

16.20436C

PA290B0K00

OPM - MILLER 5200 FBX COMBO

01/20/2006

MILLER PRO

FORAGE BOX MODEL 5200 FRONT/REAR UNLOAD

OPERATOR'S MANUAL

**DO NOT OPERATE THIS EQUIPMENT
UNTIL THIS MANUAL
HAS BEEN READ AND UNDERSTOOD.**

16.20436C 4/02
supercedes
16.20436B 10/00



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MILLER PRO FORAGE BOX

PRE-DELIVERY CHECK LIST

After the Miller Pro Forage Box has been completely set-up, check to be certain it is in correct running order before delivering it to the customer. The following is a list of points to inspect. Check off each item as you have made the proper adjustments and found the item operating satisfactorily. Any adjustment must be made according to specifications defined in this manual.

- All shields and guards are in place and fastened.
- Safety bar and cable operate properly.
- Position and fasten the rear saddle to main stringers, per instructions on pages 15-17.
- All grease fittings have been lubricated and gear box filled to proper level and all chains are oiled. See "Lubrication" section in this manual, pages 23-25.
- All mechanisms are operating trouble free.
- All roller chains are at proper tension. See "Adjustments" section in this manual, page 26-29.
- All bolts and other fasteners are tight.
- PTO shields turn freely.
- Apron chains are adjusted properly. See "Adjustments" section in this manual, page 26.
- Rear door opens, closes and latches properly.

Dealer's Name

Signature of Pre-Delivery Inspector

Date of Inspection

Model No.

Serial No.

DELIVERY CHECK LIST

The following check list 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 and PTO Manual. Instruct them to be sure to read and completely understand their contents BEFORE attempting to operate the unit.
- Explain the warranty.
- Explain and review with the customer the Safety Precautions section of this manual.
- Explain and review with the customer the Operating and Safety Equipment section of this manual.
- Explain that regular lubrication and proper adjustments are required for continued proper operation and long life. Review with the customer the Maintenance and Adjustments sections of this manual.
- Demonstrate the Safety/Cross Conveyor Clutch operation and activation. Also demonstrate the PTO Shaft Locking Device, Main Clutch and Shift Lever mechanisms.
- Advise the customer to check for proper Apron and Roller Chain tension after the second load has been unloaded and to continue to check the tension until the initial give or slack in the apron disappears.
- Complete the Delivery Registration Card and have customer sign it and return it to Miller-St. Nazianz.
- Demonstrate the proper way to switch from front unload to rear unload and back.

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

Customer's Signature

Date Delivered

(Customer Copy)

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

Customer's Signature

Date Delivered

(Dealer Copy)

SAFETY PRECAUTION



This symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions. Take time to be careful!

WARNING

BEFORE YOU ATTEMPT TO OPERATE THIS FORAGE BOX, 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. MILLER-ST. NAZIANZ PROVIDES GUARDS FOR EXPOSED MOVING PARTS FOR THE OPERATOR'S PROTECTION; HOWEVER, SOME AREAS CANNOT BE GUARDED OR SHIELDED IN ORDER TO ASSURE PROPER OPERATION. THE OPERATOR'S MANUAL AND DECALS ON THE MACHINE ITSELF WARN YOU OF DANGERS AND SHOULD BE READ AND OBSERVED CLOSELY!

DO NOT UNCLOG, ADJUST, LUBRICATE OR SERVICE YOUR FORAGE BOX UNIT UNTIL YOU DISENGAGE THE TRACTOR PTO AND SHUT OFF THE TRACTOR ENGINE. FAILURE TO FOLLOW THIS PROCEDURE MAY RESULT IN SERIOUS BODILY INJURY!

KNOW HOW TO STOP THE UNLOADING UNIT OF THE FORAGE BOX BEFORE STARTING IT!

BE SURE THE LOCKING DEVICE ON THE TELESCOPING PTO DRIVE SHAFT IS ENGAGED ONTO THE TRACTOR PTO SHAFT GROOVE BEFORE STARTING THE TRACTOR ENGINE!

BE SURE ALL GUARDS, DOORS AND SHIELDS ARE IN PLACE AND PROPERLY SECURED BEFORE STARTING THE TRACTOR ENGINE!

KEEP HANDS, FEET AND CLOTHING AWAY FROM CHAINS, AUGERS AND PTO WHEN THEY ARE MOVING!

DO NOT CONNECT A 1000 RPM TRACTOR PTO SHAFT ONTO THIS UNIT!

SAFETY PRECAUTION, continued

DO NOT ALLOW MINORS TO BE NEAR THE MACHINE UNLESS PROPERLY SUPERVISED!

KEEP THE FORAGE BOX AWAY FROM POWER LINES. CONTACT WITH ELECTRIC LINES MAY RESULT IN SERIOUS INJURY OR DEATH BY ELECTROCUTION!

USE ONLY PROPERLY RATED RUNNING GEAR AND TIRES!

ALWAYS ENGAGE THE TRACTOR PARKING BRAKE BEFORE PROCEEDING TO UNLOAD THE FORAGE BOX! (FRONT UNLOAD ONLY)

CHECK OPERATION OF THE EMERGENCY CLUTCH AND OF THE ACTIVATING MECHANISMS, SAFETY BAR AND SAFETY CABLE FREQUENTLY, TO INSURE THAT THEY ARE FUNCTIONING PROPERLY! (THEY FUNCTION ONLY IN FRONT UNLOAD MODE)

BE SURE THE ROTATING SHIELDS ON THE TELESCOPING PTO DRIVE SHAFT TURNS FREELY BEFORE STARTING THE TRACTOR ENGINE!

DO NOT WEAR LOOSE OR BAGGY CLOTHING WHEN OPERATING THIS UNIT!

DO NOT ALLOW PEOPLE OTHER THAN A QUALIFIED OPERATOR NEAR THE UNIT!

DO NOT EXCEED A MAXIMUM TOWING SPEED OF 20 MPH (32 KM/H) WHILE TRANSPORTING THE FORAGE BOX!

DO NOT USE PTO OR PTO GUARD AS A STEP!

SEE SPECIAL INSTRUCTIONS FOR OPERATING RIGHT HAND UNLOAD FORAGE BOXES! PAGE 9.

.5

OPERATING AND SAFETY EQUIPMENT



BECOME FAMILIAR WITH AND KNOW HOW TO USE ALL SAFETY DEVICES AND OPERATING EQUIPMENT BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT. KNOW HOW TO STOP THE UNIT BEFORE STARTING IT!

Shields



DO NOT OPERATE THIS EQUIPMENT UNLESS ALL INSTALLED SHIELDS ARE PROPERLY SECURED IN PLACE!



DO NOT LUBRICATE, ADJUST AND/OR SERVICE UNLESS TRACTOR PTO IS DISENGAGED AND TRACTOR ENGINE IS SHUT OFF!

Wherever possible and without affecting machine operation, shields have been used on this forage box 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. Refer to Safety Label Location section. Page 10

Hinged Shields Figure 1-#1

Hinged Shields have been provided over the transmission, beater drive chains and front roller chain drive. These can be opened for lubrication, adjustment and/or service access when required. Shields should be inspected and cleaned periodically to avoid material build up.

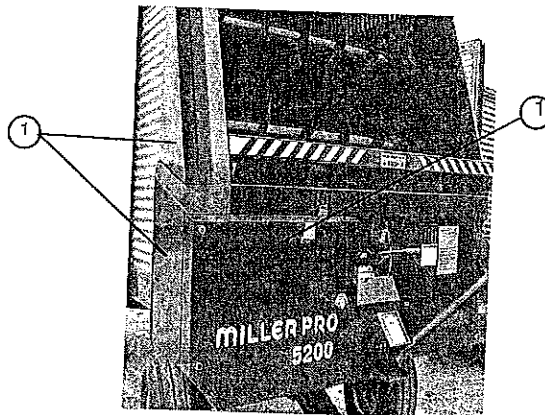


Figure 1

Emergency Clutch Bar and Cable Figure 2- #2 & #3

⚠ IN AN EMERGENCY, PUSH THE SAFETY BAR OR PULL THE SAFETY CABLE , OR ROTATE THE LEVER TO TRIP THE SAFETY/CROSS CONVEYOR CLUTCH AND STOP THE CROSS CONVEYOR, AUGERS AND MAIN APRONS.

⚠ EMERGENCY STOP DOES NOT STOP THE FORAGE BOX DRIVE SYSTEM WHEN BEING OPERATED AS A REAR UNLOAD.

To trip the safety/cross conveyor clutch, either push the safety bar (Figure 2-#2) which spans across the front of the unloading unit or pull the safety cable (Figure 2-#3) which runs over the outfeed. To reset, rotate safety/cross conveyor clutch lever into "RUN" position.

Safety/Cross Conveyor Clutch Figure 2-#4

The safety/cross conveyor clutch allows clearing of the cross conveyor without operation of the augers or main aprons. This clutch also functions as a safety reset and is disengaged by pushing the safety push bar or pulling the safety cable on the side of the box. (Figure 2-#2 & #3)

To reset, return the safety/cross conveyor clutch handle to the "run" position.



Figure 2

Main Clutch Figure 2-#5

The main clutch lever is provided for stopping and starting the augers and main aprons.

The main clutch is engaged when the lever is in the "run" position. To disengage the clutch, move the lever to the "stop" position.

Use of the main clutch lever during unloading is further explained in the Operating Instructions section of this manual. Page 18.



DISENGAGING THE MAIN CLUTCH DOES NOT STOP THE CROSS CONVEYOR. TO STOP THE CROSS CONVEYOR, THE EMERGENCY PUSH BAR OR CABLE MUST BE TRIPPED OR SAFETY/CROSS CONVEYOR CLUTCH TURNED TO THE STOP POSITION!

Main Apron Shift Lever Figure 2-#6

The shift lever is used only to adjust the feeding rate of the main aprons. It is marked with seven positions:
1, Neutral (N); 2, Neutral (N); 3, Neutral (N); and 4 (Sweep).

CAUTION: The fourth or sweep speed should only be used at the end of the load for clean-out and not for normal unloading operation.

Front PTO Guard Figure 2-#7

A guard is provided over the input drive universal joint on the front of the unloading unit.



DO NOT USE THE PTO GUARDS AS A STEP!

Rotating PTO Guard Figure 3-#8

The telescoping PTO shaft, between the forage box and the tractor, is equipped with a rotating shield.



BE SURE THE ROTATING PTO SHIELD TURNS FREELY BEFORE STARTING THE TRACTOR ENGINE!

PTO Transport Bracket Figure 3-#9

A bracket is provided on the front of the unloading unit to conveniently hold the telescoping PTO drive shaft during transport.

To safeguard the telescoping PTO drive shaft, be sure to shut off the tractor engine and disconnect the drive shaft from the PTO shaft and place it into the bracket when transporting or filling the forage box.

Hinged Shield Figure 4-#10 & #11

Hinged shields have been provided over the apron takeup and rear roller chain drive. These can be opened for lubrication, adjustment and /or service access when required. Shields should be inspected and cleaned periodically to avoid material build up.



DO NOT LUBRICATE, ADJUST AND/OR SERVICE UNLESS TRACTOR PTO IS DISENGAGED AND TRACTOR ENGINE IS SHUT OFF!

Figure 3

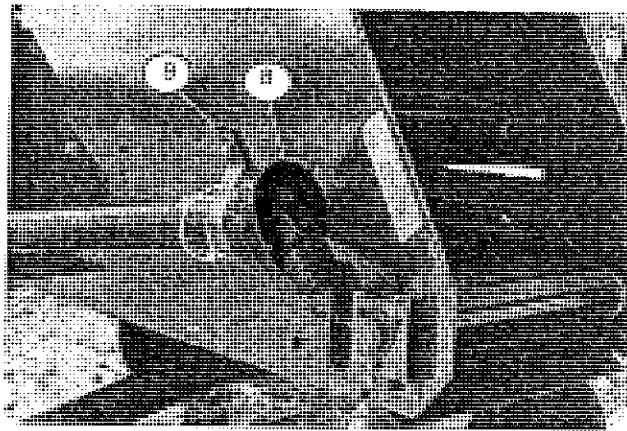
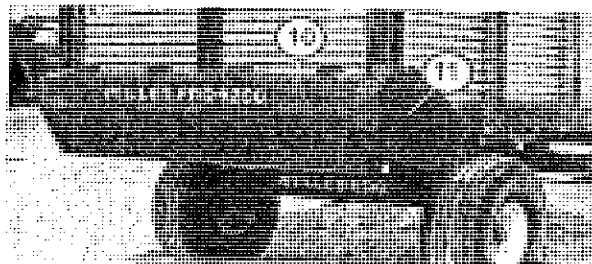


Figure 4



Unloading Operation - Left and Right Hand Unload (Front Unload Only)

Because forage blowers load from the right side (as viewed from behind), a left hand forage box will be stationed next to the forage blower so that the controls on the forage box as well as those on the blower and the blower tractor easily can be reached from the Operator's Position. This is the recommended arrangement. See the line drawing (Figure 5).

However, because of building and silo arrangements on some farms, some customers desire right hand unload forage boxes. A right hand box may be convenient for positioning the forage box to the blower, but it limits easy access of the forage box operator to the controls on the blower and the blower tractor. Accordingly, a right hand unload forage box will be stationed so that the controls on the blower and blower tractor can safely be reached from the Operator's Position ONLY by the operator leaving the Operator's position and walking around the forage box tractor and the forage box itself, or, if accessible, by walking between the blower and the silo. See the line drawing. (Figure 6)

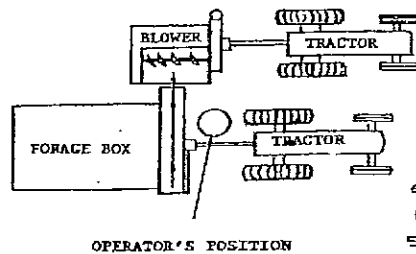


WARNING

DO NO STEP OVER PTO SHAFT!

DO NOT WALK OR CLIMB BETWEEN FORAGE BOX OUTFEED AREA AND BLOWER WHEN EITHER FORAGE BOX OR BLOWER IS OPERATING!

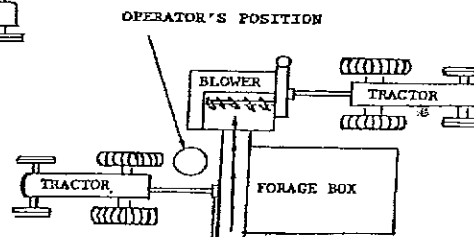
DO NOT TAKE A SHORT CUT!



OPERATOR'S POSITION

LEFT HAND UNLOAD

Figure 5



OPERATOR'S POSITION

RIGHT HAND UNLOAD

Figure 6

SAFETY LABEL LOCATION

Each Forage Box has been produced and assembled with the operator's safety in mind. As a reminder to the operator of proper operation of the machine, several labels of warning and instruction have been attached. Information on labels is by necessity less than in the operator's manual. Do not depend solely on the labels for safe and proper operation. Use your operator's manual.

DO NOT REMOVE ANY OF THESE LABELS. THEY ARE FOR YOUR PROTECTION! TAKE NOTE OF THEIR MESSAGES AND OBSERVE!

PERIODICALLY CHECK ALL LABELS AND REPLACE ANY THAT ARE MISSING, WORN, OR ILLEGIBLE. WHEN REPLACING, CLEAN MACHINE SURFACE THOROUGHLY USING SOAP AND WATER OR CLEANING SOLVENT TO REMOVE DIRT AND GREASE. CONTACT YOUR DEALER OR MILLER-ST. NAZIANZ AT 414-773-2121 IF ANY LABELS ARE NOT UNDERSTOOD!

THE MILLER FORAGE BOX WAS DESIGNED AS A FORAGE BOX. DO NOT USE FOR OTHER PURPOSES!

REPLACE ALL WORN, DAMAGED, UNUSABLE OR MISSING SAFETY SHIELDS AND GUARDS. CONTACT YOUR DEALER!

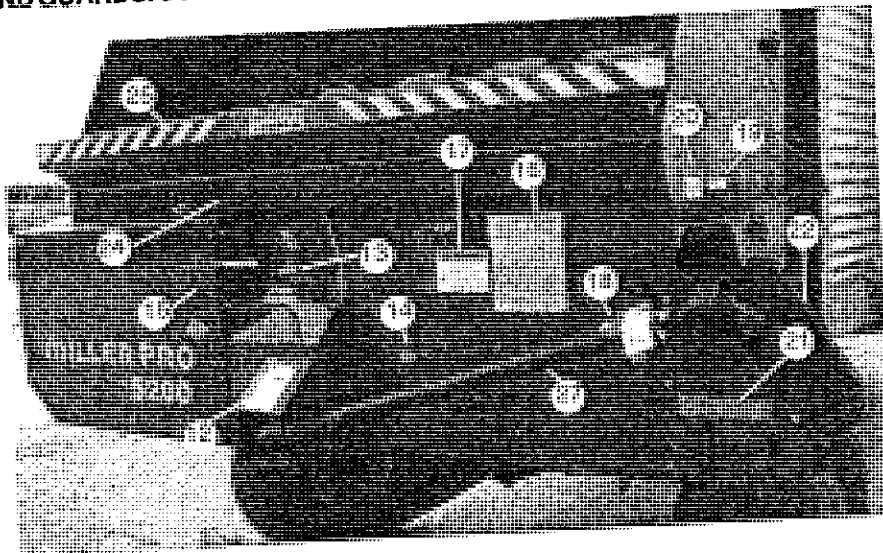


Figure 7

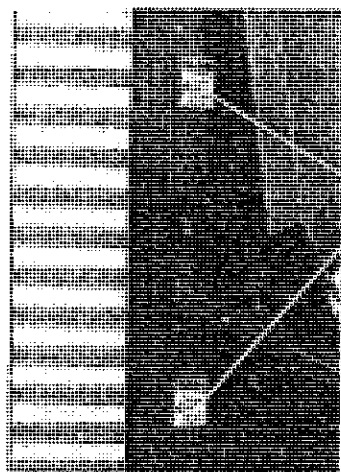


Figure 9

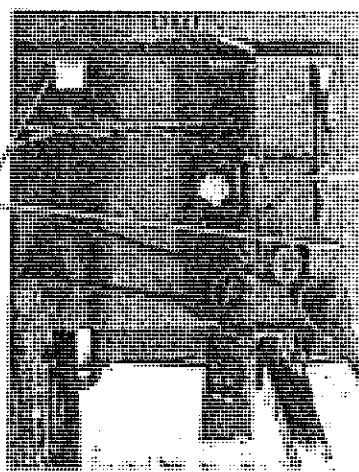


Figure 10

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
12	16.20177	WARNING - ROTATING PTO KEEP YOUR BODY AND CLOTHING AWAY
13	01.77770	STOP
14	01.77760	RUN
15	16.20195	SHIFT QUADRANT 5200 (LEFT HAND)
	16.20261	SHIFT QUADRANT 5200 (RIGHT HAND)
16	16.20210	OPERATING INSTRUCTIONS - 5200 (see page 20)
17	16.20178	CAUTION - BEFORE YOU OPERATE THIS EQUIPMENT
18	06.800509	DANGER - ROTATING DRIVELINE
19	01.77810	EMERGENCY STOP PULL
20	16.20181	WARNING - ROTATING PARTS INSIDE- KEEP YOUR BODY AND CLOTHING AWAY
21	907220	AMBER REFLECTOR (2 on each side, not shown)
22	907219	RED REFLECTOR
	01.77940	WARNING - RIGHT HAND UNLOAD (NOT SHOWN)
23	16.20179	WARNING - REPLACE ALL SHIELDS BEFORE OPERATING
24	16.20196	DECAL, 4TH GEAR (LEFT HAND)
	16.20262	DECAL, 4TH GEAR (RIGHT HAND)
25	01.77740	EMERGENCY STOP - PUSH
26	16.10552	DECAL, DANGER DOOR
27	17.00165	DECAL, DANGER (INSIDE IMPLEMENT INPUT DRIVELINE)
	907224	SMV W/STEEL BACKING (ON BACK OF FORAGE BOX (NOT SHOWN)
	907228	PTO MANUAL



CLOSE OR REPLACE ALL COVERS, DOORS OR SHIELDS BEFORE STARTING THE UNLOADING MECHANISM!

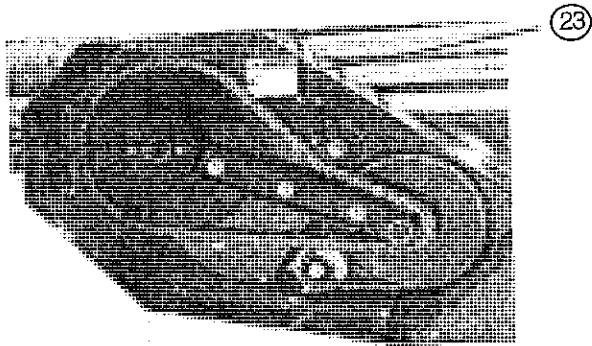


Figure 11

Figure 12

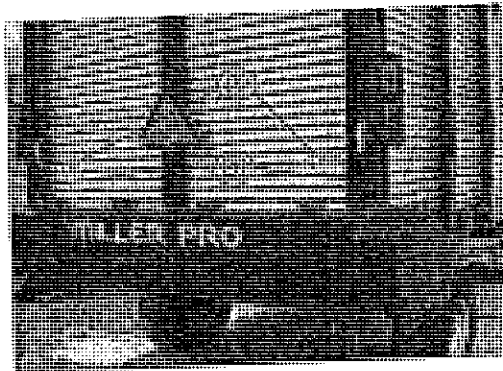
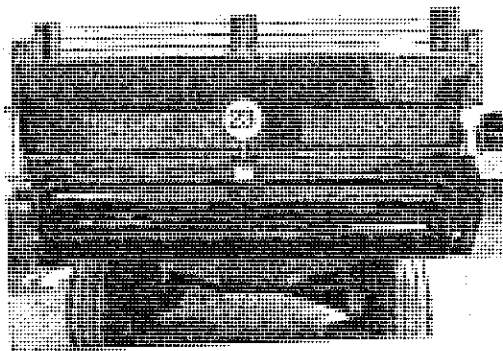


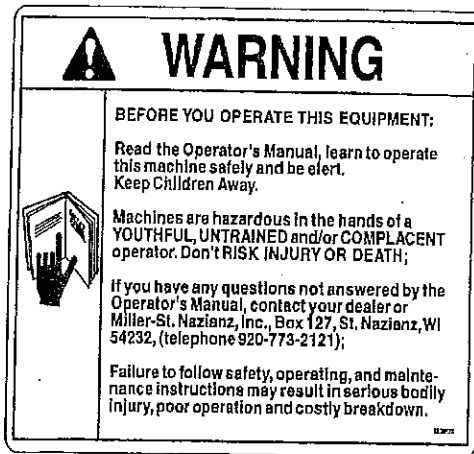
Figure 13



01.77740 1 Req'd
Figure 7 # 25



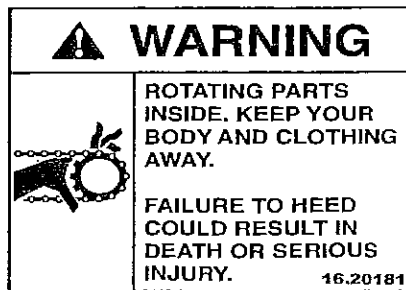
01.77810 1 Req'd
Figure 7 # 19



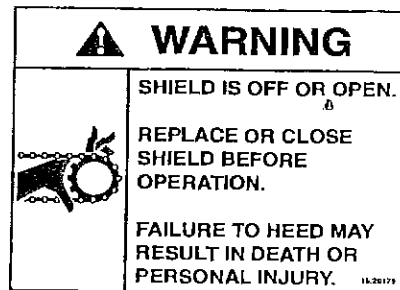
16.20178 1 Req'd
Figure 7 # 17



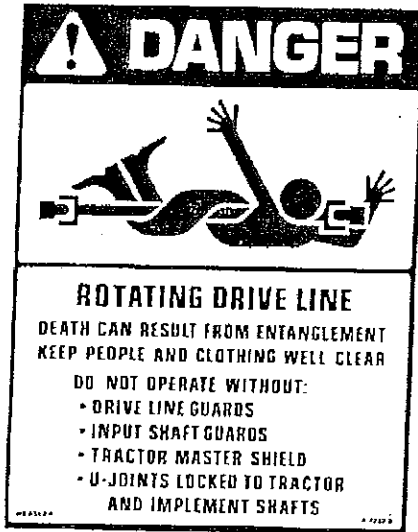
16.10552 2 Req'd
Figure 13 # 26



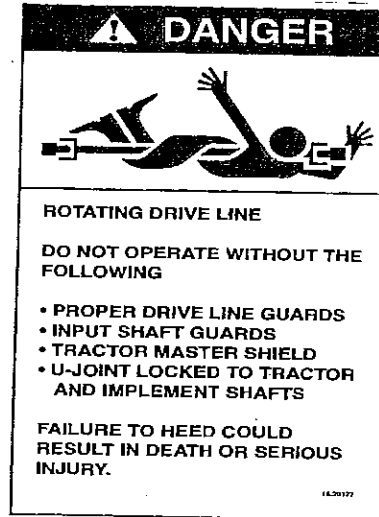
16.20181 1 Req'd
Figure 7 # 20



16.20179 9 Req'd
Fig. 9,10 # 23
11,& 12



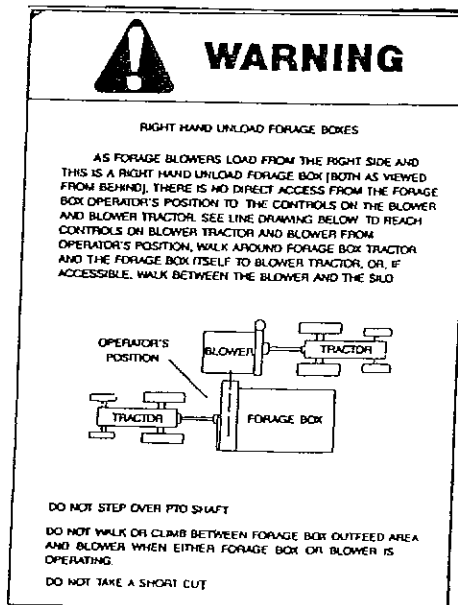
06.800509 1 Req'd
Figure 7 # 18



16.20177 1 Req'd
Figure 7 # 12



17.00165 1 Req'd
Figure 7 #27



16.10266 1 Req'd (Right Side Unit Only)
Not Shown Under Item #17

SET-UP INSTRUCTIONS

SMV Emblem

A Slow Moving Vehicle (SMV) Emblem is supplied with the forage box.

Mounting Forage Box to Millier Pro Running Gear

Front Unload and Combo Boxes:

<u>Box Length</u>	<u>Running Gear</u>	<u>A Dimension</u>	<u>B Dimension</u>
16'	6 - Wheel	117.00	116.50
16'	4 - Wheel	124.50	124.00
18'	6 - Wheel	139.50	139.00
18'	4 - Wheel	147.00	146.50
20'	6 - Wheel	162.00	161.50
20'	4 - Wheel	169.50	169.00

Rear Unload:

<u>Box Length</u>	<u>Running Gear</u>	<u>A Dimension</u>	<u>B Dimension</u>
18'	6 - Wheel	132.00	131.50
18'	4 - Wheel	139.50	139.00
20'	6 - Wheel	147.00	146.50
20'	4 - Wheel	154.50	154.00

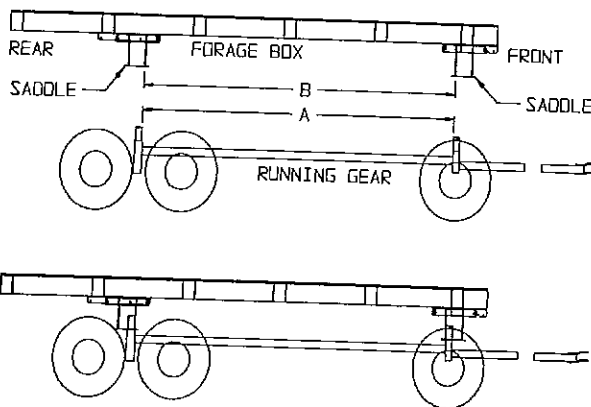


Figure 14

NOTE: B Dimension DOES NOT center forage box saddles on running gear bolster but are biased to prevent movement.

NOTE: Be sure the forage box is assembled to a running gear per included setup instructions or warranty may not apply.

Saddle Mounting

Saddle must be mounted with the side brackets facing inward, as shown.

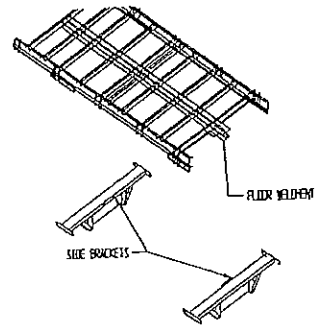


Figure 15

Saddles must be mounted with bushings provided. Bushings must be bolted tight to the floor allowing the saddle to flex.

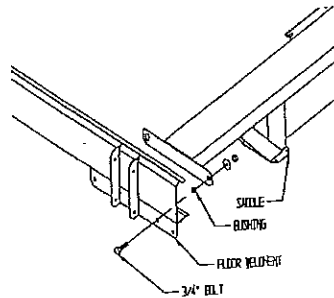


Figure 16

Tandem Tire Bracket

If you mount the box on a running gear equipped with tandems, you must bolt the tandem tire bracket into place (1 per side).

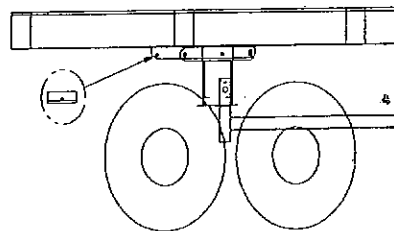


Figure 17

Mounting Forage Box to Running Gear

The 5200 may require a riser kit when mounted to a running gear with larger tires. Check the chart to determine if it is necessary to order a kit.

<u>"A" Dim</u>	<u>Block Height</u>	<u>Kit Number</u>
0" - 6 1/2"	0"	----
6 1/2" - 8 1/2"	2"	16.09984
8 1/2" - 10"	3"	16.09985
10" - 11 1/2"	5"	16.09984 & 16.09985

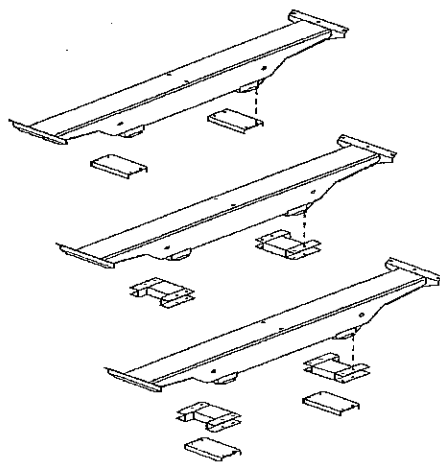


Figure 18

16.09984
2" Riser Kit
(4) 2" Riser Blocks &
Mounting Hardware

16.09985
3" Riser Kit
(4) 3" Riser Blocks &
Mounting Hardware

16.09984 & 16.09985
5" Riser Kit
(4) 2" Riser Blocks &
(4) 3" Riser Blocks &
Mounting Hardware

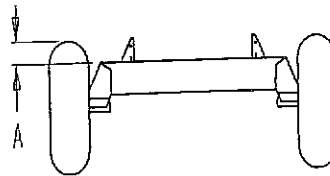


Figure 19

Cross Conveyor Apron

On some units the outfeed extension is shipped loose. Proper setup requires this be attached with the existing 6-3/8" bolts, lockwashers & nuts. The PTO bracket is located on the middle 3/8" bolt in front. The flange on the return pan must be inside the unit as shown.

Proper tension on the cross conveyor apron is obtained when apron slats are first touching the return pan about 3' inside the outfeed opening. Adjust the right and left tighteners so both side chains are tightened equally. To adjust the apron, loosen the 3/8" nuts #28A, and then loosen the outer jam nut #28 on the adjusting stud and turn the inner adjusting nut #29 until the proper tension is achieved, then retighten the jam nuts and 3/8" nuts #28A.

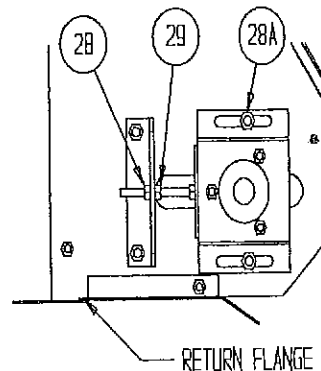


Figure 20

OPERATION INSTRUCTIONS

Loading

The forage box load should be filled evenly so as to provide for even feeding into the unloading unit.

Do not fill the cross feed unloading area with crop to get extra capacity. Although overloading devices are provided as a protection, overloading puts unnecessary pressure and strains on the cross conveyor and auger drive.

Place the telescoping PTO drive shaft in the transport bracket during loading and transporting the forage box.

Transporting

The outfeed apron extension has been equipped with an amber reflector on front and a red reflector to the rear. There are 2 amber reflectors on each side of the forage box. Red reflectors also are attached to the rear access door of the forage box.



**NEVER EXCEED A
MAXIMUM TOWING
SPEED OF 20 MPH
(32 KMH) WHEN
TRANSPORTING
THE FORAGE BOX!**

The telescoping PTO connection MUST be disconnected from the tractor when the forage box is being towed. Use the transport bracket provided for convenient storage of the drive shaft during transporting.

Capacity

The capacity of your forage box depends on the size of the box, the strength of the main apron chain, and the rating of the wagon gear and tires. The recommended maximum loads below are assuming running gear and tires are adequately rated for both the crop load and the weight of the forage box.

<u>Model</u>	<u>Chain</u>	<u>Recommended Forage Box Maximum Crop Load</u>	<u>Weight (Approx.)*</u>
5200 - 16'	667H Pintle (Std)	7.5 ton	2.00 ton
5200 - 18'	667H Pintle (Std)	9.0 ton	2.25 ton
5200 - 18'	667X Pintle (Opt)	9.5 ton	2.25 ton
5200 - 20'	667H Pintle (Std)	10.0 ton	2.50 ton
5200 - 20'	667X Pintle (Opt)	10.5 ton	2.50 ton

Tractor Connections



**USE ONLY A 540 RPM
TRACTOR PTO SHAFT.
DO NOT USE A 1000 RPM
TRACTOR PTO SHAFT!**

The following tractor hookup provisions should be made: Figure 21

The hitch point of the tractor drawbar should be set at least 14" behind the end of the PTO shaft.

The hitch point of the tractor drawbar should be set at least 5" but not more than 12" below the tractor PTO shaft.

The hitch point of the tractor drawbar should be at least 13" but not more than 20" above the ground.

The hitch point of the tractor drawbar and PTO should be in a vertical line with each other.

After the proper tractor drawbar PTO shaft alignments are established, make the telescoping PTO drive shaft connection.

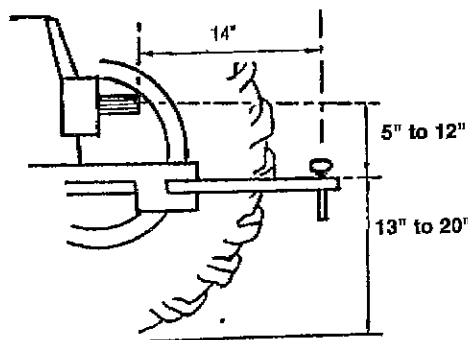


Figure 21

PTO Attachment Procedure

Figure 22

On units with plastic (two piece) locking ring, moving the ring, #30, back (away from the tractor) releases the retaining balls.



WARNING

THE ROTATING PTO FRONT HALF PTO JOINT MUST BE GUARDED BY THE TRACTOR MASTER PTO SHIELD PROVIDED BY THE TRACTOR MANUFACTURER. TO AVOID INJURY BE SURE TO HAVE IT INSTALLED BEFORE OPERATION!



WARNING

BE SURE THE TELESCOPING PTO DRIVE SHAFT LOCKING DEVICE IS POSITIVELY ENGAGED INTO THE TRACTOR PTO SHAFT BEFORE STARTING TRACTOR ENGINE!

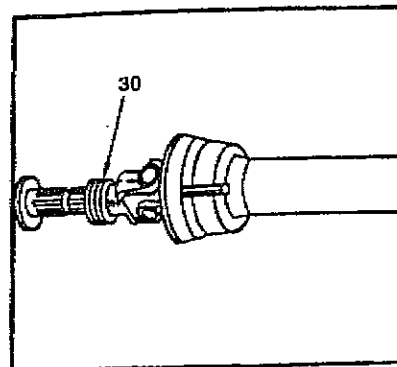


Figure 22

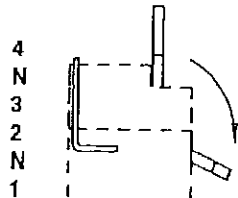


DO NOT ALLOW ANYONE TO OPERATE THIS EQUIPMENT WHO HAS NOT BEEN TRAINED IN ITS SAFE OPERATION!

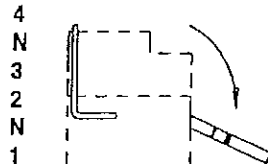
OPERATING INSTRUCTIONS

FRONT UNLOADING

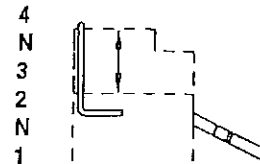
1. Before unloading the forage box, park the box on level ground for unloading, if possible, engage the tractor parking brake and shut off the tractor engine.
2. Be sure safety/cross conveyor clutch is in the "stop" position and the shift lever in the "neutral" position. To avoid undue strain on drive mechanism never start unloading with shift lever in gear or safety/cross conveyor clutch in "run".
3. Connect telescoping PTO drive shaft to tractor. Engage locking device in groove on tractor PTO shaft.



Step 4



Step 5



Step 6

4. Start tractor engine. Set throttle at idle and engage the PTO. Engage the safety/cross conveyor clutch to clean out crop on the cross conveyor.
5. Place the main clutch in the "run" position to start the augers. If the cross conveyor chamber becomes full, switch the main clutch to "stop" until area clears. Return clutch to "run" and repeat procedure until augers are clear of crop.
6. Move the shift lever from neutral to unload (1,2, or 3) to start the main unloading aprons. Do not force shift lever from neutral into gear. To shift from neutral to unload (1,2, or 3) the unit should be running and the drive clutch engaged (run).
7. Proceed to unload the forage box. Unloading speed can be varied by using the tractor throttle or selecting an alternate unloading speed. It may be necessary to disengage the main clutch to allow shifting. It may also be necessary to re-engage the main clutch to complete the shift. Do not use sweep speed (4) for unloading. Do not exceed a PTO speed of 400 RPM.

OPERATING INSTRUCTIONS, continued

8. After the crop falls back move the shift lever into sweep (4) for faster cleanout. It may be necessary to disengage the main clutch to allow shifting from an unload speed (1,2, or 3) to sweep (4).
9. After unloading return the shift lever to neutral before stopping the PTO.
10. Disengage tractor PTO and shut off tractor engine. Disconnect telescoping PTO drive shaft from the tractor and place in PTO transport bracket.



DO NOT ALLOW ANYONE TO OPERATE THIS EQUIPMENT WHO HAS NOT BEEN TRAINED IN ITS SAFE OPERATION!



EMERGENCY STOP DOES NOT STOP THE FORAGE BOX DRIVE SYSTEM WHEN BEING OPERATED AS A REAR UNLOAD.

Rear Unloading- Mechanical

- A. Before unloading the Forage Box, park the box on level ground, if possible, engage the tractor parking brake, and turn off the tractor engine.
- B. Connect telescoping PTO drive shaft to tractor. Engage the locking device in the groove on the tractor PTO shaft.
- C. Start the tractor engine. Set throttle at idle and engage the PTO. Once load has started moving and the door is open, increase your throttle to desired speed. Never exceed 540 RPM.
- D. You may have to drive ahead to allow full cleanout & door closure.
- E. Engage the parking brake, disengage the tractor PTO and shut off the tractor engine. Disconnect the telescoping PTO driveshaft from the tractor and place it in the transport bracket.
- F. Check the door to be sure the latches are engaged.

OPERATING INSTRUCTIONS, continued

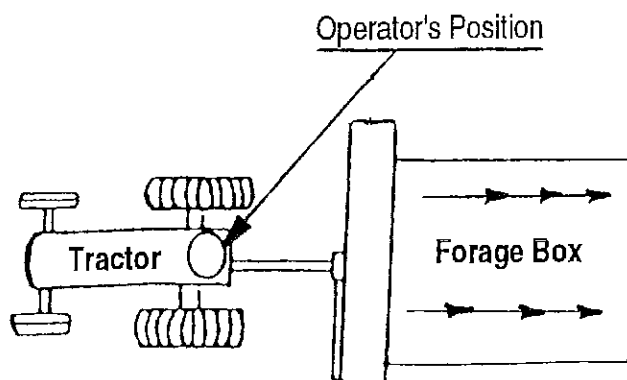


EMERGENCY STOP DOES NOT STOP THE FORAGE BOX DRIVE SYSTEM WHEN BEING OPERATED AS A REAR UNLOAD.

Rear Unloading- Hydraulic

- A. Before unloading the forage box, park the box on level ground, if possible, engage the tractor parking brake, and turn off the tractor engine.
- B. Connect the hydraulic lines to the hydraulic output couplers on the tractor.
- C. Start the tractor engine and engage the hydraulics. If the load does not move, reverse the hydraulic flow with the tractor lever. The forage box has been equipped with a check valve to ensure proper motor rotation.
- D. Once load has started moving, you may have to drive ahead to allow full cleanout and door closure.
- E. Engage the parking brake and disengage the hydraulics and shut off the tractor engine. Disconnect the hydraulic lines from the hydraulic output couplers on the tractor and place them in the storage position.
- F. Check the door to be sure the latches are engaged.

Operator's Position - Rear Unloading



OPERATING INSTRUCTIONS, continued

Shifting the Drive Coupler From Rear Unload To Front Unload

1. Set parking brake and shut off the tractor engine.
2. Remove the lynch pin & washer from the shaft with coupler in the rear of the box.
3. Slide the coupler off the shaft and go to the front.
4. Remove the lynch pin and washer from the front shaft.
5. Slide the coupler onto the front shaft and replace the lynch pin and washer.
6. Replace washer and lynch pin onto the rear shaft.
7. To shift from front unload to rear unload just reverse the above procedure.

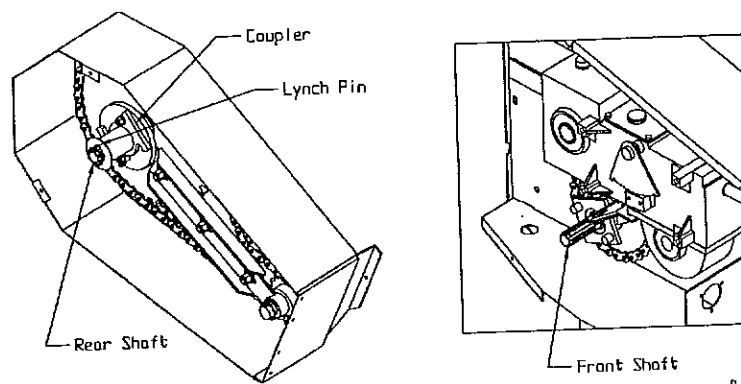


Figure 23

LUBRICATION



**CAUTION! BEFORE LUBRICATING THE MACHINE
DISENGAGE THE PTO, SHUT OFF THE TRACTOR
ENGINE AND ENGAGE THE PARKING BRAKE. BE
CAREFUL! NEVER GREASE OR OIL MACHINE WHILE
THE MACHINE IS RUNNING!**

Grease and Oil

Sufficient oil and grease will prevent excessive part wear and early failure. Lubricate according to instructions.

Most grease fittings are a standard style 1/4" - 28 commonly found on farm implements and automotive equipment. A good grade of lithium base grease should be used.

Main Apron and Beater Drive Gearbox

The gearbox oil level should be checked every 50 loads. Use No. 85W140 or No. 90 gearlube if oil is needed, add through plug in top cover. Figure 24-#31

Safety/Cross and Main Clutch Handles

If handle movement becomes hard, remove nuts (Figure 25-#33) and coat pivot bolt with grease and reinstall.

The gearbox oil level should be up to the check level plug in the gearbox rear cover. Figure 24-#32

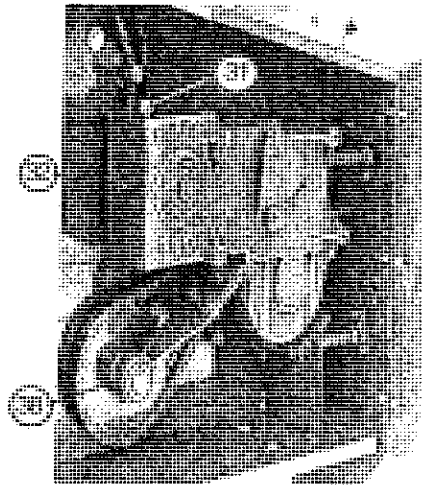


Figure 24

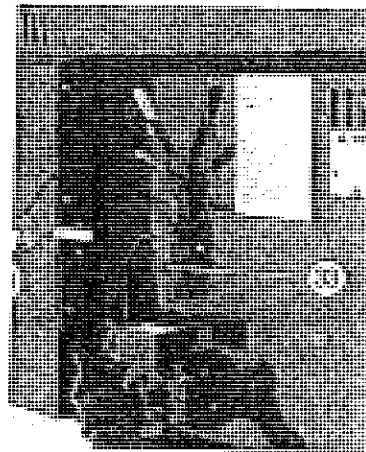


Figure 25

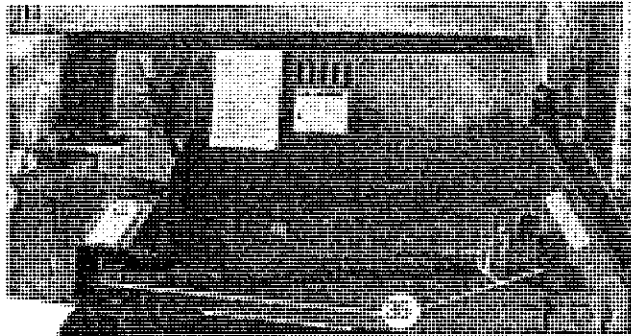


Figure 26

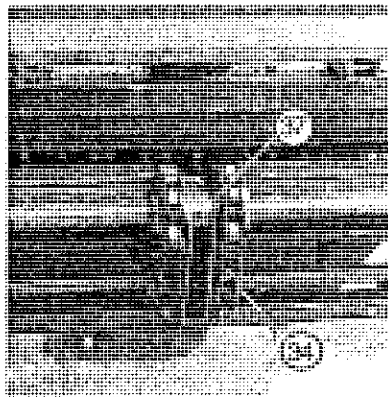


Figure 27

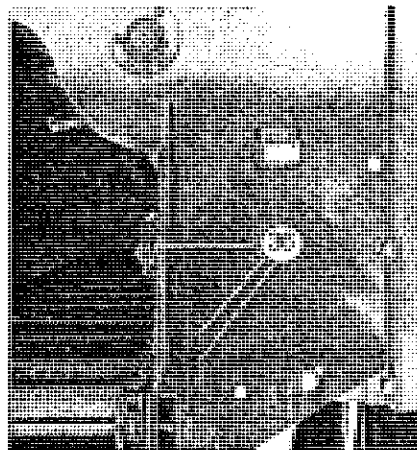


Figure 28

Ref. No.	Qty	Description
34	8	Rear Idler Sprockets
35	2	Driveline Joints
36	3	Front Main Apron Bearings
37	3	Rear Main Apron Bearings
38	1	Outer Apron Shaft Support (Fig. 24)
39	2	Rear Drive Outer Bearings (Fig. 30)
40	1	Sprocket Bearing
41	1	Center Shaft Bearing (Fig. 31)
42	1	Sprocket Cluster Bearings (Fig. 32) (Hydraulic Drive Only)

Periodic oiling of all drive chains and conveyor chains will assure longer life. Drain oil is fine. The main apron chains do not require lubrication.

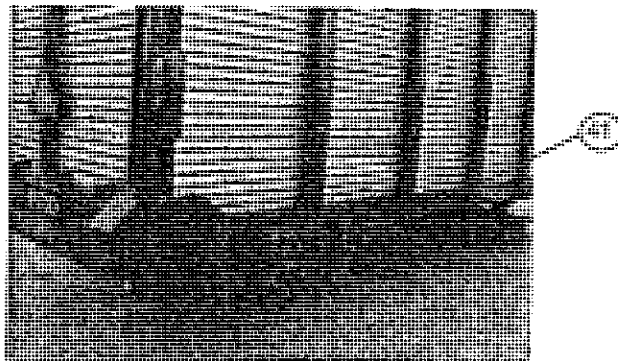


Figure 31

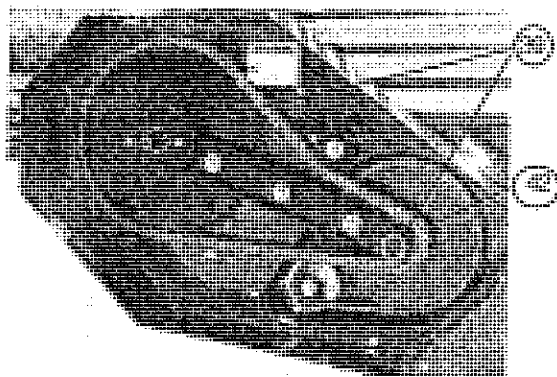


Figure 32

HYDRAULIC REAR UNLOAD SHOWN

Right Angle Gearbox

The gearbox oil levels should be checked every 50 loads. Use No. 85W140 or No. 90 gearlube if oil is needed, add through plug (Fig.33 #43) in the gearbox side cover.

The gearbox oil level should be up to the check level plug in the gearbox side cover.

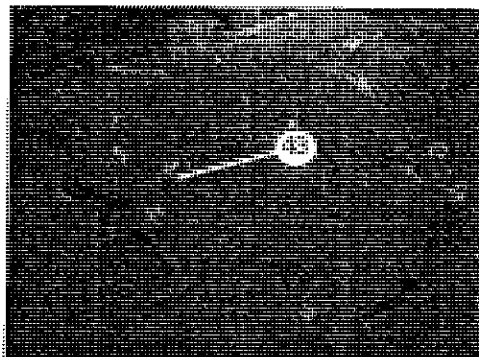


Figure 33

ADJUSTMENTS



DISENGAGE TRACTOR PTO AND SHUT OFF TRACTOR ENGINE BEFORE ADJUSTING FORAGE BOX!

Main Apron Figure 34

The main unloading aprons should be kept at proper tension at all times. On a new forage box tension should be checked every 5 loads until any excess slack has been taken up and during normal lubrication thereafter.

To obtain proper tension adjustments open rear access shield. Take up any excess slack evenly with the (4) tightener bolts #44 (2 outside bolts not shown) provided until the slats lift 1/2" off the return flanges 5 feet from the back of the forage box.



CLOSE THE REAR SHIELD BEFORE STARTING THE UNLOADING MECHANISM!

Cross Conveyor Apron Figure 35

The cross conveyor apron should be kept at proper tension at all times. Proper tension on the cross conveyor apron is obtained when apron slats are first touching the return pan about 3' inside the outfeed opening. Adjust the right and left tighteners so both side chains are tightened equally. To adjust the apron, loosen the 3/8" nuts #45, and then loosen the outer jam nut #46 on the adjusting stud and turn the inner adjusting nut #47 until the proper tension is achieved, then retighten the jam nuts and 3/8" nuts #45.

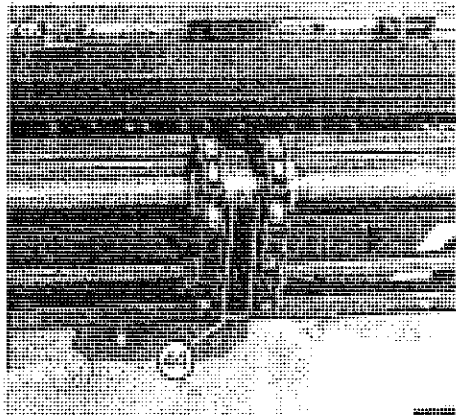


Figure 34

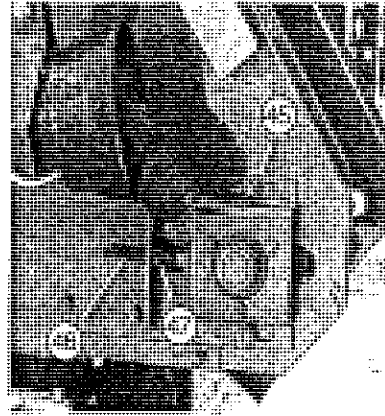


Figure 35

Front Drive Chain Figure 36

Open front shield for access. The front chain is properly adjusted when all but 1/2" sag has been taken up in the top chain between the safety/cross conveyor driven sprocket and the safety/cross conveyor clutch drive sprocket and the main clutch drive sprocket.

To adjust tension, loosen the hex nut #48 on the idler sprocket and hex nut #49 on the adjusting bolt. Turn hex nut #50 until proper tension is achieved, then retighten #48 and #49. Do not overtighten.



CLOSE THE FRONT COVER BEFORE STARTING THE UNLOADING MECHANISM!

Safety/Cross Conveyor and Main Drive Clutch Figure 37

The safety/cross conveyor clutch and main drive clutch rod linkage is factory adjusted and should not require regular adjustment. Should the belt on either one not drive, additional tension can be applied by tightening the nuts #51 & #52 to increase spring tension.

CAUTION: MAXIMUM BELT LIFE IS ASSURED BY APPLYING ONLY THE MINIMUM AMOUNT OF TENSION NECESSARY TO DRIVE!



CLOSE THE FRONT COVER BEFORE STARTING THE UNLOADING MECHANISM!

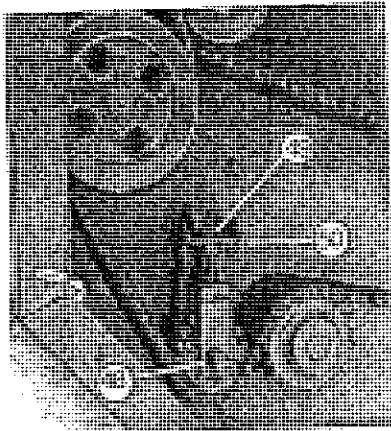


Figure 36

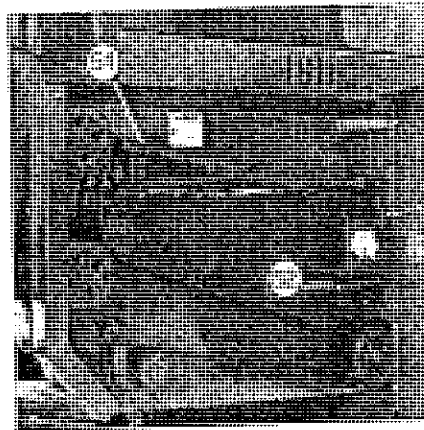


Figure 37

Apron Drive Chain Figure 38

The apron drive chain is properly adjusted when all slack has been removed. To adjust the tension, loosen the nut holding the steel tightener assembly #53 and move the tightener in until proper tension is obtained and then retighten the nut.

Beater Drive Chains Figure 38

The beater drive chain is properly adjusted when all slack has been removed. To adjust the tension, loosen the nut holding the steel tightener assembly #54 and move the tightener in until proper tension is obtained and then retighten the nut.

CAUTION: Periodic cleaning of inside of Transmission Side Door may be required.



CLOSE THE TRANSMISSION SIDE DOOR BEFORE STARTING THE UNLOADING MECHANISM!

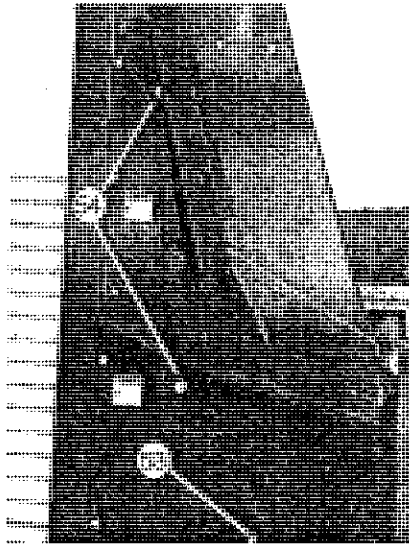


Figure 38



DISENGAGE TRACTOR PTO AND SHUT OFF TRACTOR ENGINE BEFORE ADJUSTING FORAGE BOX!

Rear Apron Drive Chain

Figure 40

The apron drive chain is properly adjusted when all slack has been removed. To adjust the tension, loosen the nut holding the tightener assembly #55 and move the tightener in until proper tension is obtained and then retighten the nut.

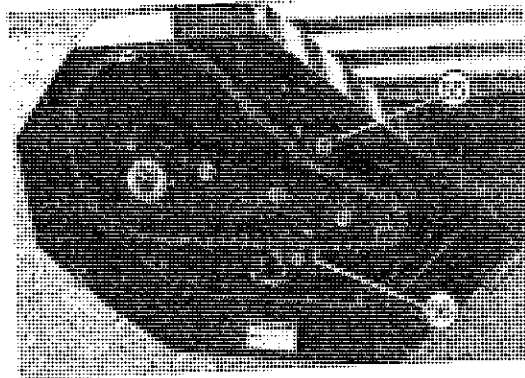


Figure 40

HYDRAULIC REAR UNLOAD SHOWN

Hydraulic Drive Chain

Figure 40

The hydraulic drive chain is properly adjusted when all the slack has been removed. To adjust the tension, loosen the 4-bolts #56 holding the motor in position. Slide the motor, in the slots, in the direction to tighten to the chain. Torque the 4-bolts #56 to proper torque.

Shear Bolts

A spare set of shear bolts have been supplied with the forage box. They are located inside the rear drive shield. Shear bolts may be purchased at your local Miller Pro Parts Dealer. The proper bolts to use are 3/8"-16 x 2" Grade 9, Part#09.71303.

Fasteners

Retighten all fasteners every 50 loads or as required.

Storage

For off- season storage the following procedures are recommended:

1. Remove all crop material from the floor, cross conveyor, front door, emergency clutch housing and transmission side door.
2. Remove cleanout pan provided in the non-outfeed side of the forage box. Remove debris and buildup. Be sure to replace this pan before resuming operation.









Clean out pan must be replaced before operation.

3. Lubricate all grease points and check gearbox oil level.
4. Oil all chains - outfeed apron, front drive chain, main apron drive chains and metering auger drive chains.
5. Run the forage box for several minutes to distribute lubrication.
6. Store inside.

TORQUE SPECIFICATIONS

NOTE: Use these torque values when tightening hardware (excluding: locknuts and self-tapping, thread forming and sheet metal screw) unless specified otherwise.

All torque values are in lb-ft except those marked with an * which are lb-in (for metric torque value nm, multiply lb-ft value by 1.355 or lb-in value by 0.113).

Unified National Thread	Grade 2 		Grade 5 		Grade 8 	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
8-32	19*	14*	30*	22*	41*	31*
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	75*	12	9
1/4-28	76*	56*	10	86*	14	10
5/16-18	11	9	17	13	25	18
5/16-24	12		19	14		20
3/8-16	20	15	30	23	45	35
3/8-24	23	17	35	25	50	
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
1-14	270	210	710	530	1000	740
Metric Course Thread	Grade 8.8 		Grade 10.9 		Grade 12.9 	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
M6-1	8	6	11	8	13.5	10
M8-1.25	19	14	27	20	32.5	24
M10-1.5	37.5	28	53	39	64	47
* M12-1.75	65	48	91.5	67.5	111.5	82
M14-2	103.5	76.5	145.5	108	176.5	131
M16-2	158.5	117.5	223.5	165.5	271	200

OPTIONS AND ACCESSORIES

MILLER ITEM NO.	DESCRIPTION
16.09990	Hydraulic Motor Motor and control unit with mounting plate and lock pin.
16.09970 (LSU)	Adaptor coupler and drive mounting weldment. (<i>One required per forage box.</i>)
16.10454	Seal Kit, Cross Conveyor
16.20265 (LSU) 16.20266 (RSU)	18" fold-up outfeed extension, complete with chain and attaching hardware (sprockets, bearings and shaft assembly is used from existing outfeed on box).
16.20286	8" fold-up outfeed extension, complete with chain and attaching hardware (sprockets, bearings and shaft assembly is used from existing outfeed on box).
16.20823	Roof Options <i>Rafters Only</i> Rafters (3 required) (to utilize complete roof removable feature).
16.20257 16.20165	Light Cable Cable Assy (Includes Storage Bracket) Plug Storage Holder