

OPERATOR'S MANUAL

MANURE SPREADER

MS2320

MS2326



CONTENTS

Table of Contents	1
Warranty & Notes	2
Dealer Pre-Delivery Checklist	3
Dealer Delivery Checklist	5
Specifications	7-8
Be Alert Symbol	9
Explanation of Safety Signs	10
Danger - Warning Signs	11-12
Warning - Owner Must Read and Understand	13
Bolt Torque Chart	14
Set-Up & Assembly	15
Transporting	16
Storage	17
Preparing for Operation	17-19
Operation	20-25
Adjustments	26-27
Service	28-29
Optional Features & Accessories	30
Lubrication Guide	31-34
Troubleshooting Guide	35
Decal Location & Identification	36-38
Instructions for Ordering Parts - About Improvements	39
Parts	40-79
Service and Parts Notes	80

WARRANTY:

Warranty coverage is provided by John Deere according to the terms of the Agricultural/Commercial & Consumer Equipment Warranty Statement. Carefully read the warranty statement on the back of your original purchase order for details on coverage and limitations of this warranty.

NOTES

FRONTIER 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 Frontier.
- ☐ All bolts and fasteners are tight.
- ☐ Manure Spreader has been correctly assembled according to instructions in this manual. Wheel nuts and all other fasteners are tightly secured.
- ☐ All grease fittings have been lubricated. Gearboxes are filled to proper levels if applicable. See Lubrication Chapter of this manual for details.
- ☐ Hoses and fittings are properly attached and there are no visible leaks.
- ☐ Guards and shields are secure.
- ☐ Wheels are properly mounted.
- ☐ Tires are inflated to correct pressure.
- ☐ Chains tension is properly adjusted. See Adjustment Chapter of this manual.
- ☐ Decals are in place and legible.

Connect the Manure Spreader onto a proper horsepower 540 RPM or 1000 RPM (if applicable) tractor and attach the PTO. Connect the lights. Run the Manure Spreader and make sure all components operate properly.

- ☐ PTO guard turns freely.
- ☐ Discharge door operates smoothly.
- ☐ Main Auger operates up and down smoothly.
- ☐ Hydraulic system does not leak under pressure.
- ☐ Lights and wiring functioning properly.
- ☐ Electronic Scale (if provided) operates properly.
- ☐ Implement and all components are functioning properly.

Inspection Date _____ Model Number _____

Serial Number _____

Dealer's Name _____

Signature of Pre-Delivery Inspector _____

Intentionally Left Blank

FRONTIER 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 machine 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 to customer that regular lubrication is required for proper operation and long life of machine. Show customer the Lubrication Chapter of the Operator's Manual.
- ☐ Give the customer the Operator's Manual and make sure they read and understand all operating and service instructions.
- ☐ Record model and serial number on this page and page 38 of this Operators Manual.

Date Delivered _____

Dealer's Name _____

By _____

Signature of Original Buyer _____

(Remove Dealer File Copy At Perforation)

Intentionally Left Blank

2320 Specifications

Cubic Ft. Struck Level	268.6		
Gallon Capacity	2009		
Tank Length	16'		
Overall Length	22' 8"		
Tank Width - Top	76"		
Auger Diameter	24"		
Poly Lined Tank	Left Side		
Overrunning Clutch	Yes		
Shear Bolt Protection	Yes		
PTO	540 RPM Std. 1000 RPM Opt.		
Expeller Size	40"		
Front and Rear Splashguards	Yes		
Weight	6,860#		
		Drop Axle Specs w/295 x 22.5 Tires	Drop Axle Specs w/16.1 x 16.5 Tires
Side Loading Height		69"	68.5"
Height @ Rear Splash		70"	69.5"
Height @ Front Splash		76"	75.5"
Overall Width		85"	91"
		Standard Axle Specs w/295 x 22.5 Tires	Standard Axle Specs w/16.1 x 16.5 Tires or 385x22.5 Truck Tires
Side Loading Height		72.5"	72"
Height @ Rear Splash		73.5"	73"
Height @ Front Splash		79.5"	79"
Overall Width		85"	91"
		High Axle Specs w/295 x 22.5 Tires	High Axle Specs w/16.1 x 16.5 Tires or 385x22.5 Truck Tires
Side Loading Height		74.5"	74"
Height @ Rear Splash		75.5"	75"
Height @ Front Splash		81.5"	81"
Overall Width		85"	91"

Note: 385x22.5 Truck Tires will NOT fit on the Drop Axle

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

2326 Specifications

Cubic Ft. Struck Level	347			
Gallon Capacity	2596			
Tank Width - Top	87"			
Tank Length	16'			
Overall Length	22' 8"			
Auger Diameter	24"			
Poly Lined Tank	Left Side			
Overrunning Clutch	Yes			
Shear Bolt Protection	Yes			
PTO	540 RPM Std. 1000 RPM Opt.			
Expeller Size	40"			
Front and Rear Splashguards	Yes			
Weight	7,880#			
		<u>Specs</u> <u>w/16.1 x 16.5</u> <u>Tires</u>	<u>Specs</u> <u>w/425x22.5</u> <u>Tires</u>	<u>Specs</u> <u>w/19L x 16.1</u> <u>Tires</u>
Side Loading Height		81"	83"	84"
Height @ Rear Splash		82"	84"	85"
Height @ Front Splash		88"	90"	91"
Overall Width		103"	102"	105"

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

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.

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 single 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.

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:

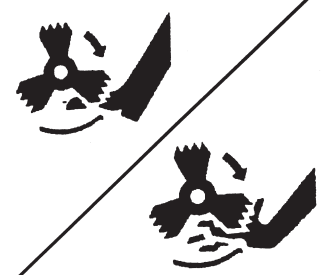
- * Loss of control of the tractor/implement combination
- * Reduced or no ability to stop during braking
- * Implement tire failure
- * Damage to the implement structure or its components

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



! DANGER

STAY CLEAR OF EXPELLER WHEN ROTATING OR IF TRACTOR IS RUNNING. FAILURE TO HEED THIS WARNING WILL RESULT IN SERIOUS INJURY OR DEATH. KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR.

111209B



! DANGER

KEEP OUT

DISENGAGE ALL POWER AND SHUT OFF TRACTOR ENGINE BEFORE ATTEMPTING TO ENTER OR CLEAN SPREADER. FAILURE TO HEED THIS WARNING WILL RESULT IN SERIOUS INJURY OR DEATH.

111209C



! WARNING

DO NOT GO NEAR LEAKS

- 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



! WARNING

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

1494A



! 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



! CAUTION

PINCH POINT, TO AVOID HAND INJURY USE CAUTION WHEN CLOSING SHIELD

111209A



! CAUTION

PINCH POINT

51010



! WARNING

DO NOT REMOVE SHIELDS

MOVING PARTS INSIDE

1494K



! WARNING

Do not exceed this implement's maximum transport speed of 32 km/h (20 mph). Exceeding this speed may result in loss of control during transport or braking and serious injury or death.

Transport only with a properly ballasted tractor and a properly attached safety tow chain. Do not transport with a motor vehicle. Reduce speed and use additional caution when on inclines, towing under adverse surface conditions, and turning.

SAFETY INFORMATION

! DANGER



NEVER ALLOW RIDERS ON THIS MACHINE

9194B

! DANGER

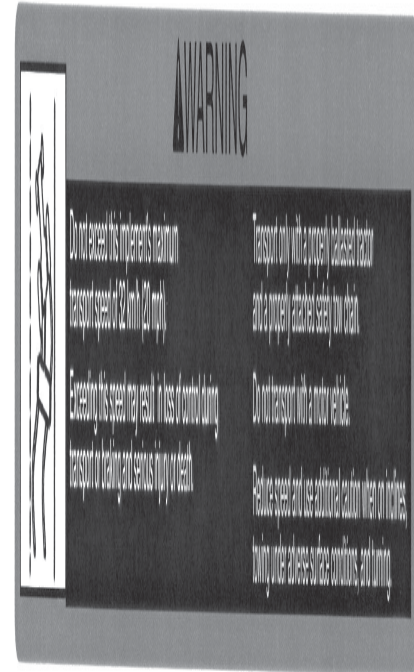


**ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY!**

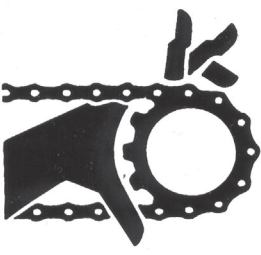
DO NOT OPERATE WITHOUT-

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

1494L



! WARNING



DO NOT REMOVE SHIELDS MOVING PARTS INSIDE

1494B

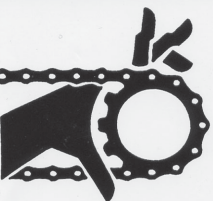
! WARNING

HELP AVOID INJURY

- 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

! 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

! DANGER



**ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH**

5896B

! CAUTION

To Avoid Serious Injury:

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from tractor seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment

FRON1

TRACTORS:

This Operators Manual uses the term “Tractor” when identifying the power source.



WARNING

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 MACHINE BEFORE STARTING IT.

If the machine becomes clogged or for servicing, Stop the tractor engine, remove ignition key and allow all mechanisms to stop. Before cleaning or working on the machine, detach the PTO shaft, and completely disengage the tractor hydraulics.

DO NOT attempt to perform maintenance or repair with tractor running, and PTO, and hydraulic hoses connected to the tractor.

DO NOT step up on the Manure Spreader at any time while in operation.

NEVER manually feed material into the expeller.

DO NOT allow minors to operate or be near the Manure Spreader.

DO NOT ALLOW PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MANURE SPREADER.

STAY CLEAR of discharge expeller when in operation.

Keep hands, feet, and clothing away from all moving parts when the Manure Spreader is in operation.

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

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

Do not step over PTO shaft: Stay clear of PTO at all times.

NEVER start the Manure Spreader until all guards and safety shields are secured in place.

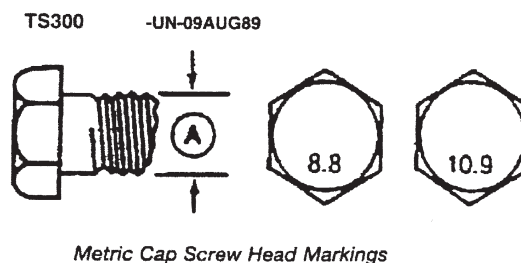
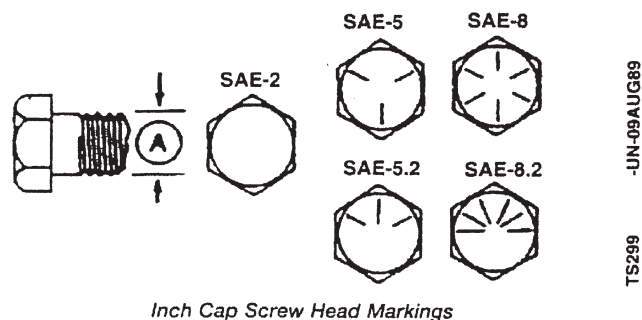
Never operate the Manure Spreader with a PTO speed greater than the recommended PTO RPM.

STAY CLEAR of hydraulic lines, they may be under extreme pressure or heat.

Frontier 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 Manure Spreader 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 TORQUE VALUES

METRIC 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	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 Wrench (A) Size	Markings on Cap Screw Heads				8.8				10.9			
	N-m	lb.-ft	N-m	lb.-ft	N-m	lb.-ft	N-m	lb.-ft	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



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 Torque Value page to identify.

WHEELS & TIRES

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 listed in the Service Chapter. Check wheel bolts periodically thereafter.
2. Inflate the tires to the appropriate pressure listed in the Service Chapter.
3. Check the Manure Spreader 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 Manure Spreader completely.

TRANSPORTING

TRANSPORT LIGHTING & REFLECTORS

Transport lighting with a 7 pin plug is standard equipment on all both models. 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. Red reflective safety decals and an SMV sign are on the rear of the tank for safety.



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).

As required or when desired, the Manure Spreader can be equipped with a safety chain for travel on public highways.

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

TOWING ON HIGHWAY

To view beyond the back of the larger trailer-mounted Manure Spreader when transporting the unit on a public highway, consider obtaining and installing a rear view mirror on your tractor with a wide load mounting bracket.

STORAGE

Because the Manure Spreader is likely to be used year-round, it should be in ready-to-operate condition at all times. Several provisions have been designed into the Manure Spreader to enable it to be used in cold, moderate and warm outside temperatures. The most important factor for continuous proper operation is lubrication. When operating the Manure Spreader in freezing temperatures, the unit should be stored inside, if possible. Refer to the Operation Chapter for special operating procedures in freezing temperatures.

PREPARING FOR OPERATION

PREPARING MANURE SPREADER

Properly lubricate the Manure Spreader, check automatic oiler level, and fill if necessary before operating. Refer to Lubrication Section of this Operator's Manual for locations.

Before loading material, adjust the hitch clevis to your tractor in order to obtain a level or forward position of the Manure Spreader tank. The hitch clevis mounting plate has several sets of mounting holes on the 2320 & 2326 to level the Manure Spreader for proper material delivery to the expeller. If additional positioning is required, turn the clevis assembly upside-down to obtain additional adjustment. If the Manure Spreader is going to be operated in freezing temperatures, review and comply with recommendations in the Operation Chapter, under the Winter Operation section.



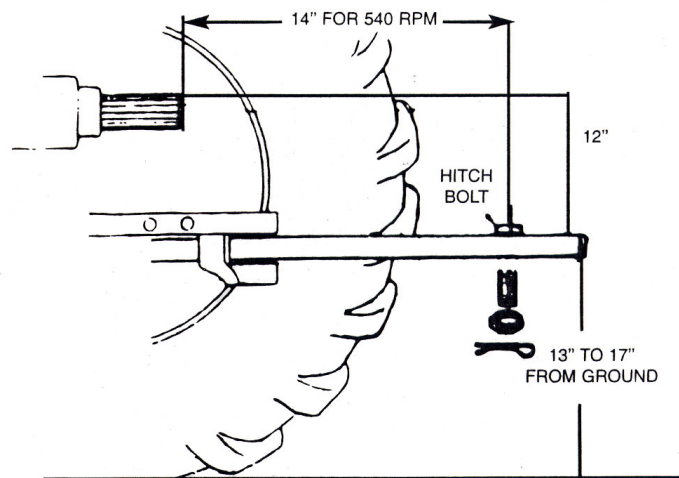
Proper operation of a loaded Manure Spreader requires a tractor with sufficient horsepower to run the PTO and proper size to counterbalance the weight of a loaded Manure Spreader.

PREPARING FOR OPERATION

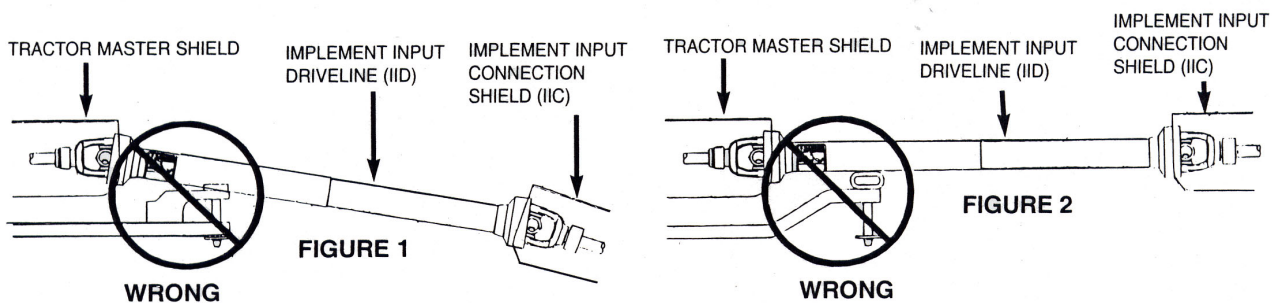
TRACTION CONNECTIONS

Tractor Hitch

1. The hitch of the Manure Spreader is designed for a standardized tractor hitch. Adjust the drawbar so that it is 13 to 17 inches above the ground.
2. 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 RPM PTO and 15-3/4" for 1000 RPM PTO as shown in drawing. An improperly located hitch point may cause damage to the universal joints of the power takeoff.
3. Secure the drawbar so that the hitch pin hole is directly below the power drive line. Fasten the Manure Spreader to the tractor drawbar with an appropriate hitch pin with safety locking device. After the connection is made, remove the hitchjack and secure it to the "Storage Position" on the left side of the Spreader.



If the Manure Spreader 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]



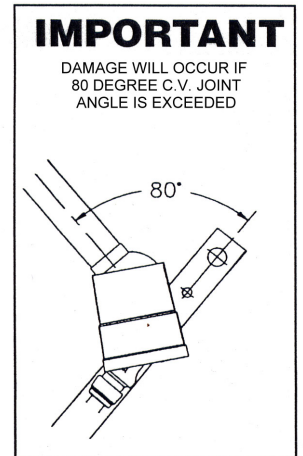
If the Manure Spreader is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the IID guarding and the IID telescoping members. [See Figure 2]

PREPARING FOR OPERATION

PTO

The Manure Spreaders are equipped with a constant velocity telescoping PTO drive shaft. This constant velocity capability, results in a smooth, quiet running drive line, without power fluctuation. The Manure Spreader can only be properly hooked-up to a tractor which has PTO and hitch dimensions conforming to ASAE Standard S203. Horsepower required may vary according to the consistency of material to be spread, ground speed and terrain. To prevent damage to the telescoping PTO drive, DO NOT allow the tractor's rear tires to make contact with the PTO or Manure Spreader while making sharp turns, Be careful when pulling the Manure Spreader with a tractor that is equipped with dual rear tires.

NOTE: *The maximum joint angle must not exceed 80° whether in operation or not. Any angle greater than 80°, will result in damage to the joint. For continuous operation, the maximum joint angle must be limited to 35°. Any continuous operation, at angles greater than 35°, will shorten joint life.*



Attach the Manure Spreader PTO to the tractor PTO shaft locking it into position and check distance by the following.

1. Maintain a straight alignment between the Manure Spreader and the tractor.
2. Maintain a distance of 6" - 12" between the top of the tractor drawbar and the center of the tractor PTO. An 8" distance is standard.

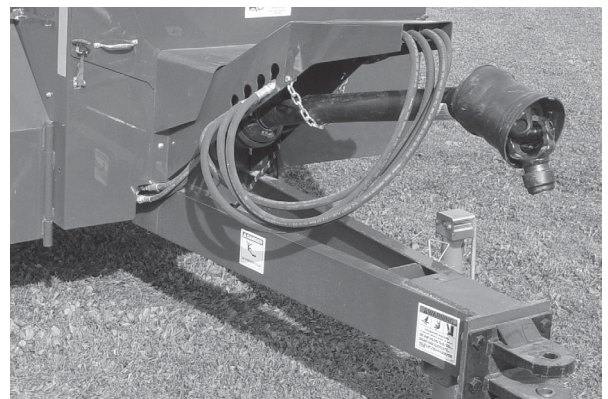
After the correct distance is obtained, slide back the coupler lock and attach the PTO drive to the tractor PTO shaft. Make sure that the coupler locks onto the PTO shaft; slide it back and forth until it locks.

NOTE: *Do NOT attempt to use a hammer to help in attaching the PTO drive connection.*

NOTE: *Remove the tractor 3-point quick hitch if the tractor is equipped with one. Tractor 3-point arms must be removed or positioned so they do not come in contact with the Top Shot tongue or PTO. Failure to heed will cause damage and void the warranty.*

Hydraulics

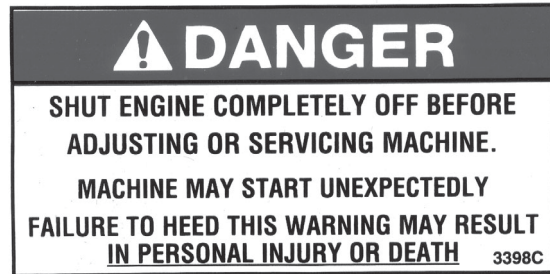
The Manure Spreader requires a 4 hose hook-up;
- 2 hoses for raising/lowering the main auger.
- 2 hoses for opening/closing the discharge door.
Before starting the tractor, make sure each set of hydraulic hoses connects to the appropriate set of remote outlets on the tractor. Operate the tractor valve to fill the hydraulic lines and operate the cylinders. Add hydraulic fluid to the tractor system, as required.



OPERATION

EMERGENCY SHUTDOWN

In case a foreign object becomes lodged in the expeller or auger area, disengage the PTO. Stop the tractor engine, remove ignition key, and allow all mechanisms to stop before cleaning or working on the machine. If an object is lodged inside the tank, block-up the discharge gate and raise the conveyor auger before attempting to remove the object.



GENERAL INFORMATION

Check entire Manure Spreader carefully before first operation. Tighten bolts and set screws that might have come loose in shipping. Lubricate as explained in the Lubrication Chapter in this manual.

The Manure Spreaders feature a large tank, forward right side discharge expeller, hydraulically controlled discharge gate, and conveyor auger. Manure Spreaders are designed and constructed to handle a wide variety of waste material types including liquids, semi-liquids, and limited solid material. Many potential spreading problems can be avoided if the following guidelines are established and met:

NOTE: *To prevent damage to the expeller, auger and drive line, foreign objects, such as stones, timber or metal, should never be placed into the Manure Spreader tank.*

1. In winter or freezing temperatures, make sure the auger and expeller are free to rotate and that the discharge gate moves freely, before loading the Manure Spreader and applying PTO power.
2. The discharge gate must be closed before loading.
3. The auger is completely lowered before loading.
4. When loading packed material into the Manure Spreader with a loader bucket, try to break up any large chunks.
5. Material which is too thick or solid to flow should only be heaped on the rear 2/3 of the Manure Spreader.
6. 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. Do not use extra sideboards. Do not overload the Manure Spreader. Overloading decreases spreading effectiveness.
7. Liquid or semi-liquids that flow will self-level allowing the Manure Spreader to be filled to a level such that sloshing or splashing material will be contained.

NOTE: *Expeller feeding will diminish as bridging occurs. To counteract bridging, completely raise, and lower the auger back down immediately. This operation will help to break-up the bridging.*

OPERATION

APPLICATION RATE

The side discharge style Manure Spreader features a hydraulically operated discharge gate to control the material flow out of the tank and into the expeller. Several factors influence the rate of discharge and the spread pattern. These factors include: ground speed, type or consistency of discharge material, PTO RPM, and discharge gate opening. Depending on your application requirements and the type of material being spread, a full range of patterns can be obtained. A discharge gate indicator provides a continuous visual display of the gate opening.

FIELD OPERATION

The Manure Spreader is “direct drive” which begins to operate immediately when the PTO is engaged. Drive disengagement is made by shutting-off the tractor PTO. It is important that the PTO is engaged at low tractor RPM. On the 2320 and 2326 Manure Spreaders, shear bolt overload protection is provided for both the main auger and the expeller. For proper operation, establish and maintain the proper driveline alignment and tractor hookup. Before loading material, adjust the hitch clevis to your tractor in order to obtain a level or forward attitude of the Manure Spreader tank. Refer to the Preparing For Operation Chapter for additional details.

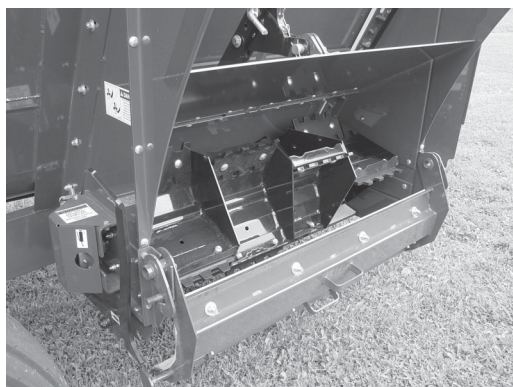
If the Manure Spreader is going to be operated in freezing temperatures, review and comply with recommendations in Winter Operation.

WINTER OPERATION

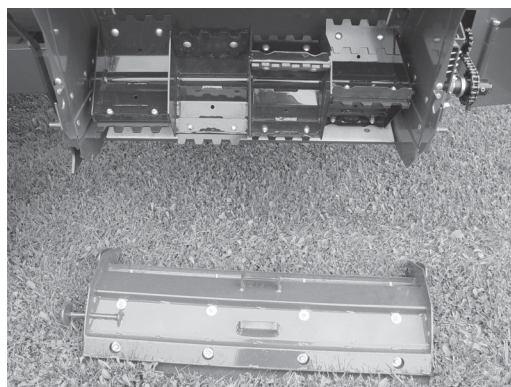
When loading and spreading material during winter or in freezing temperatures, the following recommendations apply:

1. After the Manure Spreader is unloaded and will not be used for some time, follow the EMERGENCY SHUTDOWN PROCEDURE, then scrape away any solid material remaining on the inside of the tank or Expeller area.
2. Park the Manure Spreader with the auger fully raised, the discharge gate fully raised and blocked. Position the jack height so that liquids will run forward to the discharge opening.
3. Before loading the Manure Spreader again, unblock the discharge gate and engage the expeller to make sure that it is free to rotate. Then, slowly lower the auger to the bottom of the tank and cycle the discharge gate a few times.

NOTE: To eliminate freeze-up in the area under the expeller, open the expeller pan by pushing the trip handle forward, the pan will release. Before resuming operation, close the pan.



NOTE: The pan can be removed after release of the trip handle by lifting it out of the U-Shaped slots on each side of the pan if freeze-up problems persist in this area.



OPERATION

UNLOADING & SPREADING

Packed Material

To unload and spread packed material and prevent unnecessary stress on the drive line components, observe the following guidelines:

1. Make sure the auger is completely lowered.
2. Engage the tractor PTO at as low an RPM as possible. Then, slowly bring the PTO up to the rated RPM.
3. Raise the discharge gate until it is about 1/3 open.
4. Select the desired tractor gear and begin spreading. To achieve the desired coverage, adjust the discharge gate and/or travel speed.
5. When spreading material which is susceptible to bridging, the auger should be cycled up and down, frequently, to provide a more consistent feeding of material into the expeller.

NOTE: Do NOT exceed the rated 540 or 1000 RPM operating speed of your particular model of Manure Spreader.

OVERLOAD PROTECTION

When shear bolt failure is detected, stop all operation and follow the EMERGENCY SHUTDOWN PROCEDURE.

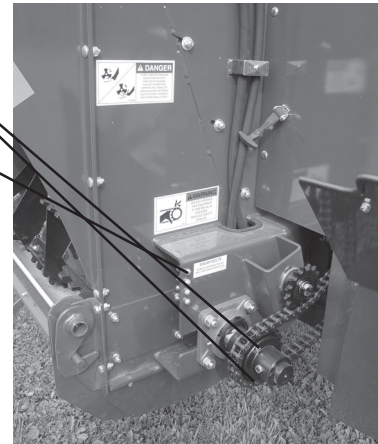
Shear bolts are used to provide overload protection in two areas on the 2320 and 2326 Manure Spreaders.

Expeller Drive

The discharge expeller sprocket has two 1/4" x 1-1/2" grade 8 shear bolts with locknuts. Additional shear bolts are stored on the expeller front bearing mount.

The following are probable causes for discharge expeller shear bolt failure:

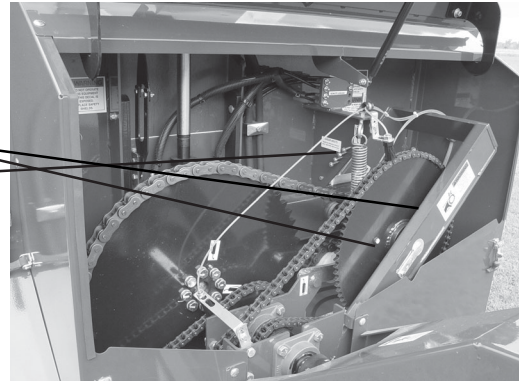
1. PTO is being engaged while RPM's are too high.
2. A foreign object is present in the expeller.
3. Overfeeding of the expeller due to improper discharge gate adjustment.
4. Gate is being raised when spreading liquid material, before expeller is up to operating speed.



Shields open for viewing

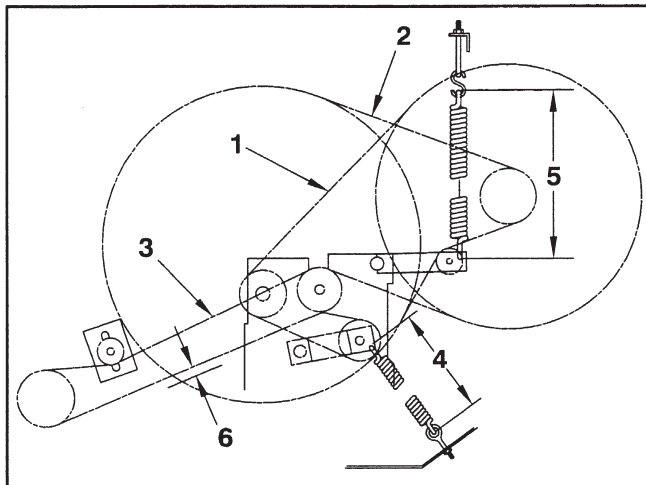
Auger Jackshaft

The auger drive sprocket is secured to the auger jackshaft hub with two 5/16" x 1-1/2" grade 8 shear bolts and locknuts. Additional shear bolts are stored in the chain tensioner bracket.



OPERATION

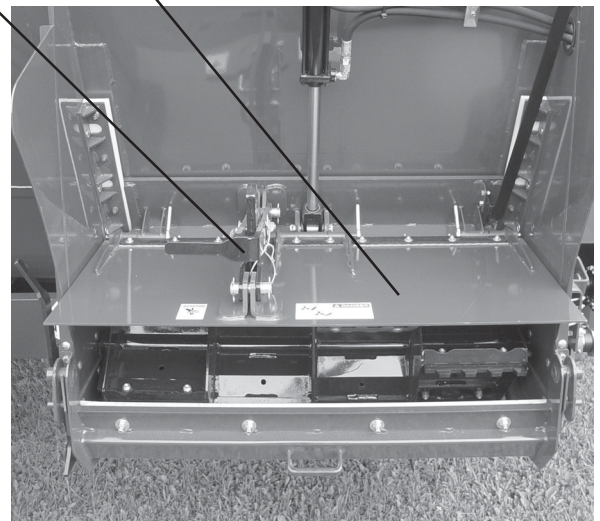
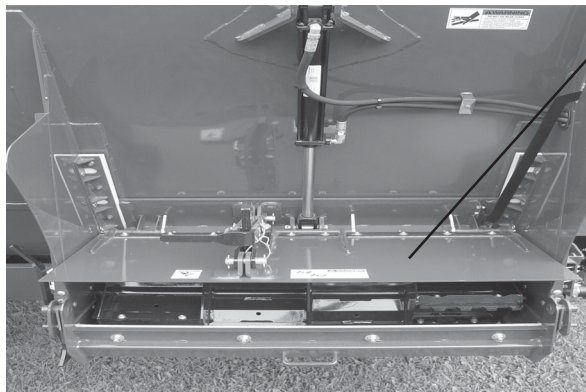
CHAIN ROUTING & SPECS



1. Jackshaft Drive Chain
2. Auger Drive Chain
3. Expeller Drive Chain
4. Jackshaft Chain Spring Length - 9-1/2"
5. Auger Chain Spring Length - 13-1/2" - 15"
6. Expeller Drive Chain Deflection - 1/2"-3/4"

ADJUSTABLE EXPELLER SHIELD

Both models have a multi-position manual adjust expeller shield to direct material and provide the best possible performance for delivery of material.



1000 RPM DRIVELINES

The 2320 and 2326 Manure Spreader can be ordered with an optional factory-installed 1000 RPM driveline.

Compared to the 540 RPM units, the 1000 RPM driveline equipped unit has a different combination of drive and driven sprockets, drive chains and a 1000 RPM constant velocity telescoping PTO drive.

AUGER & EXPELLER SPEED OPTIONS

Manure Spreaders are factory equipped with drive components selected to provide the best possible performance for processing basic material and manure types available. In certain materials, conveying and spreading performance can be improved by altering the speeds of the auger, the expeller, or both.

OPERATION

CONTROLS & SAFETY EQUIPMENT

The Manure Spreaders are provided with several features for operator safety and convenience.

GUARDS & SHIELDS

Whenever possible and without affecting the operation of the Manure Spreader, guards, shields and/or hinged shields have been used on this equipment to protect potentially hazardous areas. In many places, decals are also provided to warn of potential dangers as well as to display special operation procedures.



AUGER CONTROL

The Manure Spreaders have a hydraulically controlled raise/lower main auger to overcome material bridging when unloading hard-packed waste material. The auger can be hydraulically raised from the tractor seat, as necessary. An auger height indicator, visible from the tractor seat, allows the operator to monitor the auger height. When the unit is parked overnight in freezing temperatures, hydraulically raise the main auger to prevent the auger from freezing against the bottom of the tank.



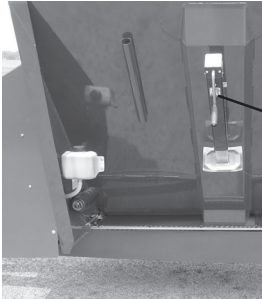
DISCHARGE GATE CONTROL

The Manure Spreader has a hydraulically controlled discharge gate with indicator to regulate the amount of material being discharged. In freezing temperatures, leave the discharge gate partially opened when the unit is parked overnight, to prevent the gate from freezing against the bottom of the opening. A discharge gate height indicator, visible from the tractor seat allows the operator to monitor the gate opening.

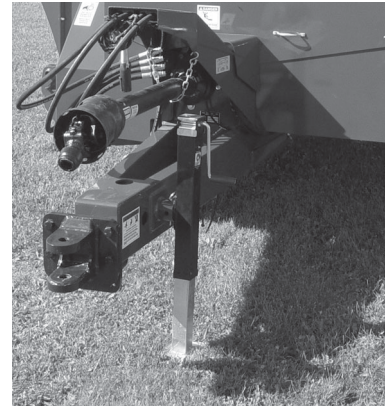
OPERATION

HITCHJACK

A jack is furnished with the Manure Spreader to support the machine when the tractor is disconnected and to adjust the hitch clevis to the tractor drawbar for hookup. The jack should never be used to support a loaded Manure Spreader.



When the jack is not being used to support the Manure Spreader, it should be relocated to the “storage” position located on the left side of the Manure Spreader as shown.



SAFETY CHAIN

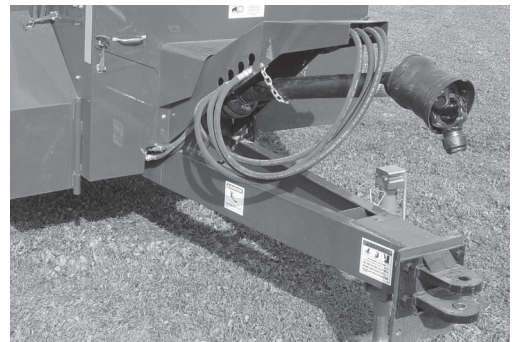
As required or when desired, the Manure Spreader should be equipped with a safety chain for transporting the unit on a public highway. Refer to the Transport Chapter for details.

TELESCOPING PTO DRIVE

The telescoping PTO drive is designed to rotate freely inside the drive shield tubes.

The telescoping PTO drive is provided with a spring-loaded locking collar on one end to positively lock the drive connection onto the tractor PTO shaft. Depress the locking collar, against the spring tension, and slide the yoke onto tractor PTO shaft. Release the locking collar and move the yoke ahead or back until the lock engages into the groove on the shaft.

NOTE: *When the spreader is not attached to the tractor, the PTO Drive can be conveniently supported by the chain provided as shown. This position is used only when the Manure Spreader is NOT in operation. Never transport the Manure Spreader with the PTO in this position.*



TRANSPORT LIGHTING

Connect the transport lighting cord that is standard equipment on all Manure Spreader models to the lighting system 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.



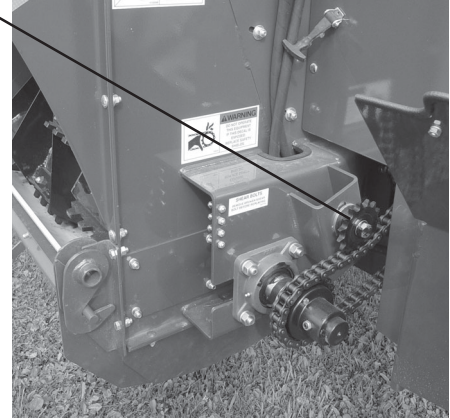
ADJUSTMENTS

DRIVE CHAIN IDLERS

Expeller Drive Chain Idler

The expeller drive chain is tensioned with an adjustable sprocket Idler. The chain is properly tensioned when the chain can be deflected 1/2" to 3/4" (13-19 mm) with hand pressure.

NOTE: *If an Idler fails to maintain proper tension, replace the worn chain.*



Shield open for viewing

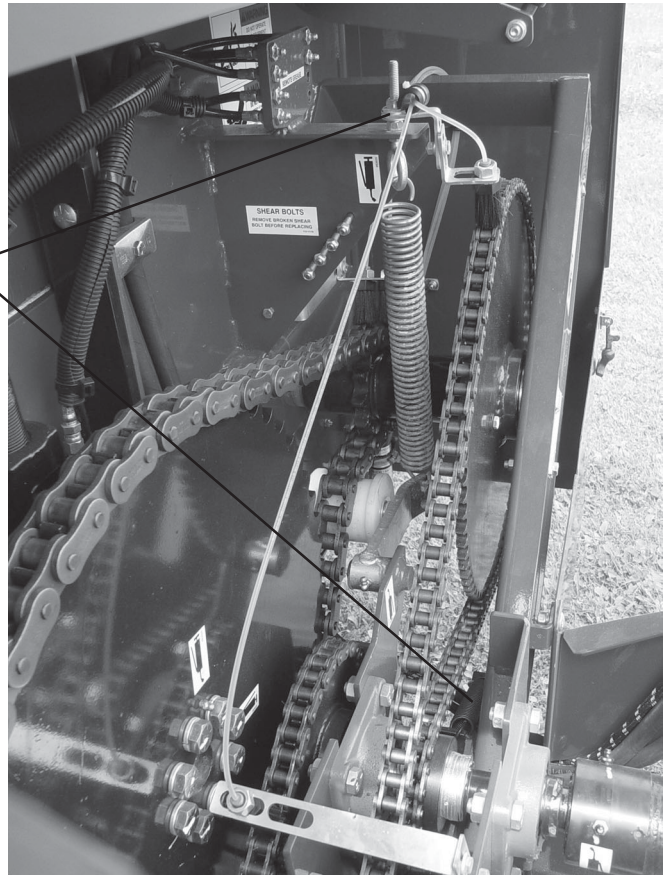
Auger Drive Chain Idlers

The jackshaft and auger drive chain tighteners are spring loaded.

Use the eye bolt adjustment to achieve a spring length of 9-1/2" on the initial reduction auger drive chain.

The auger final drive chain tension device uses an eye bolt, and S-hook to accomplish adjustment. With the auger in its lowest position, use the eye bolt to achieve a spring length of 13-1/2" to 15" on the final drive chain for obtaining the specified tension.

NOTE: *If an Idler fails to maintain proper tension, replace the worn chain.*



Shield open for viewing

ADJUSTMENTS

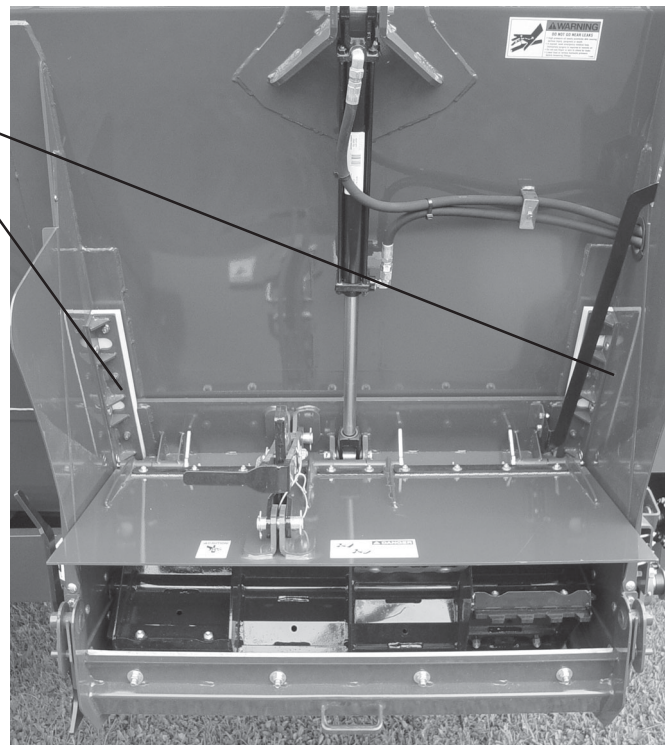
FRONT & REAR AUGER SLIDES

The front and rear auger slide assemblies are retained by adjustment plates with diagonal slots. To adjust, loosen retaining hardware and drive the plates downward with a hammer until the slide assembly is snug against the tank, then re-tighten the retaining hardware. Grease the slide assembly to ensure a leak free seal.



DISCHARGE GATE

The discharge gate is retained by adjustable angles that secure the gate to the tank through diagonal slots. To adjust, loosen retaining hardware and drive the angles downward with a hammer until the discharge gate is snug against the tank, then re-tighten the retaining hardware. Grease the discharge gate to ensure a leak free seal.



SERVICE

EXPELLER

Periodically inspect the expeller teeth for wear or damage. Damaged, broken, or missing expeller teeth will cause excessive machine vibration. Consult with your local Frontier dealer for additional ordering information.

AUGER & EXPELLER SPEED OPTIONS

The expeller input drive sprocket can be changed by raising the auger and then removing the indicated sprocket which is retained by a snap ring and set screws.

The auger input drive sprocket change requires removal and disassembly of input shaft.

NOTE: *When making sprocket changes, some chain length modifications may be required depending on the condition of the chain and size of the sprocket installed.*

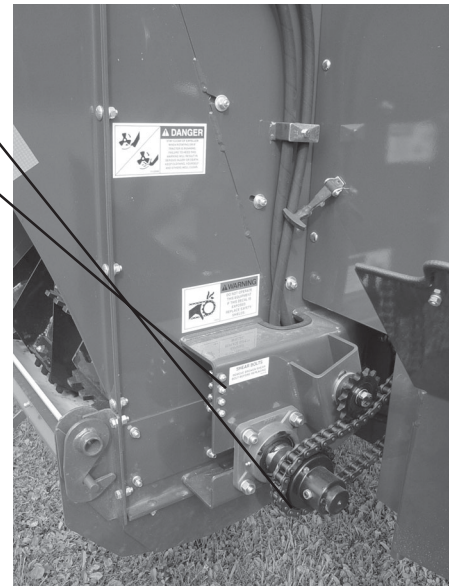
SHEAR BOLTS

Expeller Shear Device

The discharge expeller sprocket has two 1/4" x 1-1/2" grade 8 shear bolts with locknuts. Access is obtained by opening the expeller shield over the front expeller bearing. Additional shear bolts are stored on the expeller front bearing mount.

To replace the expeller shear bolts, proceed as follows:

1. Disengage the PTO.
2. If the object is not lodged in the discharge door opening, close the discharge door to stop the flow of material.
3. Shut-off tractor and remove key.
4. Open the expeller shield over the front expeller bearing.
5. Remove any pieces of the shear bolt that may be still in the shear device.
6. Check to see if the expeller rotates freely. The object may still be present in the expeller.
7. Trip the expeller pan to clear any material or object.
8. Line up the shear bolt holes by manually rotating the expeller.
9. Replace both shear bolts using the 1/4" x 1-1/2" Grade 8 shear bolts stored on the expeller front bearing mount.
10. Close the expeller shield, expeller trip pan, and resume operation.



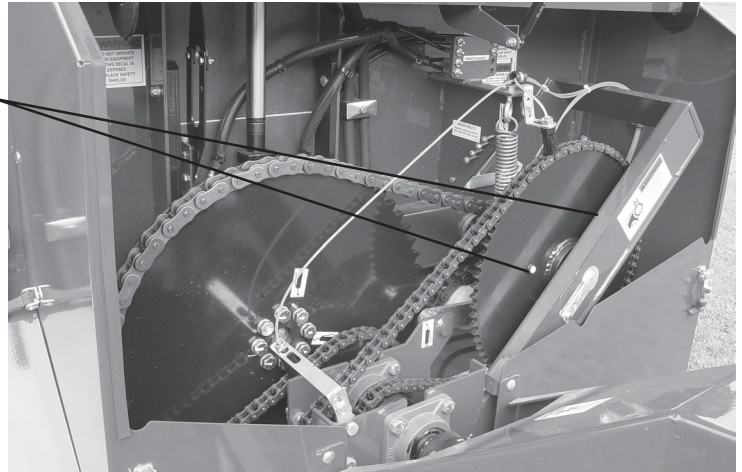
Shield open for viewing

IMPORTANT: *When resuming operation, place the tractor throttle at idle before engaging the PTO.*

SERVICE

Main Auger Shear Device

The auger jackshaft hub is secured to the auger drive sprocket with two 5/16" x 1-1/2" grade 8 shear bolts and locknuts. Additional shear bolts are stored on the chain tensioner bracket.



If the auger jackshaft bolts shear, proceed as follows:

Shield open for viewing

1. Disengage the PTO.
2. If an object is lodged in the discharge door opening or inside the tank, raise the discharge door, then raise the main auger.
3. Shut-off tractor and remove key.
4. Open the main shield.
5. Remove any pieces of the shear bolt that may be still in the auger jackshaft shear device.
6. Trip the expeller pan to clear any material or objects.
8. Remove any foreign objects from the discharge door opening or inside the tank
9. Line up the shear bolt holes on the auger jackshaft shear device.
9. Replace both shear bolts using the 5/16" x 1-1/2" Grade 8 shear bolts stored on the chain tensioner bracket.
10. Close the main shield and resume operation.

IMPORTANT: *When resuming operation, place the tractor throttle at idle before engaging the PTO.*

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>Model</u>	<u>Tire</u>	<u>Pressure</u>
2320	295/75R22.5	75 - 80 PSI
2320	385/65R22.5	85 PSI
2320/2326	16.5 x 16.1 – 10 Ply	36 PSI
2326	19L x 16.1 – 10 Ply	32 PSI
2326	425/65R22.5	85 PSI

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

- Wheel bolts must be tightened at 85-95 ft/lbs. of torque on the 2320/2326.

OPTIONAL FEATURES & ACCESSORIES

NOTE: The optional features & accessories listed in this chapter, are shipped with separate instruction for installation, as applicable.

1000 RPM PTO DRIVE

Both models can be ordered from the factory with an optional 1000 RPM drive, as desired.

AUGER SPEED OPTIONS

Several different drive sprockets are available to change auger speeds to various spreading needs. Sprockets are available as service parts.

EXPELLER SPEED OPTIONS

Several different drive sprockets are available to change expeller speeds to various spreading needs. Sprockets are available as service parts.

SAFETY CHAINS

An appropriate-sized safety chain, to accommodate the potential weight of the loaded Manure Spreader, is available.

ELECTRONIC SCALES & COMPONENTS

Model: Digi-Star GT400

An optional factory installed Digi-Star GT400 scale is available for accurate weight measurement for each load spread. The 5-point weighbar system features 3 modes, Net, Tare and Gross.



Model: Digi-Star NT460

An optional factory installed Digi-Star NT460 scale system is available for accurate weight measurement and displaying actual tons per acre. The Indicator has GPS capability and stores pounds of manure spread on individual fields.



LUBRICATION

Become familiar with all lubrication points and establish a routine to ensure complete lubrication of the Manure Spreader.

GENERAL INFORMATION

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

PTO ASSEMBLY

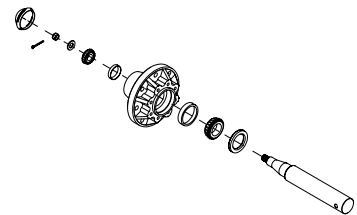
Keep the male and female shafts of the PTO well lubricated and free sliding. Failure to observe this precaution will result in excessive pressure being required to collapse or extend the assembly while subject to operating torque. This excessive force may damage the main shaft bearings. Never lubricate the shield surfaces. The shield surfaces must be kept dry, as dirt accumulation on them will cause the shields to bind and not rotate. Dented or damaged PTO shields, will also result in excessive force being applied against the jackshaft. Damaged shields also cause difficulty 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.



WHEEL BEARING LUBRICATION, CLEAN & RE-PACK INSTRUCTIONS

Grease wheel bearings as needed depending on amount of travel.

Annually disassemble and clean parts in a solvent. Pack bearings with a high grade grease. Reassemble, and tighten nut until a slight drag is felt when wheel is turned. Back nut off and insert cotter pin into first hole that you see as you back the nut off, bend cotter pin over and re-install cap.



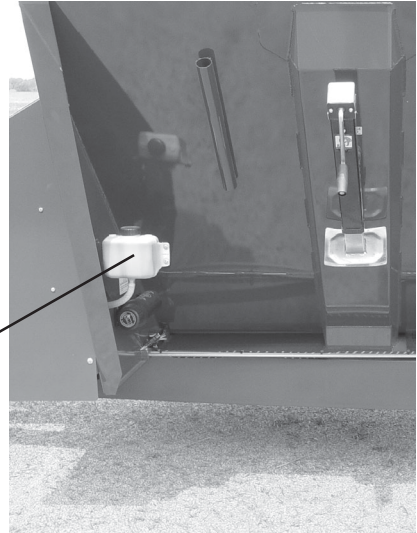
LUBRICATION

DRIVE CHAINS

The drive chains are lubricated by a automatic chain oiler. Any time that the discharge door is raised, a specified amount of oil is sent to the brushes on each of the chains. The oiler is adjustable to set the amount that is being discharged. This will extend the life of the drive chains. Keeping the chains aligned with sprockets will also lengthen the life of the sprockets and drive chains.

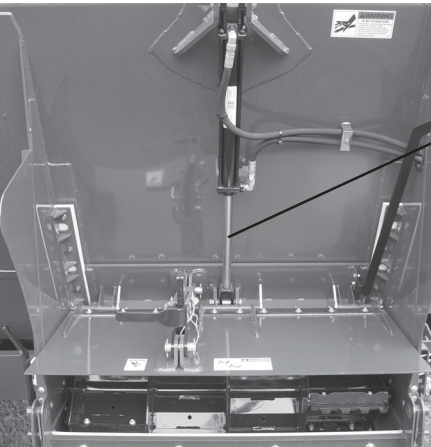


Oiler brushes on all chains.

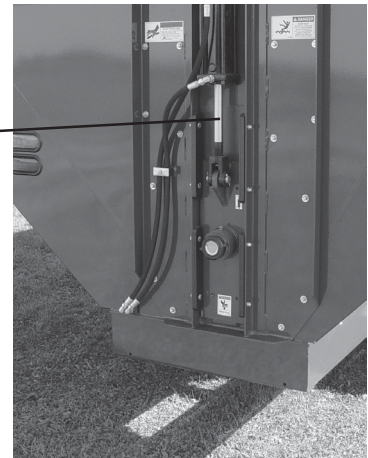


The oiler reservoir is located on the left front side by the scraper and jack storage position.

CYLINDERS



The discharge gate control cylinder shaft and both front and rear main auger cylinders should also be frequently coated with a rust preventative spray or lubricate since the cylinder shaft may remain extended when not being used for a period of time.



LUBRICATION

GREASING

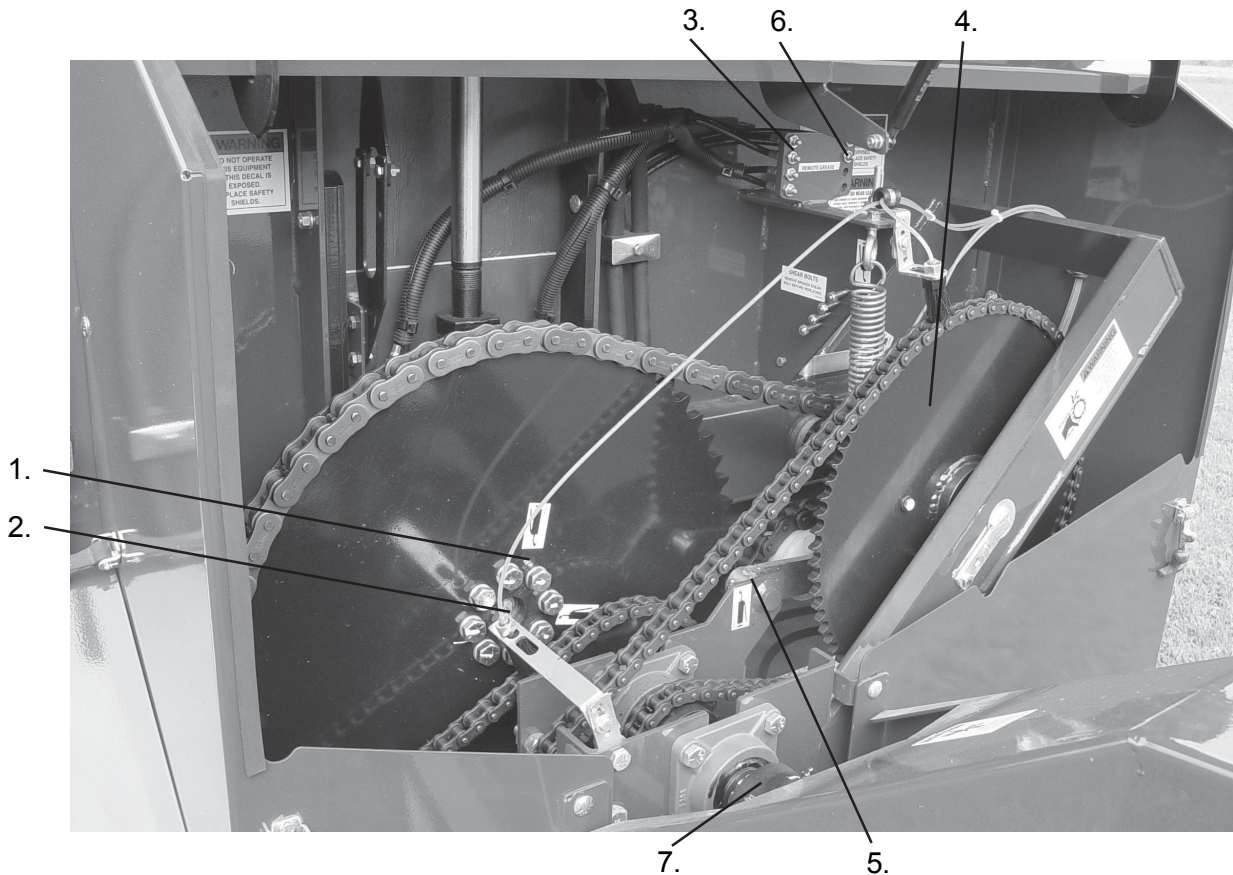
There are numerous grease fittings on the Manure Spreader. Lubricated properly and often with a high-quality grease, will prolong the life of the Manure Spreader. Replace any missing or plugged grease fittings.

Wipe dirt from the fittings before greasing to prevent the dirt from being forced into the bearing or pivot. Grease should come out around the shaft on sleeve type bearings. To minimize dirt build-up, avoid excessive greasing. After greasing, wipe off the excess grease from around the outside of the bearings to prevent the accumulation of chaff and grit.

NOTE: Grease all fittings at the intervals of operation listed, before and after storing the Manure Spreader. Use a good grade of Lithium-base grease.

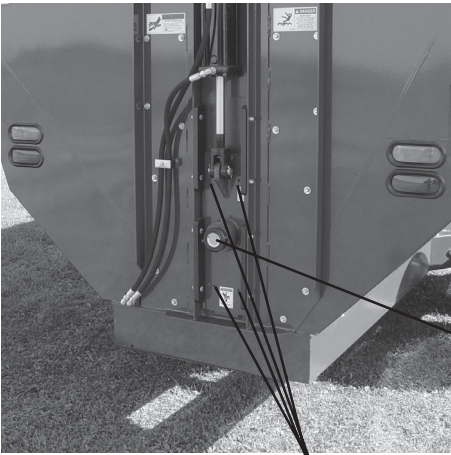
Grease Fitting Locations - Grease Every 10 Hours (or Daily)

1. Main Auger Thrust Washer
2. Main Auger Front Bearing
3. Front auger Slide Plate (4 Remote Zerk's)
4. Auger Jackshaft (Behind Sprocket)
5. Idler Arm
6. Input Shaft Bearings (2 Remote Zerk's)
7. Over-Running Clutch (2 Places)



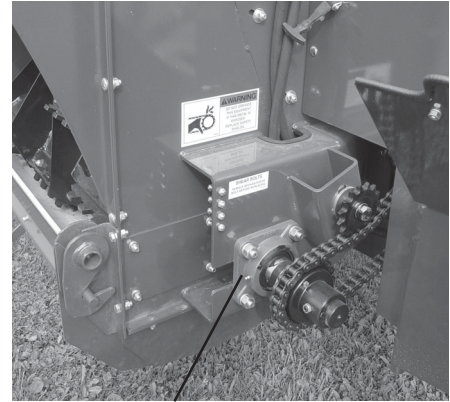
LUBRICATION

Grease Fitting Locations - Grease Every 10 Hours (or Daily)

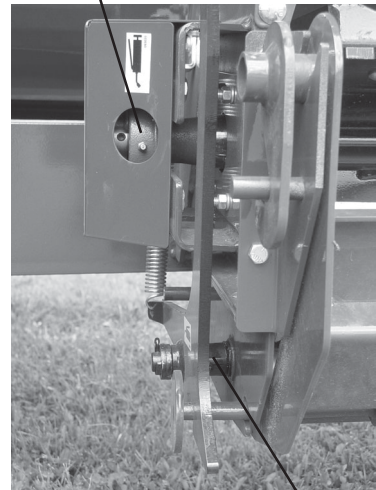


Rear Auger Bearing

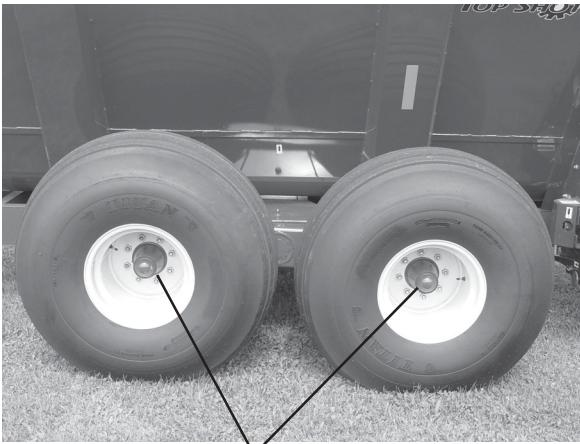
Rear Auger Slide Plate (4 Zerks)



Expeller Bearings (2 Places)



Expeller Pan Release Pivot



Axle Hubs

PTO Shaft - As required by Manufacturer



Wheel Pivot (Each Side)

LUBRICATION REQUIREMENTS

INTERVAL	LOCATION	AMOUNT
8 HRS.*	CROSS & BEARINGS	1-PUMP
8 HRS.	TELESCOPING MEMBERS	4-8 PUMPS
8 HRS.	C.V. BALL & SOCKET	1-2 PUMPS
24 HRS.	C.V. CENTER HOUSING	4-PUMPS

TROUBLESHOOTING

NOTE: *This Troubleshooting Chapter presents problems, causes and suggested remedies beyond the extent of loose, worn or missing parts and it was developed with the understanding that the machine is in otherwise good operating condition.*

PROBLEM	CAUSE	REMEDY
1.) Material NOT discharging from expeller	Discharge gate is NOT open. Expeller is NOT operating. Expeller is obstructed. Auger is NOT turning.	Open gate. See item #3 Activate gate to free obstruction See item #2
2.) Auger will not turn	Shear bolts are sheared. Drive chain not on sprocket.	Replace shear bolts. Reinstall/replace chain. Sprockets MUST be properly aligned.
3.) Expeller not turning	Shear bolts have sheared. Drive chain not on sprocket.	Replace shear bolts Reinstall/replace chain.
4.) Chains are jumping drive sprocket teeth	Inadequate chain tension. Sprocket teeth or chains excessively worn.	Adjust chain tension. See details in <u>Adjustments Chapter</u> . Replace sprocket or chain.
5.) Excessive chain and/or sprocket wear.	Sprockets are NOT properly aligned. Improper shear bolts being used. Inadequate chain tension.	Re-align sprockets. Install proper shear bolts listed in <u>Operations Chapter</u> . See item #6
6.) Drive chain(s) will NOT stay properly tensioned.	Tensioner spring(s) NOT properly adjusted. Idler pivot arm(s) binding. Tensioner spring(s) broken or stretched.	Adjust tensioner spring(s). Lubricate idler arm(s) to pivot freely. Replace spring(s).
7.) Uniformity of spread or discharge rate not acceptable	Difficult to spread material.	Change expeller or auger speed sprockets.

DECAL PLACEMENT

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

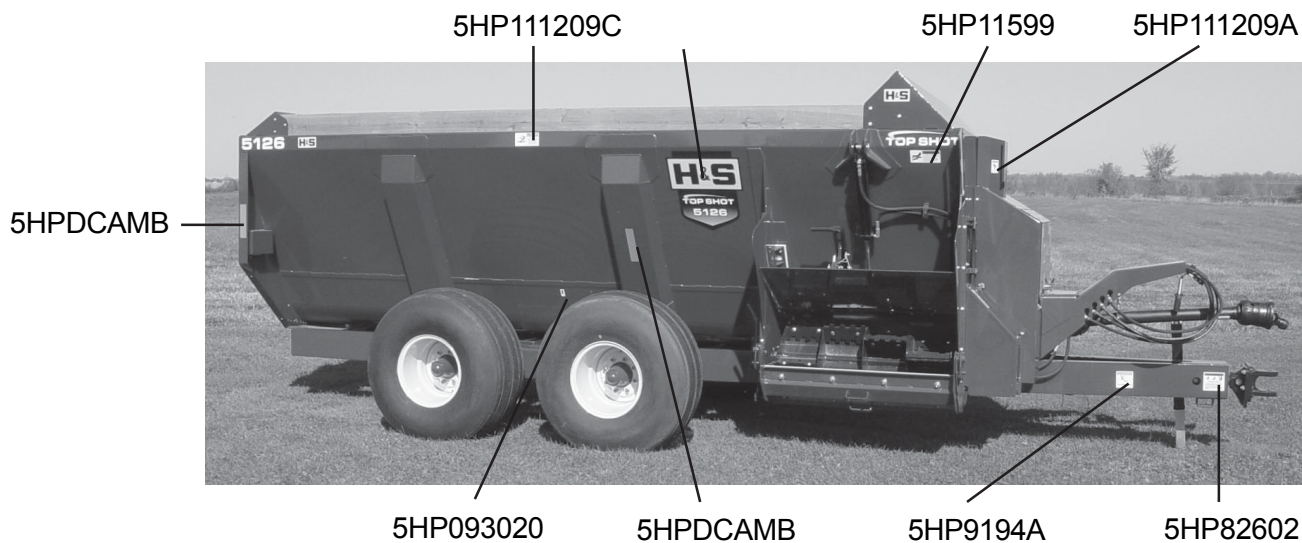
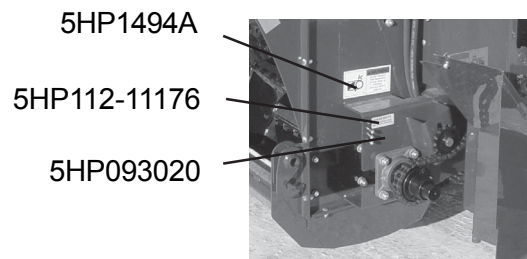
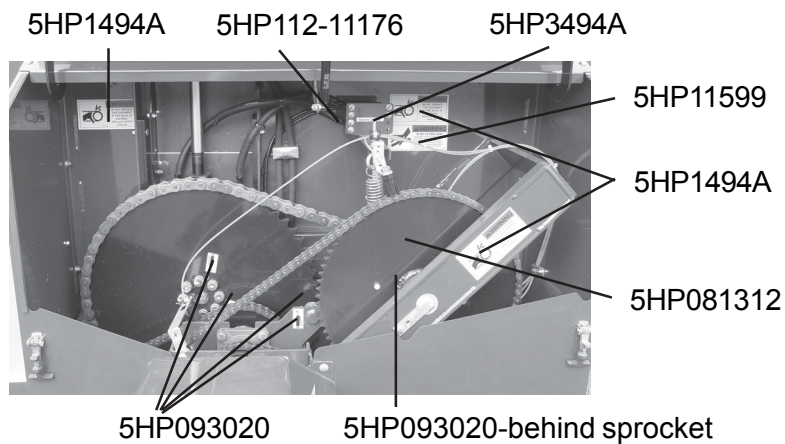
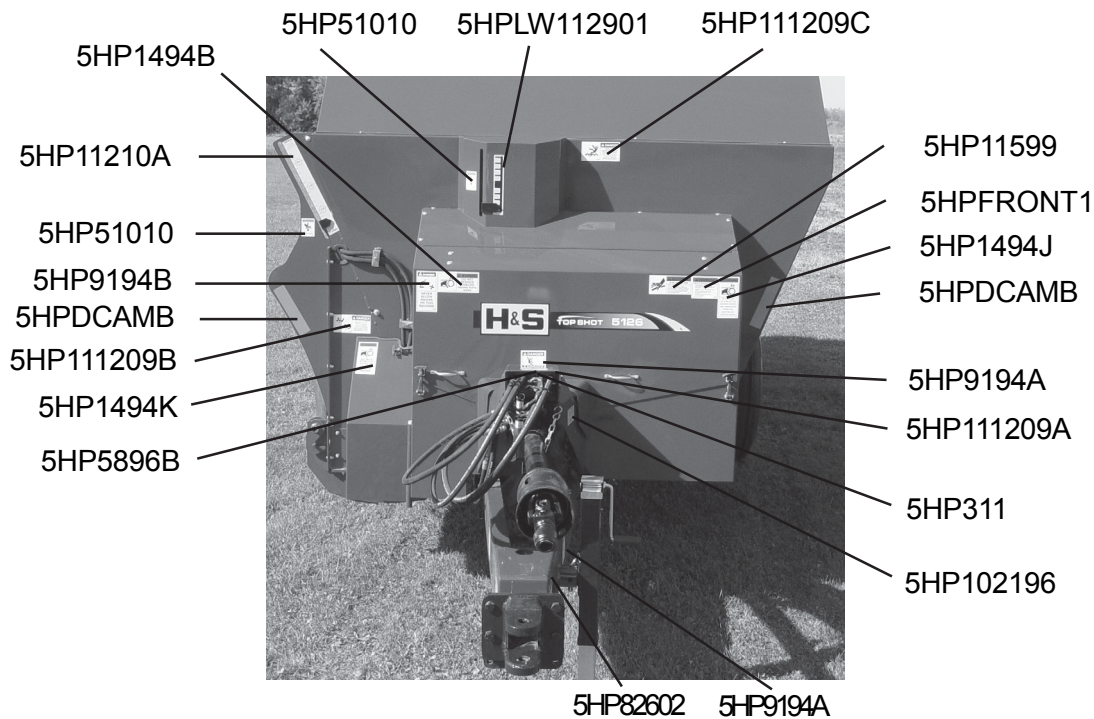


DO NOT REMOVE ANY OF THESE DECALS. IF DECALS ARE LOST, DAMAGED, OR IF YOUR MANURE SPREADER IS REPAINTED, REPLACE DECALS. REMEMBER: DECALS ARE FOR YOUR PROTECTION AND SAFETY.

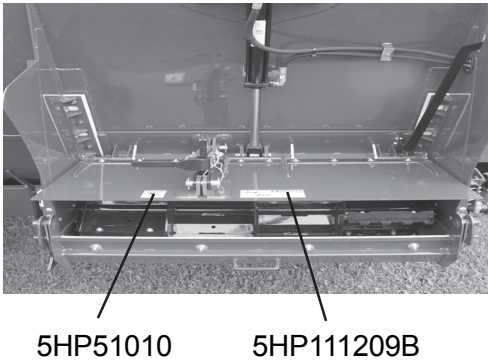
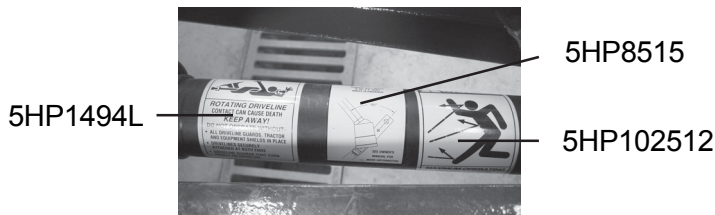
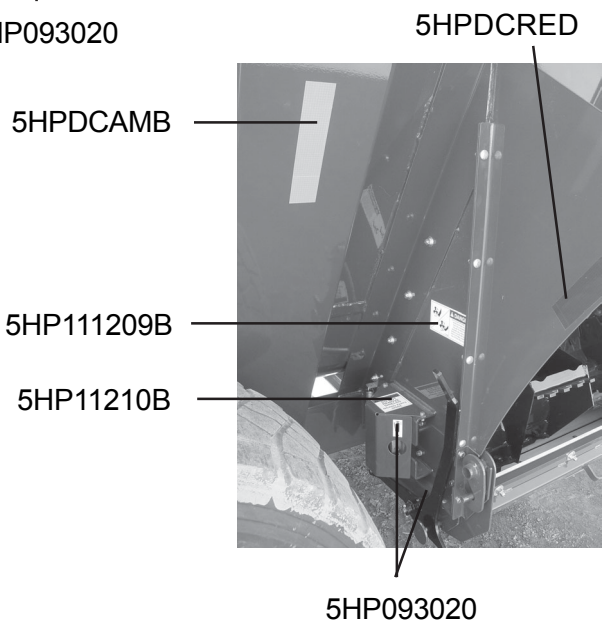
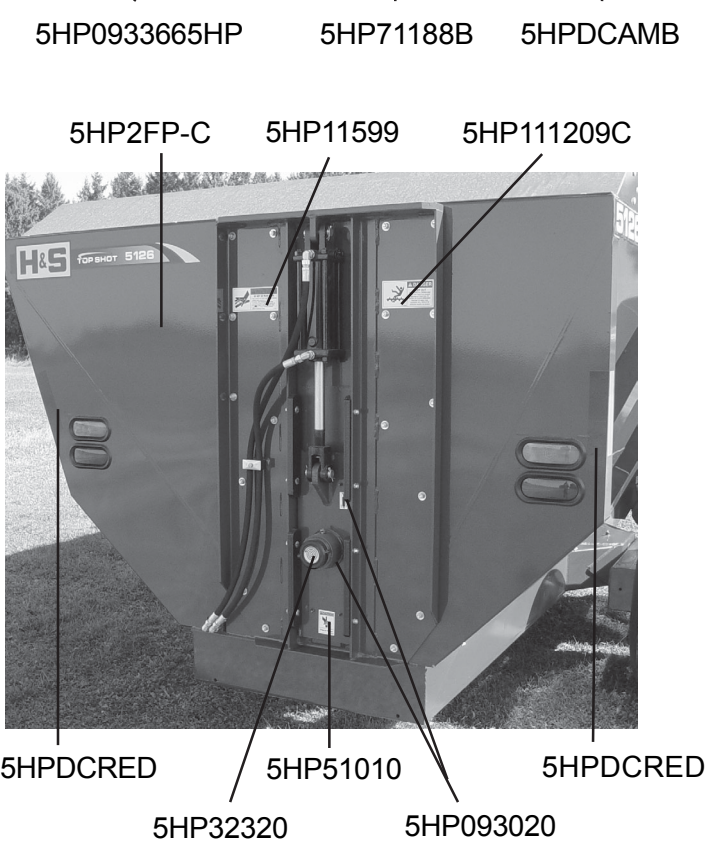
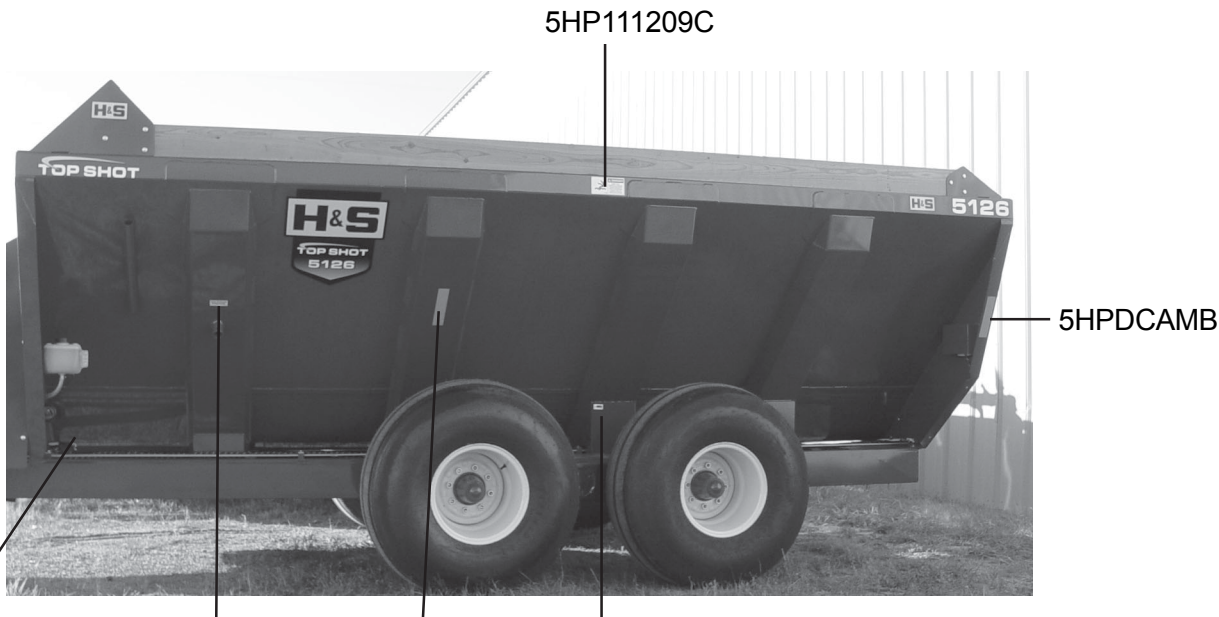
Listed below are the decals on your Manure Spreader. These decals may be ordered individually by part number, or by ordering as a complete set.

<u>Part #</u>	<u>Quantity</u>	<u>Description</u>
5HP1494A	3	Do not operate this machine if this decal is exposed. Replace safety shields
5HP1494B	2	Do not remove shields - moving parts inside
5HP1494J	1	Do not clean or work on the machine without first disengaging power
5FP1494K	1	Do not remove shields - moving parts inside
5HP1494L	2	Rotating driveline
5HP3494A	1	Remote Grease Decal
5HP5896B	2	Rotating driveline
5HP9194A	4	No step - stay clear
5HP11210B	1	Do not remove shields
5HP11599	4	Do not go near leaks
5HP51010	4	Pinch Point
5HP72203A	1	Help avoid injury - Read and understand the operators manual
5HP82602	2	Crushing Hazard
5HP093366	1	Operators Manual
5HP102196	1	Lube-CV Joint
5HP111209A	2	Pinch Point
5HP111209B	3	Stay clear of expeller when rotating or if tractor is running
5HP111209C	4	Keep Out - Disengage all power and shut off tractor engine
5HP111510	1	Discharge gate opening decal
5HP112-11176	2	Shear Bolts - Remove broken shear bolt before replacing
5HP093020	8	Grease zerk decal
5HP71188B	1	Jack Storage Position
5HP022310	2	Attention - Wheel Torque
5HPLW112901	1	Auger Height Indicator Decal
5HP311	1	Patent Decal
5HP32320	1	Spiral Decal for Main Auger Shaft-Rear
5HP8515	1	Degree of Angle Decal-PTO Shaft
5HPDCAMB	6	Amber Reflector
5HPDCRED	3	Red Reflector
5HP2FP-C	1	SMV Decal
5HP081312	1	Located Behind Sprocket

DECAL LOCATION



DECAL LOCATION



INSTRUCTIONS FOR ORDERING PARTS

All service parts should be ordered through your authorized Frontier dealer. They will be able to give you faster service if you will provide them with the following

1. Model & Serial number is located on the main frame.
2. All reference to left or right apply to the Manure Spreader as viewed from the rear.
3. Parts should not be ordered from illustration only. Please order by complete part number.
4. If your dealer has to order parts - give shipping instructions:

VIA truck - large pieces (please specify local truck lines)

VIA United Parcel Service (include full address)



PLEASE RECORD NUMBERS FOR YOUR UNIT FOR QUICK REFERENCE

ABOUT IMPROVEMENTS

FRONTIER IS CONTINUALLY STRIVING TO IMPROVE IT'S PRODUCTS

We must therefore, reserve the right to make improvements or changes whenever it becomes practical to do so without incurring any obligation to make changes or additions to the equipment previously sold.

FIGURE 1
AUGER/LINER/SLIDES/HITCH

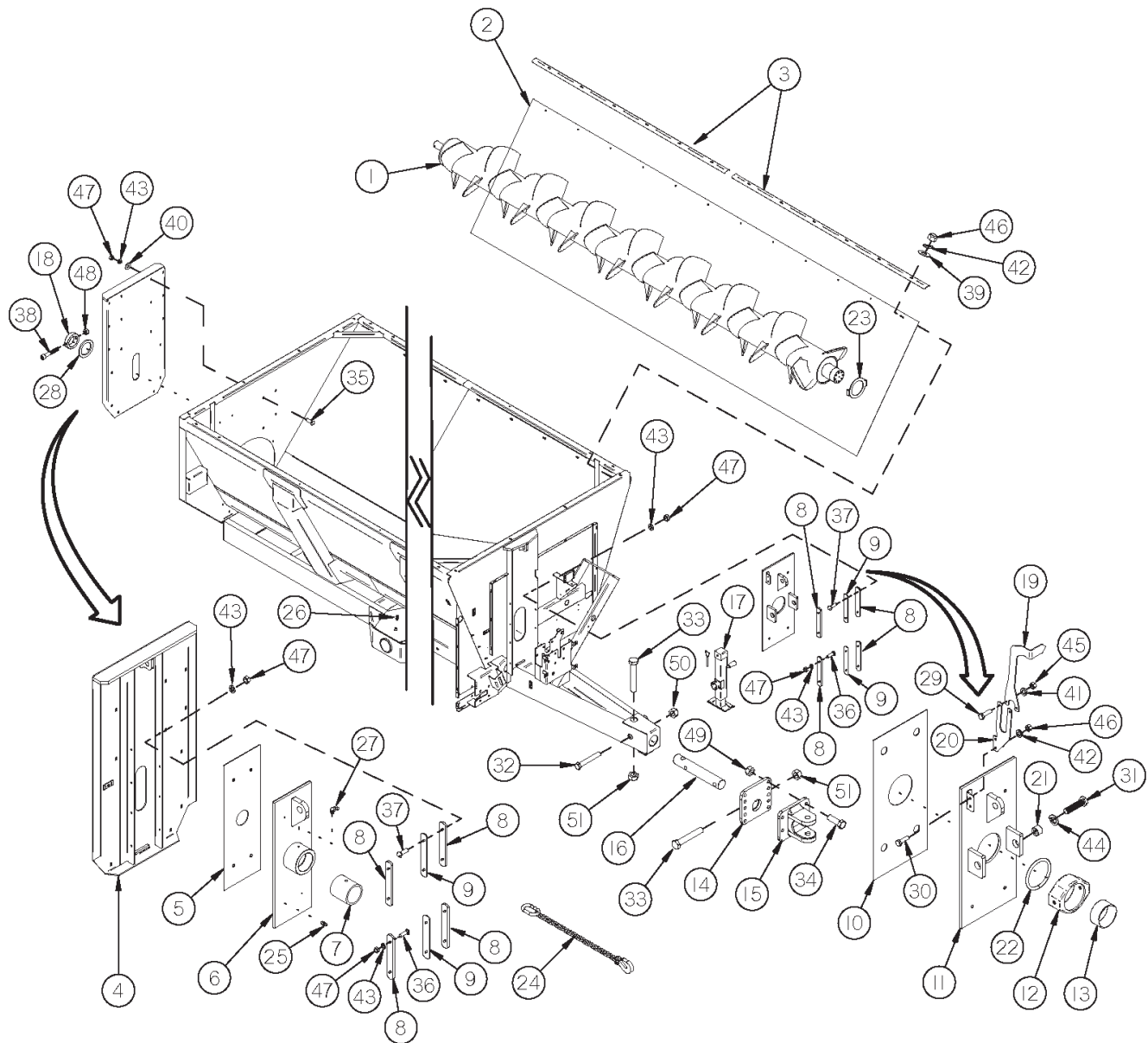


FIGURE 1

AUGER/LINER/SLIDES/HITCH

<u>QTY</u>				
<u>ITEM</u>	<u>2320</u>	<u>2326</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	"	5HPTS1	AUGER
2	1	-----	5HPTS2	TUB SIDE POLY
*	-----	1	5HPTS3	TUB SIDE POLY
3	1	"	5HPTS4	POLY TOP HOLD DOWN
4	1	-----	5HPTS5	BACK PANEL
*	-----	1	5HPTS6	BACK PANEL
5	1	"	5HPTS7	BACK SLIDER POLY
6	1	-----	5HPTS8	BACK SLIDER
*	-----	1	5HPTS309	BACK SLIDER
7	1	"	5HPTS9	REAR AUGER BUSHING
8	8	"	5HPTS10	SLIDER GUIDE
9	4	"	5HPTS308	SLIDER GUIDE THIN
10	1	"	5HPTS11	FRONT POLY SLIDE
11	1	"	5HPTS12	FRONT SLIDE PLATE
12	1	"	5HPTS14	TRUNNION HOUSING
13	1	"	5HPTS15	FRONT AUGER BEARING
*	1	"	5HPTS399	TRUNNION HOUSING WITH BEARING
14	1	"	5HPTS16	ADJUSTABLE SCALE HITCH MOUNT
15	1	"	5HPAPX2WE62	SCALE HITCH ADJUSTABLE CLEVIS CATIII
16	1	"	5HPGM73	HITCH BAR STRAIGHT
17	1	"	5HPTS306	JACK, SIDE WIND, 7000LBS
18	1	"	5HPTS19	AUGER BACK COLLAR
19	1	"	5HPTS207	AUGER INDICATOR TOP
20	1	"	5HPTS208	AUGER INDICATOR BOTTOM
21	2	"	5HPTS330	TRUNION PIVOT BUSHING
22	1	"	5HPTS33	AUGER SPROCKET RUBBER GASKET
23	1	"	5HPTS102	TRUNION SPACER
24	1	"	5HPSC40500	SAFETY CHAIN #40500
25	4	"	5HPG89	1/4" GREASE ZERK
26	2	"	5HPBFR28	1/8" NPT GREASE ZERK

NOTE: * MEANS NOT SHOWN

----- MEANS NOT USED ON THIS MODEL

" MEANS SAME AS PREVIOUS MODEL

FIGURE 1
AUGER/LINER/SLIDES/HITCH

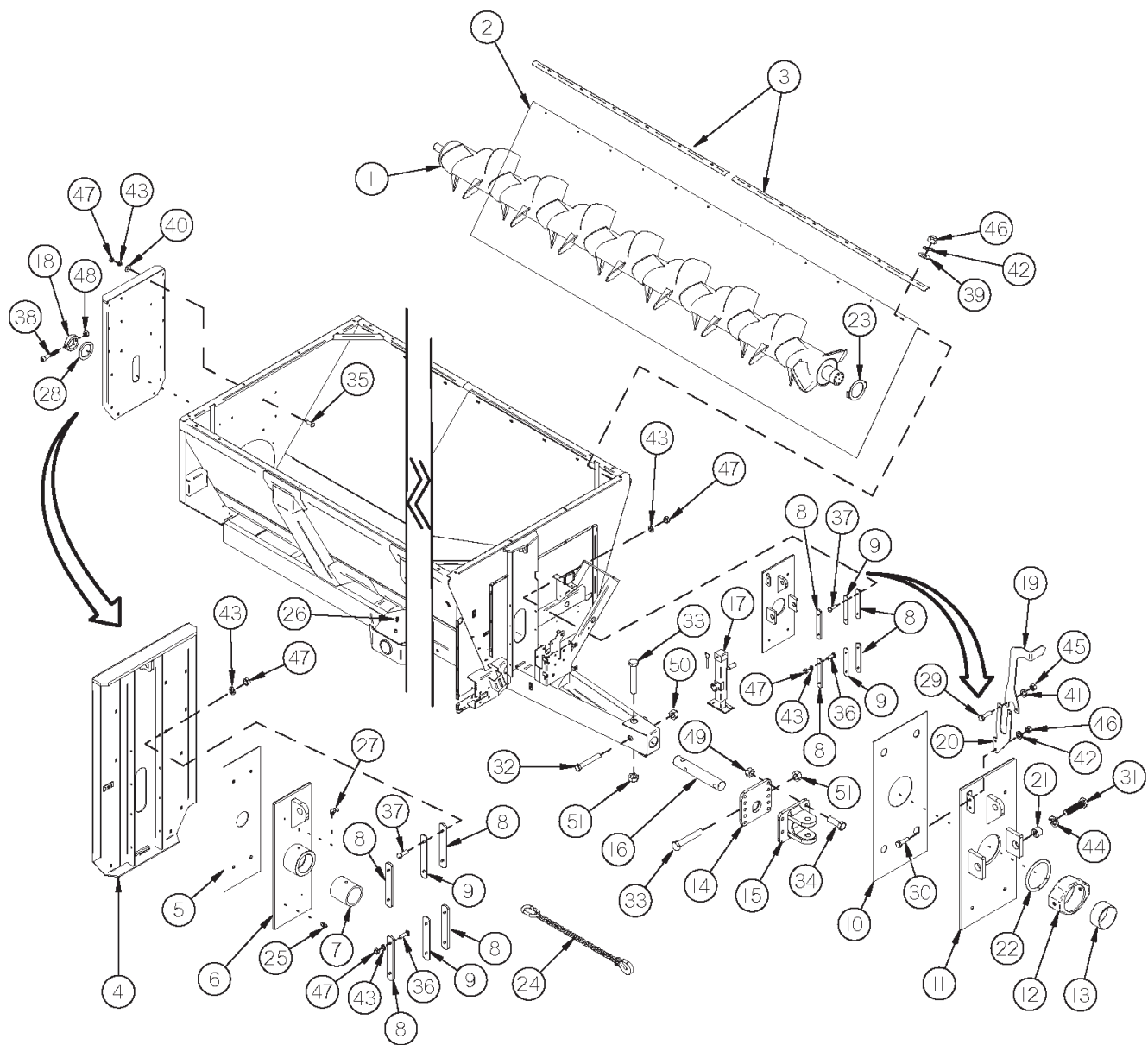


FIGURE 1

AUGER/LINER/SLIDES/HITCH

<u>QTY</u>				
<u>ITEM</u>	<u>2320</u>	<u>2326</u>	<u>PART#</u>	<u>DESCRIPTION</u>
27	1	"	5HPRG51	90° GREASE ZERK
28	A/R	"	5HPTS227	SPACER 2-17/32" (THICK)
*	A/R	"	5HPTS28	SPACER 2-17/32" (THIN)
29	2	"	5HPYBHH08100	BOLT, 1/4" X 3/4" GR. 5
30	2	"	5HPYBHH10105	BOLT, 5/16" X 3/4" GR. 5
31	2	"	5HPYBHH20022	BOLT, 5/8" X 1-3/4" GR. 8
32	1	"	5HPYBHH24083	BOLT, 3/4" X 5" GR. 8
33	2	"	5HPYBHH32032	BOLT, 1" X 5" GR. 8
34	4	"	5HPYBHH24031	BOLT, 3/4"-16 X 2-1/2" GR. 8
35	14	18	5HPYBCR12010	CARR. BOLT, 3/8" X 1" GR. 5
36	8	"	5HPYBCR12020	CARR. BOLT, 3/8" X 1-1/4" GR. 5
37	8	"	5HPYBCR12015	CARR. BOLT, 3/8" X 1-1/2" GR. 5
38	1	"	5HPYSHS12018	SOCKET HEAD CAP SCREW, 3/8" X 4"
39	12	"	5HPYWFL10005	WASHER, FLAT, 5/16" USS
40	14	18	5HPYWFL12005	WASHER, FLAT, 3/8" USS
41	2	"	5HPYWLO08005	WASHER, LOCK, 1/4"
42	14	"	5HPYWLO10005	WASHER, LOCK, 5/16"
43	30	34	5HPYWLO12005	WASHER, LOCK, 3/8"
44	2	"	5HPYWLO20005	WASHER, LOCK, 5/8"
45	2	"	5HPYNHX08005	HEX NUT, 1/4"-20
46	14	"	5HPYNHX10005	HEX NUT, 5/16"
47	30	34	5HPYNHX12005	HEX NUT, 3/8"-16
48	1	"	5HPYNL12005	HEX NUT, TOP LOCK, 3/8"-16
49	4	"	5HPYNL24010	HEX NUT, TOP LOCK, 3/4"-16 GR. 8
50	1	"	5HPYNRL24005	HEX NUT, REVERSIBLE-SIDE LOCK, 3/4"-10
51	2	"	5HPYNRL32005	HEX NUT, REVERSIBLE-SIDE LOCK, 1"-8

NOTE: * MEANS NOT SHOWN

—— MEANS NOT USED ON THIS MODEL

" MEANS SAME AS PREVIOUS MODEL

A/R: MEANS AS REQUIRED

AUGER DRIVE

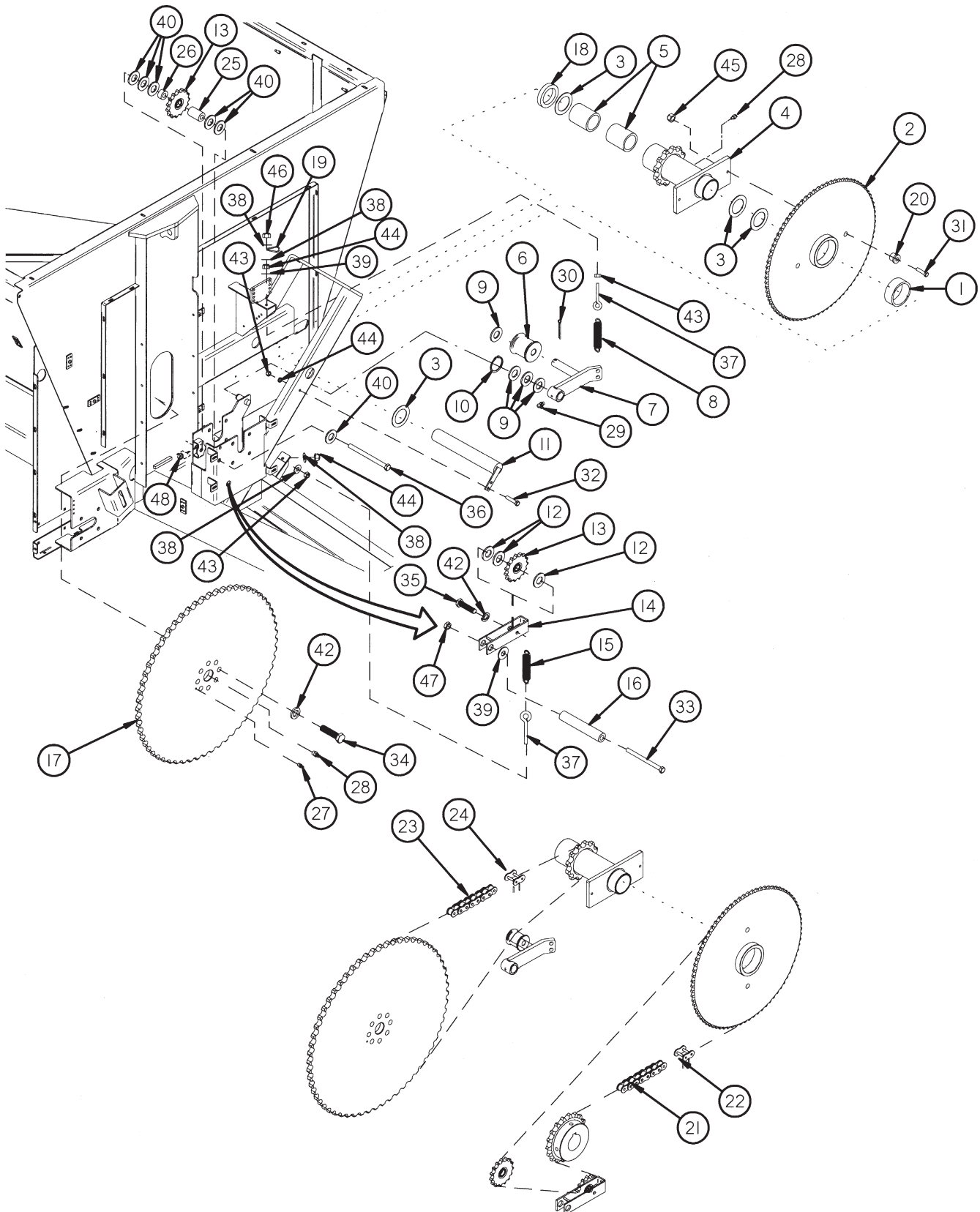


FIGURE 2

AUGER DRIVE

<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
1	1	"	5HPTS20	BUSHING/BRONZE
2	1	"	5HPTS21	SPROCKET/ASSY 80T (540 RPM)
*	1	"	5HPAPX2AS03	540 RPM SPROCKET ASSEMBLY (INCLUDES ITEM # 1, 2, 20)
*	1	"	5HPTS312	SPROCKET/ASSY 119T (1000 RPM)
*	1	"	5HPAPX2AS04	1000 RPM SPROCKET ASSEMBLY (INCLUDES ITEM # 1, 2, 20)
3	A/R	"	5HPTS22	SPACER, 2"
*	A/R	"	5HP56N183	SPACER
4	1	"	5HPTS23	COUNTER SHAFT ASSEMBLY
5	2	"	5HPTS24	BRONZE BUSHING
6	1	"	5HPTS25	ROLLER IDLER
7	1	"	5HPTS26	AUGER CHAIN TENSIONER
8	1	"	5HPBFR138	SPRING
9	3	"	5HPS345	1" SPACER
10	1	"	5HP3G21	SNAP RING
11	1	"	5HPTS27	COUNTER SHAFT
12	A/R	"	5HPT73	SPACER
*	A/R	"	5HP16SV49	SPACER
13	2	"	5HPTS29	SPROCKET/IDLER ASSY
14	1	"	5HPTS30	IDLER ASSY
15	1	"	5HPST36	SPRING/EXTENSION
*	1	"	5HPGM410	SPRING (1000 RPM ONLY)
16	1	"	5HPTS31	TENSIONER PIVOT TUBE
17	1	"	5HPS32	SPROCKET #100x60T ASSY
18	1	"	5HPTS328	REDUCTION LARGE SPACER
19	1	"	5HPHGV72	SMALL TUBE HOLDER
20	2	"	5HPTS34	HARDENED SHEAR BUSHING
21	1	"	5HPTS39	CHAIN/ROLLER #60HE X 138 (540 RPM - 18T & 15T SPROCKETS)
*	1	"	5HPTS360	CHAIN/ROLLER #60HE X 136 (540 RPM - 13T SPROCKET)
*	1	"	5HPTS361	CHAIN/ROLLER #60HE X 140 (540 RPM - 20T SPROCKET)
*	1	"	5HPTS313	CHAIN/ROLLER #60HE X 166 (1000 RPM - 15T SPROCKET)
*	1	"	5HPTS362	CHAIN/ROLLER #60HE X 165 (1000 RPM - 13T SPROCKET)
*	1	"	5HPTS363	CHAIN/ROLLER #60HE X 167 (1000 RPM - 16T SPROCKET)

NOTE: * MEANS NOT SHOWN
" MEANS SAME AS PREVIOUS MODEL

FIGURE 2
AUGER DRIVE

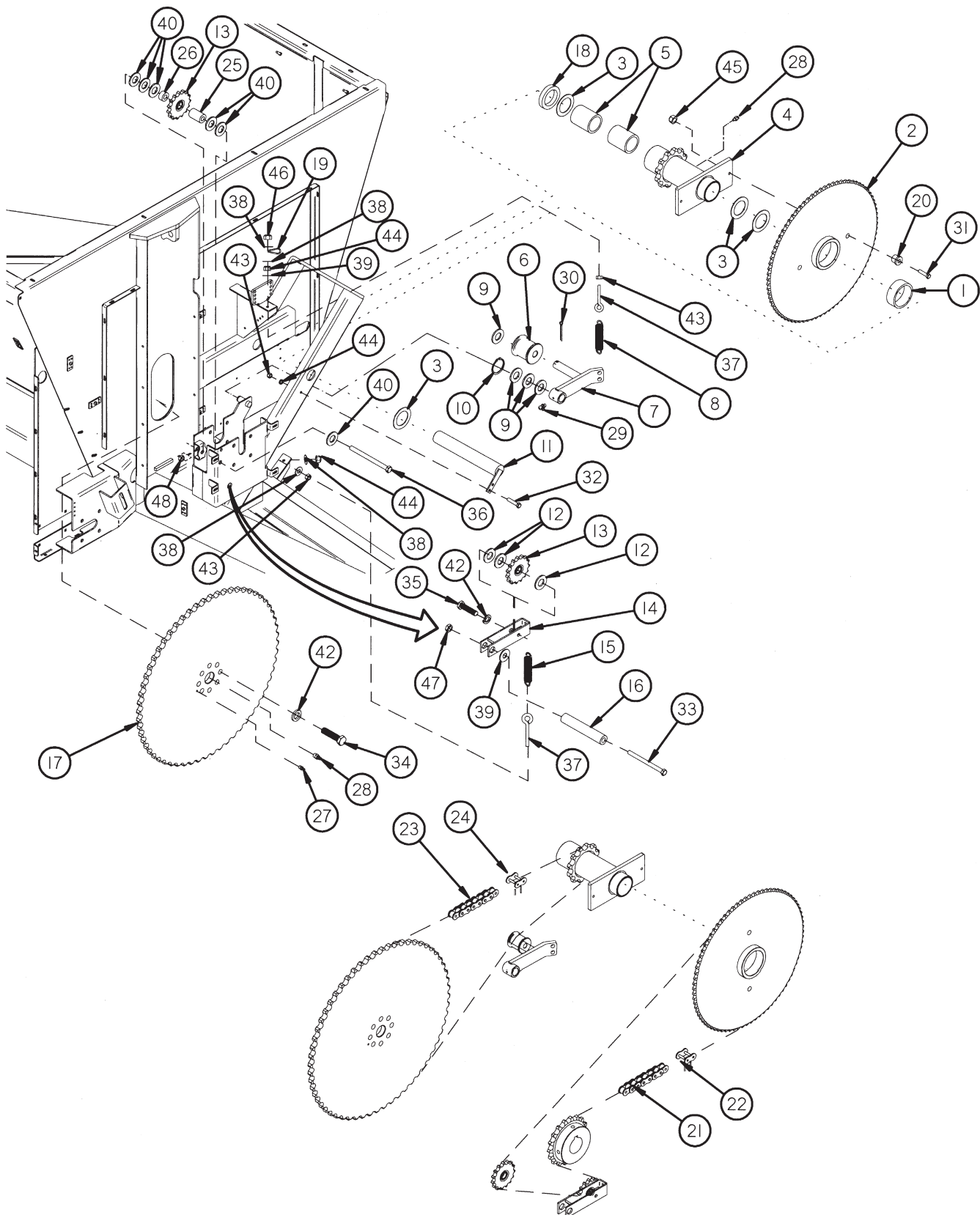


FIGURE 2

AUGER DRIVE

<u>ITEM</u>	<u>QTY</u>		<u>PART#</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
22	1	"	5HPTS40	LINK/CONNECTOR #60HE
23	1	"	5HPTS41	CHAIN/ROLLER #100HE X 75
24	1	"	5HPTS42	LINK/CONNECTOR #100HE
25	1	"	5HPTS396	IDLER FRONT SPACER
26	1	"	5HPTS397	IDLER REAR SPACER
27	1	"	5HPG89	GREASE ZERK
28	2	"	5HPBFR28	1/8" NPT GREASE ZERK #1610
29	1	"	5HPRG51	1/4"-28 90° GREASE ZERK #1911
30	1	"	5HPYPCT06005	COTTER PIN, 3/16" X 1-1/2"
31	2	"	5HPYBHH10036	BOLT, 5/16" X 1-1/2" GR. 8 YELLOW ZINC
*	4	"	5HPYBHH10036	BOLT, 5/16" X 1-1/2" GR. 8 YELLOW ZINC
32	1	"	5HPYBHH12100	BOLT, 3/8" X 2-1/4" GR. 5
33	1	"	5HPYBHH16175	BOLT, 1/2" X 6-1/2" GR. 5
34	8	"	5HPYBHH20036	BOLT, 5/8" X 2-1/2" GR. 8 YELLOW ZINC
35	1	"	5HPYBHH20025	BOLT, 5/8" X 2" GR. 5
36	1	"	5HPYBHH20100	BOLT, 5/8" X 6" GR. 5
37	2	"	5HPYBTE12025	TURNED EYE BOLT, 3/8" X 3" FULL THREAD
38	4	"	5HPYWFL12005	WASHER, FLAT, 3/8" USS
39	2	"	5HPYWFL16005	WASHER, FLAT, 1/2" USS
40	A/R	"	5HPYWFL20005	WASHER, FLAT, 5/8" USS
41	1	"	5HPYWLO12005	WASHER, LOCK, 3/8"
42	9	"	5HPYWLO20005	WASHER, LOCK, 5/8"
43	3	"	5HPYNHX12005	HEX NUT, 3/8"-16
44	2	"	5HPYNNY12005	HEX NUT, NYLON LOCKNUT, 3/8"
45	2	"	5HPYNTL10005	HEX NUT, TOP LOCK, 5/16"-18
46	1	"	5HPYNTL12005	HEX NUT, TOP LOCK, 3/8"-16
47	1	"	5HPYNTJ16005	HEX NUT, TOP LOCK, JAM, 1/2"-13
48	1	"	5HPYNTJ20005	HEX NUT, TOP LOCK, JAM, 5/8"-11, ZINC FINISH GRADE A

NOTE: * MEANS NOT SHOWN

" MEANS SAME AS PREVIOUS MODEL

A/R: AS REQUIRED

FIGURE 3

EXPELLER/DISCHARGE GATE/BEARINGS

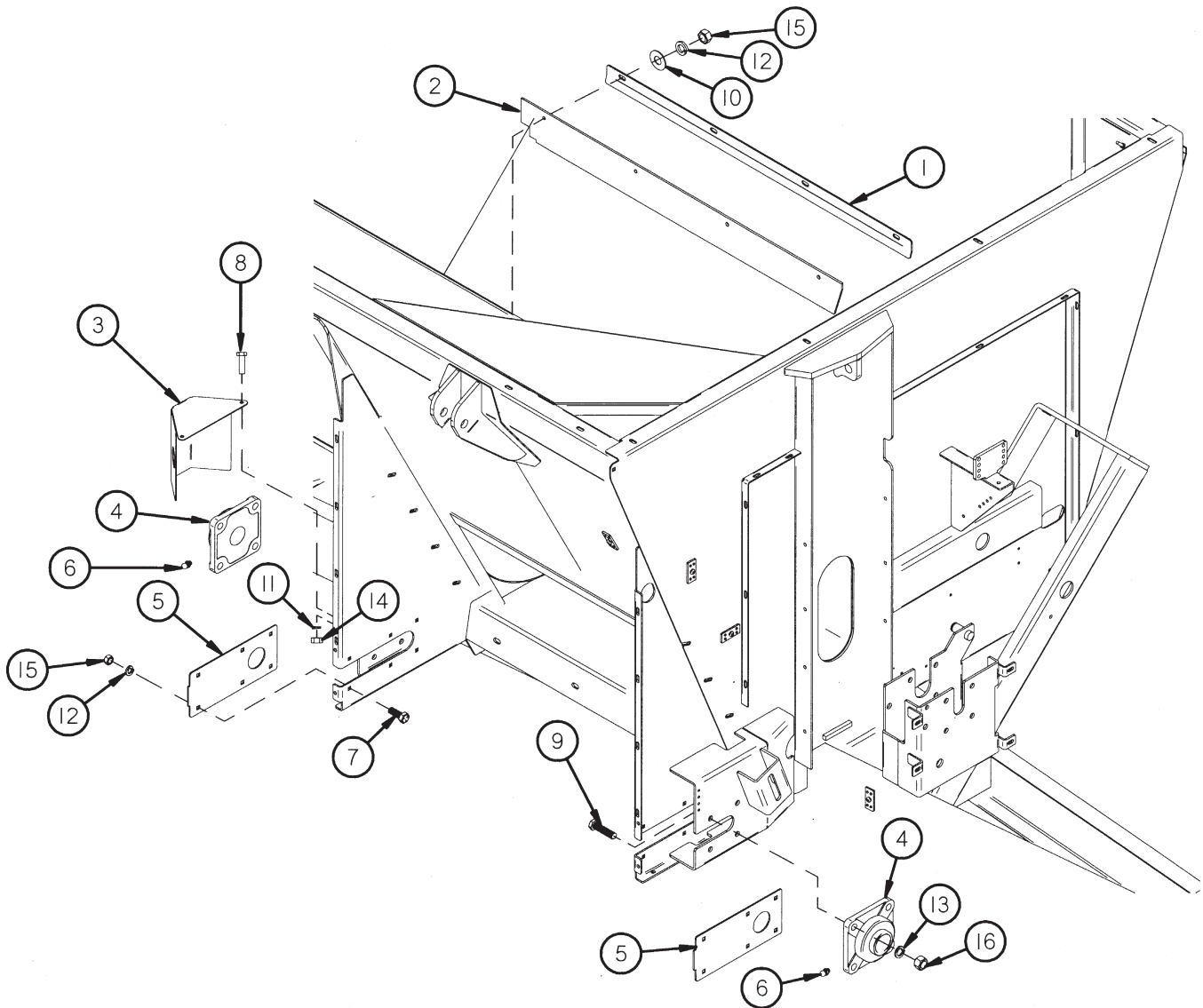


FIGURE 3

EXPELLER/DISCHARGE GATE/BEARINGS

<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
1	1	"	5HPTS43	DOOR SEAL CLAMP
2	1	"	5HPTS44	EXPELLER DOOR TOP SEAL
3	1	"	5HPTS45	EXPELLER BEARING SHIELD
4	2	"	5HPHGV41	EXPELLER BEARING
5	2	"	5HPTS47	COVER PLATE
6	2	"	5HPG89	GREASE ZERK
7	12	"	5HPYBCR12010	CARR. BOLT, 3/8" X 1" GR. 5
8	2	"	5HPYBHH08100	BOLT, 1/4" X 3/4" GR. 5
9	8	"	5HPYBHH18010	BOLT, 9/16" X 1-3/4" GR. 5
10	4	"	5HPYWFL12005	WASHER, FLAT, 3/8" USS
11	2	"	5HPYWLO08005	WASHER, LOCK, 1/4"
12	16	"	5HPYWLO12005	WASHER, LOCK, 3/8"
13	8	"	5HPYWLO18005	WASHER, LOCK, 9/16"
14	2	"	5HPYNHX08005	HEX NUT, 1/4"-20
15	16	"	5HPYNHX12005	HEX NUT, 3/8"-16
16	8	"	5HPYNHX18005	HEX NUT, 9/16"-12

NOTE: " MEANS SAME AS PREVIOUS MODEL

FIGURE 4 **EXPELLER/DISCHARGE GATE/DOOR**

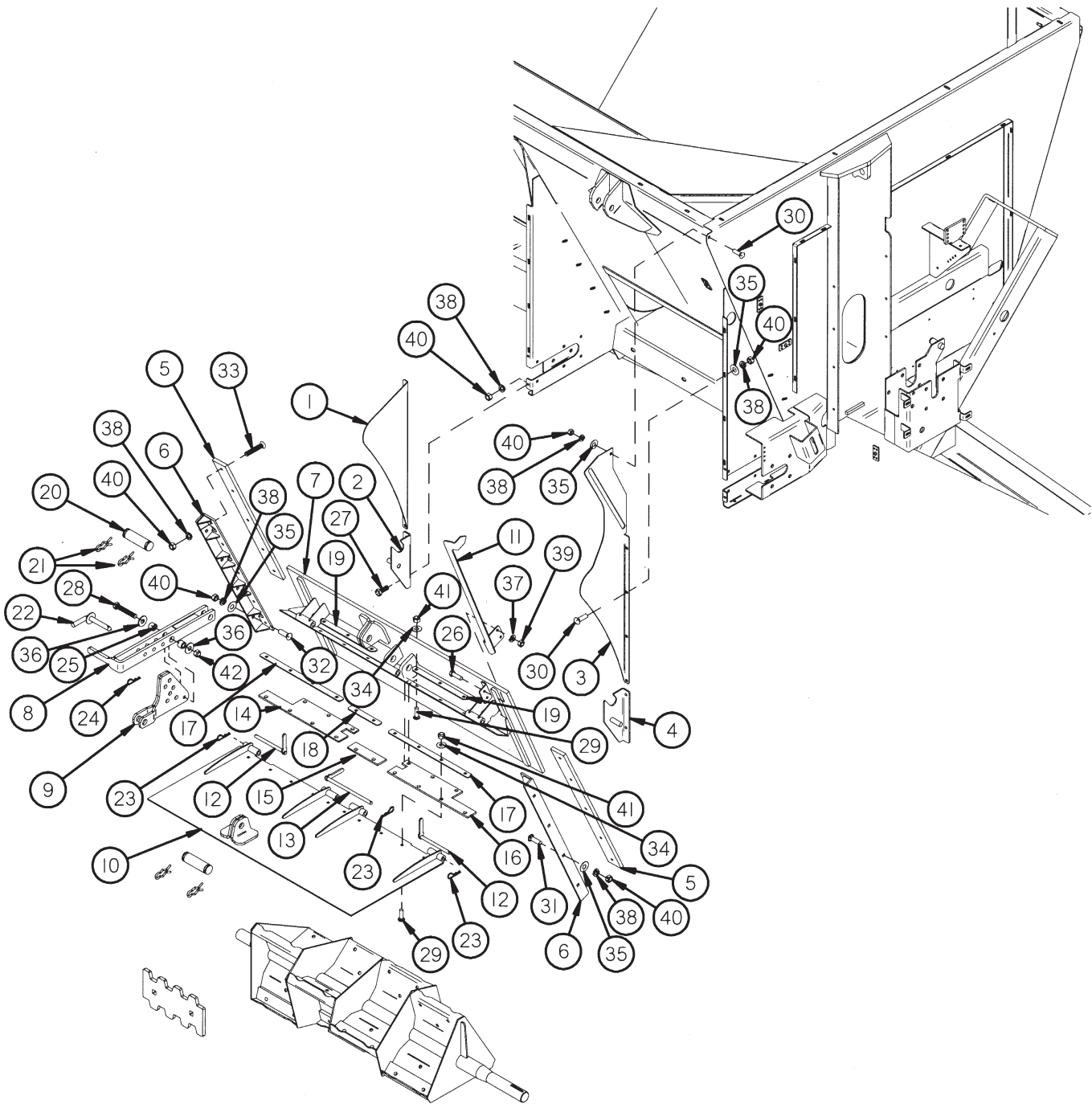


FIGURE 4

EXPPELLER/DISCHARGE GATE/DOOR

<u>QTY</u>				
<u>ITEM</u>	<u>2320</u>	<u>2326</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	"	5HPTS48	EXPPELLER PANEL EXTENSION LEFT HAND
2	1	"	5HPTS49	PAN HINGE BRACKET LEFT
3	—	1	5HPTS50	EXPPELLER PANEL EXTENSION RIGHT HAND
*	1	—	5HPTS327	EXPPELLER SPOUT RH
4	1	"	5HPTS51	PAN HINGE BRACKET RIGHT
5	2	"	5HPTS52	DOOR SLIDER POLY
6	2	"	5HPTS53	EXPPELLER DOOR GUIDE
7	1	"	5HPTS54	EXPPELLER DOOR
8	1	"	5HPTS55	DEFLECTOR ADJUSTMENT HANDLE
9	1	"	5HPTS56	DEFLECTOR ADJUSTMENT LINK
10	1	"	5HPTS57	ADJUSTABLE FLAT DEFLECTOR
11	1	"	5HPTS58	DOOR INDICATOR
12	2	"	5HPTS59	DEFLECTOR SIDE PIN
13	1	"	5HPTS60	DEFLECTOR MID PIN
14	1	"	5HPTS61	DEFLECTOR SEAL LEFT
15	1	"	5HPTS62	DEFLECTOR SEAL MID
16	1	"	5HPTS63	DEFLECTOR SEAL RIGHT
17	2	"	5HPTS64	SEAL STRAP LONG
18	1	"	5HPTS65	SEAL STRAP MID
19	2	"	5HPTS66	SEAL STRAP SHORT
20	2	"	5HPT143	CYLINDER PIN
21	4	"	5HPT144	CLIP PIN
22	1	"	5HPTS69	CASTER LOCKING PIN
23	3	"	5HPX97	HAIR PIN
24	1	"	5HPWM378	HAIR PIN W/ LANYARD
25	2	"	5HPTS307	HANDLE PIVOT
26	2	"	5HPYBHH10105	BOLT, 5/16" X 3/4" GR. 5
27	4	"	5HPYBHH12010	BOLT, 3/8" X 1" GR. 5
28	1	"	5HPYBHH16105	BOLT, 1/2" X 3" GR. 5
29	16	"	5HPYBCR10010	CARR. BOLT, 5/16" X 1" GR. 5
30	9	"	5HPYBCR12010	CARR. BOLT, 3/8" X 1" GR. 5
31	7	"	5HPYBCR12020	CARR. BOLT, 3/8" X 1-1/4" GR. 5
32	1	"	5HPYBCR12015	CARR. BOLT, 3/8" X 1-1/2" GR. 5
33	10	"	5HPYSFS12005	FLAT HEAD SOCKET CAP SCREW, 3/8" X 1-1/4"
34	16	"	5HPYWFL10005	WASHER, FLAT, 5/16" USS
35	17	"	5HPYWFL12005	WASHER, FLAT, 3/8" USS
36	2	"	5HPYWFL16005	WASHER, FLAT, 1/2" USS
37	2	"	5HPYWLO10005	WASHER, LOCK, 5/16"
38	31	"	5HPYWLO12005	WASHER, LOCK, 3/8"
39	2	"	5HPYNHX10005	HEX NUT, 5/16"
40	31	"	5HPYNHX12005	HEX NUT, 3/8"-16
41	16	"	5HPYNTL10005	HEX NUT, TOP LOCK, 5/16"-18
42	1	"	5HPYNTL16005	HEX NUT, TOP LOCK, 1/2"-13

NOTE: " MEANS SAME AS PREVIOUS MODEL

— MEANS NOT USED ON THIS MODEL

* MEANS NOT SHOWN

FIGURE 5
EXPELLER/DISCHARGE GATE/PAN

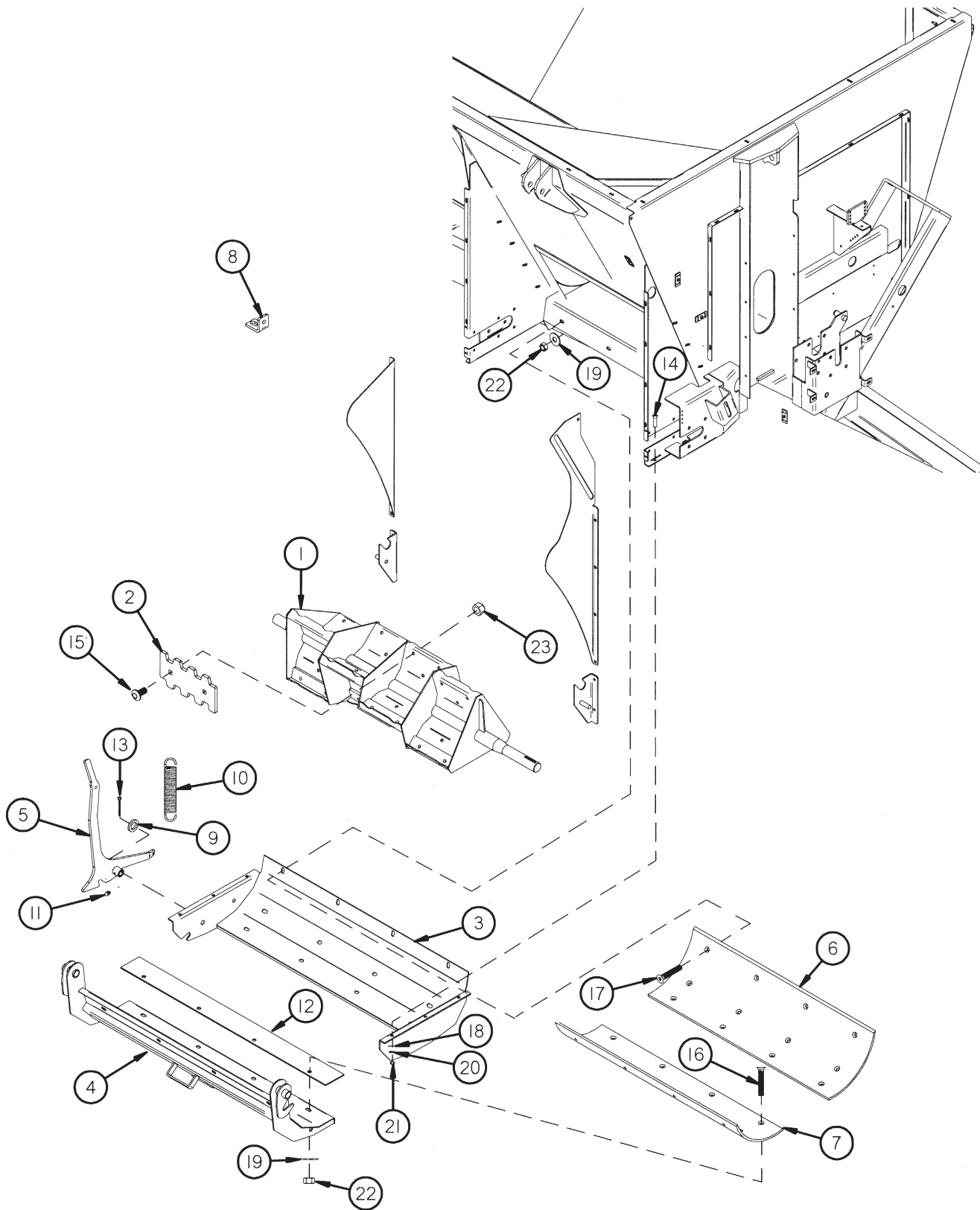


FIGURE 5

EXPELLER/DISCHARGE GATE/PAN

QTY

<u>ITEM</u>	<u>2320</u>	<u>2326</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	"	5HPTS67	EXPELLER
2	12	"	5HPTS68	EXPELLER PADDLE
3	1	"	5HPTS72	SWING AWAY PAN FRAME
4	1	"	5HPTS73	SWING AWAY PAN
5	1	"	5HPTS74	PAN LATCH HANDLE
6	1	"	5HPTS75	EXPELLER BACK POLY
7	1	"	5HPTS76	EXPELLER PAN POLY
8	1	"	5HP56N146	SHIELD ANGLE
9	3	"	5HPT73	SPACER
10	1	"	5HPK103	SPRING
11	1	"	5HPG89	GREASE ZERK
12	1	"	5HPTS18	PAN RUBBER SEAL
13	1	"	5HPYPCT06010	COTTER PIN, 3/16" X 1-1/4"
14	6	"	5HPYBCR10010	CARR. BOLT, 5/16" X 1" GR. 5
15	24	"	5HPYBCR16019	SHAKER SCREEN BOLT, 1/2" X 1-3/4" GR. 8
16	20	"	5HPYSFS16010	FLAT HEAD SOCKET CAP SCREW, 1/2" X 1-1/2"
17	4	"	5HPYSFS16020	FLAT HEAD SOCKET CAP SCREW, 1/2" X 1-3/4"
18	6	"	5HPYWFL10005	WASHER, FLAT, 5/16" USS
19	24	"	5HPYWFL16005	WASHER, FLAT, 1/2" USS
20	6	"	5HPYWLO10005	WASHER, LOCK, 5/16"
21	6	"	5HPYNHX10005	HEX NUT, 5/16"
22	24	"	5HPYNRL16005	HEX NUT, REVERSIBLE-SIDE LOCK, 1/2"-13
23	24	"	5HPYNL16006	HEX NUT, TOP LOCK, 1/2"-13 GR. 9

NOTE: " MEANS SAME AS PREVIOUS MODEL

FIGURE 6

INPUT SHAFT/EXPELLER DRIVE

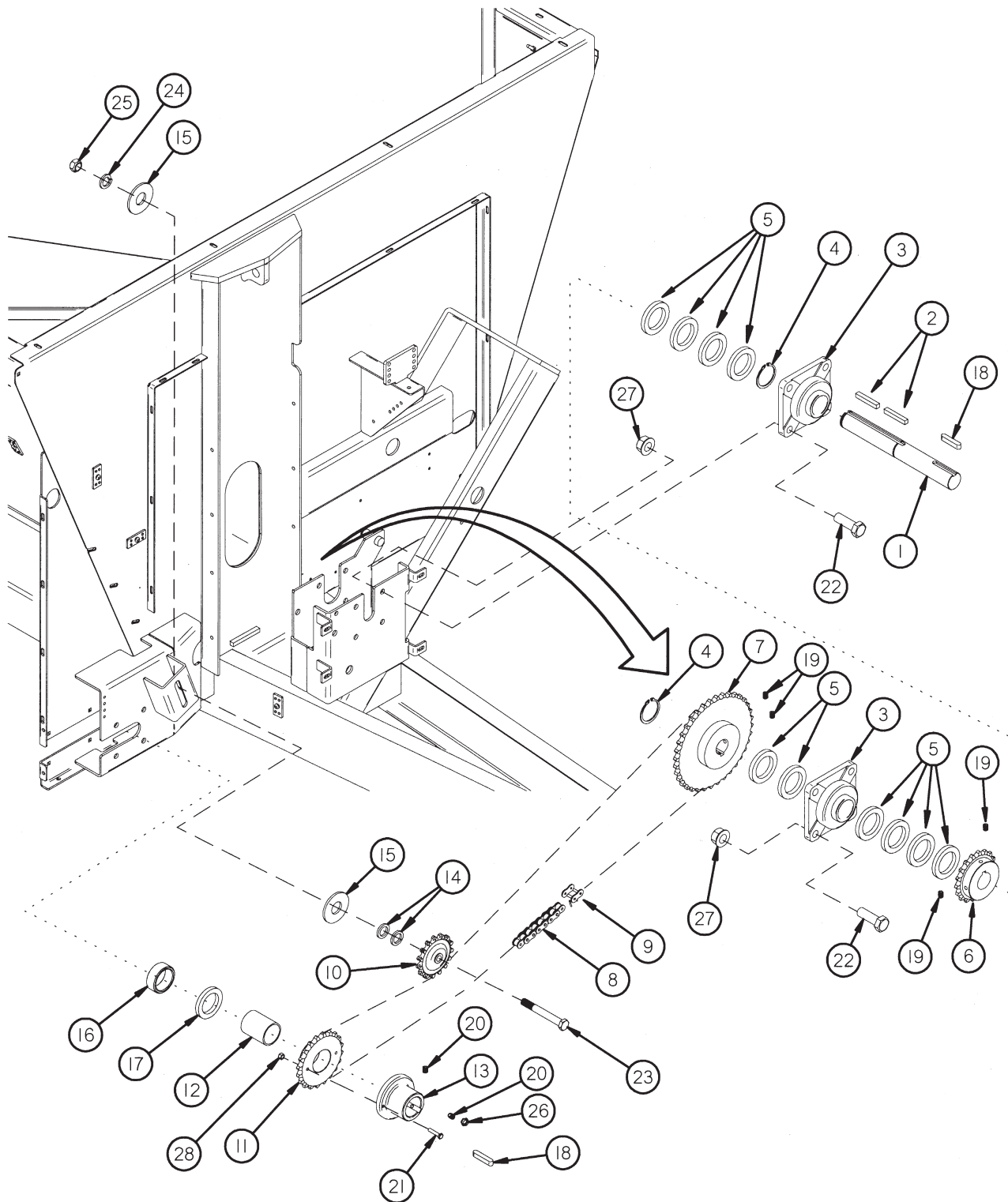


FIGURE 6

INPUT SHAFT/EXPELLER DRIVE

<u>QTY</u>			<u>PART #</u>	<u>DESCRIPTION</u>
<u>ITEM</u>	<u>2320</u>	<u>2326</u>		
1	1	"	5HPTS77	INPUT SHAFT
2	2	"	5HP16SV90	3/8" X 1-1/4" SQ. KEY
3	2	"	5HP12V67	BEARING
4	2	"	5HP12V62	SNAP RING
5	A/R	"	5HP16SV374	SPACER
*	A/R	"	5HP16SV375	SPACER
*	A/R	"	5HP16SV439	SPACER
*	1	"	5HP33SV29	SPACER
6	1	"	5HPTS35	SPROCKET/60B18 (STANDARD - 540 RPM)
*	1	"	5HPTS36	SPROCKET/ASSY 13T (OPTIONAL - 540 RPM & 1000 RPM)
*	1	"	5HPTS37	SPROCKET/60B15T (OPT. - 540 RPM) (STANDARD - 1000 RPM)
*	1	"	5HPTS38	SPROCKET/60B20 (OPTIONAL - 540 RPM)
*	1	"	5HPTS364	SPROCKET/60B16 (OPTIONAL - 1000 RPM)
7	1	"	5HPTS79	SPROCKET/60B36 (STANDARD - 540 RPM)
*	1	"	5HPTS80	SPROCKET/EXP DRIVE ASSY 30T (OPTIONAL - 540 RPM)
*	1	"	5HPTS81	SPROCKET/60X27T (OPTIONAL - 540 RPM)
*	1	"	5HPTS38	SPROCKET/60B20 (OPTIONAL - 1000 RPM)
*	1	"	5HPTS318	SPROCKET/ASSY 16T (OPTIONAL - 1000 RPM)
*	1	"	5HPTS365	SPROCKET/ASSY 15T (OPTIONAL - 1000 RPM)
*	1	"	5HPTS366	SPROCKET/ASSY 13T (OPTIONAL - 1000 RPM)
8	1	"	5HPTS82	CHAIN/ROLLER #60HE X 100 (540 RPM - 36T SPROCKET)
*	1	"	5HPTS367	CHAIN/ROLLER #60HE X 97 (540 RPM - 30T SPROCKET)
*	1	"	5HPTS368	CHAIN/ROLLER #60HE X 96 (540 RPM - 27T SPROCKET)
*	1	"	5HPTS316	CHAIN/ROLLER #60HE X 92 (1000 RPM - 20T SPROCKET)
*	1	"	5HPTS369	CHAIN/ROLLER #60HE X 90 (1000 RPM - 16T SPROCKET)
*	1	"	5HPTS370	CHAIN/ROLLER #60HE X 89 (1000 RPM - 15T SPROCKET)
*	1	"	5HPTS371	CHAIN/ROLLER #60HE X 88 (1000 RPM - 13T SPROCKET)

NOTE: * MEANS NOT SHOWN

" MEANS SAME AS PREVIOUS MODEL

A/R: AS REQUIRED

INPUT SHAFT/EXPELLER DRIVE

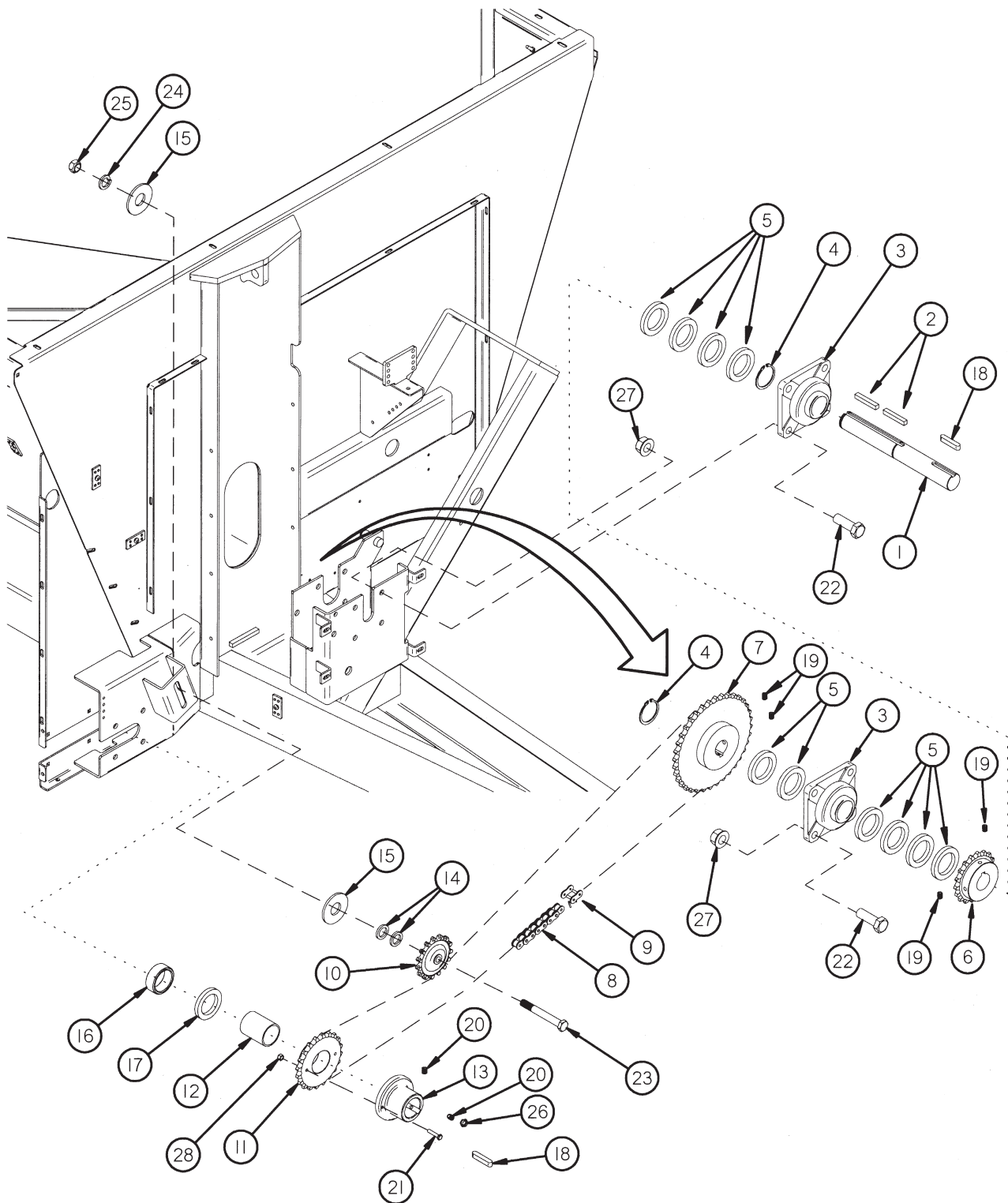


FIGURE 6

INPUT SHAFT/EXPELLER DRIVE

<u>QTY</u>				
<u>ITEM</u>	<u>2320</u>	<u>2326</u>	<u>PART #</u>	<u>DESCRIPTION</u>
9	1	"	5HPTS40	LINK/CONNECTOR #60HE
10	1	"	5HPTS29	SPROCKET/IDLER ASSY
11	1	"	5HPTS84	SPROCKET/ASSY 20T
12	1	"	5HPTS85	BUSHING/BRONZE
13	1	"	5HPTS86	EXPELLER SOLID SHEAR HUB
14	A/R	"	5HPT73	SPACER
15	2	"	5HPF129	TIGHTENER WASHER
16	1	"	5HPTS329	EXPELLER DRIVE SPACER
17	A/R	"	5HPS36	SHIM, 3/16" THICK
*	A/R	"	5HPS409	SHIM, 1/8" THICK
18	2	"	5HPS138	3/8" X 2-3/8" SQ. KEY W/ ROUND ENDS
19	4	"	5HPYSKP10010	SET SCREW, SOCKET, KNURLED CUP PT, 5/16" - 18 X 3/8"
20	2	"	5HPYSKP12010	SET SCREW, SOCKET, KNURLED CUP PT, 3/8"-16 X 1/2"
21	2	"	5HPYBHH08027	BOLT, 1/4" X 1-1/2" GR. 8 YELLOW ZINC
*	4	"	5HPYBHH08027	BOLT, 1/4" X 1-1/2" GR. 8 YELLOW ZINC
22	8	"	5HPYBHH18005	BOLT, 9/16" X 1-1/2" GR. 5
23	1	"	5HPYBHH20055	BOLT, 5/8" X 3-1/2" GR. 5
24	1	"	5HPYWLO20005	WASHER, LOCK, 5/8"
25	1	"	5HPYNHX20005	HEX NUT, 5/8"-11
26	1	"	5HPYNJM12005	HEX NUT, JAM, 3/8"-16
27	8	"	5HPYNFG18005	SERRATED FLANGE NUT, 9/16"
28	2	"	5HPYNTL08005	HEX NUT, TOP LOCK, 1/4"-20

NOTE: * MEANS NOT SHOWN

" MEANS SAME AS PREVIOUS MODEL

A/R: AS REQUIRED

FIGURE 7
GUARDS/SHIELDS

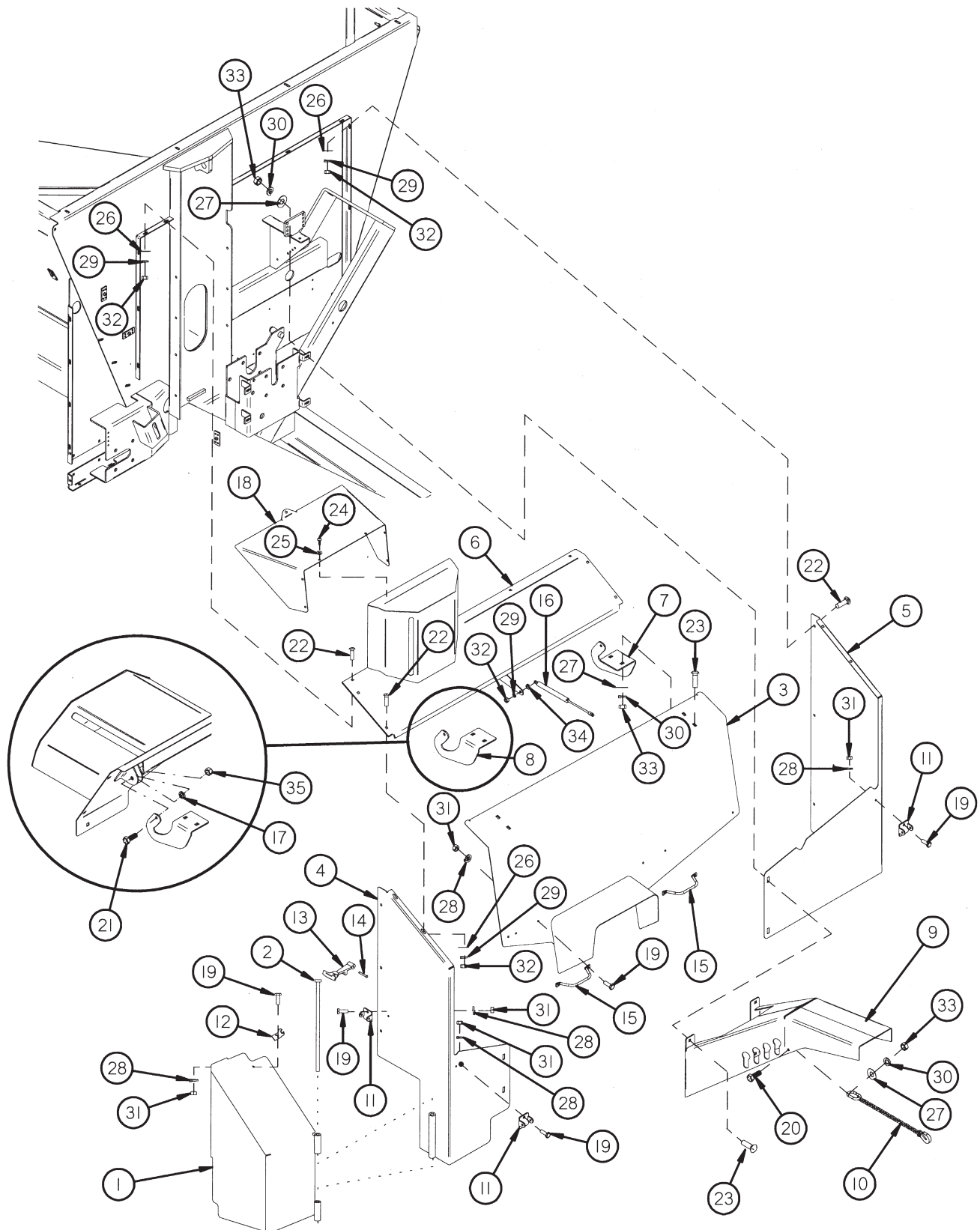


FIGURE 7

GUARDS/SHIELDS

<u>QTY</u>			<u>PART #</u>	<u>DESCRIPTION</u>
<u>ITEM</u>	<u>2320</u>	<u>2326</u>		
1	1	"	5HPTS87	EXPELLER DRIVE SHIELD
2	1	"	5HPTS88	EXPELLER SHIELD HINGE
3	1	"	5HPTS89	FRONT SHIELD DOOR
4	1	"	5HPTS90	FRONT SHIELD RIGHT SIDE
5	1	"	5HPTS91	FRONT SHIELD LEFT SIDE
6	1	"	5HPTS92	FRONT SHIELD TOP
7	1	"	5HPTS93	FRONT SHIELD HINGE RIGHT
8	1	"	5HPTS94	FRONT SHIELD HINGE LEFT
9	1	"	5HPTS95	HOSE HOLDER
10	1	"	5HPTS130	CHAIN PTO HOLDER
11	3	"	5HPX194	LATCH MOUNT
12	3	"	5HPX193	LATCH KEEPER
13	3	"	5HPX192	RUBBER LATCH
14	3	"	5HPX195	LATCH PIN
15	2	"	5HPTS96	SHIELD HANDLE
16	1	"	5HPTS97	GAS SPRING 100 LBS FORCE 13.74" EXT LNG
17	4	"	5HPTS331	SPACER
18	1	—	5HPTS13	FILLER SHIELD
19	8	"	5HPYBHH08015	BOLT, 1/4" X 1/2" GR. 5
20	1	"	5HPYBHH12010	BOLT, 3/8" X 1" GR. 5
21	2	"	5HPYBHH12035	BOLT, 3/8" X 1-1/4" GR. 5
22	13	"	5HPYBCR10030	CARR. BOLT, 5/16" X 3/4" GR. 5
23	8	"	5HPYBCR12010	CARR. BOLT, 3/8" X 1" GR. 5
24	7	—	5HPYSSD08005	SELF DRILLING SCREW, 1/4"-14 X 1"
25	7	—	5HPYWFL06010	WASHER, FLAT, 3/16" USS
26	13	"	5HPYWFL10005	WASHER, FLAT, 5/16" USS
27	9	"	5HPYWFL12005	WASHER, FLAT, 3/8" USS
28	8	"	5HPYWLO08005	WASHER, LOCK, 1/4"
29	13	"	5HPYWLO10005	WASHER, LOCK, 5/16"
30	9	"	5HPYWLO12005	WASHER, LOCK, 3/8"
31	8	"	5HPYNHX08005	HEX NUT, 1/4"-20
32	13	"	5HPYNHX10005	HEX NUT, 5/16"
33	9	"	5HPYNHX12005	HEX NUT, 3/8"-16
34	2	"	5HPYNJM10005	HEX NUT, JAM, 5/16"
35	2	"	5HPYNTL12005	HEX NUT, TOP LOCK, 3/8"-16

NOTE: " MEANS SAME AS PREVIOUS MODEL
— MEANS NOT USED ON THIS MODEL

FIGURE 8
SPLASH GUARDS/RAILS

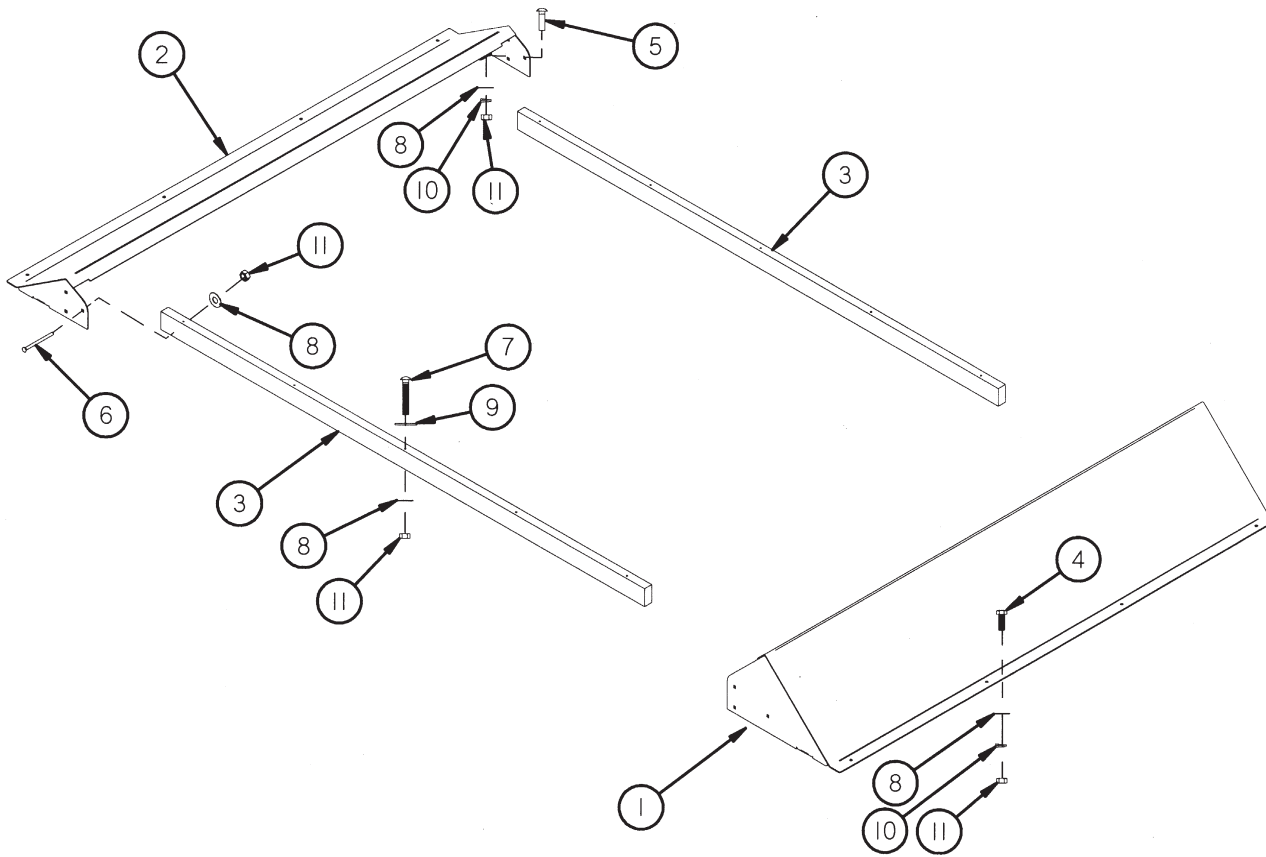


FIGURE 8

SPLASH GUARDS/RAILS

<u>QTY</u>				
<u>ITEM</u>	<u>2320</u>	<u>2326</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	——	5HPTS99	SPLASH GUARD
*	——	1	5HPTS310	SPLASH GUARD
2	1	——	5HPTS199	BACK SPLASH GUARD
*	——	1	5HPTS311	BACK SPLASH GUARD
3	2	“	5HPTS100	WOOD RAIL
4	8	“	5HPYBHH12010	BOLT, 3/8" X 1" GR. 5
5	4	“	5HPYBCR12010	CARR. BOLT, 3/8" X 1" GR. 5
6	12	“	5HPYBCR12080	CARR. BOLT, 3/8" X 3-1/4" GR. 5
7	10	“	5HPYBCR12123	CARR. BOLT, 3/8" X 6-1/2" GR. 5
8	34	“	5HPYWFL12005	WASHER, FLAT, 3/8" USS
9	10	“	5HPYWFL16005	WASHER, FLAT, 1/2" USS
10	12	“	5HPYWLO12005	WASHER, LOCK, 3/8"
11	34	“	5HPYNHX12005	HEX NUT, 3/8"-16

NOTE: * MEANS NOT SHOWN

—— MEANS NOT USED ON THIS MODEL

“ MEANS SAME AS PREVIOUS MODEL

FIGURE 9

HYDRAULICS

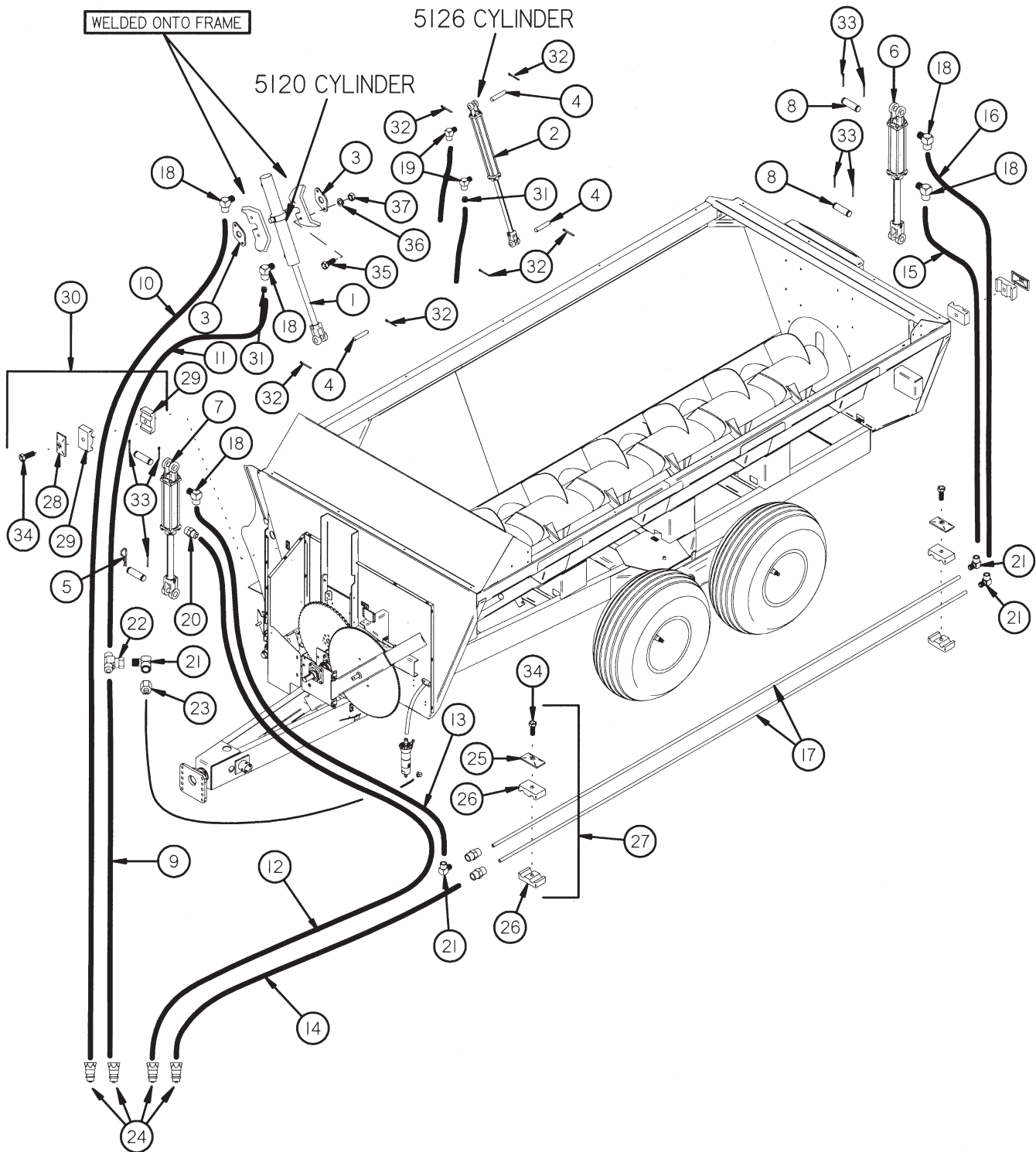


FIGURE 9

HYDRAULICS

<u>QTY</u>			<u>PART #</u>	<u>DESCRIPTION</u>
<u>ITEM</u>	<u>2320</u>	<u>2326</u>		
1	1	—	5HPTS101	2 X 16 TRUNNION MOUNT CYLINDER
2	—	1	5HP23N111A	2 X 16 CYLINDER
3	2	—	5HPTS103	CYLINDER MOUNT CLIP
4	1	2	5HPLW55	CYLINDER PIN
5	1	"	5HPYPHR02010	HAIR PIN
6	1	"	5HPTS105	3-1/4 X 8 CYLINDER
7	1	"	5HPTS104	3 x 8 CYLINDER
8	4	"	5HPT143	CYLINDER PIN
9	1	"	5HPTS110	HYD. HOSE 1/2" X 91" -8 JIC FEMALE SWIVEL & 1/2 MP
10	1	—	5HPTS106	HYD. HOSE 1/2" X 186" -8 JIC FEMALE SWIVEL & 1/2 MP
*	—	1	5HPTS107	HYD. HOSE 1/2" X 197" -8 JIC FEMALE SWIVEL & 1/2 MP
11	1	—	5HPTS108	HYD. HOSE 1/2" X 91" -8 JIC FEMALE SWIVEL & -8 JIC FEMALE SWIVEL
*	—	1	5HPTS109	HYD. HOSE 1/2" X 94" -8 JIC FEMALE SWIVEL & -8 JIC FEMALE SWIVEL
12	1	"	5HPTS111	HYD. HOSE 1/2" X 154" -8 JIC FEMALE & 1/2 MP
13	1	"	5HPTS112	HYD. HOSE 1/2" X 56" -8 JIC FEMALE SWIVEL & -8 JIC MALE
14	1	"	5HPTS113	HYD. HOSE 1/2" X 112" -8 JIC MALE & 1/2 MP
15	1	—	5HPTS114	HYD. HOSE 1/2" X 38" -8 JIC FEMALE SWIVEL & -8 JIC MALE
*	—	1	5HPTS70	HYD. HOSE 1/2" X 52" -8 JIC FEMALE SWIVEL & -8 JIC MALE
16	1	—	5HPTS115	HYD. HOSE 1/2" X 49" -8 JIC FEMALE SWIVEL & -8 JIC MALE
*	—	1	5HPTS71	HYD. HOSE 1/2" X 42" -8 JIC FEMALE SWIVEL & -8 JIC MALE
17	2	"	5HPTS116	HYDRAULIC LINE
18	5	3	5HPTS135	-8 MALE O-RING TO -8 MALE JIC 90°
19	—	2	5HPTS136	3/8" MALE PIPE TO -8 MALE JIC 90°
20	1	"	5HPTS137	-8 MALE O-RING TO -8 MALE JIC
21	4	"	5HPTFM38	-8 FEMALE JIC SWIVEL TO -8 MALE JIC 90°
22	1	"	5HPTS139	-8 JIC SWIVEL BRANCH TEE
23	1	"	5HPTS299	-8 MALE JIC TO 3/8" FEMALE PIPE
24	4	"	5HPDWM205	QUICK COUPLER MALE
25	3	"	5HPTS117	LINE CLAMP CAP
26	6	"	5HPTS118	LINE CLAMP BLOCK
27	3	"	5HPTFM91	DOUBLE STEEL LINE CLAMP
28	12	"	5HPGM69	LINE CLAMP CAP
29	24	"	5HPGM70	LINE CLAMP BLOCK
30	12	"	5HPGM9	HOSE CLAMP 1/2" TWIN (COMPLETE)
31	1	"	5HPTS197	ORIFACE .031
32	2	4	5HPYPCT05010	COTTER PIN, 5/32" X 1-1/2"
33	7	"	5HPYPCT06005	COTTER PIN, 3/16" X 1-1/2"
34	15	"	5HPYBHH10030	BOLT, 5/16" X 1-1/2" GR. 5
35	4	—	5HPYBHH12035	BOLT, 3/8" X 1-1/4" GR. 5
36	4	—	5HPYWLO12005	WASHER, LOCK, 3/8"
37	4	—	5HPYNHX12005	HEX NUT, 3/8"-16

NOTE: * MEANS NOT SHOWN

— MEANS NOT USED ON THIS MODEL

" MEANS SAME AS PREVIOUS MODEL

FIGURE 10
TANDEM AXLES (2320)

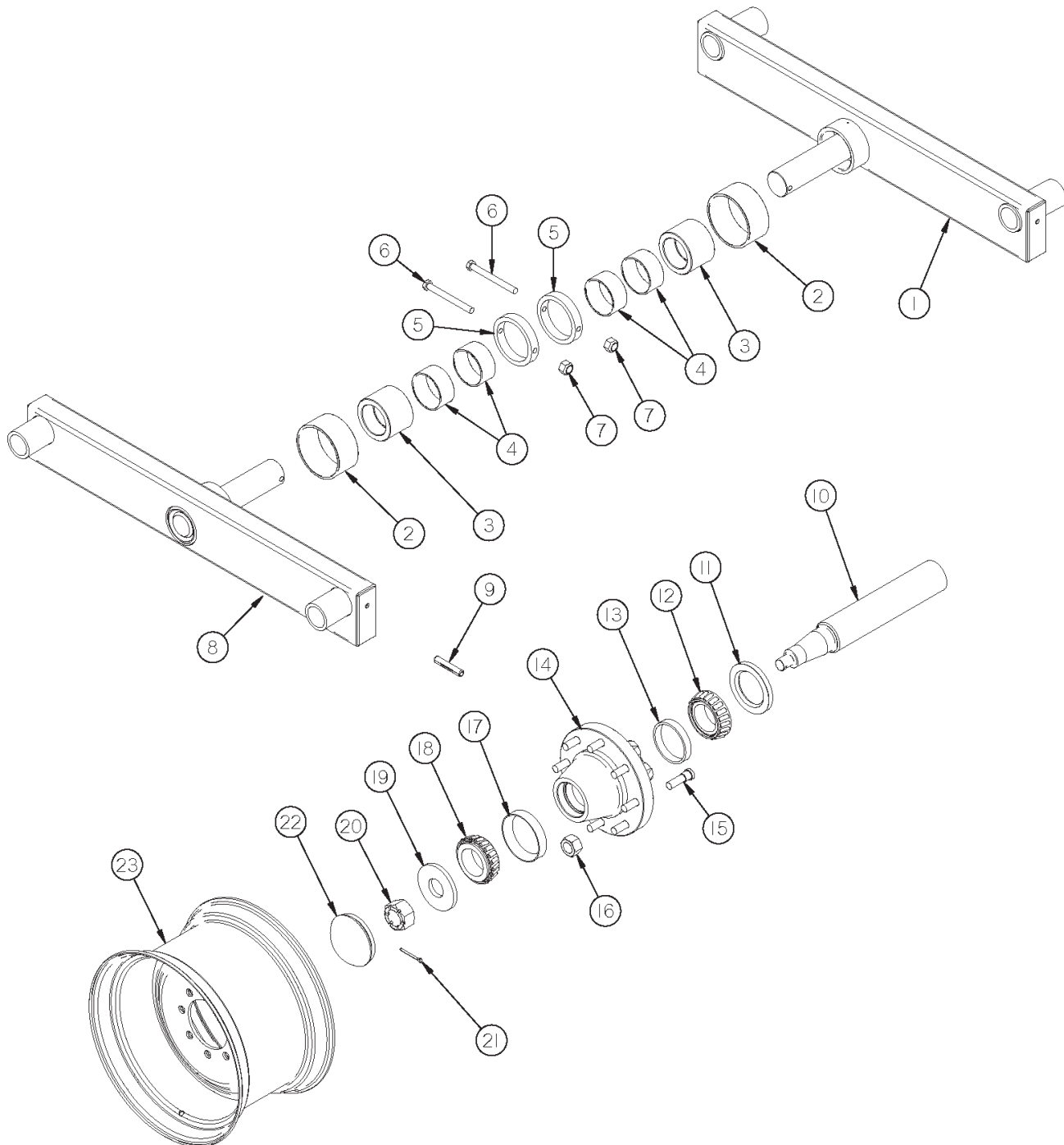


Figure 10

TANDEM AXLES (2320)

<u>ITEM</u>	<u>QTY</u> <u>2320</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	5HPTS314	LEFT TANDEM MID
*	1	5HPTS132	TANDEM BEAM LH
*	1	5HPTS131	LEFT TANDEM DROP
2	2	5HPB111	AXLE BEARING
3	2	5HPB58	AXLE BUSHING PHENOLIC
4	4	5HP16SV82	INNER AXLE BUSHING
5	2	5HP16SV78	COLLAR FOR AXLE
6	2	5HPYBHH16155	BOLT, 1/2" X 5" GR. 5
7	2	5HPYNTL16005	HEX NUT, TOP LOCK, 1/2"-13
8	1	5HPTS315	RIGHT TANDEM MID
*	1	5HPTS134	TANDEM BEAM RH
*	1	5HPTS133	RIGHT TANDEM DROP
9	4	5HPYPEX16020	EXPANSION PIN, 1/2" X 4"
10	4	5HP16SV203	SPINDLE 2.5 X 18.5
11	4	5HPB90	SEAL
12	4	5HP53461	INNER BEARING
13	4	5HPB91A	INNER RACE
14	4	5HP16SV398	HUB - 8 BOLT (INCLUDES INNER/OUTER RACES AND STUD BOLTS)
15	32	5HPYBSD20010	STUD BOLT, 5/8"-18 UNF X 2-1/2" (7/8" SHOULDER)
16	32	5HPYNWL20005	WHEEL NUT, 5/8"-18 UNF
17	4	5HPB94A	OUTER RACE
18	4	5HP53462	OUTER BEARING
19	4	5HPB4	WASHER
20	4	5HPYNSL28005	HEX NUT, SLOTTED, 7/8"-14
21	4	5HPYPCT05020	COTTER PIN, 5/32" X 1-3/4"
22	4	5HPB2	HUB CAP
23	4	5HP23N179	WHEEL 8.25 X 22.5
*	4	5HP12V36	WHEEL 14 X 16.1
*	4	5HP16SV89	WHEEL 13.5 X 22.5
*	4	5HP53463	COMPLETE HUB AND SPINDLE ASSEMBLY

NOTE: * MEANS NOT SHOWN

FIGURE 11
TANDEM AXLES (2326)

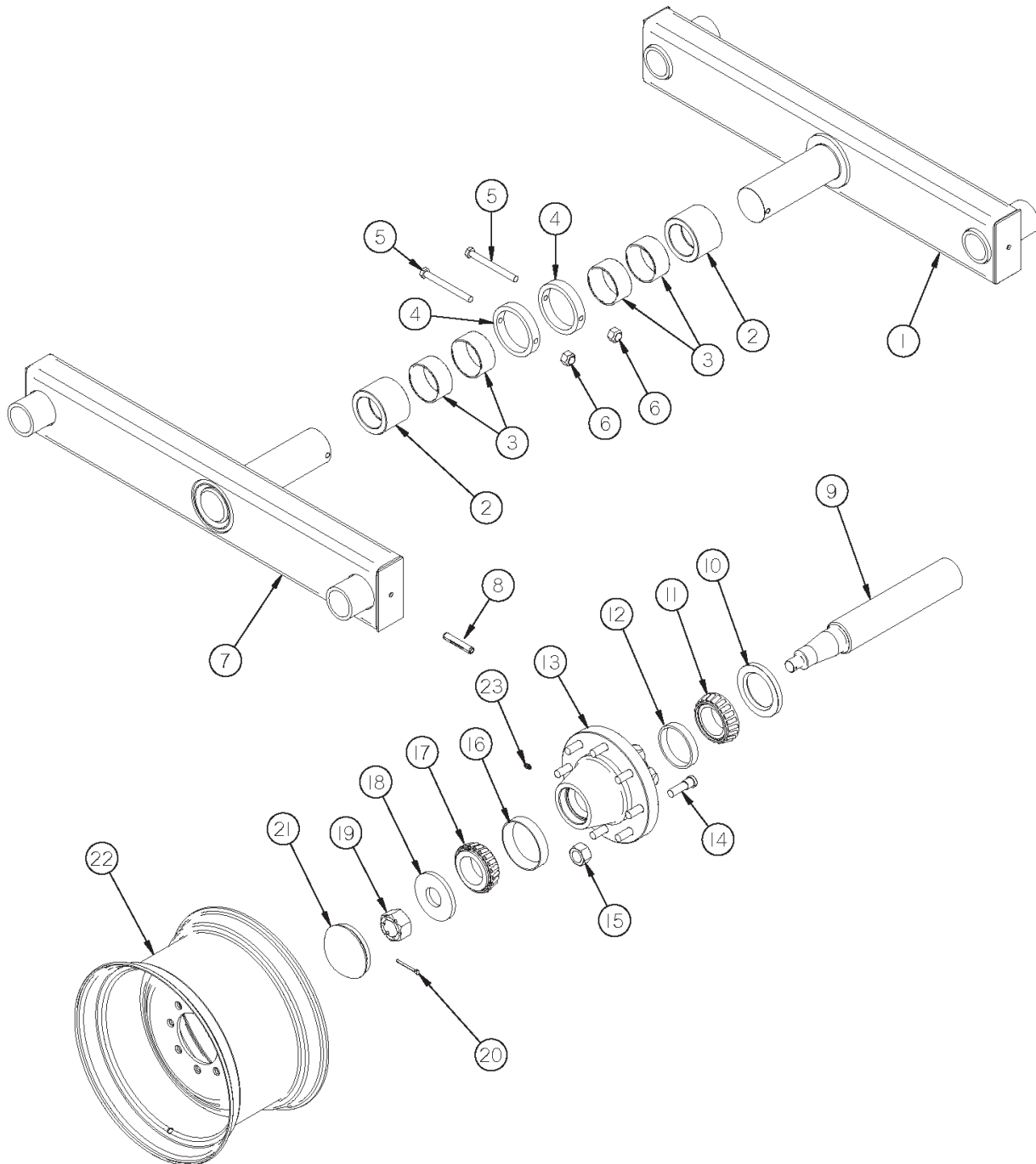


Figure 11

Tandem Axles (2326)

<u>ITEM</u>	<u>QTY</u> <u>2326</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	5HP33SV36	TANDEM BEAM LH
2	2	5HP16SV75	OUTER AXLE BEARING
3	4	5HP16SV83	INNER AXLE BEARING
4	2	5HP16SV214	COLLAR FOR AXLE
5	2	5HPYBHH16155	BOLT, 1/2" X 5" GR. 5
6	2	5HPYNLT16005	HEX NUT, TOP LOCK, 1/2"-13
7	1	5HP33SV77	TANDEM BEAM RH
8	4	5HPYPEX16020	EXPANSION PIN, 1/2" X 4"
9	4	5HP54577	SPINDLE 3 X 19.563
10	4	5HP54599	SEAL
11	4	5HP54597	INNER BEARING
12	4	5HP54593	INNER RACE
13	4	5HP54564	HUB - 8 BOLT (COMPLETE)
14	32	5HPYBSD20005	STUD BOLT, 5/8"-18 UNF X 2-1/4"
15	32	5HPYNWL20005	WHEEL NUT, 5/8"-18 UNF
16	4	5HP54594	OUTER RACE
17	4	5HP54598	OUTER BEARING
18	4	5HPB4	WASHER
19	4	5HPYNLSL28005	HEX NUT, SLOTTED, 7/8"-14
20	4	5HPYPCT05020	COTTER PIN, 5/32" X 1-3/4"
21	4	5HPB2	HUB CAP
22	4	5HP12V36	WHEEL 14 X 16.1
*	4	5HP33SV105	WHEEL 16 X 16.1
*	4	5HP16SV89	WHEEL 13.5 X 22.5
23	4	5HP54595	GREASE ZERK, 1/8"-27 NPT

NOTE: * MEANS NOT SHOWN

FIGURE 12

OILER KIT

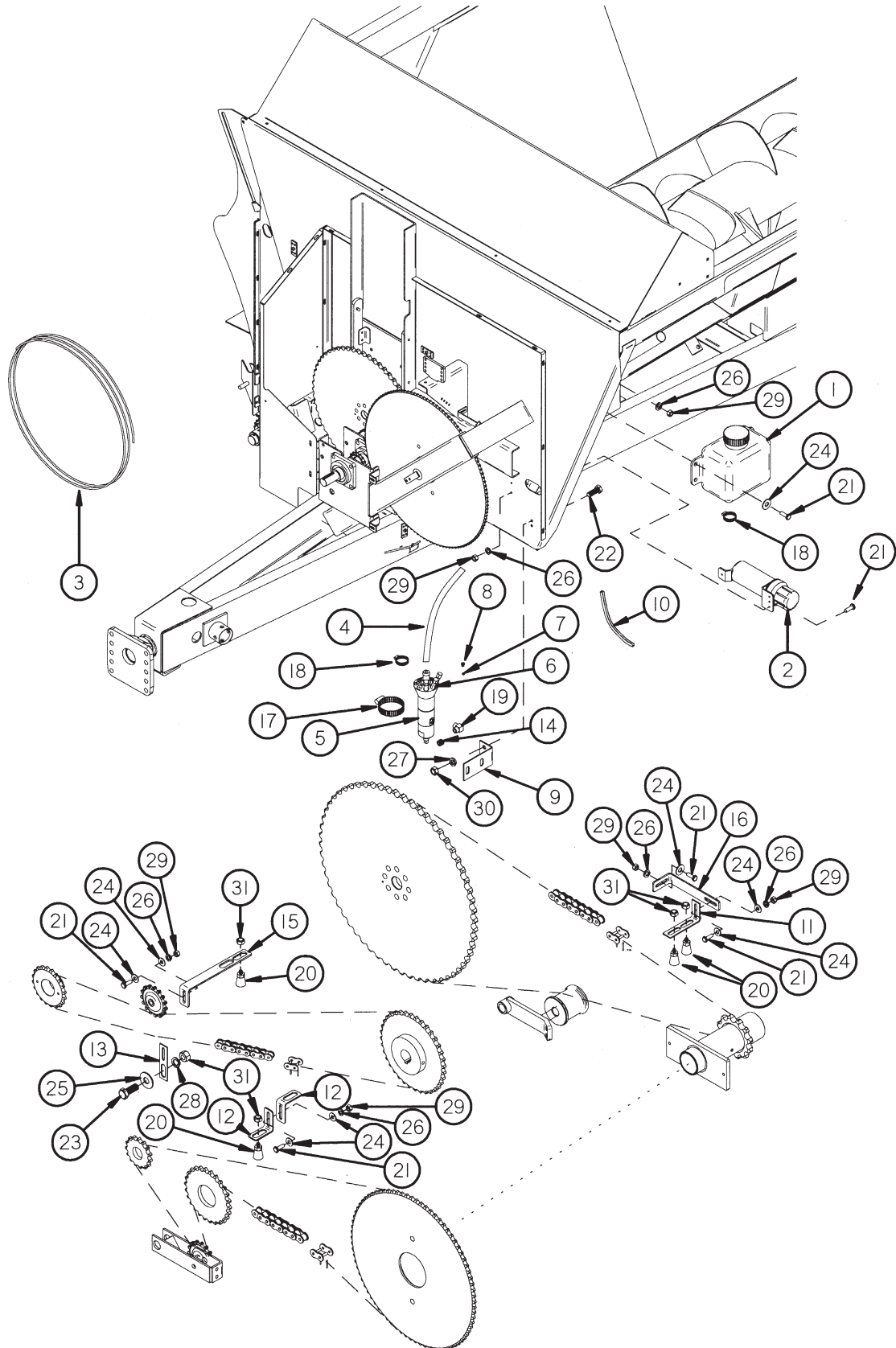


FIGURE 12

OILER KIT

<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
1	1	"	5HPHGV63	RESERVOIR
2	1	"	5HPS522	MANUAL HOLDER
3	1	"	5HPHGV71	OIL TUBE
4	1	"	5HPHGV66	FILLER HOSE
5	1	"	5HPHGV82	PUMP (COMPLETE)
6	4	"	5HPHGV86	STANDOFF
7	4	"	5HPHGV87	FERRULE
8	4	"	5HPHGV85	SLEEVE NUT
9	1	"	5HPHGV68	PUMP MOUNT BRACKET
10	1	"	5HPHGV77	EDGING
11	2	"	5HPHGV69	BRUSH BRACKET LONG
12	2	"	5HPTS98	OILER BRUSH BRACKET SINGLE
13	1	"	5HPHGV70	BRACKET MOUNT
14	1	"	5HPTS198	ORIFACE .015 (4XHX7-S)
15	1	"	5HPTS322	EXTRA LONG BRUSH BRACKET
16	1	"	5HPTS196	OILER HANGER
*	1	"	5HPHGV62	COMPLETE OILER KIT
17	1	"	5HPHGV74	2" HOSE CLAMP
18	2	"	5HPHGV75	1" HOSE CLAMP
19	1	"	5HPHGV65	O-RING/JIC ELBOW
20	4	"	5HPHGV67	BRUSH
21	11	"	5HPYBHH08100	BOLT, 1/4" X 3/4" GR. 5
22	2	"	5HPYBHH12135	BOLT, 3/8" X 3/4" GR. 5
23	1	"	5HPYBHH16045	BOLT, 1/2" X 1-1/4" GR. 5
24	11	"	5HPYWFL08005	WASHER, FLAT, 1/4" USS
25	1	"	5HPYWFL16005	WASHER, FLAT, 1/2" USS
26	11	"	5HPYWLO08005	WASHER, LOCK, 1/4"
27	2	"	5HPYWLO12005	WASHER, LOCK, 3/8"
28	1	"	5HPYWLO16005	WASHER, LOCK, 1/2"
29	11	"	5HPYNHX08005	HEX NUT, 1/4"-20
30	2	"	5HPYNHX12005	HEX NUT, 3/8"-16
31	5	"	5HPYNHX16005	HEX NUT, 1/2"

NOTE: " MEANS SAME AS PREVIOUS MODEL

*** MEANS NOT SHOWN**

FIGURE 13
FRONT GREASE LINES

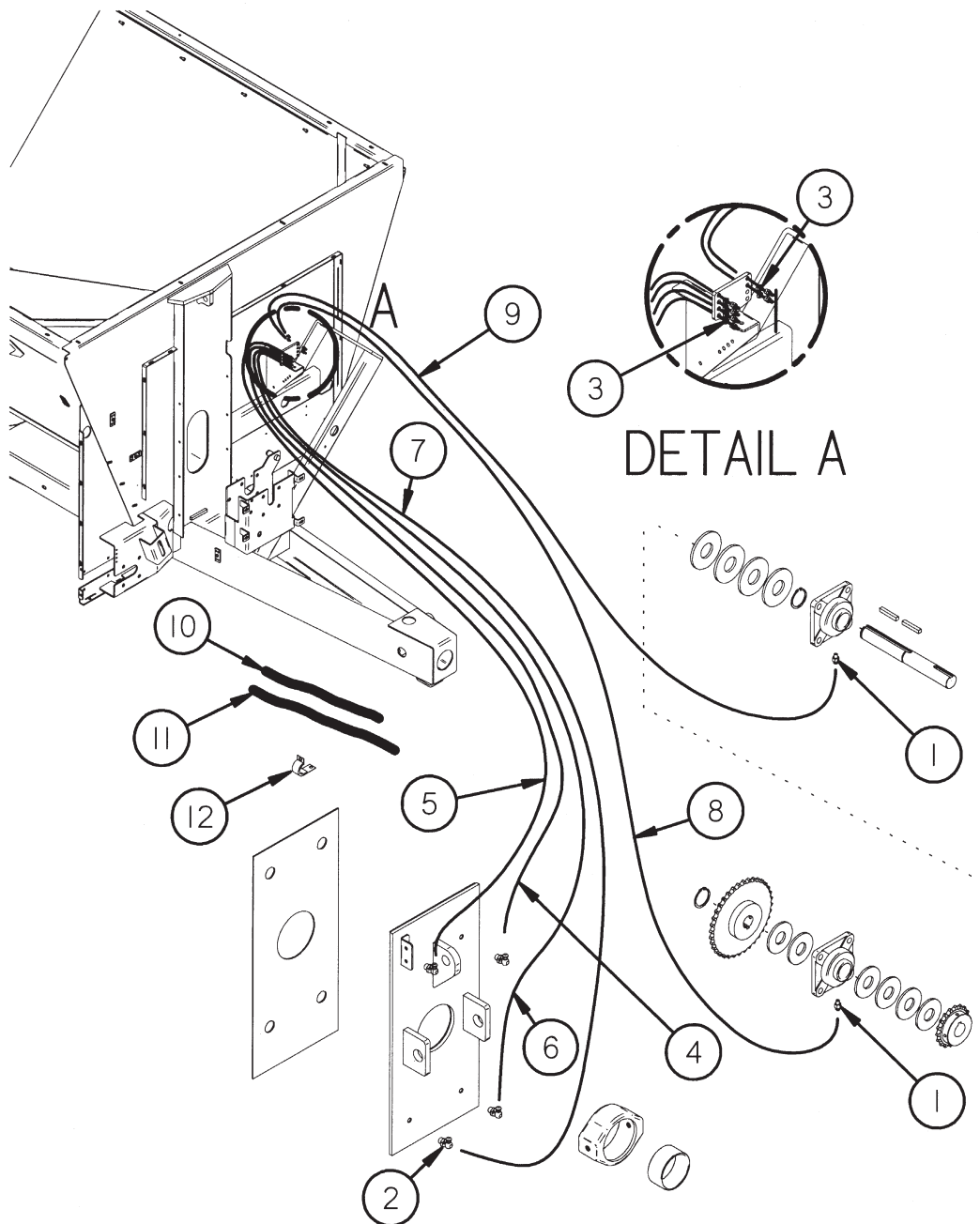


FIGURE 13

FRONT GREASE LINES

<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
1	2	"	5HPTS323	1/4"-28 TO 1/8" PIPE ADAPTER
2	4	"	5HPGM30	1/8" 90° GREASE LINE ADAPTER
3	6	"	5HPYNML99005	M10-1.0 JAM NUT A2 SS
4	1	"	5HPTS119	GREASE LINE - 23"
5	1	"	5HPTS120	GREASE LINE - 29.5"
6	1	"	5HPTS121	GREASE LINE - 38.5"
7	1	"	5HPTS122	GREASE LINE - 45.5"
8	1	"	5HPTS123	GREASE LINE - 60"
9	1	"	5HPTS124	GREASE LINE - 63.75"
10	1	"	5HPTS246	SPLIT LOOM 3/4" X 18"
11	1	"	5HPTS305	SPLIT LOOM 3/4" X 24"
12	1	"	5HPHGV162	1/2" RUBBER WIRE HOLDER

NOTE: " MEANS SAME AS PREVIOUS MODEL

FIGURE 14
LIGHTING

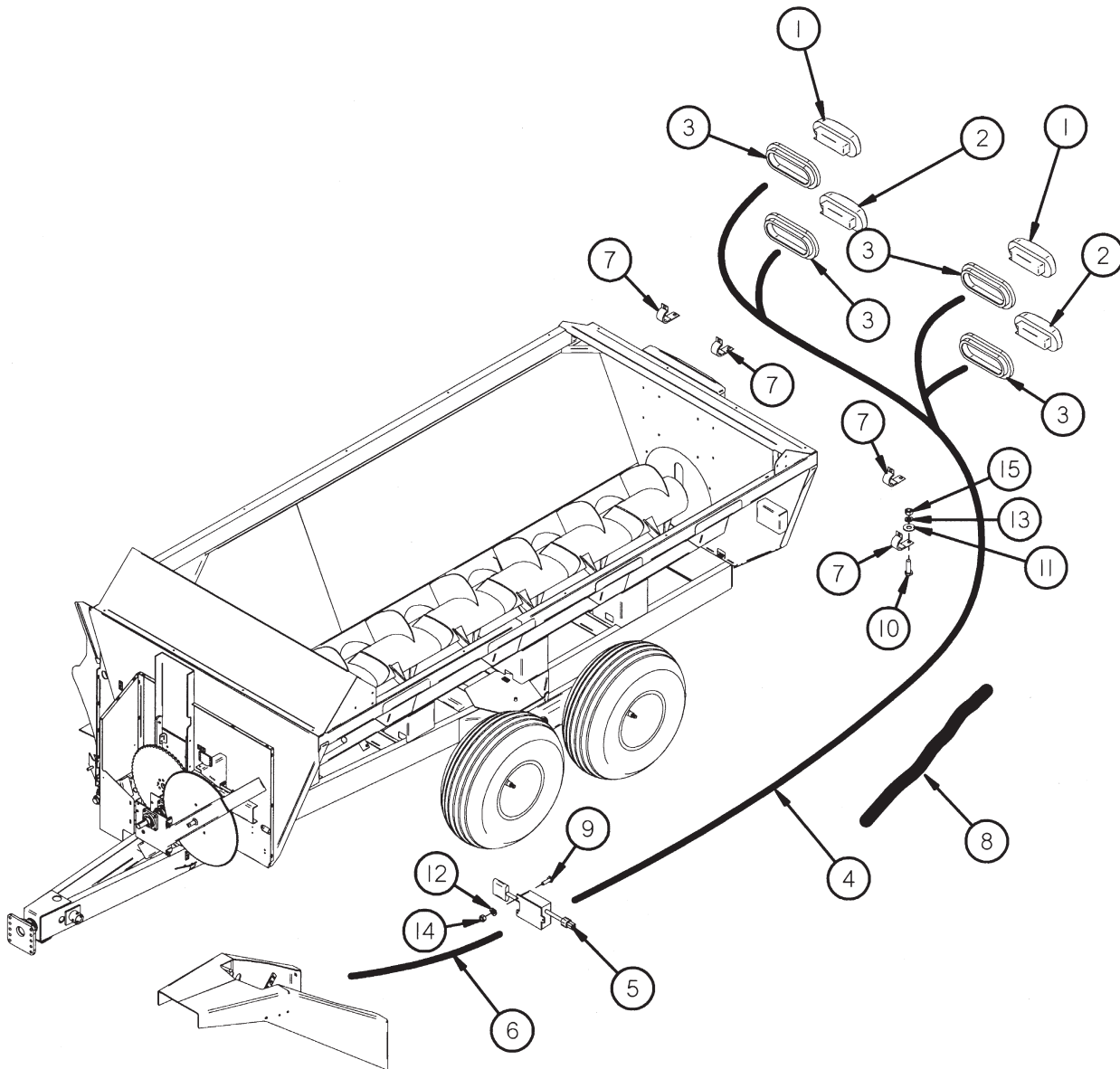


FIGURE 14

LIGHTING

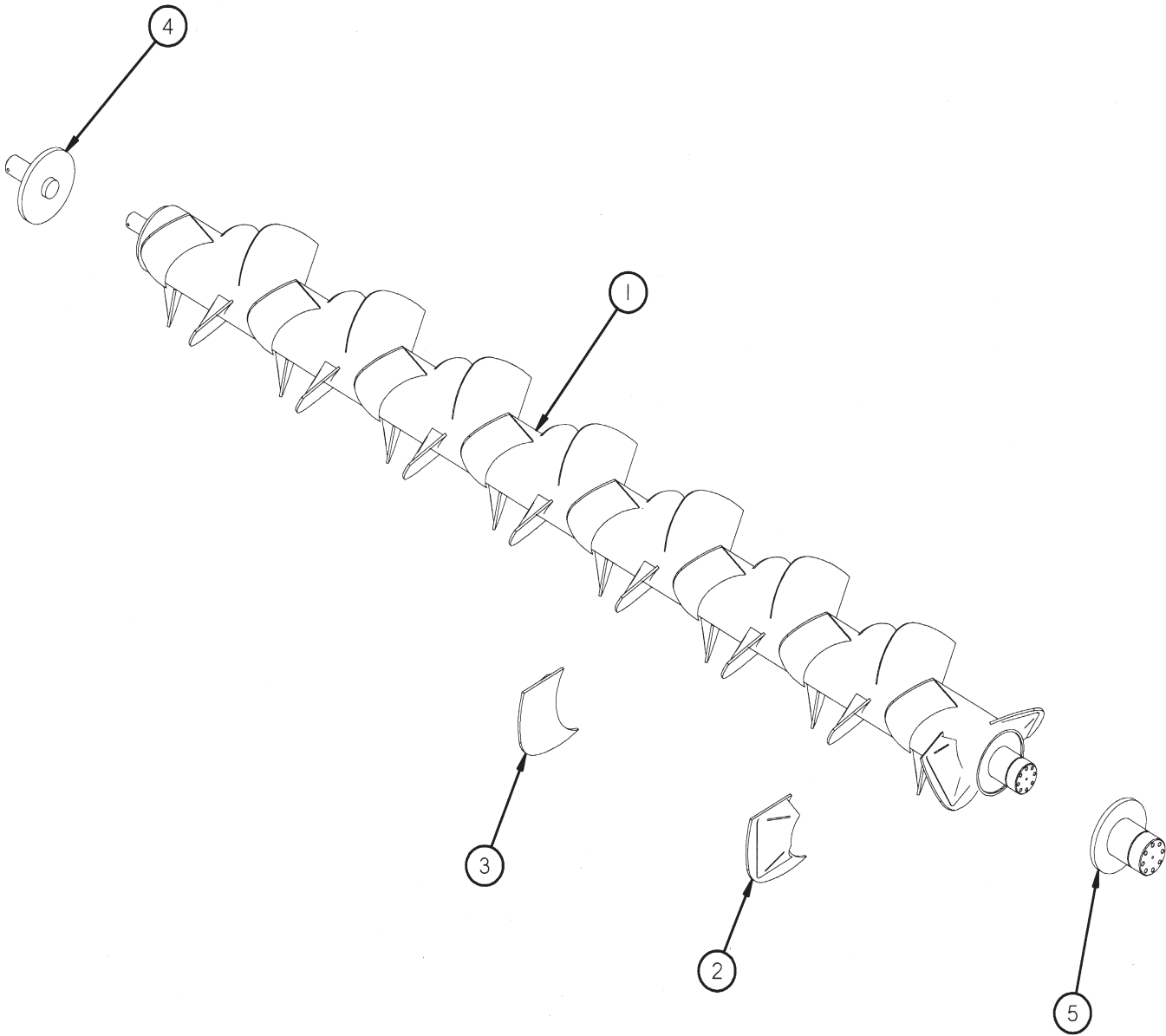
<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
1	2	"	5HPS309	YELLOW HAZARD LIGHT
2	2	"	5HPS310	RED TAIL LIGHT
3	4	"	5HPS308	RUBBER LIGHT MOUNT
4	1	"	5HP56N155	TAIL LIGHT LOOM
5	1	"	5HPS441	FLASHER MODULE
6	1	"	5HPTS317	HARNESS MODULE TO TRACTOR
7	4	"	5HPHGV162	1/2" RUBBER WIRE HOLDER
8	1	"	5HPTS129	SPIRAL WRAP, 30"
9	3	"	5HPYBHH08100	BOLT, 1/4" X 3/4" GR. 5
10	4	"	5HPYBHH10105	BOLT, 5/16" X 3/4" GR. 5
11	4	"	5HPYWFL10005	WASHER, FLAT, 5/16" USS
12	3	"	5HPYWLO08005	WASHER, LOCK, 1/4"
13	4	"	5HPYWLO10005	WASHER, LOCK, 5/16"
14	3	"	5HPYNHX08005	HEX NUT, 1/4"-20
15	4	"	5HPYNHX10005	HEX NUT, 5/16"
*	1	"	5HPTLPC	TRACTOR CORD

NOTE: * MEANS NOT SHOWN

" MEANS SAME AS PREVIOUS MODEL

Figure 15

AUGER

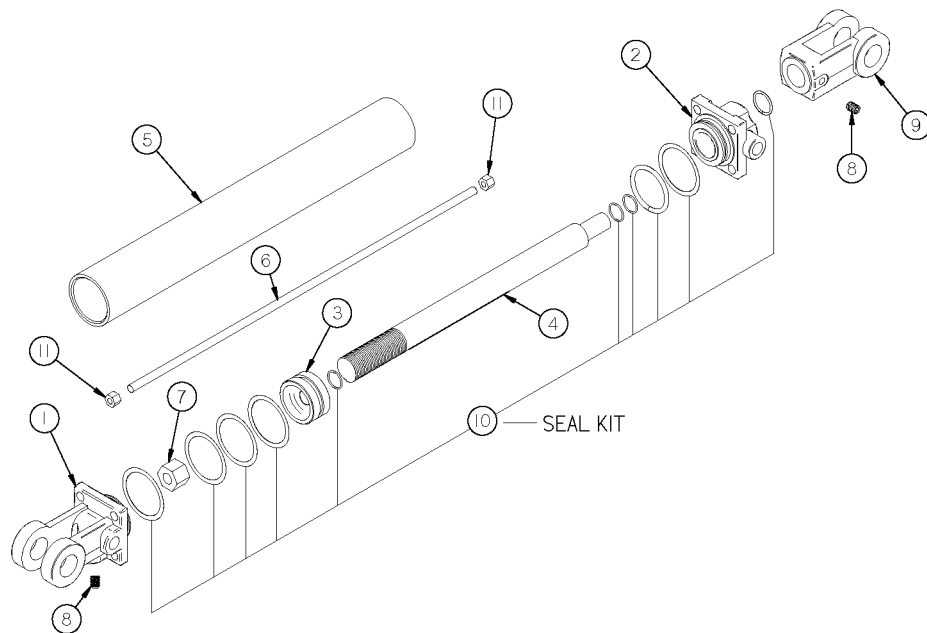


<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>5120</u>	<u>5126</u>		
1	1	"	5HPTS1	AUGER
2	2	"	5HPTS125	AUGER PADDLE FRONT
3	37	"	5HPTS126	AUGER PADDLE REAR
4	1	"	5HPTS127	AUGER REAR ASSEMBLY
5	1	"	5HPTS128	AUGER INPUT ASSEMBLY

NOTE: " MEANS SAME AS PREVIOUS MODEL

Figure 16

Auger Front/Rear Hydraulic Cylinder



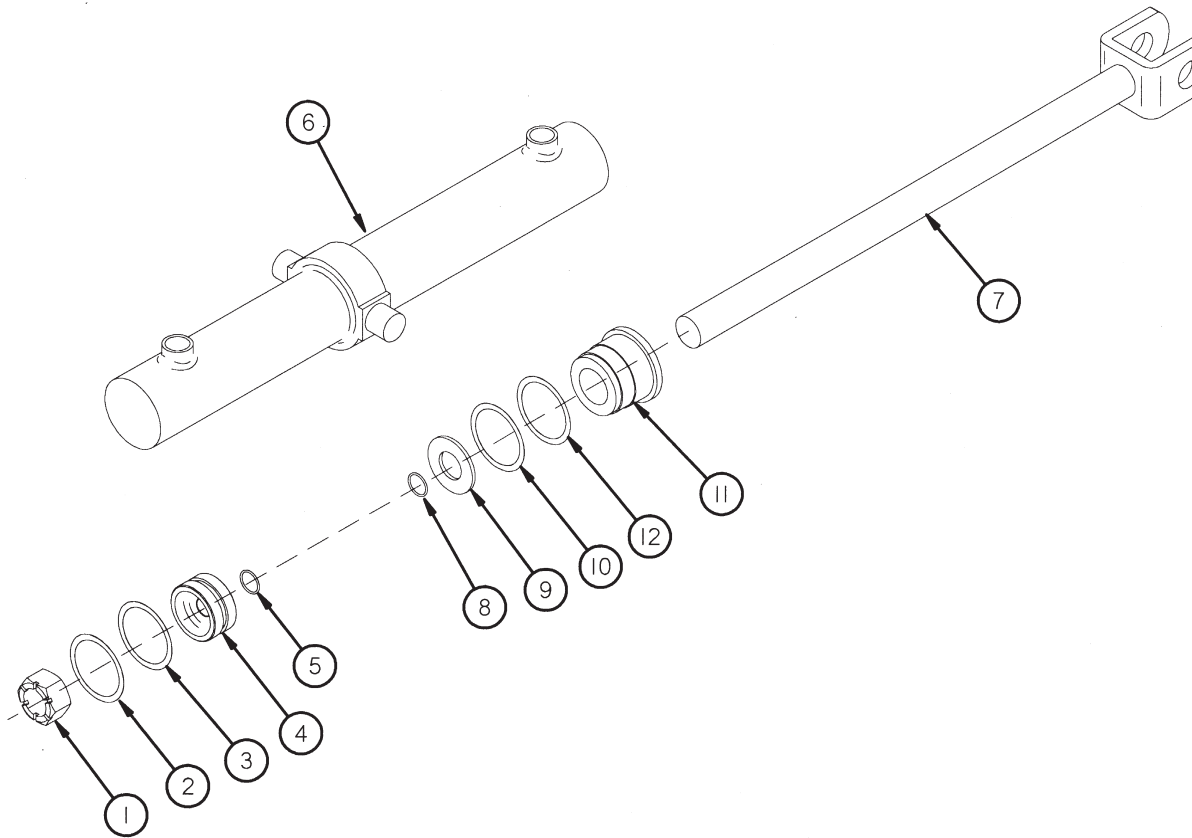
<u>ITEM</u>	<u>QTY</u>	<u>PART #</u>		<u>DESCRIPTION</u>
	<u>2320/2326</u>	<u>3" BORE</u>	<u>3-1/4" BORE</u>	
1	1	TS160	TS176	BASE (3/4-16 SAE PORT)
2	1	TS158	TS174	HEAD (3/4-16 SAE PORT)
3	1	TS159	TS175	PISTON NUT
4	1	TS156	TS172	ROD
5	1	TS157	TS173	TUBE
6	4	TS153	TS171	TIE ROD
7	1	TS145	TS166	PISTON NUT
8	1	TS152	"	PLUG ASSY (3/4-16 SAE)
9	1	TS155	"	CLEVIS ASSEMBLY
10	1	TS163	TS177	SEAL KIT
11	8	TS144	TS165	TIE ROD NUT

NOTE: " MEANS SAME AS PREVIOUS MODEL

FIGURE 17

2320 EXPELLER DOOR TRUNNION MOUNT

HYDRAULIC CYLINDER

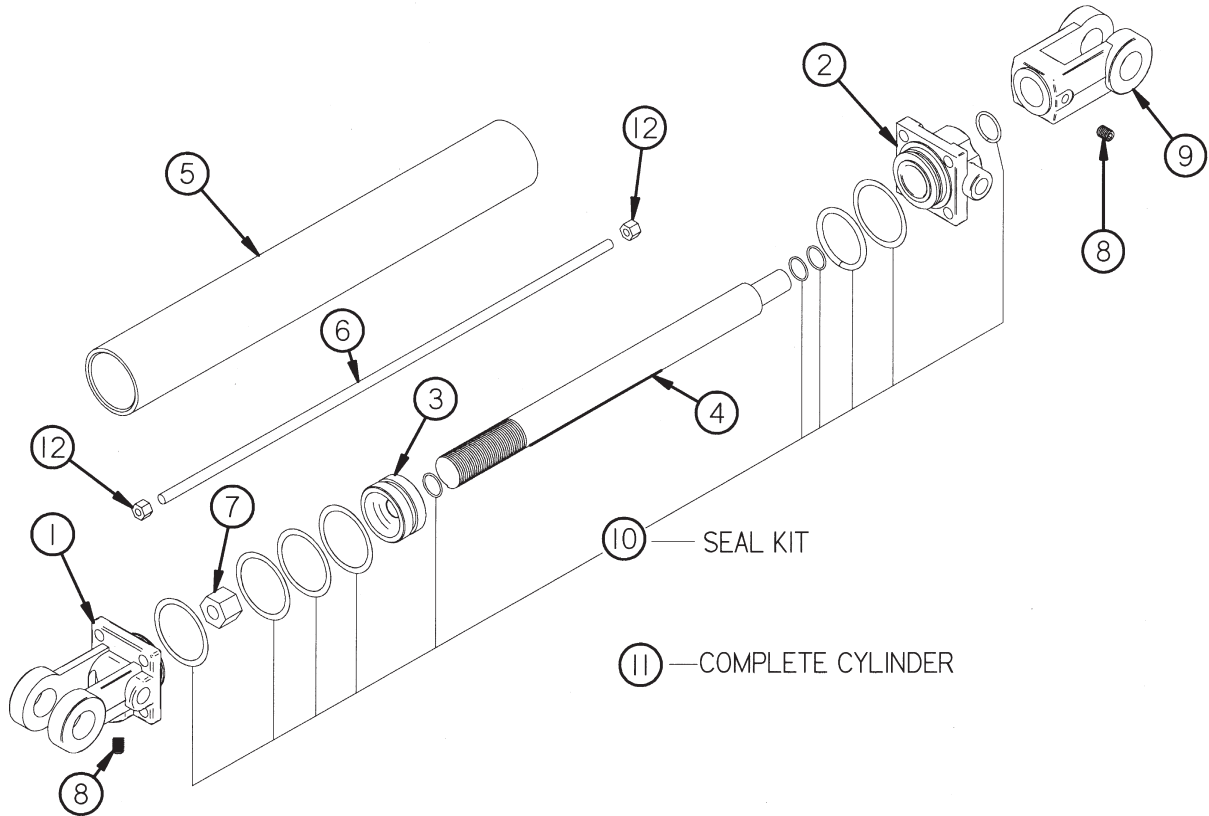


<u>ITEM</u>	<u>QTY</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	5HPYNSL24010	HEX NUT, SLOTTED, 3/4"-16
2	1	5HPTS344	WEAR RING
3	1	5HPTS345	CAPPED T-SEAL
4	1	5HPTS346	PISTON
5	1	5HPTS347	O-RING
6	1	5HPTS348	JACKET ASSEMBLY
7	1	5HPTS349	PISTON ROD
8	1	5HPTS350	O-RING
9	1	5HPTS351	BACKUP WASHER
10	1	5HPTS352	POLYPAK
11	1	5HPTS353	GLAND NUT
12	1	5HPTS354	METALLIC WIPER
*	1	5HPTS355	SEAL KIT

NOTE: * MEANS NOT SHOWN

FIGURE 18

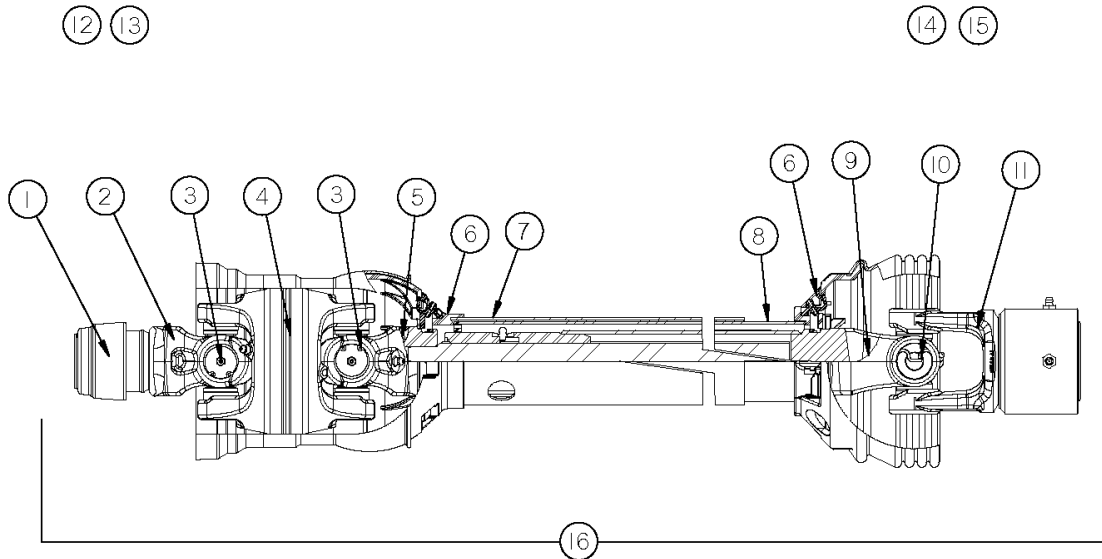
2326 EXPELLER DOOR HYDRAULIC CYLINDER 2" x 16"



<u>ITEM</u>	<u>QTY</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	5HP23N142	CLEVIS CAP
2	1	5HP23N143	ROD CAP
3	1	5HP23N144	PISTON
4	1	5HP23N145A	ROD
5	1	5HP23N146	CYLINDER TUBE
6	4	5HP23N147	TIE ROD
7	1	5HP23N148	PISTON NUT
8	2	5HP23N149	PLUG
9	1	5HP23N150	ROD CLEVIS
10	1	5HP23N151	SEAL KIT
11	1	5HP23N111A	COMPLETE HYDRAULIC CYLINDER
12	8	5HPYNHX12005	HEX NUT, 3/8\"-16

FIGURE 19

PTO

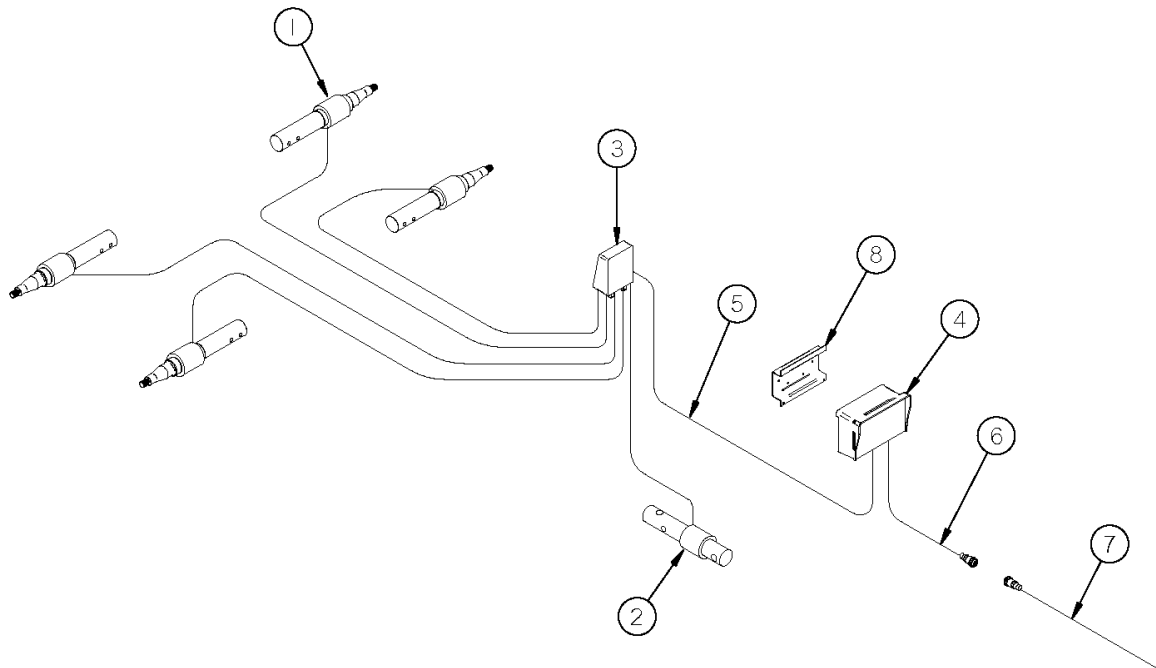


ITEM	540 RPM	1000RPM (1-3/8)	1000 RPM (1-3/4)	DESCRIPTION
1	5HP16SV274	"	5HP16SV275	SAFETY SLIDE LOCK REPAIR KIT
2	5HPTS178	5HPTS190	5HPTS193	SAFETY SLIDE LOCK YOKE ASSEMBLY
3	5HPTS179	"	"	CROSS KIT
4	5HPTS180	"	"	CENTER HOUSING
5	5HPTS181	"	"	YOKE & SHAFT
6	5HP16SV383	"	"	GUARD REPAIR KIT
7	5HPTS182	"	"	OUTER GUARD
8	5HP16SV283	"	"	INNER GUARD
9	5HP16SV388	"	"	YOKE, TUBE & SLIP SLEEVE
10	5HP16SV179	"	"	35R CROSS & BEARING KIT
11	5HPTS185	"	"	OR BALL SHEAR ASSEMBLY
12	5HPTS186	5HPTS191	5HPTS194	JOINT & SHAFT HALF ASSM. W/GUARD
13	5HPTS187	5HPTS192	5HPTS195	JOINT & SHAFT HALF ASSM.
14	5HPTS188	"	"	JOINT & TUBE HALF ASSM. W/GUARD
15	5HPTS189	"	"	JOINT & TUBE HALF ASSM.
17	5HPTS300	——	——	COMPLETE PTO (#245-25120)
*	——	5HPTS301	——	COMPLETE PTO (#245-25121)
*	——	——	5HPTS302	COMPLETE PTO (#245-25122)

NOTE: —— MEANS NOT USED ON THIS MODEL
 " MEANS SAME AS PREVIOUS MODEL
 * MEANS NOT SHOWN

FIGURE 20

SCALE



<u>ITEM</u>	<u>QTY</u>		<u>PART #</u>	<u>DESCRIPTION</u>
	<u>2320</u>	<u>2326</u>		
1	4	—	5HPTS333	SPINDLE LOAD CELL
*	—	4	5HPTS334	SPINDLE LOAD CELL
2	1	"	5HPGM403	HITCH LOAD CELL
3	1	"	5HPTS83	JUNCTION BOX
4	1	"	5HPTS339	SCALE DISPLAY
*	1	"	5HPTS337	SCALE DISPLAY W/GPS (OPTIONAL)
5	1	"	5HPTS338	JUNCTION BOX CORD
6	1	"	5HPGM405	POWER CORD
7	1	"	5HP16SV269	TRACTOR POWER CORD
8	1	"	5HPGM408	SCALE HANGER BRACKET

NOTE: * MEANS NOT SHOWN
 — MEANS NOT USED ON THIS MODEL
 " MEANS SAME AS PREVIOUS MODEL

SERVICE & PARTS NOTES

[illegible]

FRONTIER™