

# MIX-ALL<sup>®</sup>

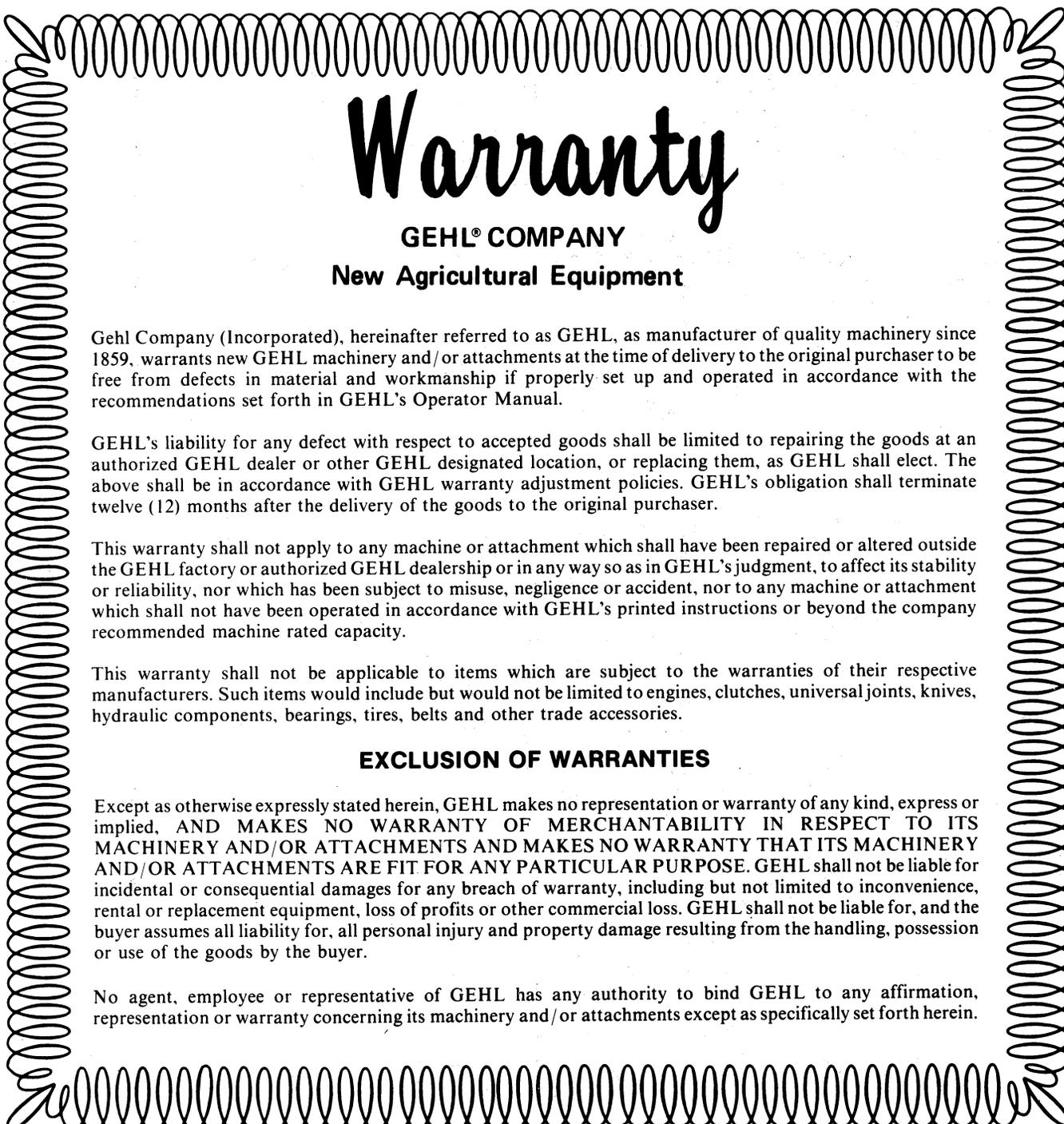
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**903441**  
Replaces  
903297 &  
903204



# OPERATOR'S MANUAL

GEHL<sup>®</sup> COMPANY



# Warranty

## GEHL® COMPANY New Agricultural Equipment

Gehl Company (Incorporated), hereinafter referred to as GEHL, as manufacturer of quality machinery since 1859, warrants new GEHL machinery and/or attachments at the time of delivery to the original purchaser to be free from defects in material and workmanship if properly set up and operated in accordance with the recommendations set forth in GEHL's Operator Manual.

GEHL's liability for any defect with respect to accepted goods shall be limited to repairing the goods at an authorized GEHL dealer or other GEHL designated location, or replacing them, as GEHL shall elect. The above shall be in accordance with GEHL warranty adjustment policies. GEHL's obligation shall terminate twelve (12) months after the delivery of the goods to the original purchaser.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the GEHL factory or authorized GEHL dealership or in any way so as in GEHL's judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any machine or attachment which shall not have been operated in accordance with GEHL's printed instructions or beyond the company recommended machine rated capacity.

This warranty shall not be applicable to items which are subject to the warranties of their respective manufacturers. Such items would include but would not be limited to engines, clutches, universal joints, knives, hydraulic components, bearings, tires, belts and other trade accessories.

### EXCLUSION OF WARRANTIES

Except as otherwise expressly stated herein, GEHL makes no representation or warranty of any kind, express or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO ITS MACHINERY AND/OR ATTACHMENTS AND MAKES NO WARRANTY THAT ITS MACHINERY AND/OR ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. GEHL shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to inconvenience, rental or replacement equipment, loss of profits or other commercial loss. GEHL shall not be liable for, and the buyer assumes all liability for, all personal injury and property damage resulting from the handling, possession or use of the goods by the buyer.

No agent, employee or representative of GEHL has any authority to bind GEHL to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth herein.

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# CHAPTER 1

## INTRODUCTION

### Mr. Operator:

Your decision to purchase this piece of GEHL equipment was a good one. We are sure that your decision was strongly considered and that you are looking forward to many seasons of work from this machine.

We, as a Company, have invested a great deal of time and effort in developing our lines of farm equipment and Skid Steer Loaders. The equipment you have purchased is built with a great deal of pride and designed to give you long life, efficient operation, durability and dependability.

This manual was developed specifically for the machine you have purchased. The information, contained within, was prepared for your assistance in preparing, adjusting, maintaining and servicing your machine. More importantly, this manual provides an operating plan for safe and proper use of your machine. Major points of safe operation are detailed in the **SAFETY** chapter of this manual. Refer to the Table of Contents for an outline (by chapters) of this manual. Use the Index, in the back of the manual, for specific chapter and topic/page number references.

**Modern machinery has become more sophisticated and, with that in mind, GEHL Company asks that you read and understand the contents of this manual COMPLETELY and become familiar with your new machine, BEFORE attempting to operate it.**

Our wide Dealership network stands by to provide you with any assistance you may require, including genuine GEHL service parts. All parts should be obtained from or ordered through your GEHL Dealer. Give complete information about the part as well as the model number and the serial number of your machine. Record numbers, in the space provided, as a handy record for quick reference.

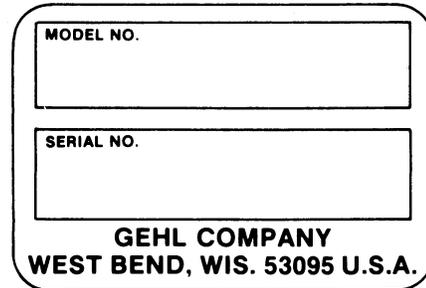
The Mixer Model and Serial numbers are on a decal located on the Frame member in the rear at the base of the Tank. The Swinging Auger Feeder Model and Serial numbers (on units so equipped) are also on a decal attached to the unit.

“Right” and “Left” are determined from a position standing behind the Mixer. From this position, the Concentrate Hopper is on the left and the Feeder Attachment is on the right.

Gehl Company reserves the right to make changes or improvements in the design or construction of any part without incurring the obligation to install such changes on any unit previously delivered.

Standard hardware torques appear in a chart at the end of the manual.

Throughout this manual, information is provided which is set in **bold type** and introduced by the word **NOTE. BE SURE** to **read carefully** and **comply with** the message or directive given. Following this information will improve your operating or maintenance efficiency, help you to avoid costly breakdown or unnecessary damage and, extend your machine's life.



Typical Model & Serial No. Plate

Model No.	Serial No.
<b>MX100</b>	

Model No.	Serial No.
<b>SAF</b>	

(Fill In)

**The GEHL Company and the American Society of Agricultural Engineers have adopted this SAFETY ALERT SYMBOL**



**to pinpoint characteristics which, if not properly followed, can create a safety hazard. When you see this symbol in this manual or on the unit itself, you are reminded to BE ALERT! Your Safety is involved.**

# CHAPTER 2

## SPECIFICATIONS

All Dimensions are in Inches (Millimeters)  
Unless Otherwise Noted

Model & Description	MX100 Mixer
Tank Capacity	100 Bushels (35-1/4 Hektoliters)
Overall Length	155 (3940)
Overall Height	106 (2690)
Transport Width (Maximum)	96 (2440)
Ground Clearance	10 (255)

### Weights - Approximate

Mixer with Swinging Auger - Feeder Attachment	3000 lb (1360 kg)
Mixer with Feed Roll - Attachment	2800 lb (1270 kg)
Mixer with Swinging Auger/Feed - Roll Attachment	3160 lb (1435 kg)
Mixer with Tractor-powered Hydraulic System (Above include 9.5L x 15 Tires)	2550 lb (1155 kg)
For 11.00 x 15 Tires	Add 25 lb (11 kg)
For Electronic Scale & Weighbars	Add 40 lb (18 kg)
Mill to Tank Transfer Auger Diameter	7 (180)
Tires Available	9.5L x 15 or 11.00 x 15
Recommended Tractor Power	Up to 115 hp for 540 RPM or Up to 145 hp for 1000 RPM

### Mill/Blower Characteristics

Cylinder and Blower Speed	2700 RPM
Hammers	Sixty-six; 4-way Reversible
Inlet Opening	21 (535)
Cylinder Diameter	20 (510)
Drive	8 "A" Section Banded Drive Belt
Hopper	Furnished with Metal Extracting Magnet

### Discharge & Unloading Conveyor Characteristics

Conveyor Diameters	8 (205)
Unloading Conveyor Length	144 (3660)
Unloading Conveyor Height - Adjustable	Up to 156 (3960)
Unloading Rate - Maximum	28 Bushel/Minute
Drives	Independent Hydraulic Motors
Concentrate Hopper	23 (585) W x 18 (455) L x 35 (890) Above the Ground

### SAF Characteristics

Conveyor Length	84 (2135)
Auger Diameter	12 (305)
Infeed Hopper Width	42 (1065); has Fold-in Flare
Infeed Hopper Height - Adjustable	As low as 20 (510)
Drive - Direct	Independent Hydraulic Motor

### FR Characteristics

Drive - Direct ..... Independent Hydraulic Motor

### SAFR Characteristics

Conveyor Length	84 (2135)
Auger Diameter	12 (305)
Infeed Hopper Width	42 (1065); has Fold-in Flare for Transport
Infeed Hopper Height - Adjustable	As low as 20 (510)
Drive	Two Hydraulic Motor Drives - has Shut-off for Swinging Auger Feeder to use Feed Roll Feeder Separately

### Selectable Features - Factory Installed

Feeder Attachments - For models with Self-contained Hydraulic Systems	Swinging Auger Feeder (SAF) Feed Roll Feeder (FR) Swinging Auger/Feed Roll Feeder (SAFR) Gravity Feeder (GF) or
For model with Tractor-powered Hydraulic System	Gravity Feeder (GF) Only
Electronic Weighing Scale	Digital or Analog Readout Models
Axle Sets	Standard or Electronic Scale (Adaptable)
PTO Drives	540 or 1000 RPM
Hydraulic Systems	Self-contained (Includes Pulley- driven Pump, Reservoir, Filter and Pressure Relief Valve) or Remote Tractor-powered

### ACCESSORIES for Field Installation

Electric Remote Controls for Unloading Conveyor Screens with Hole Sizes of 3/32", 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1", 1-1/4", 1-1/2" and 2"
3-foot Stationary Unloading Conveyor Extension
4-foot Folding Unloading Conveyor Extension
7-1/2-foot Folding Unloading Conveyor Extension
Double Bagger Attachment
Fender Set
FR Attachment for unit with factory installed SAF Attachment
FR Attachment for unit with factory installed GF Attachment and Self-contained Hydraulics System
SAF Attachment for unit with factory installed GF Attachment and Self-contained Hydraulics System
SAF Attachment for unit with factory installed FR Attachment
Electronic Scale Axle Set for unit with factory installed standard Axle Set
Analog Readout Weighing Scale
Digital Readout Weighing Scale
Audible Alarm Kits
Visual Alarm Kits
Scale Battery Mounting Kit
Molasses Attachment
Pivot Brake Kit for Unloading Conveyor Extensions

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# CHAPTER 3

## CHECK LISTS

### PRE-DELIVERY

After the Mixer has been completely set-up, the following inspections **MUST** be made before delivering it to the Customer. Check off each item after prescribed action is taken.

Check that:

- \_\_\_ Mixer is **NOT** damaged in shipment. Check for such things as dents and loose or missing parts; correct or replace components as required.
- \_\_\_ Mixer has been correctly assembled according to instructions in this manual. Check that all fasteners are tightly secured.
- \_\_\_ All grease fittings on the Main Unit and Feeder Attachment have been lubricated and that the Transmission and Hydraulic Reservoir (as applicable) are filled to proper levels. See Lubrication chapter of this manual.
- \_\_\_ Hydraulic Pump (as applicable), Motors, Hoses and Fittings are securely attached.
- \_\_\_ All Guards, Shields and Decals are in place and properly secured.
- \_\_\_ Tension on Unloading Conveyor Brake Bars is correctly adjusted to hold Conveyor at any position of travel.
- \_\_\_ Unloading Conveyor Safety Winch cranks "up" smoothly and that, when cranked "down" it stops and holds its position.
- \_\_\_ Unloading Conveyor Pulleys turn freely while Winch is being cranked. Also check that Upper Pulley and Swivel are tightly secured yet turn and pivot properly while Winch is being cranked.
- \_\_\_ Screens fit properly into the Mill and that Mill Screen Cover closes and latches tightly.
- \_\_\_ Wheels are properly mounted and that Tires are inflated to recommended pressures. See Set-up & Assembly chapter of this manual.
- \_\_\_ Front and Rear Drive Chain tension is properly adjusted. See Adjustment chapter of this manual.
- \_\_\_ Discharge Conveyor Sliding Plate operates smoothly and that it holds its position; readjust tension as required.
- \_\_\_ Serial Numbers for the Mixer and the Swinging Auger Feeder Attachment (if applicable) are recorded in the spaces provided on this page and page 2.

**Hook the Mixer onto the proper RPM tractor and connect the Telescoping Drive. If applicable, also make appropriate Hydraulic Hose and Wiring connections to the tractor. Test-run the Mixer while checking that proper operation is exhibited by all components.**

Check that:

- \_\_\_ Rotating PTO Guard turns freely.
- \_\_\_ Entire Hydraulic System does **NOT** leak under pressure; correct problems as necessary.
- \_\_\_ Electronic Scale (if provided) operates properly. Refer to separate Manual provided.

\_\_\_ Mill, Intake Auger, Mixing Auger, Discharge Auger and Unloading Auger are all functioning properly and smoothly.

**(If Mixer has)**

### SWINGING AUGER FEEDER ATTACHMENT

Check that:

- \_\_\_ All Guards and Shields, Decals and attaching hardware are in place and properly secured.
- \_\_\_ Lifting, locking and supporting mechanisms are functioning properly. Also check that Counterbalance Spring and Brake are correctly adjusted. See Adjustments chapter of this manual.
- \_\_\_ Transport Lock mechanism engages and disengages correctly. Also check that Safety Locking Clip is chained to the Transport Bracket.
- \_\_\_ Test run the Attachment and check that Hydraulic Motor and Speed Control Lever operate properly.

**(If Mixer has)**

### FEED ROLL FEEDER ATTACHMENT

Check that:

- \_\_\_ All Guards and Shields, Decals and attaching hardware are in place and properly secured.
- \_\_\_ Mill Hopper raises and lowers smoothly and that Latching mechanism engages properly.
- \_\_\_ Feed Roll slides up and down without binding.
- \_\_\_ Test run the Attachment and check that Hydraulic Motor and Speed Control Push-to-Stop Bar operates properly.

**(If Mixer has)**

### SWINGING AUGER/FEED ROLL FEEDER ATTACHMENT

**NOTE: Follow the appropriate check points for individual Attachments listed above and the following check point for the combined unit.**

- \_\_\_ Test-run Attachments and check that Auger Feeder Motor Shut-off Valve operates properly.

**(If Mixer has)**

### GRAVITY FEEDER

Check that:

- \_\_\_ All Guards and Shields, Decals and attaching hardware are in place and properly secured.
- \_\_\_ Shutter Plate moves freely and that Rubber Splash Plate is in position and swings freely.

I acknowledge that pre-delivery procedures were performed on this unit as outlined above.

\_\_\_\_\_  
Dealership's Name

\_\_\_\_\_  
Dealer Representative's Name

\_\_\_\_\_  
Date Checklist Filled-out

\_\_\_\_\_  
Mixer Serial #                      SAF Serial # (If applicable)

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# CHAPTER 3

## CHECK LISTS

### PRE-DELIVERY

After the Mixer has been completely set-up, the following inspections **MUST** be made before delivering it to the Customer. Check off each item after prescribed action is taken.

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- \_\_\_ All grease fittings on the Main Unit and Feeder Attachment have been lubricated and that the Transmission and Hydraulic Reservoir (as applicable) are filled to proper levels. See Lubrication chapter of this manual.
- \_\_\_ Hydraulic Pump (as applicable), Motors, Hoses and Fittings are securely attached.
- \_\_\_ All Guards, Shields and Decals are in place and properly secured.
- \_\_\_ Tension on Unloading Conveyor Brake Bars is correctly adjusted to hold Conveyor at any position of travel.
- \_\_\_ Unloading Conveyor Safety Winch cranks "up" smoothly and that, when cranked "down" it stops and holds its position.
- \_\_\_ Unloading Conveyor Pulleys turn freely while Winch is being cranked. Also check that Upper Pulley and Swivel are tightly secured yet turn and pivot properly while Winch is being cranked.
- \_\_\_ Screens fit properly into the Mill and that Mill Screen Cover closes and latches tightly.
- \_\_\_ Wheels are properly mounted and that Tires are inflated to recommended pressures. See Set-up & Assembly chapter of this manual.
- \_\_\_ Front and Rear Drive Chain tension is properly adjusted. See Adjustment chapter of this manual.
- \_\_\_ Discharge Conveyor Sliding Plate operates smoothly and that it holds its position; readjust tension as required.
- \_\_\_ Serial Numbers for the Mixer and the Swinging Auger Feeder Attachment (if applicable) are recorded in the spaces provided on this page and page 2.

**Hook the Mixer onto the proper RPM tractor and connect the Telescoping Drive. If applicable, also make appropriate Hydraulic Hose and Wiring connections to the tractor. Test-run the Mixer while checking that proper operation is exhibited by all components.**

Check that:

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- \_\_\_ Entire Hydraulic System does **NOT** leak under pressure; correct problems as necessary.
- \_\_\_ Electronic Scale (if provided) operates properly. Refer to separate Manual provided.

- \_\_\_ Mill, Intake Auger, Mixing Auger, Discharge Auger and Unloading Auger are all functioning properly and smoothly.

**(If Mixer has)**

#### **SWINGING AUGER FEEDER ATTACHMENT**

Check that:

- \_\_\_ All Guards and Shields, Decals and attaching hardware are in place and properly secured.
- \_\_\_ Lifting, locking and supporting mechanisms are functioning properly. Also check that Counter-balance Spring and Brake are correctly adjusted. See Adjustments chapter of this manual.
- \_\_\_ Transport Lock mechanism engages and disengages correctly. Also check that Safety Locking Clip is chained to the Transport Bracket.
- \_\_\_ Test run the Attachment and check that Hydraulic Motor and Speed Control Lever operate properly.

**(If Mixer has)**

#### **FEED ROLL FEEDER ATTACHMENT**

Check that:

- \_\_\_ All Guards and Shields, Decals and attaching hardware are in place and properly secured.
- \_\_\_ Mill Hopper raises and lowers smoothly and that Latching mechanism engages properly.
- \_\_\_ Feed Roll slides up and down without binding.
- \_\_\_ Test run the Attachment and check that Hydraulic Motor and Speed Control Push-to-Stop Bar operates properly.

**(If Mixer has)**

#### **SWINGING AUGER/FEED ROLL FEEDER ATTACHMENT**

**NOTE: Follow the appropriate check points for individual Attachments listed above and the following check point for the combined unit.**

- \_\_\_ Test-run Attachments and check that Auger Feeder Motor Shut-off Valve operates properly.

**(If Mixer has)**

#### **GRAVITY FEEDER**

Check that:

- \_\_\_ All Guards and Shields, Decals and attaching hardware are in place and properly secured.
- \_\_\_ Shutter Plate moves freely and that Rubber Splash Plate is in position and swings freely.

I acknowledge that pre-delivery procedures were performed on this unit as outlined above.

\_\_\_\_\_  
Dealership's Name

\_\_\_\_\_  
Dealer Representative's Name

\_\_\_\_\_  
Date Checklist Filled-out

\_\_\_\_\_  
Mixer Serial #

\_\_\_\_\_  
SAF Serial # (If applicable)

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### DELIVERY CHECK LIST

The following Checklist is an important reminder of valuable information that **MUST** be passed on to the Customer at the time the unit is delivered. Check off each item as you explain it to the Customer.

- \_\_\_ Give the Customer his Operator's Manual. Instruct him to be sure to read and completely understand its contents **BEFORE** operating the unit.
- \_\_\_ Direct him on how to use the Index of this manual as a quick page number locating guide.
- \_\_\_ Explain and review with him the **SAFETY** chapter of this manual.
- \_\_\_ Explain and review with him the Controls & Safety Equipment chapter of this manual.
- \_\_\_ Explain that regular lubrication is required for continued proper operation and long life. Review with him the Lubrication chapter of this manual.
- \_\_\_ Explain and review with him the Service chapter of this manual.
- \_\_\_ Install Drain Plug(s) and close Drain Cover on end of Unloading Conveyor.
- \_\_\_ Completely fill out Owner's Registration, including Customer's signature, and return it to the GEHL Company.

I acknowledge that above points were reviewed with me at the time of delivery.

---

Customer's Signature

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Date Delivered

(Dealer's File Copy)

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## DELIVERY CHECK LIST

The following Checklist is an important reminder of valuable information that **MUST** be passed on to the Customer at the time the unit is delivered. Check off each item as you explain it to the Customer.

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- \_\_\_\_ Explain that regular lubrication is required for continued proper operation and long life. Review with him the Lubrication chapter of this manual.
- \_\_\_\_ Explain and review with him the Service chapter of this manual.
- \_\_\_\_ Install Drain Plug(s) and close Drain Cover on end of Unloading Conveyor.
- \_\_\_\_ Completely fill out Owner's Registration, including Customer's signature, and return it to the GEHL Company.

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Customer's Signature

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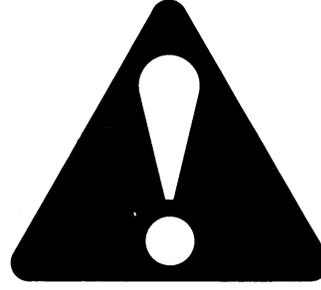
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# CHAPTER 4



## SAFETY



**BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING SAFETY INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT, WHETHER FAMILY MEMBER OR EMPLOYEE, IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.**

GEHL Company always takes the operator and his safety into consideration when designing farm machinery and guards exposed moving parts for his protection; however, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operator's manual and decals on the machine itself warn you of further danger and should be read and observed closely.

The safety alert symbol above means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of "HEADS UP" for safety and can be found throughout this operator's manual and on the unit itself.

**Remember: The careful operator is the best operator. Most accidents are caused by human error. Certain precautions must be observed to prevent the possibility of injury or damage.**

Please read the rules listed below for safe operation **BEFORE** you operate this equipment.

Use of the word **CAUTION, WARNING** or **DANGER** herein and on the machine itself signals three degrees of hazard. **CAUTION** is used for general reminders of good safety practices or to direct attention to unsafe practices. **WARNING** is used to denote a specific potential hazard. **DANGER** is used to denote the most serious specific potential hazard.

### **MANDATORY SAFETY SHUTDOWN PROCEDURE**

**Work of any type on machinery is always more dangerous when the machine is operating. Therefore, unless otherwise expressly instructed to the contrary, BEFORE cleaning, adjusting, lubricating or servicing this unit, the following MANDATORY SAFETY SHUTDOWN PROCEDURE should ALWAYS be followed:**

1. Disengage the tractor PTO
2. Shut off the tractor engine
3. Wait for all movement to stop
4. Remove the Telescoping Drive and All Power Connections from the tractor.

**ONLY when you have taken these precautions can you be sure it is safe to proceed. Failure to follow the above procedure, could lead to death or serious bodily injury!**

**Some photographs, used herein, may show Door(s), Guard(s), or Shield(s) open or removed for illustration purposes ONLY! BE SURE that all Door(s), Guard(s), or Shield(s) are in their proper position, BEFORE the machine is operated!**

**This GEHL Mixer is intended and designed to be used ONLY with a mounted GEHL Company Feeder Attachment. The GEHL Company will NOT be responsible for operator safety if used without a completing GEHL Feeder Attachment!**

**Know how to stop Mixer operation BEFORE starting it!**

**BE SURE that the Telescoping PTO Shield rotates freely BEFORE starting the tractor engine!**

**BE SURE that the Telescoping PTO Locking Couplers are properly engaged on both ends of the Drive BEFORE starting the tractor engine!**

**BE SURE the Hitchjack Locking Pin is completely engaged and that the machine is properly blocked and prevented from rolling BEFORE disconnecting the tractor!**

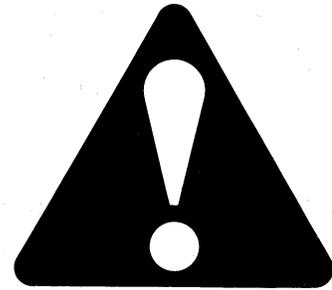
**BE SURE ALL Guards, Shields and Doors are in place and properly secured BEFORE starting the tractor engine!**

**Feed should only be sampled from what has been removed by the Unloading Conveyor. NEVER attempt to stick your hand(s) in any part of the machine while it is in operation. Failure to heed could cause bodily injury!**



# SAFETY

(Continued)



**DO NOT** start, operate or work on this machine until you have carefully read and thoroughly understand the contents of this Operator's Manual!

**DO NOT** attempt to operate the Mixer while stationary unless the Hitch is connected to the tractor drawbar with a locking hitchpin!

**DO NOT** allow minors to operate or be near the machine unless properly supervised!

**DO NOT** allow anyone other than qualified personnel to operate the machine!

**DO NOT** attempt to travel with this machine on a public highway without first complying with applicable state and local regulations dealing with a slow-moving Vehicle Emblem, towing chains, brakes, lights, etc.

**DO NOT** exceed a maximum travel speed of 20 mph (32 kmh) and use a locking hitchpin when transporting the machine!

**DO NOT** clean, adjust or lubricate the machine when it is running or moving!

**DO NOT** wear loose or baggy clothes when operating the machine!

**DO NOT** open any guards or shields when the machine is running!

**DO NOT** hook a 540 RPM tractor on a 1000 RPM machine!

**DO NOT** hook a 1000 RPM tractor on a 540 RPM machine!

**DO NOT** attempt to engage the Mill/Blower Drive Sheave Pin while the Universal Drive Shaft is turning!

**DO NOT** operate Mill with Mill Screen Cover unlatched or open!

**DO NOT** open Tank Lid or Clean-out Cover when Mixer is in operation!

**DO NOT** reach under the Mixer while in operation!

**DO NOT** stand under any part of the Unloading Conveyor while it is operating!

**DO NOT** allow anyone to ride on the Mixer!

**REMEMBER!** it is the owner's responsibility for communicating information on the safe use and proper maintenance of this machine!

# CHAPTER 5

## CONTROLS & SAFETY EQUIPMENT

The Mixer is provided with several features for operator safety and convenience.



**CAUTION:** Become familiar with and know how to use **ALL Safety Devices and Controls** on the Mixer **BEFORE** attempting to operate this equipment. Know how to stop Mixer operation **BEFORE** starting it. This GEHL Mixer is designed and intended to be used **ONLY** with a mounted GEHL Company Feeder Attachment. GEHL Company will **NOT** be responsible for operator safety if used without a completing GEHL Feeder Attachment.

### CONCENTRATE HOPPER (Fig. 5-1)

The Concentrate Hopper is used to place dry additives into the Mixer. The Cover on the Concentrate Hopper is spring-loaded to hold it in either the open or closed position. A Bag Guard is provided and should **NEVER** be removed while operating the Mixer. A Paper Bag Breaker is also provided; **BE SURE** to flip the toothed-side over, when the Bag Breaker is **NOT** being used.



**WARNING:** **DO NOT** use the Concentrate Hopper unless the Bag Guard is in place. Keep hands out of the area of the Concentrate Hopper.

**NOTE:** With **NO** material in the Concentrate Hopper, Intake Auger rotation can be observed by looking into the base of the Concentrate Hopper.

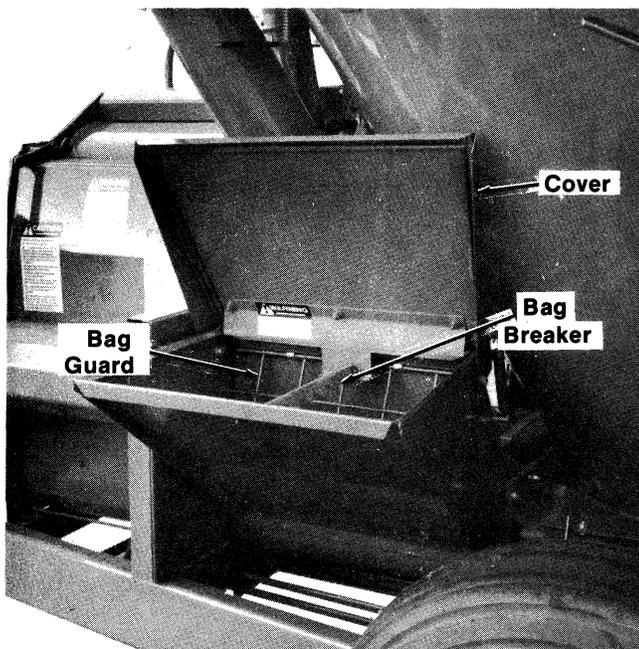


Fig. 5-1: Concentrate Hopper

### DISCHARGE CONVEYOR (Fig. 5-2)

The Discharge Conveyor is used to remove ground feed from the Mixing Tank. The Conveyor Auger is driven directly by a Hydraulic Motor which is connected in series with the Unloading Conveyor Motor. Motor operation is controlled by a single "on-off" Valve.

A Manual Crank-controlled Sliding Plate is used to regulate the amount of material feeding into the Discharge Conveyor through the Discharge Chute.

**NOTE:** **BE SURE** the Sliding Plate is completely closed over the Discharge Chute before starting to grind, mix or unload.

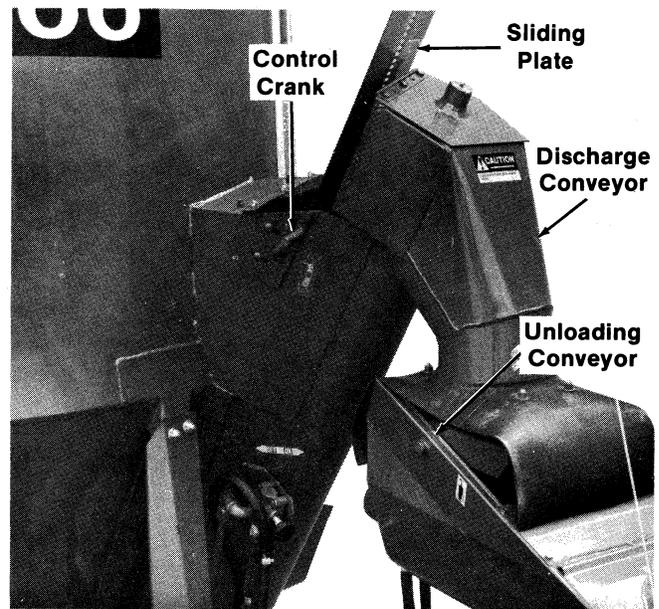


Fig. 5-2

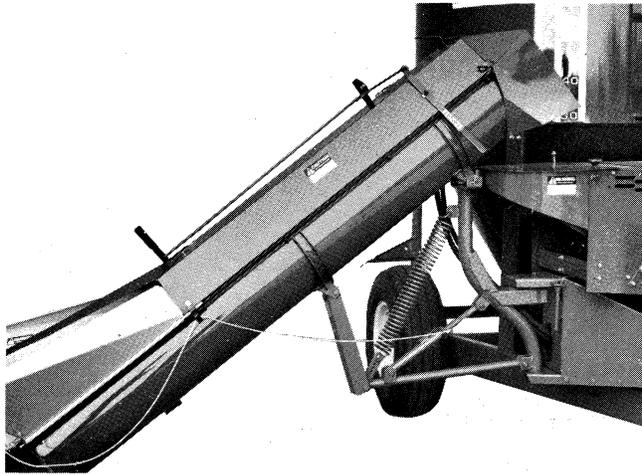
## FEEDER ATTACHMENTS

### Swinging Auger Feeder (Figs. 5-3 & 5-4)

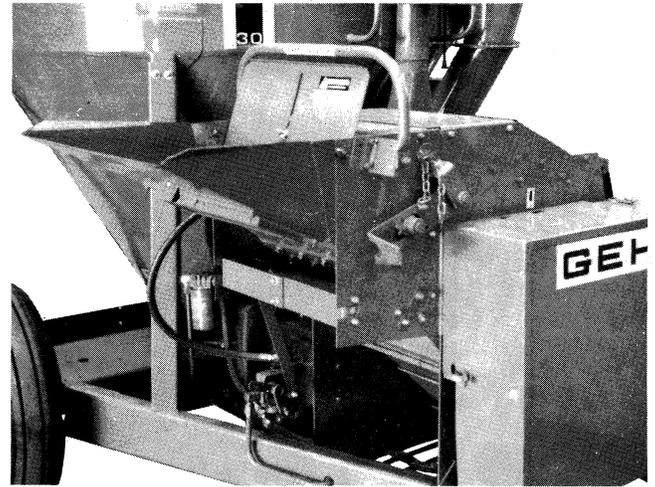
The Swinging Auger Feeder (SAF) Attachment has a mechanically-linked "off-speed" control for the Hydraulic Motor-driven Loading Auger. Speed Control Handles are provided at three locations on the SAF Trough, above the Infeed Hopper. These Control Handles enable stopping, starting and regulating the speed of Conveyor Auger rotation and thus, the material feeding rate.

A Friction Brake mechanism is used to control and hold the horizontal position of the Swinging Auger Feeder. A Lift Handle and Rope mechanism are provided for adjusting and holding the vertical position of the Attachment. Spring Counter-balancing is also provided to facilitate lifting.

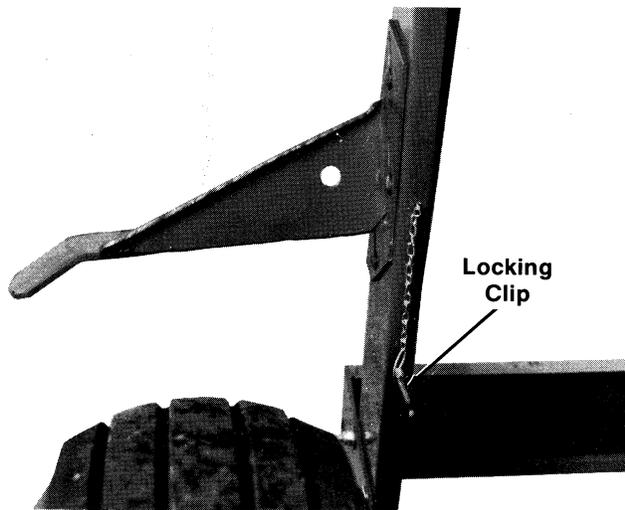
A Transport Lock mechanism is provided for holding the Swinging Auger Feeder in position against the Mixing Tank Support Brace during transport.



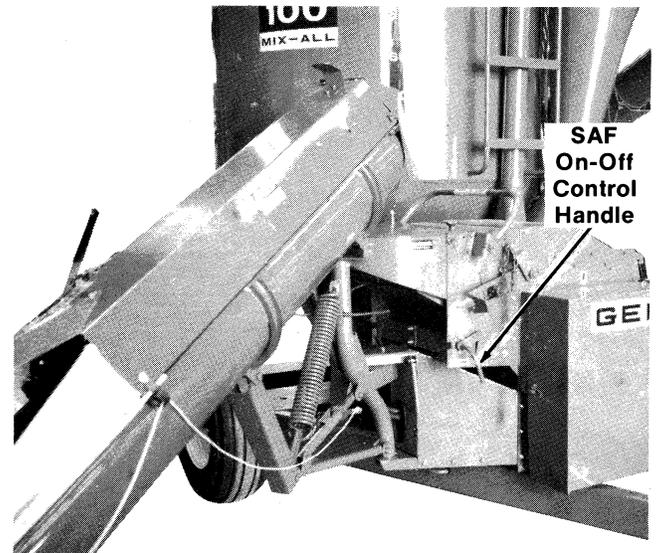
**Fig. 5-3: Swinging Auger Feeder Attachment**



**Fig. 5-5: Feed Roll (Hay Feeder) Attachment**



**Fig. 5-4: SAF Transport Bracket**



**Fig. 5-6: Swinging Auger/Feed Roll Feeder Attachment**



**CAUTION:** When transporting the Mixer, **BE SURE** the Transport Lock is properly engaged and the Locking Clip is installed.

#### **Feed Roll Feeder (Fig. 5-5)**

The Feed Roll Attachment has a Push-to-Stop Bar for starting, stopping and regulating the speed of the Hydraulic Motor-driven Feed Roll.



**WARNING:** Keep hands out of the Feed Roll area while operating this Attachment.

#### **Swinging Auger/Feed Roll Feeder (Fig. 5-6)**

The Swinging Auger/ Feed Roll Attachment is a combination of the two preceding Attachments. Control are similar to those on each individual Attachment, except both Hydraulic Motors are linked to the same Flow Control Valve. In addition, an **ON-OFF** Valve is provided to shut-off the Swinging Auger Feeder unit and thus, enable running the Feed Roll unit separately. Since both Motors are controlled by the same Flow Valve, Motor speeds are synchronized when both units are operated together.

### **GUARDS & SHIELDS**

Whenever and wherever possible and without affecting machine operation, Guards and Shields have been used on this equipment to protect potentially hazardous areas. In many places, Decals are also provided to warn of potential dangers as well as to display special operating procedures.



**WARNING:** Read and observe **ALL** Warning on the unit **BEFORE** operating it. **DO NOT** attempt to operate this equipment unless **ALL** factory installed Guards and Shields are properly secured in place.

#### **Implement Drive Line Guards**

The Telescoping PTO Drive connection to the tractor is equipped with a rotating Shield.



**WARNING:** **BE SURE** that the Rotating Shield on the Telescoping Drive turns freely **BEFORE** starting the tractor engine.

## Miscellaneous Guards

Various latched and hinged Guards and Covers are provided on the Mixer to enable access for service or adjustment.



**CAUTION: BEFORE** proceeding to perform any work on the Mixer and **BEFORE** removing any Guards or opening any Covers, **BE SURE** to exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (page 12). **BE SURE** also to replace **ALL** Guards and Shields **BEFORE** operating the Mixer.

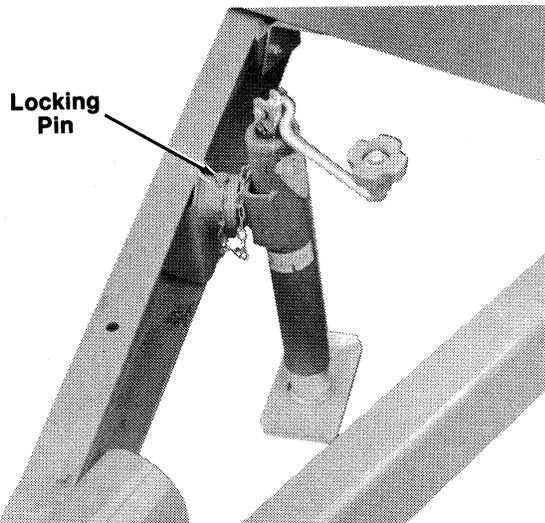


Fig. 5-7: Hitch Jack in "Supporting" Position

## HITCHJACK (Fig. 5-7)

A Hitchjack is furnished with the Mixer to support the machine when the tractor is disconnected as well as to facilitate aligning the Mixer Hitch Clips with the tractor drawbar for hookup.

When the Jack is **NOT** being used to support the Drawbar, it can be conveniently unlocked and swung into its storage position.



**WARNING: BE SURE** the Locking Pin is properly seated into the holes through the Jack Tube and the Drawbar Hub of the Mixer, **BEFORE** the tractor is disconnected. **Block** the Mixer to make sure that it does **NOT** roll after it is disconnected from the tractor.

## LADDER & STEPS (Fig. 5-8)

A Ladder and Steps are incorporated into the Mixer Frame, Mill Housing and Tank design for convenient physical access to the top of the Tank. Friction Surface material is used to cover the stepping areas.



**CAUTION: BE SURE** to exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (page 12) **BEFORE** climbing onto the Mixer.



Fig. 5-8

## MILL & BLOWER (Fig. 5-9)

The mixing section of the unit can be operated separately of the Mill and Blower. The Mill/Blower Drive Sheave is provided with a Pin to change operation from mixing and/or unloading only to grinding and mixing.



**CAUTION: BE SURE** to exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (page 12) **BEFORE** engaging or disengaging the Pin.

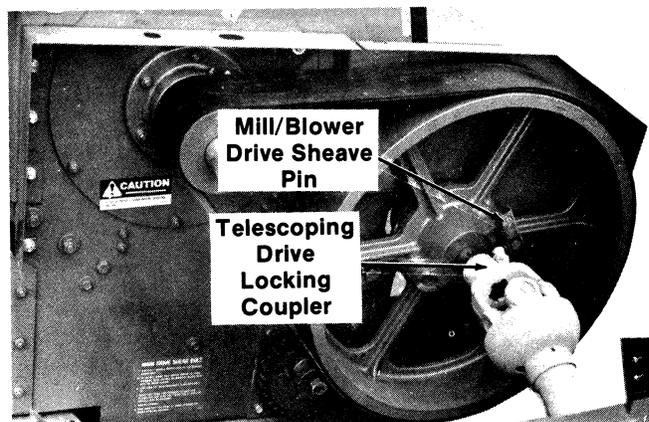


Fig. 5-9

## MILL SCREEN COVER (Fig. 5-10)

The Mill Screen Cover provides access to the Mill Cylinder and Screen areas. Overcenter Handle Latches are used to keep the Cover closed tightly.



**DANGER: BE SURE** the Mill Screen Cover is closed and tightly latched **BEFORE** operating the Mill. **NEVER** open the Cover when the Mixer or Mill is operating.

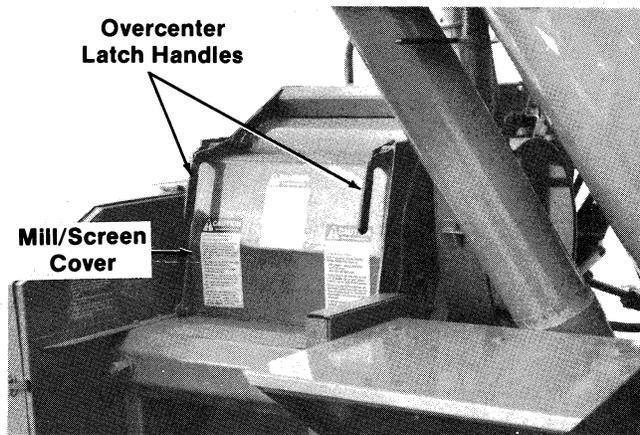


Fig. 5-10

**TELESCOPING DRIVE (Fig. 5-11 & See Fig. 5-9)**

Spring-loaded Locking Devices are provided on both ends of the Telescoping Drive to positively lock it onto the tractor PTO shaft and the Mixer Drive Shaft. The Telescoping Drive is **NOT** reversible.

**WARNING:** BE SURE that the Locking Devices on both ends of the Telescoping Drive are positively engaged **BEFORE** starting the tractor engine. Also BE SURE that the tractor PTO shield is in place and properly secured and that the Telescoping Drive Shields are rotating freely **BEFORE** starting the tractor engine to run the Mixer.

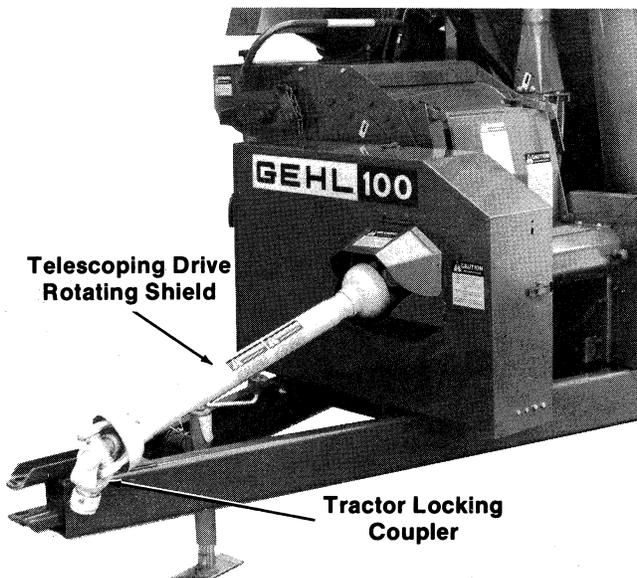


Fig. 5-11

**UNLOADING CONVEYOR (Figs. 5-12 & 5-13)**

The Unloading Conveyor receives ground feed from the Discharge Conveyor and Conveys the feed to the selected storage or feeding location. The Conveyor Auger is driven directly by a Hydraulic Motor which is connected in series with the Discharge Conveyor Motor. Motor operation is controlled by a single "on-off" Valve.

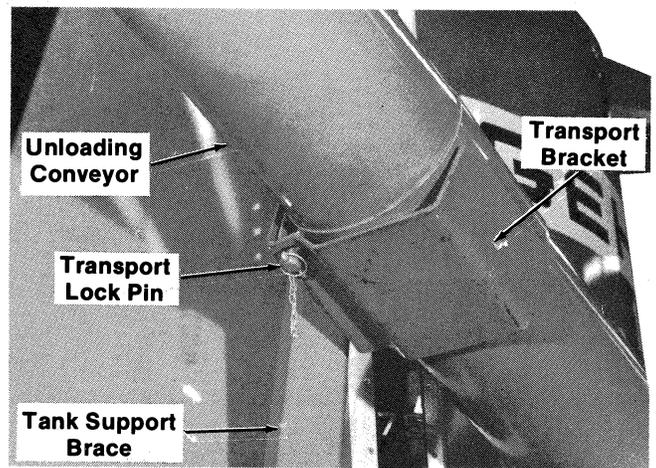


Fig. 5-12

A Transport Lock mechanism is provided for holding the Unloading Conveyor in position against the Mixing Tank Support Brace during transport.

**CAUTION:** When transporting the Mixer, BE SURE Lock Clip is properly installed in the Transport Lock mechanism.

A Friction Brake mechanism is used to adjust and hold the horizontal position of the Unloading Conveyor. A Crank-type Winch mechanism is used to adjust and hold the vertical position of the Conveyor. A Wire Cable linkage through two Pulleys is provided for raising and lowering the Conveyor.

**CAUTION:** The Wire Cable and Pulleys **MUST** be checked at least once after every 50 hours of operation and maintained in good operating condition at all times.

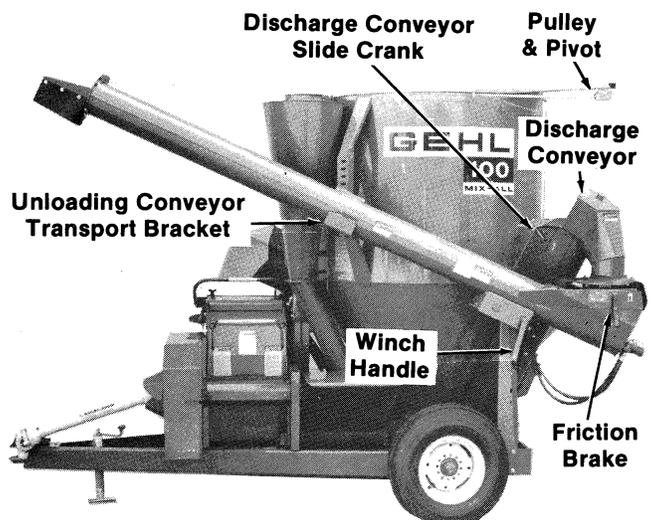


Fig. 5-13

# CHAPTER 6

## OPERATION

### EMERGENCY SHUTDOWN

In an emergency or in case a foreign object enters the Mill Inlet, **STOP** Mixer operation **IMMEDIATELY** by disengaging the tractor PTO.

### GENERAL INFORMATION



**CAUTION: BEFORE starting tractor engine and running the Mixer, review and comply with ALL SAFETY recommendations set forth in the SAFETY chapter of this manual.**

**NOTE: Before starting to grind a crop, BE SURE the Tank Lid is closed, the Discharge Slide is closed and the Collector Cover is open.**

Best performance, smooth operation, uniformity of mixing and extended component life are obtained by operating the Mixer on level ground. To prolong the life of the Drive Line components, always maintain a straight-line alignment between the tractor and Mixer.

The most efficient grinding will be obtained by maintaining the tractor rated PTO speed which produces a Mill Cylinder speed of 2700 RPM. Cylinder speed should **NOT** be allowed to exceed 3000 RPM or to drop below 2400 RPM. Before starting to grind, **BE SURE** the Discharge Slide is completely closed. For best mixing action inside the Tank, add supplements after a small amount of feed has been ground, then dry granular materials next and hay or straw last. Grind heavy feeds before light feeds since light feeds do **NOT** mix as readily if ground first. When heavy feeds are high in moisture content, the heavy damp material should be mixed into the light material to obtain a better mixing action.

**NOTE: DO NOT attempt to grind feeds with too high a moisture content as this can cause a packing problem, plugging and result in poor mixing. Abnormally damp crops will NOT feed nor mix well.**

Liquids, such as molasses, should only be added either by using an accessory Molasses Attachment or by direct application through the Mixing Tank Lid (and only after the Tank is filled half-way).

Observe the action of the ground feed through the Mixing Tank Windows. When ground feed covers the tops of the Windows and then drops, the Tank is full and grinding should be immediately stopped. After all the ground material is cleared out of the Mill, stop the Mixer by exercising the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (page 12) and disengaging the Pin on the Mill/Blower Drive Sheave.

**NOTE: DO NOT overfill the Mixing Tank as this will cause the feed to pack and thus place unnecessary stress on the Drive Line components. Also, always keep the Tank Lid closed and properly latched in position so that, if the Tank accidentally becomes overloaded, the Lid can pop-open and release pressure inside the Tank.**

The two full-length Windows on the side of the Tank are calibrated with numbers representing bushels of ground feed. Check both Windows for an accurate visual indication of the amount of material in the Tank.

**NOTE: For the best achievable accuracy in rationing or proportioning, the Mixer should be equipped with an optional Electronic Scale.**

After grinding is completed, stop the tractor and disengage the Mill/Blower Drive Sheave Pin. Then, start the tractor again and allow the Mixer to continue running for several minutes to thoroughly mix the ground feed. If the Mixer is to be transported for any distance, it is advisable to disengage the Mill and allow the Mixer to run.

**NOTE: To prevent damage to the Telescoping Drive and Drive Line components while transporting the Mixer with the Tank full and mixing, disengage the tractor PTO before turning corners.**

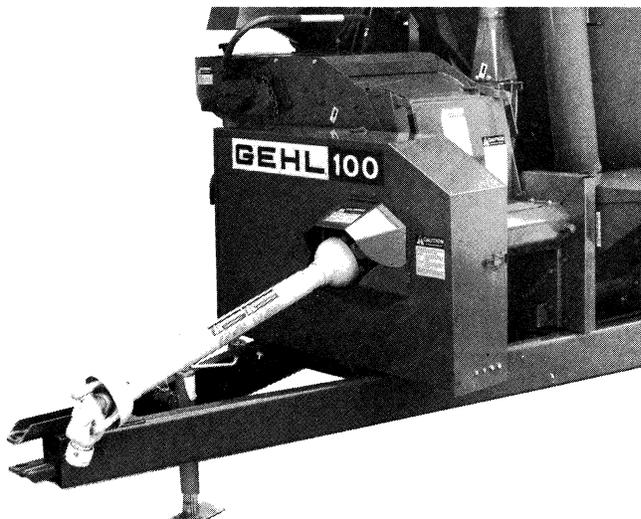


Fig. 6-1: Telescoping Drive in "Storage" Position

### MIXER POWER

#### Telescoping Drive (Fig. 6-1)

MX100 Mixers are available with 540 Drive for use with up to 115 hp 540 RPM tractors or with 1000 Drive for use with up to 145 hp 1000 RPM tractors.



**WARNING: DO NOT attempt to hook a 540 RPM tractor to a Mixer with a 1000 Drive or a 1000 RPM tractor to a Mixer with a 540 Drive.**

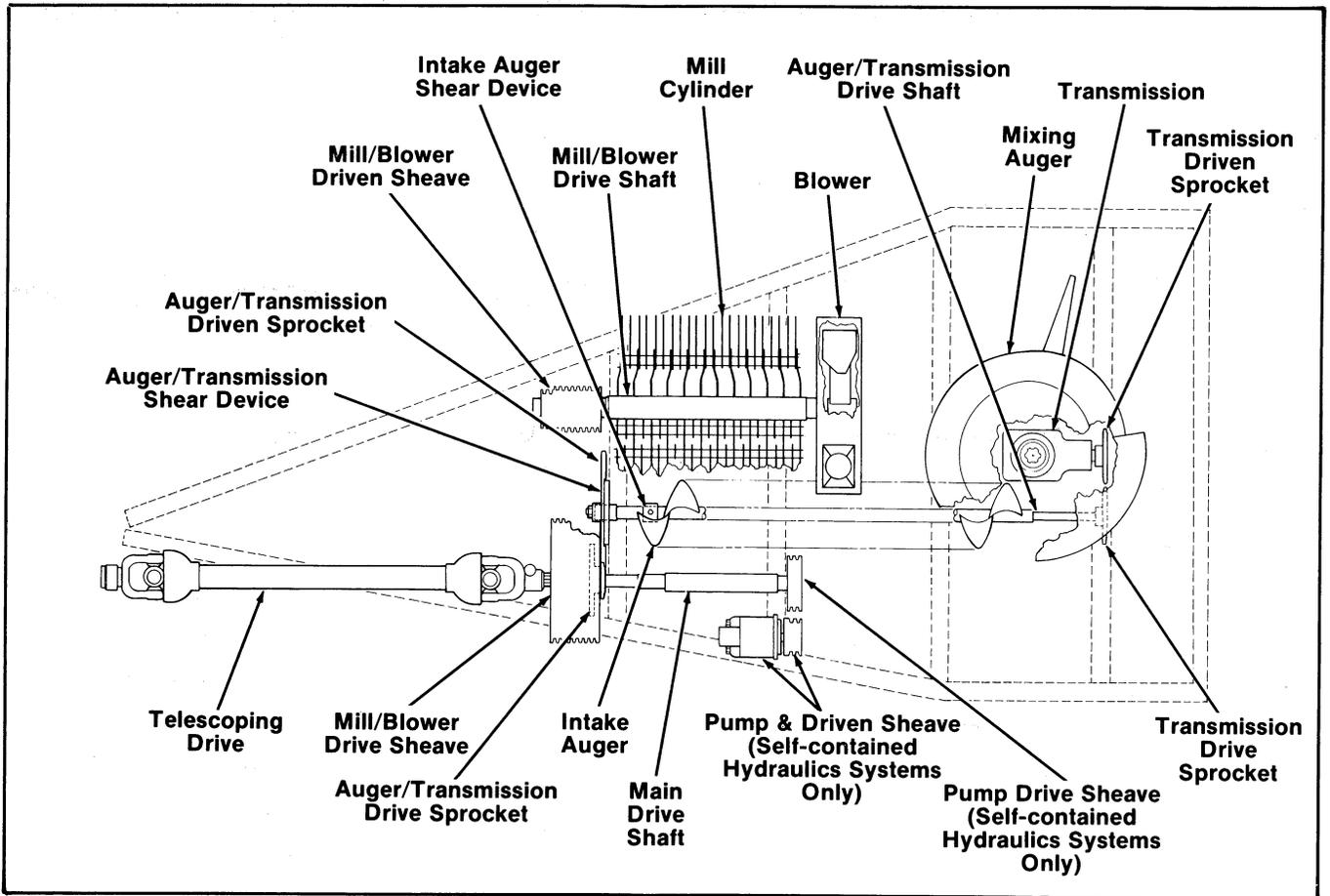


Fig. 6-2: Drive Line Components

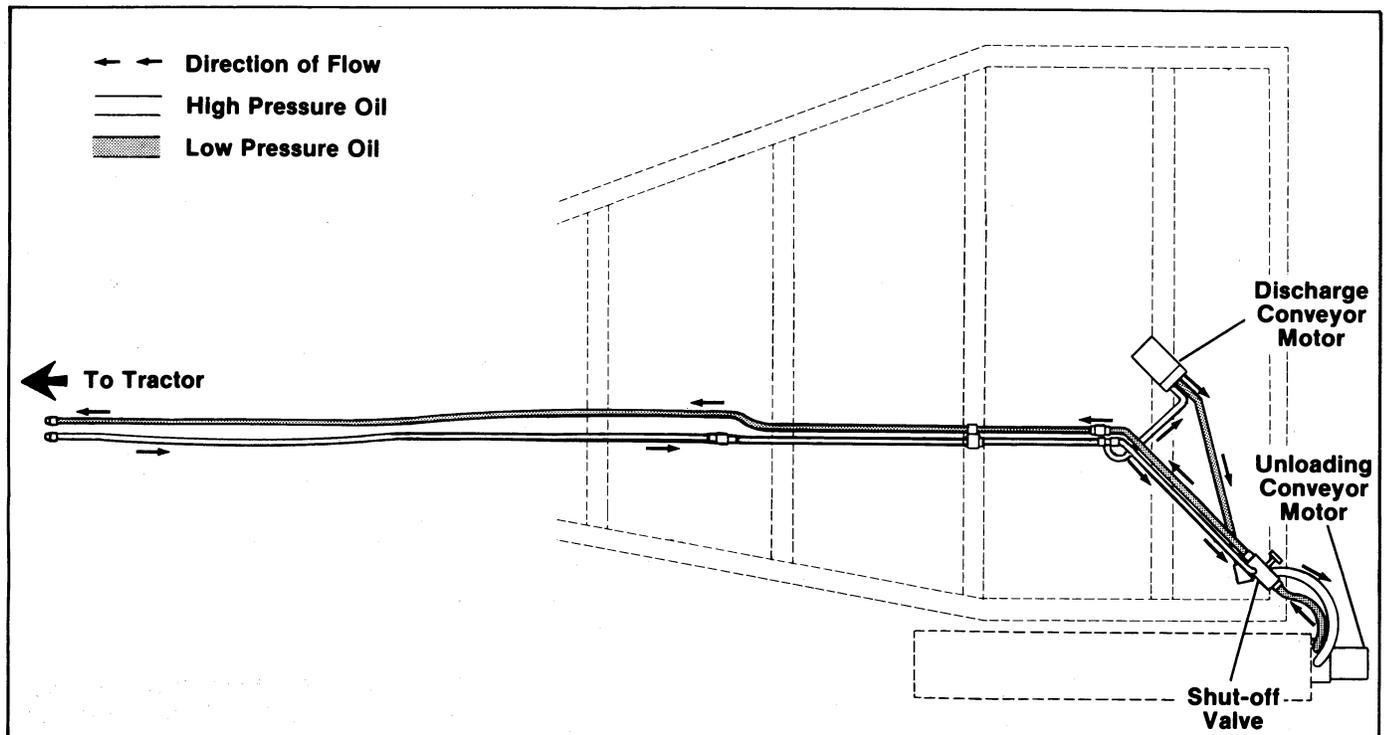
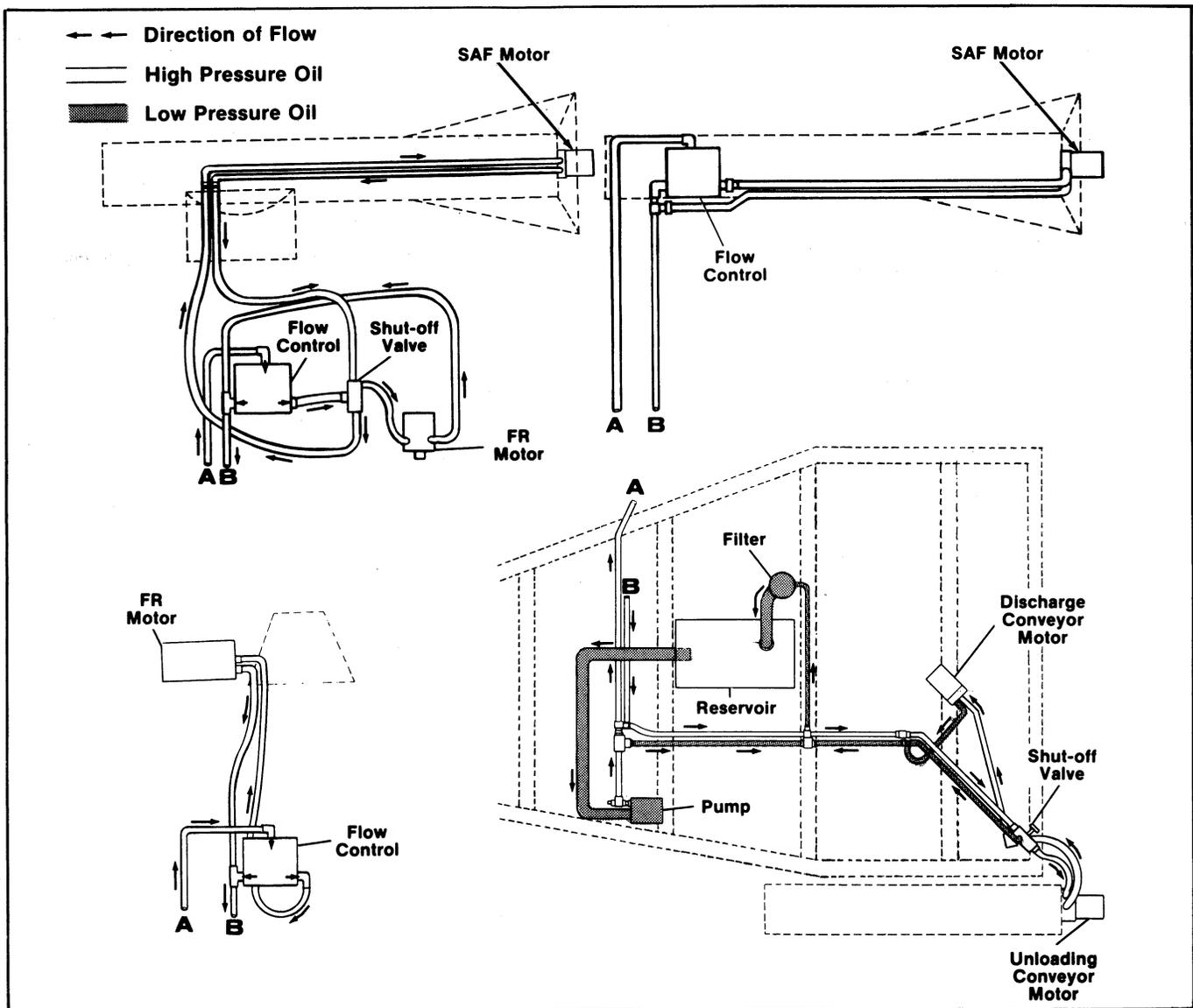


Fig. 6-3: Tractor-powered Hydraulic System



**Fig. 6-4: Self-contained Hydraulic System**

**Drive Line Components (Fig. 6-2)**

All MX100 Mixers have the same basic components shown in the illustration. Mixer models with Self-contained Hydraulic Systems have a Double Sheave on the end of the Main Drive Shaft which is linked by two Belts to the Hydraulic Pump.

**Hydraulic Systems (Figs. 6-3 & 6-4)**

Several Mixer models are available with a Self-contained Hydraulic System. These models with Self-contained Hydraulic Systems feature Hydraulic Motor-operated Discharge and Unloading Conveyors as well as Hydraulic Motor-operated Feeder Attachments (as applicable) or a stationary gravity feeder Attachment. The Self-contained Hydraulic System is composed of a Pump, Pressure Relief Valve, Reservoir and Oil Filter. The Pump is Belt-driven directly off the Main Drive Shaft which is coupled by the Telescoping Drive to the tractor PTO shaft.

One Mixer model is also available with a direct tractor-powered Hydraulic System. This model features Hydraulic Motor-operated Discharge and Unloading Conveyors and a stationary Gravity Feeder Attachment.

**MILL & BLOWER**

**Drive Sheave (Fig. 6-5)**

The Mill/ Blower Drive Sheave can be engaged or disengaged through appropriate positioning of a Pin on the Sheave. Proper positioning of the Pin enables operating the mixing section together with or separate from the Mill and Blower.

**WARNING: BEFORE attempting to engage or disengage the Drive Sheave Pin, BE SURE to exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12).**

To disengage the Mill/Blower Drive Sheave Pin and lock-out the Mill and Blower, grasp the Pin Handle and flip it 180° and turn the Sheave by hand until the Pin locks into one of the Holes in the Drive Hub.

**NOTE:** When starting to run the Mill and Blower, engage the tractor PTO at a slow idle speed. Then, advance the PTO speed to the appropriate 540 or 1000 RPM rated load speed.

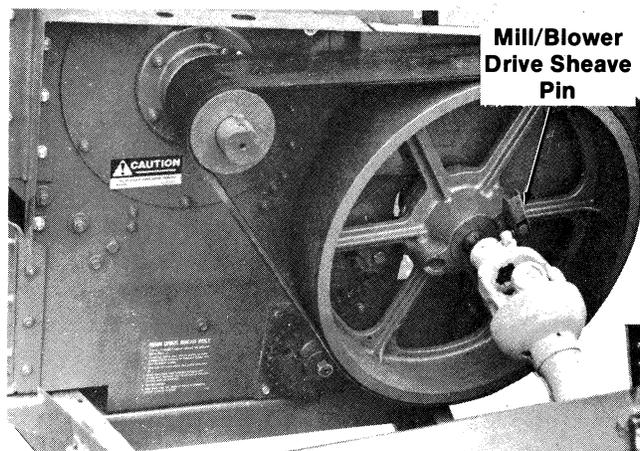


Fig. 6-5

### Component Function

Material enters the Cylinder Chamber through the Mill Inlet and is drawn into the Cylinder by a vacuum below the Cylinder. The vacuum below the Cylinder is obtained by the physical location of the Blower Inlet below the Cylinder.

The Cylinder is composed of sixty-six Swinging Hammers which are equally divided among three rows around the Cylinder. As the Cylinder rotates at the recommended speed of 2700 RPM, the Hammers grind the material and force it through the Screen. Once through the Screen, the ground material drops down to the Mill Outlet where the Intake Auger conveys it to the Mixing Tank. Light-weight chaff or dust is drawn into the Blower Inlet and forced by the Blower up into the Collector where it is refined and separated. More dense particles are directed back down into the Intake Auger and conveyed into the Mixing Tank.

### SCREENS

The MX100 Mill is designed specifically for operation only with a material Screen installed. Numerous Screens are available with various size holes to accommodate different material and grinding requirements. The Chart provided gives hole size recommendations for some of these materials and grinding requirements. Two Screens (of the Customer's choice) are furnished with the Mixer.

Refer to the Optional Features and Accessories chapter of this manual for a list of all the sizes available. For added convenience, a Screen Storage Rack is provided on the left side of the Mixer between the Tank and the Tire.

Texture of Grind	Recommended Screen Hole Size to Use					
	Small Grains - Milo, Kafir, etc.	Cereal grains - Oats, Barley, Wheat, etc.	Shelled Corn	Ear Corn	Hay or Grass	Alfalfa
Fine	3/32 1/8	3/32 1/8 3/16	3/32 1/8 3/16 1/4 5/16	1/4 5/16 3/8	1/2	1/2 5/8
Medium	3/16 1/4 5/16	1/4 5/16	3/8 1/2 5/8	1/2 5/8	5/8	3/4 1
Coarse	3/8 1/2 5/8	3/8 1/2 5/8	3/4 1	3/4 1 1-1/4	1	1-1/4 1-1/2

To install or change a Screen, proceed as follows:



**WARNING: BE SURE to exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12), BEFORE proceeding.**

1. Unlatch and open the Mill Screen Cover.
2. With the Cover completely open, the Screen Support lowers and releases the Screen. Lift the existing Screen out of the Support.
3. Position and install the new (or different) Screen into the Support.
4. Close and latch the Mill Screen Cover.



**DANGER: NEVER operate the Mill unless the Mill Screen Cover is closed and properly latched.**

**NOTE:** When a Screen is correctly installed, it should fit tight against the Mill Throat Plate and butt tightly against the Mill Frame Hood Sheet when the Mill Screen Cover is closed and securely latched

The fineness of grinding is a factor of Mill speed, condition of the Hammers and the size and sharpness of the Screen. Considering that Mill speed is maintained at 2700 RPM and also that the Hammers are in good condition, the efficiency of the Mill will decrease if too fine a Screen hole size is used and/or if the holes are badly worn. If grinding fineness is deteriorating, the Screen should be removed and rotated to place the sharp hole edges against the direction of Cylinder rotation or the Screen should be replaced.

**CAPACITY**

MX100 Mixing Tank capacity is 100 Bushels, by volume. The Tank will hold approximately 2 Tons of ground feed consisting of average weight corn, small grain and/or concentrates. More or less weight (per Tank) is possible, depending upon whether the material which is being ground is lighter or heavier than average. The following chart shows Window markings in Bushels with corresponding weights for a few common types of material. Grinding capacity of the Mill can and will vary due to the type of material being ground, the moisture content of the material, the size Screen used, and the horsepower of the tractor used to operate the Mixer.

The Mixer is designed for operation by a 50 to 115 hp 540 RPM tractor or by a 50 to 145 hp 1000 RPM tractor. Maximum Mill capacity is obtained by operating at the rated PTO speed which maintains consistent Mill Cylinder Speed.

**Tank Capacities for Some Common Materials**

MX100 Tank Capacity (in Pounds*)				
Volume in Bushels**	Oats	Barley	Milo or Shelled Corn	Ear Corn
100	3200	4800	5600	3500
90	2880	4320	5040	3150
80	2560	3840	4480	2800
70	2240	3360	3920	2450
60	1920	2880	3360	2100
50	1600	2400	2800	1750
40	1280	1920	2240	1400
30	960	1440	1680	1050
Each 10	320	480	560	350

**NOTE:** Above weights are computed on the basis of grinding average weight crops, using an average size Screen in the Mill. Capacities obtained, depend on the actual size Screen used, the moisture content of the crop being ground, and the amount of settling.

\* Multiply Pounds by 0.4536 to obtain Kilograms

\*\* Multiply Bushels by 0.3524 to obtain Hektoliters

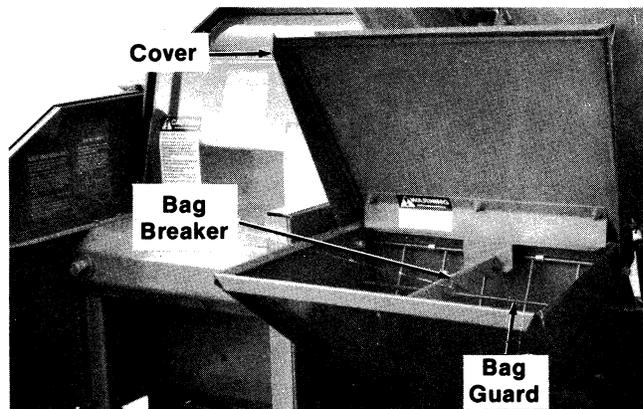


Fig. 6-6

**CONCENTRATE HOPPER (Fig. 6-6)**

**NOTE:** Certain medicated feed additives and drugs, which may be mixed by some operators for special animal rations (such as EP-250 sulfa for use with feeder pigs), may leave residual dust/material on the walls of and in the bottom of portable grinder mixers. In order to avoid the serious problems (both to the animals and your right to do business), which could occur if this material is ingested by other animals, each time you use your Mixall® to mix this type of material and after you have unloaded the material from the Tank, completely hose-out the Tank before grinding or mixing any feed for other animals.

The Cover on the Concentrate Hopper is spring-loaded to positively hold it in either the open or closed position. A Bag Guard is provided over the entire Hopper opening to prevent containers from being accidentally drawn into the Auger/ Drive Shaft or Intake Auger.



**CAUTION: NEVER** remove the Bag Guard nor use the Concentrate Hopper without the Guard covering the Hopper opening.

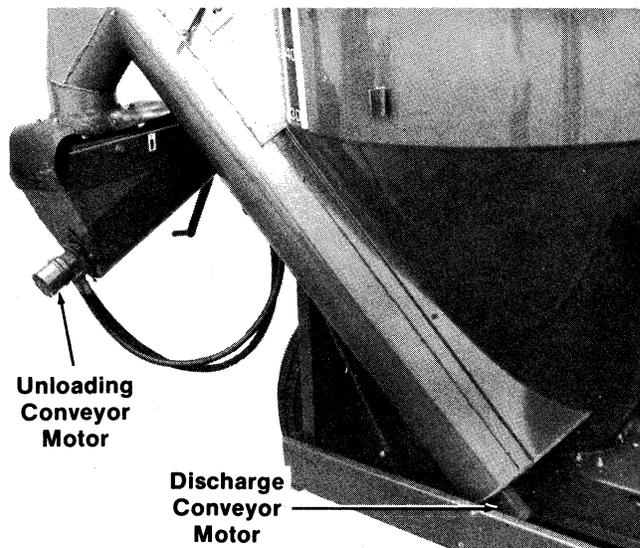


Fig. 6-7

**NOTE:** DO NOT pour any liquids, such as molasses, into the Concentrate Hopper. When adding micro-ingredients to the ground feed, a pre-mix should be used and added through the Concentrate Hopper. Small quantity, highly potent additives (medicines, vitamins, etc.) should be placed into the Tank through the Tank Lid opening on top of the Tank, after at least half a Tank of feed has already been ground into the Tank. BE SURE to close and latch the Tank Lid before continuing to grind and mix.

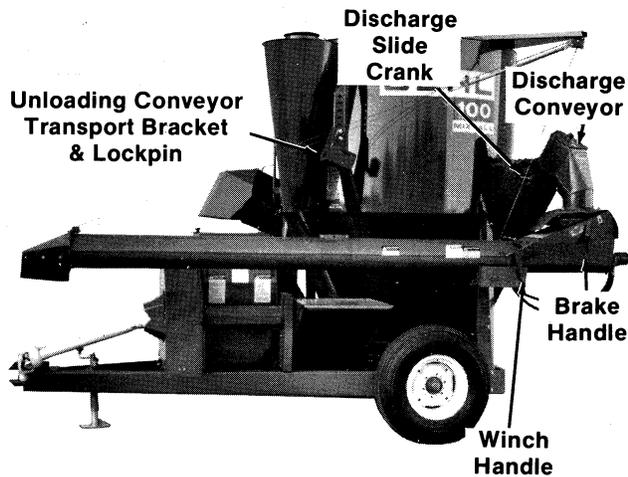


Fig. 6-8

**DISCHARGE CONVEYOR (Figs. 6-7 & 6-8)**

The Discharge Conveyor is a Hydraulic Motor-driven Auger which removes the ground feed from the Mixing Tank and discharges it into the Unloading Conveyor. A single Shut-off Valve controls the Hydraulic Motor which operates at a single constant speed determined by the speed of the tractor PTO. A manual Crank-controlled Sliding Plate is provided to regulate the amount of feed passing through the Discharge Chute, the inlet to the Discharge Conveyor. A Pop-up Cover is provided on top of the Discharge Conveyor for overflow protection. The Cover will automatically raise, if a backup condition develops in the Unloading Conveyor.

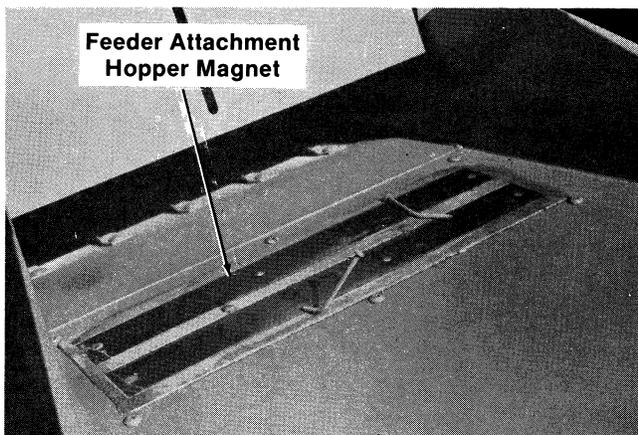


Fig. 6-9

**NOTE:** The proper sequence for operating the Discharge Conveyor is to always activate the Hydraulic Shut-off Valve to start the Motor before opening the Discharge Chute. After the Mixing Tank has been unloaded, BE SURE to close the Discharge Chute.

**FEEDER ATTACHMENTS (Fig. 6-9 thru 6-13)**

**NOTE:** As a safeguard for the Mill components as well as livestock, a Magnet is installed into the bottom of the Mill Hopper on all Feeder Attachments. This Magnet will extract harmful metal debris before it enters the Mill Inlet.

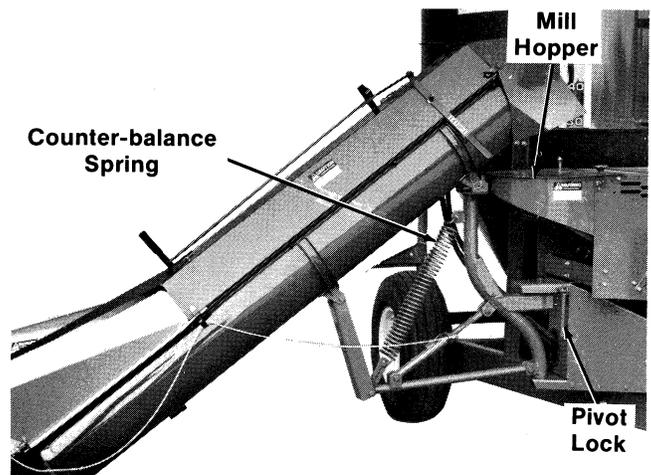


Fig. 6-10

**Swinging Auger Feeder (Fig. 6-10)**

The Swinging Auger Feeder (SAF) Attachment is designed primarily to convey material into the Mill from trailers, storage bins or cribs. It is available (factory installed) on one of the Mixer models which has a Self-contained Hydraulic System. This Attachment is composed of an Infeed Hopper, Hydraulic Motor-driven, Loading Auger and Mill Hopper with Weather Cover. The Loading Auger can be swung out and locked at any point along a 180° horizontal arc, from the point of pivot. Operating height of the Infeed Hopper can be conveniently raised or lowered and held in position using the Lifter Handle and Rope mechanism. The Attachment is Spring Counterbalanced to facilitate lifting. The right portion of Infeed Hopper can also be conveniently folded-in to reduce overall width for transporting.

Speed Control Handles are provided for convenient regulation of the speed of Conveyor Auger rotation. Appropriate movement of any one of the three mechanically interconnected Handles enables stopping and starting Auger rotation as well as regulating the feeding rate of material being fed into the Mill Hopper. Two other convenience features provided on the SAF are; an enclosed Wind and Grain Shield, which is located over the discharge end of the SAF Trough and, a Water Drain Plug, which is located in the bottom of the Trough Infeed Hopper.

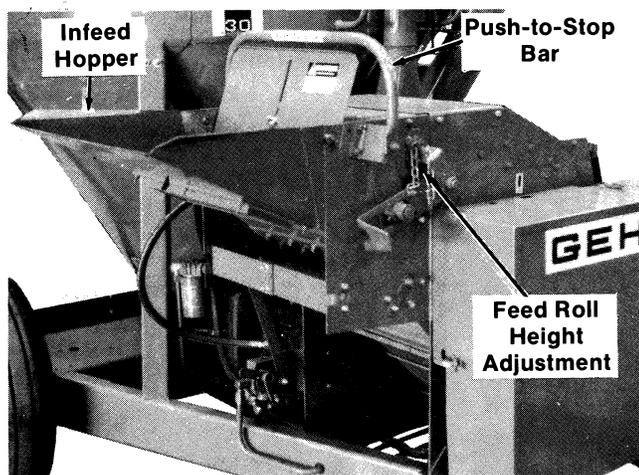


Fig. 6-11

### Feed Roll (Fig. 6-11)

The Feed Roll (FR) Attachment is designed primarily to facilitate uniform feeding of grains and ear corn as well as to simplify feeding hay. It is available (factory installed) on one of the Mixer models which has a Self-contained Hydraulic System. This Attachment is composed of an Infeed Trough and a Hydraulic Motor-driven Feed Roll attached directly to the Mill Inlet. The Infeed Hopper is designed to pivot down for feeding hay or pivot up and form a slope into the Feed Roll. Feed Roll height is adjustable through appropriate positioning of an Adjustable Chain linkage. A Push-to-Stop Bar is used to stop, start and regulate the speed of the Feed Roll and thus the feeding rate into the Mill Inlet.

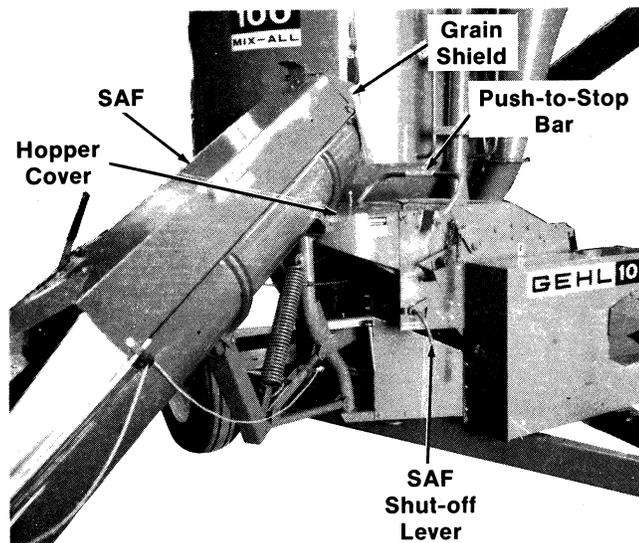


Fig. 6-12: SAF/FR Feeder Attachment

### Swinging Auger/Feed Roll Feeder (Fig. 6-12 & See Fig. 6-10)

The Swinging Auger/Feed Roll (SAFR) Attachment is a combination of both of the preceding Attachments. It is available (factory installed) on one of the Mixer models which has a Self-contained Hydraulic System. Functional

details are as individually described in the two preceding topics. Characteristics and features of the Swinging Auger Feeder section of the Attachment are exactly like the individual SAF Attachment. Basically, the only special feature of this Attachment is the provision for shutting-off the SAF section and operating the FR section separately. Both Hydraulic Motors are served by the same Flow Control Valve which serves to synchronize feeding speeds.

### Gravity Feeder (Fig. 6-13)

The Gravity Feeder (GF) Attachment is available on the MX100 Mixer model which has direct tractor-powered Hydraulic System and on the Mixer model which has a Self-contained Hydraulics System. The Gravity Feeder is a stationary Hopper unit with **NO** moving or running parts. Material to be ground or mixed is dumped into the Hopper and slides directly into the Mill Inlet. The amount of material flow into the Mill Inlet is controlled by appropriate positioning of an adjustable Shutter Plate. A Rubber Splashplate is also provided to prevent the material which is being fed from being kicked out by the Mill Cylinder.



**WARNING: Keep hands out of the area of the Mill Inlet.**

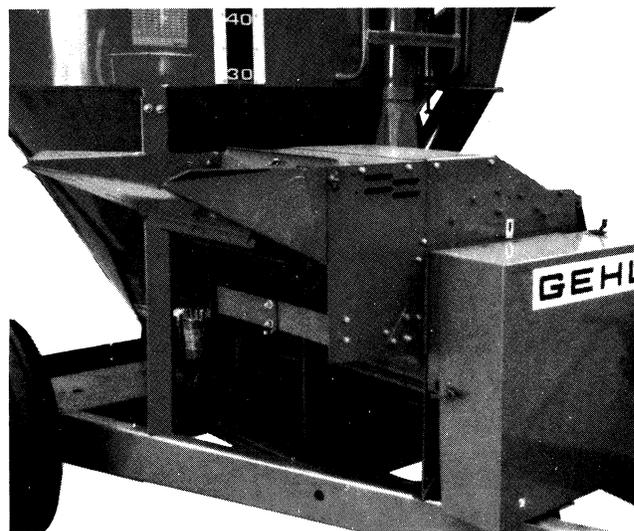


Fig. 6-13: Gravity Feeder (GF) Attachment

### OVERLOAD PROTECTION

#### Main Drive (See Fig. 6-2)

The MX100 is furnished with a 5/16 x 1 Grade 5 Shear Bolt protecting the Auger/Transmission (Main) Drive Shaft and Transmission and a 1/4 x 1 Grade 5 Shear Bolt protecting the Intake Auger. Whenever the Auger/Transmission (Main) Drive fails, the Intake Auger will also stop turning.

**NOTE: BE SURE to stop all Mixer operation IMMEDIATELY when Shear Bolt failure is detected.**

The 8 "A" Section Drive Belt, which links the Mill/Blower Driven Sheave to the Drive Sheave, provides overload protection for the Mill and Blower components. If plugging or breakdown occurs in the Mill or Blower areas, the Mill/Blower Drive Belt will slip and stop turning the Mill/Blower Drive Shaft.

**NOTE: BE SURE to stop all Mixer operation IMMEDIATELY when Drive Belt slipping is detected.**

On Mixers with Self-contained Hydraulic Systems, the Drive Belts, which link the Sheave on the Hydraulic Pump to the Sheave on the end of the Main Drive Shaft, provide overload protection for the Hydraulic Pump.

**NOTE: BE SURE to stop all Mixer operation IMMEDIATELY when Drive Belt slipping is detected.**

### Hydraulic System

The Pressure Relief Valve on the output side of the Hydraulic Pump, for Mixer models with Self-contained Hydraulics Systems, provides overload protection for the entire Hydraulic System. The Relief Valve will permit pressure build-up to a factory set value of 2000 PSI. The Mixer Hydraulic System operating pressure range is normally 200 to 1500 PSI. Thus, if one of the Hydraulic Motors is stopped by a malfunction of the component it is driving, the pressure will build-up to the factory set cut-off pressure and the Relief Valve will automatically stop flow throughout the entire Hydraulic System. After the problem is corrected, the Relief Valve will automatically reset and restore oil flow to the System.

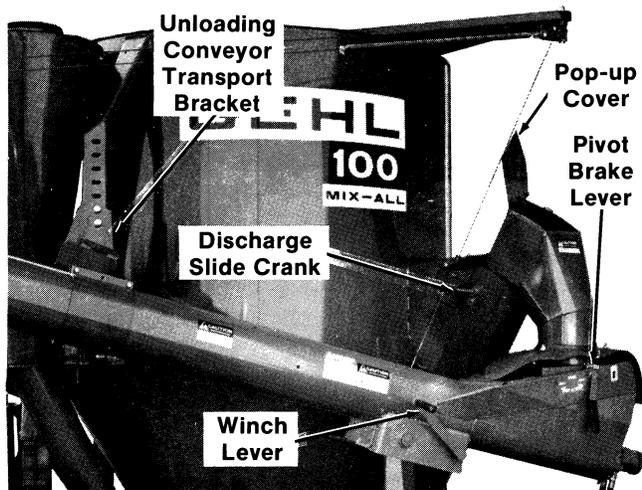


Fig. 6-14

### Discharge Conveyor (Fig. 6-14)

A Pop-up Cover is provided on the top end of the Discharge Conveyor to protect the Discharge Auger in case of a malfunction in the Unloading Conveyor Auger which might cause a material build-up in the junction between the two Conveyors. If material at the junction backs-up, the Pop-up Cover will spring open.

**NOTE: Shut the On-Off control off IMMEDIATELY if the Pop-up Cover is forced open.**

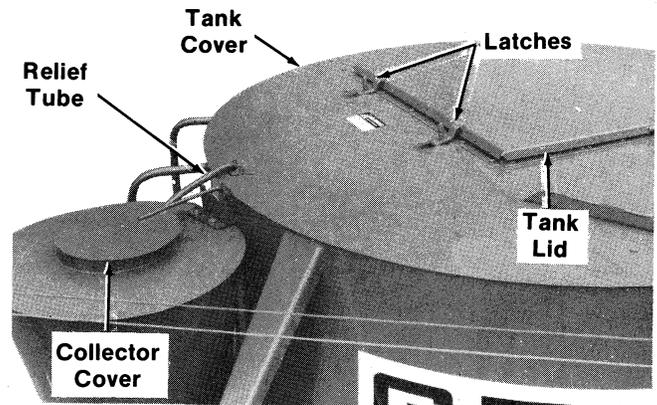


Fig. 6-15

### Tank Lid (Fig. 6-15)

The Lid on top of the Mixing Tank has spring-loaded hinges and Latches which enable it to be forced open by overflowing material inside the Tank. If the Tank accidentally becomes filled beyond design capacity, the Lid will open, allowing the ground feed to spill-out, and prevent damage to the Auger and Drive components.

**NOTE: BE SURE to stop all Mixer operation IMMEDIATELY if the Tank Lid is forced open. BE SURE the Tank Lid is closed and the Latches and Hinges are properly adjusted before starting to grind or mix.**

### UNLOADING CONVEYOR

(Fig. 6-16 & See Figs. 6-7, 6-8 & 6-14)



**CAUTION: DO NOT attempt to lower the Unloading Conveyor all the way to the ground. By design, the Conveyor is intended to be lowered only to a point at or slightly below the horizontal. When the Conveyor is moved to the rest position, avoid rotating the Winch beyond that point at which the Tensioner Spring is completely relaxed. If the Winch is rotated beyond that point, the Cable will unravel from the Winch Drum. Then, when the Winch is rotated in the opposite direction, it can become entangled and cause the Cable to bind and wear-out which, in turn, can cause the Conveyor to jump or otherwise fall suddenly while it is being lowered or raised.**

The Unloading Conveyor is a Hydraulic Motor-driven Auger which receives ground feed from the Discharge Conveyor and unloads it to any point (as directed) within a 270° horizontal arc and 52° vertical arc from the point of pivot. The length of the Unloading Conveyor is approximately 12 feet, without any Extensions. By adding one of the accessory Extensions, the length can be increased to one of the amounts shown in the illustration. Refer to the Optional Features & Accessories chapter for ordering information.

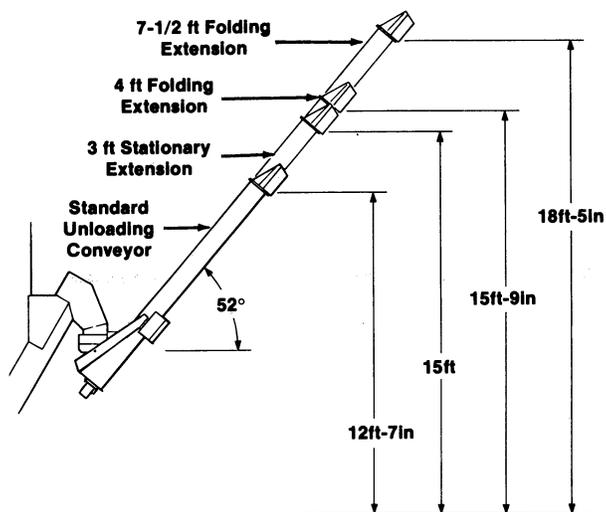


Fig. 6-16

A Friction Brake mechanism is provided to adjust and hold the horizontal position of the Unloading Conveyor. A Crank-type Winch mechanism is used to adjust and hold the vertical position of the Conveyor. A Transport Lock mechanism is provided for holding the Unloading Conveyor in position against the Mixing Tank Support Brace during transport.



**WARNING: Careful inspection and proper routine maintenance of all components related to the Brake, Winch and Transport Lock mechanisms MUST be carried-out to insure proper operation and prevent possible injury due to malfunction. Refer to the Operation and Service chapters for additional information.**

#### UNPLUGGING



**WARNING: When any part of the unit becomes plugged, BE SURE to exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12) BEFORE proceeding to remove the plugging material.**

**NOTE: Whenever plugging is detected, stop Mixer operation IMMEDIATELY.**

#### Mill, Mill Drive and Mixing Tank

Plugging of the Mill and/or the Mill Inlet can result from overfeeding, slipping of the Mill/ Blower Drive Belt, shearing of either the Auger/Transmission (Main) Shear Device or the Intake Auger Shear Device, or abnormal crop conditions. Abnormal crop conditions would include crops with high moisture content or crops that are too light or bulky which would **NOT** feed properly.

#### Overfeeding

If plugging develops from overfeeding, the tractor will choke down and even stall. To remove the plugging proceed as follows:

1. Shut the tractor off and disengage the PTO.

2. Shut off the Feeder Attachment.
3. Open the Mill Screen Cover, remove the Screen and allow the material to fall down into the Intake Auger.
4. Disengage the Mill/ Blower Drive Sheave Pin.
5. Start the tractor and engage the PTO at slow speed to convey the material into the Tank.
6. Shut the tractor off and disengage the PTO.
7. Replace the Mill Screen Cover, engage the Mill/ Blower Drive Sheave Pin and restart the tractor and PTO.
8. Bring the Mill up to proper running speed and restart the Feeder Attachment. If the condition of the crop remains the same, **BE SURE** to reduce the feeding speed to avoid overfeeding.

#### Mill/Blower Drive Belt Slippage

If plugging develops from Mill/ Blower Drive Belt slippage, the Mill and Blower will gradually slow down without much reduction in tractor PTO speed. To remove the plugging, follow steps 1 thru 6 above. After the plugging has been removed, readjust the Drive Belt tension (see Adjustment chapter), replace the Mill Screen Cover, engage the Mill/ Blower Drive Sheave Pin, restart the tractor and PTO, bring the Mill Cylinder up to proper operating speed and resume grinding.

#### Shear Devices

Blockage in the Mixer or component failure will cause the tractor to choke down or stall. Shut down the tractor and Mixer **IMMEDIATELY** and proceed as follows:



**WARNING: BEFORE attempting to unplug the Mill Inlet or Attachment Hopper, BE SURE to exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12).**

1. After exercising the **MANDATORY SAFETY SHUTDOWN PROCEDURE**, open the Mill Screen Cover and clean-out material in the Mill and the Cylinder areas.
2. Check the Auger/Transmission (Main) Shear Bolt if it has sheared. Replace the Shear Bolt per details in this chapter. Rotate the Mill Drive Sheave, by hand, to turn the Sprocket and Intake Auger. If Sprocket turns but the Intake Auger does **NOT** turn, the Intake Auger Shear Bolt has failed. Refer likewise to information in this chapter for Shear Bolt replacement information.
3. After the Shear Bolts have been replaced, attempt to rotate the entire assembly. If rotation, in either direction, is **NOT** possible, proceed to step 4. If the Sprocket and the Intake Auger turn but the Mixing Auger does **NOT**, proceed to step 5.

4. To remove plugging material in the Mixing Tank Inlet, the Intake Auger will have to be removed. Details for Mixing Auger removal are provided in the Service chapter.
5. Remove the Rear Chain Guard and check for a broken Chain, Drive Sprocket or Driven Sprocket or for sheared Keys which hold the Sprockets. Replace any damaged parts.
6. If the items in step 5 are **NOT** at fault, remove the Transmission Drive Chain and attempt to rotate the Transmission Input Shaft clockwise. If the Input Shaft turns freely, internal Transmission component failure is probable. Remove the Transmission and take it to your nearest dealer for repair.

After the cause of the plugging has been corrected, restore all components, Guards and Shields **BEFORE** resuming operation.

#### Crop Conditions

Abnormal crop conditions prevent smooth flow of the crop into the Mill Inlet. If plugging occurs in the Mill Inlet or the Attachment Hopper, the Mixer will continue to operate with **NO** apparent sign of slow-down, Cylinder slow-down or tractor loading.



**WARNING: BEFORE attempting to unplug the Mill Inlet or Attachment Hopper, BE SURE to exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12).**

Proceed to determine and correct the plugging before resuming grinding.



**WARNING: Keep hands out of the area of the Attachment Hopper while it is operating.**

**NOTE:** In general, problems of bridging in the Mill Inlet opening, due to feeding very light crops or crops with a high moisture content, can be greatly reduced when the Mixer is equipped with a Feed Roll Attachment.

After the cause of the plugging is corrected, resume feeding into the Mill at a slower rate until proper flow is obtained. Since crop condition will most likely remain the same, the infeed rate will have to be adjusted accordingly.

#### Blower Inlet & Outlet

Plugging in the Blower Inlet or Outlet will be apparent by the visible absence of dust particles in the air around the top of the Collector, the visible presence of dust in the Mill Throat area and a greatly reduced air discharge felt at the top of the Collector. If plugging is detected, proceed as follows:

**NOTE: Collector Cover MUST always be open while grinding.**

1. Exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12)**.
2. Open the Mill Screen Cover and remove the Screen.
3. Inspect the Blower Inlet opening, remove any build-up and probe into the opening all the way up into the Blower.
4. After the plugging has been removed, replace the Screen, close and latch the Cover and attempt to resume grinding.
5. If there is still **NO** air coming out the top of the Collector, the plugging is in the discharge side (Blower Outlet). Proceed to step 6.
6. If **NO** air is being discharged out the top of the Collector, remove and clean out the Pipe connected to the Blower Outlet. **BE SURE** to exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12)** before attempting to remove the plugging material.

#### Collector

If the Collector or its discharge pipe into the Intake Auger is plugged, an abnormal amount of heavier dust particles and even ground feed will be discharged from the top of the Collector. Proceed as follows:

1. Open the Concentrate Hopper and, with the PTO running, observe that the Intake Auger is turning. If it is **NOT**, refer to the Shear Devices subtopic under Unplugging, on the previous page.
2. If the Intake Auger is turning, stop the tractor and shut off the PTO.
3. Climb the Ladder and check the inside of the Collector. If a build-up is noted, remove the Discharge Pipe and dislodge the plugging material.
4. Replace the components after the plugging has been removed and resume operation.

## Air Relief Tube

If the Tank Lid opens as a result of excessive pressure (inside the Tank) the Air Relief Tube should be checked for plugging. Remove the Tube from the top of the Tank, unplug it and replace it.

## Discharge Conveyor

The Discharge Conveyor could possibly become plugged by tough and bulky material wedging between the Auger and Trough or by water forming into ice if left standing for any length of time. To clear the plugging material proceed as follows:

1. Exercise the **MANDATORY SAFETY SHUT-DOWN PROCEDURE (page 12)**.
2. Shut off the **ON-OFF** Valve and open the Pop-up Cover.
3. Clean out any excess material (if present) and attempt to turn the Auger with a wrench until the Auger moves more freely.
4. If the Auger can be rotated, restore tractor operation and restart unloading. If the Auger can **NOT** be rotated, the Auger **MUST** be removed through the Pop-up Cover opening. Proceed to step 5.
5. Remove the Nuts from the (4) Bolts which secure the Motor Mounting Plate to the Discharge Conveyor. Then, move the Plate and Motor back (an inch or two) and loosen the Square Head Set Screw which secures the Motor and Auger. Then, pry the Auger away from the Motor and pull the Auger out.
6. After the plugging material has been removed, replace the Auger and reinstall the Motor and resume unloading.

## Unloading Conveyor

The Unloading Conveyor could possibly become plugged by tough and bulky material wedging between the Auger and Trough or by water forming into ice if left standing for any length of time. Another possible cause is operating the Conveyor at too steep an angle (for the type of material being unloaded) or because of improper installation of the Conveyor Extension if being used. To unplug the Unloading Conveyor, proceed as follows:

1. Exercise the **MANDATORY SAFETY SHUT-DOWN PROCEDURE (page 12)**.
2. Shut off the **ON-OFF** Valve.
3. Attempt to turn the Auger with a wrench until it moves freely.
4. If the Auger can be turned, restore tractor operation and resume unloading. If it can **NOT** be turned, proceed to step 5 after the tractor is shut off and the PTO is disengaged.
5. Remove the Nuts from the (4) Bolts which secure the Motor Mounting Plate to the Unloading Conveyor. Then, move the Plate and Motor back (an inch or two) and loosen the Square Head Set Screw which secures the Motor and Auger. Then, pry the Auger away from the Motor and remove the Auger.
6. After the plugging material has been removed, replace the Auger and reinstall the Motor and resume unloading.

**NOTE:** If the plugging is due to an improperly attached Extension, the installation should be checked and corrected before attempting to resume unloading.

# CHAPTER 7

## ADJUSTMENTS



**CAUTION: BEFORE proceeding to perform any adjustments on this unit, exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12).**

### DISCHARGE CHUTE CRANK TENSION (Fig. 7-1)

The Sliding Plate over the Discharge Chute opening in the Mixing Tank is manually repositioned by a Crank-controlled Sprocket. Slotted mounting holes are used to attach the Crank control mechanism into its housing. By loosening the (4) attaching bolts, the Crank control mechanism can be repositioned to adjust the amount of pressure on the Sliding Plate. The Crank control mechanism should be adjusted so that it can be turned without excessive force yet it be kept tight enough to hold the adjusted position of the Sliding Plate. Access to the nuts is obtained by lifting up the Rubber Flap.

### FEEDER ATTACHMENTS

**NOTE:** The following information, although listed under specific Attachment topics, should be understood to apply also to the appropriate sections of the combination Swinging Auger/Feed Roll Attachment.

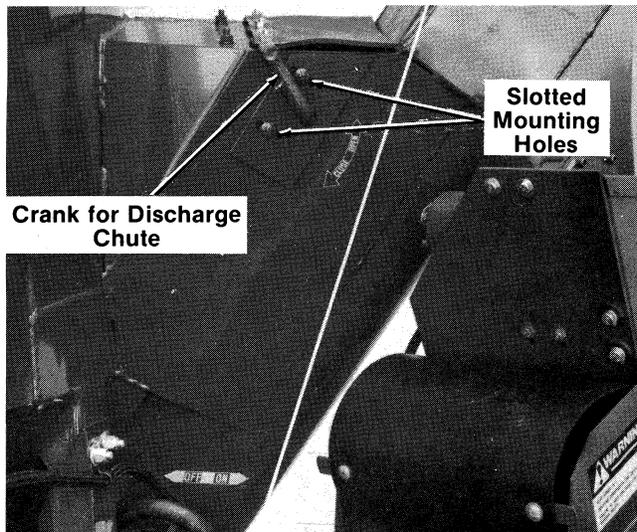


Fig. 7-1: Discharge Chute Crank Mechanism

### SAF Brake Tension (Fig. 7-2)

A Brake Lever is used to adjust and hold the horizontal position of the Swinging Auger Feeder Attachment. The Brake mechanism consists of a cam-type Lever-activated mechanism which is linked to a Clamping Band around the Attachment Pivot. An Adjustment Bolt, on the opposite end of the Lever, can be turned in or out to respectively tighten or loosen the Clamping Band around the Pivot. The Bolt should be properly adjusted so that, when the Brake Lever is at a right angle to the Pivot,

there is **NO** binding or restriction when the Auger is swung. It should likewise be adjusted so that, when the Brake Lever is moved straight-out (perpendicular) to the Pivot, there is tight clamping around the Pivot and the Auger is firmly held in place.

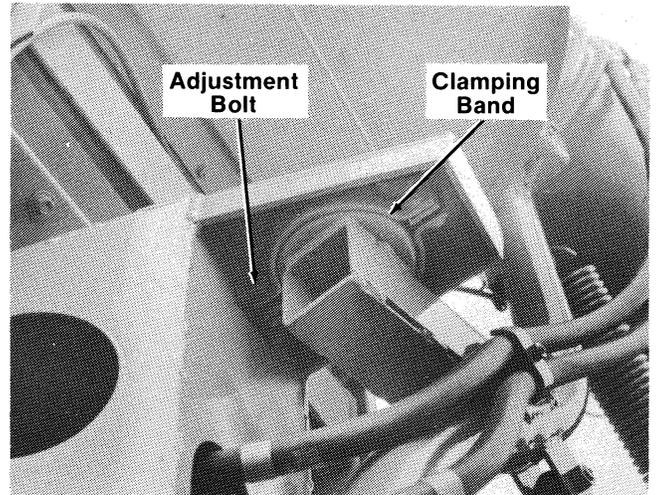


Fig. 7-2: SAF Brake Adjustment

### SAF Counterbalance Spring Tension (Figs. 7-3 & 7-4)

The Swinging Auger Feeder Attachment is Spring Counterbalanced to facilitate lifting the Attachment. Several holes are provided in the Spring Attachment Bracket to select an appropriate Spring tension. The Spring should be hooked in the hole which provides enough tension to conveniently raise the Attachment yet still allows the Attachment to remain stationary when the Infeed Hopper end is lowered to the ground.



**CAUTION: BE SURE to use care when adjusting Spring tension so as to avoid pinching fingers in the Spring Coils.**

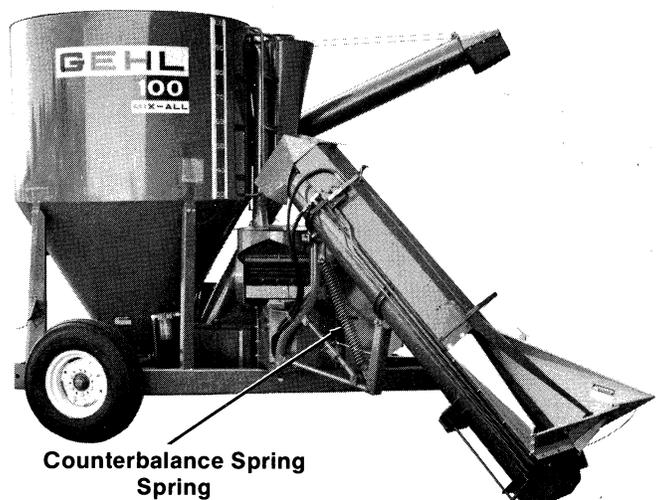
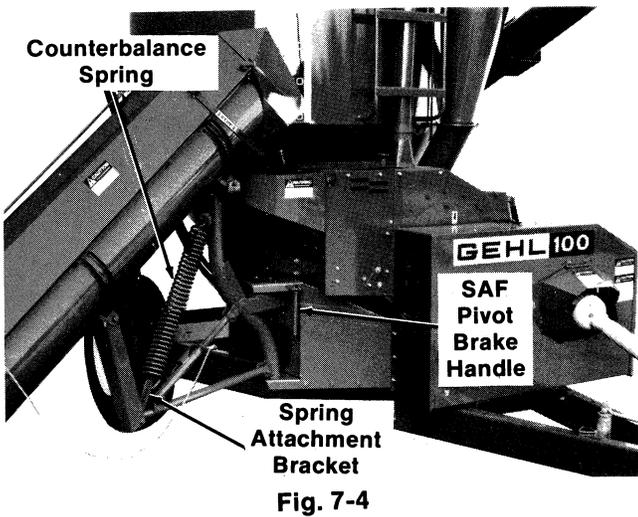


Fig. 7-3



### Feed Roll Height (Fig. 7-5)

An Adjustment Chain is provided for adjusting the height of the Feed Roll Attachment. By appropriate positioning of the Chain, the lower limit of travel for the Feed Roll can be adjusted for different materials to be fed into the Mill. The Feed Roll should be set all the way down (minimum gap) for feeding hay or set half-way up for feeding cob corn, grains or shelled corn.



**WARNING:** Keep hands out of the Feed Roll area when operating this Attachment.

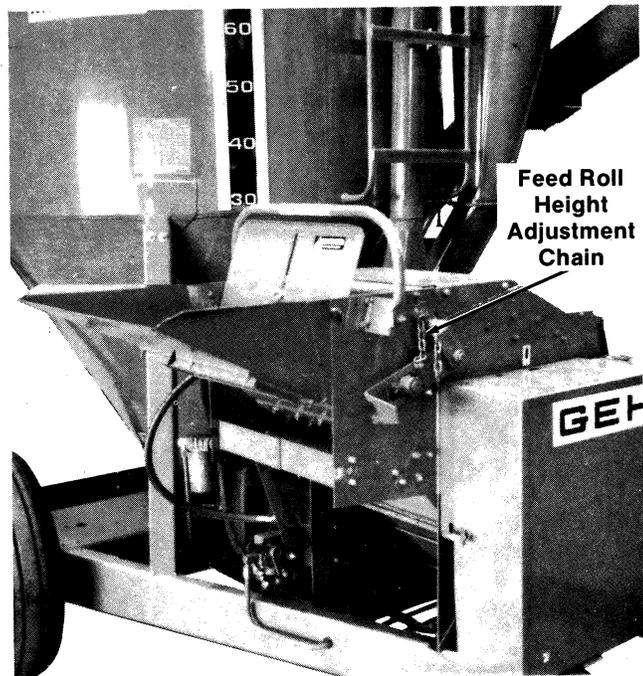


Fig. 7-5

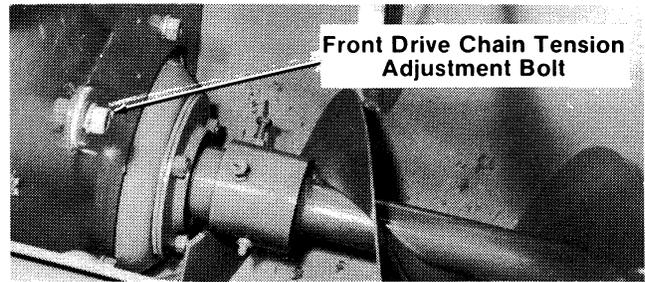


Fig. 7-6: Tension Adjustment Bolt Accessible Through Mill

### FRONT DRIVE CHAIN (Figs. 7-6 & 7-7)

The Auger/Transmission (Main) Drive Shaft is driven by a Sprocket which is linked by the Front Drive Chain to a Sprocket on the Main Drive Shaft. Front Chain tension is adjusted with an Idler attached to a pivoting Bracket. Access to the Bolt which adjusts the position of the pivoting Bracket is gained by opening the Mill Screen Cover and removing the Screen. Front Chain tension can be checked by opening the large Front Shield. Chain tension should be adjusted and maintained at a 1/4" deflection on the strand of Chain opposite the Idler.

**NOTE:** Front Chain tension should be checked on a routine basis and properly adjusted to prevent accelerated wear and excessive noise.

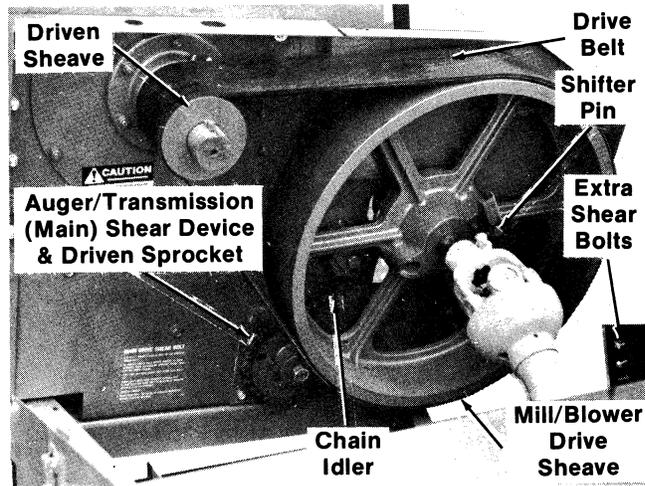
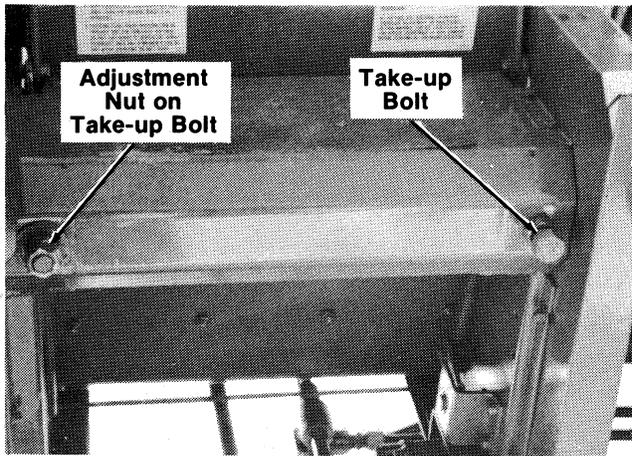


Fig. 7-7

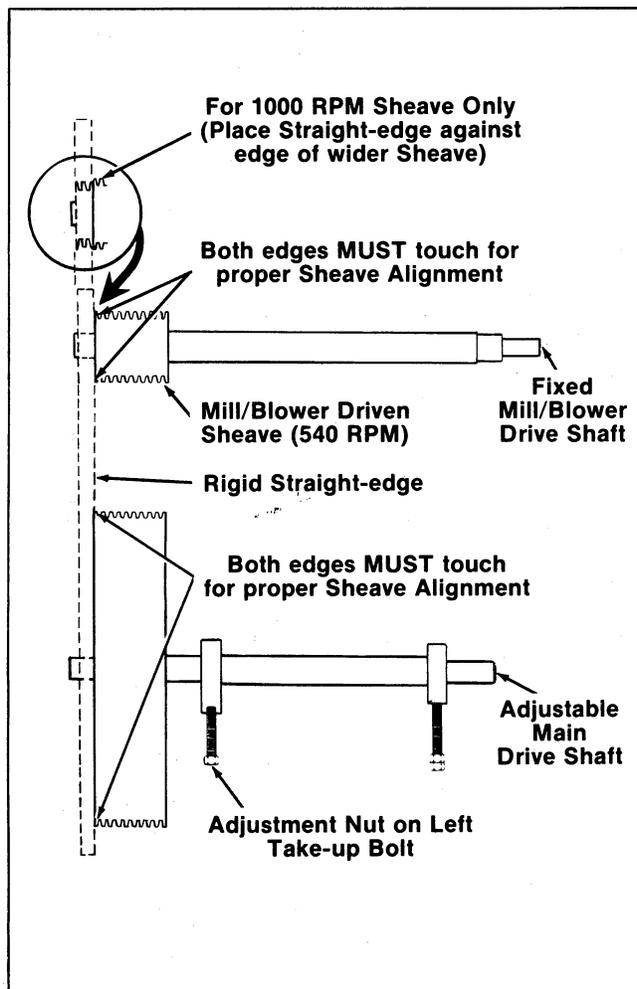
### MILL/BLOWER DRIVE (Figs. 7-7 & 7-8)

The Mill/Blower Drive Sheave is linked by an 8 "A" Section Banded Drive Belt to the Mill/Blower Driven Sheave which turns the Mill/Blower Drive Shaft. Take-up Bolts are provided to align the Drive Sheave with the Driven Sheave as well as to adjust Drive Belt tension. Proper alignment of the Sheaves is obtained when both the Main Drive and the Mill/Blower Drive Shafts are parallel and also when the edges of both Sheaves are in alignment with each other. Proper Belt tension is measured by obtaining a 3/8" deflection of the Belt while applying a 60 lb pressure on the Belt mid-way between the Sheaves.



**Fig. 7-8: Main Drive Shaft Adjustment for Belt Tension & Sheave Alignment**

**NOTE:** A new Drive Belt should be adjusted for an initial tension of 3/8" deflection with an applied pressure of 80 lb. Refer to the Service chapter of this manual for new Belt installation procedures.



**Fig. 7-9: Sheave Alignment Detail**

**Sheave Alignment (Fig. 7-9)**

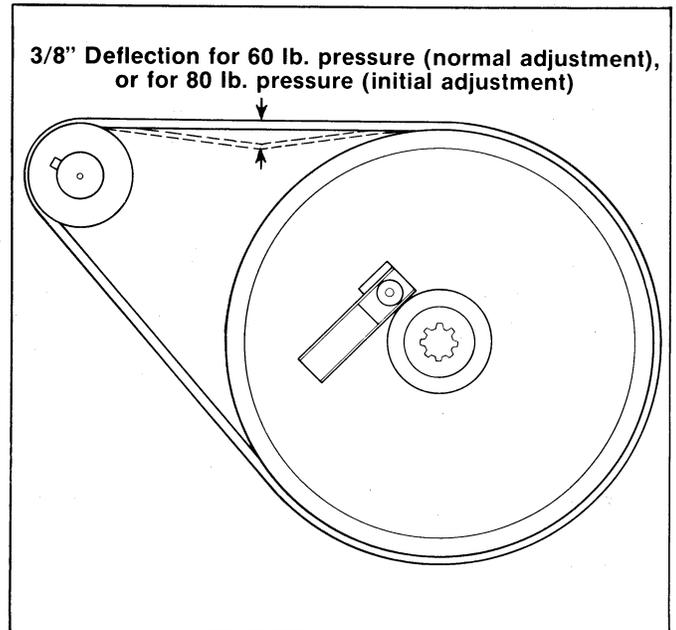
To align the Mill/Blower Drive Sheave with the Driven Sheave, proceed as follows:

**NOTE:** BE SURE to release Front Drive Chain tension (by loosening the Idler) before proceeding.

1. Loosen the Lock Nuts on both Main Drive Shaft Take-up Bolts.
2. Place a long rigid straight-edge across the faces of both Sheaves to check alignment.

**NOTE:** The Driven Sheave for 1000 RPM Drives is 1-1/8" wider.

3. Adjust the Nut on the left Take-up Bolt to bring the Drive Sheave into alignment with the Driven Sheave.
4. After proper alignment is obtained, check and adjust Drive Belt tension.



**Fig. 7-10: Mill/Blower 8 "A" Section Drive Belt Tension**

**Belt Tension (Fig. 7-10)**

To adjust Mill/Blower Drive Belt tension, proceed as follows:

**NOTE:** BE SURE to release Front Drive Chain tension (by loosening the Idler) before proceeding.

1. Loosen the Lock Nuts on both Main Drive Take-up Bolts.
2. Check Belt tension initially by measuring the amount of Belt deflection, at the mid-way point between the Sheaves, while applying a 60 lb pressure at the mid-way point.

3. Adjust the Nut on the left Take-up Bolt clockwise to decrease deflection (increase tension) and adjust the Take-up Bolt on the right an equal number of turns counterclockwise to keep Drive Sheave in alignment with Driven Sheave. Adjust both sides until the deflection measures 3/8".
4. After proper tension is obtained, check for correct Sheave alignment, retighten the Lock Nuts on both Take-up Bolts and readjust Front Drive Chain tension.

### MILL SCREEN COVER LATCHES (Fig. 7-11)

Over-center Handle Latches are used to secure and maintain the Mill Screen Cover tightly closed while the Mill is being operated.

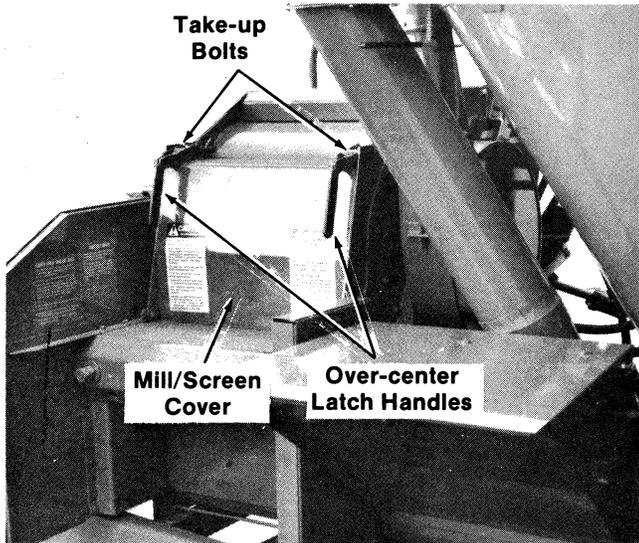


Fig. 7-11



**DANGER: NEVER attempt to operate the Mill unless the Mill Screen Cover is properly closed and latched. Cover MUST also be properly closed and latched before climbing onto Mixer.**

Take-up Bolts are built-into the Latches to adjust latching tension. This tension should be adjusted and maintained so that some force has to be applied on the Handles to unlock them. Both Take-up Bolts should be adjusted equally and locked with loops in horizontal positions.

### TANK LID (Fig. 7-12)

The Tank Lid on top of the Mixing Tank is designed to be self-unlatching in the event that the Mixing Tank accidentally becomes overfilled. The Latching Handles should be properly adjusted to maintain proper tension on the Lid to keep it closed and weather-tight but to still allow it to be forced-open from the inside of the Tank by overflowing material. Proper Latch adjustment is obtained when the Latch Handle can be pulled straight up approximately 1/2" which completely compresses the Spring.

**NOTE: The Latch Springs should NEVER be completely compressed.**

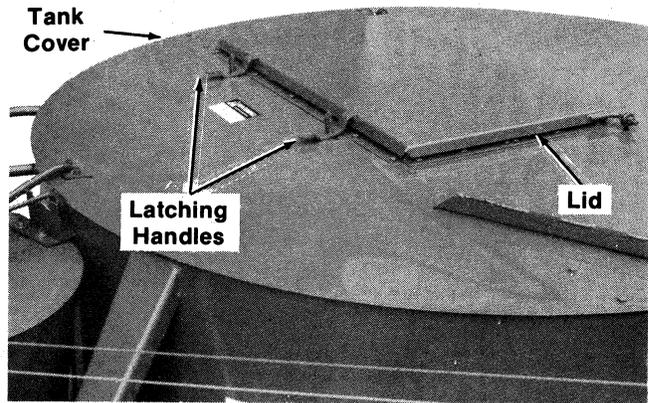


Fig. 7-12

### TRANSMISSION DRIVE (REAR) DRIVE CHAIN (Fig. 7-13)

The Transmission Output Shaft fits directly into the Mixing Auger Shaft. The Transmission Input Sprocket is linked by the Rear Drive Chain to a Sprocket on the end of the Auger/Transmission (Main) Drive Shaft. Chain tension can be adjusted by appropriate positioning of an Idler Sprocket which is attached to an Adjustable Bracket. Access to the Idler and Bracket is obtained by removing the Guard over the Rear Chain. Chain tension should be adjusted and maintained at a 1/4" deflection on the strand of Chain opposite the Idler Sprocket.

**NOTE: Rear Chain tension should be checked on a routine basis and properly adjusted to prevent accelerated wear and excessive noise.**

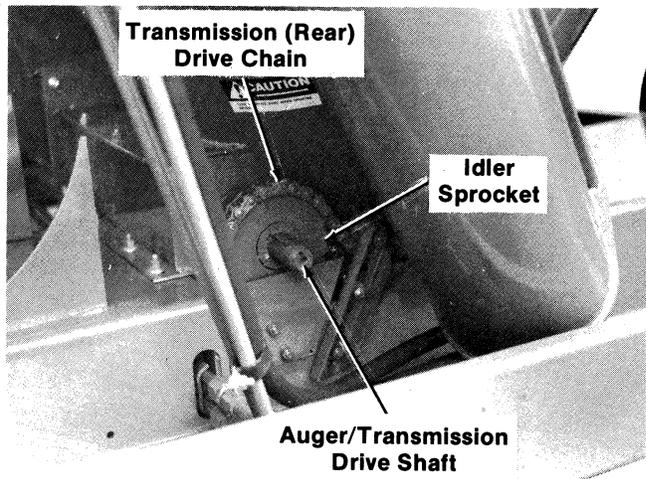


Fig. 7-13: Transmission Drive Chain (with Guard Removed)

## UNLOADING CONVEYOR

### Brake Tension (Fig. 7-14)

The Brake Lever is provided to adjust and hold the horizontal position of the Unloading Conveyor. A Decal is also provided to show the positions of the Lever for both engagement and disengagements. The Brake consists of a Cam-type Lever-activated mechanism which is rotated into contact with a Brake Shoe assembly underneath the Conveyor Pivot Flange. The Brake Shoe can be repositioned, when necessary, to increase or decrease the amount of Lever rotation necessary to lock the position of the Conveyor Housing.

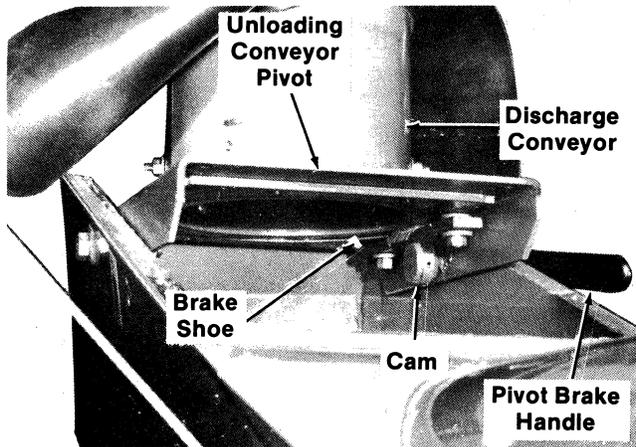


Fig. 7-14

**NOTE:** In order for the Brake Mechanism to function properly, the bottom side of the Discharge Spout Flange **MUST** be checked and kept clean of grease and dirt.

The Brake Shoe is designed with a sloped cutout directly below the Brake Pad and above the Cam. When the Brake Shoe is new, the Shoe is secured at a position where the deepest portion of the cutout is above the Cam and a minimum clearance is between the vertical face of the cutout and the Cam. After this Shoe position has been established, the CB, with the two thick Washers **MUST** be completely tightened and the CB with the one thick Washer **MUST** be secured just enough to prevent side to side Shoe movement; do **NOT** overtighten the CB with one thick Washer as this will cause binding and prevent Brake function. With the two CB properly secured, the Brake should be disengaged, with the Handle in the 6 o'clock position and, the Brake should fully engage when the Handle is moved to the 10 or 2 o'clock positions. Repositioning the Shoe and resecuring the two CB may have to be repeated several times to obtain the correct Brake Mechanism function. After proper adjustment is obtained, **BE SURE** to check Unloading Conveyor pivoting with the Brakes unlocked to check for freedom of movement.

**NOTE:** Over a period of regular use and normal operation, the Brake Shoe will require repositioning (towards the shallower portion of the cutout) to restore correct Brake Mechanism function and to compensate for normal Brake Pad wear.

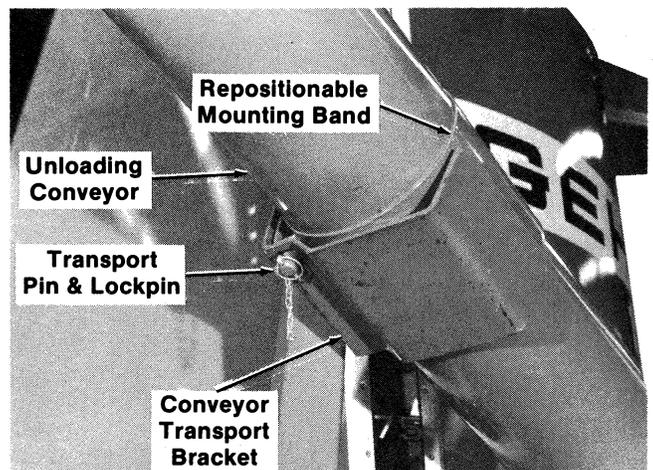


Fig. 7-15

### Transport Lock Mechanism (Fig.s 7-15 & 7-16)

The Unloading Conveyor **MUST** always be moved to and locked against the Tank Support Brace before the Mixer is transported. The Transport Lock Mechanism consists of a Conveyor Latch Pin on the Conveyor Lock assembly which is clamped to the Unloading Conveyor and a Conveyor Support assembly which is secured to the Tank Support Brace. When required to avoid interference with your tractor cab, the Conveyor Support assembly can be raised, by relocating it to another pair of holes in the Tank Support Brace. If the Support assembly is raised, the (2) Clamp mounting bolts will also have to be loosened and the Conveyor Lock assembly will have to be repositioned to obtain correct Latch Pin engagement.



**WARNING:**

**BE SURE to ALWAYS install and secure the Lockpin through the hole in the Latch Pin BEFORE transporting the Mixer.**



**DANGER: Avoid contact with overhead high power lines; ALWAYS maintain a safe clearance from all electrical wires.**

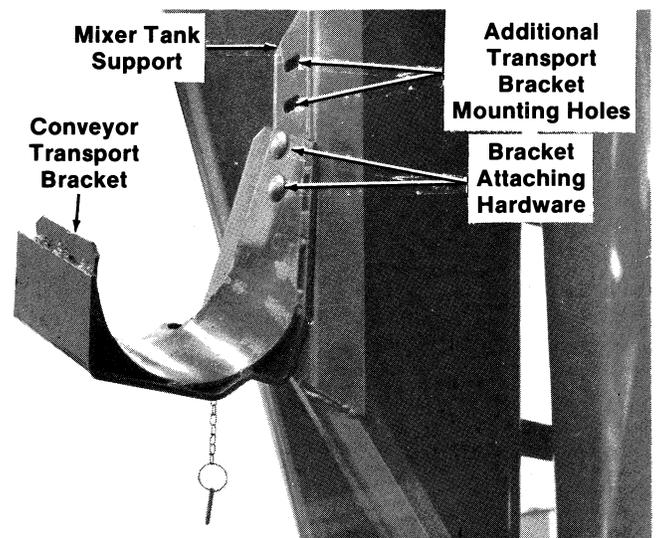


Fig. 7-16

## NOTES

# CHAPTER 8

## LUBRICATION

### GENERAL INFORMATION

 **CAUTION:** NEVER attempt to lubricate this unit when any part of the machine is in motion. ALWAYS BE SURE to exercise the MANDATORY SAFETY SHUTDOWN PROCEDURE (page 12) BEFORE proceeding to lubricate this equipment.

**NOTE:** Before starting the Mixer, make sure the entire unit is properly lubricated and that the Transmission and Hydraulic Reservoir (as applicable) are filled to the proper oil levels.

It is well to remember that a sufficient amount of oil and grease will prevent excessive part wear and early failure.

### TRANSMISSION OIL LEVEL

**NOTE:** On a routine basis after every 200 hours of operation, check the fluid level in the Mixer Transmission by removing the Plug located on the side of the Transmission. It requires 1-1/2 U.S. Pints (0.7 liters) of SAE #140 Gear Lube.

The Transmission should be checked occasionally for oil drips and dust accumulation around the Seals. Oil drips or dust accumulation indicate that Seals are leaking. Oil which is tan in color and foams excessively indicates that it has water present. Unless rust spots appear inside the Transmission, the fluid does NOT require replacement.

**NOTE:** Do NOT overfill the Transmission; only fill to the bottom of the Inspection Plug hole.

### OILING

Apply motor oil on all of the points listed at the intervals specified:

#### Lubricate Every 10 hours (or (Daily))

Rotating Telescoping PTO Drive Guard  
All Roller Drive Chains  
Unloading Conveyor Pulleys  
Winch Bearings

#### Lubricate Every 50 hours

Unloading Conveyor Transport Latch Pin  
SAF Transport Latch Pin (as applicable)  
Mill/Blower Shifter Pin

### HYDRAULIC RESERVOIR

The Hydraulic Reservoir on Mixers with Self-contained Hydraulic Systems should be operated at all times with at least 10 U.S. Gallons (38 liters) of Hydraulic Transmission Fluid.

**NOTE:** If it is NOT the intention to change oil to cover extreme temperature variations, use only Hydraulic Fluids which meet the following specification.

#### Viscosity Index

Temperature F (C)	-10 (-23)	100 (38)	210 (99)
Viscosity (SUS)	8000 Max.	145 - 175	47 Min.

In addition to any type of Hydraulic Transmission Fluid, the following brand names can be used:

Mobil DTE Medium - 5  
Texaco Rando - B  
Delta Lene Medium - 937  
Shell Turbo - 29

**NOTE:** For the one Mixer model with Tractor-powered Hydraulics System, follow recommendation in the tractor operator's manual for proper hydraulic system maintenance routines and replacement procedures.

### GREASING

**NOTE:** Grease all fittings on a prescribed basis, at the intervals of operation listed, before and after storing the unit, and as otherwise listed. Use a good grade of Lithium base grease.

Wipe dirt from the fittings before greasing to prevent the dirt from being forced into the Bearing or pivot. Replace any missing fittings, when noted. Force the grease into the fitting until it comes out at the Bearing Seal or at the Shaft. To minimize dirt build-up, avoid excessive greasing.

**NOTE:** In addition to the fittings, repack the Wheel Bearings at least once a year and the Mill/-Blower Drive Sheave Bearings every 500 hours.

## Grease Fitting Locations

### Grease Every 10 hours (or Daily)

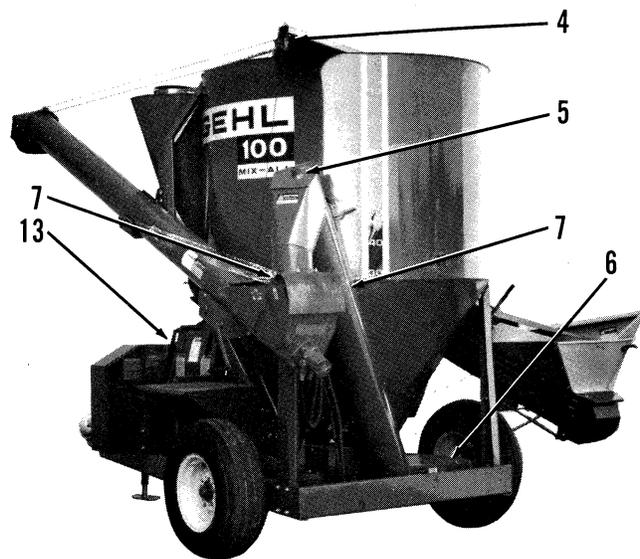
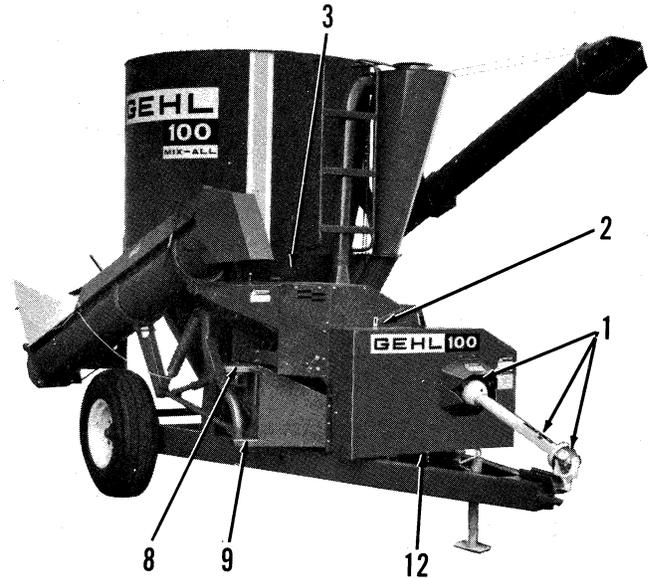
1. Telescoping Universal Drive (3 Places)
2. Front Mill Bearing
3. Rear Mill Bearing
4. Conveyor Pulley Pivot
5. Discharge Conveyor Pop-up Cover Bearing
6. Transmission Main Bearing
7. Unloading Conveyor Pivot (2 Places)

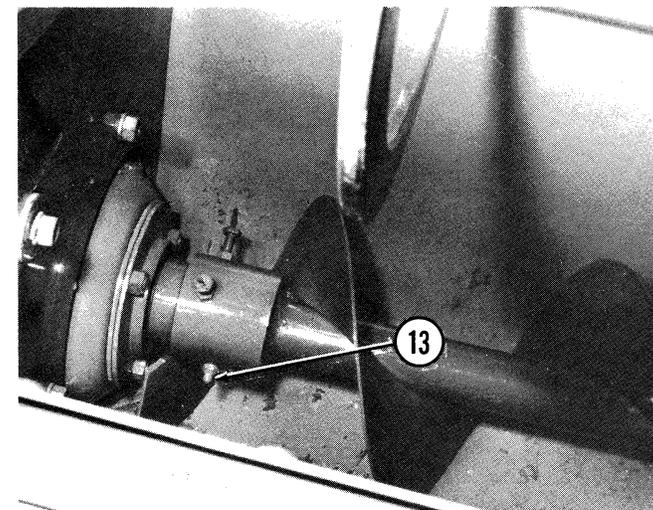
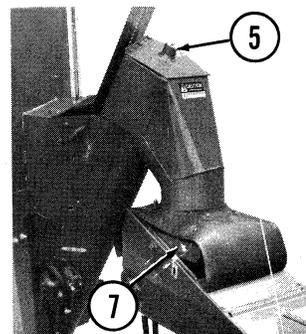
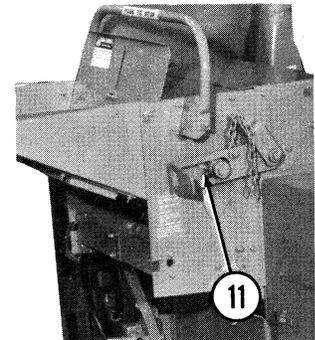
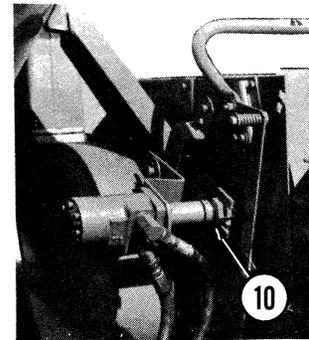
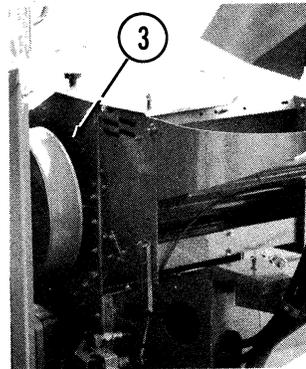
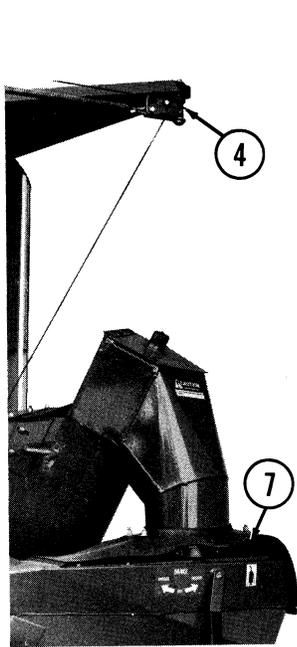
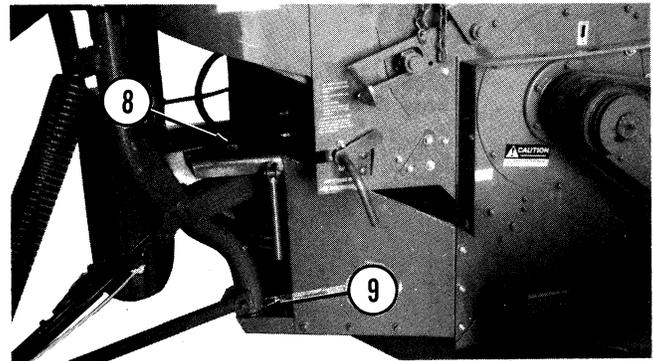
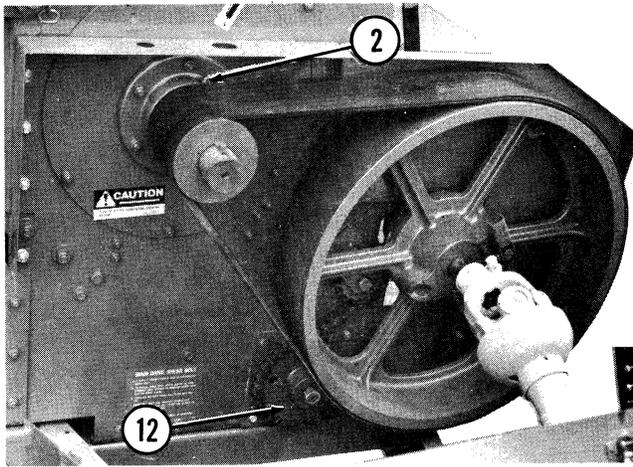
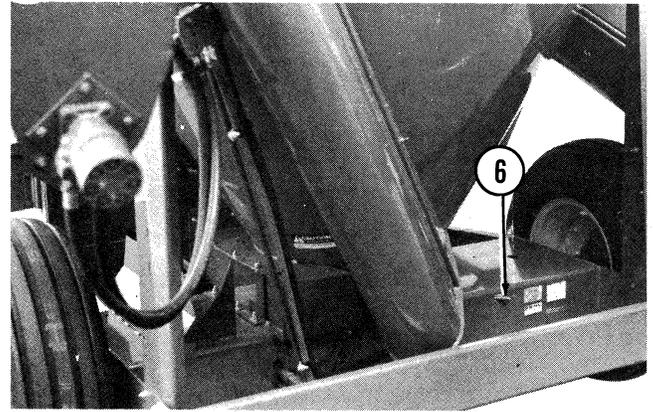
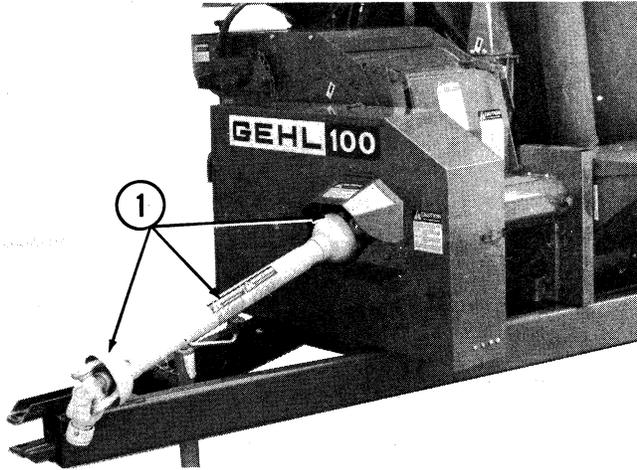
### Attachments - As Applicable

8. SAF Upper Pivot Bearing
9. SAF Lower Pivot Bearing
10. FR Left (Rear) Roller Bushing
11. FR Right (Front) Roller Bushing

### Grease Each Time a Bolt is Sheared or at Least Once a Year

12. Auger/Transmission (Main) Shear Device
13. Intake Auger Shear Device





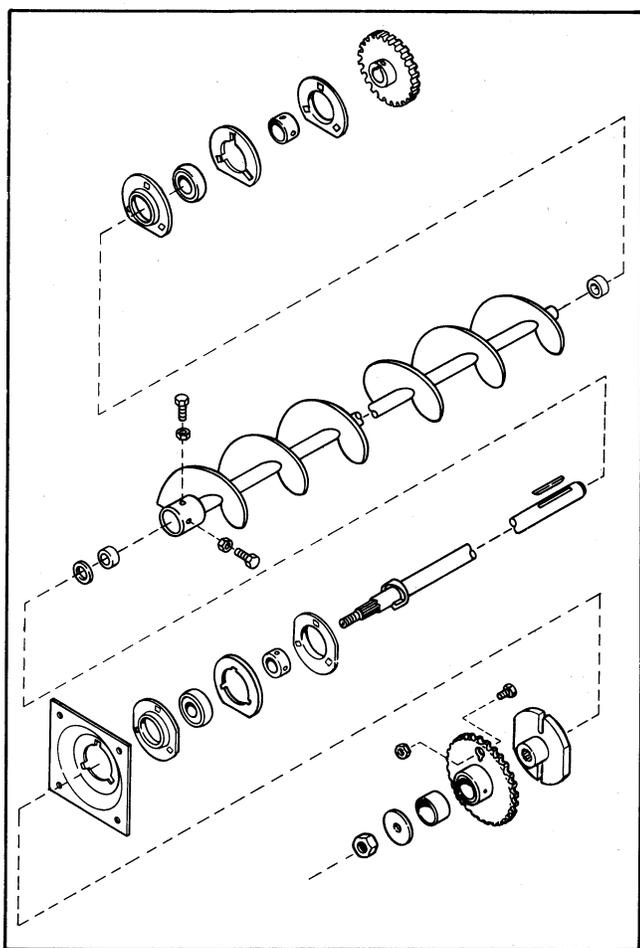
# CHAPTER 9

## SERVICE



**CAUTION:** BEFORE proceeding to perform all Service routines on this unit, exercise the **MANDATORY SAFETY SHUT-DOWN PROCEDURE** (page 12).

**NOTE:** The following information is referred to in both the Troubleshooting Guide and the Maintenance Schedule chapters of this manual. It should be understood that all services detailed in this chapter are Owner-Operator responsibilities. Where indicated, certain service routines should only be carried-out under the direction of an authorized GEHL equipment dealer.



**Fig. 9-1: Auger/Transmission Drive Exploded View**

### AUGER/TRANSMISSION (MAIN) DRIVE SHAFT & INTAKE AUGER (Fig. 9-1)

#### Removal

The following steps **MUST** be taken to remove the Auger/Transmission (Main) Drive Shaft & Intake Auger from the Mixer.

#### In the rear of the Mixer:

1. Loosen and remove the Transmission (Rear) Drive Chain Guard.
2. Release the Drive Chain Idler tension and remove the Chain.
3. Remove and retain the Key and Drive Sprocket from the end of the Auger/Transmission Drive Shaft.
4. Loosen, remove and retain the Set Collar.

#### In the front of the Mixer:

5. Open the large Front Guard. Remove the Guard by detaching the Hinges from the Mixer Frame.

**NOTE:** If the Mixer has a 1000 RPM Drive, proceed to step 6. If the Mixer has a 540 RPM Drive, it will be necessary to remove the Mill/Blower Drive Belt, to loosen the Main Drive Shaft Take-ups and to move the Mill/Blower Drive Sheave away to provide the necessary clearance for Drive Sprocket and Shear Plate removal as well as component replacement.

6. Release Idler tension and remove the Front Drive Chain.
7. Loosen and remove the Lock Nut, the Sprocket and the Shear Plate.
8. With the Bearing and Retainers loosened (but **NOT** removed), remove the Mill Bearing Cover by detaching the (4) corner fasteners.
9. After the Bearing Cover is removed, the Shaft and Auger assembly can be removed from the Mixer.
10. If one or the other component (Auger or Shaft) is being replaced, remove the Intake Auger Shear Bolt so that both parts can be separated.

#### Replacement

To replace the Shaft and Auger assembly, reverse the removal procedure. Preassemble the Auger and Shaft before attempting to replace them into the Mixer. Refer to the Shear Devices topic in this chapter for Shear Bolt replacement and adjustment information.

**NOTE:** Grease the fittings on the Shear Devices whenever they are replaced or when a bolt is replaced.

After the Shaft and Auger have been replaced and before replacing the Front Set Collar, **BE SURE** to rotate the assembly to insure freedom of movement and proper clearances. Make sure that the assembly is placed all the way into the Auger Housing to insure that, before the Shear Plate is replaced, the Shoulder of the Intake Auger Shear Device is tight against the Bearing Lock Collar.

### DISCHARGE CONVEYOR AUGER (Figs. 9-2 & 9-3)

The Discharge Conveyor Auger can be uncoupled from the Hydraulic Motor and removed through the Pop-up Cover end of the Conveyor. First, remove the Hose Clamp which secures the Hose which runs between the two Motors. The Clamp is located close to the Valve and should be removed to allow the Hose to be moved with the Motor. Next, remove the Nuts from the (4) Bolts which secure the Motor Mounting Plate to the bottom of the Conveyor. Then, move the Plate and Motor assembly back (an inch or two) and loosen the Square Head Set Screw which secures the Motor and Auger. Then, pry the Motor and Auger apart and provide a support for the Motor to rest on while the Auger is removed. To replace the Auger, reverse the removal procedure.

### HYDRAULIC FITTINGS

**NOTE:** The following information gives recommendations regarding Hydraulic Fittings. It is provided for the purpose of avoiding leaky connections and to prevent stripping threads and cracking a housing while tightening fittings.

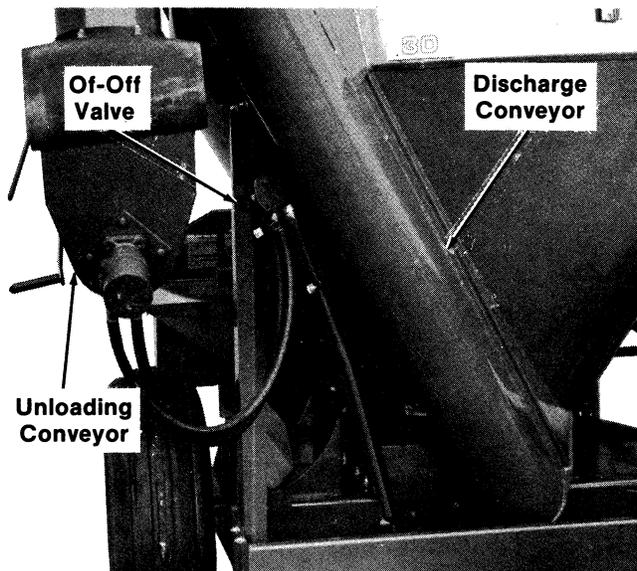


Fig. 9-2

Four types of fittings are used on the Mixer for making Hydraulic connections: National Tapered Thread Pipe Fittings, National Straight Thread Pipe Fittings, Male and Female JIC Fittings, and Straight and Angled O-ring Fittings.

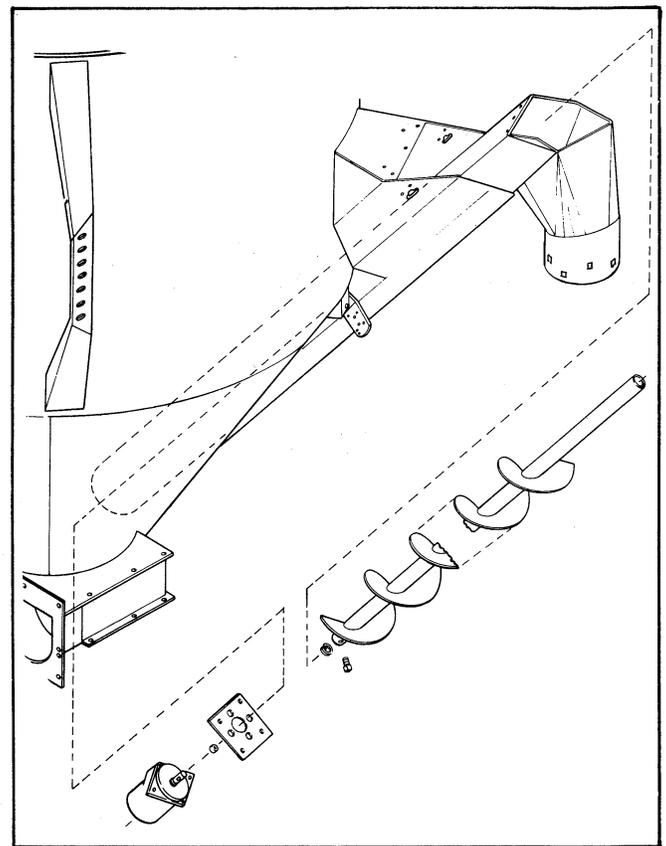


Fig. 9-3: Discharge Auger Exploded View

**NOTE:** Use thread sealant on all Tapered Thread Pipe Fittings. Properly apply the sealant to avoid getting it into the System.

**NOTE:** When making Male and Female JIC Fitting couplings, use a wrench on both Fittings.

**NOTE:** When installing Angled O-ring Fittings into Inlet or Outlet Ports, turn them in all the way (until they bottom-out) and then, back them out just enough to orient them in their appropriate directions. Use wrenches on both the Lock Nut and the Fittings when tightening the Lock Nut.

**NOTE:** Tighten Straight O-ring Fittings only as much as is needed to seal the O-ring.

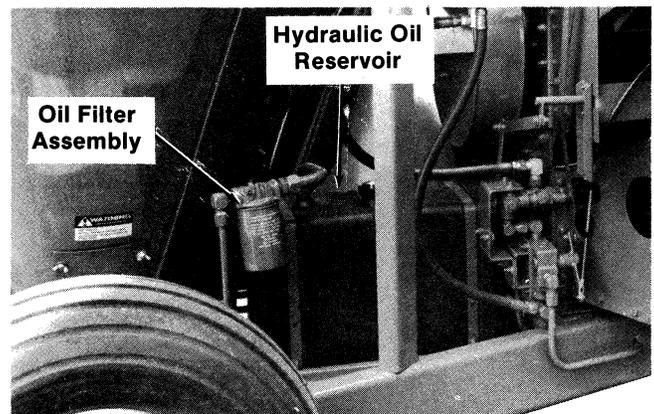
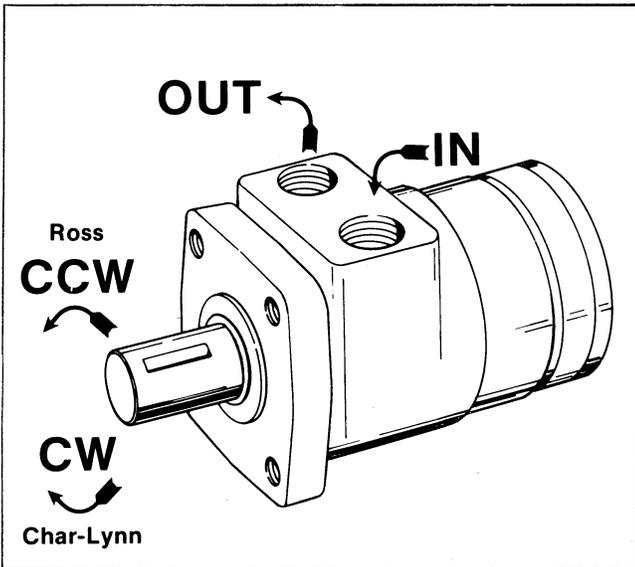


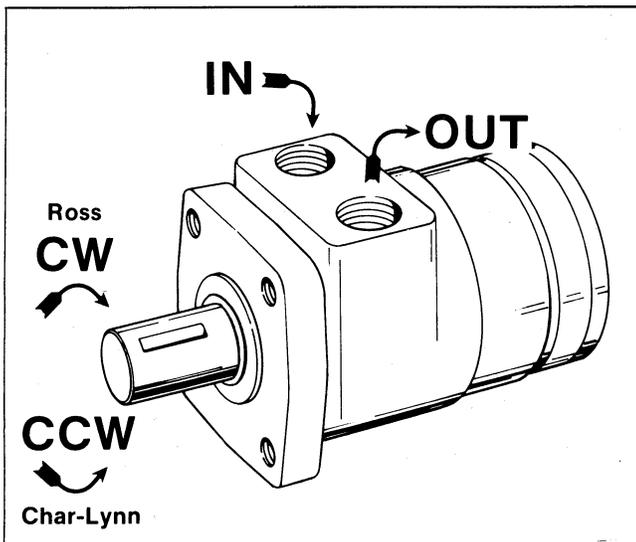
Fig. 9-4

## HYDRAULIC RESERVOIR & FILTER (Fig. 9-4)

Mixers with a Self-contained Hydraulic System have a 13 U.S. gallon Reservoir and a replaceable Oil Filter (GEHL part number 048959). Refer to the Lubrication chapter of this manual for Hydraulic System Oil recommendations. The Oil level should be checked on a routine basis every 50 hours of operation and maintained at a level of approximately 3" (76 mm) from the Filler Hole. **BE SURE** to avoid allowing dirt to get into the Reservoir. Replace the Oil Filter on a routine basis every 100 hours of operation, or sooner as required. To drain the Hydraulic Reservoir, the Hydraulic Line to the Pump **MUST** be removed. Use solvent to flush the Reservoir, if dirt accidentally gets into it.



**Fig. 9-5: Hydraulic Connections**  
**NOTE: Ross made for CCW rotation or Char-Lynn made for CW rotation**



**Fig. 9-6: Hydraulic Connections**  
**NOTE: Ross made for CW rotation or Char-Lynn made for CCW rotation**

## HYDRAULIC MOTORS (Figs. 9-5 & 9-6)

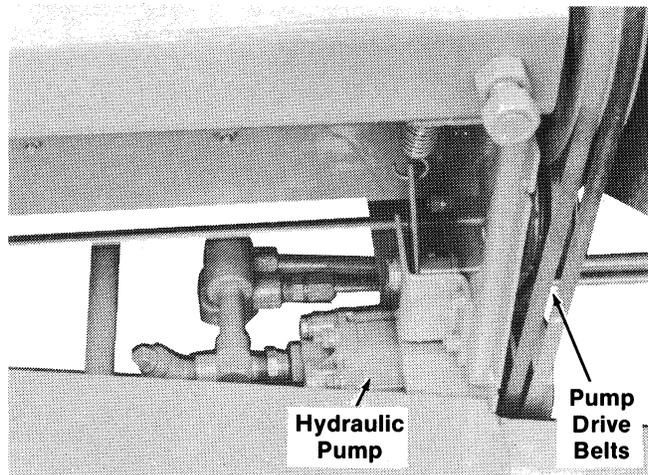
**NOTE: All MX100 Hydraulic Motors, except the Motor on the Feed Roll Attachment, are the same size and style to facilitate switching them for troubleshooting.**

Motor size and style information is stamped on a plate (attached to the Motor) or on the base of the Motor. Refer to the information provided on the Motor for warranty, repair and service references. Before removing the Hydraulic connections to the Motor, **BE SURE** to note which is the Inlet and which is the Outlet Lines so that, when the Motor is replaced, it will turn in the proper direction; see the drawings provided, for details.

**NOTE: When replacing a Motor, BE SURE to reinstall the Mounting Spacers. Spacers are provided to allow the Motor to align with the Auger Shaft, when the Motor is secured to its mounting surface.**

## HYDRAULIC PUMP (Fig. 9-7)

The Hydraulic Pump on Mixers with Self-contained Hydraulic Systems is driven by two Belts which are linked to a Double Sheave on the end of the Main Drive Shaft. The same Pump is used on both 540 and 1000 Drive. The Hydraulic Pump is **NOT** field serviceable.



**Fig. 9-7: Hydraulic Oil Pump**  
**(Self-contained Hydraulic System Models Only)**

## Belt Tension (Fig. 9-8)

Hydraulic Pump Drive Belt tension is maintained by a Spring-tensioned Idler and requires **NO** further adjustment. The Anchor Bolt, which is used to secure the top of the Idler Tension Springs, is located in appropriate position to match the Mixer Drive RPM. **BE SURE** that the Anchor Bolt is kept in that position, unless the Drive is field converted. **BE SURE** also that the Idler Pulley is properly positioned to keep the Belts aligned with the Sheaves.

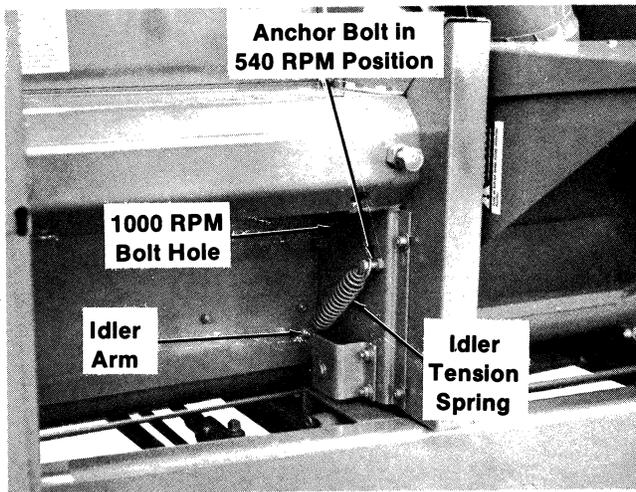


Fig. 9-8

**Sheave Alignment (See Fig. 9-7)**

The Hydraulic Pump Drive and Driven Sheaves **MUST** be maintained in correct alignment and be tightly secured at all times. Keys and Set Screws are used to secure both Sheaves to their appropriate Shafts.

**HYDRAULIC SHUT-OFF VALVE (Fig. 9-9)**

The Hydraulic Shut-off Valve is the **ON-OFF** control for the Discharge and Unloading Conveyor Motors. The Shut-off Valve is **NOT** field serviceable. An E-ring Clip is provided and attached in the groove on the Valve Stem. To maintain proper Valve operation, this Clip **MUST** always be kept locked in position in the groove.

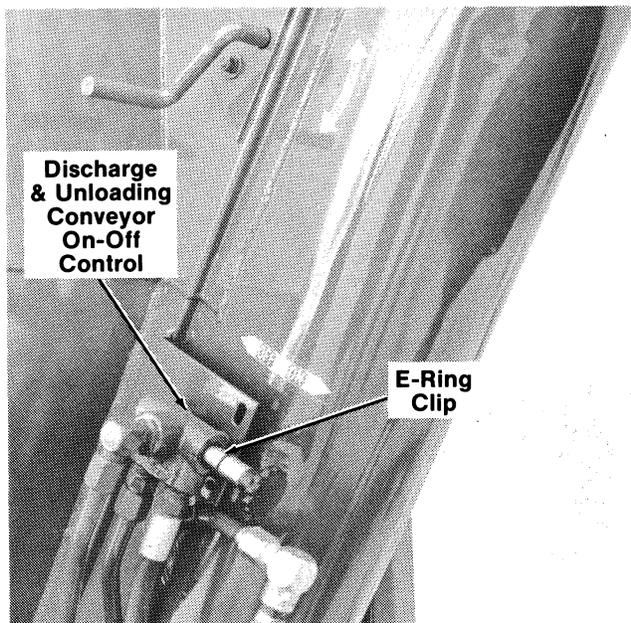


Fig. 9-9

**MAIN DRIVE SHAFT (Fig. 9-10)**

The Bearings inside the Mill/Blower Drive Sheave should be checked and repacked annually. The following procedure should be followed:

1. Remove the Seal from the Drive Sheave. **BE SURE** that, when components are replaced, a new Seal is installed (if old Seal was damaged during removal).
2. Remove the Snap-ring and the Mill/Blower Drive Sheave and the Front and Rear Bearing Cones.
3. Reinstall the Sheaves and related components in reverse order of disassembly.

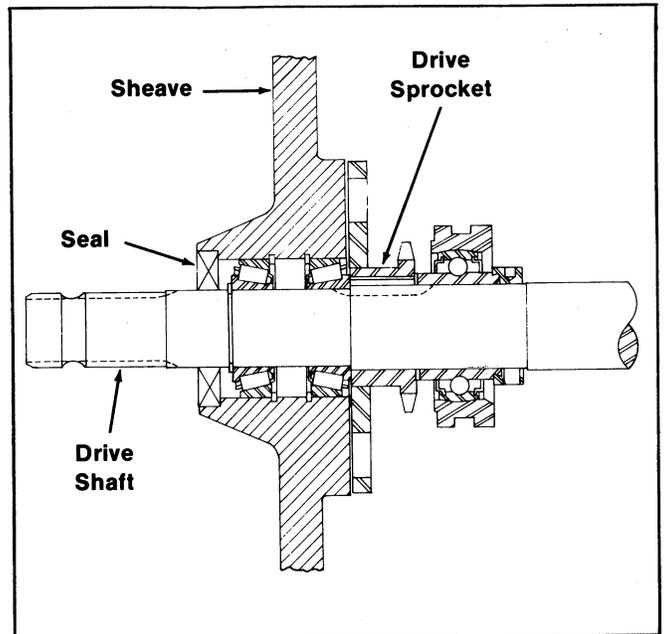


Fig. 9-10: Mill/Blower Drive Cross-sectional View

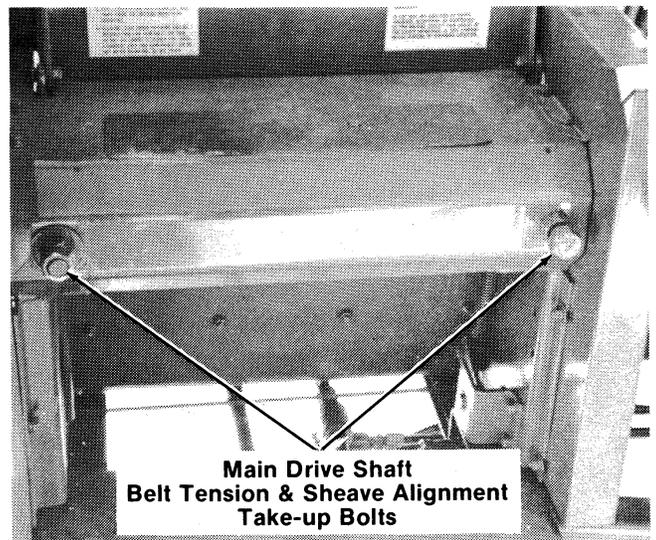


Fig. 9-11

## MILL/BLOWER DRIVE

### Belt Replacement (Figs. 9-11 & 9-12)

To replace the Mill/Blower Drive Belt, perform the following steps:

1. Completely release Front Drive Chain tension.
2. Loosen the Lock Nuts on the Main Drive Shaft Take-up Bolts.
3. Rotate the Nut on the left Take-up Bolt counter-clockwise to completely release Drive Belt tension.
4. After tension is completely released, the old Belt can be taken off and the new Belt can be installed.
5. Adjust new Belt tension following details in the Adjustment chapter of this manual. After tension is properly adjusted, retension the Front Drive Chain.

**NOTE:** The Mill/Blower Drive Belt will deteriorate more rapidly if improper tension is applied. Improper Sheave alignment will result in uneven Belt stretch. Overtensioning the Drive Belt shortens Bearing life.

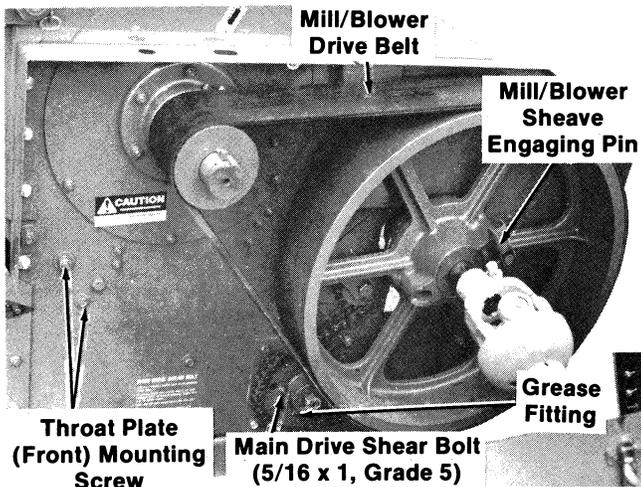


Fig. 9-12

### Engaging Pin (Fig. 9-12)

The Pin which is used to engage or disengage the Mill/Blower Drive Sheave should be checked on a routine basis for excessive wear or improper seating. Excessive wear on the Pin or the hole in the Hub, in which the Pin engages, could result in the Pin accidentally disengaging in the middle of Mill and Blower operation. Either component should be replaced if worn excessively.

**NOTE:** DO NOT attempt to start the PTO until the Pin is positively engaged. Using the PTO to engage the Pin will quickly wear it out.

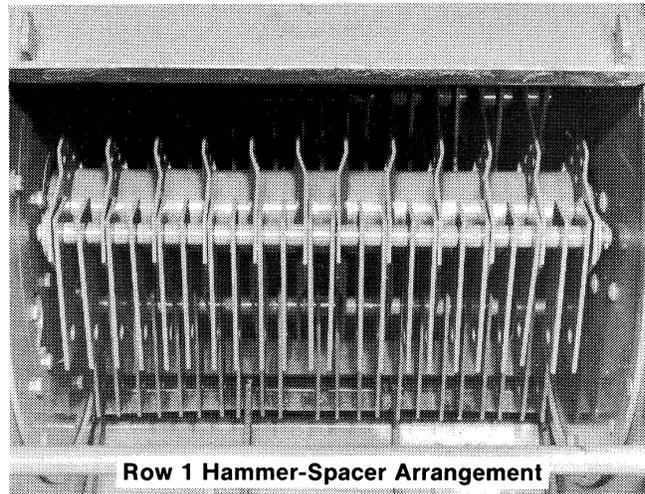


Fig. 9-13

### MILL HAMMER ROTATION OR REPLACEMENT (Figs. 9-13 thru 9-15)

The Mill Hammers are designed to be conveniently removed and rotated through (4) positions, before they require replacement. The Mill Cylinder contains (3) rows with (22) Hammers in each row. To remove a row of Hammers, rotate the Cylinder to the position where the row of Hammers to be removed lines up with the Access Hole in the left side of the Mill Housing. Then, with the Access Hole Cover removed, pull the Cotter Pin out of the right end of the Hammer Rod and proceed to pull the Rod out through the Access Hole.

**NOTE:** It is advisable to use a catch pan, below the Rod, for the Hammers and Spacers to drop into as the Rod is being pulled-out.

Refer to the three illustrations provided for proper Hammer and Spacer sequence. **BE SURE** to use the appropriate illustration as a reference while replacing the Hammers and Spacers.

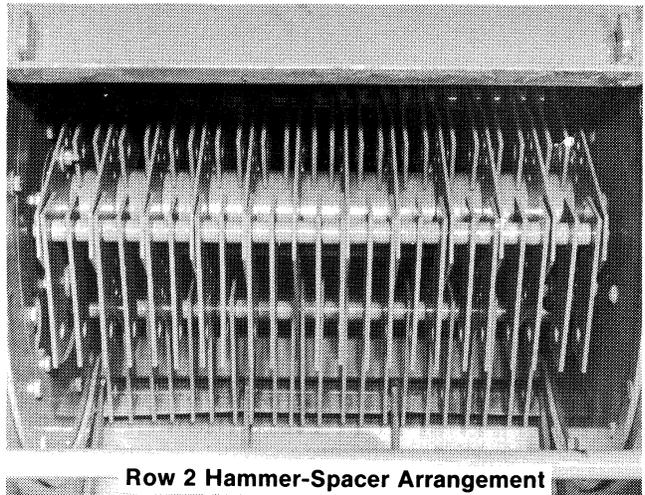


Fig. 9-14

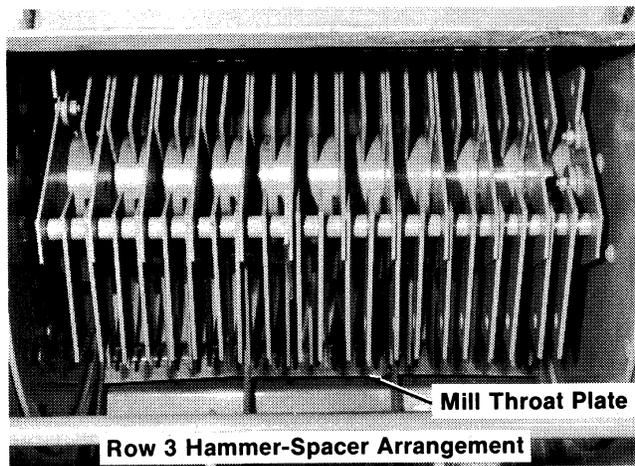


Fig. 9-15

**NOTE:** Hammers and Spacers **MUST** be replaced in proper sequence with respect to the appropriate row on the Cylinder. It is further recommended that, when the Hammers are rotated (potentially three times), they are always rotated in the same direction so as to maintain a balanced Cylinder. Furthermore, all (3) rows of Hammers should be rotated on the same day or replaced on the same day (if all four corners are worn-out).

After the Hammer Rod is replaced and all of the Hammers and Spacers have been replaced, **BE SURE** to secure the Rod in place with a new 3/16 x 1-1/4" Cotter Pin; spread the points and bend them around the Rod. After all Hammers have been serviced, replace the Access Hole Cover.

#### MILL THROAT PLATE (Figs. 9-15 & 9-16 & see Fig. 9-12)

The Mill Throat Plate is a stopping block for the Screen that **MUST** be properly adjusted to hold the Screen in place when the Mill Screen Cover is closed and latched. Throat Plate position is adjusted with (2) bolts on each side of the Mill Housing. Access to the bolts on the right side is gained by unlatching and lowering the large Front Shield. To make the Throat Plate adjustment, proceed as follows:

1. Open the Mill Screen Cover and install a Screen into the Screen Support.
2. Loosen, but do **NOT** remove the (4) adjustment bolts and position the Throat Plate toward the bottoms of their mounting slots; then, partially tighten the bolts.
3. Gradually and smoothly close the Mill Screen Cover while forcing the Screen against the Throat Plate.
4. Before latching the Cover, tightly secure the (4) adjustment bolts to lock the Throat Plate position.

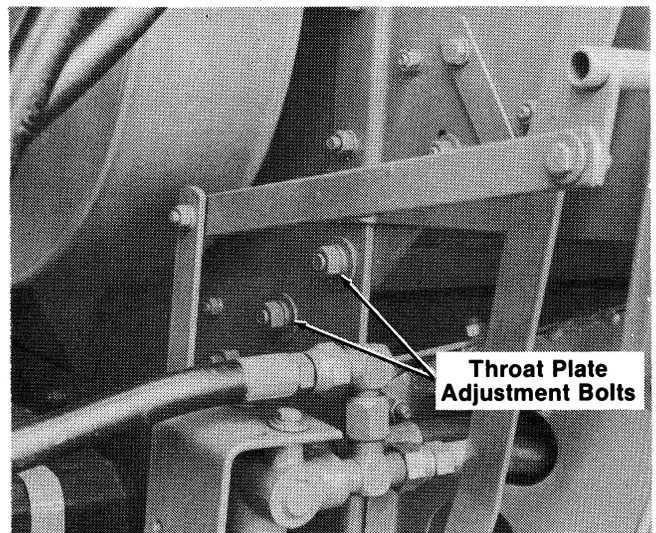


Fig. 9-16: Throat Plate (Rear) Adjustment

**NOTE:** The Throat Plate position should be correctly readjusted on a routine basis to maintain proper Mill/Screen operation and Cover latching as well as to prevent material from dropping out the bottom of the Mill.

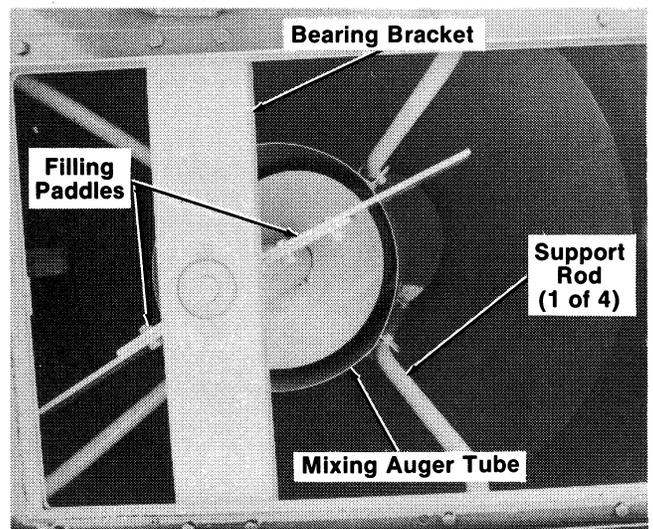


Fig. 9-17

#### MIXING AUGER & TUBE (Fig. 9-17)

The Mixing Auger should be centered inside the Tube at all times. Adjustment bolts are provided on the (4) Support Rods which hold the Tube for aligning the Tube and centering it around the Auger. Access to these Adjustment bolts as well as for removing the Mixing Auger is gained through the Tank Lid opening in the top of the Tank. The Auger can be removed as follows:

1. Open the Tank Lid and loosen and remove the top Bearing Bracket from the Tank Cover.
2. Loosen the Set Collar and remove the Bearing Bracket from the Auger Shaft.

3. Loosen and remove the (2) Filling Paddles from the Auger.
4. Loosen and remove the (4) Support Rods from the Tube.
5. Remove the Tube and then the Auger through the Tank Lid.

To replace the Mixing Auger or install a new Auger, reverse the procedure of removal. **BE SURE** that, after all components are replaced, the Tube is correctly centered around the Auger and that it is tightly secured.

## SHEAR DEVICES

### Auger/Transmission (Main) Shear Device (See Figs. 9-1 & 9-12)

The Auger/Transmission Shear Device on the front end of the Auger/Transmission Drive Shaft protects the Drive Shaft, Transmission and Mixing Auger. If the Shear Bolt fails, the Intake Auger will also stop rotating. In case of an overload, the Head of the Bolt will shear off and stop Shaft rotation. To replace the Auger/-Transmission (Main) Shear Bolt, proceed as follows:

**NOTE:** **BE SURE** to use only a 5/16 x 1 Grade 5 Shear Bolt (stored in the bottom left corner of the large Front Cover).

1. Rotate (by hand) the Mill/Blower Drive Sheave (with the Shifter Pin engaged) to align the Keyhole in the Sprocket with the Slot in the Shear Plate. After proper alignment is obtained, disengage the Shifter Pin.
2. Turn the Lock Nut on the Shear Bolt flush and insert the Bolt Head through the Keyhole and into the Slot. Then, move the Bolt down into the narrower portion of the Keyhole.
3. Tighten the Lock Nut to fix the Bolt position.
4. Grease the Fitting on the Sprocket to prevent the mechanism from seizing.

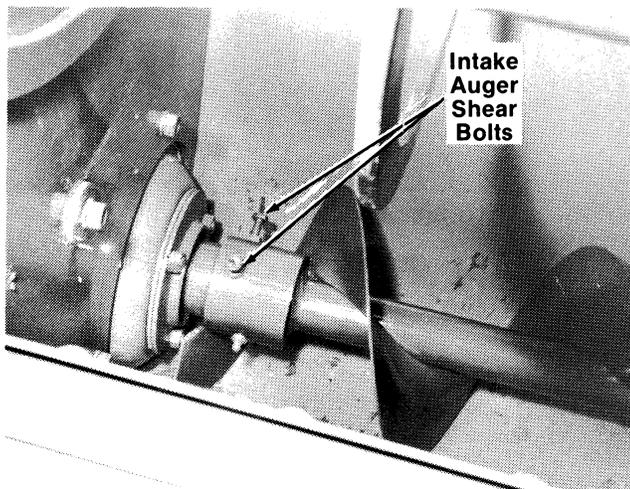


Fig. 9-18: View of Intake Auger (Inside Mill)

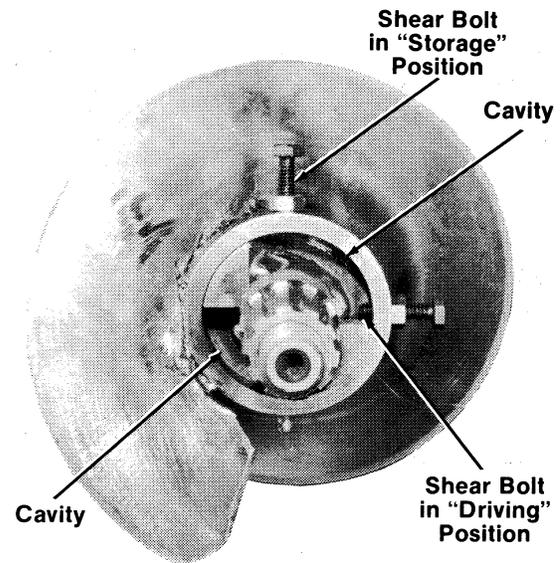


Fig. 9-19: Intake Auger Shear Device (End-View)

**NOTE:** **BE SURE** to remove the cause of the Shear Bolt failure before attempting to resume operation. Also, grease the fitting on the Sprocket any time a Bolt is sheared.

### Intake Auger Shear Device (Figs. 9-18 & 9-19 & See Figs. 9-1 & 9-12)

The Intake Auger Shear Device is accessible only through the Mill. This device protects the Auger Flighting. If the Shear Bolt fails, the Intake Auger will stop rotating even though the Auger/Transmission Drive Shaft will continue to rotate.

**NOTE:** Even though (2) Shear Bolts are provided on the Shear Device, only (1) Bolt serves as Shear protection; the second Bolt is provided so that either one of the Bolts is readily accessible for service regardless of where the Auger actually stops after the Bolt shears.

To readjust the Shear Bolt for the correct driving position, proceed as follows:

1. For access to the Shear Bolt, remove the material in the bottom of the Mill.
2. Loosen the accessible Shear Bolt locking Nut.

**NOTE:** If the gap between the Bolt head and the Hub of the Shear Device is less than 1/8" (3 mm), the Bolt **MUST** be replaced. **BE SURE** to use only a 1/4 x 1 Grade 5 Shear Bolt (stored in the bottom left corner of the large Front Cover).

3. Referring to the appropriate illustration provided, determine if (1 of the 2) cavities is positioned below the Shear Bolt by attempting to turn the Bolt. If the cavity is **NOT**, the Shaft will have to be rotated 90°.

4. With the cavity under the Shear Bolt, turn the Bolt clockwise (3) full turns or about 5/32" (8 mm). This will place Bolt in the correct driving position.

**NOTE: DO NOT turn the Shear Bolt less than NOR more than (3) full turns to insure the correct driving position. In addition, DO NOT attempt to readjust the other Shear Bolt; the other Bolt will remain undisturbed at this time.**

5. Tighten the locking Nut and **BE SURE** to grease the fitting on the Hub to prevent the mechanism from seizing.

After the cause of the Shear Bolt failure is corrected and the Bolt has been replaced (readjusted), **BE SURE** to place the Mill/ Blower Shifter Pin in the disengaged position and test the Intake Auger operation before attempting to resume grinding. Intake Auger rotation can be viewed conveniently through the Concentrate Hopper.

**NOTE: When restarting the tractor, place the throttle at idle before engaging the PTO.**

### TRANSMISSION (See Fig. 9-1)

The MX100 Transmission can be removed from the Mixer for taking it to the dealer for internal component service.

**NOTE: Internal component repairs and replacements should only be attempted by (or under the direction of) an authorized GEHL equipment dealer.**

To uncouple and detach the Transmission from the Mixer, first release Drive Chain tension and uncouple the Chain. Next, uncouple, remove and retain the Remote Grease Fitting Pipe Nipple. Then, remove and retain the (4) Cap Screws which secure the Transmission to the underside of the Tank Support. After service is performed, replace the Transmission in reverse order of removal. **BE SURE** to properly adjust Drive Chain tension following details in the Adjustments chapter.

**NOTE: Check the Transmission oil level after every 200 hours. Refer to the Service chapter for additional details.**

### UNLOADING CONVEYOR

#### Auger (See Fig. 9-2)

When it becomes necessary to remove the Unloading Conveyor Auger for service or replacement, place the Conveyor in a horizontal position and lock the Brake. Proceed as follows:

1. Remove the nuts on the bolts which secure the Motor Mounting Plate to the Conveyor.

2. Pull the Motor and Plate back an inch or two to gain access for loosening the bolt securing the Auger to the Motor Shaft.
3. After the Auger is detached from the Motor Shaft, the Motor and Plate can be set on top of the Discharge Conveyor (with the Hoses still connected) and then the Auger can be pulled-out.

Auger replacement or new Auger installation is in reverse order of removal.

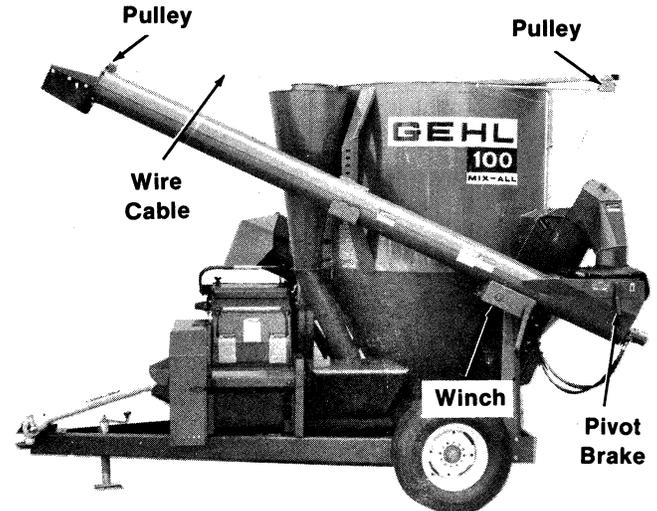


Fig. 9-20

### Wire Cable & Pulleys (Figs. 9-20 & 9-21)

**WARNING:** The Wire Cable and Pulleys used to raise and lower the Unloading Conveyor **MUST** be maintained in good operating condition at all times. These components should be checked on a routine basis and replaced immediately if they become worn or defective.

The Pulleys should be checked periodically and properly lubricated to insure freedom of movement. The Wire Cable should be checked for wear and fraying. A good method of checking the Cable is to use a piece of cloth. Wrap the cloth around the Cable and slide it along the Cable. If the cloth snags, the Cable is starting to deteriorate and should be replaced.

When the Winch Cable is replaced, the Cable Tensioner Spring will have to be detached from the old Cable and replaced on the new Cable. Refer to the line drawing provided and mark the distance for proper Tensioner Spring Cable Clamp anchoring. Then, install the new Cable and route it in the same manner as the old Cable. After the Cable is properly routed, loosely attach the Cable Clamp. Using a gloved hand, grasp the Cable and hold tension on it while rotating the Winch crank counterclockwise to unwind the Cable from the Winch Drum and in turn, to obtain enough slack so that the Tensioner Spring can be tightly clamped at the mark on the Cable. With the Cable slack, slide the Clamp and Hook over the mark (at the 28" point on the Cable) and tightly secure the Clamp over the mark.

**NOTE:** BE SURE to check and readjust, if necessary, the position of the Hook on the Spring and the way it is attached to the Cable Clamp so there is minimum bending on the Cable when the Spring is extended.



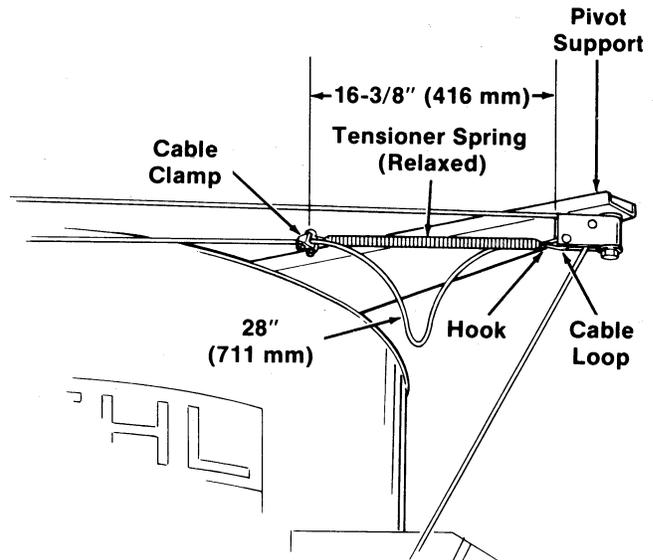
**WARNING:** BEFORE attempting any service on the Winch, BE SURE the Unloading Conveyor is locked and secured to the Transport Bracket.

**Winch (Figs. 9-22 & See Fig. 9-20)**

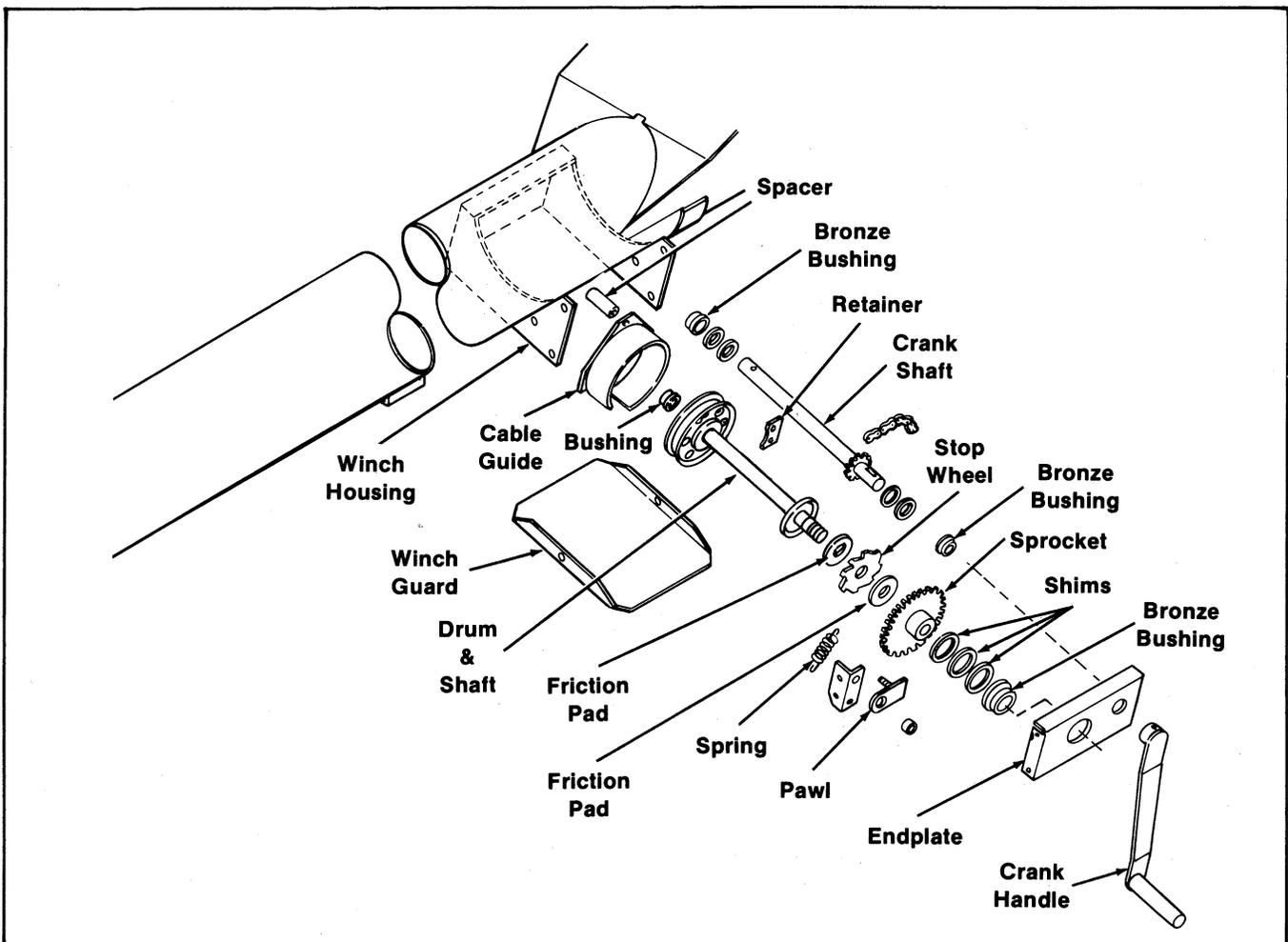
The Winch, which raises and lowers the Unloading Conveyor, **MUST** be maintained in proper operating condition at all times. A drop of oil should be applied to the Bronze Bushings on a routine basis every 10 hours of operation. Condition of the Pawl and Spring should be checked every 100 hours for signs of excessive wear or breakage. The Stop Wheel should always be maintained centered below the Pawl to enable positive engagement.

If the Winch is serviced and components are removed, **BE SURE** that the correct position of the Stop Wheel is adjusted by adding or removing Shims, between the Sprocket and the Winch Housing.

Access to the Winch components is gained by removing the Plate on the bottom of the Winch Housing. To remove the Winch components, the End Plate will have to be removed.



**Fig. 9-21: Tensioner Spring Attachment Detail**



**Fig. 9-22: Winch Assembly Exploded View**

# CHAPTER 10

## PREPARING FOR FIELD OPERATION

### TRACTOR CONNECTIONS (Figs. 10-1 & 10-2)

**NOTE:** To prolong the life of the Drive Line components, always maintain a straight alignment between the Mixer and the tractor.

Refer to the illustrations provided, for alignment details and appropriate tractor PTO shaft, tractor drawbar and ground clearance dimensions related to either 540 or 1000 RPM tractors and Mixer Drives.

After the Mixer is hooked-up to the tractor drawbar, raise the Telescoping Drive from its Storage Hook on the Mixer Frame and lock it onto the tractor PTO shaft.



**WARNING:** BE SURE the Locking Couplers on both ends of the Telescoping Drive are properly engaged BEFORE starting the tractor. Also, BE SURE that the Telescoping Drive Shield turns freely BEFORE starting the tractor.

**NOTE:** On the one model MX100 with Tractor-powered Hydraulic System, make the Hydraulic Coupler (purchased locally) connections to the tractor hydraulic output ports.

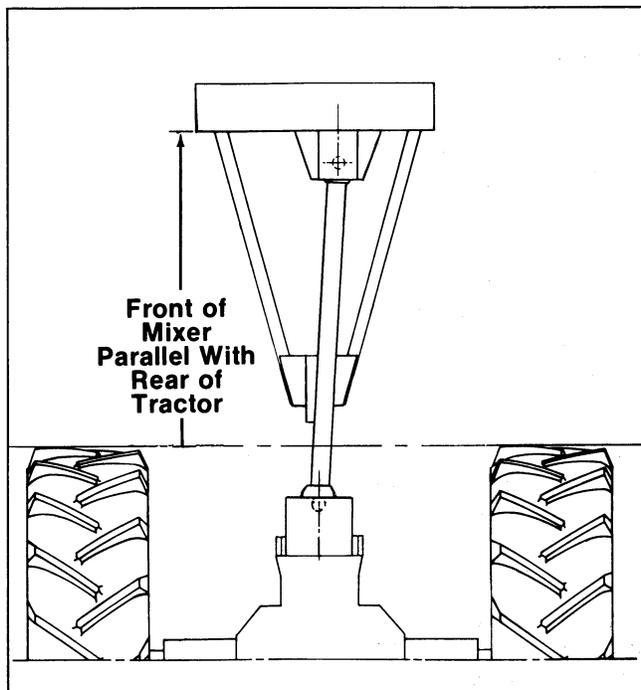


Fig. 10-1: Before Operating Establish Parallel Alignment

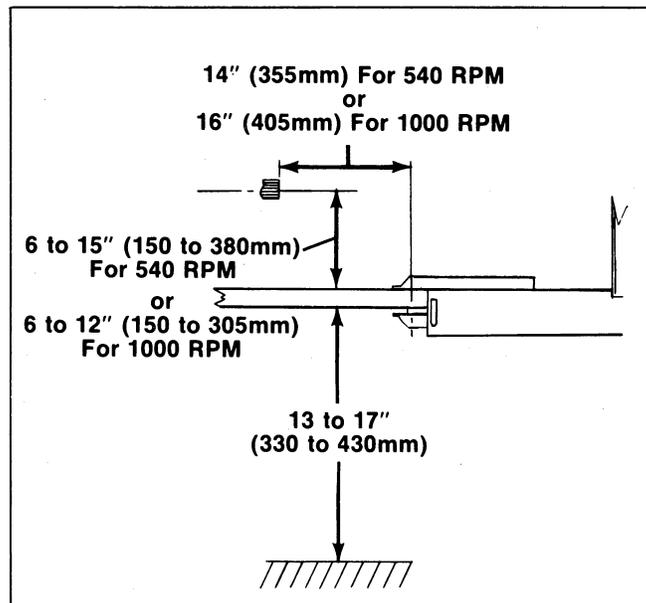


Fig. 10-2: Tractor Drawbar - PTO Dimensions

### PREPARING MIXER

**NOTE:** Make sure the entire unit is properly lubricated and check and replenish the Transmission and Hydraulic Reservoir (as applicable) oil levels, before operating the Mixer. Also, make sure the Drain Plugs are installed and secured.

Install the appropriate hole-sized Screen into the Mill, following procedures outlined in the Operation chapter of this manual.



**DANGER:** BE SURE the Mill Screen Cover is closed and properly latched BEFORE starting the tractor. Also, BE SURE all Guards and Shields are properly secured in place, BEFORE starting the tractor.

**NOTE:** Before starting to grind, make sure the Tank Lid is closed, the Discharge Chute is closed and the Collector Cover is open.

Start the tractor engine, engage the PTO at slow speed and gradually increase speed until the Mill is running at the rated speed. Proceed to grind.

# CHAPTER 11

## TRANSPORTING

The Mixer is equipped with a Slow-moving Vehicle Emblem Mounting Bracket welded to the back of the Tank. The Emblem **MUST** be purchased locally.

Because of variations in safety laws for different states and localities, it may be necessary to use a different location for displaying the Slow-moving Emblem. Your GEHL Dealer can aid you in installing a different Emblem Mounting Bracket (if required).



**CAUTION: DO NOT exceed 20 mph (32 kmh) when towing the Mixer. BE SURE the Unloading Conveyor and the Swinging Auger Feeder (if provided) are properly locked into their transport positions.**

# CHAPTER 12

## STORAGE

Because a Mixer is a year-round implement, it should be maintained in ready-to-operate condition at all times. Several provisions have been designed into the Mixer for protection of the unit against the weather.

### DRAIN PLUGS

All Mixers are furnished with Water Drain Plugs in two areas; under the Auger/Drive Shaft and under the Infeed Hopper on Mixers equipped with a Swinging Auger Feeder Attachment. A Water Drain and Slot Cover is also provided in the bottom end of the Unloading Conveyor below the Motor. Before operating the Mixer after a rain, the Plug should be removed to drain water which may have accumulated.

### WEATHER COVERS

Various Lids, Covers and Rubber Flaps are used to prevent weather from getting into the Mixer. The Mill Hopper, on Mixers equipped with a Swinging Auger Feeder Attachment, is provided with a Weather Cover to protect the opening into the Mill.

**NOTE:** Before operating the Mixer after a rain, check the several vulnerable areas for water accumulation. As necessary, drain the water before using the Mixer.

# CHAPTER 13

## TROUBLESHOOTING

**NOTE:** This Troubleshooting guide presents problems, causes and remedies beyond the extent of loose, worn or missing parts and is developed in consideration of the machine being in otherwise good operating condition. Refer to Index for Chapter and topic page references.

### MILL & MIXER DRIVE

PROBLEM	CAUSE	REMEDY
Power Shaft vibrates excessively.	Improper tractor hook-up. Tractor being operated at an angle. Power Shaft bent Power Shaft Bearings worn.	Adjust hook-up. Align tractor straight-away with Mixer. Replace Power Shaft. Replace Bearings.
Mill does <b>NOT</b> turn.	Pin <b>NOT</b> engaged (improperly engaged). Mill/ Blower Drive Belt slipping.	Correctly engage Pin. Readjust Belt tension.
Mixing Auger <b>NOT</b> turning.	Auger/Transmission (Main) Shear Bolt sheared. Front Drive Chain disconnected. Transmission (Rear) Drive Chain disconnected. Sprocket Keys sheared. Transmission Gear Keys sheared. Broken Shafts.	Replace Bolt and correct cause of Bolt failure. Repair or replace Chain. Repair or replace Chain. Replace Keys. Replace Keys. Replace Shafts.
Intake Auger <b>NOT</b> turning.	Intake Auger Shear Bolt sheared. Front Drive Chain is broken or disconnected.	Replace Bolt and correct cause of Bolt failure. Repair or replace Chain.

## MILL

**NOTE:** Causes and Remedies referring to Feed Roll apply only to Mixers with Self-contained Hydraulic Systems.

PROBLEM	CAUSE	REMEDY
Decreased or very low capacity.	<p>Mill Cylinder <b>NOT</b> operating at 2700 RPM.</p> <p>Mill Cylinder loses speed when loaded.</p> <p>Screen badly worn.</p> <p>Hammers worn.</p> <p>Blower Inlet plugged.</p> <p>Mill plugged beneath Screen.</p>	<p>Adjust tractor throttle for proper RPM.</p> <p>Readjust Mill/ Blower Sheave alignment and Drive Belt tension.</p> <p>Remove and rotate or replace.</p> <p>Remove and rotate or replace (if all sides worn).</p> <p>Check and unplug.</p> <p>Unplug Mill and replace or adjust Shear Bolt, if necessary.</p>
Excessive vibration.	<p>Hammers broken or missing.</p> <p>Cylinder Shaft Bearings worn.</p> <p>Blower unbalanced.</p> <p>Cylinder Plate Clamping Nut loose.</p> <p>Cylinder unbalanced.</p>	<p>Replace Hammers.</p> <p>Replace Bearings.</p> <p>Remove, balance and replace.</p> <p>Retighten Clamping Nut.</p> <p>Remove, balance and replace.</p>
Excessive dust.	<p>Blower Inlet plugged.</p> <p>Collector covered.</p>	<p>Check and unplug.</p> <p>Uncover Collector while operating.</p>
Material <b>NOT</b> being ground to desired fineness.	<p>Incorrect Screen being used.</p> <p>Mill speed too high or too low.</p>	<p>Select and use appropriate size Screen.</p> <p>Adjust tractor throttle for proper RPM.</p>
Material blocking in Mill Hopper.	<p>Material too damp.</p> <p>Material too light or bulky.</p> <p>Feed Roll <b>NOT</b> turning.</p> <p>Feed Roll too low.</p> <p>Mixer sloping towards feeding side.</p>	<p>Adjust slope or use Feed Roll.</p> <p>Adjust slope or use Feed Roll.</p> <p>Troubleshoot Hydraulic circuit to Motor.</p> <p>Adjust Feed Roll height.</p> <p>Reposition Mixer on level ground.</p>

### MIXING

PROBLEM	CAUSE	REMEDY
Ground material <b>NOT</b> mixing properly.	<p>Ground material bridging in Tank.</p> <p>Roughage <b>NOT</b> ground fine enough.</p> <p>Improper proportion of roughage.</p> <p>Mixer <b>NOT</b> on level ground.</p> <p>Too much liquid being added.</p> <p>Discharge Chute open when starting to mix.</p>	<p>Sequence of adding material improper.</p> <p>Use a smaller sized hole Screen.</p> <p>Adjust percentage of roughage.</p> <p>Move to level ground.</p> <p>Reduce amount of liquid for amount of material in the Tank.</p> <p>Return the first portion of the unloaded feed back into the Mixing Tank and <b>BE SURE</b> the Discharge Chute is closed.</p>
Ground feed spilling out of Tank Lid.	<p>Tank filled too full.</p> <p>Tank Lid <b>NOT</b> closed and latched properly.</p>	<p>Cease grinding when material drops on top of Windows.</p> <p>Clean around Lid opening and re-adjust Latches, if necessary.</p>

### UNLOADING

**NOTE:** Causes and Remedies referring to Pump or Oil Filter apply only to Mixers with Self-contained Hydraulic Systems.

Discharge and Unloading Augers <b>NOT</b> turning.	<p><b>NO</b> oil flow to drive Motors.</p> <p>Snap-ring out of groove on Control Valve Spool.</p> <p>Defective Hydraulic Motor.</p> <p>Material plugging Auger.</p> <p>Ice frozen in Auger.</p>	<p>Check-out Hydraulic System and repair faulty component.</p> <p>Replace Snap-ring.</p> <p>Repair or replace.</p> <p>Remove plugging.</p> <p>Remove ice.</p>
Difficulty experienced in engaging or disengaging Control Valve.	Control Valve Spool defective.	Replace Control Valve.
Tank <b>NOT</b> unloading.	Bridging in the Tank.	Shut off Mixer and break-up bridging by probing through Clean-out Cover.
Tank unloads too slow.	<p>Insufficient oil flow to Motors.</p> <p>Oil Filter plugged.</p> <p>Faulty connection to Motor.</p> <p>Worn Pump.</p> <p>Oil too thin.</p> <p>Worn Motor.</p> <p>Oil shortage to the Pump.</p>	<p>Increase tractor throttle speed.</p> <p>Replace Filter.</p> <p>Check and correct connection.</p> <p>Replace Pump.</p> <p>Replace with heavier oil.</p> <p>Repair or replace.</p> <p>Clean oil line to the Pump and/or add oil to the Reservoir.</p>

### UNLOADING (cont.)

PROBLEM	CAUSE	REMEDY
Tank unloads too slow.	Discharge Slide <b>NOT</b> open enough. Paddle at lower end of Mixing Auger worn.	Open up more as required. Replace Paddle.
Discharge Slide does <b>NOT</b> stay open or opens with great difficulty.	Crank mechanism incorrectly adjusted. Crank bowed in area of Sprocket.	Readjust Crank mechanism. Straighten or replace Crank.
Unloading Conveyor does <b>NOT</b> pivot properly.	Brake adjusted too tight. Pivot plugged with dirt or debris.	Readjust Brake. Clean and lubricate mechanism.
Winch Handle free-wheels and lowers Unloading Conveyor by itself	Friction Pads improperly adjusted. Friction Pads glazed. Friction Pads contaminated with oil. Pawl Spring broken.	Reposition Pads. Remove glaze with fine sandpaper or emery cloth. Dry off Pads. Replace Spring.
Winch Handle cranks hard while lowering Unloading Conveyor.	Friction Pads are frayed or wet. Chain dry or stiff.	Replace Pads or allow to dry-out. Lubricate Chain and check for free movement; replace if still stiff.

### HYDRAULICS - ALL MIXER MODELS

**NOTE:** Problems, Causes and Remedies referring to Pump or Oil Filter apply to Mixers with Self-contained Hydraulic Systems.

Discharge and Unloading Augers <b>NOT</b> turning.	Selector Valve in <b>OFF</b> position. Pump defective. Pressure too low. Motor defective. Auger plugged. Ice frozen in Auger.	Move to <b>ON</b> position. Replace Pump. Check for restriction in Hydraulic lines. Repair or replace. Remove plugging material. Remove ice.
Auger rotating in wrong direction.	Hose connections crossed.	Switch Hose connections to change direction of rotation.
Difficulty experienced in engaging or disengaging Control Valve.	Control Valve Spool defective.	Replace Control Valve.

### HYDRAULICS - ALL MIXER MODELS (cont.)

PROBLEM	CAUSE	REMEDY
Augers operating too slow.	<p>Improper oil flow.</p> <p>Plugged Oil Filter.</p> <p>Pump defective.</p> <p>Control Valve <b>NOT</b> fully open.</p> <p>Motor defective.</p> <p>Oil too thin.</p> <p>Oil shortage to the Pump.</p>	<p>Check Pump or tractor output pressures as applicable.</p> <p>Replace Filter.</p> <p>Replace Pump.</p> <p>Check and correct Spool travel.</p> <p>Repair or replace Motor.</p> <p>Replace with heavier oil.</p> <p>Clean oil line to the Pump and/or add oil to the Reservoir.</p>
Discharge Auger operating slower than Unloading Auger or vice versa.	<p>Oil pressure too low.</p> <p>One or other Motor worn.</p> <p>Interconnecting Hoses kinked.</p> <p>One or other Auger partially plugged causing greater Motor power consumption.</p> <p>If Discharge Auger is slower than Unloading Auger, Discharge Chute possibly open too far.</p>	<p>Check and adjust system pressure.</p> <p>Repair or replace Motor.</p> <p>Straighten Hoses.</p> <p>Remove restriction in either Auger.</p> <p>Adjust Sliding Plate position to restrict Discharge Chute opening.</p>

### HYDRAULICS - SELF-CONTAINED HYDRAULIC SYSTEMS MODELS ONLY

Pump does <b>NOT</b> turn.	<p>Belts out of grooves.</p> <p>Belts <b>NOT</b> properly tensioned.</p> <p>Pump defective.</p>	<p>Realign Sheaves and readjust Belt tension. Replace Belts if worn.</p> <p>Tension Spring missing or improperly positioned.</p> <p>Replace Pump.</p>
Pump squeals during start-up.	<p>Oil too heavy.</p> <p>Level too low in Reservoir.</p> <p>Return line blocked or restricted.</p>	<p>Allow oil to warm-up longer or switch to lighter oil.</p> <p>Add oil to bring level to within 3" of top.</p> <p>Remove blockage and replace oil if dirty.</p>
None of the Motors operating.	<p>Pump defective.</p> <p>Relief Valve <b>NOT</b> passing flow.</p> <p>Pump <b>NOT</b> being driven.</p>	<p>Replace Pump.</p> <p>Check pressure and replace Valve if defective.</p> <p>Check Sheaves and Belts for malfunction.</p>

### HYDRAULICS - SELF-CONTAINED (cont.)

PROBLEM	CAUSE	REMEDY
Swinging Auger Feeder will <b>NOT</b> operate.	Variable Speed Control Valve in <b>OFF</b> position.  Variable Speed Control Valve malfunctioning.	Move Control to full open and check mechanical linkage.  Check pressure to Valve and determine if defective.
Feeder Auger turns in wrong direction.	Motor connections crossed.	Switch Hose connections to change direction of Motor rotation.
Feeder Auger turns too slow.	Oil shortage to the Pump.  Relief pressure too low.  Pump defective.  Motor defective.  Insufficient oil flow.  Snap-ring out of groove on Control Valve Spool.  Auger partially plugged.  Control Valve <b>NOT</b> functioning properly.	Clean oil line to the Pump and/or add oil to the Reservoir.  Check and correct pressure.  Replace Pump.  Repair or replace Motor.  Check Pump output pressure and adjust Belt tension or increase PTO speed.  Replace Snap-ring.  Remove plugging material.  Check and replace Valve, if necessary.
Feed Roll turns in wrong direction.	Motor connections crossed.	Switch Hose connections to change direction of Motor rotation.
Feed Roll stops when loaded.	Relief pressure too low.  Feed Roll plugged.	Check pressure.  Shut tractor off and disconnect PTO and remove plugging.
Feed Roll turns slow or <b>NOT</b> at all.	Key missing from Drive coupling.  Hoses kinked or blocked.  Oil shortage to the Pump.  Control Valve <b>NOT</b> functioning properly.  Pump defective.  Motor defective.  Feed Roll partially plugged.  Relief pressure too low.	Replace Key.  Straighten Hoses or replace dirty oil in Reservoir.  Clean oil line to the Pump and/or add oil to the Reservoir.  Check and replace Valve, if necessary.  Replace Pump.  Repair or replace Motor.  Remove plugging.  Check and correct pressure.

# CHAPTER 14

## SET-UP & ASSEMBLY

### WHEELS & TIRES

The Mixer is shipped from the factory without Wheels and Tires mounted. Install the Tires and Rims; torque the Wheel Nuts to 90 ft-lb (124 N-m). Inflate the 11:00 x 15L Tires to 36 PSIG (252 kPa).

### DRAIN PLUGS & DRAIN COVER

When the Mixer is delivered, a bag of hardware, containing (2) Drain Plugs and the Wheel Bolts, is wired to the Concentrate Hopper Guard. Remove the bag and install one of the Drain Plugs in the Water Drain Hole in the base of the Concentrate Hopper. If the Mixer is equipped with an SAF, install the other Drain Plug in the Drain Hole in the bottom of the SAF Trough Hopper.

**NOTE:** The Water Drain Holes and Drain Cover, on the end of the Unloading Conveyor, should be left unplugged or uncovered to release water build-up which might occur if the Mixer is stored outside. Before the Mixer is going to be operated, **BE SURE** to install the Plugs and close the Cover.



**WARNING:** NEVER attempt to open or plug the Water Drain Holes with the Mixer running.

**NOTE:** If unit is equipped with Electronic Scale, unpackage and install Scale unit. Refer to separate Scale manual for additional details.

**NOTE:** The Pressure Hose, for the Mixer model with tractor-powered Hydraulic System, is on the left. **BE SURE** to make proper connections when terminating hoses with fittings (purchased locally), that plug-into the tractor output.

# CHAPTER 15

## OPTIONAL FEATURES & ACCESSORIES

**NOTE:** Most of the Optional Features & Accessories, listed in this chapter, are shipped with separate instructions for installation.

### ELECTRONIC SCALES

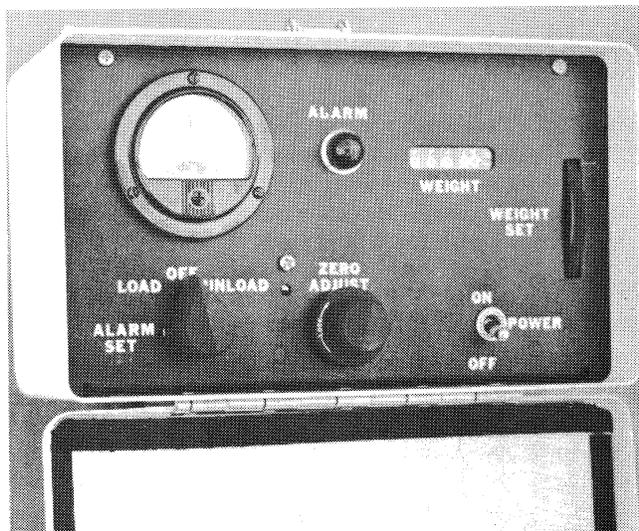


Fig. 15-1: Analog Readout Weigh Scale

**NOTE:** Both of the following Electronic Scale models require a 12-volt D.C. power connection.

### Analog Scale Kit (Fig. 15-1)

The Analog Scale Kit (801597 - factory installed or 801604 - field installed) consists of (2) Axles with Hubs, a Weighbar (Drawbar), the Analog Scale unit, mounting hardware and wiring. Mounting, wiring and operation details are provided in a separate manual which is furnished with the Scale unit.

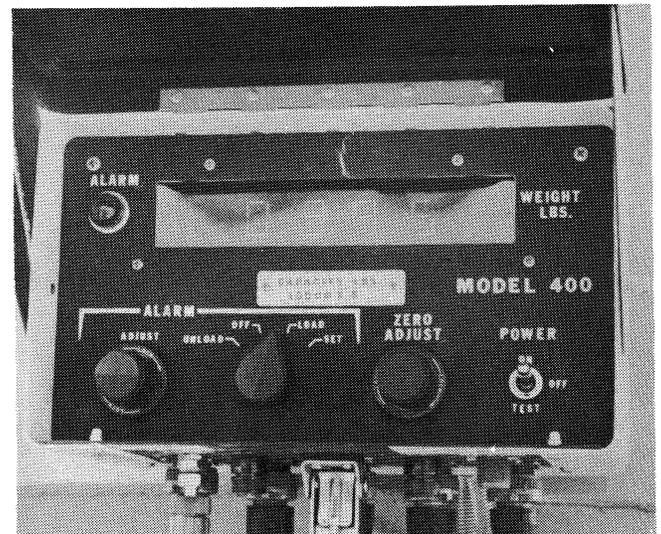


Fig. 15-2: Digital Readout Weigh Scale

### Digital Scale Kit (Fig. 15-2)

The Digital Scale Kit (801598 - factory installed or 801605 - field installed) consists of (2) Axles with Hubs, a Weighbar (Drawbar), the Digital Scale unit, mounting hardware and wiring. Mounting, wiring and operation details are provided in a separate manual which is packaged with the Scale unit.

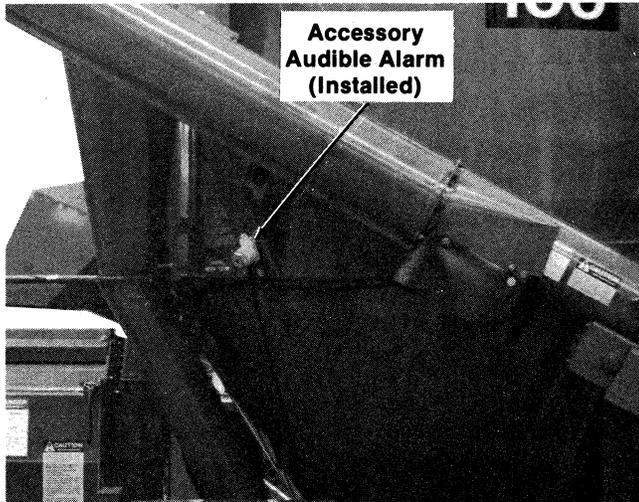


Fig. 15-3

### Audible Alarm Kits (Fig. 15-3)

Audible Alarm Kits are composed of a plug-in horn and cord arrangement. The horn unit has a built-in mounting bracket. The Audible Alarm Kit (850463) is used with Analog Scale unit and the Audible Alarm Kit (801579) is used with Digital Scale unit.

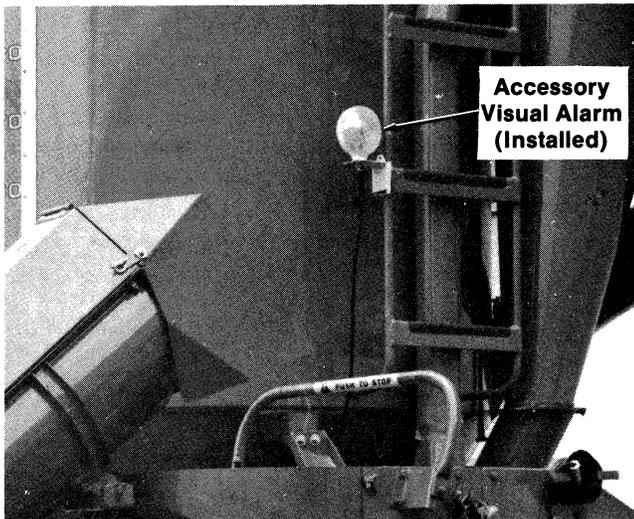


Fig. 15-4

### Visual Alarm Kits (Fig. 15-4)

Visual Alarm Kits are composed of a plug-in light and cord arrangement. The light unit has a built-in mounting bracket. The Visual Alarm Kit (800599) is used with Analog Scale unit and the Visual Alarm Kit (801580) is used with Digital Scale unit.

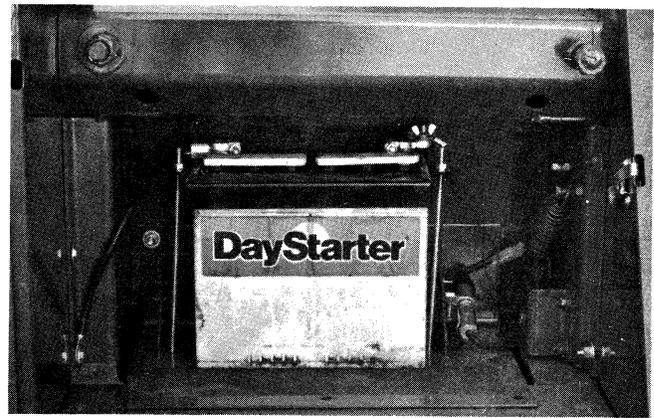


Fig. 15-5: Accessory Scale Battery (Installed)

### SCALE BATTERY MOUNTING KIT (Fig. 15-5)

The Scale Battery Mounting Kit (801786) consists of a Battery Base, Battery Hold-downs, a Ground Cable and a Marine Terminal and attaching hardware. The Kit is available for installation on a Mixer to provide a self-powered Weight Scale arrangement in lieu of using the tractor electrical system. The 12 volt D.C. wet cell battery (Group 22F or Group 24) **MUST** be purchased locally. Installation instructions are packaged with the Kit of parts.

### 3-FOOT STATIONARY UNLOADING CONVEYOR EXTENSION

**CAUTION:** Both the 3-foot Stationary and the 4-foot or 7-1/2-foot Folding Unloading Conveyor Extension Kits are **ONLY** intended to be installed onto the end of the Unloading Conveyor and are **NOT** to be mounted to each other.

The 3-foot Stationary Unloading Conveyor Extension Kit (850252) consists of a 3-foot length of Conveyor which is attached to the end of the base Unloading Conveyor, extending the unit to 15 feet. Installation instructions are packaged with the Kit of parts.

**NOTE:** Check transport height and tractor cab clearance of the extended Unloading Conveyor.

### 4-FOOT FOLDING UNLOADING CONVEYOR EXTENSION

The 4-foot Folding Unloading Conveyor Extension Kit (801627) consists of a 4-foot length of Conveyor which is attached on a pivoting Mounting Bracket to the end of the base Unloading Conveyor. Installation instructions are packaged with the Kit of parts.

**NOTE:** The Folding Conveyor **MUST** be folded back and locked in position for transport.

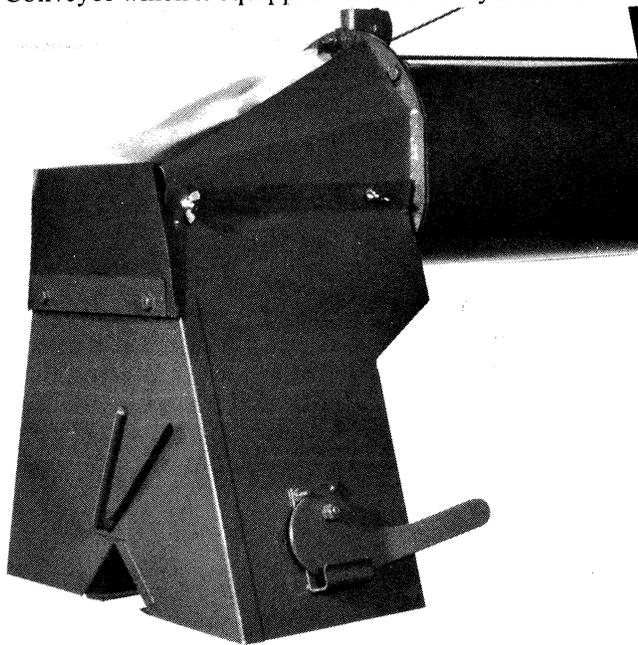
### 7-1/2-FOOT FOLDING UNLOADING CONVEYOR EXTENSION

The 7-1/2-foot Folding Unloading Conveyor Extension Kit (801628) consists of a 7-1/2-foot length of Conveyor which is attached on a pivoting Mounting Bracket to the end of the base Unloading Conveyor. Installation instructions are packaged with the Kit of parts.

**NOTE:** The Folding Conveyor **MUST** be folded back and locked in position for transport.

**PIVOT BRAKE KIT FOR UNLOADING CONVEYOR EXTENSION**

The Pivot Brake Kit (074799) provides an additional pivot brake for a manually pivoted Mixer Unloading Conveyor which is equipped with a Conveyor Extension



**Fig. 15-6: Accessory Double-Bagger DOUBLE BAGGER ATTACHMENT (Fig. 15-6)**

The Double Bagger Attachment (801666) is available for field installation onto the end of the Unloading Conveyor. Installation instructions are packaged with the Kit of parts.

**FEED ROLL FEEDER ATTACHMENTS**

A Feed Roll Feeder Attachment (802619) is designed for field conversion of an existing Swinging Auger Feeder feeding system to a combination feeding system.

A Feed Roll Feeder Attachment (801792) is also available for converting a Mixer with Gravity Feeder and Self-contained Hydraulics system.

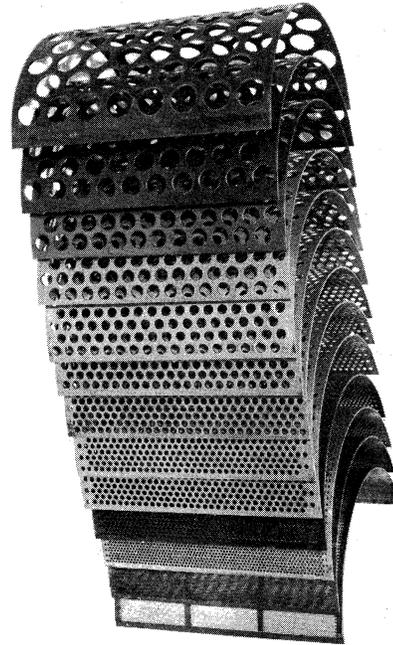
**NOTE:** Conversion procedures are packaged with the appropriate Kit of parts.

**SWINGING AUGER FEEDER ATTACHMENTS**

A Swinging Auger Feeder Attachment (802620) is designed for field conversion of an existing Feed Roll Feeder feeding system to a combination feeding system.

A Swinging Auger Feeder Attachment (802618) is also available for converting a Mixer with Gravity Feeder and Self-contained Hydraulics system.

**NOTE:** Conversion procedures are packaged with the appropriate Kit of parts.

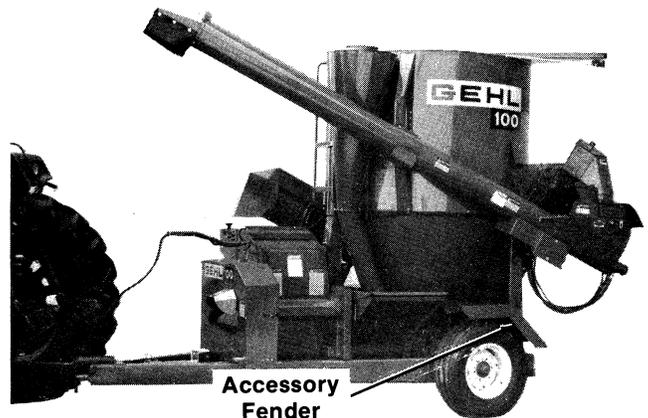


**Fig. 15-7: Accessory Screens**

**SCREENS (Fig. 15-7)**

**NOTE:** In addition to the two Screens, which are available (customer selected) and included with the Mixer, all of the following Screens are available. Size = Hole Diameter in Inches.

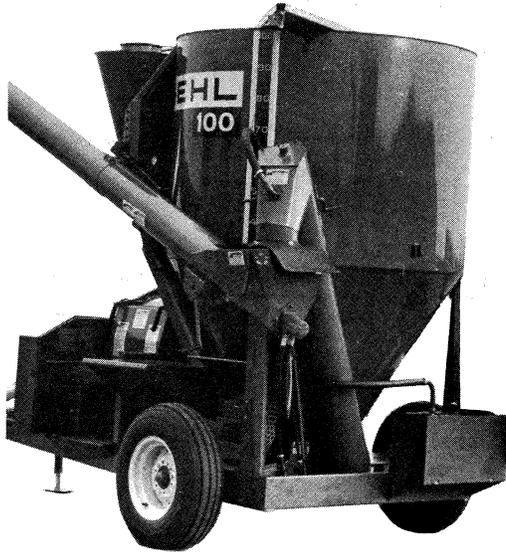
Part Size No.	Part Size No.	Part Size No.	Part Size No.
3/32 045955	1/4 040108	1/2 040111	1 040113
1/8 040106	5/16 040109	5/8 040735	1-1/4 040114
3/16 040107	3/8 040110	3/4 040112	1-1/2 040115
			2 040116



**Fig. 15-8: Mixer with Accessory Remote Unloading Conveyor Controls & Fenders**

### **FENDER SET (Fig. 15-8)**

The Fender Set (801601) consists of (2) Fenders, (2) Fender Support Angles and attaching hardware. Installation instructions are packaged with the Kit of parts.



**Fig. 15-9: Accessory Molasses Attachment (Installed)**

### **MOLASSES ATTACHMENT (Fig. 15-9)**

The Molasses Attachment (802046) consists of a Reservoir, a Pump, a Pump Control mechanism, interconnection piping, mounting provisions and hardware. The Molasses Pump is Belt-driven off a Sheave which is mounted on the end of the Transmission Drive Shaft. The Molasses (or liquid) being added is discharged by a Spray Nozzle which is installed in the Discharge Conveyor outlet. Mounting and operating instructions are packaged with the kit of parts.

### **UNLOADING CONVEYOR REMOTE CONTROL (See Fig. 15-8)**

The accessory Unloading Conveyor Remote Control package (802416) is available for repositioning the Unloading Conveyor from the tractor seat. The Remote Control consists of the Control Box for the tractor, two 12 volt D.C. Motors and Drive Mechanisms for the Winch and Conveyor Pivot assemblies, mounting hardware and interconnection wiring. Field mounting details for Remote Control adaptation are provided with the package of parts.

### **AUXILIARY REMOTE CONTROL**

The accessory Auxiliary Remote Control Kit (802558) can only be adapted to a Mixer which is equipped with an accessory Electric Remote Control for the Unloading Conveyor. The Auxiliary Remote Control enables regulating the Unloading Conveyor movements at the Mixer (with the Auxiliary Control Box) as well as from the tractor seat (with the Primary Control Box). Installation instructions are packaged with the Kit of parts.

# CHAPTER 16

## DECAL LOCATIONS

### GENERAL INFORMATION

Decal Locations information is provided to assist in the proper selection and application of new decals, in the event the original decal(s) become damaged or the machine is repainted. Refer to the listing for the illustration reference number, part number, description and quantity of each decal provided in the Kit. Refer to the appropriate illustration(s) for replacement location(s).

**NOTE:** Certain decals are included in the Kit which are described in the listing as "not shown". These decals may be for different RPM or earlier style units or, for optional field-installed equipment which may or may NOT apply to your machine.

To insure proper selection of the correct replacement decals, compare all of the various closeup location photographs to your machine, before starting to refinish the unit. Then, circle each pictured decal (on or otherwise applicable to your machine) while checking-off its part number in the listing. After you have verified all the decals needed for replacement, place the extra unnecessary decals aside for disposal.

**NOTE:** Always order decals by the set number listed; do NOT order by separate part numbers. For various reasons, your unit may have some Warning decals which have been superceded by more current Warning, Caution or Danger decals. If such is the case, read the information in the decal on your machine and select the new decal from the Kit which expresses the same directives.

### NEW DECAL APPLICATION

Surfaces **MUST** be free from dirt, dust, grease and other foreign material before applying the new Decal. To apply, remove the smaller portion of the decal backing paper and apply this part of the exposed adhesive backing to the clean surface while maintaining proper position and alignment. Peel the other portion of the backing paper off slowly while applying hand pressure to smooth out Decal surface.



**CAUTION: Always Observe Safety Rules Shown on Decals. If Decals become damaged, or if unit is repainted, replace Decals. If repainting, BE SURE that all Decals from the Kit(s) which apply to your machine, are affixed to your unit.**

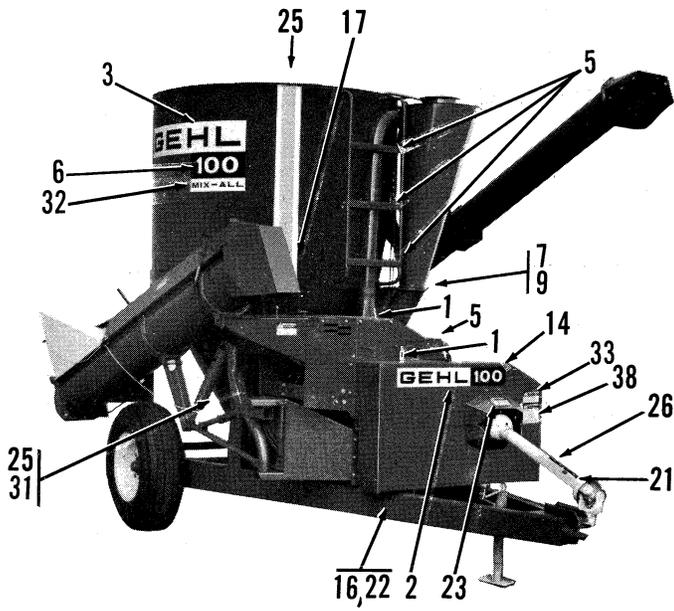
### NOTICE

Order paint for refinishing machines from this list:

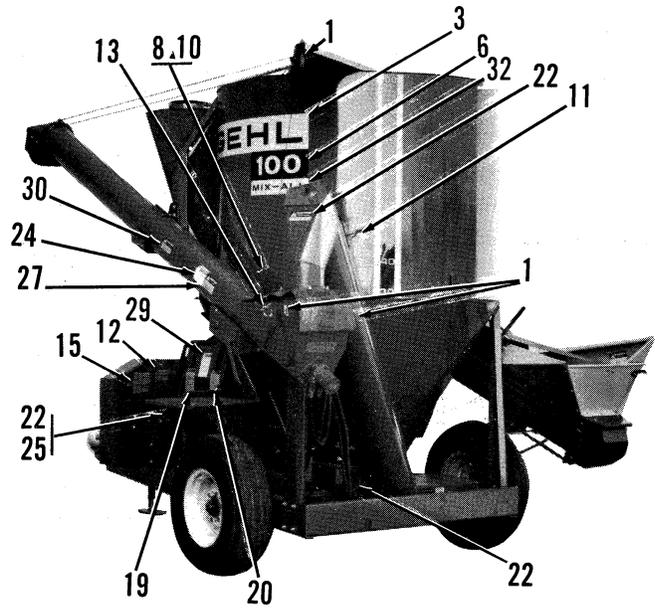
901225	One Gallon Blaze Paint
901226	One Gallon Maize Paint
610239	6 (12 oz.) Cans Blaze Spray Paint
610240	6 (12 oz.) Cans Maize Spray Paint

The Decal Set Number for the MX100 Mixer with Gravity Feeder Attachment is 074853. The Set includes the following:

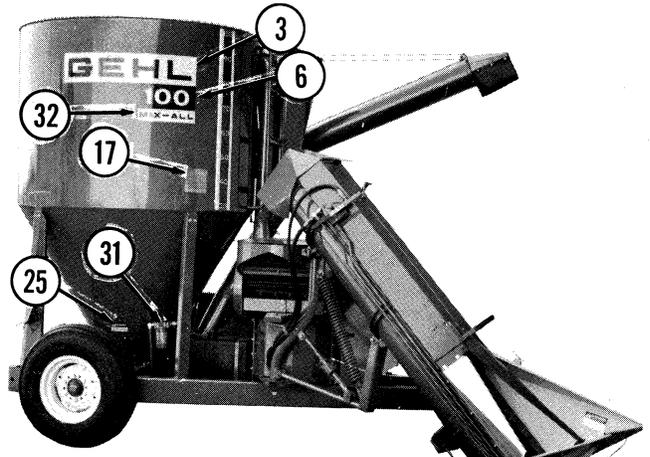
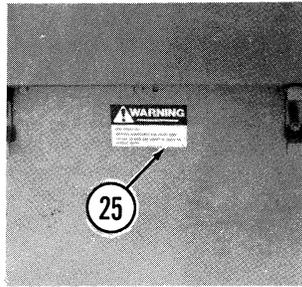
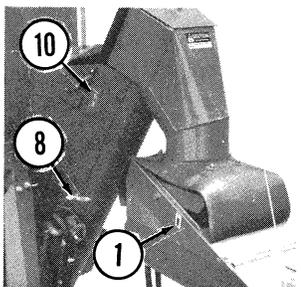
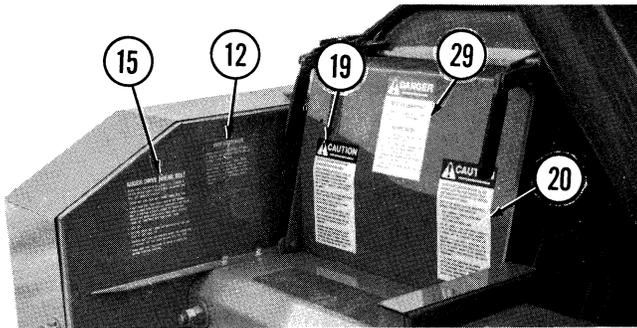
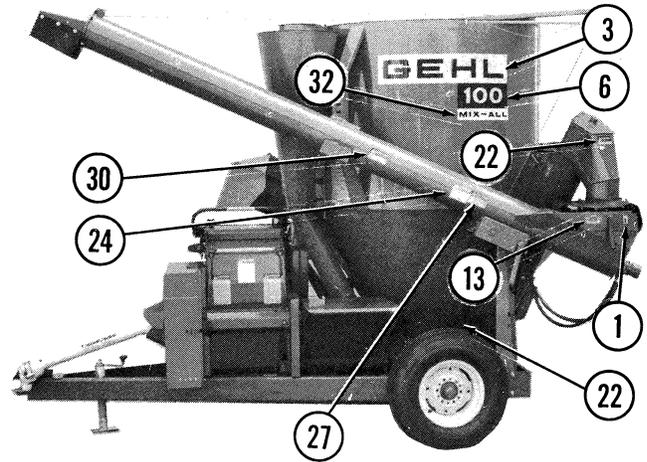
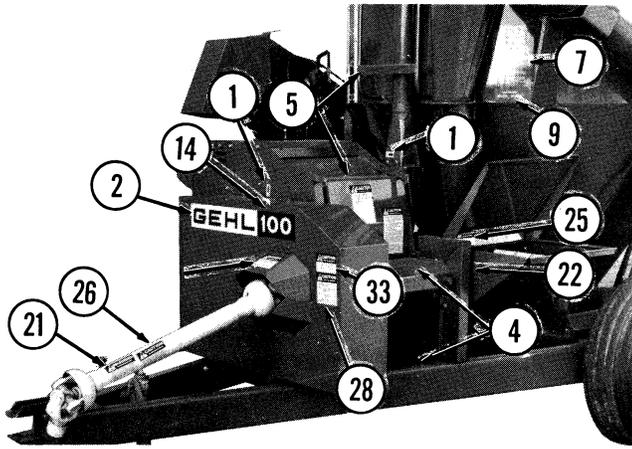
Ref. Part No. Number	Description & Quantity
1 061187	Decal - Grease Fitting Symbol (5 Places)
2 061202	GEHL 19 x 4
3 061205	GEHL 35 x 7 (2 Places)
4 064873	Wide Friction Surface Strip (2 Places)
5 064874	Narrow Friction Surface Strip (4 Places)
6 065001	100 15 x 6 (2 Places)
7 065002	Decal - Mixer Instructions
8 065006	Decal - Valve ON-OFF
9 065008	Decal - Collector - OPEN-CLOSED
10 065009	Decal - Front Crank - OPEN-CLOSED
11 065010	Decal - Rear Crank - CLOSED-OPEN
12 065011	Decal - Belt Tension Adjustment
13 065012	Decal - Brake Engagement
14 066855	100 9½ x 4
15 069080	Decal - Auger Drive Shear Bolt Instruction
16 069081	Decal - Main Drive Shear Bolt Instruction
17 069240	Decal - Feed Capacity Chart
18 069251	Decal - Patent - Not Shown (Replace if Desired)
19 077682	CAUTION - General Safety Precautions
071712	CAUTION - General Safety - Not Shown
20 076894	CAUTION - Operator's Responsibility & Manual
071713	CAUTION - Read Operator's Manual - Not Shown
21 071718	WARNING - Rotating Shield
22 072058	CAUTION - Close or Replace Guard (4 Places)
23 072146	WARNING - Clutch Pin Engagement
24 072148	DANGER - Electrical Shock Hazard
25 072150	WARNING - Keep Hands Out (3 Places on Mixer & 1 Place on Gravity Feeder)
26 072152	CAUTION - 540 RPM Operation Only - Shown
072151	CAUTION - 1000 RPM Operation Only - Not Shown
27 072154	CAUTION - Winch Brake
28 072157	CAUTION - Sheave Identification
29 072159	DANGER - Rotating Component
30 072160	CAUTION - Transport Latch Pin
31 072313	Decal - Filter (less Gauge) Use
067175	Decal - Filter (with Gauge) Use - Not Shown (Early Model)
32 075362	Decal - Mixall® (2 Places)
33 075684	CAUTION - Implement Hitchpin
061187	Decal - Grease Fitting Symbol - Not Shown (Remote Controls)
072058	CAUTION - Close or Replace Guard (2 Places) - Not Shown (Remote Controls)
072150	WARNING - Keep Hands Out (2 Places) - Not Shown (Remote Controls)
072153	CAUTION - Transport Latch Pin - Not Shown (4 or 7½ Ft Conveyor Extension)
074695	Decal - Wiring Diagram - Not Shown (Remote Controls)
075103	WARNING - Do Not Combine with 7½ Ft Extension - Not Shown (3 Ft Conveyor Extension)

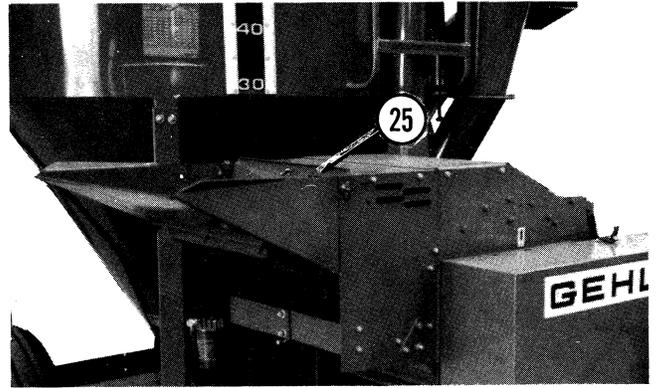
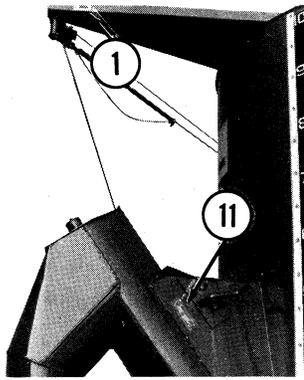
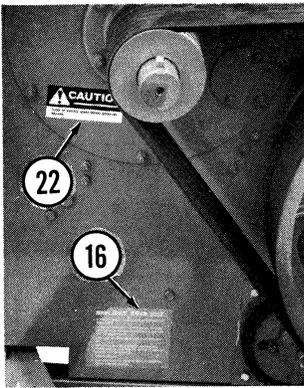


Front Master



Rear Master

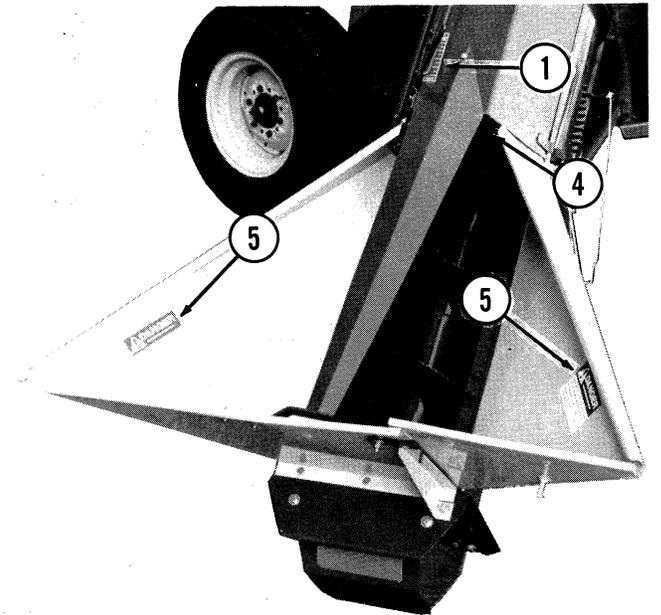




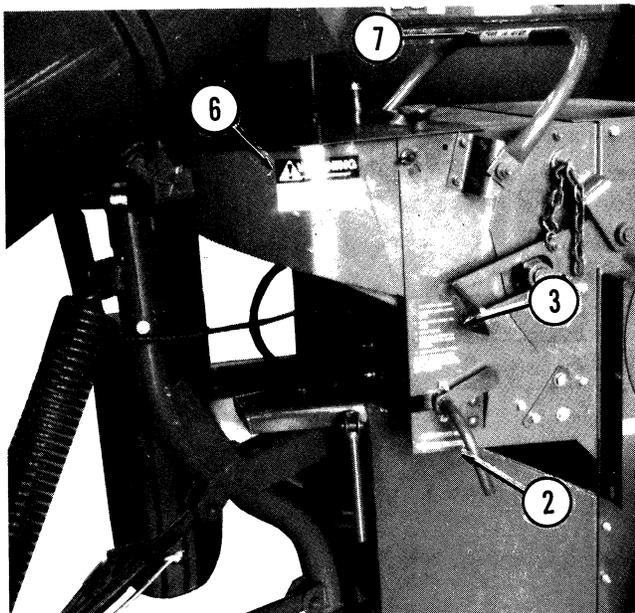
GF Attachment

The Decal Set Number for the FR (Feed Roll), SAF (Swinging Auger Feeder) and combination SAF/FR (Swinging Auger Feeder/Feed Roll) Attachments is 074857.

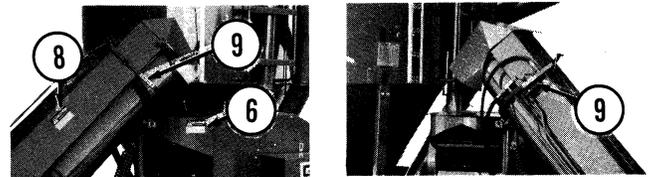
Ref. No.	Part No. Number	Description & Quantity
1	065194	Decal - FAST-SLOW (SAF or SAF/FR)
2	065475	Decal - Auger-Feeder Motor ENGAGE-DISENGAGE (SAF/FR)
3	065476	Decal - FR Operating Instructions (SAF/FR)
4	072058	CAUTION - Close or Replace Guard (2 Places) (SAF or SAF/FR) - Only 1 used After Serial #10000
5	072149	DANGER - Rotating Auger (2 Places) (SAF or SAF/FR)
6	072150	WARNING - Rotating Component (FR or SAF or SAF/FR)
7	072158	Decal - Push-to-Stop (FR or SAF/FR)
8	072160	CAUTION - Transport Latch Pin (SAF or SAF/FR)
9	075923	Decal - Stop (2 Places) (SAF or SAF/FR) - Used Only After Serial #10000



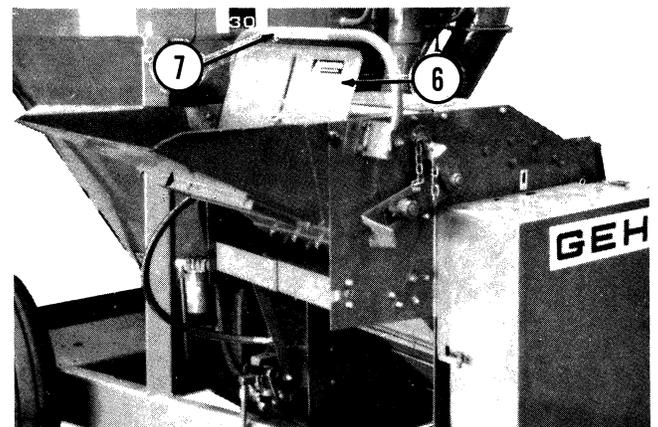
SAF Trough



SAF/FR Attachment



SAF Trough (After Serial #10,000)



FR Attachment

# CHAPTER 17

## MAINTENANCE SCHEDULE

COMPONENT & SERVICE REQUIRED	PROCEDURE AND/OR SECTION TOPIC REFERENCE (Check Pg. # in Index)																														
<b>Service after 10 Hours of Use</b>																															
Lubricate Chains and grease Fittings Lubricate Unloading Conveyor Winch and Pulleys Check Universal Drive Guards	See <b>Lubrication</b> section Apply a few drops of oil Lubricate with oil and test for free rotation																														
<b>Date after Each 10 Hour Servicing</b>																															
<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>																<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>															
<b>Service after 50 Hours of Use</b>																															
Check Roller Chain tension Check Mill/Blower Drive Belt tension Check quality and level of Hydraulic (Self-contained System) Oil Inspect Unloading Conveyor Winch Mechanism and Cable condition Lubricate Transport Lock Mechanism(s) and Mill/Blower Shifter Pin Check Tire pressure Check Wheel Bolts	See <b>Adjustment</b> section See Mill/Blower Drive topic in <b>Adjustment</b> section See Hydraulic Reservoir & Filter topic in <b>Adjustment</b> section See Unloading Conveyor topic in <b>Service</b> section Apply a few drops of oil See <b>Set-up &amp; Assembly</b> section Torque to 90 ft-lb																														
<b>Date after Each 50 Hour Servicing</b>																															
<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>																<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>															
<b>Service after 100 Hours of Use</b>																															
Inspect Hydraulic Motors, Hoses and Fittings Inspect Mill Hammers	Check for leaks and secure attachment See Mill Hammer Rotation or Replacement topic in <b>Service</b> section																														
<b>Date after Each 100 Hour Servicing</b>																															
<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>																<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>															
<b>Service after 200 Hours of Use</b>																															
Inspect all Chains and Sprockets Inspect all Drives, Joints and Bearings* Check quality and level of Transmission oil	Replace if stiff, broken or worn excessively Replace if worn excessively Replace or replenish - See <b>Lubrication</b> section																														
<b>Date after Each 200 Hour Servicing</b>																															
<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>																<table border="1" style="width: 100%; height: 20px;"> <tr><td> </td><td> </td></tr> </table>															

\*Repack Wheel Bearings at least once a year and Mill/Blower Drive Sheave Bearings after every 500 hours of operation

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## TORQUE SPECIFICATIONS FOR STANDARD MACHINE HARDWARE

SIZE	SAE GRADE #2 		SAE GRADE #5 		SAE GRADE #8 	
	DRY	LUB.	DRY	LUB.	DRY	LUB.
8 - 32	19 In. Lbs.	14 In. Lbs.	30 In. Lbs.	22 In. Lbs.	41 In. Lbs.	31 In. Lbs.
8 - 36	20 "	15 "	31 "	23 "	43 "	32 "
10 - 24	27 "	21 "	43 "	32 "	60 "	45 "
10 - 32	31 "	23 "	49 "	36 "	68 "	51 "
1/4 - 20	66 "	50 "	9 Ft. Lbs.	75 "	12 Ft. Lbs.	9 Ft. Lbs.
1/4 - 28	76 "	56 "	10 "	86 "	14 "	10 "
5/16 - 18	11 Ft. Lbs.	9 Ft. Lbs.	17 "	13 Ft. Lbs.	25 "	18 "
5/16 - 24	12 "	9 "	19 "	14 "	25 "	20 "
3/8 - 16	20 "	15 "	30 "	23 "	45 "	35 "
3/8 - 24	23 "	17 "	35 "	25 "	50 "	35 "
7/16 - 14	32 "	24 "	50 "	35 "	70 "	55 "
7/16 - 20	36 "	27 "	55 "	40 "	80 "	60 "
1/2 - 13	50 "	35 "	75 "	55 "	110 "	80 "
1/2 - 20	55 "	40 "	90 "	65 "	120 "	90 "
9/16 - 12	70 "	55 "	110 "	80 "	150 "	110 "
9/16 - 18	80 "	60 "	120 "	90 "	170 "	130 "
5/8 - 11	100 "	75 "	150 "	110 "	220 "	170 "
5/8 - 18	110 "	85 "	180 "	130 "	240 "	180 "
3/4 - 10	175 "	130 "	260 "	200 "	380 "	280 "
3/4 - 16	200 "	150 "	300 "	220 "	420 "	320 "
7/8 - 9	170 "	125 "	430 "	320 "	600 "	460 "
7/8 - 14	180 "	140 "	470 "	360 "	660 "	500 "
1 - 8	250 "	190 "	640 "	480 "	900 "	680 "
1 - 12	270 "	210 "	710 "	530 "	1000 "	740 "

Multiply in Lbs. by (0.113) or Ft. Lbs. by (1.355) for metric Nm

**NOTE:** These torque values are to be used for all GEHL hardware excluding: locknuts, self-tapping screws, thread forming screws, and sheet metal screws. Unless otherwise noted, all torque values must meet this specification.

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**GEHL®**

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**FARM EQUIPMENT**

**GEHL COMPANY WEST BEND, WISCONSIN 53095 U.S.A.**