



OPERATOR'S **MANUAL**

PS6160
MANURE
SPREADERS

Part #99579

Rev. #03

HSMFG101424

Starting Serial #421PS60001



WARNING

READ AND UNDERSTAND THIS MANUAL BEFORE
OPERATING THIS EQUIPMENT. UNSAFE OPERATION
OR MAINTENANCE OF THIS EQUIPMENT CAN
RESULT IN SERIOUS INJURY OR DEATH.

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WARRANTY

H&S Manufacturing Co., Inc. ("H&S") warrants this product to be free from defect in material and workmanship. Except as noted below, this warranty term is twelve (12) months on parts and labor from the date of delivery of the product to the original purchaser by an authorized H&S dealer. Under this warranty, H&S will repair or replace, at its option, any covered part which is found to be defective in material or workmanship during the applicable warranty term. In no case will the covered repair cost of a part or parts exceed the replacement cost of that part. In no case, unless pre-authorized by H&S, will a component be replaced versus repaired unless the cost of labor and parts exceeds 75% of the cost of a new component. Warranty repairs must be performed by H&S or a dealer authorized by H&S to sell and/or service the product involved, and will use only new or remanufactured parts or components furnished by H&S. Any warranty repairs needing to be performed by a third party must be pre-authorized by H&S. Standard freight costs will be covered by H&S for any part used to make a warrantable repair, any form of express freight will not be covered unless pre-authorized by H&S. This warranty includes approved parts and labor to repair the product but does not include, and the purchaser is responsible for, any service call and/or transportation of the product to and from the dealer's place of business, for any costs related to travel, for any premium charged for overtime labor requested by the purchaser, and for any service work not directly related to any defect covered under this warranty. This warranty includes only those components of the product manufactured by H&S. Warranty for any component not manufactured by H&S including, but not limited to, engines, batteries, tires, rims, hydraulic motors, pumps, etc. are covered by the warranty, if any, provided separately by their respective manufacturers. H&S reserves the right to request the return of any failed component.

This warranty in all its parts is extended solely to the original purchaser of the product, is terminated upon any subsequent transfer or sale from or by the original purchaser, and extends no third party benefits or rights whatsoever.

The warranty term for any product used in any for hire, rental fleet or rental application, is limited to six (6) months from the date of delivery of the product to the original purchaser by an authorized H&S dealer. This warranty does not include: (1) Any product that has been altered or modified in ways not approved by H&S; (2) Depreciation or damage caused by normal wear, use for which the product was not designed, misuse, improper or insufficient maintenance, improper operation, accident or failure to follow the product Operator's Manual recommendations and product decal recommendations; (3) Normal maintenance parts and service; (4) Repairs made with parts other than those available from H&S or performed by anyone other than H&S or a dealer authorized by H&S to sell and/or service the product involved.

To secure warranty service the purchaser must report the product defect to a dealer authorized by H&S to sell and/or service the product involved within the applicable warranty term together with evidence of the warranty start date and make the product available to that dealer within a reasonable period of time.

Apron chain warranty: H&S offers a limited lifetime warranty on the apron chain extended solely to the original purchaser. This warranty covers only the chain links and no other components welded to the link or associated to the links i.e. Slats. If a connecting link fails only the connecting link will be replaced. If any other chain link breaks both complete apron chains will be replaced. Freight and labor to install the chain is the responsibility of the purchaser and not covered under this limited warranty.

Prorated Scale

| Months from purchase date | Parts only coverage % |
|---------------------------|-----------------------|
| 60 | 100% |
| 72 | 90% |
| 84 | 80% |
| 96 | 70% |
| 108 | 60% |
| 120 and after | 50% |

WARRANTY

For these warranty terms to be in effect the selling authorized H&S dealer and/or the customer must submit the warranty registration to H&S.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. H&S and the companies affiliated with it make no warranties, representations, or promises, express or implied, as to the performance or freedom from defect of its products other than those set forth above and NO IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS OR FITNESS FOR A PARTICULAR PURPOSE IS MADE. IN NO EVENT WILL THE DEALER, H&S OR ANY COMPANY AFFILIATED WITH H&S BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. The ONLY REMEDY the purchaser has in connection with the breach of performance of any warranty on H&S products are those set forth above.

The selling dealer has no authority to make any representation or promise on behalf of H&S, or to modify the terms or limitations of this warranty in any way.

12/21/22

MANUFACTURER'S STATEMENT

Your New H&S Product has been manufactured of the finest quality materials and components. The performance you get from your machine is largely dependent upon how well you read and understand this manual and apply this knowledge. There is a right and a wrong way to do everything. Please do not assume that you know how to operate and maintain your Machine before reading this manual carefully. Keep this manual available for ready reference.

H&S reserves the right to make changes or add improvements to its products at any time without incurring any obligation to make such changes to products previously manufactured. Specifications, statements and descriptions of Products contained in this publication are subject to change without prior notification.

WARRANTY REGISTRATION

- Date of Purchase: _____
- Purchaser Name: _____
- Street Address: _____
- City: _____
- State: _____ Zip: _____
- Phone Number: _____
- E-mail Address: _____
- Product: _____
- Model Number: _____
- Serial Number: _____
- You have received the Operator's Manual for this product. Yes _____ No _____
- Interested in receiving the H&S E-mail Newsletter? Yes _____ No _____

-
- Dealer Name: _____
 - Street Address: _____
 - City: _____
 - State: _____ Zip: _____
 - Signature: _____

- All fields must be filled out to ensure prompt notification of product and/or warranty updates.

Please mail the completed WARRANTY REGISTRATION FORM to:

H&S Manufacturing Co., Inc.

2608 S. Hume Ave.

Marshfield, WI 54449

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H&S DEALER PRE-DELIVERY CHECKLIST

AFTER COMPLETION, DEALER SHOULD REMOVE AND RETAIN FOR RECORDS

After the Manure Spreader has been completely set up, check to be certain it is in correct operating order before delivering 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.

- ☐ Manure spreader was not damaged in shipment. Check for dents and loose or missing parts. Report damage immediately to H&S Manufacturing Co., Inc.
- ☐ All bolts and fasteners are tight.
- ☐ Manure spreader has been correctly assembled according to instructions in this manual.
- ☐ All grease fittings have been lubricated. Gearbox is filled to proper level.
- ☐ Hoses and fittings are properly attached and there are no visible leaks.
- ☐ Guards and shields are secure.
- ☐ Wheels are properly mounted to torque specifications.
- ☐ Tires are inflated to correct pressure.
- ☐ Decals are in place and legible.

Connect the manure spreader onto a proper horsepower tractor and attach the PTO and connect the lights. Connect the hydraulic hoses to the tractor remote outlets. Run the manure spreader and make sure all components operate properly.

- ☐ PTO guard turns freely.
- ☐ Hydraulic end gate operates smoothly.
- ☐ Hydraulic system does not leak under pressure.
- ☐ Lights and wiring functioning properly.
- ☐ Implement and all components are functioning properly.

Model Number _____ Serial # _____

Dealer's Name _____

Inspection Date _____

Signature of Pre-Delivery Inspector _____

(Remove Dealer File Copy At Perforation)

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DEALER DELIVERY CHECKLIST

AFTER COMPLETION, DEALER SHOULD REMOVE AND RETAIN FOR RECORDS

This checklist that follows is an important reminder of valuable information that should be passed on to the customer at the time this Manure Spreader is delivered.

Check off each item as you explain it to the customer.

This delivery checklist, when properly filled out and signed, assures the customer that the pre-delivery service was satisfactorily performed.

- ☐ Explain to the customer that the pre-delivery inspection was made.
- ☐ Explain to the customer all the safety precautions they must exercise when operating this unit.
- ☐ Explain recommended loads for different types of materials.
- ☐ Explain to customer that regular lubrication is required for proper operation and long life of machine.
- ☐ Show customer the lubrication section of Owner's Manual.
- ☐ Give the customer Owner's Manual and make sure they read and understand all operating and service instructions.
- ☐ Have the customer sign a completed "Warranty Registration" and mail it.

Date Delivered _____

Dealer's Name _____

By _____

Signature of Original Buyer _____

Note: Warranty is not valid until warranty card is completed and returned to H&S Mfg. Co., Inc.

SAFETY INFORMATION

TRACTOR:

This operator's manual uses the term "Tractor" when identifying the power source.



TO PREVENT SERIOUS INJURY OR DEATH

BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING 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. KNOW HOW TO STOP UNLOADING MECHANISM BEFORE STARTING IT.

If the machine becomes clogged, disengage the PTO. Stop the tractor engine, remove ignition key, and allow all mechanisms to stop before cleaning or working on the machine.

"Never allow riders" in or on the machine.

DO NOT get off the tractor while the spreader is in operation.

DO NOT attempt to perform maintenance or repair with tractor running and PTO or hydraulic lines hooked up.

DO NOT step up on machine at any time.

NEVER manually feed material into the beaters.

DO NOT allow minors to operate or be near the machine.

DO NOT ALLOW PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MACHINE.

Before starting tractor, be sure PTO shields turn freely and PTO is securely locked to tractor.

DO NOT clean, adjust, or lubricate the machine when any part is in operation.

Keep hands, feet, and clothing away from beaters when they are revolving.

Loose or floppy clothing should not be worn by the operator.

Be sure the machine is clear of people, tools, and other objects before engaging PTO.

DO NOT step over power take off shaft. Stay clear of PTO at all times.

NEVER start manure spreader until all guards and safety shields are secured in place.

STAY CLEAR of Hydraulic Lines. They may be under extreme pressure or heat.

H&S always takes the operator and their safety into consideration and guards exposed moving parts for their protection. However, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operators manual and decals on the machine itself warn you of further danger and should be read and observed closely.

Study The Above Safety Rules

ATTENTION - BE ALERT - YOUR SAFETY IS INVOLVED

SAFETY INFORMATION



**BE
ALERT!**

**YOUR SAFETY
IS INVOLVED.**

THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER YOUR PERSONAL SAFETY IS INVOLVED. TAKE TIME TO BE CAREFUL. 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.

H&S MANUFACTURING CO., INC.

SAFETY INFORMATION

RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



UNDERSTAND SIGNAL WORDS

A signal word - DANGER, WARNING, or CAUTION - is used with the safety alert symbol. DANGER identifies the most serious hazards.

Safety signs with signal word DANGER or WARNING are typically near specific hazards.

General precautions are listed on CAUTION safety signs.



CAUTION

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual, and all safety signs on your machine. Follow all recommended precautions and safe operating procedures.

Keep signs in good condition. Immediately replace any missing or damaged signs.

OBSERVE MAXIMUM TRANSPORT SPEED

The maximum transport speed for this implement is 32 km/h (20 mph).

Some tractors are capable of operating at speeds that exceed the maximum transport speed of this implement. Regardless of the maximum speed capability of the tractor being used to tow this implement, do not exceed the implement's maximum transport speed.

Exceeding the implement's maximum transport speed can result in:

- * Loss of control of the tractor/implement combination
- * Reduced or no ability to stop during braking
- * Implement tire failure
- * Damage to the implement structure or its components

Use additional caution and reduce speed when towing under adverse surface conditions, when turning, and when on inclines.

Do not attempt transport if the fully loaded implement weighs more than 1.5 times the weight of the tractor.



LIMITS OF THE MACHINE

INTENDED USAGE

It is important that this manual be read and understood by the operator and maintenance personnel before attempting to operate or perform any maintenance on this machine. This manual contains information that will contribute to the safe, reliable and most productive operation. The PS6160 power spreaders are designed as tow behind unit. If you notice degradation of performance, contact your H&S dealer for assistance.

PROHIBITED USAGE

No parts or attachments should be fitted to this machine, which have not been released by H&S. They might affect machine operation, safety of the user or other people, stability, or wear characteristics of the machine.

NOTICE: DO NOT use this machine for any purpose or in any manner other than as described in the manual, decals, or other product safety information provided with the machine. These materials define the machine's intended use.

Do not use your machine for another purpose than intended by the manufacturer and within its limits.

AVOID TIP-OVERS

- Always adapt ground speed to road or field conditions.
- Avoid making sharp turns when driving up or down slopes or when driving across slopes.
- Be especially careful when turning on slopes.
- When making turns, always take into consideration the width of the Spreader.
- Reduce ground speed when driving on slopes or over uneven ground and before making sharp turns, especially on hillsides.
- Avoid holes, ditches and obstructions which may cause the Spreader to tip, particularly on hillsides.
- Avoid passing over weak or fragile bridge-heads and bridge-floors in poor condition which may cause the spreader to tip.
- Never drive near the edge of a ditch, creek, gully or steep embankment.
- Do not operate on hillsides over a 25% slope.



CAUTION: FAILURE TO COMPLY WITH THE ABOVE WARNINGS MAY CAUSE THE SPREADER AND TRACTOR TO TIP OVER AND RESULT IN SERIOUS PERSONAL INJURY.

SAFE PRACTICES

Safe practices developed from experience in the use of spreaders are described in this manual.

Safe installation, operation, and servicing practices have evolved through research, development, and field experience. Accidents occur when equipment is improperly used or maintained. The reason for the safe practices may not always be given. Some are based on common sense; others may require technical volumes to explain. It is wiser to follow the rules.

Read and understand these safe practices before attempting to install, operate, or service the equipment. Comply with these procedures for personal safety and for the safety of others.

Improper use of the spreader may result in injury. To reduce this possibility, pay complete attention to the job at hand and observe the following cautions. If you can prevent an accident, your time is well spent.

DO:

- Sound horn and make sure everyone is clear of the machine before starting the tractor engine.
- Visually check for obstacles or people before moving the machine.
- Keep people away from the machine during operation..
- Slow the tractor down when rough terrain appears imminent or when turning.
- **ALWAYS** use a seat belt or safety restraints while operating equipment



DO NOT:

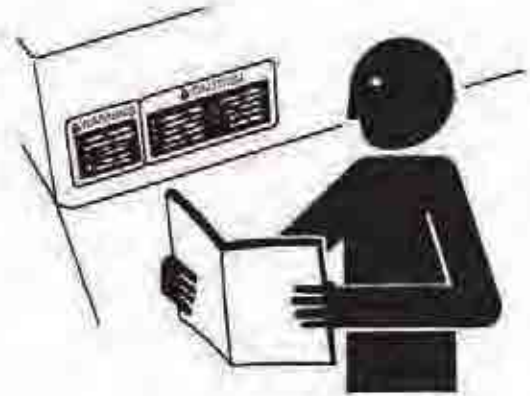
- Operate without safety covers, guards, shields, and safety signs in place.
- Disable safety switches or safety devices.
- Operate on dangerous terrain.
- Operate beyond the intended use of the machine.
- Never operate the spreader while under the influence of alcohol, drugs, or while under fatigue.
- Read the tractor and Spreader operator manuals completely to ensure safe operation.
- Avoid loose, bulky clothing.
- Keep a first aid kit and a fire extinguisher nearby at all times.
- Avoid touching hot hydraulic components during, or immediately after operation. Service or check spreader only after it has cooled off.

ADDITIONAL SAFETY INFORMATION

SAFETY SIGNS

CLEAN: Keep all safety signs clean and unobstructed.

REPLACE: Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.



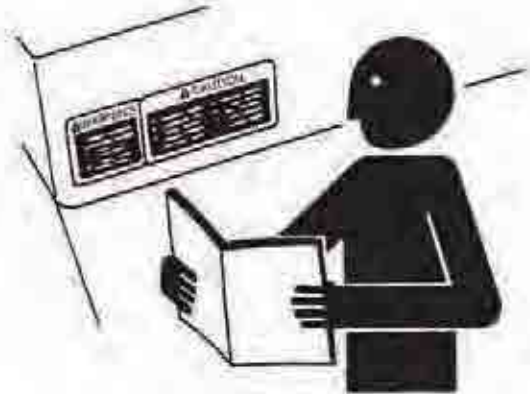
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your dealer.

Learn how to operate the equipment and how to use controls properly. Do not let anyone operate without instruction.

Keep your equipment in proper working condition. Unauthorized modifications to the equipment may impair the function and/or safety and affect equipment life.

If you do not understand any part of this manual and need assistance, contact your dealer.



ADDITIONAL SAFETY INFORMATION

READ OPERATOR'S MANUAL

Read your operator's manual thoroughly to learn how to operate the machine and how to use controls properly. Do not allow anyone to operate this machine without instruction.



USE YOUR TRACTOR OPERATOR'S MANUAL

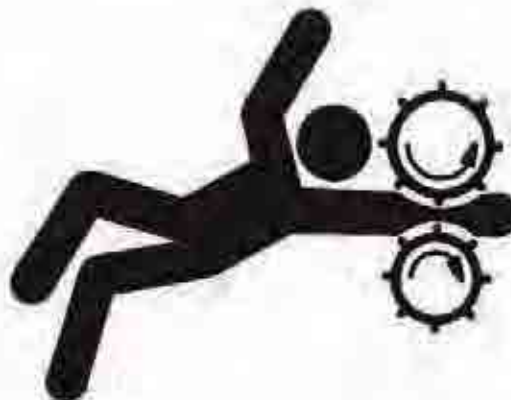
Always refer to YOUR tractor operator's manual for specific detailed information regarding operation of YOUR equipment.



SERVICE EQUIPMENT SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



ADDITIONAL SAFETY INFORMATION

PRACTICE SAFE MAINTENANCE

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is running. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow engine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.



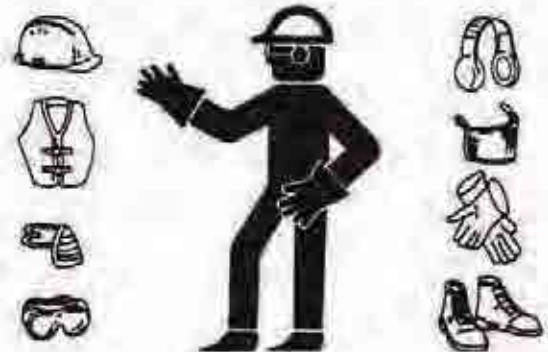
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

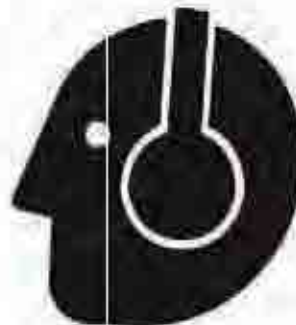


ADDITIONAL SAFETY INFORMATION

PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



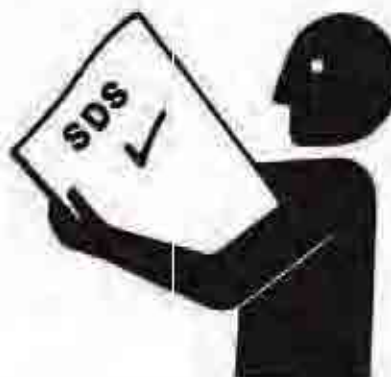
HANDLE CHEMICAL PRODUCTS SAFELY

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with this equipment include such items as lubricants, coolants, paints, and adhesives.

A Safety Data Sheet (SDS) provides specific details on chemical products, physical and health hazards, safety procedures, and emergency response techniques.

Check the SDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and use recommended equipment.

(See your Oxbo dealer for SDS's on chemical products used with Oxbo equipment.)



ADDITIONAL SAFETY INFORMATION

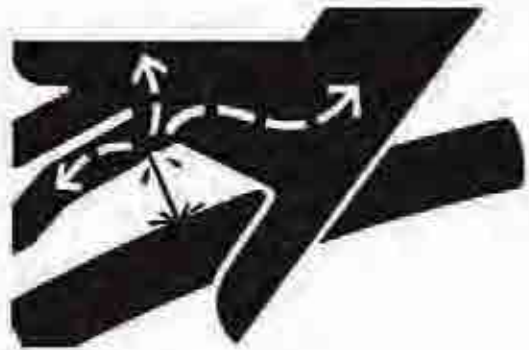
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.



DISPOSE OF WASTE PROPERLY

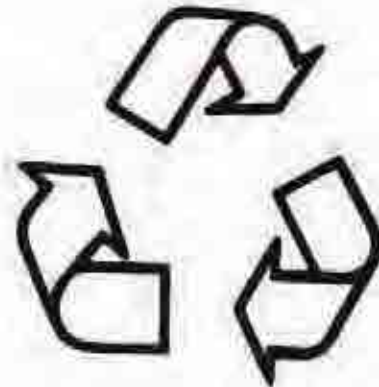
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with agricultural equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your dealer.



ADDITIONAL SAFETY INFORMATION

AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

Never weld or cut on a hydraulic oil tank or a structural member used as a hydraulic reservoir.



REMOVE PAINT BEFORE WELDING OR HEATING

Avoid potentially toxic fumes or dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

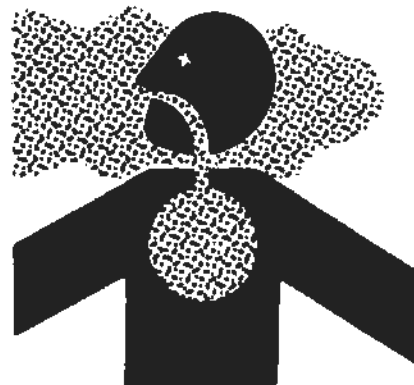
Remove paint before heating:

- Remove paint a minimum of 101 mm (4in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.



ADDITIONAL SAFETY INFORMATION

USE SAFETY LIGHTS AND DEVICES

Slow moving tractors, self-propelled equipment and towed implements or attachments can create a hazard when driven on public roads. They are difficult to see, especially at night. Avoid personal injury or death resulting from collision with a vehicle.

Flashing warning lights and turn signals are recommended whenever driving on public roads. To increase visibility, use the lights and devices provided with your machine. For some equipment, install extra flashing warning lights.

Be sure to observe local laws.

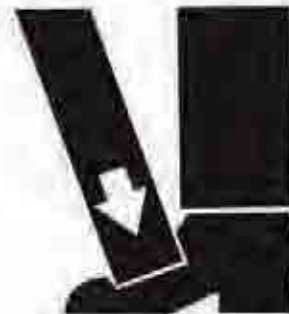
Keep safety items in good condition. Replace missing or damaged items.



USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



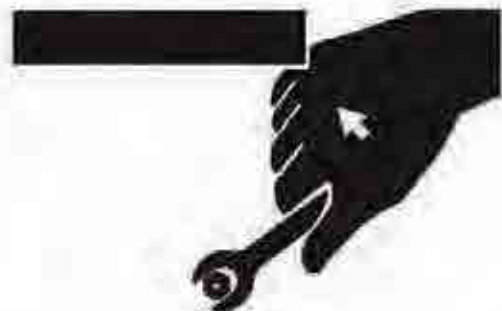
USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use Imperial measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

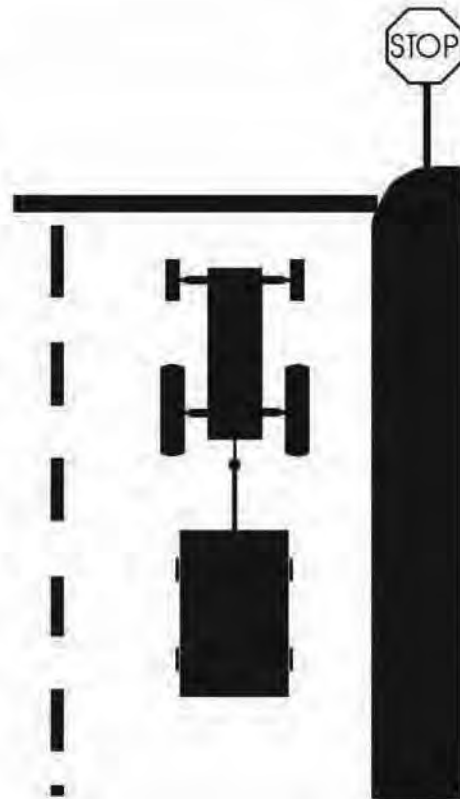
Use only service parts meeting Oxbo specifications.



ADDITIONAL SAFETY INFORMATION

OBSERVE ALL TRAFFIC REGULATIONS

When traveling on public roads observe all traffic regulations in your area, especially the permissible transport dimensions.



ADDITIONAL SAFETY INFORMATION

NO RIDERS

Never allow anyone to ride on the machine during operation or transport.



DRIVE AT SAFE SPEEDS

Always drive at speeds which allow complete control under existing field or road conditions.

Trailed implements influence the steering and braking performance of the tow vehicle. Make sure there is sufficient steering and braking capacity.



AVOID TIP-OVERS

Use a seat belt when present.

Avoid holes, ditches and obstructions which may cause the machine to tip, especially on hillsides.

Never drive near the edge of a ditch, creek, gully or steep embankment.

Slow down when turning or traveling over rough ground and when turning on hillsides.

Trailed implements influence the stability of the tow vehicle. Understand how a Dump Cart connected to your equipment can change the stability of the units working together.



ADDITIONAL SAFETY INFORMATION

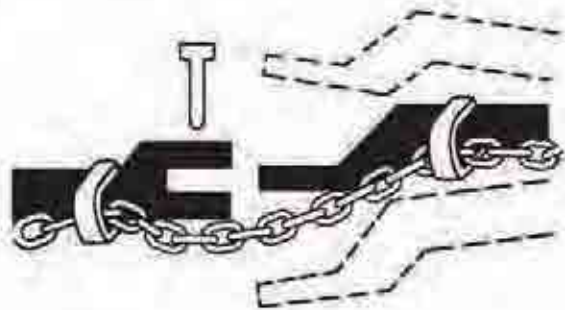
USE A SAFETY CHAIN

A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

Replace the safety chain if necessary with Oxbo specified chain as found in the parts catalog.

Do not use the safety chain for towing.



CALIFORNIA PROPOSITION 65: WARNING

WARNING: This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

For more information go to: www.P65Warnings.ca.gov



DECAL LOCATION

Your H&S Manure Spreader was manufactured with operator safety in mind. Located on the manure spreader are various decals to aid in operation, and warn of danger or caution areas. Pay close attention to all decals on your Manure Spreader.



DO NOT REMOVE ANY OF THESE DECALS. IF DECALS ARE LOST, DAMAGED, OR IF MANURE SPREADER IS REPAINTED, REPLACE DECALS. REMEMBER: DECALS ARE FOR YOUR PROTECTION AND INFORMATION.

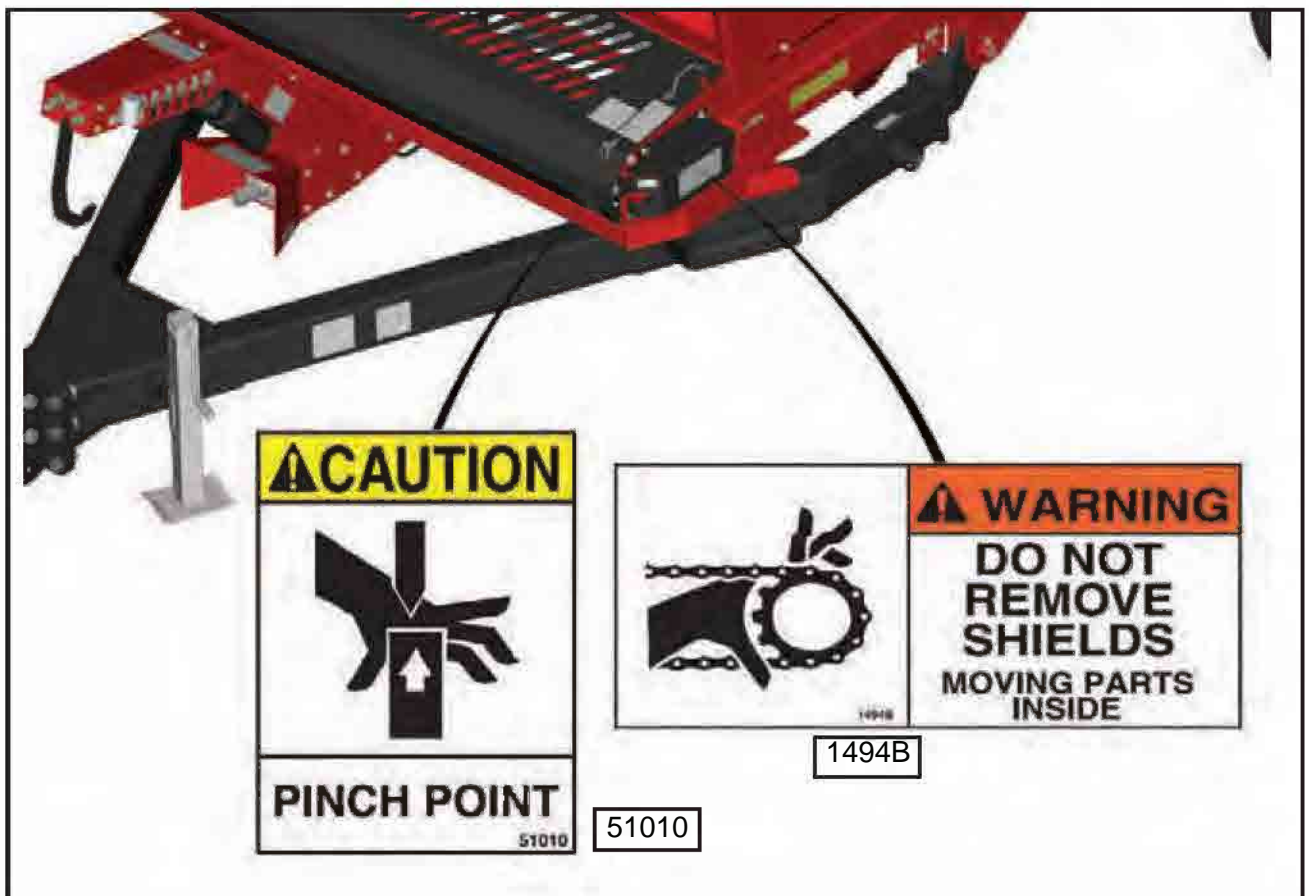
Listed below are the decals on your Manure Spreader. These decals may be ordered individually by part number or by ordering a complete set.

| <u>PART #</u> | <u>QTY</u> | <u>DESCRIPTION</u> |
|----------------------|-------------------|-------------------------------------|
| 311 | 1 | Patent Number |
| 1494J | 3 | Warning - Do Not Clean or Work |
| 1494K | 2 | Warning - Do Not Remove Shields |
| 1906F | 9 | Danger - Keep Out |
| 51010 | 2 | Caution - Pinch Point |
| 9194B | 1 | Danger - Never Allow Riders |
| 9194A | 4 | Danger - No Step |
| 11599 | 3 | Warning - Stay Clear of Leaks |
| 12794 | 2 | Warning - Do Not Operate |
| 54033 | 1 | Made in USA 3" |
| 84044 | 1 | FEMA Decal |
| 84045 | 1 | H&S Since 1967 |
| 72203A | 1 | Warning - Help Avoid Injury |
| 82602 | 2 | Warning - Crushing Hazard |
| 84044 | 1 | FEMA |
| 86060 | 3 | Danger - Stay Clear of Beater |
| 96654 | 1 | Danger - Beaters Throw Objects |
| 093020 | 10 | Grease Fitting |
| 99955 | 1 | Decal, Instruction, Remote Zerk |
| 093366 | 1 | Operators Manual |
| 66076 | 1 | Decal, Zerk Behind SHLD |
| DCAMB | 8 | Amber Reflector |
| DCRED | 3 | Red Reflectors |
| JD5922 | 2 | Orange Non Reflective Decal |
| 123002 | 2 | Decal-Warning, Clear of Leaks |
| 1494B | 2 | Decal-Warning, Do not Remove |
| DCSERIAL | 1 | Decal-Serial Number |
| 111593A | 2 | Decal, Danger, Beater |
| 98305 | 1 | Decal, Cold Weather Operation |
| 99952 | 2 | Decal, Instruction, Remote Zerk |
| 97901 | 1 | Decal, Branding, 6160 Front |
| 94013 | 1 | Decal, Branding, Powerspread, Front |
| 94012 | 1 | Decal, Branding, Powerspread, RH |
| 97900 | 1 | Decal, Branding, 6160 RH |
| 97899 | 1 | Decal, Branding, 6160 LH |
| 94011 | 1 | Decal, Branding, Powerspread LH |

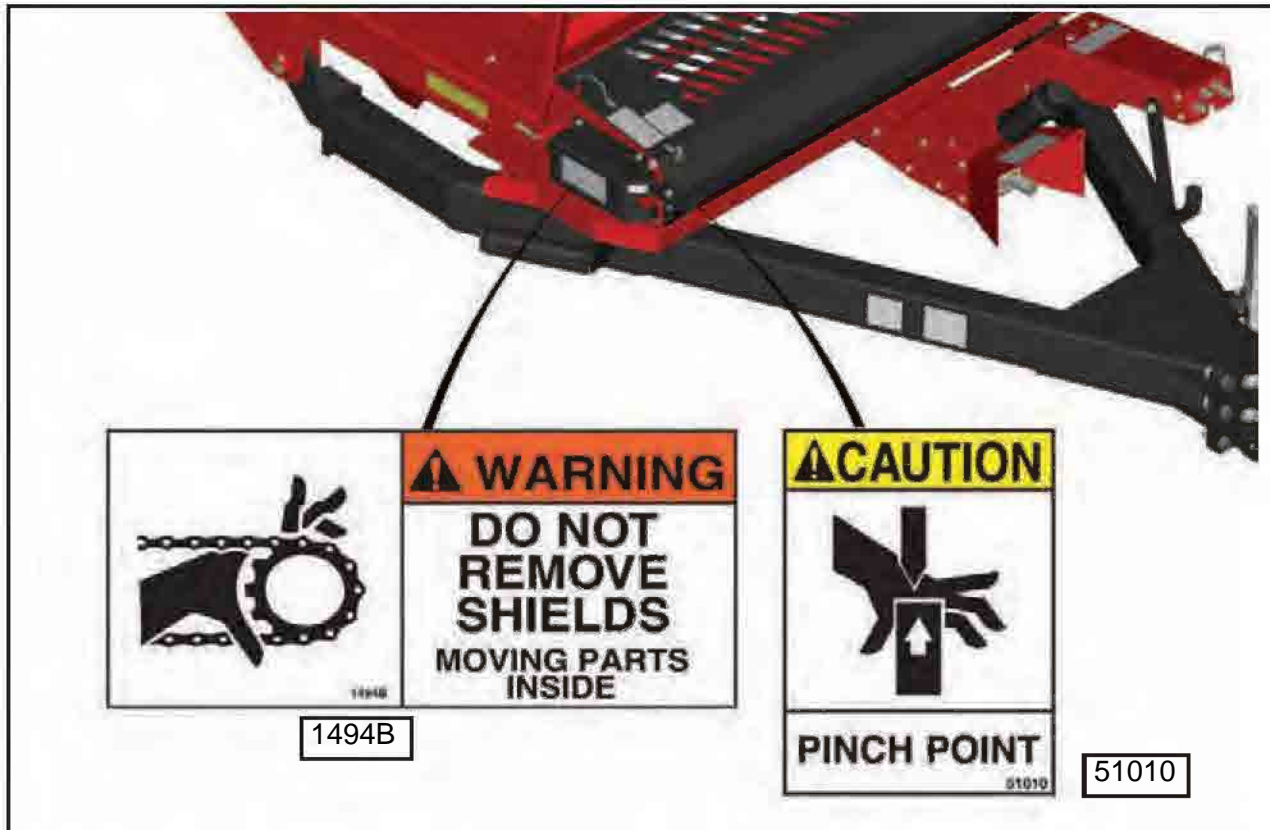
SAFETY DECALS



SAFETY DECALS



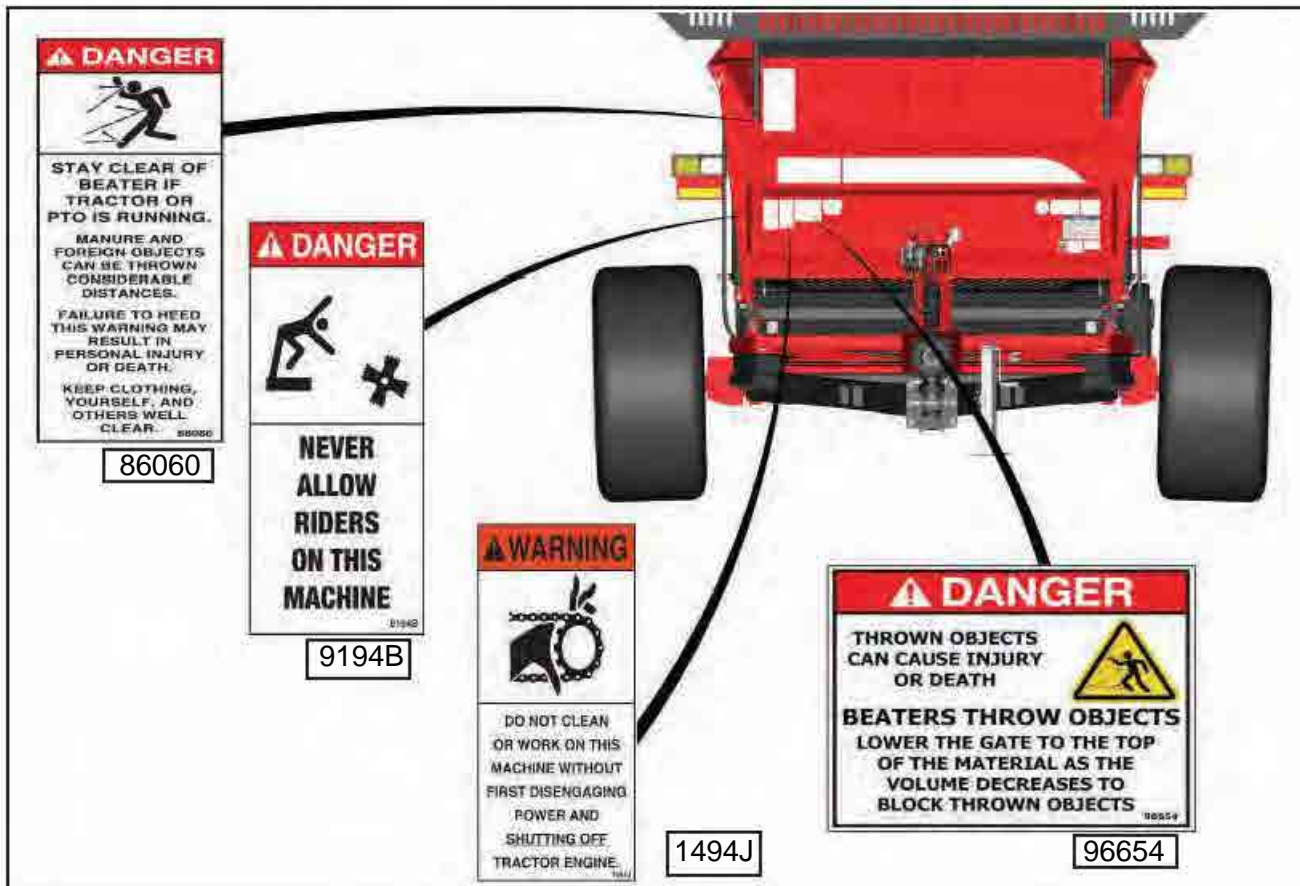
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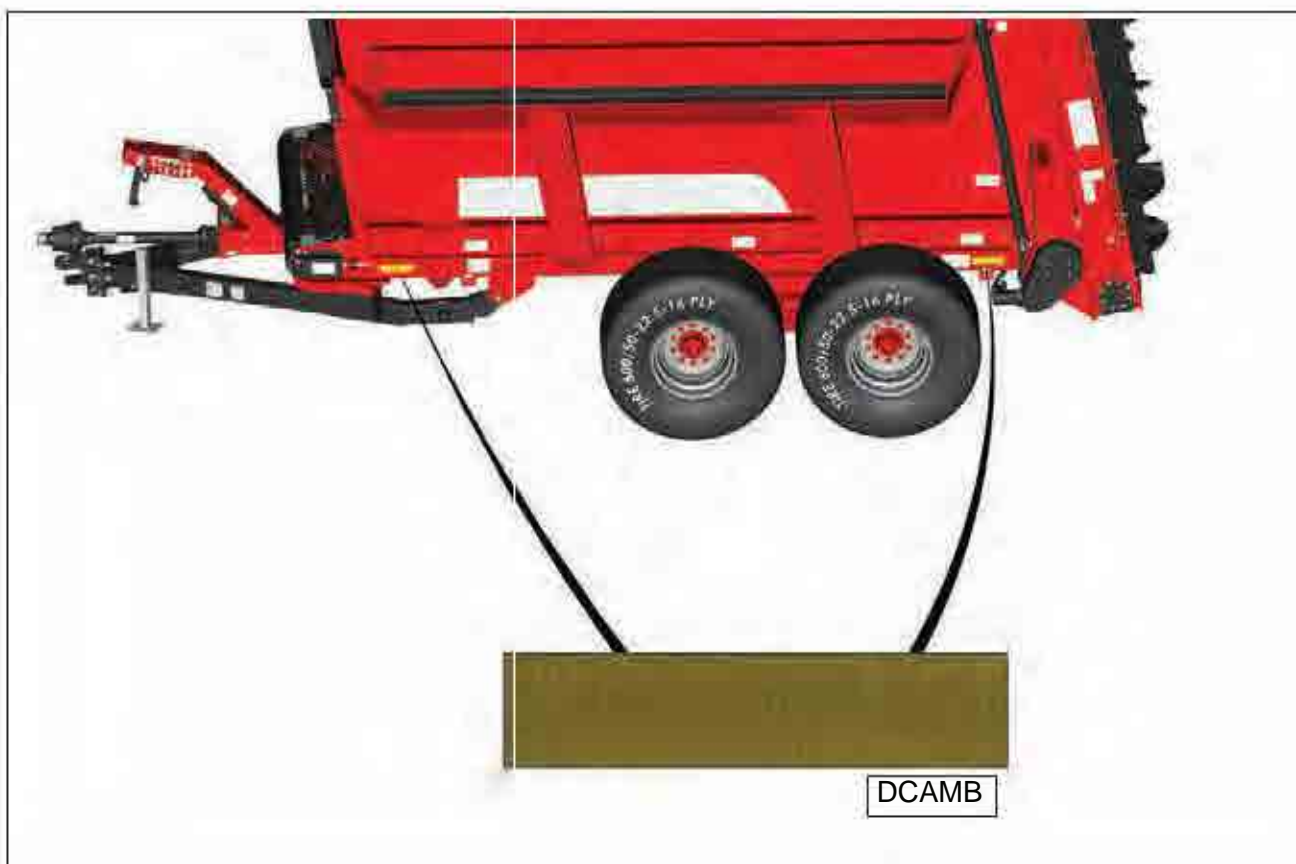
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SAFETY DECALS



SAFETY DECALS



SAFETY DECALS



DCAMB



123002

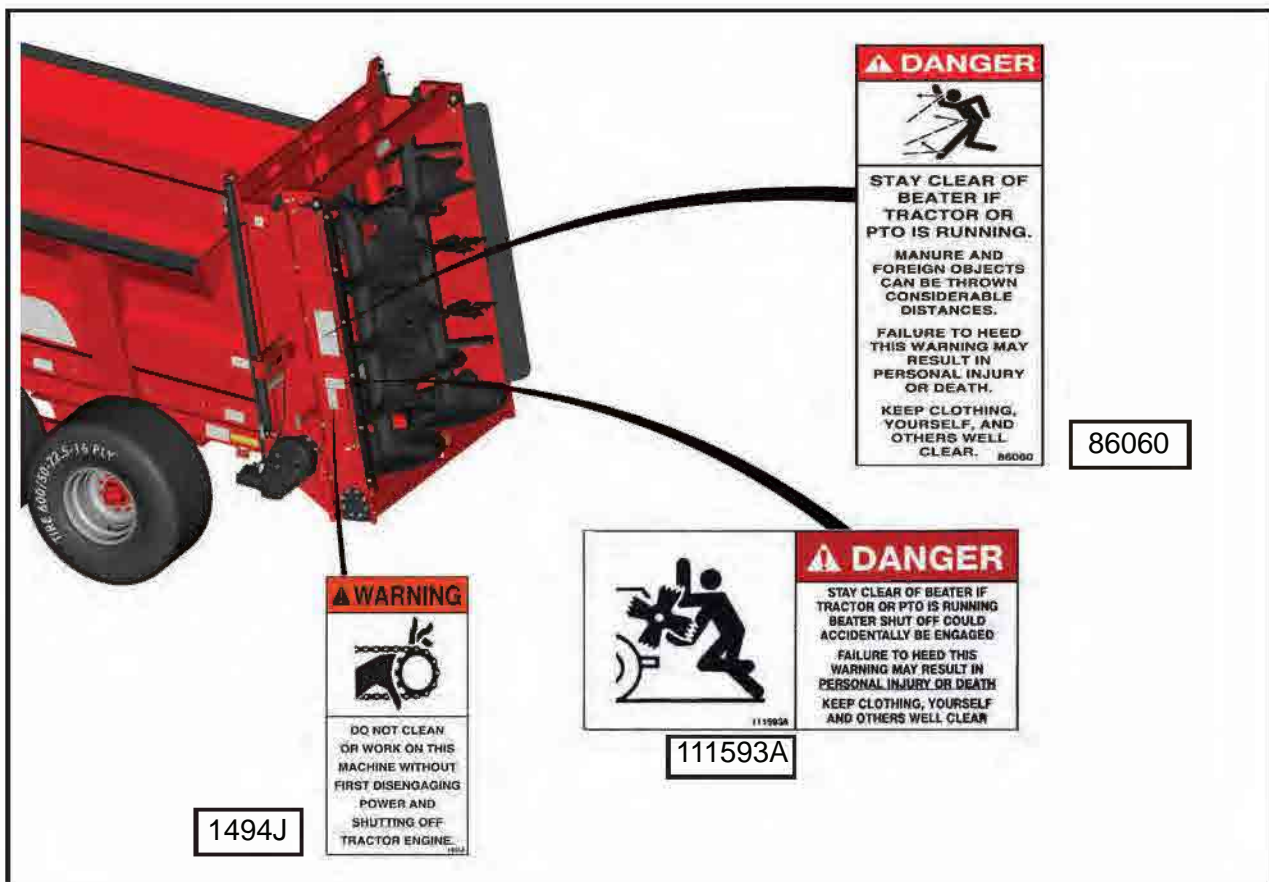
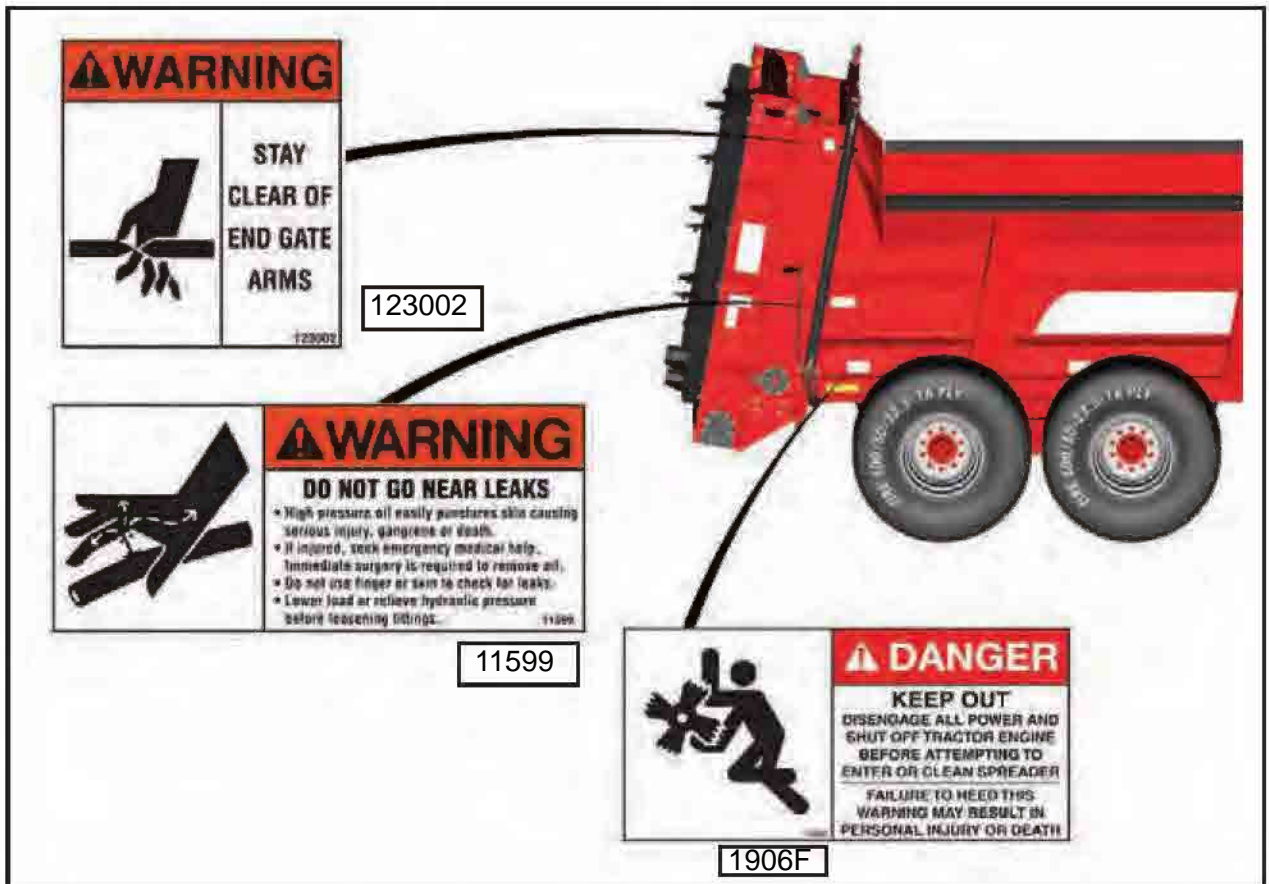


11599

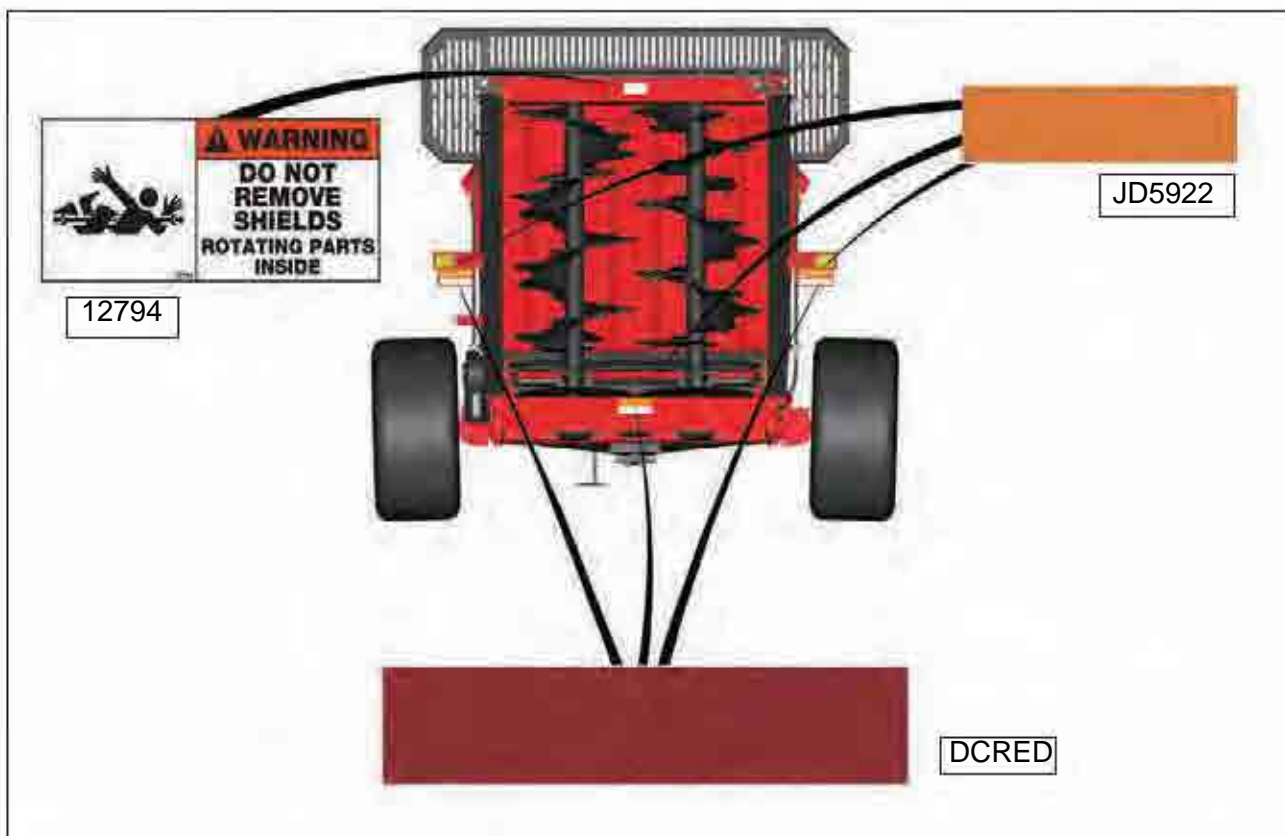
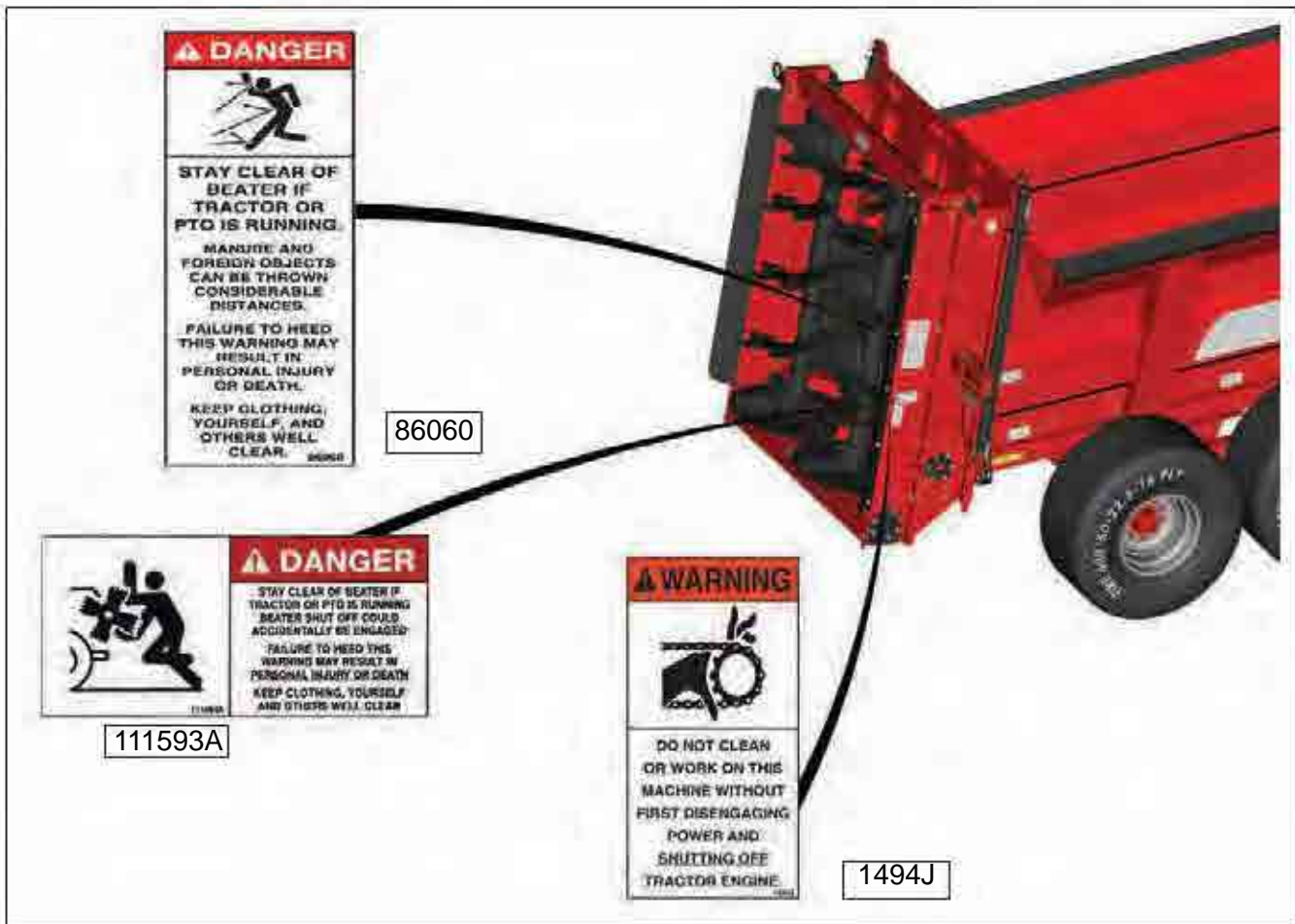


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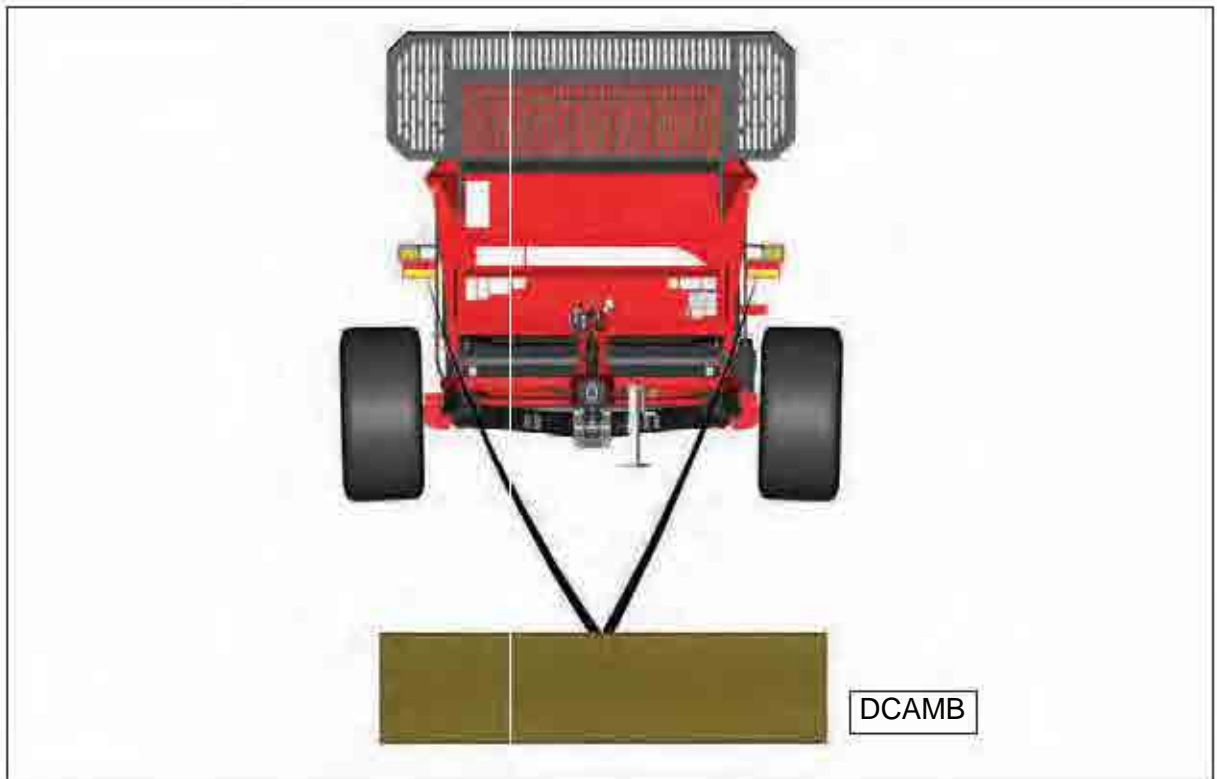
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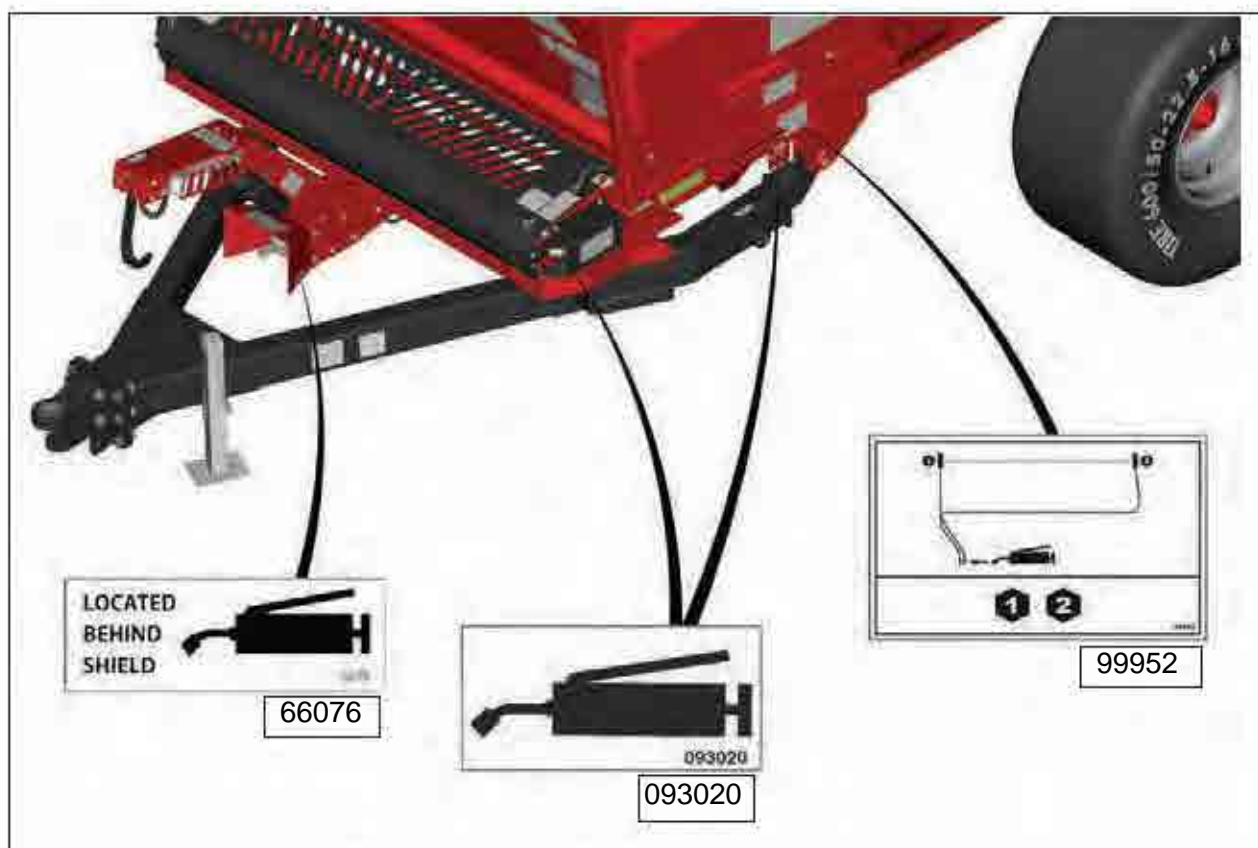
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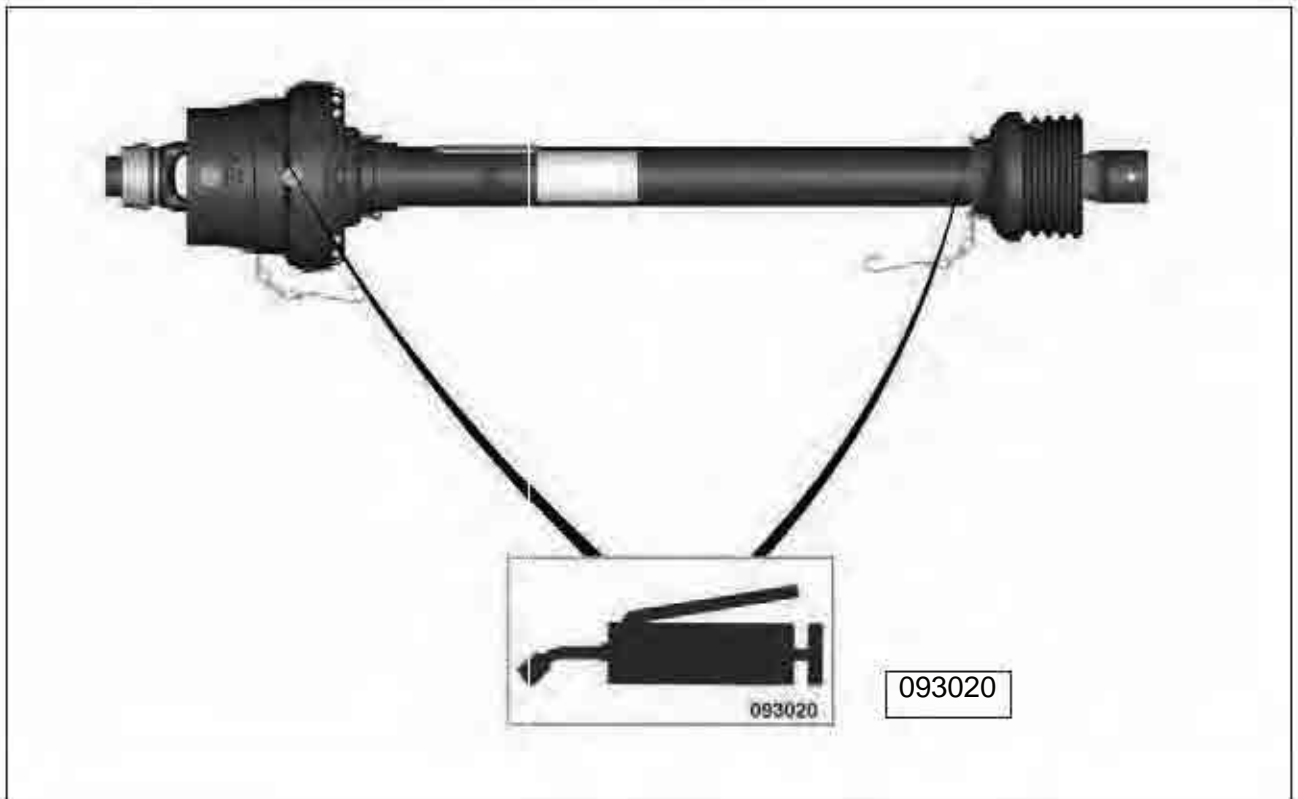
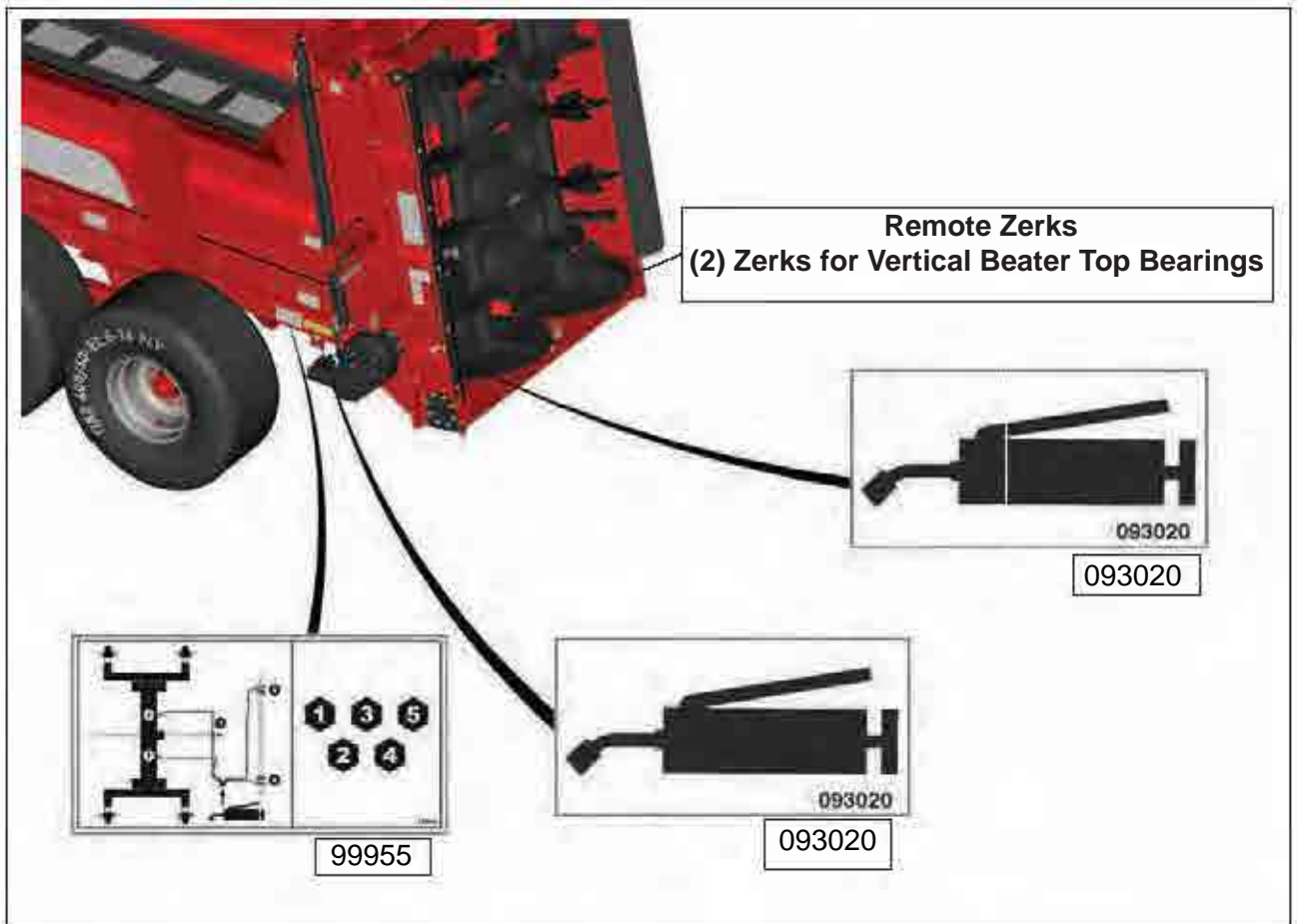
SAFETY DECALS



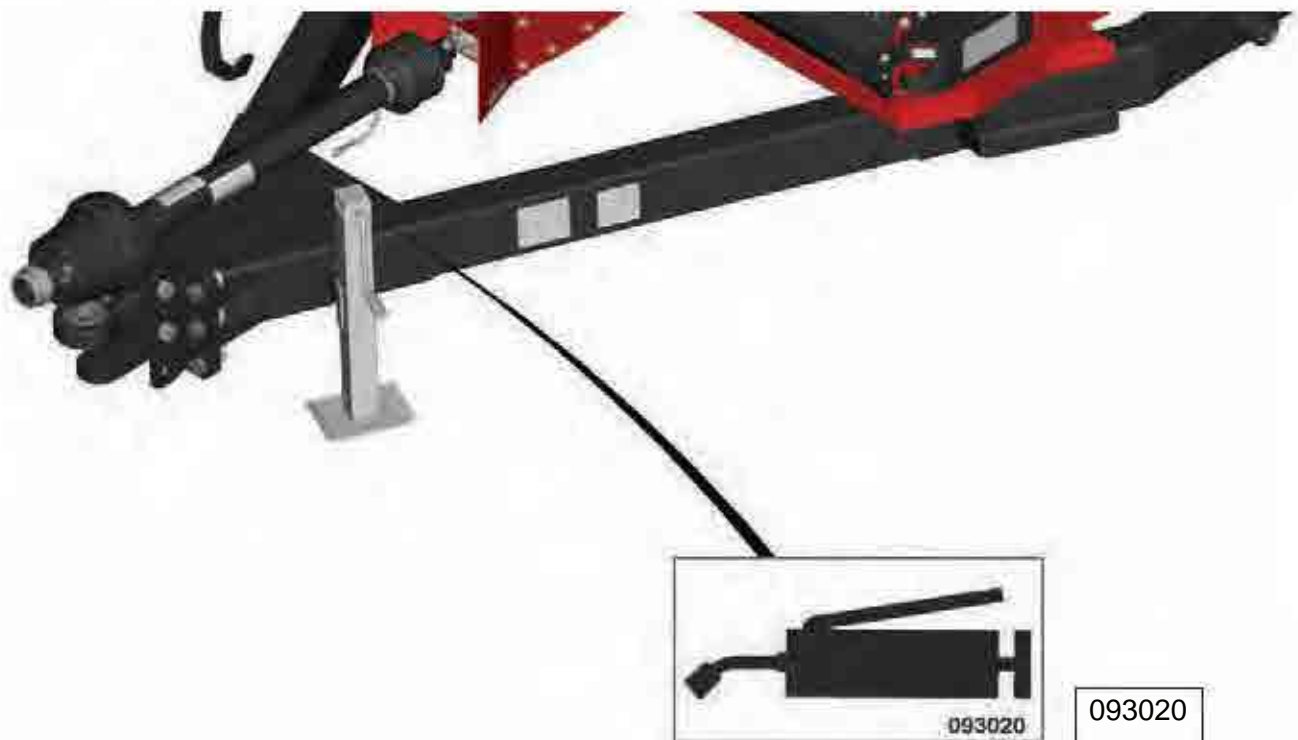
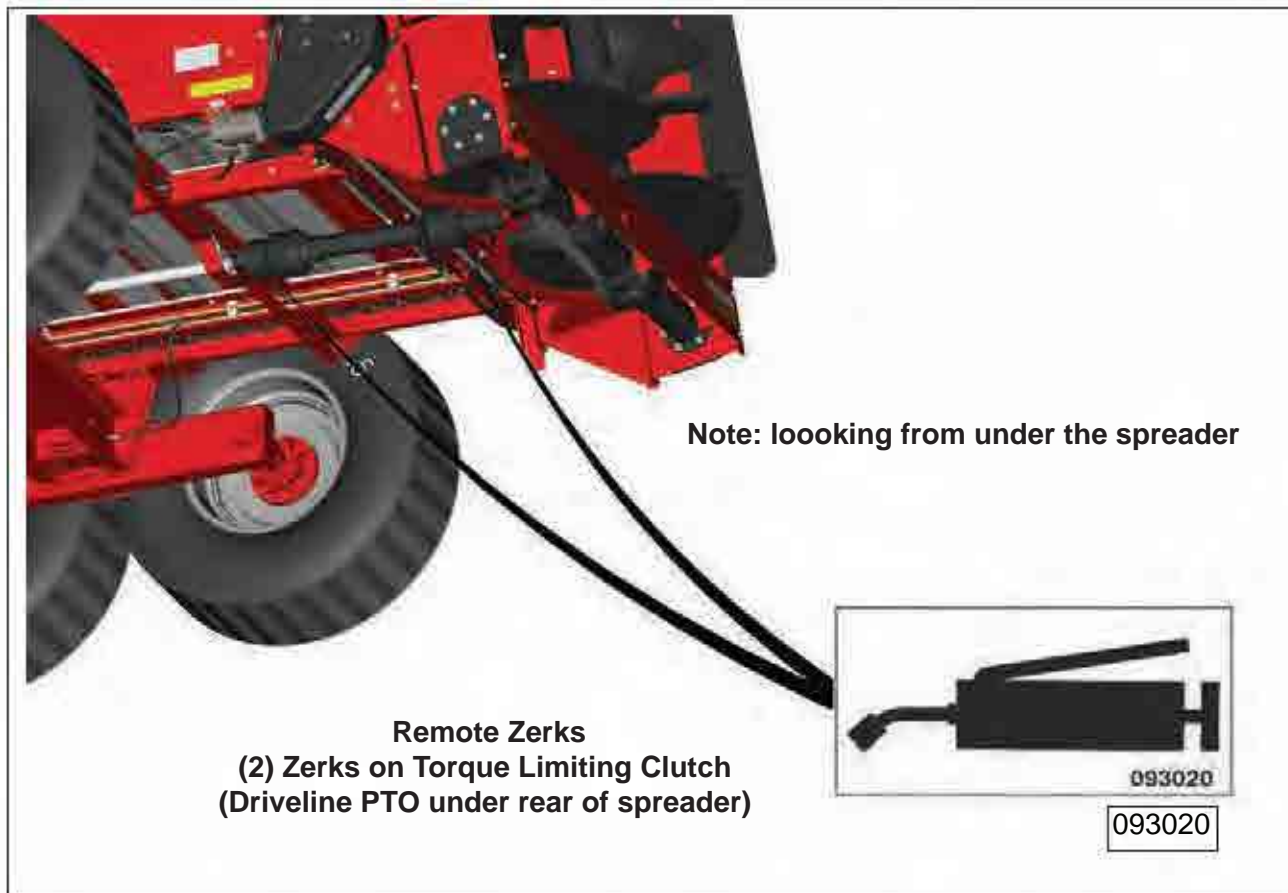
LUBRICATION DECALS



LUBRICATION DECALS



LUBRICATION DECALS



LUBRICATION GUIDE

GENERAL INFORMATION

IMPORTANT: *Catch and dispose of fluid per local waste disposal regulations whenever service is performed on hydraulic components, valves, cylinders, hoses, etc.*

The operator should become familiar with all lubrication points and establish a systematic routine to ensure complete and quick lubrication of the machine.

GREASING

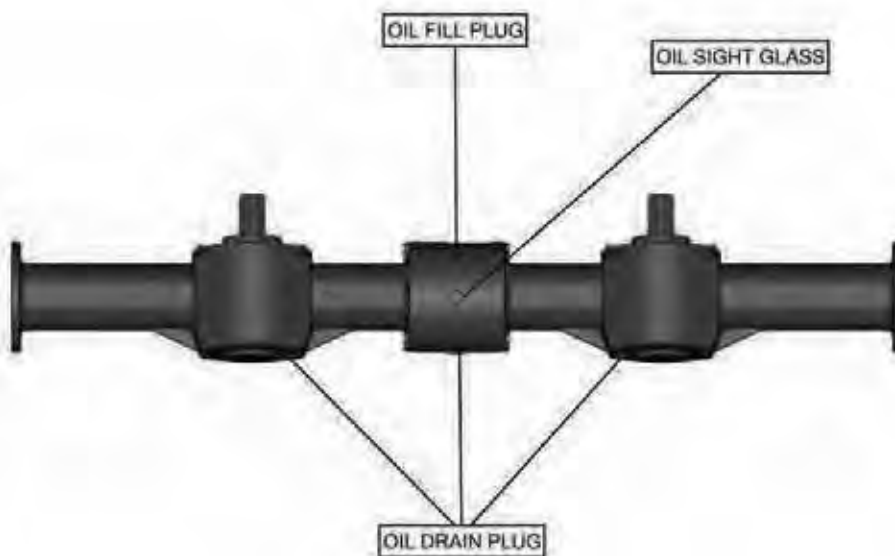
There are numerous grease fittings on the spreader. If these are lubricated properly and often enough, it will prolong the life of the spreader. (Grease every 20 hours, **also before and after power washing.**) Make certain that the grease fittings are free of paint and dirt, force a high-quality grease into them until the grease comes out around the shaft on the sleeve-type bearings. On the sealed ball bearings, grease should be added slowly until a slight bead forms at the seals indicating the correct amount of lubricant. Wipe off excess grease to prevent the accumulation of chaff and grit around the bearings.

PTO ASSEMBLY

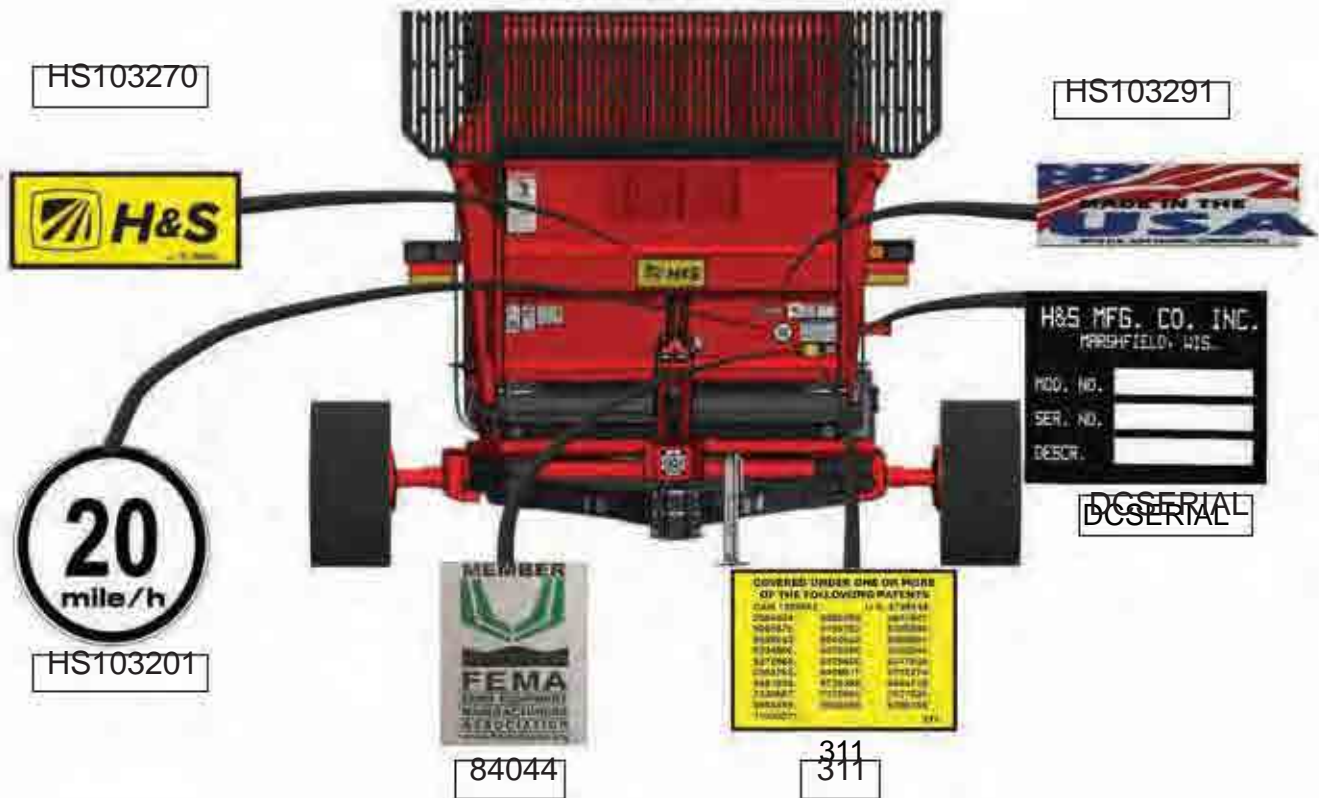
Keep the male and female driving elements well lubricated and free sliding. Failure to observe this precaution will result in excessive pressure being required to collapse or extend the assembly while subject to operating torque. This excessive force may damage or displace the main shaft bearings. DO NOT lubricate the shield surfaces. The shield surfaces must be kept dry, as dirt accumulation on them will quickly cause these units to bind and not rotate. Be sure that the rotating integral shields are not dented or damaged, as this also will result in excessive force being applied against the jackshaft. Damaged shields also cause obvious difficulties when installing the assembly. If at any time the shields do not turn freely, they should be checked to determine the cause, and repaired or cleaned. To avoid damage to the main drive bearings, avoid turning sharp corners while PTO is running. Start and Stop PTO slowly to avoid damage to the drive line.

GEARBOX LUBRICATION

Gearbox oil should be changed annually with 75/90 gear oil. **(See image for oil fill plug, oil drain plug and oil sight glass.)**








BRANDING DECALS








BRANDING DECALS





CAP SCREW TORQUE VALUES

| SUGGESTED ASSEMBLY TORQUE VALUES | | | | | | | | Stainless steel | |
|----------------------------------|------------------|---|-------------|---|-------------|--|-------------|---|---|
| SAE | | SAE GRADE 2 | | SAE GRADE 5 | | SAE GRADE 8 | | 18-8 SS | 316 SS |
| | |  | |  | |  | |  |  |
| BOLT SIZE | Threads Per INCH | Dry FT. LBS | LUB FT. LBS | Dry FT. LBS | LUB FT. LBS | Dry FT. LBS | LUB FT. LBS | Dry IN. LBS | Dry IN. LBS |
| 1/4 | Coarse 20 | 5.5 | 4.2 | 8 | 6.3 | 12 | 9 | 75.2 | 78.8 |
| | Fine 28 | 6.3 | 4.7 | 10 | 7.2 | 14 | 10 | 94 | 99 |
| 5/16 | Coarse 18 | 11 | 8 | 17 | 13 | 24 | 18 | 132 | 138 |
| | Fine 24 | 12 | 9 | 19 | 14 | 27 | 20 | 142 | 147 |
| 3/8 | Coarse 16 | 20 | 15 | 30 | 23 | 45 | 35 | 236 | 247 |
| | Fine 24 | 23 | 17 | 35 | 25 | 50 | 35 | 254 | 271 |
| 1/2 | Coarse 14 | 32 | 24 | 50 | 38 | 70 | 50 | 376 | 393 |
| | Fine 20 | 36 | 27 | 55 | 40 | 80 | 60 | 400 | 418 |
| 1/2 | Coarse 13 | 50 | 35 | 75 | 55 | 110 | 80 | 527 | 542 |
| | Fine 20 | 55 | 40 | 85 | 65 | 120 | 90 | 541 | 565 |
| 9/16 | Coarse 12 | 70 | 55 | 100 | 80 | 150 | 110 | 682 | 713 |
| | Fine 18 | 80 | 60 | 120 | 90 | 170 | 130 | 752 | 787 |
| 5/8 | Coarse 11 | 100 | 75 | 150 | 110 | 210 | 160 | 1110 | 1160 |
| | Fine 18 | 110 | 85 | 170 | 130 | 240 | 180 | 1244 | 1301 |
| 3/4 | Coarse 10 | 175 | 130 | 260 | 200 | 380 | 280 | 1530 | 1582 |
| | Fine 16 | 200 | 140 | 300 | 220 | 420 | 310 | 1690 | 1758 |
| 7/8 | Coarse 9 | 170 | 125 | 430 | 320 | 600 | 450 | 2328 | 2430 |
| | Fine 14 | 180 | 140 | 470 | 350 | 670 | 500 | 2318 | 2420 |
| 1 | Coarse 8 | 250 | 190 | 640 | 480 | 910 | 680 | 3440 | 3595 |
| | Fine 14 | 280 | 210 | 720 | 540 | 1020 | 760 | 3710 | 3890 |

| SUGGESTED ASSEMBLY TORQUE VALUES | | | | | | | | | | |
|----------------------------------|---|-------------|---|-------------|---|-------------|--|-------------|---|-------------|
| Metric | 4.6 | | 4.8 | | 8.8 OR 8.9 | | 10.9 | | 12.9 | |
| |  | |  | |  | |  | |  | |
| BOLT SIZE | Dry FT. LBS | LUB FT. LBS | Dry FT. LBS | LUB FT. LBS | Dry FT. LBS | LUB FT. LBS | Dry FT. LBS | LUB FT. LBS | Dry FT. LBS | LUB FT. LBS |
| M3 | 0.3 | 0.25 | 0.5 | 0.4 | 1 | 0.8 | 1.5 | 1.25 | 1.5 | 1.25 |
| M4 | 0.8 | 0.7 | 1 | 0.9 | 2 | 1.8 | 3 | 2.5 | 4 | 2.25 |
| M5 | 1.5 | 1.25 | 2 | 1.8 | 4.5 | 4 | 6.5 | 6 | 7.5 | 6.75 |
| M6 | 3 | 2.7 | 4 | 3.6 | 7.5 | 6.75 | 11 | 10 | 13 | 12 |
| M8 | 7 | 6.3 | 10 | 9 | 18 | 16 | 29 | 23.5 | 35 | 30 |
| M10 | 14 | 12.8 | 18 | 16 | 37 | 33.8 | 59 | 49.5 | 63 | 56.5 |
| M12 | 28 | 23.6 | 38 | 29.7 | 83 | 66.6 | 97 | 87 | 111 | 100 |
| M14 | 37 | 33 | 55 | 49.5 | 103 | 83 | 151 | 136 | 177 | 158 |
| M16 | 59 | 53 | 85 | 76.5 | 159 | 143 | 233 | 209 | 273 | 243.5 |
| M18 | 81 | 73 | 110 | 101.5 | 225 | 202.5 | 321 | 289 | 378 | 338.5 |
| M20 | 118 | 106 | 180 | 149.5 | 321 | 279 | 457 | 411 | 535 | 481.5 |
| M22 | 158 | 143 | 225 | 202.6 | 435 | 391.5 | 629 | 558 | 728 | 663.5 |
| M24 | 200 | 180 | 280 | 258 | 555 | 498 | 788 | 718 | 928 | 833.5 |
| M27 | 285 | 265.5 | 417 | 412 | 811 | 730 | 1154 | 1038.8 | 1340 | 1218 |
| M30 | 402 | 382 | 588 | 528 | 1102 | 985 | 1671 | 1414 | 1857 | 1695 |

HYDRAULIC FITTING TORQUE SPECIFICATIONS

| Tapered Pipe Thread Size - Assembly turns from Finger Tight (TFFT) for Tapered Threads | | TFFT |  |
|--|---------------|-----------|---|
| BSPT (Uncommon) | NPTF (Common) | | |
| 1/8-28 | 1/8-27 | 2 - 3 | |
| 1/4-19 | 1/4-18 | 2 - 3 | |
| 3/8-19 | 3/8-18 | 2 - 3 | |
| 1/2-14 | 1/2-14 | 2 - 3 | |
| 3/4-14 | 3/4-14 | 2 - 3 | |
| 1-11 | 1-11 1/2 | 1.5 - 2.5 | |
| 1 1/4-11 | 1 1/4-11 1/2 | 1.5 - 2.5 | |
| 1 1/2-11 | 1 1/2-11 1/2 | 1.5 - 2.5 | |
| 2-11 | 2-11 1/2 | 1.5 - 2.5 | |

| ORB - SAE J1926 Straight Thread Port Assembly Torques | | | | | | | | | | | | | |
|---|-------------------|--|---|---------------------|---|---------------------|---|---------------------|---|---------------------|---|---------------------|---|
|  | | Assembly Torque (+10% -0) **If fitting is being torqued into aluminum or brass, subtract 35% from standard torque value** | | | | | | | | | | | |
| | | Non-Adjustable | | | | Adjustable | | | | Plugs | | | |
| | | ORFS | | JIC NPT | | ORFS | | JIC | | Hollow Hex | | Hex Head | |
| Dash Size | SAE Size (UN/UNF) | Ft. lbs. (in. lbs.) | Into Alum. Or Brass Ft. lbs. (in. lbs.) | Ft. lbs. (in. lbs.) | Into Alum. Or Brass Ft. lbs. (in. lbs.) | Ft. lbs. (in. lbs.) | Into Alum. Or Brass Ft. lbs. (in. lbs.) | Ft. lbs. (in. lbs.) | Into Alum. Or Brass Ft. lbs. (in. lbs.) | Ft. lbs. (in. lbs.) | Into Alum. Or Brass Ft. lbs. (in. lbs.) | Ft. lbs. (in. lbs.) | Into Alum. Or Brass Ft. lbs. (in. lbs.) |
| 2 | 5/16-24 | - | - | (85) | (55) | - | - | (60) | (39) | (30) | (19.5) | (85) | (55) |
| 3 | 3/8-24 | - | - | (155) | (101) | - | - | (100) | (65) | (55) | (36) | (155) | (101) |
| 4 | 7/16-20 | (310) | (201.5) | (260) | (169) | (180) | (117) | (180) | (117) | (120) | (78) | (260) | (169) |
| 5 | 1/2-20 | (360) | (234) | (280) | (182) | (360) | (234) | (250) | (162.5) | (170) | (110.5) | (280) | (182) |
| 6 | 9/16-18 | (420) | (283) | (350) | (227.5) | (420) | (273) | (350) | (227.5) | (410) | (266.5) | (350) | (175) |
| 8 | 3/4-16 | 60 | 39 | (620) | (403) | 60 | 39 | (620) | (217) | 60 | 39 | (620) | (403) |
| 10 | 7/8-14 | 100 | 65 | 85 | 55 | 100 | 65 | 85 | 55.25 | 100 | 65 | 85 | 55 |
| 12 | 1 1/16-12 | 135 | 88 | 135 | 88 | 135 | 88 | 135 | 88 | 135 | 88 | 135 | 88 |
| 14 | 1 3/16-12 | 175 | 114 | 175 | 114 | 175 | 114 | 175 | 114 | 175 | 114 | 175 | 114 |
| 16 | 1 5/16-12 | 200 | 130 | 200 | 130 | 200 | 130 | 200 | 130 | 200 | 130 | 200 | 130 |
| 20 | 1 5/8-12 | 250 | 162.5 | 250 | 162.5 | 250 | 162.5 | 250 | 162.5 | 250 | 162.5 | 250 | 162.5 |
| 24 | 1 7/8-12 | 305 | 198 | 305 | 198 | 305 | 198 | 305 | 198 | 305 | 198 | 305 | 198 |
| 32 | 2 1/2-12 | 375 | 244 | 375 | 244 | 375 | 244 | 375 | 244 | 375 | 244 | 375 | 244 |

HYDRAULIC FITTING TORQUE SPECIFICATIONS

Code 61 and 62 Flange Recommended Bolt Torques

Steps to Properly Assemble the Flange Port Clamping Bolts:

1. Inspect components to ensure that male and female port threads and sealing surfaces are free of burrs, nicks and scratches, or any foreign material.
2. Lubricate the O-ring
3. Position flange and clamp halves
4. Place lock washers on bolts and insert through clamp halves
5. Hand tighten bolts.
6. Torque bolts in diagonal sequence in small increments to the appropriate torque level **refer to the table below.

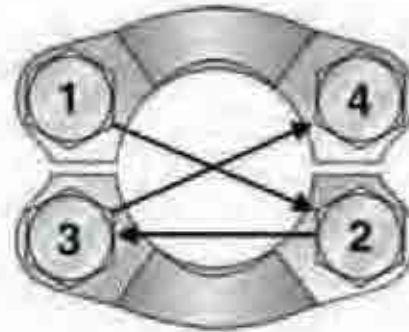


Figure 208 Tightening Sequence

| Code 61 | | | | | | Code 62 | | | | | |
|-----------|-------------|----------------------|-----------------|------------------------|------------|-----------|-------------|----------------------|-----------------|------------------------|------------|
| Dash Size | Flange Size | Inch Bolt (SAE J518) | Torque ft. lbs. | Metric Bolt (ISO 6162) | Torque N-m | Dash Size | Flange Size | Inch Bolt (SAE J518) | Torque ft. lbs. | Metric Bolt (ISO 6162) | Torque N-m |
| 8 | 1/2 | 5/16-18 | 17 ± 2 | M8 | 24 | 8 | 1/2 | 5/16-18 | 17 ± 2 | M8 | 24 |
| 12 | 3/4 | 3/8-16 | 31 | M10 | 50 | 12 | 3/4 | 3/8-16 | 31 | M10 | 50 |
| 16 | 1 | 3/8-16 | 31 ± 4.5 | M10 | 50 | 16 | 1 | 7/16-14 | 52 | M12 | 92 |
| 20 | 1-1/4 | 7/16-14 | 52 | M12 | 50 | 20 | 1-1/4 | 1/2-13 | 77 | M14 | 130 |
| 24 | 1-1/2 | 1/2-13 | 77 | M12 | 92 | 24 | 1-1/2 | 5/8-11 | 155 | M16 | 210 |
| 32 | 2 | 1/2-13 | 77 | M12 | 92 | 32 | 2 | 3/4-10 | 265 | M20 | 400 |
| 40 | 2-1/2 | 1/2-13 | 77 | M12 | 92 | | | | | | |
| 48 | 3 | 5/8-11 | 155 | M16 | 210 | | | | | | |
| 56 | 3-1/2 | 5/8-11 | 155 | M16 | 210 | | | | | | |
| 64 | 4 | 5/8-11 | 155 | M16 | 210 | | | | | | |
| 80 | 5 | 5/8-11 | 155 | M16 | 210 | | | | | | |

| 37° Flare (JIC) Assembly Torques and FFWR | | | | | |
|---|-------------|--------------------------|---------|----------------------|------------------------------------|
| SAE Dash Size | Thread Size | Assembly Torque (+10%-0) | | Tube Connection FFWR | Swivel Nut or Hose Connection FFWR |
| | | In. lb. | ft. lb. | | |
| -2 | 5/16-24 | 35 | 3 | - | - |
| -3 | 3/8-24 | 65 | 5 | - | - |
| -4 | 7/16-20 | 155 | 13 | 2 1/2 | 2 |
| -5 | 1/2-20 | 165 | 14 | 2 | 2 |
| -6 | 9/16-18 | 265 | 22 | 2 | 1 1/2 |
| -8 | 5/8-16 | 505 | 42 | 2 | 1 1/2 |
| -10 | 7/8-14 | 720 | 60 | 1 1/2 | 1 1/2 |
| -12 | 1 1/16-12 | 1000 | 84 | 1 1/2 | 1 1/4 |
| -14 | 1 3/16-12 | 1200 | 100 | 1 1/2 | 1 1/4 |
| -16 | 1 5/16-12 | 1415 | 118 | 1 1/2 | 1 |
| -20 | 1 5/8-12 | 2015 | 168 | 1 | 1 |
| -24 | 1 7/8-12 | 2340 | 195 | 1 | 1 |
| -32 | 2 1/4-12 | 3180 | 265 | 1 | 1 |
| -40 | 3-12 | - | - | 1 | 1 |

SET-UP & ASSEMBLY



WARNING: Some photographs used in the following pages show guards or shields removed for clarification. Never operate machine until these guards or shields are in proper operating position.

NOTE: Determine right or left side of the Manure Spreader by viewing it from the rear. If instructions or parts lists call for hardened bolts, refer to the Cap Screw Torques Value page to identify.

PREPARING MANURE SPREADER

The Manure Spreader may be shipped without the wheels/tires installed.

1. Attach the wheels with tires, using the lug nuts furnished and torque the mounting hardware to the appropriate torque. Wheel bolts should be tightened at 240 ft/lbs. of torque.
2. Check the tires and inflate to the recommended pressure.
(425/65 R 22.5 tires to 85 psi)
(600/50 22.5 tires to 38 psi)
3. Check for proper assembly and adjustment and make sure that all bolts are tightened.
4. Securely retighten after a few hours of operation, as bolts can loosen up on new machinery.
5. Lubricate the machine completely, check the oil level of the gearbox, fill if necessary.

TRANSPORTING

TRANSPORT LIGHTING & REFLECTORS

When transporting on the highway, connect the spreader to the tractor with a lighting power cord. The lighting system is to be connected to the 7 pin power receptacle (per SAEJ560B) on your tractor. If your tractor is not equipped with the proper receptacle, see your tractor dealer for details. Make sure lights are functioning properly. Regularly clean the reflective tape at the rear of the spreader. There is a holder provided for your SMV sign.

SAFETY CHAIN

Follow state and local regulations regarding use of a safety chain and transport lighting when towing farm equipment on public highways. A proper safety chain should be used to retain the safety connection between the towing and towed machines, in the event of separation of the primary attaching system. Check with local law enforcement agencies for your own particular regulations. Unless otherwise prohibited, use a slow-moving vehicle emblem. Never tow the manure spreader on a public highway at a speed greater than 20 mph (32 kph).

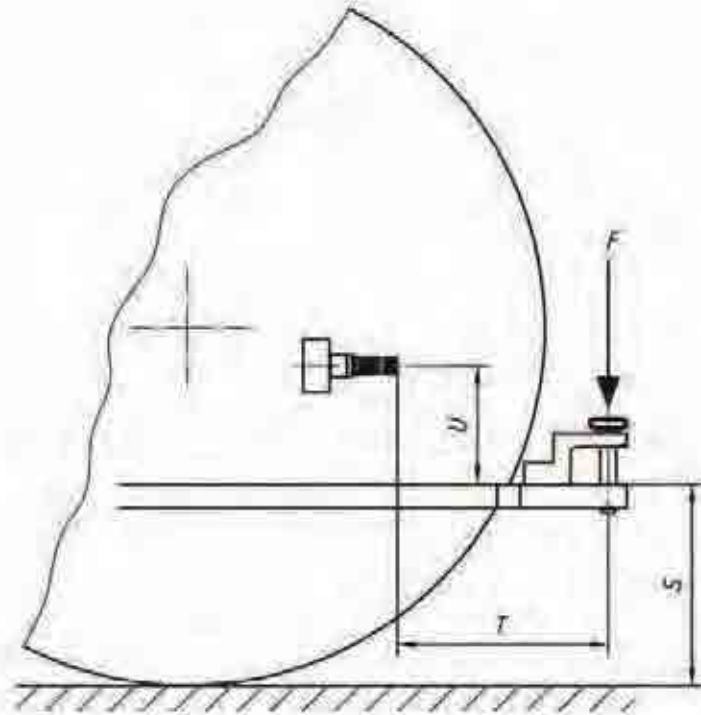
1. The chain is sufficiently slack to allow turns and movements of either the tractor or the manure spreader, without placing tension on the chain.
2. The chain is of sufficient strength to hold the decoupled implement (and its load) and tow it to the shoulder.

PREPARING FOR OPERATION

TRACTOR CONNECTIONS

Tractor Hitch

Fasten the spreader hitch to the drawbar with a **hitch pin with a safety locking device**. Use a 1-1/4" diameter hitch pin to pull spreader. Remove the weight from the jack (jack is not to be used when spreader is loaded). The hitch of the spreader is designed for a standardized tractor hitch. Adjust the drawbar so that it is 13 to 17 inches above the ground. Extend or shorten it so that the horizontal distance from the end of the tractor power takeoff shaft to the center of the hitch pin hole is 15-3/4" for 1000 PTO as shown in drawing. An improperly located hitch point may cause damage to the universal joints of the power takeoff. Secure the drawbar so that the hitch pin hole is directly below the power drive line.



Hydraulics

The spreader requires a 4-hose hook-up;

1. Connect the set of hydraulic hoses which operates the Manure Spreader hydraulic apron drive from the spreader to a double acting valve on the tractor.
2. Connect the set of hydraulic hoses which operate the hydraulic endgate to another double acting valve on the tractor.
3. Operate the tractor valve to fill the hydraulic lines and operate the cylinders. Add hydraulic fluid to the tractor system, as required.
4. With endgate open, operate tractor valve to fill hydraulic lines and operate the apron chain then add fluid.

Note: Before operation, run the machine slowly to make sure that the Manure Spreader is operating and lubricated properly.

PREPARING FOR OPERATION

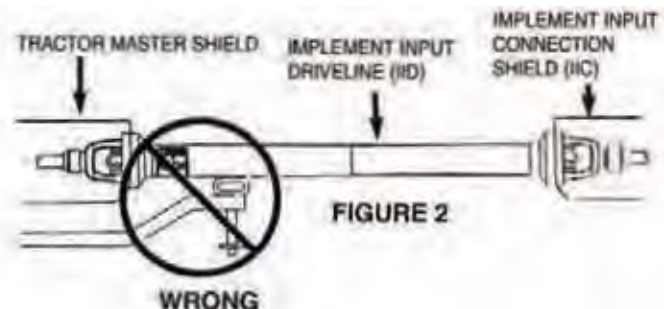
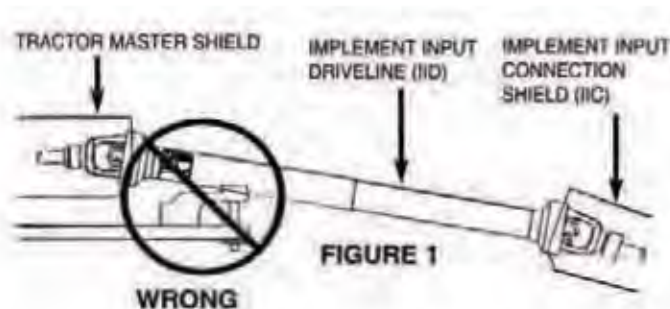
PTO ASSEMBLY

Attach the PTO of the spreader to the tractor by sliding the spring loaded locking collar on PTO yoke rearward, then sliding it onto the tractor PTO shaft. Release spring loaded collar. Be sure the pins fall into the groove of the tractor PTO shaft and collar snaps forward into locking position.

CAUTION: Do not use a steel hammer to aid in joining PTO parts.

Keep the male and female driving elements well lubricated and free sliding. Failure to observe this precaution will result in excessive pressure being required to collapse or extend the assembly while subject to operating torque. This excessive force may damage or displace the main shaft bearings. **DO NOT** lubricate the shield surfaces. The shield surfaces must be kept dry, as dirt accumulation on them will quickly cause these units to bind and not rotate. Be sure that the rotating integral shields are not dented or damaged, as this also will result in excessive force being applied against the jackshaft. Damaged shields also cause obvious difficulties when installing the assembly. If at any time the shields do not turn freely, they should be checked to determine the cause, and repaired or cleaned. To avoid damage to the main drive bearings, avoid turning sharp corners while PTO is running. Start and Stop PTO slowly to avoid damage to the drive line.

If this implement is attached to a tractor with a clevis hitch (hammer-strap) style drawbar, the hammer-strap must be removed to prevent damage to the IID guarding and the IID telescoping members. [See Figure 1]



If this implement is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the IID guarding and the IID telescoping members. [See Figure 2]

OPERATION

EMERGENCY SHUTDOWN

If a foreign object becomes lodged in the beater area and disengages the torque limiting clutch, stop the hydraulic drive apron and disengage the PTO. Stop the tractor engine, remove the ignition key, and allow all mechanisms to stop before cleaning or working on the spreader.

LOADING

Begin loading the spreader at the front end and work toward the rear until loading is completed. Loading this way permits the material to be spread uniformly.

When hauling extremely heavy materials with a large portion of dirt, it may be necessary to reduce the load size or slow apron to prevent the torque limiting clutch from disengaging. When loading a mixed load of solids and semi solid first and then the semi liquid to prevent the whole load from moving when the semi liquid runs out. Do not use extra sideboards. Do not overload spreader. Overloading decreases spreading effectiveness.

WINTER OPERATION

In freezing weather run the beaters for five minutes to ensure beaters are working properly. Make certain that the apron chain is not frozen to the floor and the hydraulic gate is not frozen to the track uprights or the floor of the spreader. Raise the tail gate partially and remove any manure.

SPREADING

Before beginning to spread, make sure that the knob on the reverse valve is fully threaded in.

1. Engage the tractor PTO slowly. The beater is always in the engaged position, therefore, engaging the tractor PTO will automatically start the beaters.
2. Raise the hydraulic gate by engaging the tractor hydraulics.

Note: The hydraulic gate can be used for metering loose material, but must always be raised completely for pen pack material prior to activating the hydraulics for the main apron.

3. Engage the tractor hydraulic lever into the detent position to operate the hydraulic drive main apron.
4. Control the variable speed main apron by using the tractor hydraulic flow controls cab-mounted electric control if equipped, or spreader mounted manual control if equipped.
5. As the spreader empties lower the endgate to match the height of the load to prevent material from being thrown toward the tractor.
6. When the spreader is completely empty, disengage the hydraulic lever for the main apron drive and engage the tractor hydraulics to close the hydraulic gate.

OPERATION

NOW STANDARD - REVERSING THE MAIN APRON

If the manure spreader is equipped with a reversing valve that allows the operator to reverse the main apron if a problem arises such as an obstruction in the beater area. Follow the steps below to reverse the apron.

IMPORTANT

NEVER REVERSE APRON CHAIN WHEN SPREADER IS FULLY LOADED

APRON REVERSING INSTRUCTIONS

- ♦ Before REVERSING the main drive apron chain, disengage the PTO and the hydraulic main apron drive.
- ♦ Adjust the electronic speed control to the 25-40 setting. (if equipped)
- ♦ Thread out the reverse valve adjustment knob 3-4 full turns.
- ♦ Engage ONLY the HYDRAULIC APRON DRIVE.
- ♦ Run the tractor hydraulic control lever in the reverse direction until the material or obstruction has cleared the beater area ensuring that the load does not jam into the front of the box.
- ♦ Clear any obstructions from vertical beater area.
- ♦ Caution must be taken to make sure that everyone is clear and of a proper distance from the vertical beater discharge area.
- ♦ Engage the tractor PTO to start the vertical beaters.
- ♦ Disengage the PTO and fully thread in the reverse valve adjustment knob.



CAUTION: DO NOT RUN THE APRON CHAIN IN REVERSE LONGER THAN NECESSARY AS DAMAGE COULD OCCUR IF THE LOAD IS BACKED INTO THE FRONT OF THE MANURE SPREADER. FAILURE TO COMPLY COULD DAMAGE THE MACHINE AND VOID THE WARRANTY.

SERVICING

NOTE: Be certain to disconnect all sources of power before servicing. Keep pant cuffs and loose clothing away from all drives as well as the other moving parts. Keep off the equipment when in use, and keep all shields in place. Do not attempt to clean, grease or lubricate while the machine is running.

Never allow riders in or on the machine.

DRIVELINE PROTECTION TORQUE LIMITER DISCONNECT CLUTCH

The driveline is protected by a Torque Limiter Disconnect Clutch located in the PTO driveline before the gearbox of the spreader. Disconnect of the clutch during operation is normally due to large frozen chunks of manure, foreign objects (rocks, chunks of wood etc.) in the manure, running the spreader apron too fast when unloading long straw and pen-packed material, or STARTING THE SPREADER PTO TOO QUICKLY WITH HIGH TRACTOR RPM. Always determine the reason for the disconnect and eliminate the problem before re-engaging the PTO.

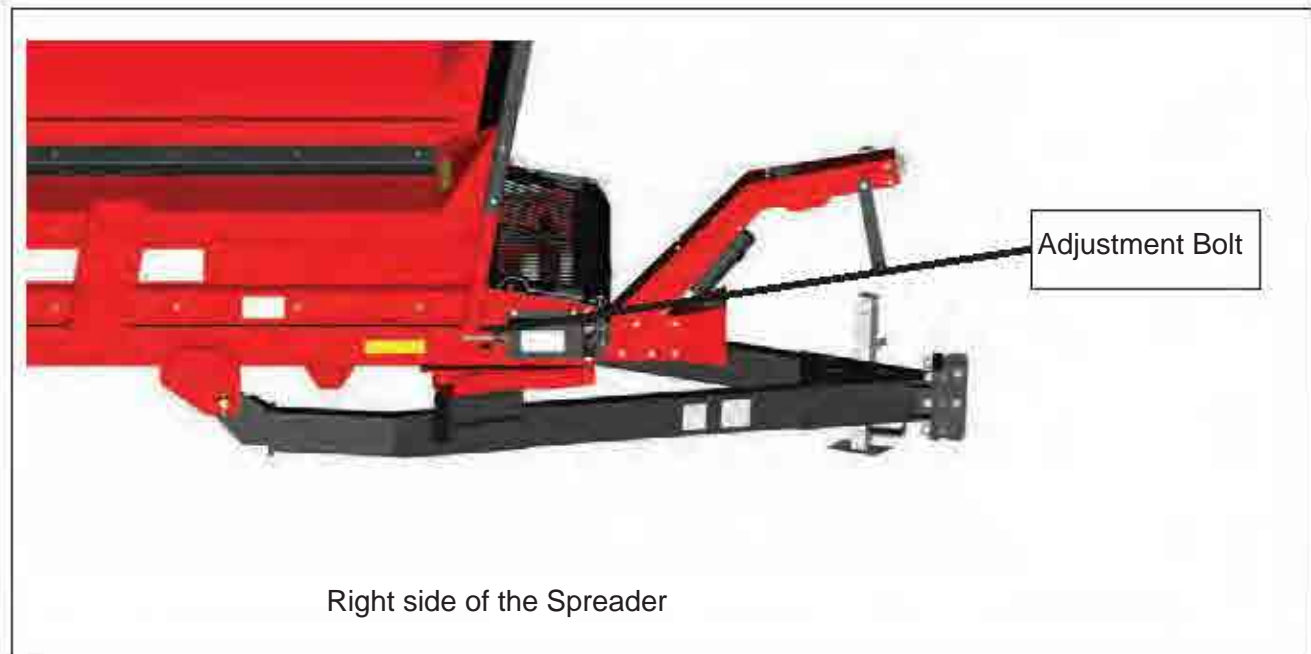
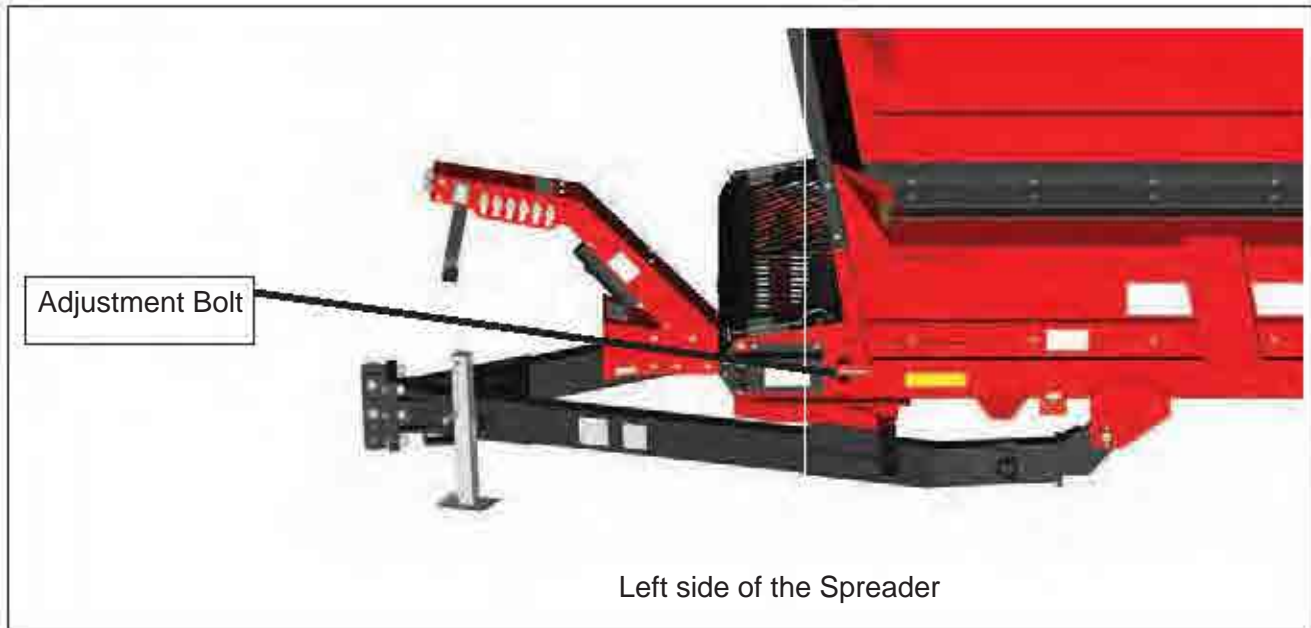
BEATER

When replacing the beater paddles, always use proper grade bolts, washers, and nuts and torque to the recommendations in the bolt torque chart of this manual.

ADJUSTMENTS

MAIN APRON ADJUSTMENT

Loosen front jam nut. Tighten rear nut until desired tension is achieved. Tighten evenly to ensure chain slats are straight. Retighten jam nuts before operating. (1 on each front corner of the spreader - see image in the pictures below).



Note: A loose chain may allow the tabs to disengage with the floating cross slats, or cause the chain to jump off the drive/idler sprockets. Take extra caution to avoid this when operating the chain in reverse.

ADJUSTMENTS

MAIN APRON ADJUSTMENT

Apron slats should sit 1/2" above the first driveshaft support cross member. The apron will be damaged if the machine is operated with one end of the apron slats running ahead of the opposite end.

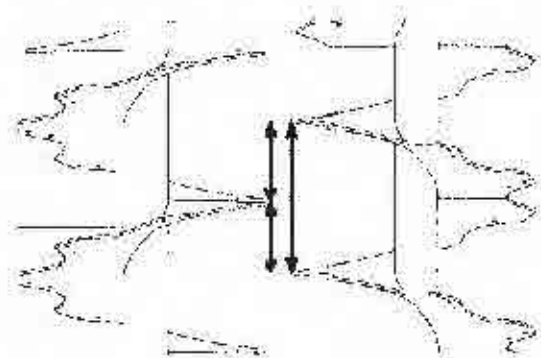


TIMING OF BEATERS

The vertical beaters on the manure spreader are preset from the factory. If it becomes necessary to service the beater assembly, the beaters must be timed so the flighting of the opposite beater is about halfway between the beater being timed.

To time the beaters;

1. Remove the top shield and bearing support from both beaters.
2. Lift/raise the beater up off of the gearbox splined shaft.
3. Rotate the beater so the flighting of the opposite beater is about halfway between the beater being timed.
4. Lower the beater on the splined shaft.
5. Beaters should be turned to ensure there is no interference between them.
6. Replace the bearing support and top shield.



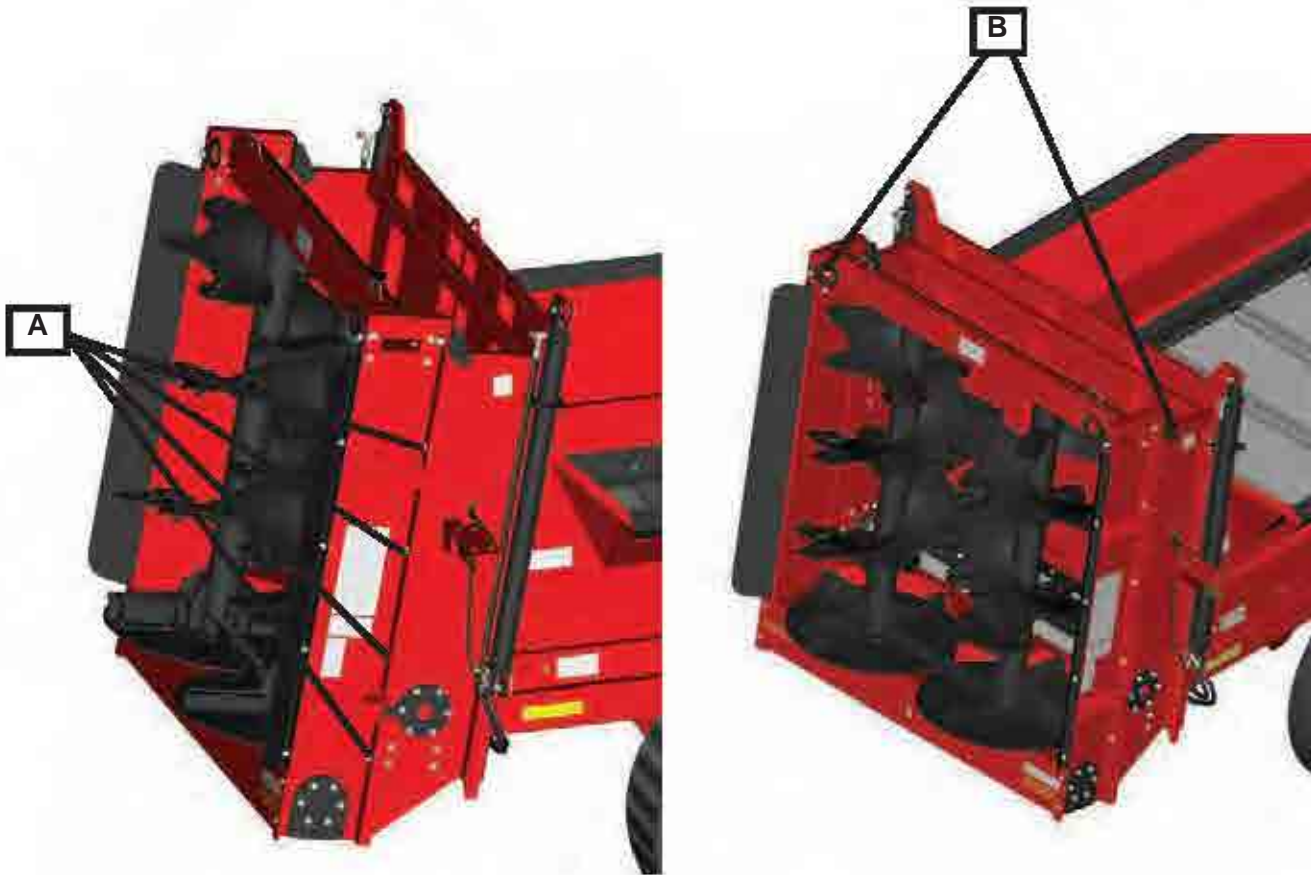
* There are sixteen poly rods that absorb shock and if the beaters are loose these may need to get replaced.

ADJUSTMENTS

BEATER REMOVAL

The beater attachment can easily be removed for various reasons such as manure stock piling.

1. Remove bolts, nuts at the same location on each side (A).
2. Disconnect the quick disconnect PTO from the gearbox under the rear of the manure spreader and remove the rear half of the PTO.
3. The remaining portion of the rear PTO has a nut and bolt that must be removed to slide the front portion off of the PTO from the shaft.
4. After removal of both PTO halves, slide them together and store them in a safe place.
5. Securely attach a lifting chain to the lifting eyes at the top of the beater assembly (B).
6. Lift the beater assembly gently until alignment pegs are clear of the alignment holes.
7. Store the beater assembly on level ground with blocking as not to damage the drive system.



MOVING AXLE

The axle housing may be adjusted to provide more or less tongue weight on the spreader. If removing the beater for an extended period of time, the axle should be adjusted to account for the lower spreader weight.

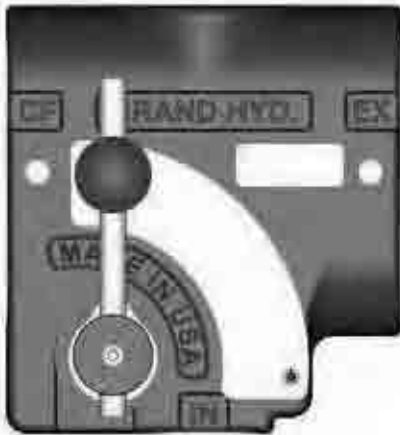
1. Loosen/Remove axle mount bolts.
2. Lift spreader body off the axle. Ensure spreader body is properly secured before proceeding.
3. Roll axle with tandems and wheels to the desired position.
4. Lower spreader body onto the axle and reattach bolts.

OPTIONAL EQUIPMENT

ELECTRIC ADJUST HYDRAULIC VARIABLE SPEED APRON CONTROL

The optional electric adjust valve allows you to adjust your apron speed from the tractor cab if the tractor is not equipped with variable speed hydraulic controls.

MANUAL ADJUST HYDRAULIC VARIABLE SPEED APRON CONTROL



HYDRAULIC ACTUATOR LIGHT COVERS

The optional light covers are hydraulically linked to the hydraulic end gate so that when the end gate is raised, the cover closes over them to protect them from debris. When the end gate is closed, the light covers open.



OPTIONAL EQUIPMENT

RUBBER SPRING SUSPENSION PACKAGE



FIT-A-ROUND SCREEN EXTENSION



TROUBLESHOOTING

WARNING:

MAKE SURE THAT THE TRACTOR IS SHUT OFF AND THE SPREADER CANNOT MOVE BEFORE SERVICING THE MANURE SPREADER. MAINTENANCE AND REPAIR SERVICE WORK TO BE PERFORMED BY A QUALIFIED SERVICE PERSON ONLY.



| TROUBLE... | POSSIBLE CAUSE... | POSSIBLE REMEDY... |
|------------|-------------------|--------------------|
|------------|-------------------|--------------------|

| | | |
|---------------------|-------------------------|--------------------|
| Beater Will Not Run | Tractor PTO Not Turning | Engage Tractor PTO |
|---------------------|-------------------------|--------------------|

| | | |
|---------------------|--------------------------------|---------------------------|
| Apron Does Not Turn | Tractor Hydraulics Not Engaged | Engage Tractor Hydraulics |
|---------------------|--------------------------------|---------------------------|

| | | |
|---|---|-----------------|
| Insufficient Tractor Hydraulic Pressure | Hydraulic Hoses Disconnected From Tractor | Reconnect Hoses |
|---|---|-----------------|

| | | |
|--------------------------------|--------------------------------------|--|
| Hose Not Connected To Same SCV | Connect Hoses From Apron To Same SCV | |
|--------------------------------|--------------------------------------|--|

| | | |
|------------------|--|-----------------|
| Beater Kicks Out | Apron Is Feeding Material To Beaters Faster Than System Designed For | Slow Down Apron |
|------------------|--|-----------------|

| | | |
|---|----------------------|--|
| Torque Limit Clutch Was Run Disconnected To Long Or Too Many Times And It Is Wore Out | Replace Clutch Parts | |
|---|----------------------|--|

| | | |
|---------------------------------------|-----------------------|--|
| Gear Oil Is Cold And Needs Warming Up | Execute Cold Start up | |
|---------------------------------------|-----------------------|--|

| | | |
|------------------------|------------------------------|--|
| Obstruction In Beaters | Stop And Remove Obstructions | |
|------------------------|------------------------------|--|

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