lock.

## Auger Extension:

Optional extensions for the unloading auger include a 3' to 6' folding or bolt-on extensions. See Figures 32 and 33 for discharge heights with these extensions.

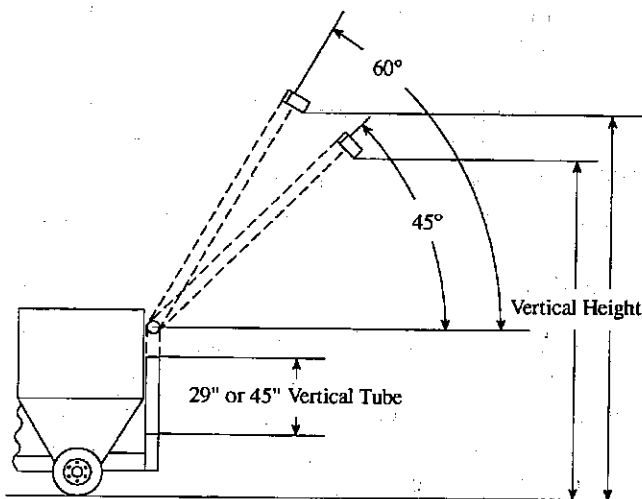


Figure 32: Unloading auger heights (see figure 33).

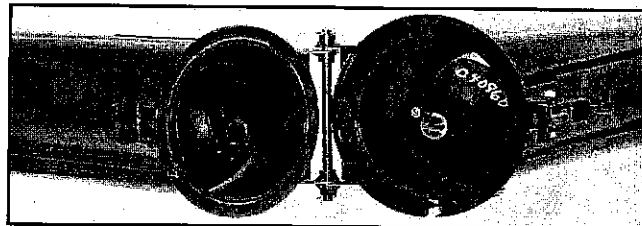


Figure 34: Folding auger extension.

Always make certain that a bolt on auger extension will clear the tractor cab during transport. Folding augers extensions should be in the folded position for transport.

## Unloading Auger Hood

When the unloading auger tube becomes overloaded, a spring-loaded door opens on the end to prevent damage to the drive (see Figure 35).

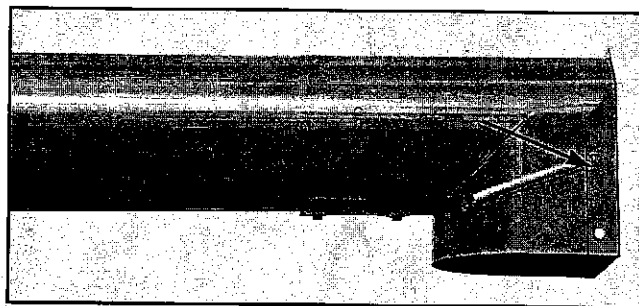


Figure 35: Unloading auger hood.

## UNLOADING HEIGHTS OBTAINED ON LEVEL SURFACE (See Figure 32)

Unloading Auger Configuration	Tube & Elbow Combined Length	Discharge 45°		Discharge 60°	
		29" Tube	45" Tube	29" Tube	45" Tube
105 Bu.					
Standard - No Extensions	125"	14'-9"	N/A	16'-8"	N/A
3' Fold Around Auger Extension	161"	17'-0"	N/A	19'-3"	N/A
6' Fold Around Auger Extension	197"	19'-3"	N/A	22'-0"	N/A
150 Bu.					
Standard - No Extensions	125"	N/A	15'-9"	N/A	17'-8"
3' Fold Around Auger Extension	161"	N/A	18'-0"	N/A	20'-3"
6' Fold Around Auger Extension	197"	N/A	20'-3"	N/A	23'-0"

Figure 33: Unloading auger heights.

# OPERATION OF CATTLEMAYX

## Auger Feeder Operation

The CattleMaxx may be equipped with a hydraulic auger feeder:

To position the auger feeder, remove the clip pin from the fender bracket, lift the bottom of the auger feeder slightly so that the brackets clear at the fender. Swing the auger feeder out away from tank so it will clear the fender when it is lowered. Lift slightly on the auger feeder and pull the rope on the right hand side to disengage the height adjustment slide lock. Raise or lower to the desired height and release the rope.



**DANGER:** To prevent personal injury:

1. Use grate over auger at all times.
2. Keep hands and feet out of the hopper area and do not climb onto or over the hopper at any time.
3. Keep children and bystanders away from machine while in operation.

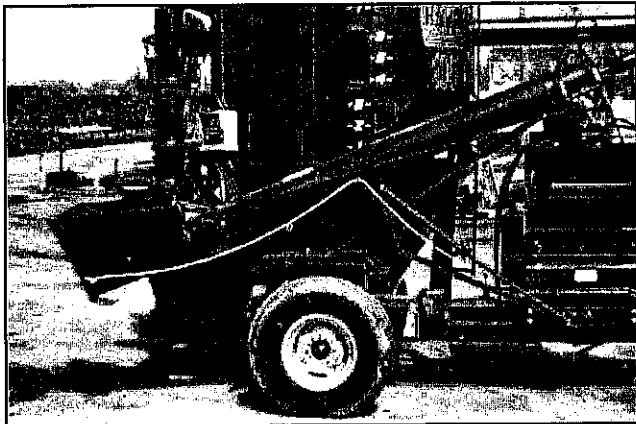


Figure 36: Auger feeder.

The auger feeder swing brake prevents the auger from swinging. Tighten or loosen as desired (see Figure 37).

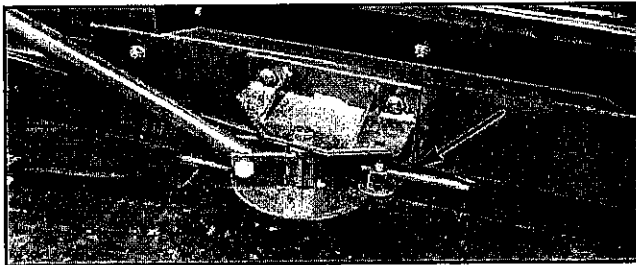


Figure 37: Auger feeder swing brake.

*NOTE: If machine is equipped with an electric scale, to obtain a more accurate reading DO NOT rest auger feeder on the ground. Place in position and set swing brake (see Figure 37).*

The auger feeder is counter balanced by a spring (see Figure 38). Adjust the spring by loosening the nut on the lower bolt, turn the bolt in to increase the spring tension, relock the nut.

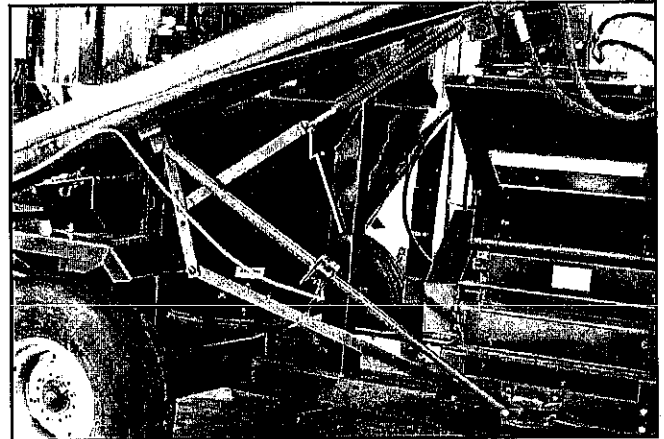


Figure 38: Auger feeder counter balance spring adjustment.

Shut off handles are provided at the auger feeder hopper and at the flow control valve at the top of the auger feeder housing. To shut off the auger feeder pull the handle at hopper area or move flow control lever to off (see Figure 39, and 40 page 22). Make sure the shut off handle at the hopper will stop the auger feeder. Loosen cable clamps to readjust.

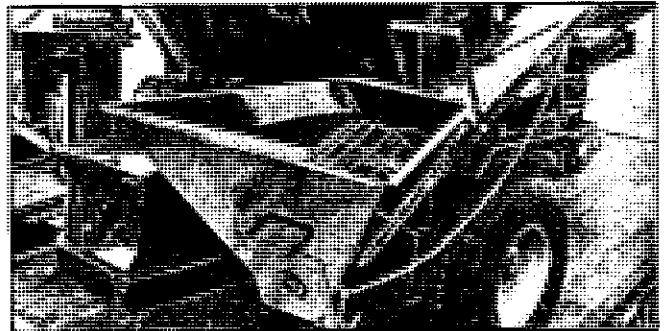


Figure 39: Auger feeder auger shut off handle at hopper.

# OPERATION OF CATTLEMAXX

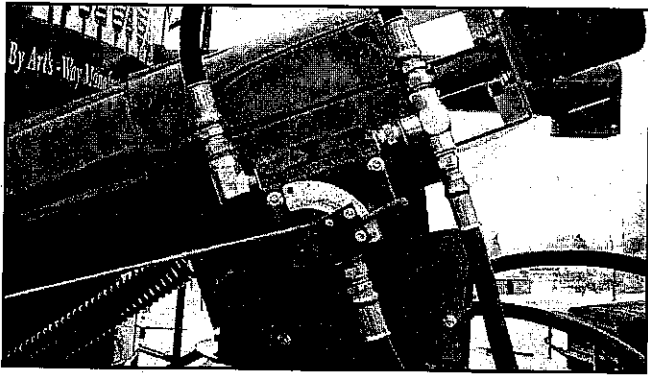


Figure 40: Auger feeder flow control valve (shown in "ON" position).

For the tractor hydraulic auger feeder, when the machine is also equipped with a hydraulic lift and swing unloading auger, a selector valve will be located to the left, rear side of the rollermill. The handle on this valve must be out to divert the oil to the auger feeder.

If the handle for the selector valve is in, oil flows to the swing function of the unloading auger (see Figure 41).

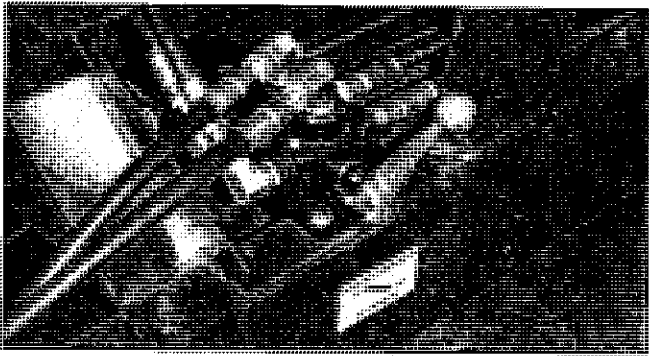


Figure 41: Hydraulic selector valve (lever in the "OUT" position - auger feeder).

To start the auger feeder, the flow control handle is moved forward (clockwise) until the desired speed is reached.

Adjust the speed of the auger feeder to keep the roller-mill hopper about half full, or the grain level visible through the hopper inspection window (see Figure 42). Under filling the hopper will cause uneven roll wear and higher particle size deviation, while over filling the hopper will cause the hopper plate magnets to be covered with material, making them ineffective.

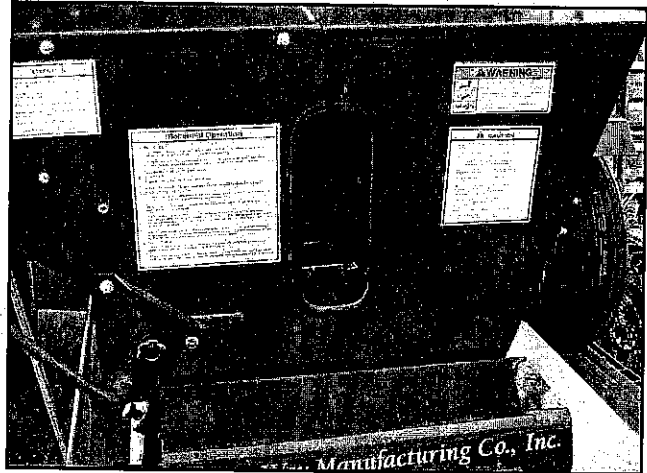


Figure 42: Hopper inspection window.

# CATTLEMAXX ADJUSTMENTS



**CAUTION:** Do NOT make any adjustments while the machine is in operation. Be sure to shut off tractor and place key in pocket while making adjustments. Wait for all movement to stop before approaching machine.

## Auger/Supplement Drive Chain Adjustments

The mill to mixer/supplement hopper auger drive chain and discharge auger drive chain (see Figures 43 and 44), are tensioned with a wood block idler. Adjust the chain tension to 1/2" total deflection by positioning the wood block idler.

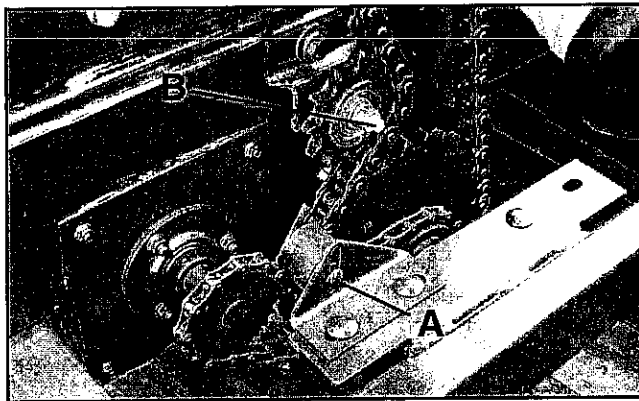


Figure 43: Front drive chains. A - mill to mixer auger drive chain adjustment; B - Main drive train adjustment.

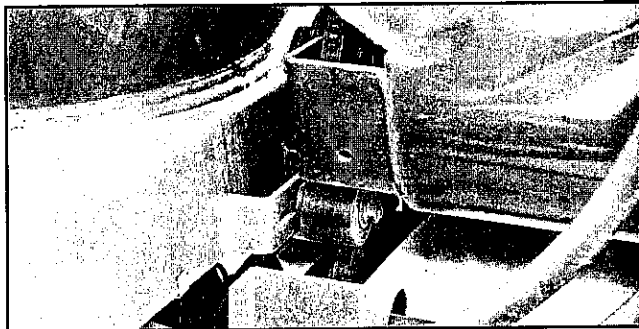


Figure 44: Discharge auger drive chain adjustment.

## Main Drive Chain

Adjust the tension of the main drive chain (see Figure 43), by loosening the idler sprocket and bolt and sliding the idler sprocket towards the chain. Retighten idler sprocket bolt. Chain deflection should be 1/2" total at longest span. This chain should be checked and oiled daily.

## Roll Speed Differential

Your machine may be equipped with a belt driven roll speed differential, which increases the speed of the eccentric roll. Be certain to maintain proper belt tension with the spring loaded idler (see Figure 45) as the belts will stretch during their break-in period. Improper tensioning or overloading the mill will cause the belts to slip, causing premature wear and reduced belt life.

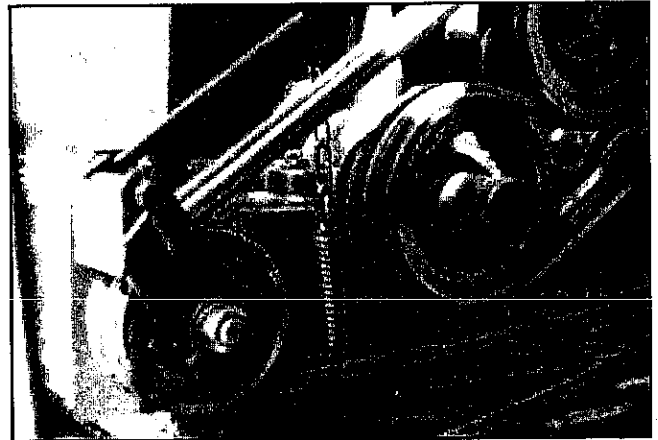


Figure 45: Roll differential spring loaded idler.

## Roll Gap

The minimum roll gap on the mill must be maintained to ensure a consistent fine particle size. This should be monitored as the rolls wear, and will also need to be adjusted for any replacement or regrooved rolls.



**DANGER:** Do NOT make any adjustments while the machine is in operation.

To open the roll gap, loosen the eccentric lock bolts (see Figure 46, page 24) with the wrench provided and pull up on the eccentric roll handle. A pointer gage (see figure 46) on the eccentric roll bearing housing can be used as a reference for wider roll gaps. Each mark on the gage is approximately 0.015" of additional roll gap. Always re-tighten the eccentric lock bolts when processing, otherwise the roll gap will open and feed particle size will increase.

To check the roll gap, remove the 20" magnet (see Figure 47, page 24), from the hopper throat. Using a feeler gage, check the current roll gap with the eccentric roll handle down on the stops and the eccentric lock bolts snugged down. Be sure to check the roll gap at the front and back of the rolls. Also rotate the rolls to check several different places on the roll diameter, as there may be 0.001" to 0.002" difference in the concentricity of the rolls.

# CATTLEMAXX ADJUSTMENTS

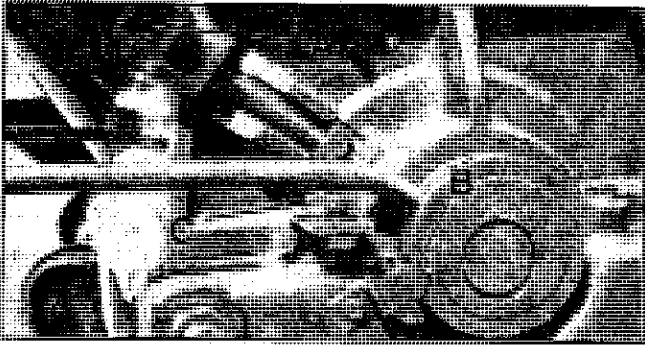


Figure 46: Rollermill housing, eccentric bearing. A - Eccentric lock bolts; B - Pointer gauge; C - Stop bolts.

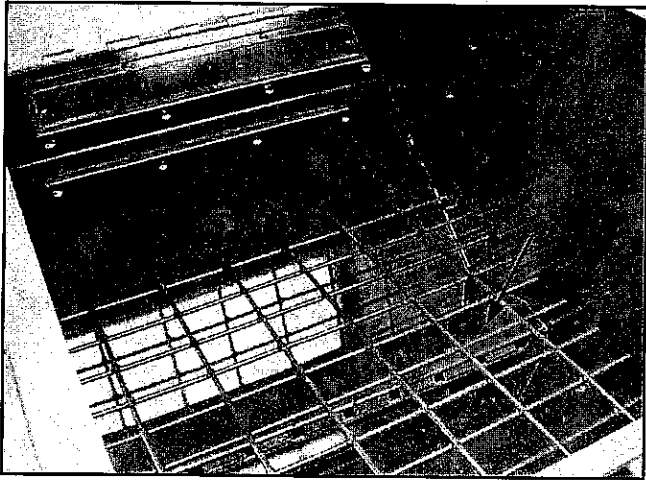


Figure 47: Removing magnet to check roll spacing.

To change the minimum roll gap, loosen the eccentric lock bolts and pull the eccentric roll handle up out of the way. Loosen the jam nuts on the 1/2" stop bolts (see Figure 46) and turn both the front and rear stop bolts evenly, up for a wider roll gap and down for a smaller roll gap. Lower the eccentric roll handle to the stop bolts and retighten the eccentric lock bolts. Recheck the roll gap and repeat as necessary until the desired roll gap is attained. Be sure to retighten the jam nuts on the stop bolts when finished.

**NOTE:** Rolls must not be set closer than 0.008" gap. Never adjust the minimum roll gap setting with the tractor PTO engaged; the rollermill rolls will be severely damaged if they ever touch while the PTO is engaged.

## Roll Parallelism

If the roll gap is different from front to back on the rolls, the rolls are out of parallel and need to be adjusted. This can occur from the eccentric roll handle getting bent or twisted, or uneven roll wear from not keeping the hopper full across the whole width while

processing. To adjust roll parallelism, reset one stop bolt up or down. Be certain to push down on each corner of the eccentric roll handle when tightening the eccentric lock bolts to ensure both sides of the handle are in contact with the stops. The eccentric roll handle may have to be twisted to accommodate an excessive stop bolt adjustment.

## Roll Scrapers

Roll scraper clearance needs to be monitored as the rolls wear, and should be adjusted after changes in a minimum roll gap setting or when replacing rolls. The main drive roll scraper should be set at 0.006" clearance and the eccentric roll should be set at 0.050" clearance. Be sure the minimum roll gap is set and the rolls locked in place before setting the scrapers.

To adjust the roll scrapers, loosen the jam nuts on the scraper adjustment bolts (see Figure 48). Turn the adjustment nut clockwise to bring the scraper closer to the roll. Turn the roll by hand while adjusting the scraper. When the scraper contacts the roll, back the adjusting nut off slightly until no scraper to roll contact can be heard. On the opposite side of the mill (front to back) turn the adjustment nut on the same scraper until the scraper contacts the roll. Back the adjustment nut off slightly until no scraper to roll contact can be heard. Recheck the side of the mill you started on and repeat the procedure if further adjustment is needed.

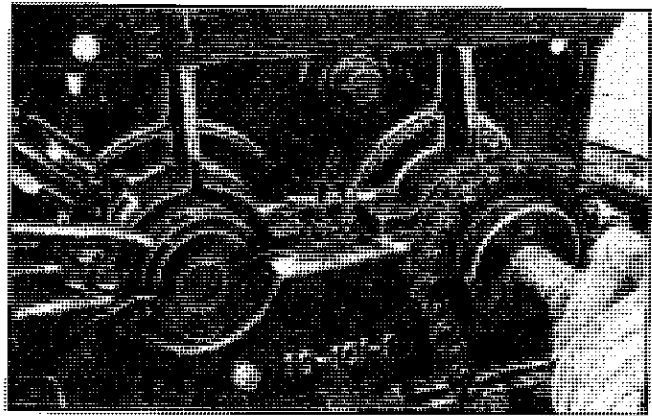


Figure 48: Roll scraper adjustment bolts.

Repeat this procedure for the opposite roll. To check for actual scraper clearance, remove the side panels of the mill and measure the clearance with a feeler gage.

**NOTE:** Do not adjust roll scrapers with the tractor PTO engaged. Roll to scraper contact with the PTO engaged will severely damage the rolls and scrapers.

# CATTLEMAXX ADJUSTMENTS

## Manual Unloading Auger Swing Crank Adjustment For Sprocket Engagement

Adjust by loosening the three bolts shown in Figure 49 and moving the assembly up to engage the teeth of the sprocket with the disk.

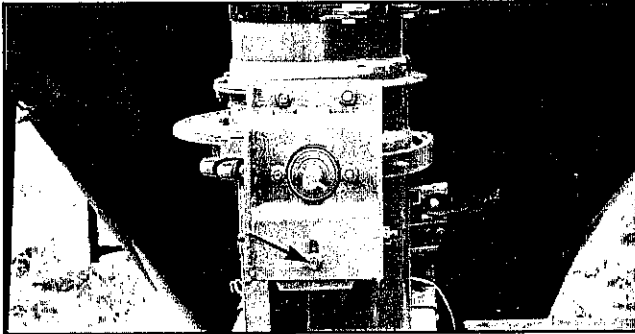


Figure 49: Manual unloading auger swing crank adjustment.

## Manual Unloading Auger Swing Brake adjustment

Tighten or loosen nut and bolt, to maintain tension to hold unloading auger (see Figure 50).

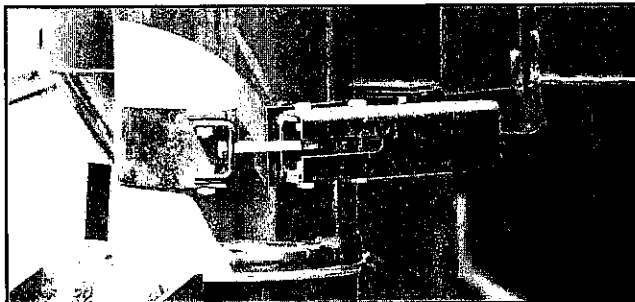


Figure 50: Manual brake adjustment.

## Manual Lift Adjustment

If the chain becomes loose, loosen bolts on the crank shaft and position chain to the proper tension (see Figure 51).

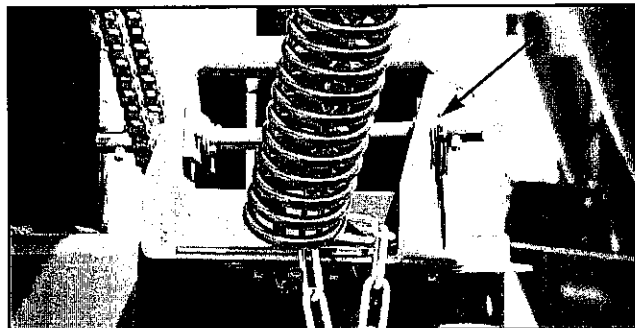


Figure 51: Manual lift adjustment.

## Hydraulic Swing Drive Adjustment

If any problem is encountered with this drive, adjust and/or check as follows: (see Figure 52).

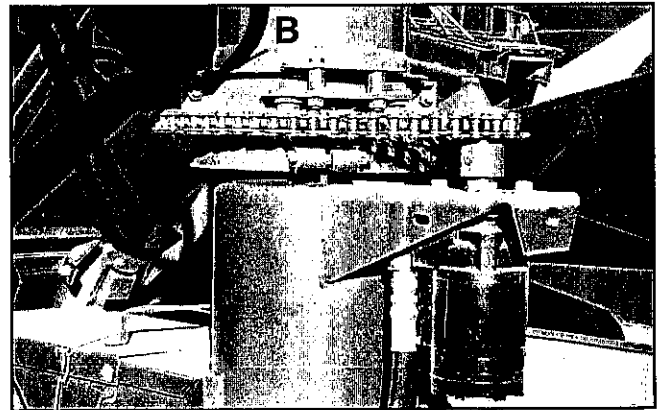


Figure 52: Hydraulic swing adjustment. (A) - Hydraulic motor bolts/chain tension; (B) - Slip band tension. (shield removed for clarity).

1. Loosen the four hydraulic motor bolts and remove the #60 chain.
2. Wrap #60 chain completely around 55 tooth split sprocket. Inspect the chain matching sprocket teeth in the two areas where the sprocket is split. If the rollers on the chain do not seat into the root of the sprocket teeth, loosen 10 bolts holding sprocket to upper ring; holding the chain across split areas retighten bolts so the chain properly seats into sprocket teeth.
3. Retighten the hydraulic motor bolts, check alignment of sprocket. If out of line, loosen set screws on the 10 tooth sprocket and realign.
4. Reinstall #60 chain and tension. Reinstall shield.
5. Adjust spring tension (see "B" in Figure 52) to be sure auger will slip if it hits something solid. If it doesn't slip, damage to discharge could occur.

## Hydraulic Swing Speed Adjustment

The speed of the discharge auger swing can be controlled by adjusting the flow control valves at the swing motor (see Figure 53, page 26). These valves are preset at the factory to be open 1-1/2 turns. When changing the swing speed be sure to adjust both valves equally. Different valve settings will cause excessive back pressure at the motor which may cause shaft seal failure.

To adjust the flow control valves, loosen the jam nut behind the knob. Turn the knob clockwise for lower flow, counterclockwise for higher flow. Mark the

# CATTLEMAXX ADJUSTMENTS

knobs so they can both be adjusted equally. Tighten the jam nut after adjustments are finished and check discharge auger swing for proper operation.

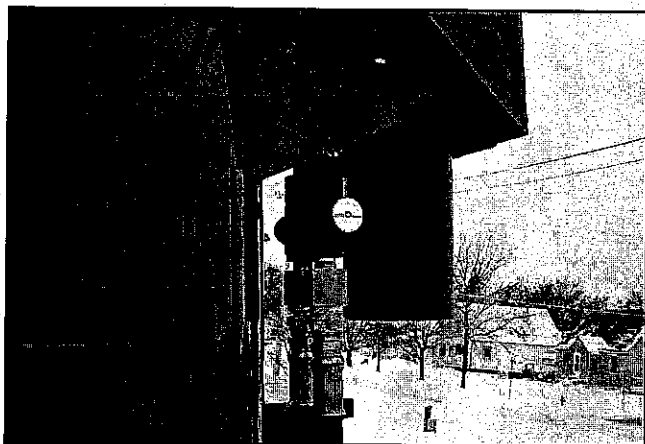


Figure 53: Hydraulic swing flow control valves.

## Lift Assist Spring Adjustment

The lift assist spring may lose tension after excessive usage. It is important to keep proper tension on the spring, this spring helps ease raising and lowering the discharge auger. Adjust the spring tension by removing bolt in hole and moving to the hole shown in Figure 53.

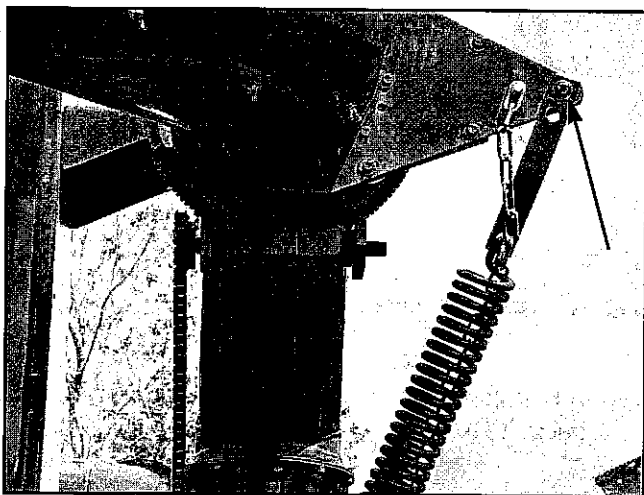


Figure 54: Lift assist spring adjustment.

## Positioning The Unloading Auger To Opposite Side Of Machine

To change to the opposite side, lift the unloading auger until it is straight up and comes down the opposite side.

Rotate the hood downward. Move the saddle to the opposite side of the mixing tank.

An unloading auger swivel stop (see Figure 55) prevents the unloading auger from contacting the mixing tank when moved 180° from the storage position. Relocate the swivel stop so it contacts the bracket before unloading auger contacts the tank.

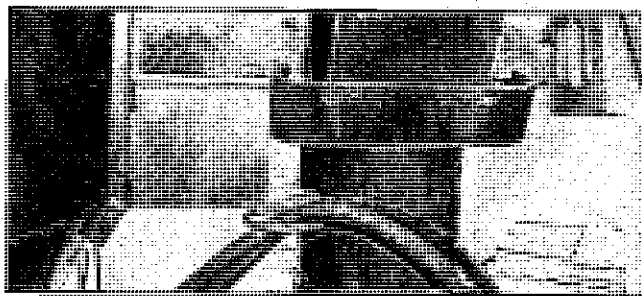


Figure 55: Swivel Stop.

## Swivel Stop Adjustment

Adjust bracket so it contacts before unloading auger contacts the tank when moved 180° from the storage position (see Figure 55).

## Open & Closed Hydraulics

As standard, this machine is equipped for tractor "Open Center" hydraulic operation.

If operation of the auger feeder is to be with a tractor that is equipped with a closed center hydraulic system, revision to the plumbing at the control valve bypass should be made. Refer to the tractor operators manual or consult the dealer to make sure which system the tractor has (see Figure 56, page 27).

To convert to "Closed Center" hydraulic system revise as shown in Figure 56. When revised for "Closed Center" operation, do not use on tractor with "Open Center".

**For converting to "Closed Center" do the following:**

At the control valve upper right corner, disconnect hoses from the motor and tractor from the tee and elbow; remove the nipple. Install plugs in the valve and tee where the nipple was removed. Reconnect the hoses to the tee and elbow. Tie the hoses together for support.

# CATTLEMAXX ADJUSTMENTS

## Wheel Bearings

Raise and securely block the frame so that the wheel turns freely. Be sure to block wheel on opposite side. To tighten wheel bearing, remove the hub cap. Then remove the cotter pin from the slotted nut and tighten the slotted nut while turning the wheel. Then loosen or back off the nut to the nearest slot and insert and spread cotter pin.

There should be a slight drag on the bearing, following the adjustment. Replace hub cap (see Figure 57).

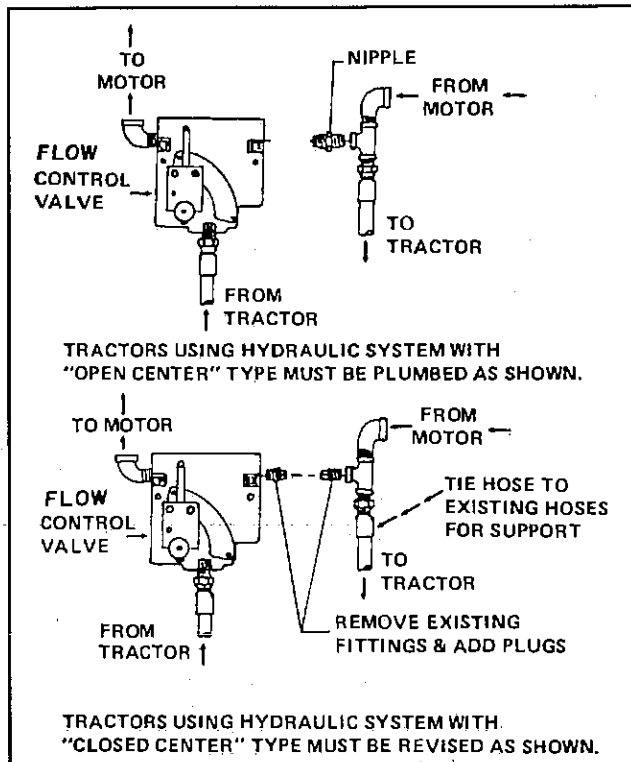


Figure 56: Open and closed hydraulic systems.

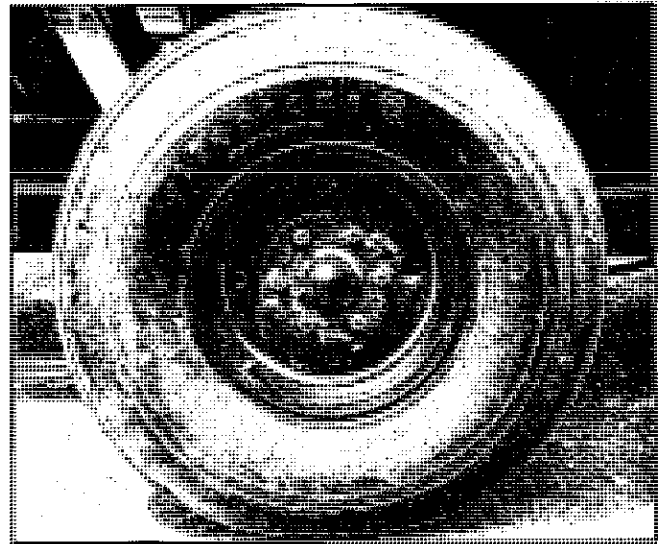


Figure 57: Wheel bearing adjustment.

# LUBRICATION & MAINTENANCE



**CAUTION:** Before lubricating, make sure tractor engine is shut off, place key in your pocket and disconnect implement input driveline.

The CattleMaxx is designed to require a minimum amount of lubrication, however, the points that are to be lubricated should be serviced regularly at the intervals listed.

Keep your supply of lubricating oil and grease stored in clean containers and covered to protect from dust and dirt.

Keep the lubricating gun nozzle clean and wipe dirt from grease fittings before lubricating.

## PTO Driveline

Grease the bearing crosses, zerk on the sliding shaft and plastic shield bearings (see Figure 58 and 59) every 20 hours.

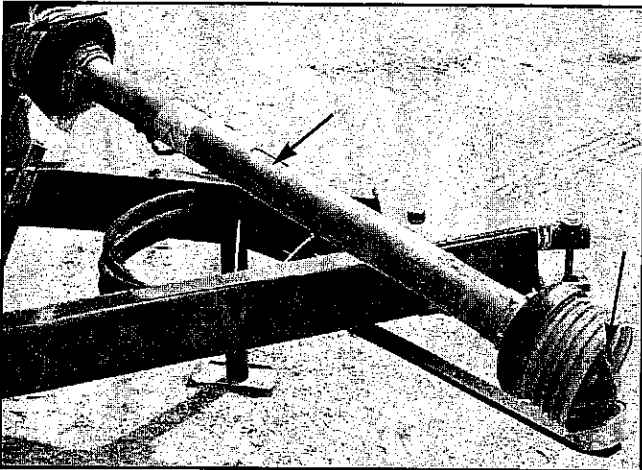


Figure 58: PTO driveline.

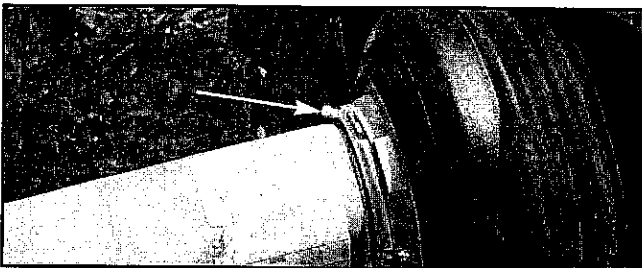


Figure 59: Plastic shield bearings.

## Grain Control Gate

Grease the pivot points and slide on the grain control gate once a year or every 100 hours of operation. (figure 60).

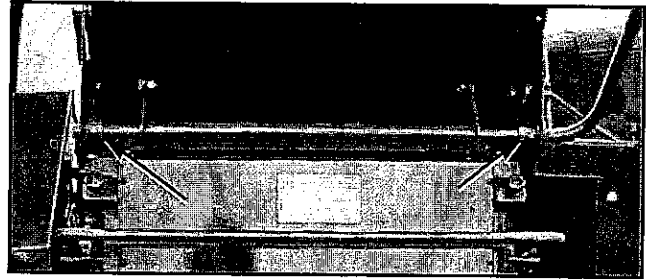


Figure 60: Grain control gate lubrication - 2 zerks and slide guides.

## Roll Bearings

The roller mill roll shaft bearings are a sealed bearing and require no additional lubrication. Monitor the condition of these bearings and replace if overheating of the shaft or roller mill housing occur. New bearings are supplied with replacement rolls.

## Eccentric Bearing Housings

The bearing housings on the eccentric roll shaft are greased at the factory and should not require additional lubrication under normal operating conditions. These housings should be cleaned and re-lubricated if the eccentric roll becomes hard to move or whenever the mill is torn down for service (see Figure 61).

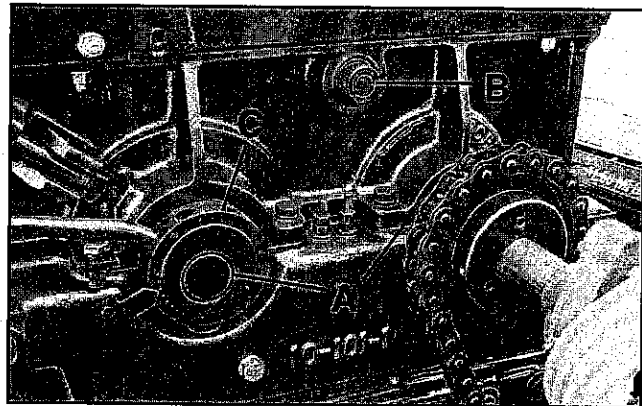


Figure 61: Roller mill bearings. (A) Roll bearings; (B) Agitator shaft bearings; (C) Eccentric housing.

# LUBRICATION & MAINTENANCE

## Agitator Shaft Bearings

The agitator shaft bearings are a sealed bearing and require no additional lubrication. Monitor the condition of these bearings and replace if overheating of the shaft or rollermill housing occur.

## Rollermill Belt Drive

Be certain to maintain the proper belt tension on the rollermill eccentric drive as belts will stretch during their break in period. Keep the spring loaded idler properly tensioned and lubricated to pivot freely (see Figure 62). Improper tensioning or overloading will cause the belts to slip, causing premature wear and reduced belt life.

The idler pulley bearings on the rollermill belt drive are a sealed bearing and require no additional lubrication. Monitor the condition of these bearings and replace as necessary.

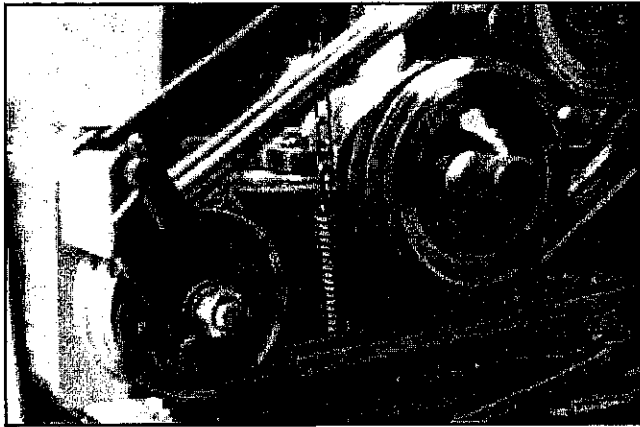


Figure 62: Spring loaded idler tension and lubrication.

## Hopper Magnets

Periodically check the hopper magnets for tramp metal and debris, and clean as necessary. Open the hopper lid to inspect the hopper plate magnets. Always clean the plate magnets with the throat magnet installed. Remove the throat magnet for cleaning and inspection. Be sure not to let any material from the magnets fall into the rollermill (see Figure 63).

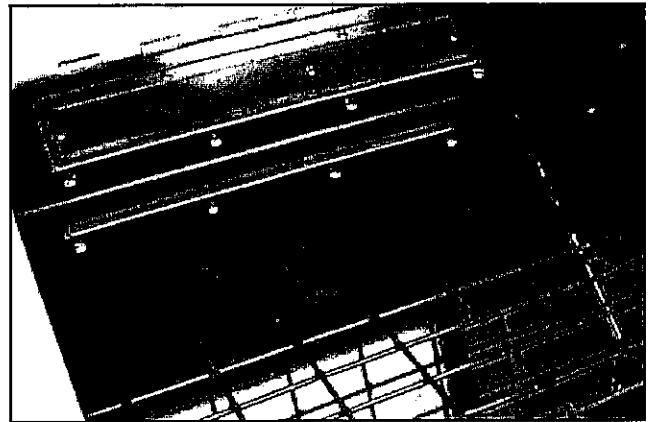


Figure 63: Cleaning magnets.

## Chains

Chains should be lubricated at frequent intervals. Apply a light engine oil to the chain. Oil the chain on the inside (upper side of lower strand) (see Figure 64).

Chains should be cleaned regularly. Take the chains off and clean them well by soaking and dipping them in kerosene. Dry well and oil thoroughly.

**Oil roller chain on  
upper side of lower  
strand.**

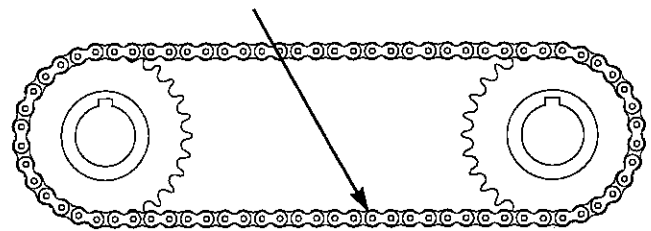


Figure 64: Oiling roller chains.

The split end of the chain clip must face the direction opposite the chain travel. Be sure the clip is properly seated in the groove on the ends of the pin (see Figure 65).

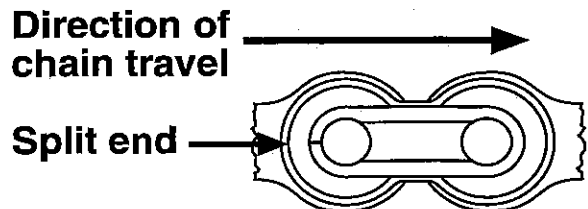


Figure 65: Chain spring clip.

# LUBRICATION & MAINTENANCE

## Gearbox

Check the oil level in the gearbox at the base of the mixing tank every 6 months by removing check plug at front of the gearbox. Add SAE 90 weight gear oil if necessary, until oil runs out of check hole (see Figure 66). **DO NOT OVERFILL.**

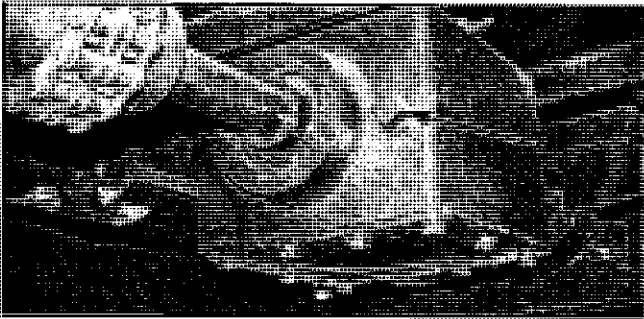


Figure 66: Gearbox lubrication.

## Lower Vertical Mixing Auger

Refill the grease seal at the bottom of the vertical mixing auger every six months with SAE multi-purpose type grease. Access to this fitting under the large bottom flight of the mixing auger is through the clean-out cover in the mixing tank cone (see Figure 67).



Figure 67: Tank cone clean-out cover (right side).

## Upper Vertical Mixing Auger

Grease the upper vertical mixing auger brass bearing weekly or every 10 hours of operation with SAE multi-purpose type grease. Access to this bearing is through the top of the mixing tank (see Figure 68).

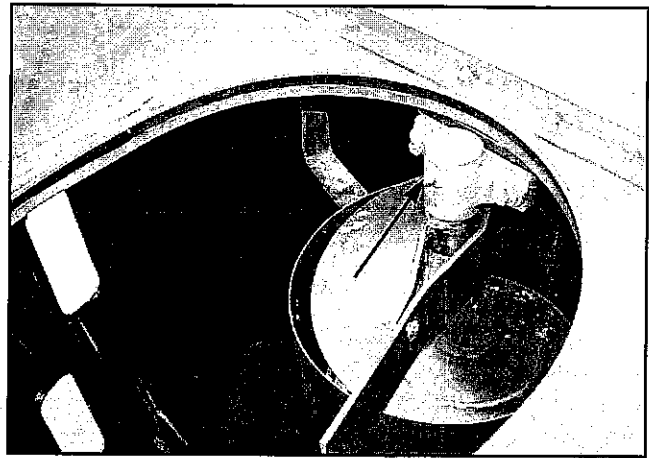


Figure 68: Vertical mixing auger brass bearing.

## Tank Vent

The mixing tank is vented through the left ladder rail, (right-hand when facing ladder). Periodically blow air through this tube and check the opening in the tank to ensure that the vent is clear of dust and debris. A clogged tank vent may cause the spring loaded tank lid to open or windows to pop out from the side of the mixer (see Figure 69).

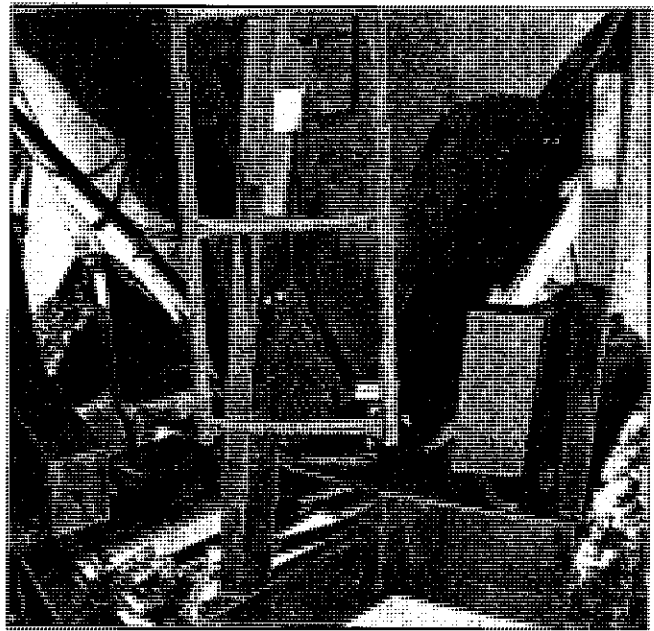


Figure 69: Left Ladder Vent (Right-Hand when Facing Ladder).

## Unloading Auger Clutch

Apply SAE multi-purpose type grease to the shaft and groove in the under sliding (driven) unloading auger clutch half periodically (see Figure 70, page 31).

# LUBRICATION & MAINTENANCE

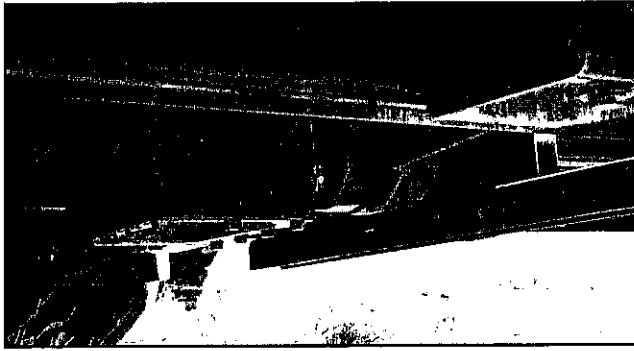


Figure 70: Unloading clutch operation.

## Swivel Clamp

Grease lower swivel clamp weekly (see Figure 70).

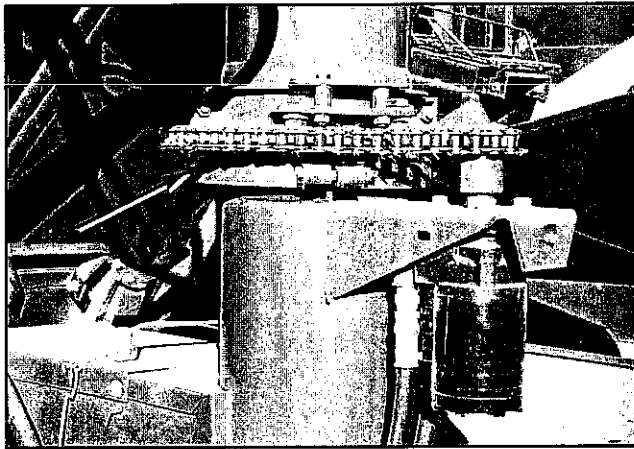


Figure 71: Swivel clamp area, discharge auger (shield removed for clarity).

## Elbow

Periodically lubricate gear sets at each unloading auger transfer point. Use SAE multi-purpose type grease (see Figures 72 and 73) every 20 hours.



Figure 72: Discharge auger bevel gears (inner elbow) (shields removed for clarity).

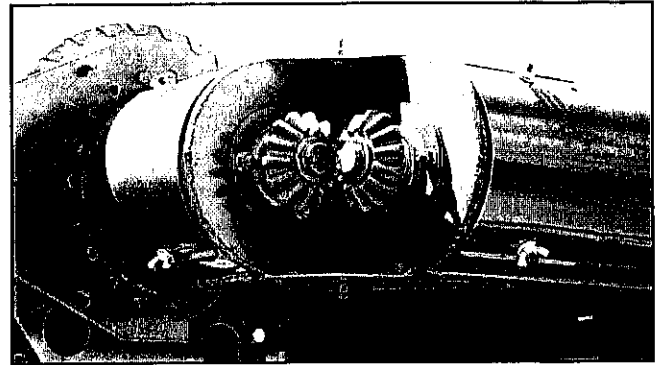


Figure 73: Discharge auger bevel gears (outer elbow) (shields removed for clarity).

## Ring And Worm Gear

Grease at two locations on large ring gear for unloading auger lift pivot. On units with mechanical back auger, apply grease at ring gear and worm gear periodically. Use SAE multi-purpose type grease (see Figure 74).

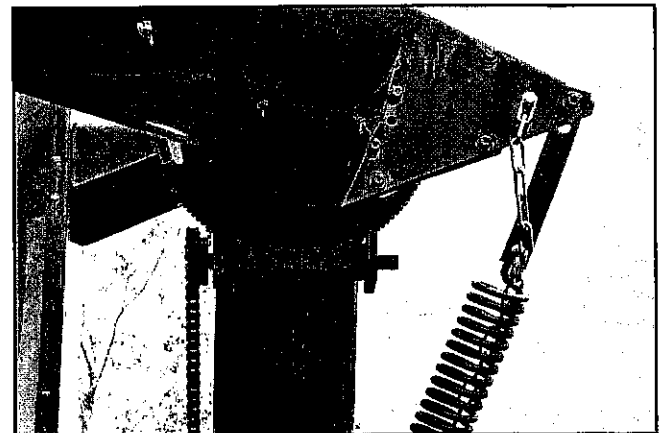


Figure 74: Ring and worm gear - mechanical

On units with hydraulic controlled back auger, keep the worm gear reservoir filled with oil up to the worm shaft (units shipped dry). Use SAE 90 weight gear oil. Check periodically for leaks which could run reservoir dry (see Figure 75, page 32). Grease lubrication fittings and outside diameter of ring gear with SAE multi-purpose grease every 10 hours of operation.

# LUBRICATION & MAINTENANCE

## Wheels

Repack the wheel bearings once a year or every 100 hours of operation with SAE multi-purpose type grease.

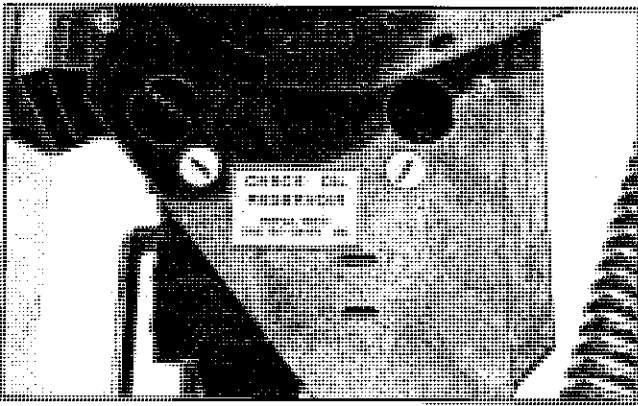


Figure 75: Ring and worm gear hydraulic.

Every 6 months repack 3/4" dia. bearings on worm shaft (see Figure 76).

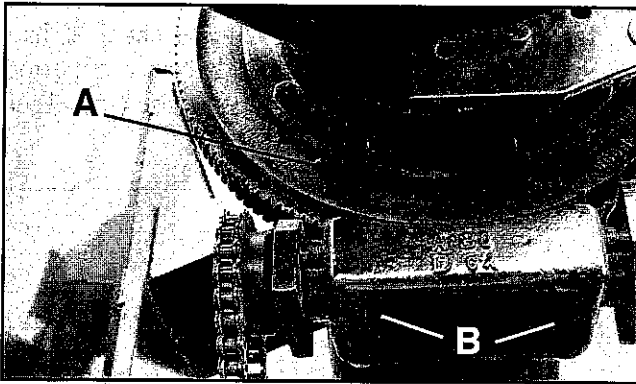


Figure 76: Ring and worm gear lubrication. (A) - Lift pivot; (B) Worm shaft bearings.

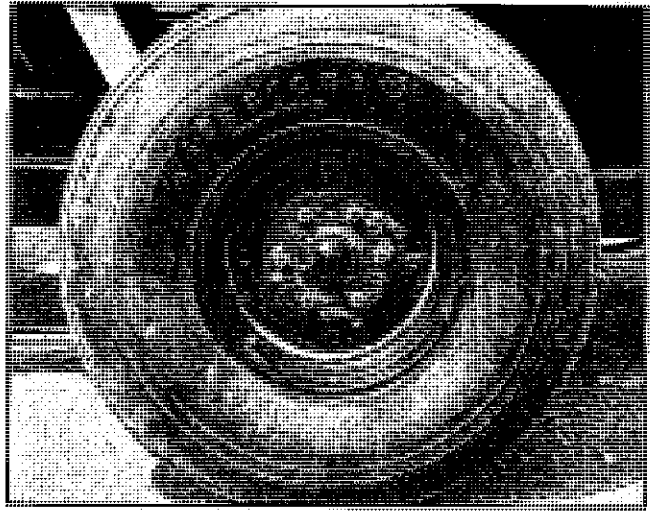


Figure 77: Wheel bearing lubrication.

# SERVICE



**CAUTION: Disengage all drives, shut off tractor engine and place key in pocket and disconnect PTO driveline before servicing grinder mixer.**

SIZE	CLAMP LOAD	PLAIN	PLATED
1/4 - 20(.250)	2,025	8 ft. lbs.	76 in. lbs.
5/16 - 18(.3125)	3,338	17 ft. lbs.	13 ft. lbs.
3/8 - 16(.375)	4,950	31 ft. lbs.	23 ft. lbs.
7/16 - 14(.4375)	6,788	50 ft. lbs.	37 ft. lbs.
1/2 - 13(.500)	9,075	76 ft. lbs.	57 ft. lbs.
9/16 - 12(.5625)	11,625	109 ft. lbs.	82 ft. lbs.
5/8 - 11(.625)	14,400	150 ft. lbs.	112 ft. lbs.
3/4 - 10(.750)	21,300	266 ft. lbs.	200 ft. lbs.
7/8 - 9(.875)	29,475	430 ft. lbs.	322 ft. lbs.
1 - 8(1.00)	38,625	644 ft. lbs.	483 ft. lbs.
1-1/8 - 7(1.125)	42,375	794 ft. lbs.	596 ft. lbs.

Figure 78: Torque specification guide.

## Shear Bolts

The shear bolts make a loud noise when they shear. This is your warning to turn off the tractor ignition immediately and determine the cause of the shearing.

Shear bolt locations on the CattleMaxx are:

1. The PTO driveline shear clutch.
2. The mixer drive #80 sprocket on the lower drive-shaft.
3. The mill to mixer and supplement auger drive #40 sprocket on the lower driveshaft
4. Discharge auger drive clutch on the gearbox output shaft.

Drive	Location	Bolt/Pin	Part #
PTO driveline	PTO shear clutch	Bolt, M10-1.5 x 60 (metric)	407760
Mixer drive	#80 sprocket, lower driveshaft	Bolt, 1/4-20 x 1-1/2 grade 5	047000
Mill to mixer auger	#40 sprocket, lower driveshaft	Bolt, 1/4-20 x 1 grade 5	042960
Discharge auger	Rear drive clutch	Clevis pin, 3/8 x 2-3/8	041540

Figure 79: Replacement shear bolts.

If these designed shear points are not the problem then most likely a sheared keyway in an individual component is the problem. Clear the obstruction that caused the overloading and repair or replace components as necessary.

When replacing the shear bolts, always tighten them securely, using lock nuts. The shear bolts must be of the correct hardness: Grade 5 (3 radial dashes) or Grade 2 (plain head) (see Figure 79).

### IDENTIFICATION OF SAE BOLT GRADES; HEAD MAKINGS

Grades 0, 1, and 2 no markings



Grades 5: 3 radial dashes 120° apart



Grades 8: 6 radial dashes 60° apart



Figure 80: SAE bolt identification.

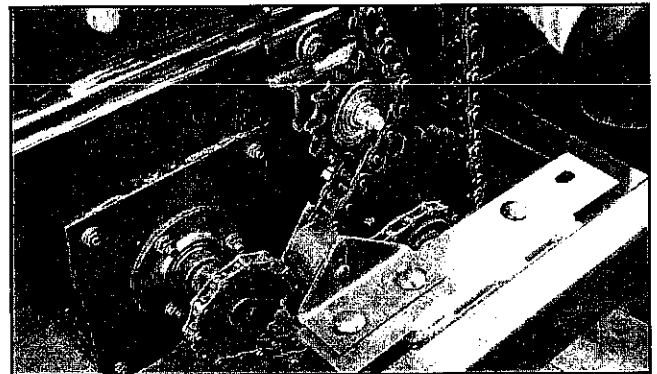


Figure 81: Mixer drive/mill to mixer auger shear sprockets (shields removed for clarity).

## Sprocket & Chain Alignment

Be sure the sprockets are aligned on the shafts. If the sprockets are not aligned, a side pull develops which concentrates the load on the sides of the sprocket teeth and on the side of the chain. This faulty alignment results in excessive wear on both chain and sprockets (see Figure 82 for alignment).

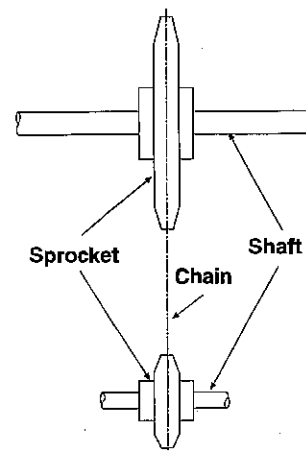


Figure 82: Sprocket alignment.

## Replacement Rolls

Worn rolls can be replaced with either new rolls or regrooved rolls. A deposit must be made on the purchase of regrooved rolls. This deposit is refundable upon the return of the worn rolls and inspection by Art's Way deeming that the returned rolls can be regrooved. Rejection of used rolls will be for such things as excessive wear (minimum roll diameter), cracked or broken rolls.

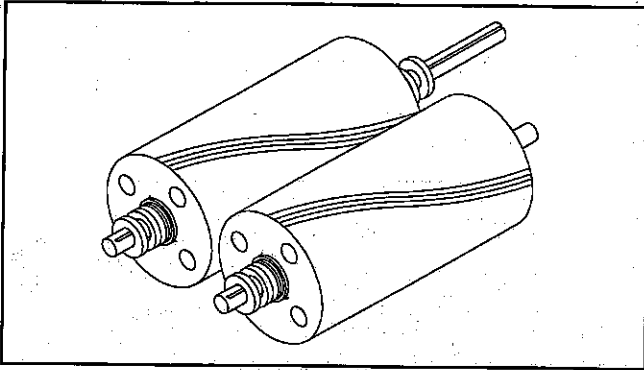


Figure 83: Replacement rolls supplied with shaft and bearings.

## Roll Replacement

When using roll combinations with different grooves (sharp to sharp or flat to flat) the coarser grooved roll is the drive roll. When combining sharp and flat rolls with same number of grooves the drive roll is the sharp roll. Make certain rolls and shafts are the proper combination before installing.

Replacement rolls are supplied with shaft and bearings. To replace the rolls, follow these steps:

1. Remove the PTO, front and rear guards, rear belt drive and front drive chain.
2. If the CattleMaxx has an auger feeder, remove the pivot pin at the top of the hopper and support the auger feeder off to the side.
3. Remove the 4 bolts on the front and rear roller mill castings that hold the top and bottom halves of the mill together. Lift the top half off in one assembly. Pick up and save the two brass plugs that were in the upper castings beneath the eccentric tightener bolts.
4. Lift out the rolls and remove any pulleys, sprockets and bearing housings. Leave the old shaft and bearings with the worn rolls. The roll handle is a press fit into the bearing housings. Use care when removing the bearing housings as they can be easily damaged by hammer blows.
5. Thoroughly clean the machined surfaces of the top and bottom castings. Press the bearing housings onto the new roll assemblies. Replace the adjusting handle on the eccentric roll.
6. Grease the outside of the bearing housings and place the roll assemblies in the bottom half of the mill. The dowel spacers in the bottom casting will position the rolls front to back.
7. Replace the top half of the mill and securely bolt in place. Check that the rolls will turn without interference and the eccentric handle will move freely.
8. Replace all pulleys, sprockets, belts, chains, and replace the two brass plugs below the eccentric lock bolts. Replace the front and rear guards.
9. Replace the auger feeder to the hopper lid if applicable.
10. Set the roll gap as described in the "Adjustment" section of this manual. Set the rolls for proper minimum gap and parallelism.
11. Set the roll scrapers for the new rolls as described in the "Adjustment" section of this manual.

# TROUBLESHOOTING

Most difficulties are caused by improper adjustments. When you encounter trouble, make a systematic check of all adjustments, using the following chart as a guide. If the difficulties cannot be corrected by making the adjustments given in this manual, consult your dealer.

<b>Trouble</b>	<b>Possible Cause</b>	<b>Possible Remedy</b>
PTO driveline hard to telescope and hook-up.	Shafts twisted due to overloading of mill.	Replace PTO driveline if necessary. Check for proper shear bolt in PTO shear clutch.
	Lack of grease on sliding halves.	Lubricate.
	Tractor drawbar improperly adjusted.	Adjust tractor drawbar.
Excessive noise when turning with mixer in operation.	Turning to sharply.	Avoid sharp turns.
	Lack of grease on sliding halves.	Lubricate.
	Tractor drawbar improperly adjusted.	Adjust tractor drawbar.
Tractor engine rpm falls below rated PTO speed while processing.	Overloading mill.	Close grain control gate.
	Drive belts too loose.	Tighten belts.
	Drive belts wore.	Replace drive belts.
	Material packing on rolls.	Adjust scrapers.
		Open roll gap. Install roll speed differential.
Shear pins break.	Foreign objects and debris (nuts, bolts, etc.) in mill, mixer or augers.	Remove foreign objects.
	Grain in mill on start-up.	Open eccentric roll to let grain flow through. Clean material from rolls.
	High rpm starts and stops.	Lower rpm PTO engage and disengage. Gradually speed up and slow down.
Mill vibrates excessively while operating.	PTO driveline not aligned.	Position tractor straight with the mixer frame.
	PTO driveline bent.	Replace PTO driveline.
	Overloading mill (low rumbling).	Close down grain control gate/open roll gap.
	Tractor drawbar improperly adjusted.	Adjust tractor drawbar.
Rollermill loses capacity.	Grain gate open too far.	Close grain control gate.
	Material packing on rolls - high moisture material.	Adjust roll scrapers.
	Rolls are worn, gouged, smooth.	Replace with new or regrooved rolls.
Rolls making loud or unusual noises.	Rolls are touching.	Check roll gap, adjust as needed.
	Roll scrapers touching rolls.	Adjust roll scrapers.
	Overloading mill (low rumbling)	Close down control gate/open roll gap.

Continued next page...

# TROUBLESHOOTING

Trouble	Possible Cause	Possible Remedy
Rollermill suddenly chokes.	Material packed on the rolls - high moisture material.	Clean rolls. Adjust roll scrapers. Install roll speed differential.
Mill will not maintain roll gap setting.	Eccentric lock bolts loose. Brass shear plug worn or missing.	Tighten lock bolts. Inspect and/or replace shear plug. Clean knurled surface of eccentric bearing housing.
Drive belt squeals while running mill.	PTO drive may not be fast enough. Drive belts loose. Drive belts wore. Material packed on rolls. Overloading mill.	Speed up tractor to 540 rpm. Check belt tension. Replace drive belts. Open roll gap, clean rolls, or adjust roll scrapers. Close down grain control gate.
Drive belts wear excessively.	Belts out of alignment. Belts slipping.	Adjust belts. Tighten belts.
Whole grain kernels in feed.	Large roll gap. Rolls out of parallel. Eccentric roll moving/increased roll gap. Rolls worn.	Adjust roll gap. Check roll parallelism. Adjust as needed. Tighten eccentric lock bolts. Check and replace brass shear plug as needed. Clean knurled surface of eccentric bearing housing. Inspect rolls. Replace as needed.
Material bridges in tank.	Processing High-moisture material	Process high-moisture material last or run straight through tank.
Mill runs but unloading auger and mixing auger do not run.	Pin(s) sheared in drive.	Correct cause of sheared pin and replace.
Unloading auger runs but feed is not unloading.	Mixer tank door closed. Mixer Auger not turning.	Open door. Check for sheared key in lower gearbox.
Unloading auger does not engage.	Unloading auger clutch linkage out of adjustment. Clutch sticking.	Adjust clutch linkage. Lubricate clutch. Engage Clutch.
Auger feeder does not engage.	Hydraulic flow control valve disengaged. Selector valve position.	Engage flow control valve. Change position of selector valve ( "OUT" for auger feeder).

# ATTACHMENTS

## Electronic Scale Attachment

A solid state electronic scale attachment, digital type, is available for your grinder mixer. The scale attachment consist of weigh bar sensors mounted on grinder mixer's axle spindles and hitch. They are electronically connected to the indicator box. The indicator alarm system is available with the electronic scale attachment. Scale accuracies of one percent or less are obtained. Complete installation and operating instructions are included with the attachment.

## Discharge Unloading Auger Extensions

3' and 6' folding and 3' to 6' bolt on discharge auger extensions are available. See chart on page 20 for unloading height obtainable with various extensions added to the unloading auger system. Refer to the Operation Section, page 18, of this manual for unloading auger instructions.

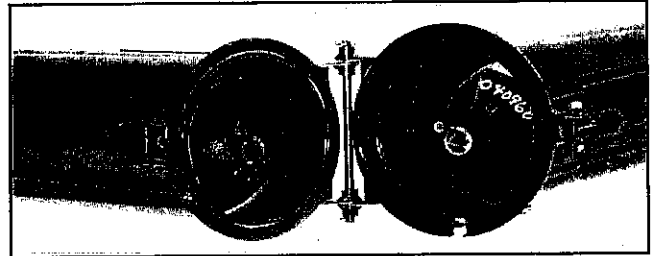


Figure 84: Folding auger extension.

# SPECIFICATIONS

## Torque Specification Guide

SIZE	CLAMP LOAD	PLAIN	PLATED
1/4 - 20(.250)	2,025	8 ft. lbs.	76 in. lbs.
5/16 - 18(.3125)	3,338	17 ft. lbs.	13 ft. lbs.
3/8 - 16(.375)	4,950	31 ft. lbs.	23 ft. lbs.
7/16 - 14(.4375)	6,788	50 ft. lbs.	37 ft. lbs.
1/2 - 13(.500)	9,075	76 ft. lbs.	57 ft. lbs.
9/16 - 12(.5625)	11,625	109 ft. lbs.	82 ft. lbs.
5/8 - 11(.625)	14,400	150 ft. lbs.	112 ft. lbs.
3/4 - 10(.750)	21,300	266 ft. lbs.	200 ft. lbs.
7/8 - 9(.875)	29,475	430 ft. lbs.	322 ft. lbs.
1 - 8(1.00)	38,625	644 ft. lbs.	483 ft. lbs.
1-1/8 - 7(1.125)	42,375	794 ft. lbs.	596 ft. lbs.

## SAE Bolt Identification

### IDENTIFICATION OF SAE BOLT GRADES; HEAD MAKINGS

Grades 0, 1, and 2 no markings



Grades 5: 3 radial dashes 120° apart



Grades 8: 6 radial dashes 60° apart



# SPECIFICATIONS

## CattleMaxx

### CattleMax 105

### CattleMax 150 (45" Discharge)

#### Tank and Frame

Capacity of mixing tank:	105 bushel (129 cu. ft.)	150 bushel (187 cu. ft.)
Height (variable with tire size):	106	119"
Width with auger feeder:	95"	111"
Overall length:	170"	175"
Weight:	3,560 lbs.	4,350 lbs.

#### Discharge Auger

Auger length (standard):	125"	125"
Auger diameter:	7"	7"
Auger tube diameter:	8"	8"
10' main auger at 60° angle:	16' 7"	17' 8"
Horizontal operating arc:	324°	316°
Vertical operating arc:	Infinite	Infinite

#### Auger Feeder

Auger length:	117"	117"
Auger diameter:	7"	7"
Auger hopper width:	23"	23"
Height of hopper from ground in down position:	17-1/2"	17-1/2"
Height of hopper from ground in up position:	42"	51"

#### Mixing Auger

Auger width:	12"	12"
Mixing base:	24"	24"

#### Supplement Hopper:

Auger diameter	7"	7"
Hopper size:	21" x 24"	21" x 24"
Height from ground:	34"	39"

#### RollerMill\*

Width of mill:	20"	20"
Roll diameter:	10"	10"
Operating speed of PTO:	540 rpm	540 rpm
Operating speed of mill:	540 rpm	540 rpm
Roll grooves available:	5, 7 & 10	5, 7 & 10
Type of drive:	PTO Direct	PTO Direct
Power required:	50 hp	50hp

\*Rolls are regroovable.

# NOTES

# NOTES





# Quality Manufacturers of:

- **SupRaMix® - forage vertical tub mixer**  
425, 500 or 710 cu. ft. capacity
- **Portable Mixer-Processor**  
105 bushel with 20" hammer Mill or 150 bushel with 26" Hammer Mill.
- **CATTLEMAXX - Cattle Processing**  
105 bushel or 150 bushel with 20" Roller Mill for cattle applications.
- **Hammer Mills**  
26" electrically or PTO driven mills.
- **Roller Mills**  
10", 20", 30" or 36" PTO or electrically driven mills.
- **SCALE SYSTEMS**  
Electronic weighing equipment — from basic weighing to a computerized system.  
Platform Scales  
Universal Scales  
Small Animal Scales  
Mounting Scales  
Scale Accessories  
Indicators, single ingredient & Batching
- **UFT Grain Drills**  
10', 12', 15' or 30' seeding width.
- **UFT High Dump Wagons**
- **Speedy Edible Bean Equipment**  
Bean cutters and windrowers.
- **Finishing Mowers**  
60" or 72" Mid-Mount Mowers
- **Eversman Ditchers**  
43" to 84" ditch width.  
20" to 33" ditch depth.
- **Eversman Land Planes**  
16', 20' or 24' blade widths.
- **Agricultural Graders**  
Landstar 12' or 14' widths.
- **Sugar Beet Defoliators**  
4 to 12 row defoliators with different row spacings. Optional hydraulic or mechanical scalpings.
- **Sugar Beet Harvesters**  
4 to 8 row harvesters with different row spacings.
- **MEGA tater**  
4-row potato harvester.
- **LOGAN - Potato Equipment**  
Potato Harvesters, Potato Planters, Windrowers and Bulk Boxes.
- **Art's-Way/UFT Flail Shredders**  
Various cutting widths.

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