

HP 425/550 MANURE SPREADER

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 #3

425 Starting Serial # 314257

550 Starting Serial # 315147

HSMFG0813

Part #59745

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.

Polybonded (polyethylene and plywood) panels utilized in H&S Manure Spreaders are warrantied, to the original purchaser, to not wear through and the polyethylene overlay to not tear free of the plywood for the functional life of the spreader. This specific warranty on polybonded panels includes only replacement of any defective panel part without any allowance for labor beyond the terms of the general warranty (12 or 6 months), and is further limited to manure spreaders used to spread normal agricultural manure.

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.

THERE 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.

9/12

**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 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 Mfg. Co. 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



H&S 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.
- 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.
- Drive chain tension and alignment is correct.
- 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 pusher 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 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

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



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 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:

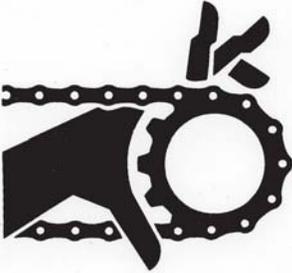
- * Loss of control of the tractor/implement combination
- * Reduced or no ability to stop during braking
- * Implement tire failure
- * Damage to the implement structure or its components

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 DECALS

	<p style="text-align: center;">! WARNING</p> <p style="text-align: center;">DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS.</p>
1494A	

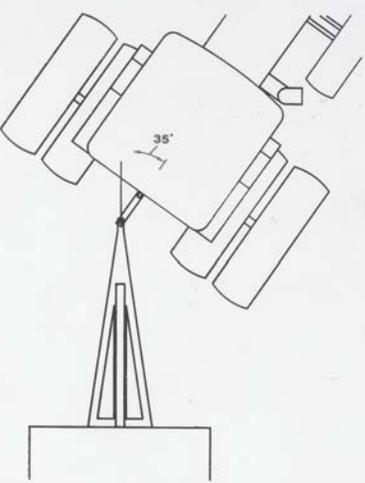
<p style="font-size: 2em; margin: 0;">! DANGER</p>

<p style="text-align: center;">ROTATING DRIVELINE CONTACT CAN CAUSE DEATH KEEP AWAY!</p> <p style="text-align: center;">DO NOT OPERATE WITHOUT-</p> <ul style="list-style-type: none"> • ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE. • DRIVELINES SECURELY ATTACHED AT BOTH ENDS. • DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE.
1494L

	<p style="text-align: center;">! WARNING</p> <p style="text-align: center;">DO NOT GO NEAR LEAKS</p> <ul style="list-style-type: none"> • High pressure oil easily punctures skin causing serious injury, gangrene or death. • If injured, seek emergency medical help. Immediate surgery is required to remove oil. • Do not use finger or skin to check for leaks. • Lower load or relieve hydraulic pressure before loosening fittings.
11599	

	<p style="text-align: center;">! WARNING</p> <p style="text-align: center;">DO NOT REMOVE SHIELDS</p> <p style="text-align: center;">ROTATING PARTS INSIDE</p>
12794	

<p style="font-size: 2em; margin: 0;">! WARNING</p>
<p>DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS.</p>
32597A

	<p style="text-align: center;">! CAUTION</p> <p style="text-align: center;">HYDRA PUSH DRIVELINE 35° MAXIMUM WORKING ANGLE</p> <p style="text-align: center;">NEVER TURN GREATER THAN 35° IN OPERATION OR 65° IN NON-OPERATION; EXCEEDING THESE ANGLES WILL BEND DRIVELINE</p> <p style="text-align: center;">WATCH CAREFULLY WHEN BACKING UP</p> <p style="text-align: center;">NOTE: SHUTTING OFF THE PTO WHEN TURNING WILL EXTEND THE LIFE OF THE DRIVELINE</p> <p style="text-align: center;">PTO TO HITCH PIN LENGTH:</p> <p style="text-align: center;">540 RPM - 14"</p> <p style="text-align: center;">1-3/8" 1000 RPM - 16"</p> <p style="text-align: center;">1-3/4" 1000 RPM - 20"</p> <p style="text-align: center;">FAILURE TO HEED WILL VOID WARRANTY</p>
82508	

<p style="font-size: 2em; margin: 0;">! WARNING</p>
<p>HELP AVOID INJURY</p> <ul style="list-style-type: none"> • READ & UNDERSTAND THE OPERATORS MANUAL PROVIDED WITH THIS MACHINE. IF MISPLACED CALL YOUR LOCAL JOHN DEERE DEALER 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
FRON1

SAFETY DECALS



! WARNING

DO NOT REMOVE SHIELDS

MOVING PARTS INSIDE



! DANGER

NEVER ALLOW RIDERS ON THIS MACHINE



! WARNING

DO NOT REMOVE SHIELDS

MOVING PARTS INSIDE



! DANGER

NO STEP-STAY CLEAR



! WARNING

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



! WARNING

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



! DANGER

STAY CLEAR OF BEATER IF TRACTOR OR PTO IS RUNNING

BEATER SHUT OFF COULD ACCIDENTALLY BE ENGAGED

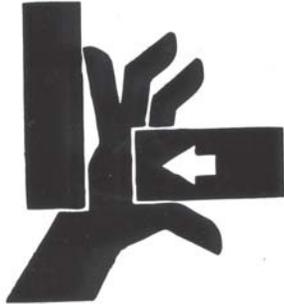
FAILURE TO HEED THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH

KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR

SAFETY DECALS

	⚠ DANGER
	<p>STAY CLEAR WHEN MANURE SPREADER IS OPERATING</p> <hr/> <p>FAILURE TO HEED THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH</p> <hr/> <p>KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR.</p>

1906D

	⚠ WARNING
	<p>STAY CLEAR MOVING PARTS BEHIND THIS AREA</p>

1906E

	⚠ WARNING
	<p>DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS.</p>

71494A

	⚠ DANGER
	<p>KEEP OUT DISENGAGE ALL POWER AND SHUT OFF TRACTOR ENGINE BEFORE ATTEMPTING TO ENTER OR CLEAN SPREADER</p> <hr/> <p>FAILURE TO HEED THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH</p>

1906F

	⚠ WARNING
	<p>DO NOT OPERATE THIS EQUIPMENT IF THIS DECAL IS EXPOSED. REPLACE SAFETY SHIELDS. FAILURE TO HEED MAY RESULT IN SERIOUS INJURY OR DEATH.</p>

51606

⚠ WARNING	
	<p>STAY CLEAR OF END GATE ARMS</p>

123002

⚠ WARNING	
	<p>STAY CLEAR</p>

1906C

⚠ WARNING		
		
<p>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.</p>		

82602

ATTENTION
<p>TRACTOR THREE POINT HITCH ARMS SHOULD BE REMOVED OR POSITIONED SO THEY CANNOT COME IN CONTACT WITH SPREADER. FAILURE TO HEED WILL CAUSE DAMAGE TO SPREADER AND VOID WARRANTY.</p>

71706

SAFETY INFORMATION

TRACTOR:

This operators 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.

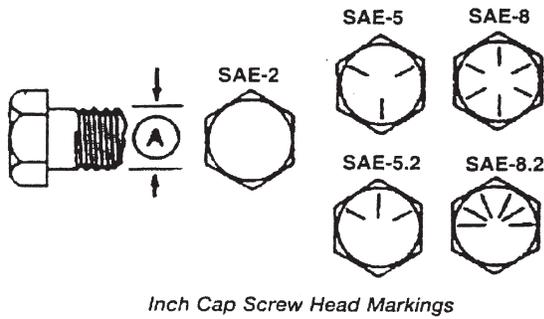
STAY CLEAR of Hydraulic Lines. They may be under extreme pressure or heat.

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

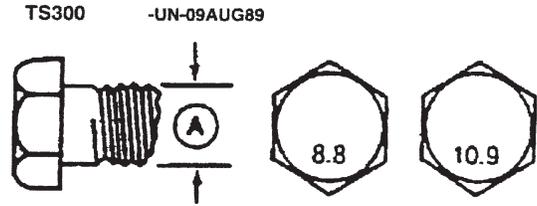
Study The Above Safety Rules

ATTENTION - BE ALERT - YOUR SAFETY IS INVOLVED

CAP SCREW TORQUE VALUES



-UN-09AUG89
TS299



INCH CAP SCREW TORQUE VALUES

Bolt Diameter Wrench (A) 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)	

METRIC CAP SCREW TORQUE VALUES

Bolt Diameter Wrench (A) 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

PREPARING HP

The HP 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 100 ft/lbs. of torque on HP425 and 300 ft/lbs. of torque on HP550
2. Check the tires and inflate to the recommended pressure (385/65R-22.5 and 425/65R-22.5 tires to 85 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. Check the automatic oiler level if spreader is equipped, 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 (Optional)

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.

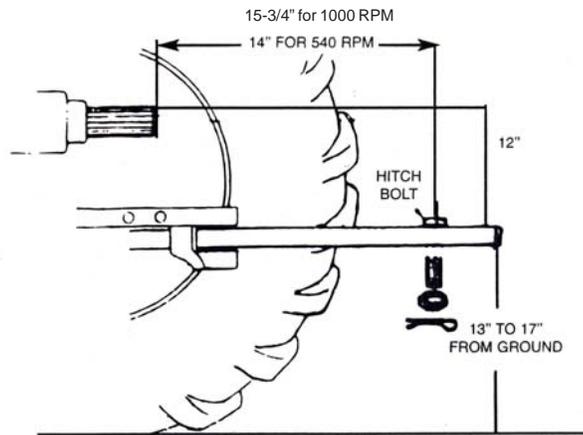
PREPARING FOR OPERATION

TRACTOR CONNECTIONS

Tractor Hitch

ATTENTION: Remove tractor quick coupler (if equipped). Tractor three point arms should be removed or positioned so they cannot come in contact with spreader. **Failure to heed will cause damage to spreader and Void Warranty.**

Fasten the spreader hitch to the drawbar with a **hitch pin with a safety locking device**. Use 1-1/2" diameter hitch pin to pull spreader. 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 side of the left push frame brace. 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 and 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.



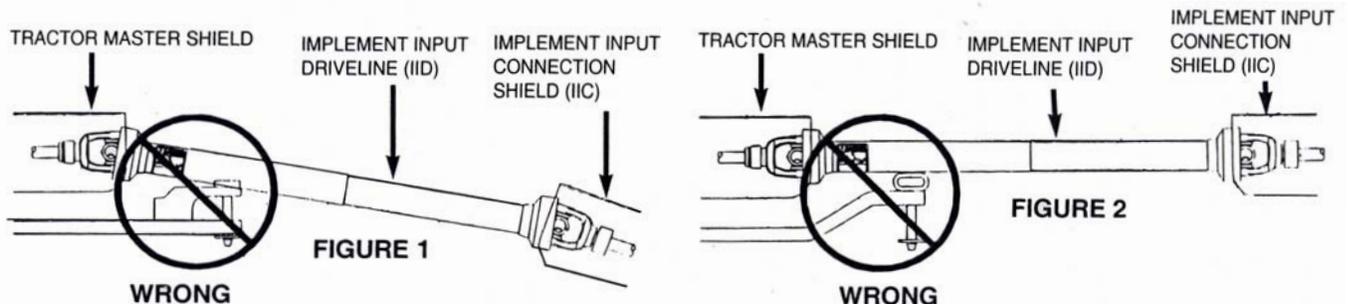
PTO

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]



PREPARING FOR OPERATION

Hydraulics

The spreader requires a 4 hose hook-up;

1. Connect the set of hydraulic hoses which operate the Manure Spreader hydraulic push gate 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. The hydraulic endgate must be raised completely prior to activating hydraulics for pusher.**
4. Operate the tractor valve to fill the hydraulic lines and operate the cylinders. Add hydraulic fluid to the tractor system, as required.

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

OPERATION

EMERGENCY SHUTDOWN

If a foreign object becomes lodged in the beater area and shears the shear bolt, disengage the PTO and stop the hydraulic pusher. 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. 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 other loads.

When hauling extremely heavy materials with a large portion of dirt, it may be necessary to reduce the loadsize to prevent excessive shear bolt breakage. Never dump material onto the beater. Do not use extra sideboards. Do not overload spreader. Overloading decreases spreading effectiveness. Do not load more than 15 inches above the beater.

WINTER OPERATION

In freezing weather, make certain that hydraulic tailgate is not frozen to the sides or on the floor of the spreader. Make sure the push gate is not frozen to the spreader floor or any lumps of manure are frozen to the floor.

SPREADING

1. Engage the tractor PTO slowly. Beater is always in the engaged position, therefore, engaging the tractor PTO will automatically start the beaters.
2. Raise the hydraulic endgate by engaging the tractor hydraulics. **Note: Hydraulic endgate MUST BE RAISED COMPLETELY prior to engaging hydraulic pushgate.**
3. Engage the tractor hydraulic lever into the detent position to operate the spreader hydraulic pusher.
4. The spreader pusher hydraulic hose has a restrictor in the line. It can easily be slowed down by the tractor flow control if tractor is equipped with one. (Optional in-line flow control is available.)
5. When the spreader is empty, disengage the tractor PTO (which will stop the beater). Engage the tractor hydraulics to return the spreader push gate. When the spreader push gate is **completely retracted**, engage tractor hydraulics to close hydraulic endgate.

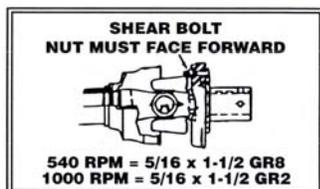
SERVICING

Be certain to disconnect all sources of power before servicing. Keep pant cuffs and loose clothing away from all chains and 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.

SHEAR BOLT

Both beaters at the rear of the spreader are protected by one shear bolt located in the PTO at the front of the spreader. Four spare shear bolts are provided. Shearing of bolts is normally due to large frozen chunks of manure, foreign objects (rocks, chunks of wood etc.) in the manure, running the spreader push gate too fast when unloading long straw and pen-packed material, or STARTING THE SPREADER PTO TOO QUICKLY WITH HIGH TRACTOR RPM'S. Always determine the reason for shearing bolt and eliminate the problem before replacing shear bolt. Always use proper H&S shear bolt (540 RPM 5/16"-18 x 2" GR. 8 bolt with a 5/16"-18 lock nut) or, (1000 RPM 5/16"-18 x 2" GR. 5 bolt, with a 5/16"-18 lock nut.



540 RPM = 5/16x2 GR 8
1000 RPM = 5/16x2 GR 5



Shear Bolt

Spare Shear Bolts



BEATER

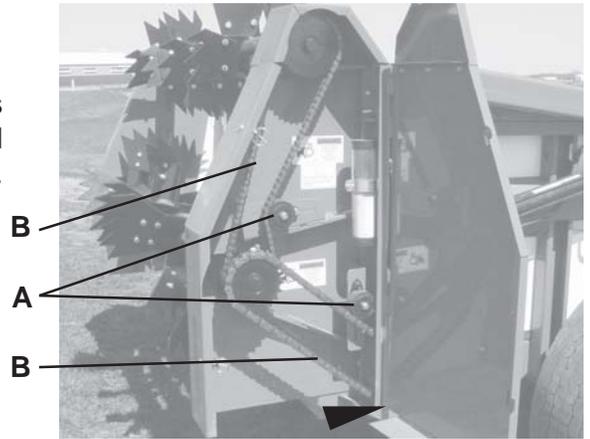
When replacing the beater paddles (Horizontal Beater Assembly), the sharp edges of the teeth must lead in the direction of beater travel. On the right half of the beater the teeth must point to the right side of the spreader. On the left half of the beater the teeth must point to the left side of the spreader. Always use H&S special grade 5 bolts, washers, and nuts when replacing tips and torque to 60 foot lbs.



ADJUSTMENTS

HORIZONTAL BEATER DRIVE CHAINS

Both beater drive chains can be adjusted by loosening bolts (A) and sliding the poly tensioners toward the chain until 1/2" of deflection can be obtained on the opposite side (B). Retighten the bolts (A) when deflection is obtained.



Shields Opened for Clarity

NOTE: PERIODICALLY LUBRICATE ALL ROLLER CHAINS WITH A LIGHT MACHINE OIL IF NOT EQUIPPED WITH AN AUTOMATIC OILER.

VERTICAL BEATER DRIVE CHAINS

Vertical beater drive chains have a spring loaded tightener system. If chains become loose, replace the worn chains or check if the springs are stretched out or worn, replace.



Shields Opened for Clarity

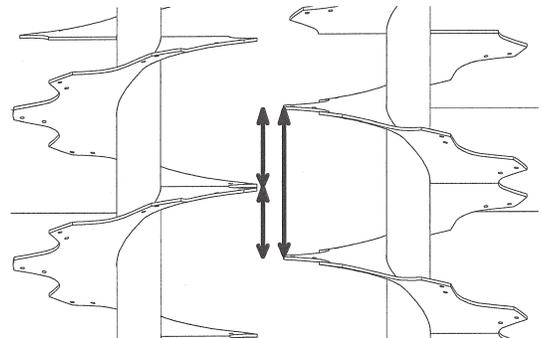


FAILURE TO FOLLOW THE RECOMMENDED ADJUSTMENTS WILL VOID WARRANTY.

BE SURE ALL SHIELDS ARE SECURED INTO PLACE PRIOR TO RE-STARTING MACHINE.

TIMING OF BEATERS

The beaters must be timed so the flighting of the opposite beater is about half-way between the beater being timed. To time the beaters, remove the top shield and remove the chain coupling so the beater can be turned to the proper position. Re-connect the chain and re-install the shield.



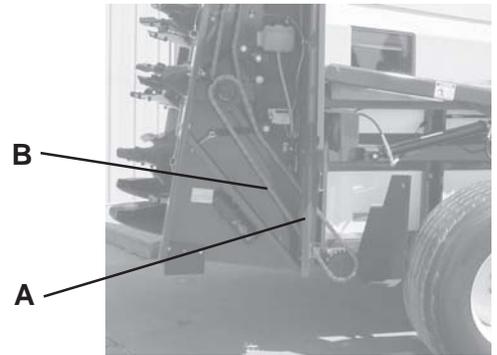
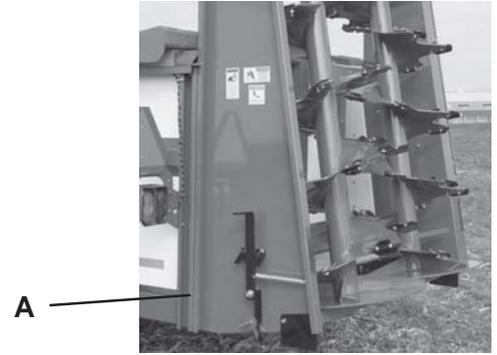
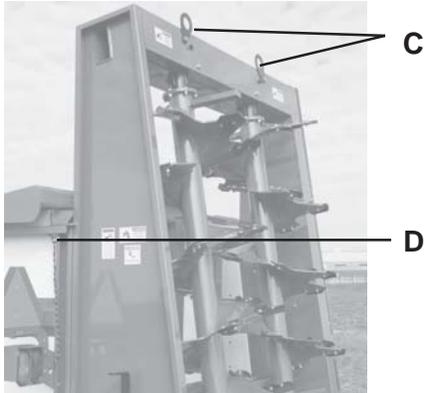
WHEEL HUBS

To 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.

VERTICAL BEATERS

BEATER REMOVAL

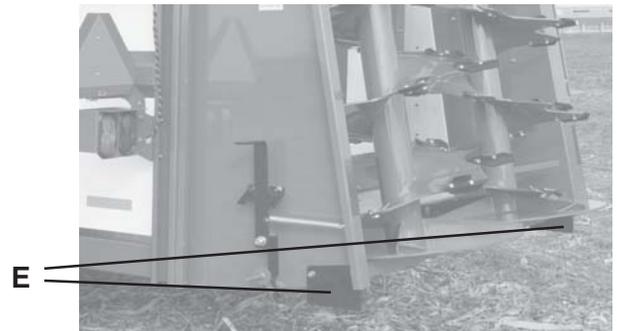
The beater attachment can easily be removed for various reasons such as manure stock piling. Remove bolts, nuts and lockwashers (A). Remove connector link on chain (B). Strip chain from sprockets. Set bolts and chain aside. Securely attach a lifting chain to lifting eyes at the top of the beater assembly (C). Lift beater assembly gently until alignment pegs are clear of the alignment holes (D).



Shields Removed for Clairty

BEATER STORAGE

After the beater assembly has been removed make sure the legs are securely bolted in place (E). **The beater assembly must be stored on a flat level concrete surface.**

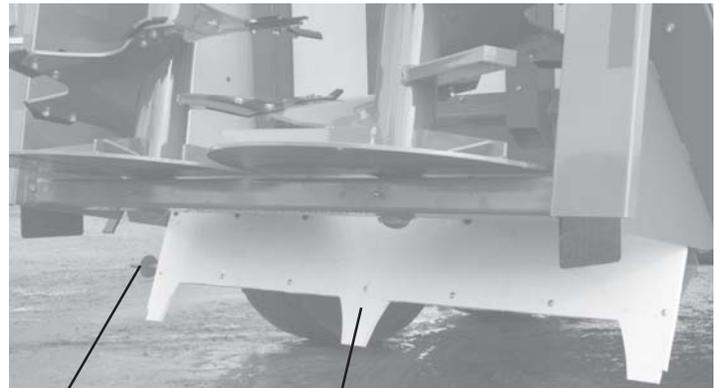


CLEAN OUT PAN

The clean out pan should be used at the end of each day or between each load during freezing weather. To trip the pan, pull forward on lever (F). The pan (G) will drop and allow the manure build up to fall to the ground. Note: The endgate should be completely raised and the push gate fully extended (All the way to the rear of the spreader). To reset the clean out pan, lift up on handle (H).



F



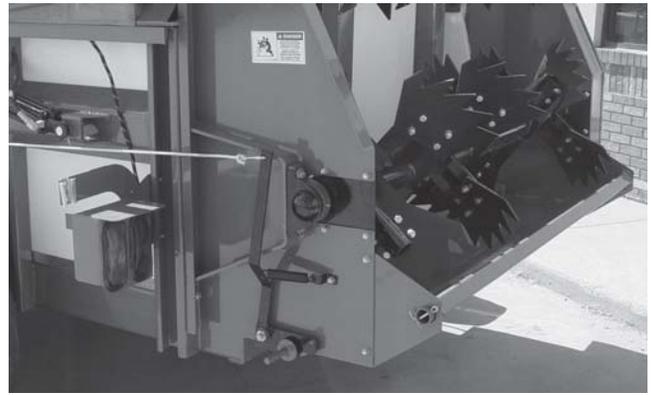
H

G

OPTIONAL EQUIPMENT

REAR PAN - HORIZONTAL BEATER

The rear pan shown to the right is optional equipment on the HP425 & HP550 spreader. The rear pan option allows for an even spread when light applications are needed.



LUBRICATION GUIDE

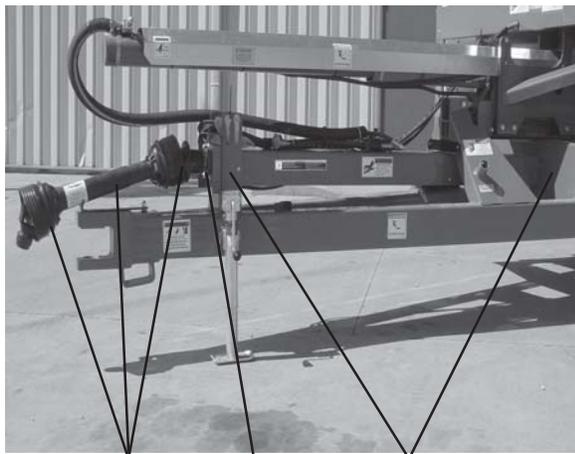
The operator should become familiar with all lubrication points and establish a systematic routine to ensure complete and quick lubrication of the machine.

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.

Grease Fitting Locations

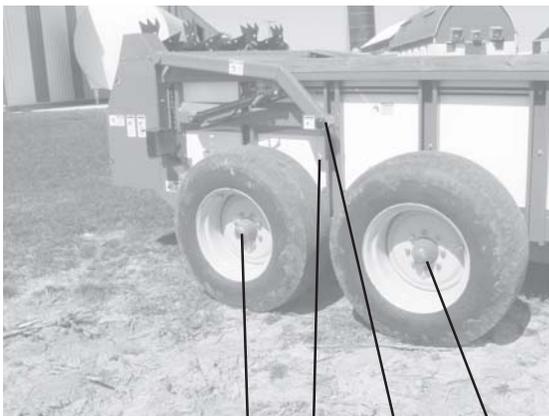
- | | |
|-----------------------------------------------|--------------------------------------------------|
| A. (3) PTO Shaft | G. (2) Each Axle Pivot (Remote Zerk) |
| B. (2) Front Drive Shaft Bearings. | H. (4) Each Wheel Hub |
| C. (1) Gear Box Output Shaft(On Bearing) | I. (2) Each Lower Beater Bearing (Page 22) |
| D. (4) Each Beater End | J. (1) Gearbox Drive Shaft (Page 22) |
| E. (2) Endgate Pivot Points | K. (2) Overrunning Clutch (Vertical Beater Only) |
| F. (2) Over Running Clutch (Rear Half of PTO) | |



A F B
Shields Removed for Clarity

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.



H G E H



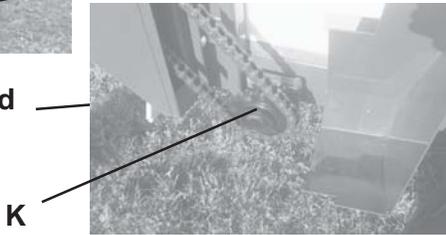
H E G H D

LUBRICATION GUIDE



Shields Removed for Clarity

C (Behind Shield on bearing)



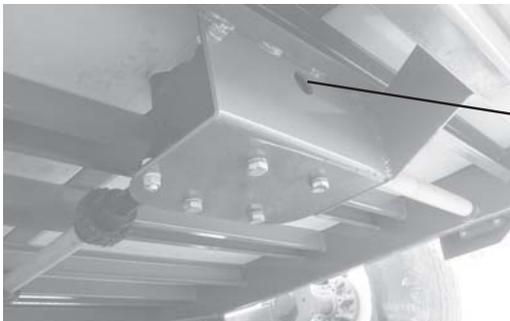
Shields Removed for Clarity

CHAIN OILER

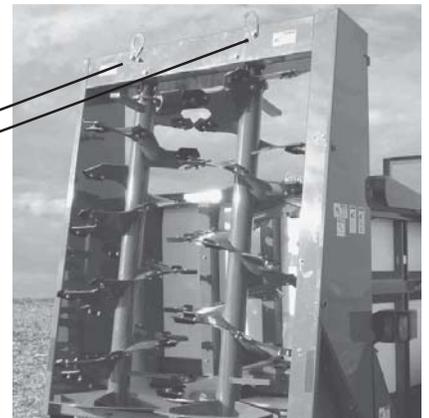
The Vertical Beater attachment is equipped with a chain oiler. The oiler will place a prescribed amount of oil to the drive chains every time the hydraulic endgate is raised. In warm weather, the oiler should be filled with a #30 oil, and #10 oil in cold weather. The reservoir is located behind the shield at the right rear of the spreader. Maintain oil level no less than 1/4 tank. Keep the chains aligned with the sprockets, this will also lengthen the life of the sprockets and drive chains.

GEARBOX

Before using your new Manure Spreader, check the oil in the beater drive gearbox or gearboxes (Vertical Beaters). Keep the gearbox filled to the oil plug on the side of the gearbox as shown with Mobilube SHC 75W90 (or equivalent) gear lube.



CHECK PLUG



(Gearbox is located underneath rear of spreader)

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.

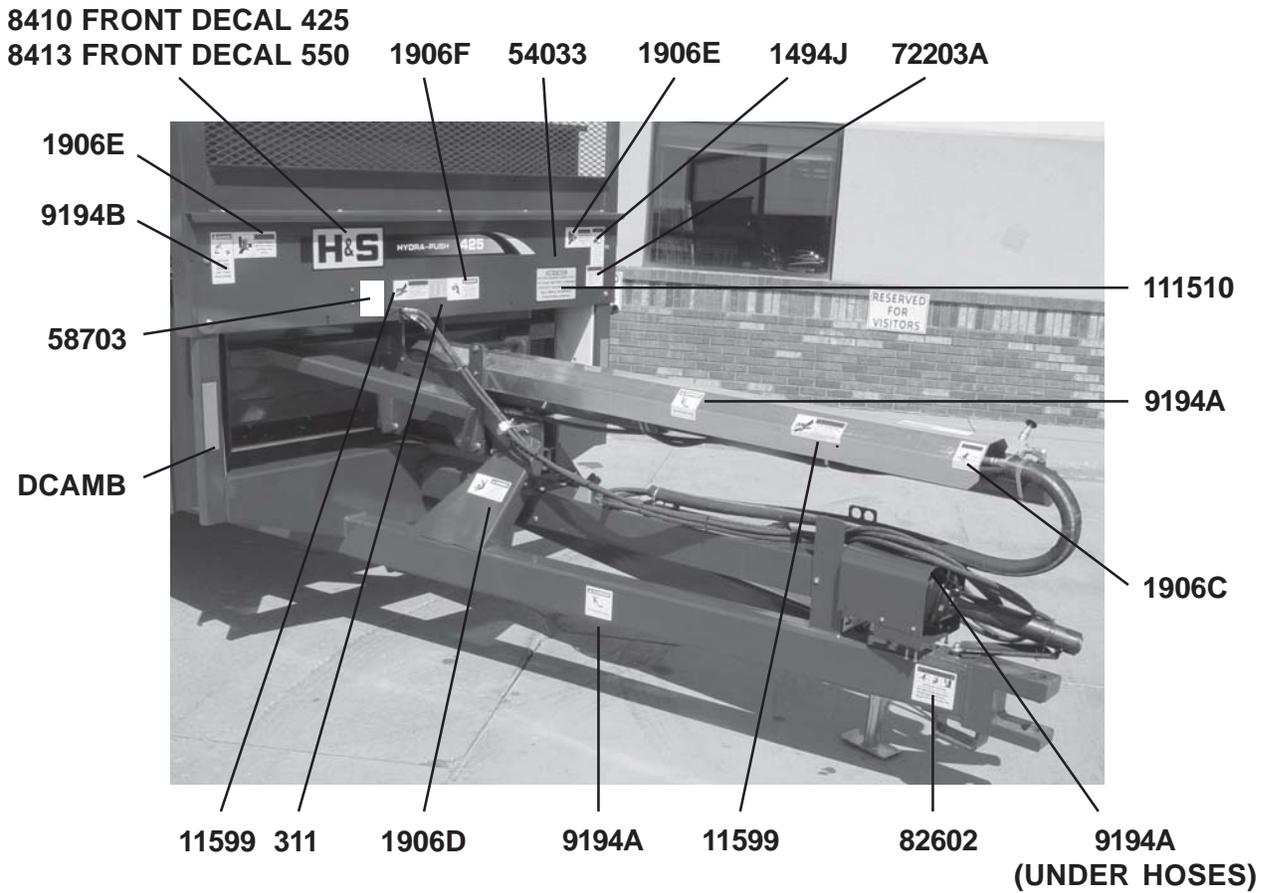


DO NOT REMOVE ANY OF THESE DECALS. IF DECALS ARE LOST, DAMAGED, OR IF MANURE SPREADER IS REPAINTED, REPLACE DECALS. REMEMBER: DECALS ARE FOR YOUR PROTECTION AND INFORMATION.

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>
8408	1	HP425 Decal Left
8409	1	HP425 Decal Right
8410	1	HP425 Decal Front
8411	1	HP550 Decal Left
8412	1	HP550 Decal Right
8413	1	HP550 Decal Front
DCAMB	6	Amber Reflector
1494K	1	Warning - Do Not Remove Shields
72203A	1	Warning - Help Avoid Injury
9194B	1	Danger - Never Allow Riders
1494L	1	Danger - Rotating Driveline
9194A	5	Danger - No Step
DCSERIAL		Model/Serial Number
1494B	1	Warning - Do Not Remove Shields
1494J	3	Warning - Do Not Clean or Work
71188B	1	Jack Storage Position
111593C	2	Warning - Stay Clear of Endgate
111593A	2	Danger - Stay Clear of Beater
DCRED	2	Red Reflectors
11599	3	Warning - Stay Clear of Leaks
82602	2	Warning - Crushing Hazard
311	1	Patent Number
32597A	1	Warning - Do Not Operate
1906C	2	Warning - Stay Clear
1906D	2	Danger - Stay Clear
12306	1	Shear Bolt
1906E	2	Warning - Stay Clear
1906F	3	Danger - Keep Out
1906F	5	Danger - Keep Out
123002	2	Warning - Stay Clear of Endgate
93366	1	Keep Operators Manual Here
51606	1	Warning - Do Not Operate
71706	1	Attention - Tractor 3pt Hitch
3494A	2	Remote Grease Fitting
1494A	2	Warning - Do Not Operate
093020	2	Grease Fitting (Only on Vertical Beater Spreader)
71494A	2	Warning - Do Not Remove Shields(Only on Vertical Beater Spreader)
12794	2	Warning - Do Not Operate(Only on Vertical Beater Spreader)
82508	2	Caution - Driveline Angle
111510	1	Attention Return Pusher
54033	1	Made in USA 3"
58703	3	Danger - Stay Clear of Beater
B12DC	1	H & S Decal (Only on Vertical Beater)
JD5922	4	Orange Non Reflective Decal
8669		Complete Set of Decals HP425 Horizontal Beater
8670		Complete Set of Decals for HP550 Horizontal Beater
53376		Complete Set of Decals for HP425 Vertical Beater
53377		Complete Set of Decals for HP550 Vertical Beater

DECAL LOCATION



DECAL LOCATION



12794

58703

11593A

8408 LH SIDE DECAL 425
8411 LH SIDE DECAL 550

DCAMB

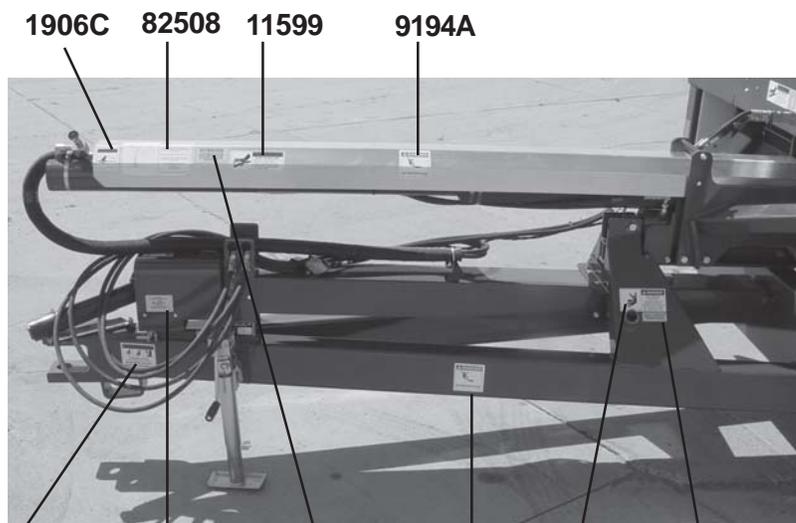
1906F

123002

111593C

093020

1494J



1906C

82508

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9194A

82602

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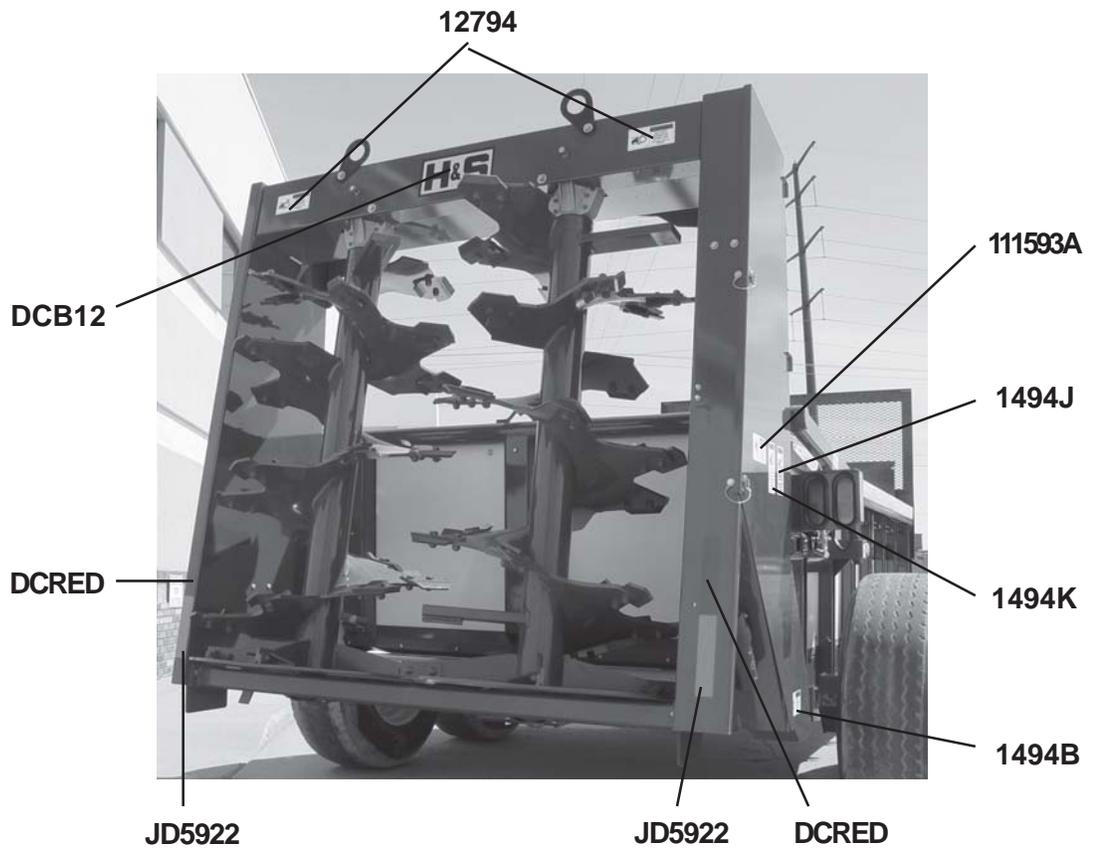
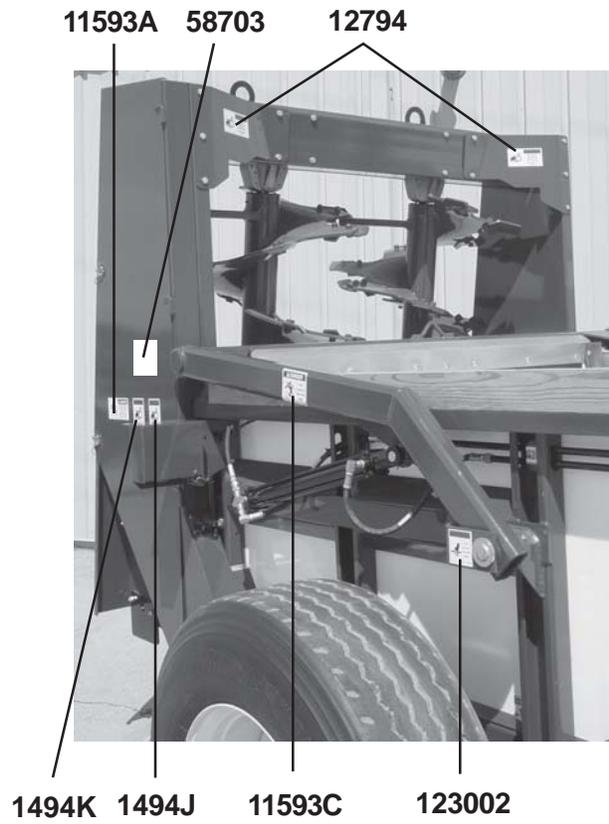
71706

9194A

1906D

71188B

DECAL LOCATION



TROUBLE SHOOTING



WARNING:

MAKE SURE THAT THE TRACTOR IS SHUT OFF AND THE 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 Will Not Run	Tractor PTO Not Turning	Engage Tractor PTO
	PTO Shaft Shear Bolt Sheared	Replace PTO Shaft Shear Bolt
	Primary Beater Drive Chain Off, Broken or Missing	Replace or Repair Primary Beater Drive Chain
	Key Sheared or Missing on Beater Drive or Driven Sprocket	Replace Sheared or Missing Key
Top Beater Does Not Turn	Secondary Beater Drive Chain Off, Broken or Missing	Replace or Repair Secondary Beater Drive Chain
Push Gate Will Not Move	Tractor Hydraulics Not Engaged	Engage Tractor Hydraulics
	Low Tractor Hydraulic Flow or Pressure	Have Servicing Dealer Check Tractor Flow And Pressure
	Hydraulic Couplers Not Coupled To Tractor Properly	Couple Hoses To Tractor
	Spreader Is Over Loaded	Reduce Load

SPECIFICATIONS

	<u>HP425</u>	<u>HP550</u>	<u>HP425VB</u>	<u>HP550VB</u>
Capacity (Old Rating)	425 Bu.	550 Bu.	425 Bu.	550 Bu.
Capacity Cu. Ft. Struck Level.	270.	430.	270.	430
Side Loading Height.	61-1/4"	81"	61-1/4"	81"
Overall Height Top of 2nd Beater or Vertical.	74-3/4"	86-3/4"	101-1/4"	121-1/2"
Height-Top of Hyd. Endgate w/o Hook.	65"	85-1/2"	65"	85-1/2"
Height-Top of Screen (Vertical Beater Only).	N/A	N/A	98"	118"
Inside Width.	72"	72"	72"	72"
Inside Length.	16'	16'	16'	16'
Inside Depth.	34"	53"	34"	53"
Overall Width w/Tires.	10'2"	10'2"	10'2"	10'2"
Overall Length.	26'5"	26'5"	27'5"	27'5"
Lower Horizontal Beater Diameter.	29"	29"	N/A	N/A
Upper Horizontal Beater Diameter.	20"	29"	N/A	N/A
Vertical Beater Diameter.	N/A	N/A	34"	34"
Hydraulic Push Cylinder Diameter.	3-1/2"	4-1/2"	3-1/2"	4-1/2"
Spindle Size.	3"	3"	3"	3"
Hubs.	8 Bolt.	10 Bolt.	8 Bolt.	10 Bolt
Tire Size.	385 x 22.5.	425 x 22.5.	385 x 22.5.	425 x 22.5
Wood Side Rails.	Standard.	Standard.	Standard.	Standard
Standard PTO.	540 RPM.	1000 RPM.	540 RPM.	1000 RPM
Optional PTO.	1000 RPM.	1-3/4" 1000.	1000 RPM.	1-3/4" 1000
Hydraulic Endgate.	Standard.	Standard.	Standard.	Standard
Semi Liquid Rear Pan.	Optional.	Optional.	Standard.	Standard
Weight.	7000#.	9680#.	7700#.	11,000#

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

H&S MFG. CO.

products approved

for the

FEMA

SEAL OF QUALITY

