

H&S Standard Duty Spreader

2112

OPERATOR'S MANUAL



WARNING

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

Revision #00
Starting Serial #611605

HSMFG1015

Part #71215

Manufactured By
H&S MANUFACTURING CO.,INC.

P.O. BOX 768 (715) 387-3414 FAX (715) 384-5463
MARSHFIELD, WISCONSIN 54449

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WARRANTY

H&S 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 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. Warranty service must be performed by H&S or a dealer authorized by H&S to sell and/or service the product involved, which will use only new or remanufactured parts or components furnished by H&S. This warranty includes approved parts and labor to fix 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 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.

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 commercial, custom, for hire or rental application, is limited to six (6) months from the date of delivery of the product to the original purchaser or the first day of service, whichever comes first, by an authorized H&S dealer.

Floor and side panels utilized in H&S Manure Spreaders are warranted, to the original purchaser, to not wear through or delaminate for 10 years when used to spread normal agricultural manure. The frame, sides, end, floor and roof of forage boxes are warranted to not wear or rust through for 10 years when the forage box is used to transport freshly chopped forage. These specific warranties include only replacement of any defective panel part without any allowance for labor beyond the terms of the standard H&S 12 month warranty.

For commercial, custom for hire, or rental application, warranty is limited to 6 months from the date of delivery to the original purchaser, or the first day in service, whichever is earlier.

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, 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.

HERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. H&S and the companies affiliated with it makes 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.

12/13

**FILL OUT
AND MAIL
IMMEDIATELY
TO MAKE
WARRANTY
EFFECTIVE**



WARRANTY REGISTRATION

Date of Purchase _____

Purchaser _____ Address _____

City _____ State _____ Zip _____

Product _____ Model# _____ Serial# _____

Dealer _____ Address _____

City _____ State _____ Zip _____

Signature of Original Buyer

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.

IMPORTANT!

Tear on the dotted line, provide the information requested on the card. The H&S Warranty is valid “only” after this card is received and recorded at H&S Manufacturing Co., Inc. Mail at once. No postage is required in the U.S.A.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL Permit No.195 Marshfield, WI 54449

POSTAGE WILL BE PAID BY ADDRESSEE

H&S Manufacturing Co., Inc.
PO Box 768
Marshfield, WI 54449-9963



DEALER PRE-DELIVERY CHECK LIST

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.
- Guards and shields are secure.
- Wheels are properly mounted to torque specifications.
- Tires are inflated to correct pressure.
- Drive chain tension and alignment is correct.
- Decals are in place and legible.
- Main apron chains are adjusted properly.

Connect the manure spreader to a proper horsepower tractor and attach the PTO. Run the manure spreader and make sure all components operate properly.

- PTO guard turns freely.
- Main apron operates smoothly.
- 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 CHECK LIST

AFTER COMPLETION, DEALER SHOULD REMOVE AND RETAIN FOR RECORDS

This check list 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 check list, 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.

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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

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

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.



WARNING



CAUTION



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.

OBSERVE MAXIMUM TRANSPORT SPEED

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

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 implements maximum transport speed can result in:

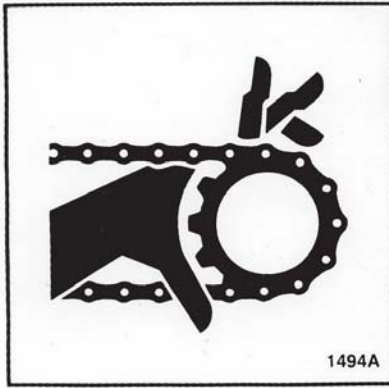
- * Loss of control of the tractor/implement combination
- * Reduced or no ability to stop during braking
- * Implement tire failure
- * Damage to the implement structure or its components

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.



SAFETY INFORMATION



! WARNING

DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS.



! WARNING

DO NOT REMOVE SHIELDS

ROTATING PARTS INSIDE



! WARNING

DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS.



! DANGER

STAY CLEAR OF BEATER IF TRACTOR OR PTO IS RUNNING
 BEATER SHUT OFF COULD ACCIDENTALLY BE ENGAGED

FAILURE TO HEED THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH
 KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR

! DANGER

**ROTATING DRIVELINE CONTACT CAN CAUSE DEATH
 KEEP AWAY!**

DO NOT OPERATE WITHOUT-

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE.
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS.
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE.

1494L

! DANGER

NEVER ALLOW RIDERS ON THIS MACHINE

9194B

SAFETY INFORMATION

! WARNING



DO NOT REMOVE SHIELDS

MOVING PARTS INSIDE

1494K

! WARNING



CRUSHING HAZARD

TO PREVENT SERIOUS INJURY OR DEATH:

KEEP HANDS AND BODY OUT OF HITCH AREA WHEN ATTACHING TOWING VEHICLE.

KEEP BODY CLEAR OF CRUSH POINT BETWEEN TOWING VEHICLE AND LOAD.

KEEP FEET AND LEGS CLEAR FROM UNDER TONGUE AREA IN CASE OF POSSIBLE JACK FAILURE.

82602

! WARNING

HELP AVOID INJURY

- READ & UNDERSTAND THE OPERATORS MANUAL PROVIDED WITH THIS MACHINE. IF MISPLACED CALL H & S MANUFACTURING AT 715-387-3414 WITH MODEL AND SERIAL NUMBER.
- UNDERSTAND ALL SAFETY WARNINGS AND FUNCTION OF CONTROLS.
- KEEP SAFETY DEVICES IN PLACE AND WORKING.
- KEEP YOURSELF AND OTHERS WELL CLEAR OF MOVING PARTS.
- DISCONNECT ALL POWER BEFORE SERVICING OR CLEANING THIS MACHINE.
- DO NOT EXCEED 20 MPH

72203A

! WARNING



DO NOT CLEAN OR WORK ON THIS MACHINE WITHOUT FIRST DISENGAGING POWER AND SHUTTING OFF TRACTOR ENGINE.

1494J

! DANGER



NO STEP-STAY CLEAR

9194A

! WARNING



DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS. FAILURE TO HEED MAY RESULT IN SERIOUS INJURY OR DEATH.

3894

SAFETY INFORMATION

TRACTOR:

This operators manual uses the term “Tractor” when identifying the power or the towing 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.

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 engaged.

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.

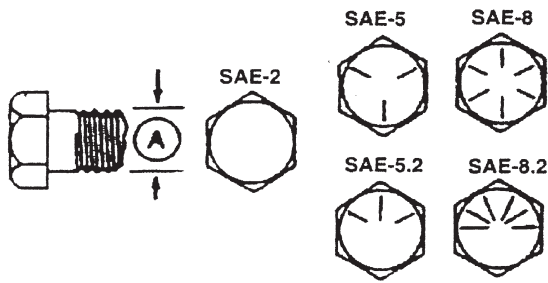
NEVER start manure spreader until all guards and safety shields are secured in place.

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.

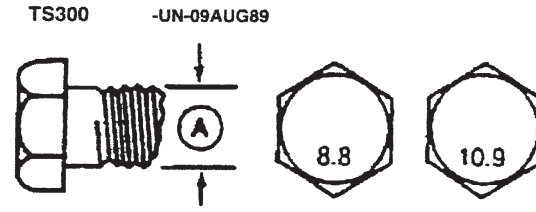
Study The Above Safety Rules

ATTENTION - BE ALERT - YOUR SAFETY IS INVOLVED

CAP SCREW TORQUE VALUES



Inch Cap Screw Head Markings



Metric Cap Screw Head Markings

-UN-09AUG89
TS299

INCH CAP SCREW TORQUE VALUES

METRIC CAP SCREW TORQUE VALUES

Bolt Diameter (A)	Wrench Size	Cap Screw Grade					
		SAE 2		SAE 5		SAE 8	
		N-m	lb.-ft	N-m	lb.-ft	N-m	lb.-ft
1/4"	7/16"	7	(5)	11	(8)	16	(12)
5/16"	1/2"	14	(10)	23	(17)	33	(24)
3/8"	9/16"	24	(18)	41	(30)	54	(40)
7/16"	5/8"	41	(30)	68	(50)	95	(70)
1/2"	3/4"	61	(45)	102	(75)	142	(105)
9/16"	13/16"	88	(65)	142	(105)	203	(150)
5/8"	15/16"	122	(90)	197	(145)	278	(205)
3/4"	1-1/8"	217	(160)	353	(260)	495	(365)
7/8"	1-5/16"	224	(165)	563	(415)	800	(590)
1"	1-1/2"	332	(245)	848	(625)	1193	(880)
1-1/4"	1-7/8"	665	(490)	1492	(1100)	2393	(1765)

Bolt Diameter (A)	Wrench Size	Markings on Cap Screw Heads			
		8.8		10.9	
		N-m	lb.-ft	N-m	lb.-ft
5 mm	8 mm	6	(4.5)	9	(6.5)
6 mm	10 mm	10	(7.5)	15	(11)
8 mm	13 mm	25	(18)	35	(26)
10 mm	16 mm	50	(37)	75	(55)
12 mm	18 mm	85	(63)	130	(97)
16 mm	24 mm	215	(159)	315	(232)
20 mm	30 mm	435	(321)	620	(457)
24 mm	36 mm	750	(553)	1070	(789)
30 mm	46 mm	1495	(1103)	2130	(1571)



CAUTION: Use only metric tools on metric hardware. Other tools may not fit properly. They may slip and cause injury.

DO NOT use these values if a different torque value tightening procedure is listed for a specific application. Torque values listed are for general use only. Check tightness of cap screws periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade. Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fastener threads are clean and you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of amount shown in chart. Tighten toothed or serrated-type lock nuts to full torque value.

SET-UP & ASSEMBLY

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 Torque Value Chart.

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 60-65 ft./lbs. of torque.
2. Check the tires and inflate to the recommended pressure. (10.00 - 15 tires to 40 Pounds).
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

SAFETY

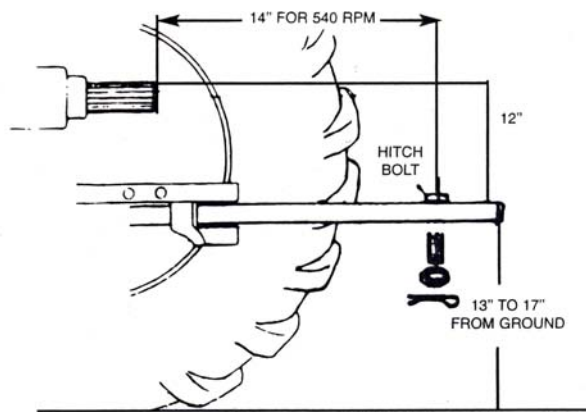
Follow state and local regulations when towing farm equipment on public highways. Check with local law enforcement agencies for your own particular regulations. Unless otherwise prohibited, use a slow-moving vehicle emblem. Never tow the manure spreader on a public highway at a speed greater than 20 m.p.h. (32 kph).

PREPARING FOR OPERATION

TRACTOR CONNECTIONS

Tractor Hitch

Fasten the spreader hitch to the drawbar with a **hitch pin with a safety locking device**. Remove the weight from the jack (jack is not to be used when spreader is loaded). Remove jack from pipe mount and place on convenient storage mount located on the left front of spreader. This allows protection of jack from tractor tires during turns. 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 14 inches for 540 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.

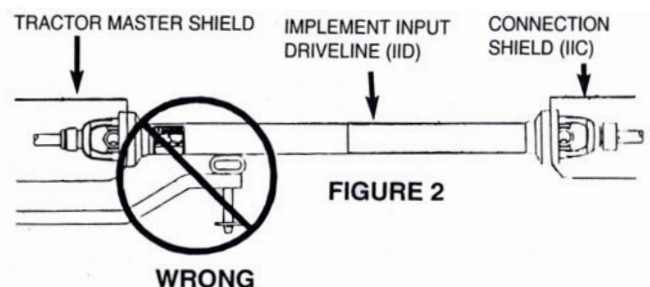
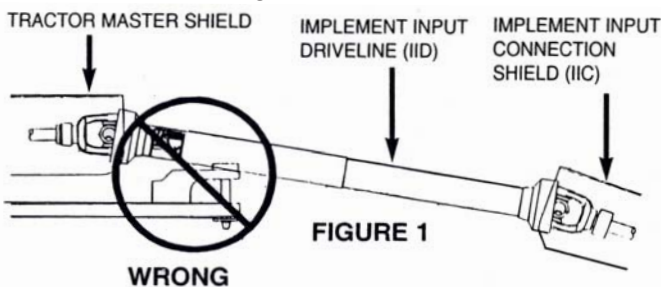


PTO

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.

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

LOADING

In freezing weather, make certain that the apron chain is not frozen to the spreader floor or any lumps of manure are frozen to the floor. 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. Loading front to rear is particularly important when the spreader is loaded by a mechanical loader because this type of load requires more power to spread than others loads. When hauling extremely heavy materials with a large portion of dirt, it may be necessary to reduce the load size to prevent excessive shear bolt breakage. Never dump material onto the beater. Do not use extra sideboards. Do not overload the manure spreader. Overloading decreases spreading effectiveness. Do not load more than 15 inches above the beater.

SPREADING

NOTE: Two speed apron drive and beater engage/disengage mechanisms are contained in a single gearbox at the rear of spreader. This gearbox is controlled by one rope leading to the tractor.

1. Make sure that the gear box is in the “low” position, with the shifter dog all the way to the “low” side of the indicator slot.
2. Raise the hydraulic endgate (if so equipped).
3. Throttle tractor down, engage PTO, then increase the throttle to 540 RPM's and begin moving.
4. The apron speed may be increased from 4-1/2 fpm to 8-1/2 fpm (at 540 RPM) by pulling once on the control rope until the shifter stops and locks into the “high speed” position. The beater will continue to operate in this position.
5. When the spreader is almost empty, the bed can be cleaned out by again, pulling once on the control rope until the shifter dog locks into the “clean-out/beater disengaged” position. The beater will stop, and the apron will continue to run in the “high” speed position, thus saving unloading time.
6. When spreader is empty, SHUT OFF PTO. With the PTO off, pull the control rope once again and release it. The shifter will return to the “low” position, ready to begin unloading the next load.

DO NOT SHIFT FROM CLEAN OUT TO LOW POSITION WITH THE PTO RUNNING.

7. NEVER operate the spreader with a PTO speed greater than 540 RPM.

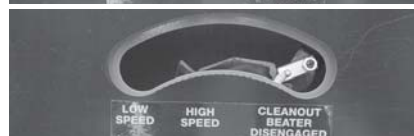
Low Speed



High Speed



Clean Out

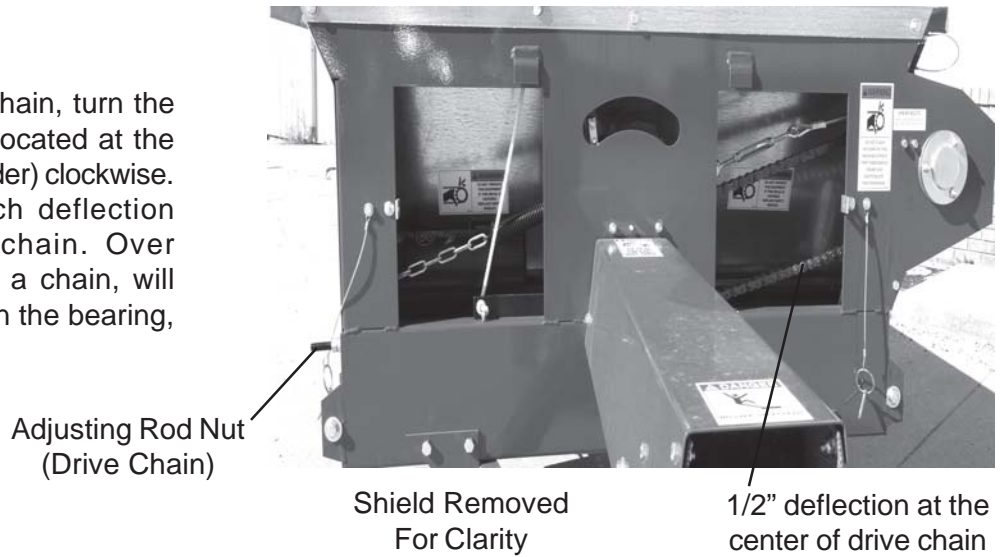


FAILURE TO FOLLOW THE RECOMMENDED ADJUSTMENTS WILL VOID WARRANTY

ADJUSTMENTS

DRIVE CHAIN

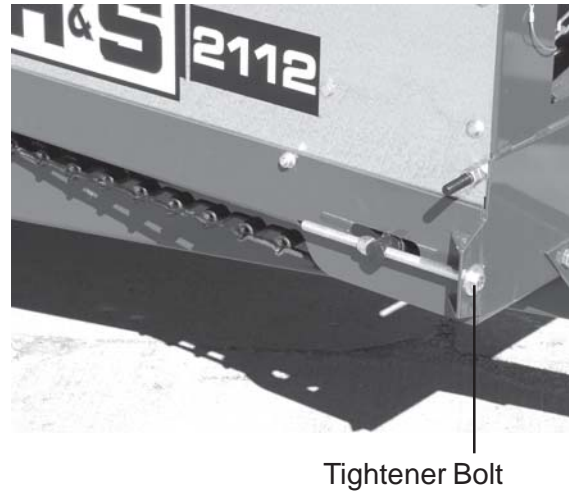
To adjust the main drive chain, turn the nut on the adjusting rod (located at the left hand front side of spreader) clockwise. There should be 1/2 inch deflection at the center of drive chain. Over tightening or too loose of a chain, will result in excessive wear on the bearing, chain and sprockets.



MAIN APRON CHAIN

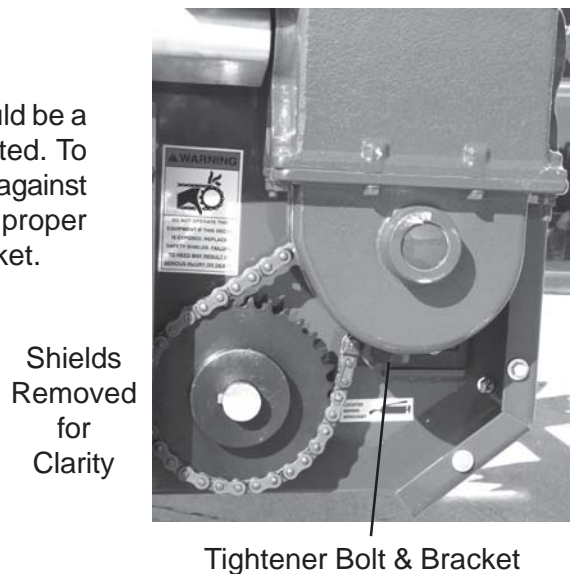
Adjust the apron by tightening the adjusting bolts located at the front of the spreader until the apron chain rests lightly on top of the chain guides located below the axle.

NOTE: Tighten the adjusting bolts on each front corner equally on each side so that the apron slats run parallel with the ends of the bed. The apron will be damaged if the machine is operated with one end of the apron slats running ahead of the opposite end. Do not tighten the apron chains excessively.



APRON DRIVE CHAIN

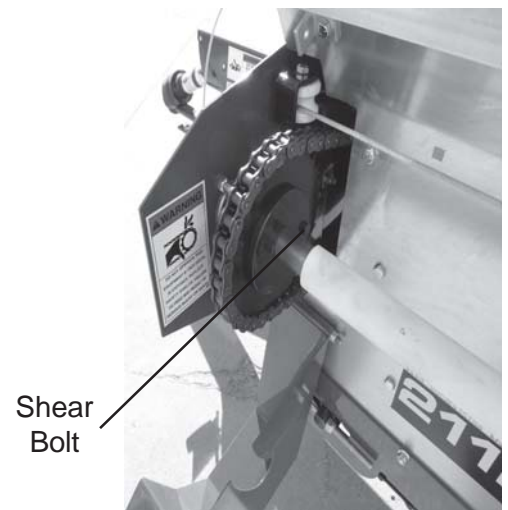
Maintain proper tension on the apron drive chain. There should be a 1/4" deflection at the side of the chain when properly adjusted. To adjust, loosen the bolt holding the tightener. Slide the tightener against the drive chain and retighten the bolt. Failure to maintain proper tension will result in excessive wear to the chain and sprocket.



SERVICE

SHEAR BOLT

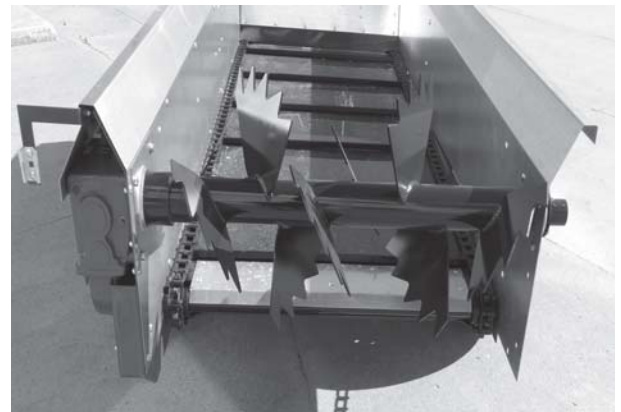
The beater and apron drive are protected by one shear bolt. Two extra shear bolts are provided. Shearing of the bolt is normally due to foreign objects in the manure, or starting the spreader PTO too quickly with high tractor RPM's. Always use H&S shear bolts.



Shields Removed For Clarity

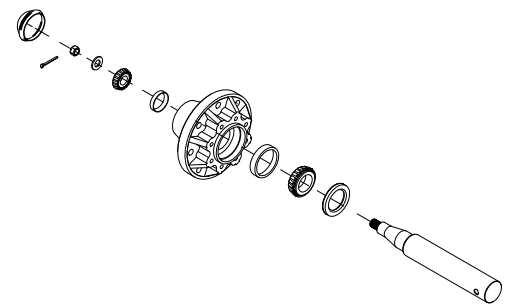
BEATER

The beater paddles are welded to the beater tube. Replacement of these paddles should be performed by authorized service personnel who are competent welders. When replacing paddles, the sharp edge of the teeth must lead in the direction of beater travel.



WHEEL HUBS

To service or adjust the wheel hubs, tighten the castellated nut on the spindle to the point where there is no end-play and a slight drag on the bearings. Replace the cotter key with a new one of the correct size.



SERVICE

TIRES & WHEELS

Check the tire pressure after every 50 hours of operation. Tires should be inflated to the appropriate pressure listed in the table.

<u>Tire</u>	<u>Pressure</u>
10.00x15	40 PSI



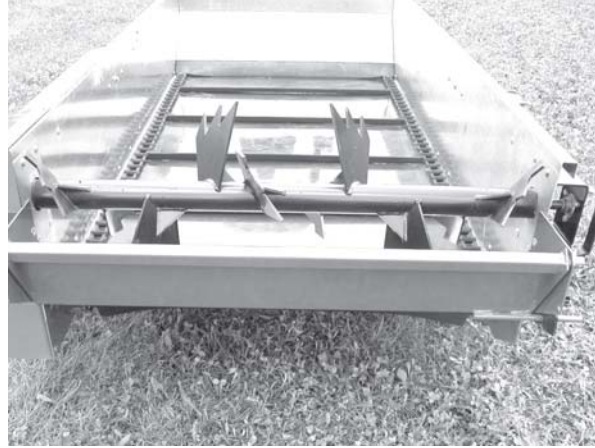
Wheel lug torque should be checked after every 50 hours of operation and tightened to the appropriate torque.

Wheel bolts must be tightened between 60-65 ft./lbs. of torque.

OPTIONAL EQUIPMENT

REAR PAN

The rear pan shown is optional equipment.



LUBRICATION

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

GENERAL INFORMATION

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

GREASE FITTINGS

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 storage 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.

GEARBOX

Before using your new machine, check the oil level in the gearbox located at the left rear of the spreader. Keep the gearbox filled to the center of the top shaft of the gearbox with 75W90 gear lube.

DRIVE CHAINS

Lubricate the drive chains with a light machine oil. Keep chains aligned with sprockets, this will lengthen the life of the sprockets and chain. Lubricate chains often.

PTO ASSEMBLY

Care must be taken to 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 jackshaft 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. Care should also be taken to be certain 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 the PTO slowly to avoid damage to the drive line.



LUBRICATION

GREASE ZERK LOCATIONS



(1) on each front idler sprocket behind the shields



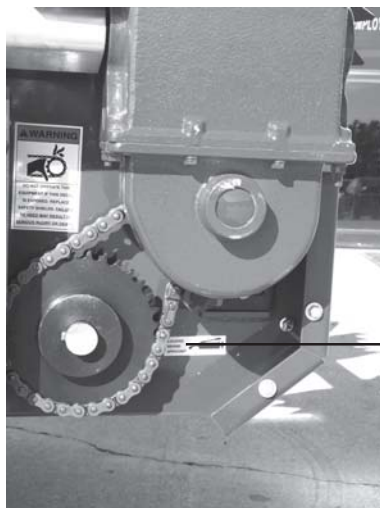
(1) at each end of the input shaft

(1) at each end of the PTO shaft

(1) on jack



(1) on the side shaft



(1) on each end of the drive shaft



DECAL LOCATION

Your 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.

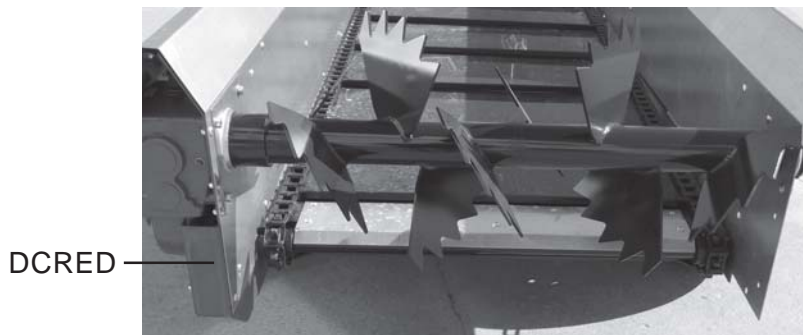
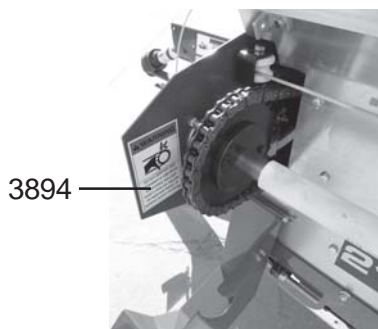
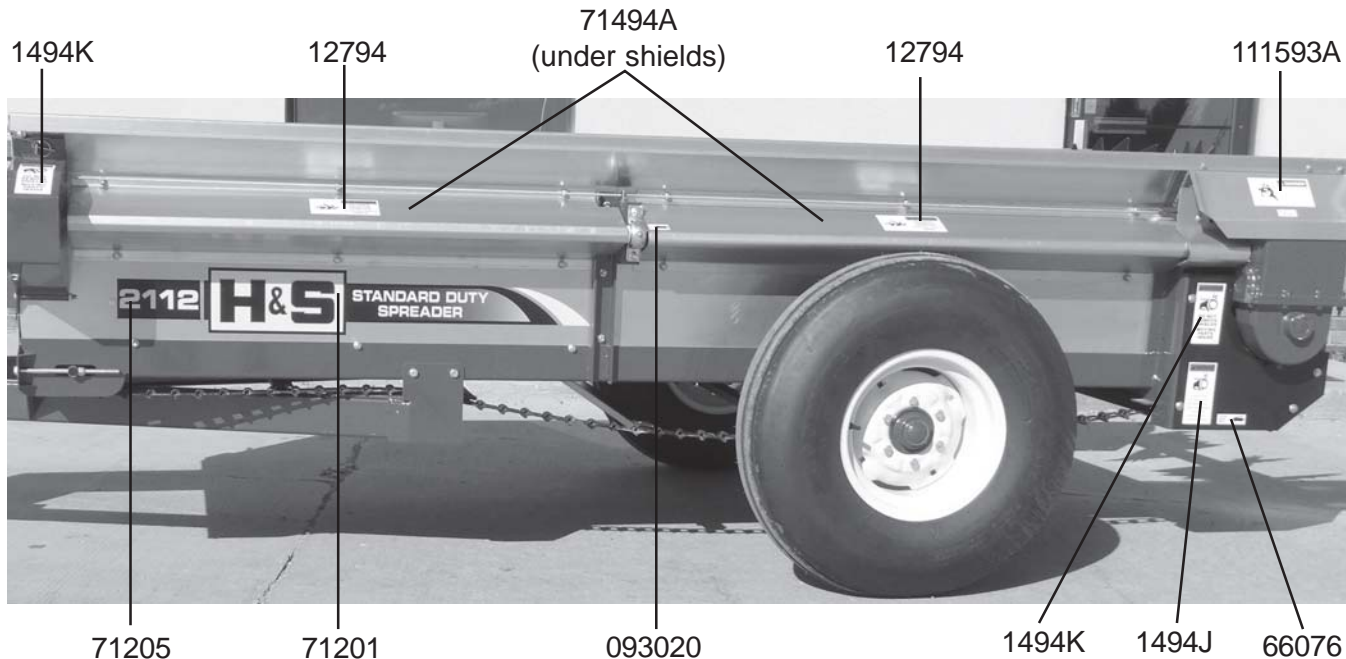


DO NOT REMOVE ANY OF THESE DECALS. IF THE DECALS ARE LOST, DAMAGED, OR IF THE MANURE SPREADER IS REPAINTED, REPLACE THE DECALS. REMEMBER: DECALS ARE FOR YOUR PROTECTION AND INFORMATION.

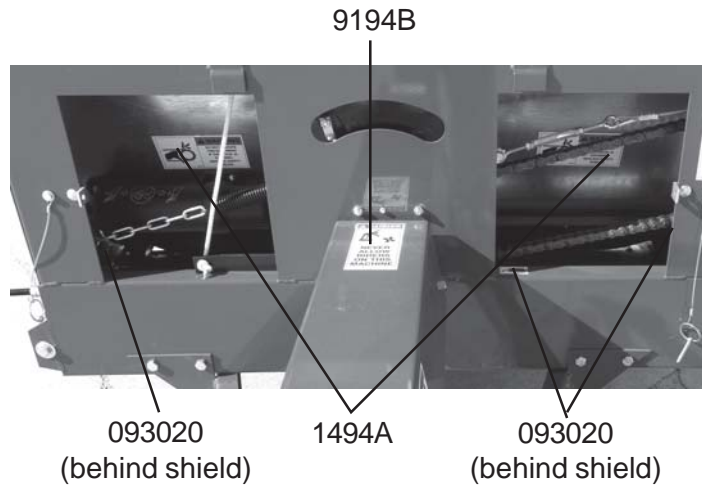
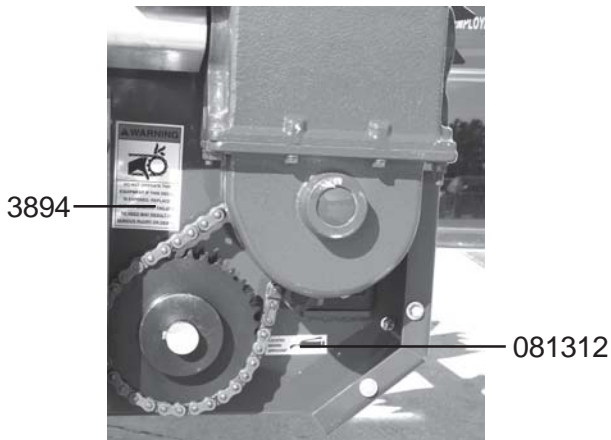
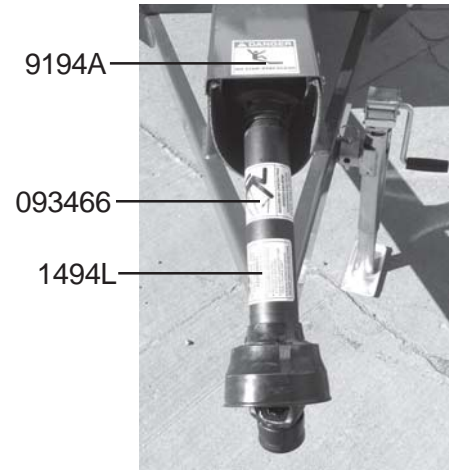
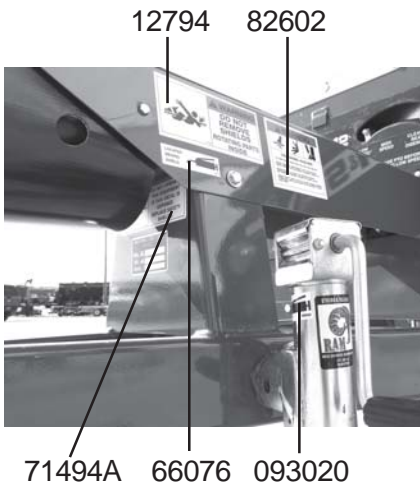
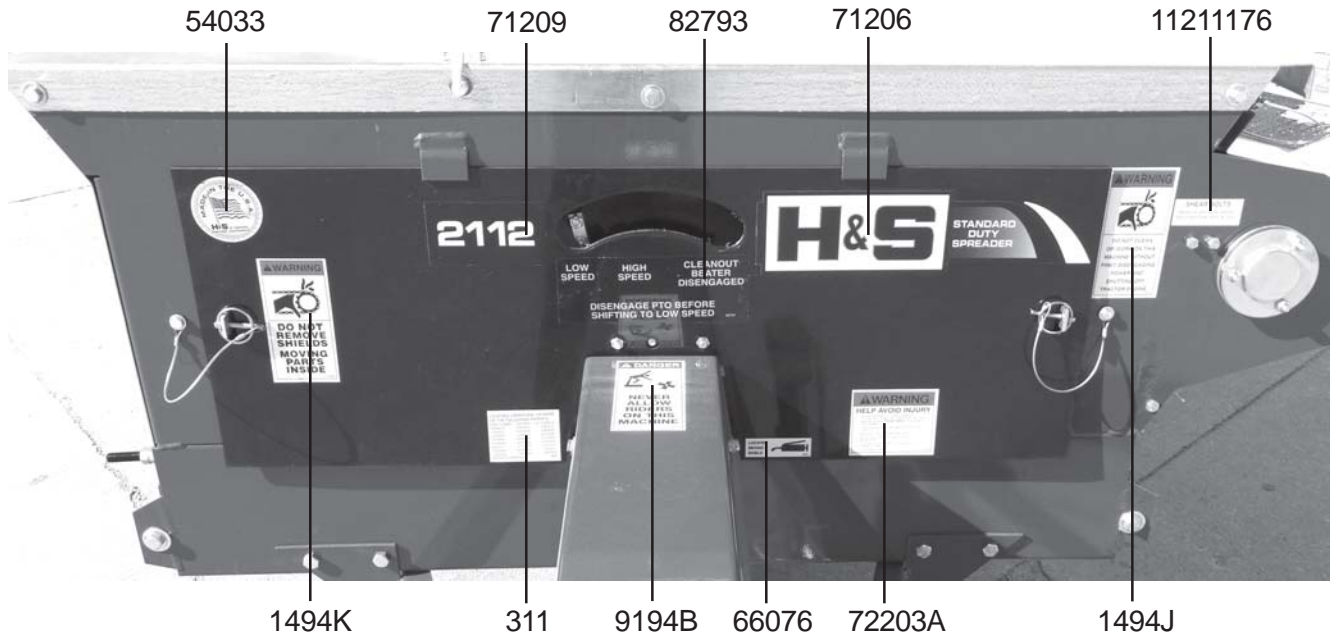
Listed below are the decals on your Manure Spreader. These decals may be ordered individually by part number or by ordering a complete set.

<u>PART #</u>	<u>QTY</u>	<u>DESCRIPTION</u>
311	1	Patent Numbers
1494A	2	Warning - Do Not Operate
1494J	2	Warning - Do Not Clean
1494K	3	Warning - Do Not Remove Shields
1494L	1	Danger - Rotating Driveline
3894	2	Warning - Do Not Operate
9194A	1	Danger - No Step
9194B	1	Danger - Never Allow Riders
12794	3	Warning - Do Not Remove Shields
54033	1	Made in the U.S.A.
66076	3	Grease Zerk Located Behind Shield
71201	1	H&S Logo Decal LH
71203	1	H&S Logo Decal RH
71206	1	H&S Logo Decal Front
71209	1	2112 Model Decal Front
71205	2	2112 Model Decal LH & RH Side
71494A	3	Warning - Do Not Operate
72203A	1	Warning - Help Avoid Injury
82602	1	Warning - Crushing Hazard
82793	1	Warning - Disengage PTO before Shifting
081312	1	Grease Zerk Located Behind Sprocket
093466	1	Maximum Operating Speed - 540 RPM
093020	6	Grease Zerk
11211176	1	Shear Bolts
111593A	2	Danger - Stay Clear of Beater
DCRED	1	Red Reflector

DECAL LOCATION



DECAL LOCATION



TROUBLESHOOTING



WARNING:
MAKE SURE THAT THE TRACTOR IS SHUT OFF AND SPREADER CAN NOT 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 Does Not Turn	PTO Not Turning	Engage Tractor PTO
	Beater Not Engaged	Engage Beater
	Shear Bolt Sheared	Replaced Shear Bolt
	Front Drive Chain Off, Broken, or Missing	Replace or Repair Front Drive Chain
	Beater to Gear Box Attaching Bolts Sheared or Missing	Replace Sheared or Missing Beater Bolts
	Beater Drive Sprocket Key Sheared or Missing	Replace Sheared or Missing Key
Beater Will Not Disengage	Beater Engage/Disengage Cable Stretched or Broken	Re-adjust or Replace Cable
Apron Does Not Turn	PTO Not Turning	Engage Tractor PTO
	Shear Bolt Sheared	Replace Shear Bolt
	Front Drive Chain Off, Broken, or Missing	Replace or Repair Front Drive Chain
	Main Apron Broken	Replace or Repair Main Apron
	Keys on Main Apron Shaft Sheared or Missing	Replace Sheared or Missing Keys

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SEAL OF QUALITY

