

Instruction Book



Material Handler



Manufactured By:
Helm Welding (1983) Limited
86386 Lucknow Line
PO Box 158
Lucknow, Ontario, Canada
N0G 2H0
TEL: (519) 529-7627 or 529-7000
FAX: (519) 529-3260
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Printed in Canada 2020

Warranty Information

Helm Welding (1983) Limited warrants to the original user that goods & equipment of its manufacture are free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment, or where applicable from the date of installation by the dealer.

Helm Welding (1983) Limited will, at its option, repair or replace parts (f.o.b. point of shipment) that are found to be defective.

This warranty is on these further terms and conditions:

1. The equipment must be installed (when applicable), operated and maintained in accordance with Helm Welding's instructions.
2. The equipment will fulfill the function it is designed to perform but due to wide variation in farm animals, management practices on farms and other conditions beyond the equipment manufacturer's control, no specific level of performance is guaranteed.
3. Excluded from the warranty are damages caused by late delivery, ordinary wear and tear, erosion or corrosion, lightning and other acts of God, accident or alteration, repair or attempted repair or adjustments made by persons not authorized by Helm Welding (1983) Limited, by misuse, abuse or improper handling or operation of the equipment by the purchaser or any third party or poor or no servicing of machine.
4. Helm Welding (1983) Limited shall in no event be responsible for any consequential damages of any nature whether special or general, direct or indirect.
5. Equipment, parts or accessories manufactured by others and not sold under Helm Welding (1983) Limited trademark(s) carry the warranty and remedy provided by their manufacturer only.
6. Any warranty or claim, which differs from that herein set out is unauthorized by Helm Welding (1983) Limited and is the warranty solely of the party making it. Helm Welding (1983) Limited makes no other warranty express or implied and the original user's sole remedy for breach thereof is as set forth above.

To properly qualify for warranty, all maintenance criteria and service schedules must be followed. As well, the pre-delivery check list and warranty registration forms must also have been completed at the time of product delivery and returned to us the manufacturer for proper record keeping.

In extreme warranty situations, the service record must be provided to Helm Welding upon request at any time.

Failure to follow and provide any of the above information will void warranty.

The warranty registration card must be completed and mailed within thirty (30) days of delivery or installation of the equipment to validate this warranty.

Note: Credits or replacements will not be issued unless documentation is complete and correct.

Date of installation _____ Serial Number _____

Your Luck//Now Dealer _____

Name _____

Address _____

Telephone Number _____

HELM WELDING (1983) LIMITED

9Mar20

This Copy Must
Be Returned To
HELM WELDING (1983) LIMITED

Helm Welding (1983) Limited
P.O. Box 158
Lucknow, Ontario, Canada
N0G 2H0

Material Handler Pre-Delivery Check List & Warranty Registration

- 1. Inspect machine for loosened bolts during transit (eg. wheel bolts).
- 2. Inspect machine for loose bearing locking collars.
- 3. Check all roller chains for alignment.
- 4. Check lubrication of PTO drive line (grease).
- 5. Ensure that PTO drive line has been fitted properly and holding bolts tightened to proper tightness.
- 6. Grease all bearings and chains.
- 7. Run machine and make sure all functions work properly before delivery to user.
- 8. Check hydraulic system for leaks.
- 9. Check to make sure all safety equipment is in place.

Dealer Signature: _____ Date: _____

Client Signature: _____ Date: _____

Client Address: _____

Serial # _____ Model # _____

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ATTENTION:
Technical Customer Service

Tel: (519) 529-7627 or (519) 529-7000
Fax: (519) 529-3260

Number of pages
including front-page _____

Reader's comments

Helm Welding (1983) Limited is committed to providing excellent documentation. Please, fax or write us your comments on this manual.

Your suggestions help us improve our technical information.

General

Please check appropriate square.

Agree Disagree

- | | | |
|--------------------------|--------------------------|---------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | * I can find the information I want |
| <input type="checkbox"/> | <input type="checkbox"/> | * The table of contents is thorough |
| <input type="checkbox"/> | <input type="checkbox"/> | * Instructions are complete |
| <input type="checkbox"/> | <input type="checkbox"/> | * There are enough illustrations |
| <input type="checkbox"/> | <input type="checkbox"/> | * Illustrations are clear and helpful |

Comments:

Name & Address

HELM WELDING (1983) LIMITED

9Mar20

Important Information

This manual has been prepared to provide the owner and operator with the information required to properly operate and maintain this unit. It is important that you, the owner or operator, read this manual prior to operating or performing any maintenance work on the unit.

Date of purchase: _____

Serial Number: _____

Information needed for ordering parts.

Model Number: _____

Special Options: _____

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1. Safety

SAFETY TIPS!

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH!



THIS SYMBOL MEANS

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. They are limited typically to hazards, which cannot be guarded for functional purposes.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. Also used to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or

Helm Welding (1983) Limited, PO Box 158 Lucknow, Ontario Canada, N0G 2H0.

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Safety



Equipment Safety Guidelines

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist that those working with you follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. **Keep all shields in place.** If shield removal becomes necessary during repairs, replace the shield prior to use.

Replace any **CAUTION, WARNING, DANGER** or instruction safety decal that is not readable or is missing.

Do not attempt to use this equipment under the influence of alcohol or drugs.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed thorough understanding of the safety precautions and how it works.**

To prevent injury or death, use a tractor equipped with Roll Over Protection System (ROPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

- Never exceed the limits on a piece of machinery. If its ability to do a job, or to do so safely is in question
- **DO NOT TRY IT!**



Safety Sign Care

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your Distributor or the factory.

How to install safety signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before removing the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with exposed sticky backing in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.



Tire Safety

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- Do not attempt to mount a tire unless you have the proper experience to do the job.
- Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.
- Always order and install tires and wheels with appropriate capacity to meet or exceed the anticipated weight to be placed on the equipment.



Before Operation

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing that may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable protective hearing and eye protection be worn.
- **Keep wheel lug nuts or bolts tightened to specific torque.**
- **Ensure that agricultural implement tires are inflated evenly.**
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow maintenance safety instructions included in this manual.
- Make sure there are no tools lying on or in the unit.
- Do not use the equipment until you are sure that the area is clear, especially of children and animals.
- Because it is possible that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.
- Don't hurry the learning process or take the unit for granted. Ease into it and familiarize yourself and other operators with its operation before use.
- Use a tractor equipped with Roll Over Protection System (ROPS) and fasten your seat belt prior to starting the engine.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.

Safety



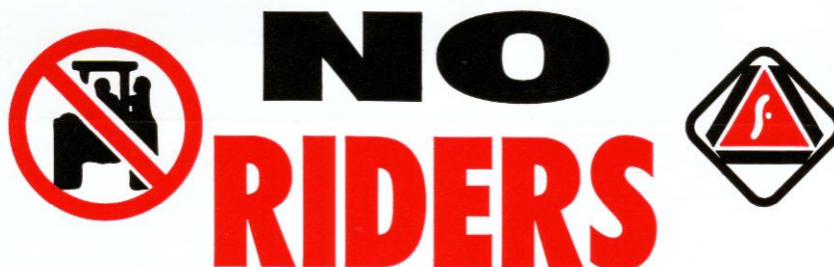
During Operation

- Install a safety chain by crossing the chains under the tongue and secure to the draw bar cage or hitch or bumper frame.
- Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED** - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- When halting operation, even periodically, set the brakes, disengage PTO, shut off engine and **remove ignition key.**
- Pick the most level route when transporting. Avoid edges of ditches or gullies and steep hillsides or inclines.
- Allow for unit length when making turns.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside unit.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow procedures.



Transport Operation

- This unit is **NOT** designed to be towed behind a pick-up truck or any other highway vehicle. Always tow with a tractor of adequate size and weight capable of towing and stopping safely.
- Comply with federal, state/provincial and local laws governing highway safety and movement of farm machinery on public roads.
- Plan your route to avoid heavy traffic.
- Watch for obstructions overhead and to the side while transporting.
- **Don't Drink and Drive!**
- ***All highway regulations and lighting requirements must be followed.***
- Be observant of bridge load ratings. Do not cross bridges rated lower than the gross weight at which you are operating.
- Obey all general traffic laws.



Before operating the machine, carefully read the instructions in the following chapters. Proper handling of the equipment is the basis of trouble-free use. The equipment must be used only for the intended application.



SW1: Proper handling of the equipment is the basis of trouble-free functioning. The equipment **MUST** be used **ONLY** for intended use.

	<p>⚠ WARNING</p>
	<p>To Prevent Serious Injury or Death</p> <ul style="list-style-type: none"> Avoid unsafe operation or maintenance. Do not operate or work on this machine without reading and understanding the operator's manual. If manual is lost, contact your nearest dealer for a new manual. <p style="text-align: right; font-size: small;">SW1</p>



WARNING!
Turning gears, chains and belts can cause serious injury. To avoid injury, keep hands, loose clothing and jewelry away from the mixer while operating.



SW104: Standard PTO speed is 540 rpm. **DO NOT** exceed rated PTO speed.

<p>⚠ DANGER</p>
<p style="text-align: center;">ROTATING DRIVELINE HAZARD</p> <p>To prevent serious injury or death from rotating driveline:</p> <ul style="list-style-type: none"> Keep all guards in place when operating. Operate only at 540 RPM. Keep hands, feet, hair and clothing away from moving parts. <p style="text-align: right; font-size: small;">SW104</p>



SW108: Keep chain drive guards closed when operating. **STOP** unit to lubricate.

<p>⚠ DANGER</p>
<p>To Prevent Serious Injury Or Death From Moving Parts:</p> <ul style="list-style-type: none"> KEEP AWAY, Moving parts can crush and dismember. Do not operate without guards and shields in place. Disconnect and lockout power source before adjusting and servicing. <p style="text-align: right; font-size: small;">SW108</p>

Safety



SW205: Do not raise/lower belt conveyor unless unit is ready to discharge and all personnel are clear.



None of our current Material Handlers are designed to be towed behind a pick-up or highway vehicle. All units must be towed by a farm tractor of size and weight capable of towing and stopping safely when required.

All highway regulations and lighting requirements must be followed.



2. Assembly

PTO Shaft

1. Connect round bore, keyed end of PTO to implement.
2. Connect Quick Disconnect Sleeve end to tractor.
3. Connect safety chain to hole on PTO shield.



Danger: PTO Spline Adaptors

It is dangerous to use a PTO spline adaptor to change your tractor PTO shaft spline to accommodate a different implement PTO spline. Match the right tractor PTO spline and speed with the PTO driveshaft provided with the implement.

Use of a PTO spline adaptor will void the warranty on your implement PTO shaft and driveline.

Start-Up

3. Start-up

New Mixer Break-In

On the trailer, check the wheel lug bolts to make sure that they are tightened. Tighten the rim bolts to a minimum of 280 ft/lbs. **Check the tire sidewall for rated pressure**



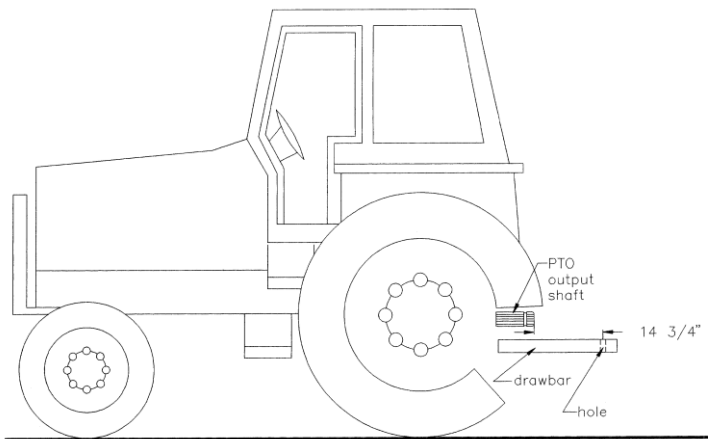
DO NOT EXCEED MAX. TIRE PRESSURE!



Tractor Requirements

Use an adequately sized tractor that can handle the PTO, hydraulic, and maneuverability requirements of the unit.

Ensure that the tractor drawbar is adjusted properly to meet the PTO properly.



It should measure 14 3/4" from the end of the PTO output shaft to the drawbar hole for 540rpm models and 16" for 1000 rpm models.



The PTO should be checked for proper minimum and maximum length to ensure adequate tube overlap and prevent the shafts from bottoming out.



The tractor must have dual hydraulic outlets to meet the hydraulic requirements of the implement unless an integral hydraulic system has been installed. One outlet is needed to operate the discharge door and a second outlet to operate the conveyor rotation. The hydraulic discharge drive system requires a minimum of 12 gal/min for the hydraulic motor to maintain conveyor speed. A minimum of 1500 PSI is required to operate the door and conveyor under load.

The empty weight of the unit plus the weight of the material must be added together to obtain the gross weight. The size and weight of your tractor must be adequate to start, maneuver, and stop the total load under the ground conditions and environment that will be encountered during operation. Ensure you have a drawbar of sufficient strength which will accept a hitch pin of the same size as is provided in the hitch. Use a drawbar pin that has a locking device on the tractor drawbar.

Loading



Note: When loading the material handler, it **MUST** be coupled to a tractor of adequate size and weight to handle the total weight of the machine plus the weight of the products to be loaded. **NEVER LOAD THE MACHINE STANDING ON THE JACK ALONE!**

Position the unit on level ground and set the parking brake to prevent the unit from moving. Make sure the discharge door is closed before loading.



Note: When loading materials manually, never climb above the side of the machine. You could fall into the machine while the unit is running causing serious injury or death.



Never use your hands to throw materials into the machine. You could get pulled into the machine.



Always use a fork or shovel when loading the unit manually.

Operation

4. Operation

During the unloading procedure, the chain drag conveyor must be in operation to move the material to the discharge door. This is controlled by one set of hydraulic outlets from your tractor. The belt conveyor is controlled by the PTO of the tractor.

To begin unloading, first open the discharge door, engage the PTO of the tractor to start the belt conveyor moving. Only after the belt conveyor is moving, operate the hydraulic outlet to start the drag conveyor emptying the bin.

Put the tractor in gear and drive along the desired unloading location. Vary the tractor PTO speed to obtain the desired belt conveyor discharge speed. The operator will determine the proper speed of the tractor, distance to the unload location, and how far to open the discharge door.

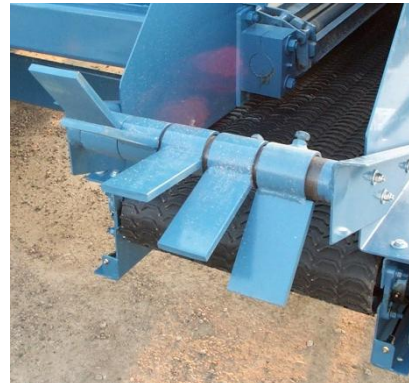
To stop the unloading process, turn off the chain drag conveyor, close the discharge door, and shut off the PTO. *Failure to stop the chain drag conveyor before closing the discharge door may result in damage to the machine*

Optional Deflector Adjustment

The optional deflectors at the end of the belt conveyor can be manually adjusted to vary the discharge pattern.

Note: Never adjust the deflectors when the machine is running.

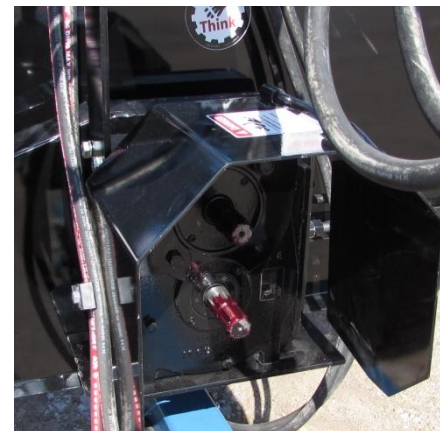
Loosen the bolt on each deflector and rotate the deflector to the desired location, retighten the bolt.



Optional Bi-Directional Discharge Conveyor

The optional bi-directional conveyor can be used to discharge to either side of the machine. To change the discharge direction, stop the tractor, disconnect the pto shaft from the current conveyor gearbox shaft and re-install the pto shaft onto the opposite gearbox shaft.

The slope of the conveyor can be adjusted with the hydraulic cylinder attached to the end of the conveyor.



5. Maintenance



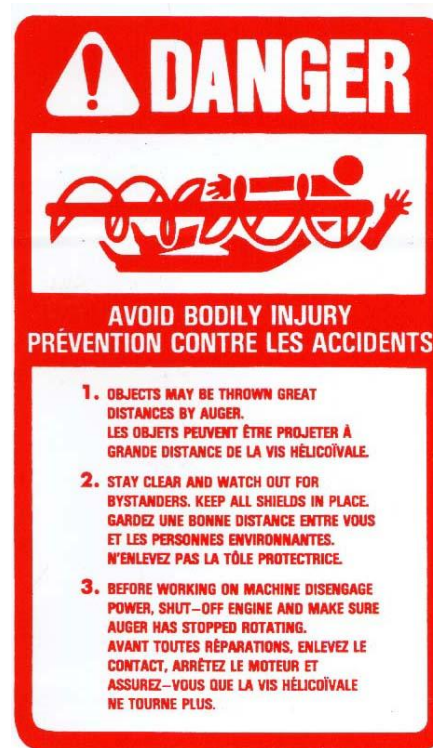
Warning: STOP the unit before making adjustments or servicing.

Chain Drag Conveyor Maintenance

The hydraulic motor drives the chain drag conveyor with the use of drive chain. Be sure to oil the chain regularly to extend chain life. The bearings on the front and rear shafts should be greased regularly. Greasing extends bearing life by forcing out water and contaminants.

For the best results, the grease should be pumped into the bearings slowly until a very slight bead of grease forms around the bearing seals on the shaft. This bead, in addition to acting as an indication of adequate lubrication, provides additional protection against the entry of foreign matter. To prevent premature bearing failure, always ensure that the grease nipple, grease gun end, and the grease itself, is clean and free of any dirt, grit, paint or foreign matter.

Ensure that drag chain is properly tightened and aligned.



Installing New Chain

Before installing a new chain, carefully check the teeth on the sprockets. If the teeth are worn to a hooked shape, the sprockets should be replaced to ensure full performance and long life from the new chain. Proper tension is essential when installing new chain. Tight chain causes an additional load which increases wear on chain joints, sprockets and shaft bearings. Slack chain produces vibration that may result in excessive chain wear, noise, or shock loading.

Maintenance

Sprocket Inspection

Check for these common sprocket problems which lead to replacement.

1. Wear on the sides is due to misalignment.
2. Tooth wear (indicated by hooking).
3. Broken teeth.
4. Cracks that might lead to failure.
5. Wobbling of sprockets on shaft.



Belt Conveyor Maintenance

The belt conveyor is driven by the tractor PTO and a system of belts and pulleys.

Ensure PTO is properly setup and maintained as described in the next section.

Proper drive belt tension is necessary for correct running of the conveyor and extended belt life.

Ensure that bearings on all four corners of the conveyor are regularly greased.

Inspect belt conveyor for wear and tear, ensure proper alignment on shafts.

PTO Drive Shaft

It is **important** that the owner/operator read this section and the information supplied by the PTO manufacturer. The trailer unit incorporates a PTO coupling shaft containing several important features and warnings:

--1. Safety Shields

These shields should be left in place at all times to prevent injury.

- 2. Do not wear loose clothing when operating the PTO, or when near any rotating equipment.
- 3. When operating stationary PTO driven equipment, apply the tractor parking brake lock and block the rear wheels front and back.
- 4. To avoid injury, do not clean, adjust, unclog or service PTO driven equipment when tractor is running.
- 5. Never exceed the recommended operating speed for the particular equipment in use.
- 6. PTO shafts must only be used for their intended purpose and are designed for only that machine.
- 7. Ensure clamping collar bolts are securely tightened to fasten on to implement input shaft. Tighten set screw on key.
- 8. Push locking pin and simultaneously push PTO drive shaft onto PTO shaft until the locking device engages. Ensure that the PTO shaft is securely connected before use.

- 9. The maximum joint angles must be observed or serious injury and damage could occur.

Continuous Operation-	25 deg.
Short duration-	45 deg.
Non-rotating-	80 deg.
- 10. Avoid contact between the PTO shaft and tractor or implement.
- 11. The chain is intended to prevent the shield from rotating against non-moving parts, preventing shield damage. A properly installed chain will increase the service life of the shield.
- 12. Chains must be fitted so as to allow sufficient rotation of the shaft in all positions. Be sure that chain does not become entangled with drawbar hitch or other restrictions during operation or transport.
- 13. The PTO drive shaft must not be suspended from the chain.
- 14. **Lubricate with quality grease before starting work and every 8 operating hours.** Clean and grease the PTO drive shaft before each period of prolonged non-use. The molded nipples on the shield near each bearing are intended as grease fittings and should be lubricated every 8 hours of operation. Telescoping members must have lubrication to operate successfully regardless of whether a grease fitting is provided. Those without fittings should be pulled apart, cleaned and re-greased manually. Check and grease the guard tubes in winter to prevent freezing.

NOTE - the PTO shaft tubes should be fully disassembled, cleaned and re-greased (using a Lithium based grease) every 200 hours of operation.

6. Service Schedule

The following items are to be checked and, if necessary, corrective action taken. This schedule is designed for units operating under normal conditions. If the unit is operating in adverse or severe usage conditions it may be necessary for the items to be checked and serviced more frequently.

Check & Inspect the Following Every:	Daily or 8 HRS	Weekly or 50 HRS
Belt Conveyor Drive System		
PTO bearings, slides & crosses - lube	X	
Disassemble PTO shaft & lube inner tube		X
Bearings - grease	X	
Drive belt - check tension	X	
Chain Drag Conveyor System		
Bearings (front & rear) - grease	X	
Chain, sprockets & bearings - check for wear & adjustment		X
Tire, Hub & Spindle		
Tire pressure - check	X	
Hub & spindle - grease	X	
Hub & spindle - check wheel bolts		X

Service Schedule

Machine Information Please fill in the following:

Model # _____ Serial # _____

Date Machine Put Into Service _____

Farm / Operation Name: _____

Dealer: _____

Service Record

Hours	Date	Signature	Service Performed / Comments
8			
16			
32			
48			
56			
64			

7. Lubrication Specifications

Drive line Bearings	
Splined Drive Line Yokes	
PTO Shaft	
Conveyor Bearings.....	NLGI #2 or #3 Lithium Base Grease
Gearbox	40/50 or 80/90
Drive Chain	SAE-20 to SAE-30 Motor Oil
Hydraulic Oil.....	SAE-10 ISO 32 or equivalent Indol #32 Dextron #32