



FS 800 Fertilizer Spreader

Owner's Manual and Parts Book
(Originating w/Serial Number 76-146)

Model Number: _____
Serial Number: _____
Date of Purchase: _____



LOFTNESS SPECIALIZED EQUIPMENT, INC.

LIMITED WARRANTY POLICY

The limited warranty policy begins upon delivery of the unit to the original customers.

All Loftness products have a one (1) year limited warranty. The XLB10 Grain Bag Loader has a two (2) year limited warranty.

If any Loftness product is used as rental equipment, or in a commercial application, the limited warranty period is for only 30 days from the delivery date to the original customers.

Loftness Specialized Equipment, hereinafter referred to as LOFTNESS, a manufacturer of quality machinery since 1956, warrants new LOFTNESS machinery and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship when properly set up and operated in accordance with the recommendations set forth in the LOFTNESS Operator's Manual.

LOFTNESS' liability for any defect with respect to accepted goods shall be limited to repairing the goods at an authorized dealer or other LOFTNESS designated location, or replacing them as LOFTNESS shall elect. The above shall be in accordance with LOFTNESS warranty adjustment policies.

WARRANTY REQUIREMENTS

Warranty registration form must be filled out and returned to Loftness Specialized Equipment to validate all warranty claims. To receive a warranty claim, a return authorization from LOFTNESS must be obtained. The failed part may then be returned in an untampered status. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls and pick-up/delivery charges are the customer's responsibility.

LIMITATIONS OF WARRANTY

LOFTNESS products are designed to provide years of dependable service when proper use and maintenance is adhered to. The potential for misuse in many applications exists; therefore, a limited warranty is provided as follows.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the LOFTNESS factory or authorized LOFTNESS dealership or in any way so as in LOFTNESS' judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any machine or attachment which shall not have been operated in accordance with LOFTNESS' printed instructions or beyond the company recommended machine rated capacity. LOFTNESS may elect to have an area representative evaluate the condition of the machine before warranty is considered.

In addition, this limited warranty provides no coverage for general wear or maintenance items, misuse, environmental conditions and/or contamination for which they were not designed or not intended, including but not limited to the following items:

- Use of machine beyond its rated capacity;
- Improper knife replacement;
- Missing knives;
- Striking foreign objects
- Lack of lubrication
- Failures caused by running in an "out-of-balance" condition;
- Tires;
- Conveyors;
- Auger wear;
- Saw blades; and
- Brakes and brake pads.

EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, LOFTNESS makes no representation or warranty of any kind, expressed or implied. **The implied warranty of merchantability and fitness for a particular purpose are excluded from this limited warranty.** The remedies set forth in this warranty are the only remedies available to any person under this warranty. LOFTNESS shall have no liability to any person for incidental, consequential or special damages of any description, whether arising out of express or implied warranty or any other contract, negligence, or other tort or otherwise. This exclusion of consequential, incidental and special damages is independent from and shall survive any finding that the exclusive remedy failed of its essential purpose. Upon purchase, the buyer assumes all liability, all personal injury and property damage resulting from the handling, possession or use of the goods by the buyer.

No agent, employee or representative of LOFTNESS has any authority to bind LOFTNESS to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth herein.

April 2017

LOFTNESS ™

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Warranty

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Owner Information

Thank you for your decision to purchase a Fertilizer Spreader from Loftness. To ensure maximum performance of this product, it is mandatory that you thoroughly study the owner's manual and follow its recommendations. Proper operation and maintenance are essential to prevent injury or damage and to maximize machine life.

Operate and maintain this machine in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and/or laws, and in compliance with on-product labeling and these instructions.

Make sure that all personnel have read this owner's manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

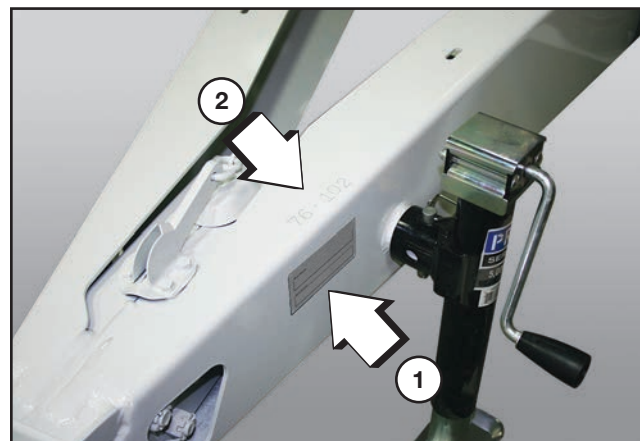
Continuous improvement and advancement of Loftness products may result in changes to your equipment that may not be reflected in this publication. Loftness reserves the right to make product improvements to the machine at any time. Although great care has been taken to ensure the accuracy of this publication, Loftness does not assume any liability for errors or omissions.

Loftness is not responsible for costs or damages caused by misapplication of fertilizers. It is the responsibility of the operator to assure that the fertilizer is applied uniformly and correctly over the application area.

Warranty Policy

Be sure to read and understand the Warranty Policy at the beginning of this manual. It is also important that you fill out the Warranty Registration form(s) completely and return to Loftness so as not to void the warranty.

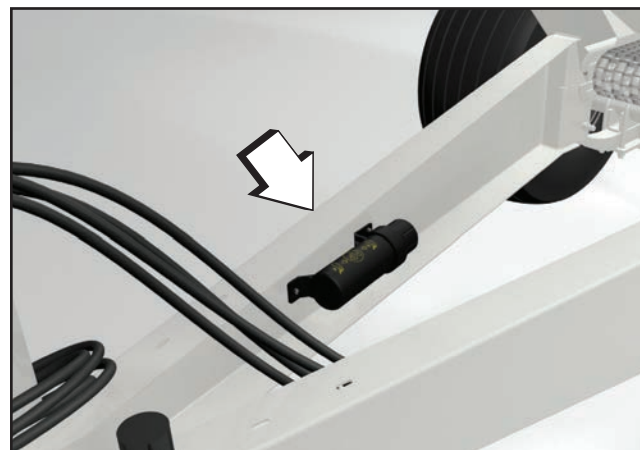
Serial Number Location



Always use your serial number when requesting information or when ordering parts. This information is on the serial tag (1).

NOTE: *The machine's serial number is also stamped in this area (2).*

Manual Storage



Keep the owner's manual and the entire documentation packet in the storage compartment provided with your fertilizer spreader. The owner's manual must be available for all operators.

The manual holder is located on the inside of the spreader tongue.

Introduction

Features

Spread Pattern

- Dual (40, 50, and 60 ft.) stainless steel spinners deliver a spread pattern using a 100% overlapping triangular pattern.
- Spread patterns up to 90 ft. with a trapezoidal pattern.

Wider Leaf Springs

- Heavy duty 2.5 in. wide leaf springs.
- Walking suspension.

Adjustable Height Hitch

- Moveable clevis accommodates wide range of drawbar heights.
- Allows for leveling of spreader.

Integral Hitch

- Hitch is integral to frame.
- Suspension pulls from hitch.

Split sprocket design

- Allows for easy in-field replacement of worn sprockets without removal of wheel.

Integral Lights

- Sealed and rubber isolated lights tucked neatly and cleanly inside frame.
- Compliant with ASABE standard (S279.14)

Obstruction Free Interior

- No internal gussets/plates to catch fertilizer.

Apron Drive Options

- Mechanical Drive (Standard)
 - Two speed axle driven transmission.
 - Hydraulic engage/disengage from cab.
 - Stainless steel chains.
- Hydraulic Drive (Optional)
 - Variable rate ready (VRR)

Spinner Drive Options

- 540 RPM PTO (Standard)
- 540/1000 RPM dual-drive PTO (Optional)
- Hydraulic drive (Optional)
 - Hydraulic Spinner Drive (HSD)
 - Controlled Spinner Drive (CSD)

Options

Brakes


- None (Standard)
- 2 wheel (Optional)
- 4 wheel (Optional)

Roll Tarp

- Optional (Contact your dealer for a hopper roll tarp.)
Shur-Co.® or Agri-Cover® (Specify Loftness FS 800)

Safety First

Accidents can be prevented by recognizing the causes or hazards before an accident occurs and doing something about them. Regardless of the care used in the design and construction of this machine, there are some areas that cannot be safeguarded without interfering with accessibility and efficient operation.

	<h3>Safety Alert Symbol</h3> <p>This message alert symbol identifies important safety messages on the machine and in the owner's manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.</p>
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In the owner's manual and on decals used on the machine the words **DANGER, WARNING, CAUTION, IMPORTANT, and NOTE** are used to indicate the following:

DANGER: This word warns of immediate hazards which, if not avoided, will result in severe personal injury or death. The color associated with Danger is RED.




WARNING: This word refers to a potentially hazardous situation which, if not avoided, could result in severe personal injury or death. The color associated with Warning is ORANGE.

CAUTION: This word refers to a potentially hazardous or unsafe situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

IMPORTANT: Highlights information that must be heeded.

NOTE: A reminder of other related information that needs to be considered.

If Safety Decals on this machine are ISO two panel pictorial, decals are defined as follows:

- The first panel indicates the nature of the hazard.
- The second panel indicates the appropriate avoidance of the hazard.
- Background color is YELLOW.
- Prohibition symbols such as   and  if used, are RED.

Be certain all machine operators are aware of the dangers indicated by safety decals applied to the machine, and be certain they follow all safety decal instructions. Contact Loftness for safety decal replacement.

Loftness cannot anticipate every possible circumstance that may involve a potential hazard. The warnings in this owner's manual are not all inclusive.

Owner's Responsibility

Operate and maintain this machine in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and/or laws and in compliance with on-product labeling and this owner's manual instructions.

Make sure that all personnel have read this owner's manual, and thoroughly understand safe and correct installation, operation and maintenance procedures.

Make sure the machine is assembled and installed correctly before being placed in service. At regular intervals thereafter, the machine should be serviced in accordance with procedures outlined in this owner's manual.

Fulfill all warranty obligations so as not to void the warranties. The warranty policy included in this manual outlines the warranty policy of Loftness.

Safety Instructions

Safety Rules

These are general safety considerations. Additional precautions may be necessary to operate your machine in a safe manner. Be certain you are operating your machine in accordance with all safety codes, OSHA rules and regulations, insurance requirements and local, state, and federal laws.

Operating Safety

- Do not allow anyone to operate the machine until he or she has read the owner's manual and is completely familiar with all safety precautions.
- Do not allow inexperienced persons unfamiliar with the machine, or unfamiliar with safe operating and maintenance procedures, to operate or maintain the machine.
- Do not allow persons under the influence of alcohol, medications, or other drugs that can impair judgment or cause drowsiness to operate or maintain the machine.
- Keep children, bystanders and other workers away from the machine while it is operating. No riders allowed.
- The machine requires an operator at all times. Never leave the machine running and unattended.
- Do not wear loose hanging clothes, neckties or jewelry. Long hair is to be placed under a cap or hat. These precautions will help prevent you from becoming caught in any moving parts on the machine.
- Do wear safety glasses, ear protection, respirators, gloves, hard hats, safety shoes and other protective clothing when required.
- The fertilizer spreader should not be used to handle materials other than those which were specified as part of its design. It is the operator's responsibility to be aware of the specifications and operate the spreader accordingly.
- It is the operator's responsibility to be aware of machine operation and work area hazards at all times.

- Operators are responsible to know the location and function of all guards and shields including but not limited to chain drives, aprons/conveyors, spinners and are responsible to make certain that all guards are in place when operating the machine.
- Operators are responsible to be aware of safety hazard areas and follow instructions on warning, caution, or danger decals applied to the machine.
- Know the area before operating the machine. Be aware of power lines or other equipment. Watch for adequate overhead clearance.
- Always have an operator in the tractor while the machine is in operation.
- Disengage PTO, clutch hydraulic valve and shift tractor into neutral or park before starting engine.

Transporting Safety

- Be sure the machine is in the transport position before transporting on a roadway.
- Do not exceed speed rating (20 mph) on the factory provided tires.
- Disengage PTO, clutch hydraulic valve and shift tractor into neutral or park before starting engine.
- Machine has high center of gravity. Exercise caution when pulling on slopes. Reduce speed while turning.

Maintenance Safety

- Do not allow inexperienced persons unfamiliar with the machine, or unfamiliar with safe operating and maintenance procedures, to operate or maintain the machine.
- Do not allow persons under the influence of alcohol, medications, or other drugs that can impair judgment or cause drowsiness to operate or maintain the machine.
- Make sure the operator's area is clear of any distracting objects. Keep work areas clean and free of grease and oil to avoid slipping or falling.
- Periodically check all guards, shields and structural members. Replace or repair anything that could cause a potential hazard.

Safety Instructions

Maintenance Safety (Cont'd)

- Periodically check all hoses, hose connections and electrical wiring. Replace or repair anything that could cause a potential hazard.
- Do not replace components or parts with other than factory-recommended service parts. To do so may decrease the effectiveness of the machine.
- Do not lubricate parts while the machine is running.
- Do not smoke while servicing the machine.
- Never attempt to make any adjustments while the tractor engine is running or the key is in the "ON" position in the tractor. Before leaving the operator's position, disengage power to the machine and remove ignition key.

Hydraulic Safety

- The hydraulic system is under high pressure. Make sure all lines and fittings are tight and in good condition. These fluids escaping under high pressure can have sufficient force to penetrate skin and cause serious injury.
- Never check for leaks by using any part of your body to feel for escaping fluid.
- Always use a piece of wood to check for leaks.



WARNING: *Contact with high pressure fluids may cause fluid penetration and burn hazards. Fluid that is under pressure can penetrate body tissue. Fluid penetration can cause serious injury and possible death. If fluid is injected into the skin, seek medical attention immediately!*

PTO Safety

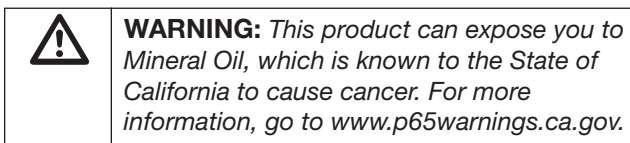
- Keep all guards and shields in place when operating the PTO. Replace any damaged or missing guards and shields before operating the PTO.
- Keep children, bystanders and other workers away from the machine while it is operating or while the PTO is engaged. No riders allowed.
- Do not wear loose hanging clothes, neckties or jewelry. Long hair is to be placed under a cap or hat. These precautions will help prevent you from becoming caught in any moving parts on the machine.
- Read and understand the tractor operation and maintenance manual regarding safe and proper operation for PTO driven equipment.
- Never step over or crawl around the equipment while the PTO is engaged; entanglement could occur.
- Do not exceed rated PTO speed.
- Disengage PTO driveline and place in the stored position when the machine is transported.
- Never use a steel hammer when connecting or disconnecting a PTO shaft.
- Engage the PTO slowly at idle speed to prevent unnecessary stress to the driveline.
- DO NOT USE PTO ADAPTERS OF ANY KIND.
- Use only recommended shear-bolts.
- Maintain proper hitching dimensions
1 - 3/8" - 21 Spline - PTO end to pin of draw bar 16".
1 - 3/8" - 6 Spline - PTO end to pin of draw bar 14".

Safety Instructions

Chemical Fertilizer Safety

- Always read the label before using chemical fertilizers. Follow manufacturer's instructions for use and handling. Also follow label directions and recommendations on keeping fertilizer residue on edible parts of plants within limits permitted by law.
- Wear personal protective equipment (PPE) when handling chemical fertilizers, such as safety glasses or face shield, respirators, proper clothing, and rubber gloves.
- Wash hands, face, and clothing after handling and spreading.
- Do not spill chemical fertilizers on skin or clothing. In case of a spill, remove contaminated clothing and wash skin and clothing thoroughly with soap and water.
- Avoid inhaling chemical fertilizers.
- Do not smoke when handling chemical fertilizers.
- Cover food and water containers when spreading around livestock or pet areas.
- Keep bystanders away while spreading fertilizer.
- The spreader should be completely emptied of chemical fertilizer, all residue removed, and washed with clean water before servicing.
- If symptoms of illness occur during or after handling and/or spreading chemical fertilizers, contact a physician immediately.
- Store chemical fertilizer in a locked, secure space away from food and animal feed. Do not store inside of the home.
- Keep chemical fertilizers away from children, pets, and unauthorized personnel.
- Store chemical fertilizers in their original containers and securely closed. Be sure to read fertilizer manufacturers storage recommendations.
- Dispose of empty fertilizer containers according to manufacturer's instructions.

California Proposition 65 Warning



A decal with this warning statement is adhered to the machine. If the decal should become worn or missing, replace immediately.

FS 800 Fertilizer Spreader Identification



Hydraulic Drive model shown.

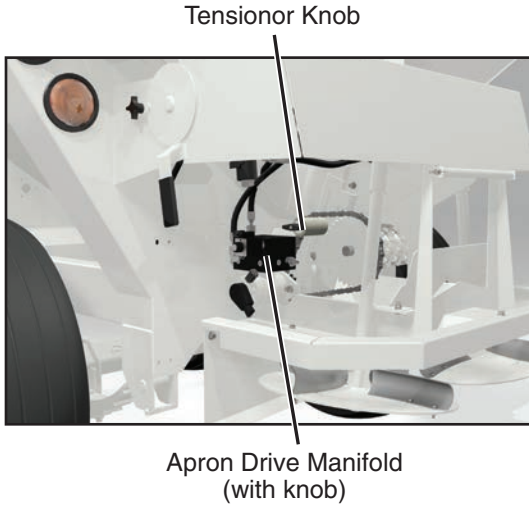
Safety Instructions

FS 800 Fertilizer Spreader Identification (Cont'd)

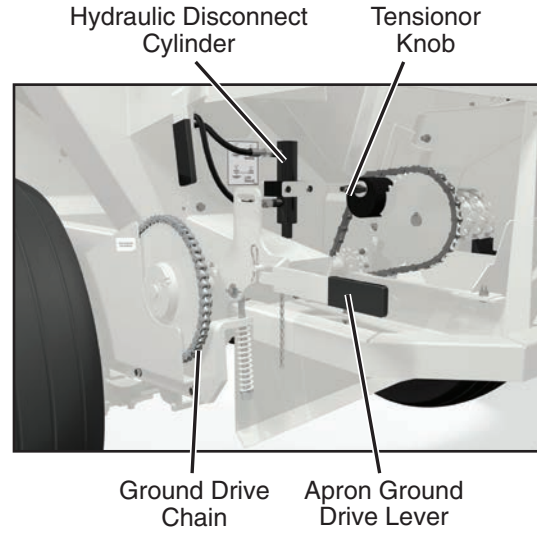
Apron and Spinner Drive Options

Apron Drive Options

Hydraulic Drive (VRR)

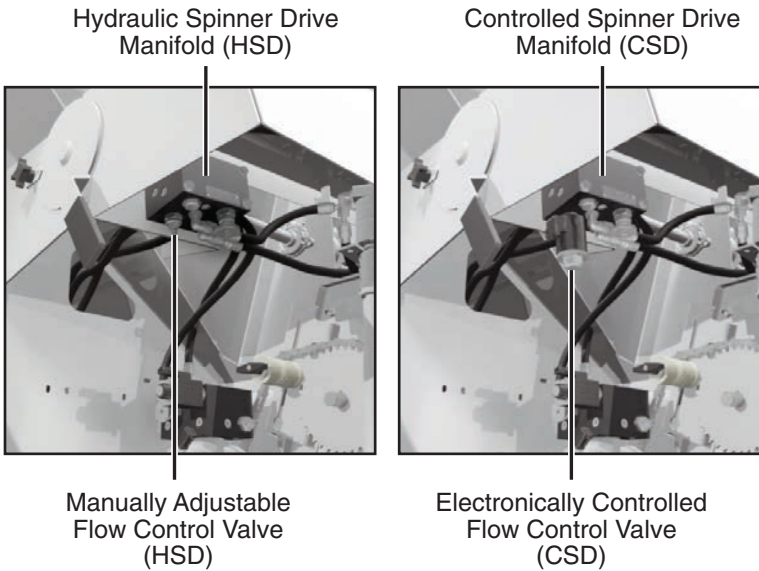


Mechanical Ground Drive

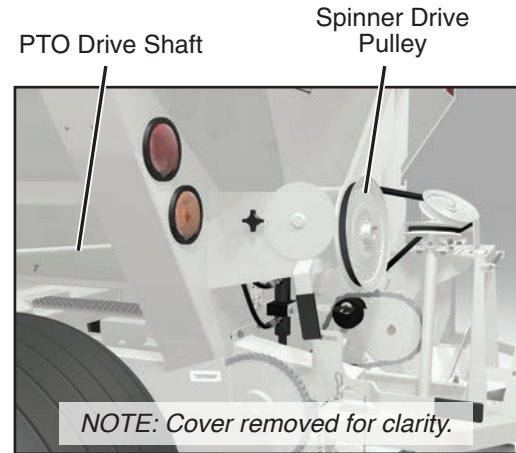


Spinner Drive Options

Hydraulic Drive



PTO Drive



Safety Instructions

Safety Decal Locations

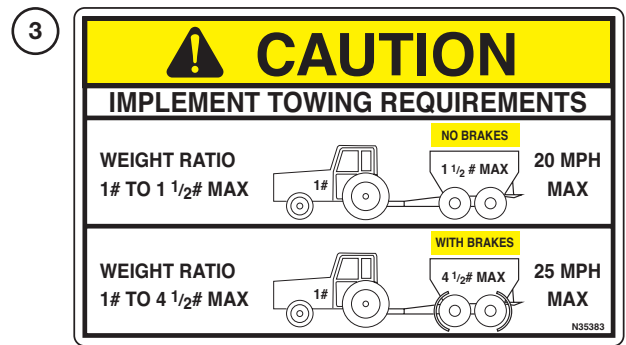
Check and replace any worn, torn, hard to read or missing safety decals on your machine.



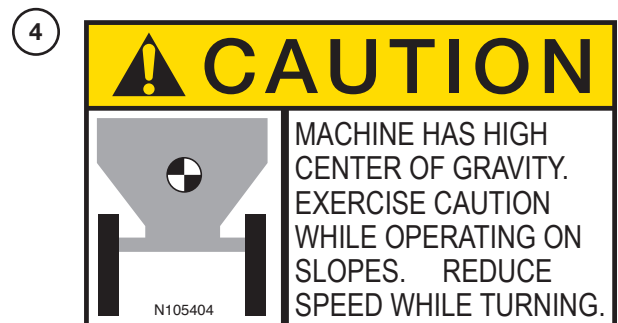
Part No. N35380



Part No. N35391



Part No. N35383



Part No. N105404

NOTE: Applies to machines with high set frame.



Part No. 203264



Set-up and Operation

Preparation for Use

Before putting the spreader into operation make sure the machine has been properly adjusted and the spread pattern has been determined.

IMPORTANT: *Read and thoroughly understand the contents of the operator's manual before operating.*

- Visually inspect the spreader for damage or missing parts. Contact your Loftness dealer if any parts need replacing.
- Remove protective cover on Slow Moving Vehicle sign on rear of the spreader.
- Check the machine for loose bolts. Check bearing, sheave, and sprocket set screws.
- Check wheel lugs for tightness.
- Check tire pressure.
- Check the v-belts (PTO drive models) and chains for tension and alignment.
- For PTO drive models, check the rear belt wrap. The spinners should rotate in opposite directions.
- Turn apron chain by hand to ensure it moves freely without obstruction(s).
- Check apron chain for tension. There should be a 2-3 in. (5.08 - 7.62 cm) sag underneath.
- Perform a test pattern.

IMPORTANT: *Before placing the fertilizer spreader into operation, a spread pattern test MUST be performed. Refer to "Spread Pattern Test" on page 25 for instructions.*

Monitors/Controllers

Install controller/monitor in cab. Consult tractor manual to determine locations for mounting monitors and controllers.

Connect controllers and monitors to keyed switch power. Consult tractor manual for sources of keyed switch power. If keyed switch power is not available, constant 12V power may be used.

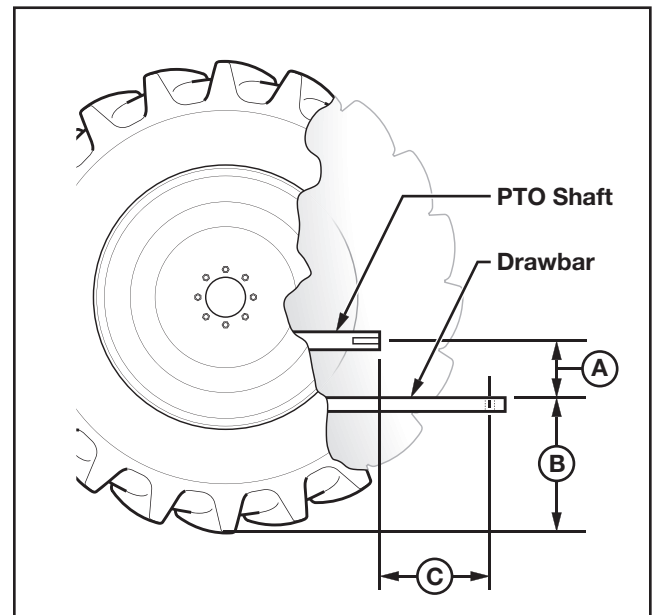
IMPORTANT: *Monitors and Controllers that have power supplied via constant 12V power will not turn off with tractor key. Turn off monitor when tractor is not running.*

Connecting to Tractor

For PTO Drive Models

Adjust the spreader hitch so the spreader is as level as possible. Connect to the tractor and install an approved hitch pin for the load, securing hitch pin with a safety locking pin. Connect the safety chains to the tractor. Connect surge breakaway chain to tractor.

The tractor draw bar and PTO must conform to ASAE specifications shown in illustration below for proper PTO operation.



CAUTION: *Lock the draw bar securely in both the horizontal and the vertical positions to avoid damage to the PTO.*

A - 6-12 in. (15.24-30.48 cm)

B - 13-17 in. (33.02-43.18 cm); 15 in. (38.1 cm preferred).
(Higher draw bars disrupt spread pattern.)

C - 540 RPM - 14 in. (35.56 cm);
1,000 RPM - 16 in. (40.64 cm)



CAUTION: *Always work with the PTO driveline as straight as possible to guard against damage to the PTO, spreader, or tractor.*

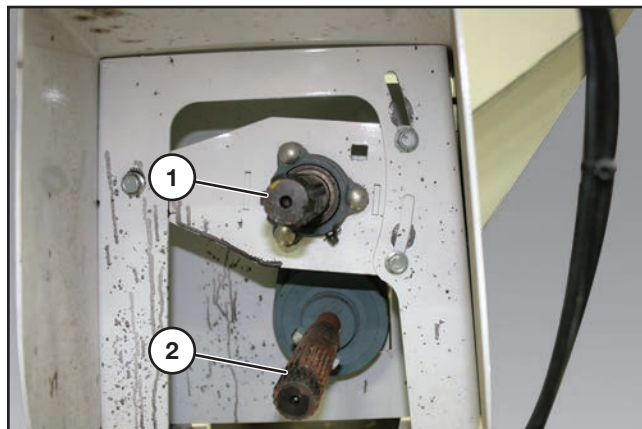
(Procedure continued on following page.)

Set-up and Operation

Connecting to Tractor (Cont'd)

For PTO Drive Models (Cont'd)

Attaching PTO



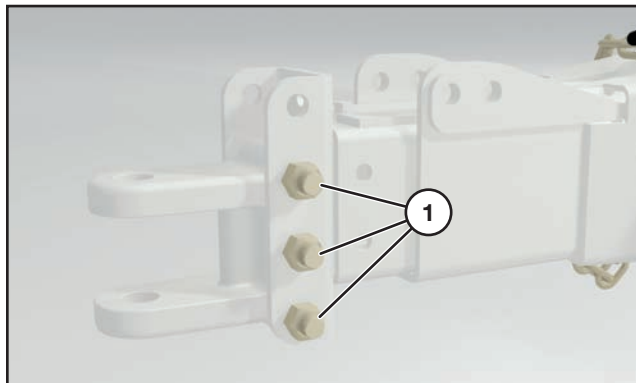
1,000 RPM Input Shaft

Connect the PTO to the top shaft (1) on the spreader for 1,000 RPM input.

540 RPM Input Shaft

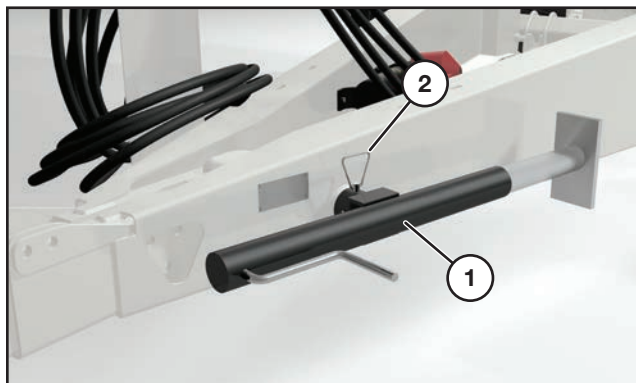
Connect the PTO to the bottom shaft (2) on the spreader for 540 RPM input.

For Variable Rate Ready and Ground Drive Models



Adjust bolts (1) on the clevis (if necessary) to be level as possible with the tractor drawbar height.

Connect to the tractor and install an approved hitch pin for the load, securing hitch pin with a safety locking pin. Connect the safety chains to the tractor. Connect surge breakaway chain to tractor.



Rotate the jack (1) into the storage position and secure with pin (2).

Connecting to Tractor (Cont'd)

Controller/Monitor Connections (Variable Rate Ready Only)

For spreaders equipped with hydraulic drive, connect the controller harness on the spreader to the mating harness on the tractor.

Wiring Connections

Connect the spreader wiring connector to the tractor using the provided 7-pin round to 4 wire flat connector. See Loftness part number N62721.

Hydraulic Connections

Connect the spreader's hydraulic hoses to the tractor's hydraulic system. Hydraulic hoses are marked with corresponding "TANK" or "PRESSURE" decals.

Setting Tractor Hydraulics

For Clutch Disengage:

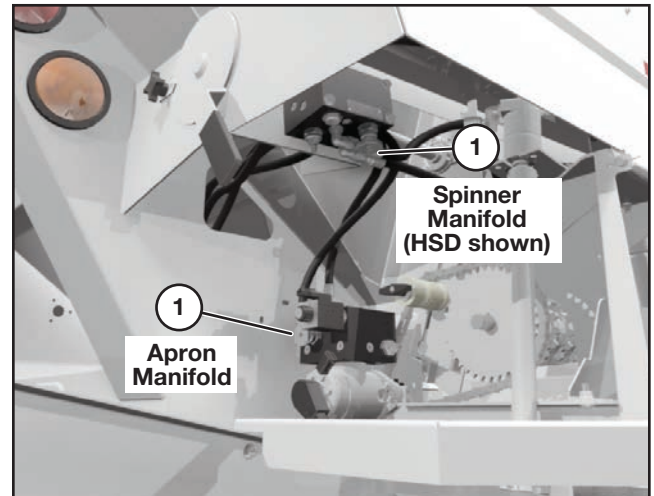
1. Valve should be set fully so cylinder extend/retract time is 3 seconds.

IMPORTANT: *Clutch disengage cylinder is small – high cylinder speed could damage cylinder*

For Apron Drive and Spinners:

1. Make hydraulic hose connections.
2. Set hydraulics to continuous flow.
3. Determine if your tractor is equipped with an open-center or closed-center hydraulic system.

NOTE: *For tractors equipped with an open-center system, contact your dealer for an open-center kit.*



4. If the tractor has an **open-center system**, rotate knob (1) fully counter-clockwise until stop is reached to open the valve.

If the tractor has a **closed-center system**, rotate knob (1) fully clockwise until stop is reached to close the valve.


5. If the tractor is equipped with an open-center system, set the tractor hydraulic flow to maximum.
6. Set the controller to Test mode.
7. Set the speed to 15 MPH.
8. Set the rate to 1,000 lbs.
9. Decrease the tractor hydraulic flow until the apron slows. Then slightly increase tractor flow.

IMPORTANT: *This is done to reduce the amount of bypass oil.*

10. Exit the Test mode on the controller.

Set-up and Operation

Connecting to Truck - Transporting

 **CAUTION:** Tow only with a truck or vehicle capable of pulling the weight of the spreader and its contents.

Adjust the spreader hitch so the spreader is as level as possible. Connect to the truck hitch and install an approved hitch pin for the load, securing hitch pin with a safety locking pin. Connect the safety chains to the truck.

Connect the spreader's running light wiring harness to the truck.



IMPORTANT: Make sure hydraulic hoses are secure before transport.



IMPORTANT: For PTO drive models, make sure PTO is locked in the storage cradle and hydraulic hoses are secure before transport.

IMPORTANT: During transport, always have the ground drive disengaged. See "Engaging the Apron Ground Drive" on page 16 for instructions on disengaging the ground drive.

Determining Product Density



Determine the fertilizer density using the scale provided with your spreader following these instructions

1. Fill canister gently to the top with material to be spread.
2. Support by the ring.
3. Level beam.
4. Read pounds per cubic feet at the center of weight.

NOTE: Instructions are also written on the density scale.

NOTE: A density scale is provided with variable rate ready model spreaders and is secure to the manual holder during shipping.

If you would like to order a density scale for your mechanical ground drive model spreader, contact your Loftness dealer.

Set-up and Operation

Variable Rate Ready (VRR)

Setting the Metering Gate Opening (VRR)

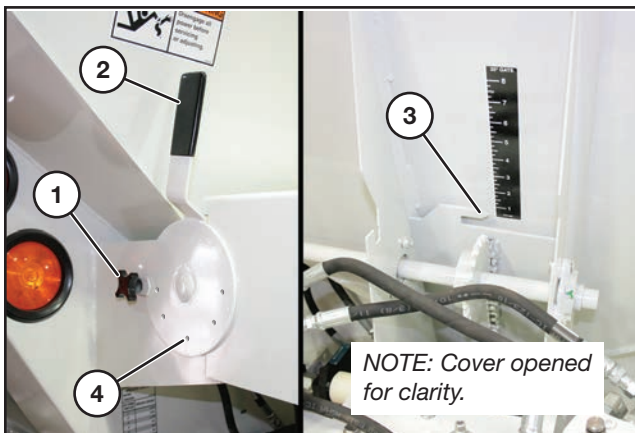
The metering gate opening, along with the speed of the apron chain, determines the spreader constant. Refer to the spreader setup chart, "Hydraulic (Variable Rate Ready) - N129459" on page 19, for the spreader constant as it relates to the metering gate opening.

The recommended metering gate opening for variable rate ready spreaders is 2 in. However, some adjustments may need to be made after the machine has been put into operation.

RAISE metering gate opening if apron cannot keep up with high rates/application speeds.

LOWER metering gate opening for low rates/speed to prevent ratcheting.

IMPORTANT: *If an adjustment to the metering gate is made, the spreader constant needs to be adjusted accordingly. Refer back to the chart on page 19 to find the spreader constant that correlates with the meter gate opening.*



Loosen knob (1). Move the gate control lever (2) until the indicator (3) is at the proper setting. Lock gate by retightening the knob (1).

If a permanent gate position is desired, match drill a .257" diameter hole through one of the five holes (4) in the lever and install a 1/4" bolt and nut.

IMPORTANT: *DO NOT drill through and into the rear cover. With a bolt inserted, the rear cover could not swing open.*

Calibrate Spreader Constant (VRR)

The spreader constant should be calibrated every time the metering gate is adjusted.

Catch Test

1. Fill spreader with product.
2. Measure product density using scale provided.
3. Weigh empty container and place container under spreader discharge to collect fertilizer.
4. Engage hydraulics for apron. DO NOT engage spinners.
5. Place controller console in test mode.
 - a. Enter spreader constant for metering gate opening.
 - b. Enter product density.
 - c. Enter desired application rate, spread width, and application speed.
 - d. Zero out total/field volume.
6. Turn on apron and collect fertilizer. Recommend 1,000 lb. for increased accuracy.
7. Turn off apron.
8. Weigh full container. Determine actual weight of fertilizer in container (full weight – empty weight)
9. Calculate new spreader constant.
New spreader constant = old spreader constant * (console weight/actual weight).

NOTE: *If catch test is not feasible, new spreader constant can be calculated by using same formula and spreading a known amount of fertilizer on a field. Weigh spreader before and after test to determine amount actual amount of fertilizer applied.*

Engaging the Apron (VRR)

The apron is engaged from the controls in the tractor cab. Hydraulic valves on the tractor need to be activated. Set the valves to continuous flow.

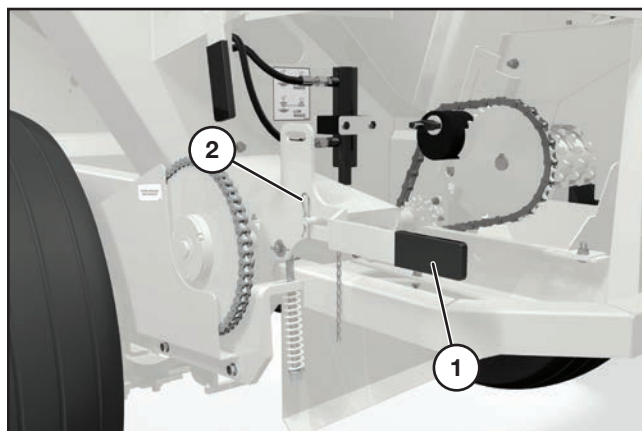
IMPORTANT: *When spreader not in use, or to avoid unintended application, turn off hydraulic flow from tractor.*

Set-up and Operation

Mechanical Ground Drive

Prepare For Field Use

Engaging the Apron Ground Drive



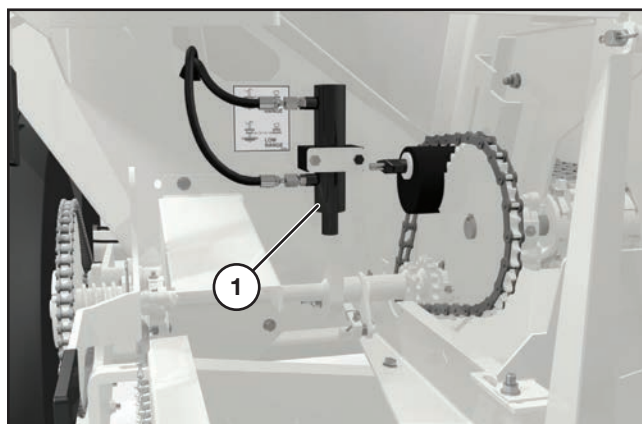
Raise the lever (1) to the upper position as shown to engage the ground drive. Secure with retaining pin (2).

To disengage the drive, move the lever to the lower position and secure with the retaining pin.

During transport, always have the ground drive disengaged.

IMPORTANT: Be sure the chain engages the hub sprocket properly. If it slips to one side, raise the chain and realign before lowering.

2. Ensure hydraulic connections to tractor have been made.



3. Using hydraulic controls in the tractor, fully retract the hydraulic disconnect cylinder (1) to apply product. Extend the cylinder to stop application.

Setting the Metering Gate Opening (Mechanical Ground Drive)

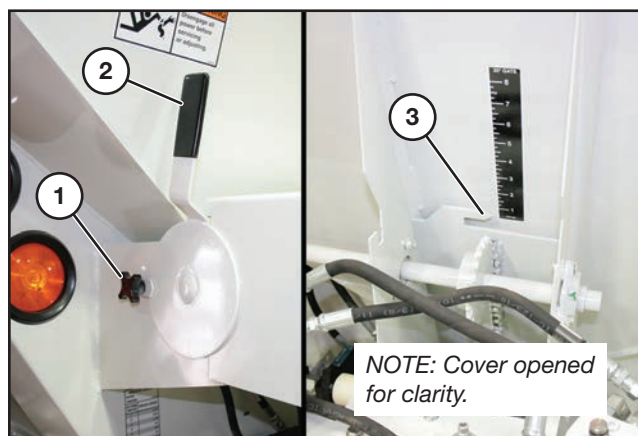
The application rate is determined by the metering gate opening and the speed range (high or low) of the apron chain.

To determine the gate opening:

1. Find the fertilizer density. See “Determining Product Density” on page 14.

NOTE: If scale is not available, weigh 1 gallon (3.78 Liters) of the fertilizer and then multiply that by 7.5 to establish the product density.

2. Go to the Rate Chart Selector Guide found on page 18. Use this chart to find the correct Application Rate Chart within this manual that corresponds with your desired spread width.
3. Under the “Product Density” row of the Application Rate Chart, find the value closest to your outcome from Step 1. Follow this column down to the desired application rate.
4. Follow this row to the left of the chart to the proper gate opening size.

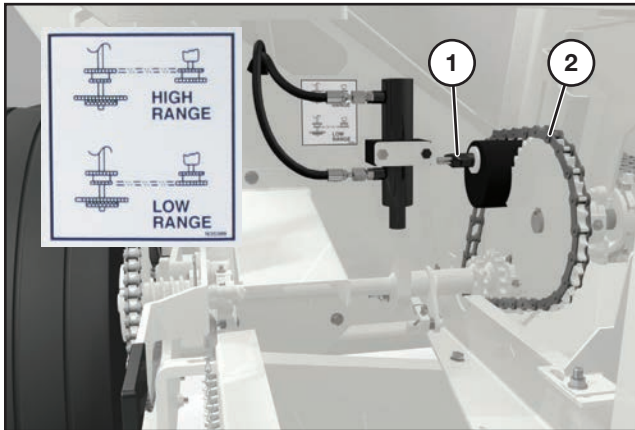


Loosen knob (1). Move the gate control lever (2) until the indicator (3) is at the proper opening size. Lock gate by retightening the knob (1).

Set-up and Operation

Mechanical Ground Drive (Cont'd)

Adjusting for High or Low Range (Mechanical Ground Drive)



Determine if the application will be spread in high range or low range.

Low range - The chain must be on the outside sprockets,

High range - The chain must be on the inside sprockets.

If adjustment is needed, loosen the apron drive chain tensioner (1) and move the chain (2) to the appropriate set of sprockets. Reposition the drive chain tensioner and retighten. Chain tensioner should be oriented such that it does not touch sprockets.

IMPORTANT: Read the application rate chart for operating in high range. To avoid undue stress on the apron mechanism, it is recommended to use the largest practical gate opening in low range before changing to high range.

To assure a uniform application rate around field edges, make a border application with these adjustments. Reduce to 1/2 fan speed, gate opening, and travel interval.



CAUTION: Do not use a gate setting of 1.5 in. (3.81 cm) in high range. This could cause undue stress on the hopper from a high apron speed.

Spreading Speed and Interval

Speed

When spreading for a test pattern and for the final field application, maintain a speed of 3-8 mph.

Driving Interval

Test Pattern Interval: Driving interval is 40-90 ft. (12.19 m - 27.43 m), depending on machine, to maintain an accurate spreader constant and spread pattern.

Field Application Interval: Determine optimum driving interval by following the steps below.

NOTE: The spreader is designed to spread the material 40-90 ft. (12.19 m - 27.43 m) to each side of center, giving a double coverage for a uniform application. The application chart is based on 40-90 ft. (12.19 m - 27.43 m) driving intervals, not the actual spread width. However, a slight change in driving distance or spinner RPM may be beneficial for optimum coverage.

1. Make sure all spread pattern adjustments are complete, and a spread pattern test has been produced following the "Spread Pattern Test" instructions found on page "Spread Pattern Test" on page 25.
2. From the Spread Pattern Test Results Sheet found on page 27, determine the maximum (cc) volume value of material in center of pattern.
3. Divide this value by two.
4. Locate the distance from the zero foot mark (centerline of driving path) where the graph intersects this (cc) value.
5. Multiply this distance by two to determine the optimum driving interval.

Even if the pattern has an acceptable shape, optimum driving interval may be too small for practical field use. If this is the case, the spreader must be adjusted to produce the best possible pattern shape with an acceptable driving interval.



CAUTION: Do not exceed the rated gross weight of the spreader.

Set-up and Operation

Calibration (VRR Models)

The following chart shows the recommended calibration numbers for the VRR model spreader.

Calibration Component	Signal Type	Calibration Value
Spinner Speed Sensor	Pulses Per Spinner Revolution	20
Apron Speed Sensor	Pulses Per Drum Revolution	180
Apron Valve Type	Valve Type	PWM-Close
	Valve Calibration	Raven 0043 Deere 1533
	Coil Frequency	122 Hz
	High limit	255
	Low limit	0
Spinner Valve Type (CSD Only)	Valve Type	PWM-Close
	Valve Calibration	0043
	Coil Frequency	122
	High Limit	255
	Low Limit	0

Rate Chart Selector

Use the Rate Chart Selector Guide below to determine the correct Application Rate Chart based off of your spreader's drive option (hydraulic or mechanical) and the desired spread width.

The Application Rate Charts are found in this manual and the page numbers are provided within the Rate Chart Selector Guide below, after each respective chart/decals number.

NOTE: An Application Rate Chart decal is also applied to the spreader when shipped from the factory that is reflective of the spreader's drive option. If changes are made to the spreader's configuration, and/or a different application setting is desired, a new decal can be ordered to coincide with the new changes. Refer to "Machine Decals and Signs" on page 73 to order a new decal.

Rate Chart Selector Guide			
		Apron Drive	
		Mechanical Ground Drive (19L-16.1 Tires)	Hydraulic (Variable Rate Ready)
Driving Interval (ft)	40	N139852 (page 20)	N129459 (page 19)
	50	N139853 (page 21)	
	60	N139854 (page 22)	
	80	N139855 (page 23)	
	90	N139856 (page 24)	

Set-up and Operation

Spreader Constants/Rate Charts

Hydraulic (Variable Rate Ready) - N129459

SPREADER SETUP			
MACHINE:			N129459
FS800, RC800, OS170			
GATE OPENING INCHES	SPREADER CONSTANT	CUBIC FEET PER REVOLUTION	
1.00	3,170	0.0568	
2.00	1,664	0.1082	
3.00	1,132	0.1590	
4.00	880	0.2045	
5.00	702	0.2565	
6.00	601	0.2993	
DRIVING INTERVAL	SPINNER RPM	BLADE SETTING	
40	700		
50	830	3 - 2 - 3 - 2	
60	950		
80	740		
88	780	3 - 3 - 3 - 3	
90	790		
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>LH</p> </div> <div style="text-align: center;"> <p>↑ Front of Machine</p> </div> <div style="text-align: center;"> <p>RH</p> </div> </div>			

Set-up and Operation

Spreader Constants/Rate Charts (Cont'd)

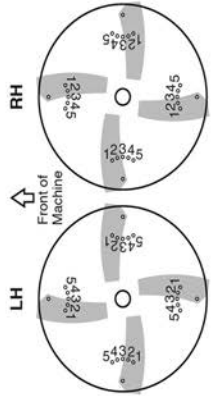
40 Ft. Mechanical Drive - N139852

APPLICATION RATE -- lbs/ACRE		MACHINE: FS800		BLADE SETTING		SPINNER RPM						
40FT		TIRE SIZES:		3 - 2 - 3 - 2		700						
		19L-16.1		LH		RH						
N139852		FRONT OF MACHINE		FRONT OF MACHINE		FRONT OF MACHINE						
APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES		APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES		APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES		APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES						
LOW RANGE	HIGH RANGE	Product Density lbs/ft ³										
Gate Opening		45	50	55	58	60	62	65	67	70	75	80
1"	149	61	67	74	78	81	84	88	90	94	101	108
1 1/2"	213	86	96	106	111	115	119	125	129	134	144	154
2"	284	115	128	141	149	154	159	167	172	180	192	205
2 1/2"	355	144	160	176	186	192	198	208	214	224	240	256
3"	418	170	189	207	219	226	234	245	253	264	283	302
3 1/2"	477	194	215	237	250	258	267	280	288	301	323	344
4"	537	218	243	267	281	291	301	315	325	340	364	388
4 1/2"	604	245	273	300	316	327	338	354	365	382	409	436
5"	674	274	304	335	353	365	377	396	408	426	456	487
5 1/2"	738	300	333	366	386	400	413	433	446	466	500	533
6"	786	319	355	390	412	426	440	461	476	497	532	568
			874	961	1,014	1,049	1,084	1,136	1,171	1,223	1,311	1,398

Spreader Constants/Rate Charts (Cont'd)

50 Ft. Mechanical Drive - N139853

APPLICATION RATE -- lbs/ACRE		MACHINE: FS800		BLADE SETTING		SPINNER RPM		N139853				
<h1 style="font-size: 4em; margin: 0;">50FT</h1>		TIRE SIZES: 19L-16.1		3 - 2 - 3 - 2		830						
LOW RANGE		APPLICATION RATE BASED ON 50 FT DRIVING INTERVALS										
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										
Gate		Product Density lbs/ft ³										
Opening		45	50	55	58	60	62	65	67	70	75	80
1"		48	54	59	63	65	67	70	72	75	81	86
1 1/2"		69	77	84	89	92	95	100	103	107	115	123
2"		92	103	113	119	123	127	133	138	144	154	164
2 1/2"		115	128	141	149	154	159	166	172	179	192	205
3"		136	151	166	175	181	187	196	202	211	226	241
3 1/2"		155	172	189	200	207	213	224	231	241	258	275
4"		175	194	213	225	233	241	252	260	272	291	310
4 1/2"		196	218	240	253	262	270	283	292	305	327	349
5"		219	243	268	282	292	302	316	326	341	365	389
5 1/2"		240	267	293	309	320	331	347	357	373	400	426
6"		256	284	312	329	341	352	369	381	398	426	454
		629	699	769	811	839	867	909	937	979	1,049	1,119



Set-up and Operation

Spreader Constants/Rate Charts (Cont'd)

60 Ft. Mechanical Drive - N139854

APPLICATION RATE -- lbs/ACRE		MACHINE: FS800		BLADE SETTING 3 - 2 - 3 - 2		SPINNER RPM 950		N139854				
60FT		TIRE SIZES: 19L-16.1										
LOW RANGE		APPLICATION RATE BASED ON 60 FT DRIVING INTERVALS										
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										
Gate		Product Density lbs/ft ³										
Opening		45	50	55	58	60	62	65	67	70	75	80
1"		40	45	49	52	54	56	58	60	63	67	72
1 1/2"		99	111	122	128	133	137	144	148	155	166	177
2"		58	64	70	74	77	79	83	86	90	96	102
2 1/2"		142	157	173	183	189	195	205	211	220	236	252
3"		77	86	94	99	103	106	111	115	120	128	137
3 1/2"		190	211	232	244	253	261	274	282	295	316	337
4"		96	107	117	124	128	132	139	143	149	160	171
4 1/2"		236	263	289	305	315	326	341	352	368	394	420
5"		113	126	138	146	151	156	163	168	176	189	201
5 1/2"		279	310	340	359	371	384	402	415	433	464	495
6"		129	143	158	166	172	178	186	192	201	215	230
6 1/2"		318	353	388	410	424	438	459	473	494	530	565
7"		146	162	178	188	194	201	210	217	226	243	259
7 1/2"		358	398	438	462	478	494	517	533	557	597	637
8"		164	182	200	211	218	225	236	244	254	273	291
8 1/2"		403	447	492	519	537	555	582	599	626	671	716
9"		183	203	223	235	243	252	264	272	284	304	325
9 1/2"		449	499	549	579	599	619	649	669	699	749	799
10"		200	222	244	258	267	275	289	298	311	333	355
10 1/2"		492	547	601	634	656	678	711	733	765	820	875
11"		213	237	260	275	284	293	308	317	331	355	379
11 1/2"		524	583	641	676	699	722	757	781	816	874	932

Spreader Constants/Rate Charts (Cont'd)

80 Ft. Mechanical Drive - N139855

APPLICATION RATE -- lbs/ACRE		N139855										
80FT		MACHINE: FS800		BLADE SETTING		SPINNER RPM						
		TIRE SIZES: 19L-16.1		3 - 3 - 3 - 3		740						
LOW RANGE	HIGH RANGE	APPLICATION RATE BASED ON 80 FT DRIVING INTERVALS										
		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										
Gate		Product Density lbs/ft ³										
Opening		45	50	55	58	60	62	65	67	70	75	80
1"		30	34	37	39	40	42	44	45	47	51	54
		75	83	91	96	99	103	108	111	116	124	133
1 1/2"		43	48	53	56	58	59	62	64	67	72	77
		106	118	130	137	142	146	154	158	165	177	189
2"		58	64	71	74	77	80	83	86	90	96	103
		142	158	174	183	190	196	205	212	221	237	253
2 1/2"		72	80	88	93	96	99	104	107	112	120	128
		177	197	217	228	236	244	256	264	276	295	315
3"		85	94	104	109	113	117	123	126	132	141	151
		209	232	255	269	279	288	302	311	325	348	371
3 1/2"		97	108	118	125	129	133	140	144	151	161	172
		238	265	291	307	318	328	344	355	371	397	424
4"		109	121	133	141	146	150	158	163	170	182	194
		269	299	328	346	358	370	388	400	418	448	478
4 1/2"		123	136	150	158	164	169	177	183	191	204	218
		302	335	369	389	403	416	436	450	470	503	537
5"		137	152	167	176	183	189	198	204	213	228	243
		337	374	412	434	449	464	487	502	524	562	599
5 1/2"		150	167	183	193	200	207	217	223	233	250	267
		369	410	451	476	492	508	533	549	574	615	656
6"		160	177	195	206	213	220	231	238	248	266	284
		393	437	481	507	524	542	568	585	612	655	699

Set-up and Operation

Spreader Constants/Rate Charts (Cont'd)

90 Ft. Mechanical Drive - N139856

APPLICATION RATE -- lbs/ACRE		N139856										
		MACHINE: FS800		BLADE SETTING 3 - 3 - 3 - 3		SPINNER RPM 790		LH		RH		Front of Machine
90FT		TIRE SIZES: 19L-16.1										
LOW RANGE	HIGH RANGE	APPLICATION RATE BASED ON 90 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										
Gate		Product Density lbs/ft ³										
Opening		45	50	55	58	60	62	65	67	70	75	80
1"		27	30	33	35	36	37	39	40	42	45	48
		66	74	81	85	88	91	96	99	103	111	118
1 1/2"		38	43	47	49	51	53	55	57	60	64	68
		94	105	115	122	126	130	136	141	147	157	168
2"		51	57	63	66	68	71	74	76	80	86	91
		126	140	154	163	168	174	182	188	197	211	225
2 1/2"		64	71	78	83	85	88	92	95	100	107	114
		158	175	193	203	210	217	228	235	245	263	280
3"		75	84	92	97	101	104	109	112	117	126	134
		186	206	227	239	248	256	268	276	289	310	330
3 1/2"		86	96	105	111	115	119	124	128	134	143	153
		212	235	259	273	282	292	306	315	330	353	377
4"		97	108	119	125	129	134	140	144	151	162	172
		239	265	292	308	318	329	345	356	372	398	425
4 1/2"		109	121	133	141	145	150	157	162	170	182	194
		268	298	328	346	358	370	388	400	418	447	477
5"		122	135	149	157	162	168	176	181	189	203	216
		300	333	366	386	399	413	433	446	466	499	533
5 1/2"		133	148	163	172	178	184	193	198	207	222	237
		328	365	401	423	437	452	474	488	510	547	583
6"		142	158	174	183	189	196	205	211	221	237	252
		350	388	427	451	466	482	505	520	544	583	621

Spread Pattern Test

Before placing the fertilizer spreader into operation, a spread pattern test must be performed. Differences in product density and/or texture can vary a spread pattern, therefore a test must be performed each time a new material is implemented. Certain variables must be controlled and adjusted to ensure that there is uniform product coverage and that the spreader is operating efficiently with optimal performance.

Loftness is not responsible for costs or damages caused by misapplication of fertilizers. It is the responsibility of the operator to assure that the fertilizer is applied uniformly and correctly over the application area.

NOTE: A spread pattern test must also be performed at the beginning of each season, and after adjustments have been made.

Machine Preparation

Ensure the following items are completed before performing the spread pattern test.

- Inspect, repair, or replace any components that are damaged or not performing properly.
- Make all of the adjustments indicated in this manual.
- Ensure rear end and spinners are clear and free of obstruction.
- Determine the weight per cubic foot of material to be spread as accurately as possible using a density scale. See Loftness part number N105370.
- Fill the hopper 40-50% of full capacity. There must be enough product added to ensure the gate is completely covered throughout the test.
- Set the machine to the appropriate RPM. Refer to “Spinner RPM” on page 30 for instructions. Chart shows recommended spinner speeds and blade setting for desired driving intervals. Adjustments to spinner speed/blade settings may be required to optimize spread pattern.

Course Set-up



You will need:

- Density scale
- 17 identical collecting pans lined with dividers
- 3 flags
- Yellow rope
- 17 cone-bottom vials with rack
- Funnel

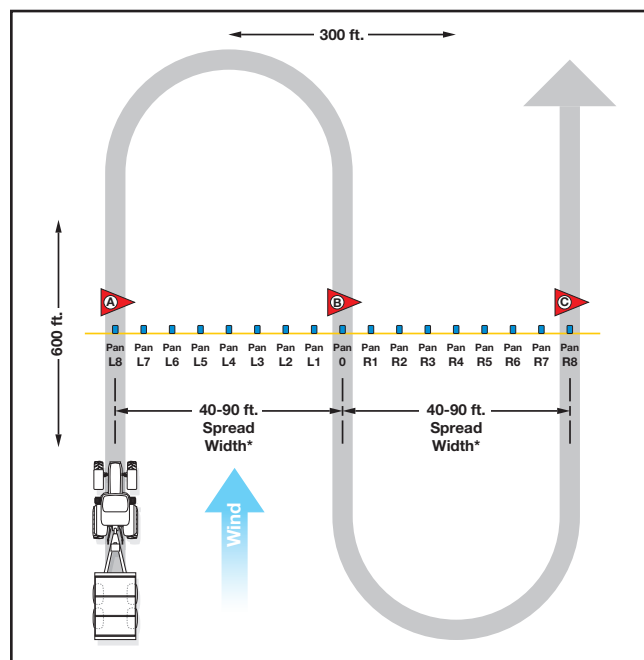
NOTE: For a test pattern kit with these items, contact your dealer.

Set-up and Operation

Spread Pattern Test (Cont'd)

Course Set-up (Cont'd)

Spread Pattern Course



Select a flat, level area 300 ft. x 600 ft. (91 m x 183 m). The 300 ft. (91 m) length should be parallel with the wind direction. For best results wind speed should be less than 10 mph.

Place the 17 identical pans lined with dividers in a line approximately 5-7 ft. apart (on center) from one another as shown above. Use the yellow rope to keep all pans in a straight line.

NOTE: All pans must be at the same elevation. Additional pans may be necessary for wider spread patterns or increased test resolution. Pans should be evenly spaced.

Spread Procedure

Use a wide front end tractor to pull the spreader.

Before conducting the test, drive the tractor/spreader for at least 450 ft. to allow the material in the hopper to settle.

IMPORTANT: DO NOT let the spreader sit for an extended period of time with material in the hopper.

1. Position unit at the beginning of the course, directed at Flag A.
2. Set gate for desired spreader constant. For variable rate ready drive, refer to "Setting the Metering Gate Opening (VRR)" on page 15 for instructions. For mechanical drive, refer to "Setting the Metering Gate Opening (Mechanical Ground Drive)" on page 16.
3. Make sure apron drive is engaged.

NOTE: The recommended speed is 3-8 mph (4.8-12.9 km/h). The speed test should match your operating speed.

4. Engage spinners.

NOTE: During the test, note the farthest point from the course and unit center line that material is being spread. You will record this on the data sheet (see "Spread Pattern Test Results Sheet" on page 27).

For steps 5-7, refer to illustration under "Spread Pattern Course" for course direction.

5. Drive through Flag A with the center of the unit lined up with the center of Pan L8.
Allow ample room to turn back
6. Drive back through Flag B, keeping center of the unit lined up with the center of Pan 0.
7. Turn back and drive through Flag C, keeping center of the unit lined up with the center of Pan R8.
8. At the end of the course, turn off spinners and disengage the apron drive.

NOTE: Depending on rate per acre, as many as five passes may be required to obtain a measurable amount of material in the outermost pans.

IMPORTANT: Do not test if wind speed is over 5 mph (8 km/h). If a wind exists, the direction of travel must be parallel with the wind direction, and all passes must be made traveling in the same direction.

Gather the collection pans in an organized fashion. Start with the outermost pan - Pan L8. Proceed left to right until all pans have been picked up.

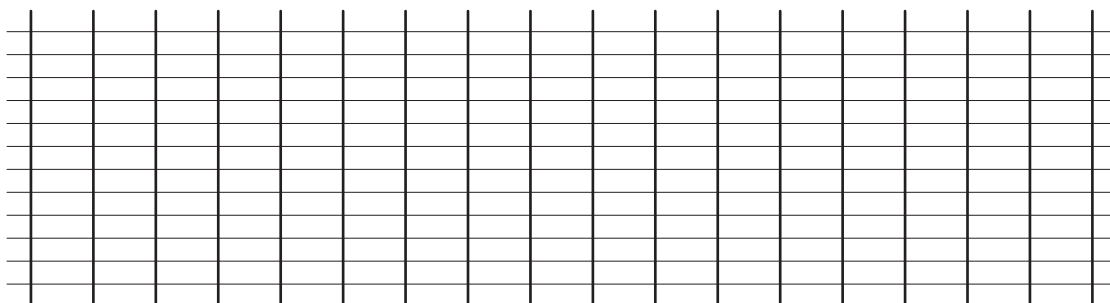
IMPORTANT: Keep track of the order in which the pans are stacked. It is vital that they stay in order as this will facilitate the recording procedure. It may help to label each pan accordingly.

Spread Pattern Test (Cont'd)

Spread Pattern Test Results Sheet

Location _____ Serial # _____ Date _____ Test# _____

Spread Pattern Test Results



L8 L7 L6 L5 L4 L3 L2 L1 0 R1 R2 R3 R4 R5 R6 R7 R8
←----- 40-90 ft. Driving Interval ----->|
←----- 40-90 ft. Driving Interval ----->|

Recorded Vial Readings

L8 L7 L6 L5 L4 L3 L2 L1 0 R1 R2 R3 R4 R5 R6 R7 R8

Spinner Blade Hole Location	Rear Deflector Setting	Gate Setting	Range	Spinner RPM	Material Density

Notes/Comments: _____

Set-up and Operation

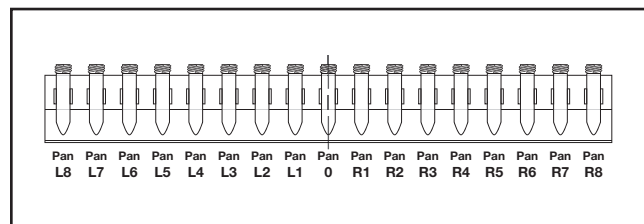
Spread Pattern Test (Cont'd)

Spread Pattern Recording

The material collected in the pans will be measured in the Spread Pattern Test Results sheet found on page 27 and will reveal the spread pattern. This data can be used to make adjustments to the machine, if necessary, based on the results.

Before entering the test pattern results, be sure to fill out the information requested such as location, serial number, etc. This information, along with the results, can be filed for future reference when completed.

NOTE: *Keep the original Spread Pattern Test Results sheet in this Owner's Manual and use a photocopy for writing down the information and recording the test results.*

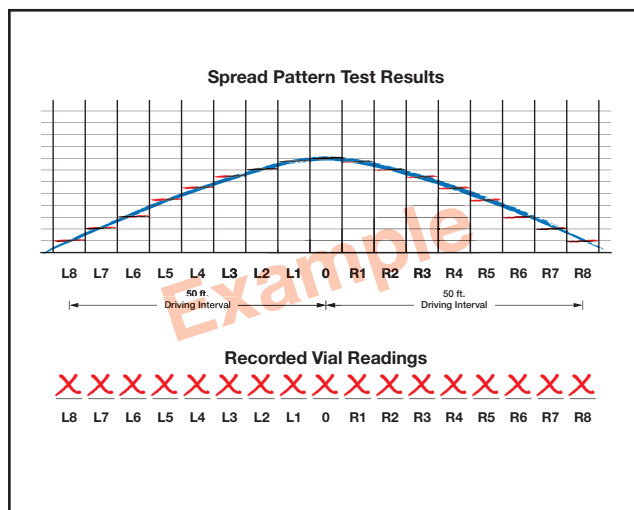


Using the funnel, empty the contents of each pan into its corresponding vial, starting with the L8 pan and vial.

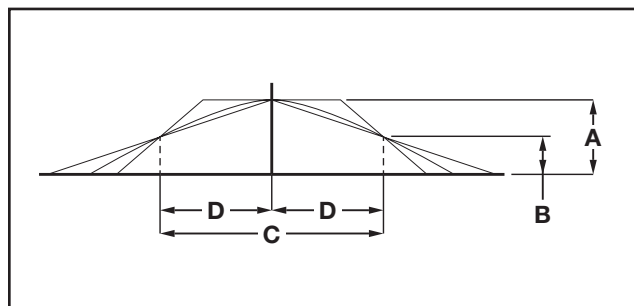
Measure the weight of the material in each vial using a scale. Record the weight for each vial in its proper square on the Test Pattern Results sheet.

NOTE: *Although each vial has marks for measure, the most reliable method for measurement is by weight as granular fertilizer components can settle with some irregularity.*

Graphing the Test Results



After all of the data has been entered on the Spread Pattern Test Results sheet, graph the results (see example above). Compare the shape of the graph to the following illustrations.



Any symmetrical spread pattern of these dimensional characteristics is acceptable.

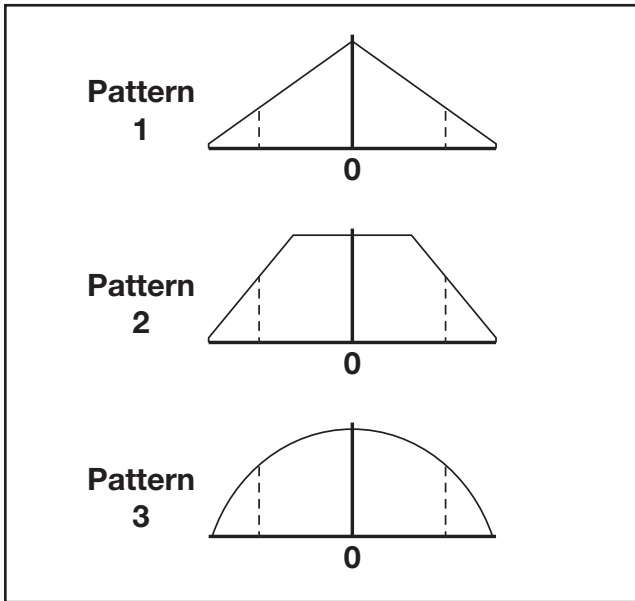
- A - Application rate of centerline.
- B - One half of application rate at centerline.
- C - Driving interval width.
- D - One half of driver interval width.

Acceptable patterns will deliver one half of the desired application rate at distance equal to one half driving interval from centerline. This point will be at the middle of the overlap.

Set-up and Operation

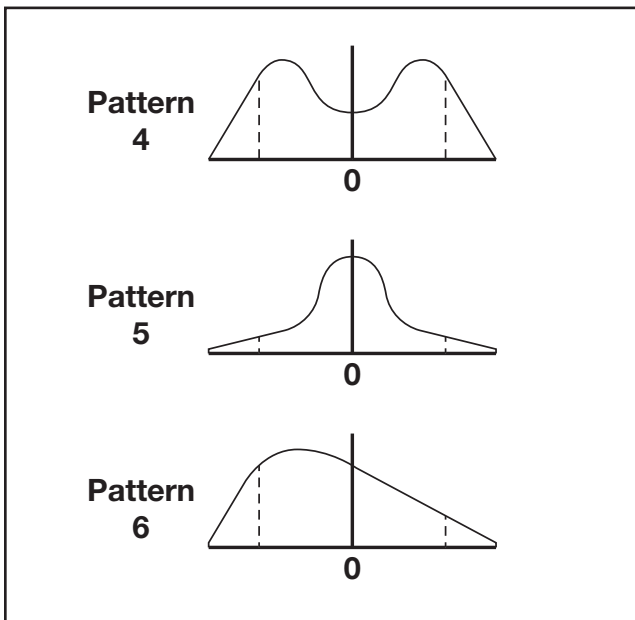
Spread Pattern Test (Cont'd)

Acceptable Patterns



If the pattern resembles any of the acceptable patterns above, no adjustments will need to be made to the machine.

Unacceptable Patterns

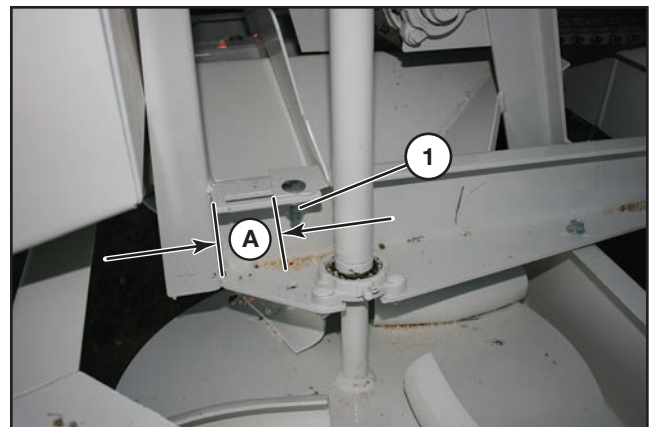


If the shape resembles any of the undesirable patterns above, take the recommended corrective action described in the following chart.

Spread Pattern	Recommended Corrective Action
Pattern 4 Low at center - High at sides	Move one or two spinner blades to a higher numbered hole.*
	Increase dimension "A". (See photo below.)
	Increase spinner RPM.
Pattern 5 High at center - Low at sides	Move one or two spinner blades to a lowered numbered hole.*
	Reduce dimension "A". (See photo below.)
	Decrease spinner RPM.
Pattern 6 Pattern off center	Check center divider - straighten or center if required.
	Spinner blade settings should be identical on each spinner.
	Check component condition and adjustment settings.

* Refer to "Spinner Blade Positions" on page 30 for adjustment instructions.

Retest and adjust the machine until the test pattern matches one of the acceptable patterns. Refer to "Spread Pattern Adjustments" for adjustment instructions.



Loosen nut (1) - (both sides) to adjust dimension "A". Retighten nuts when preferred dimension is reached. See also "Rear Deflector Adjustment" on page 30.

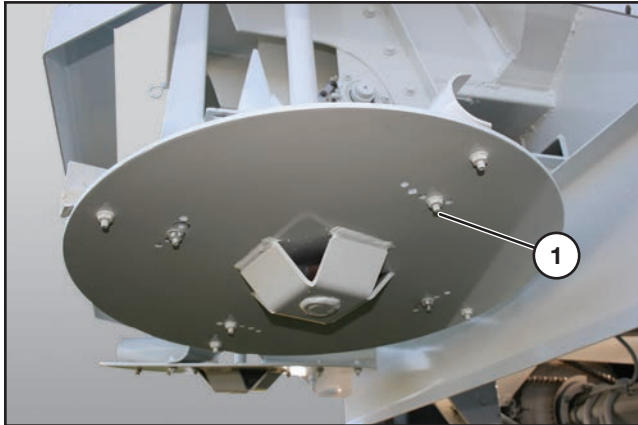
Set-up and Operation

Spread Pattern Adjustments

Before attempting any spread pattern adjustments, make sure the actual spread pattern has been determined.

Spinner Blade Positions

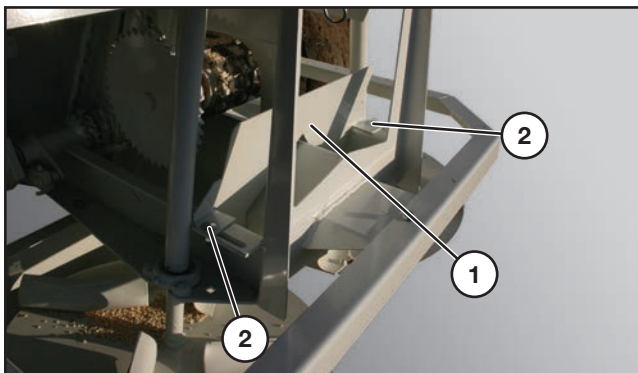
The spinner blades are the primary means of adjustment.



To adjust a spinner blade, remove the nut and washer (1) from the bolt securing the blade to the spinner. Reposition the blade and reinsert the bolt into the appropriate hole, securing with washer and nut.

NOTE: Any adjustment to a blade must also be duplicated to the blade opposite the spinner shaft. Also, spinner blade settings should be identical to the opposite spinner.

Rear Deflector Adjustment



To adjust rear deflector (1), loosen the nut and washer (2) on each side of deflector. Slide the deflector forward or back accordingly. Retighten hardware when deflector is in the desired position.

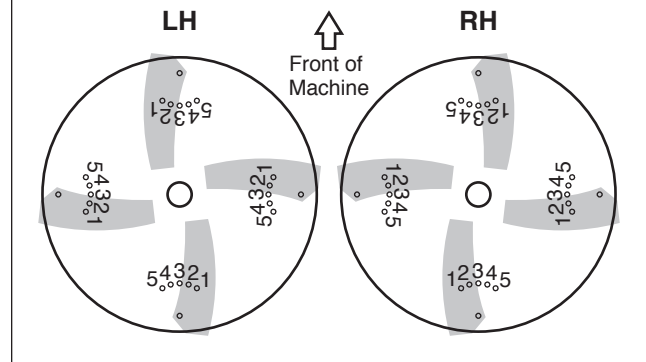
Spinner RPM

Check the spinner RPM with tractor throttle at operating speed - "PTO speed" for PTO powered spinners. Hold an electronic or mechanical tachometer near one of the spinners to check the spinner speed.

NOTE: For spreaders with spinner speed sensor, speed can be checked from the controller.

Driving Interval (Spread Width)	Spinner Speed RPM	Pattern Type	Spinner Blade Setting			
			1	2	3	4
40 ft.	700	Pattern 1 Triangle 100% Overlap				
50 ft.	830		3	2	3	2
60 ft.	950					
80 ft.	740	Pattern 2 Trapezoidal	3	3	3	3
90 ft.	790					

NOTE: Spinner blade hole number increases as blade is moved rearward. 1-2-3-4-5 when facing RH spinner; and 5-4-3-2-1 when facing LH spinner.



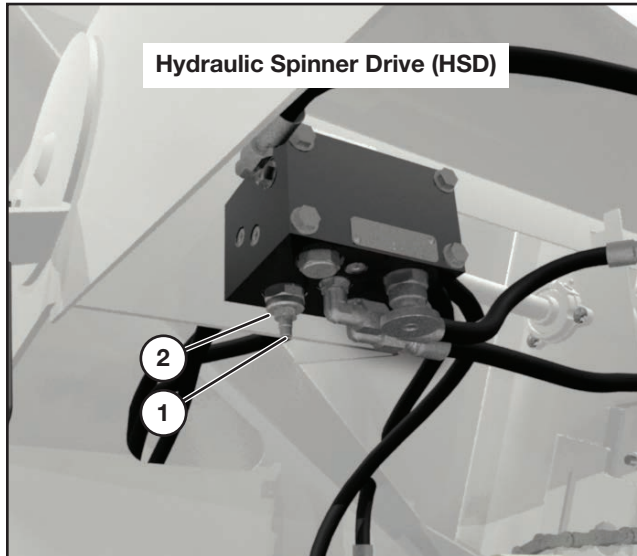
WARNING: Spinners rotate at high speed. Do not get hands or tachometer too close when checking spinner RPM.

(Procedure continued on following page.)

Spread Pattern Adjustments (Cont'd)

Spinner RPM (Cont'd)

For Hydraulic Spinner Drive (HSD)



To make adjustments, use a hex key to turn the flow control on the hydraulic spinner manifold located adjacent to the left side spinner.

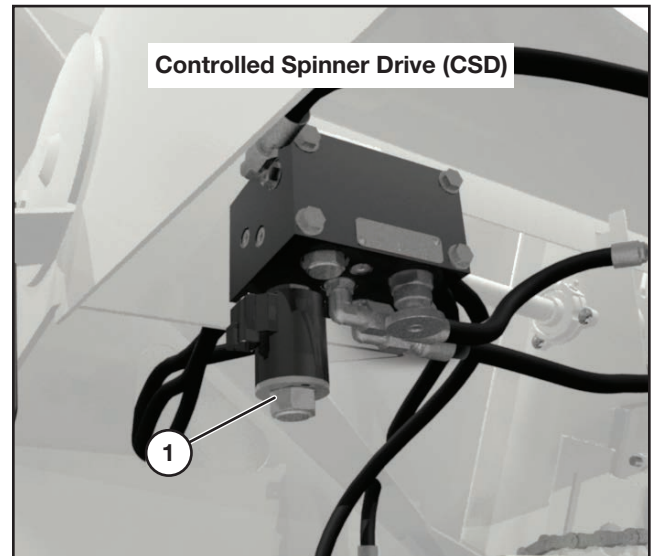
Turn the adjustment screw (1) clockwise to decrease RPM and counterclockwise to increase spinner RPM.

NOTE: Do not make more than 1/4 turn of the adjustment screw without rechecking the spinner RPM.

Recheck the spinner RPM using the tachometer or spinner speed sensor on control display, if equipped.

When complete, tighten the lock nut (2) to maintain the desired setting.

For Controlled Spinner Drive (CSD)



Spinner speed is controlled via a PWM (pulse width modulation) proportional flow control valve (1) and spinner speed sensor to maintain desired spinner speed. Spinner speed is set via the controller interface. Enter desired spinner speed in the application controller following the controller instructions.

Settings for valve and spinner speed are as follows:

Spinner Speed Sensor: 20 pulses per revolution

Spinner Valve Type: PWM Closed

PWM Frequency: 122

Spinner Valve Calibration: 43

Verify that spinner speed is correct.

NOTE: See also "Calibration (VRR Models)" on page 18.


Spinner RPM (PTO Powered Spinners)

For PTO powered spinners, adjust tractor PTO speed. Or if different spread width is desired, contact your dealer for alternate pulleys.



General Maintenance

See “Maintenance Safety” on page 4 before performing any service or maintenance on the fertilizer spreader.

	WARNING: Always shut down the tractor, remove the ignition key, set the park brake and remove the PTO shaft from the tractor before performing any inspections or maintenance.
---	---

To ensure efficient operation, you should inspect, lubricate, and make necessary adjustments and repairs at regular intervals. Parts that are starting to show wear should be ordered ahead of time, before a costly breakdown occurs and you have to wait for replacement parts. Keep good maintenance records, and adequately clean your spreader after each use.

Maintenance Schedule


HOURS	SERVICE POINTS	SERVICE REQUIRED					
		CHECK	CLEAN	CHANGE	GREASE	ADJUST	OIL
Every 8 (or after each use)	Machine		X				
	Loose Bolts	X				X	
	Hoses and Wiring	X					
	Oil Leaks	X					
	Bearings (Line Shaft, Spinner, Apron, Ground Drive, Slip Clutch, Metering Gate)				X		
	Chain Tension	X					
	PTO Shaft	X			X		
Every 50	Rear V-Belt Tension	X					
	540/1000 RPM Belt	X					
	Apron	X					
	Safety Labels	X					
	Wheels and Tires	X					
Every 60	Bearing Set Screws	X				X	
Every 500	Wheel Bearings	X			X		
	Jack				X		

Tire Inflation

Check tire inflation pressure. Set correct inflation pressure for tire per table.

Tire Size	Inflation Pressure
19216.1	32 psi
VF295/75R22.5	49 psi

Fluids And Lubricants

	CAUTION: Use proper safety procedures when handling petroleum products including, but not limited to, the use of rubber gloves and eye protection.
---	---


Proper lubrication is important. Too little lubricant will cause premature failure of a bearing. Too much lubrication usually causes high operating temperature and early failure of seals. Follow all lubrication instructions and schedules included in this section.

- Grease - Use an SAE multipurpose high temperature grease with extreme-pressure (EP) rating. Also acceptable is an SAE multipurpose lithium based grease.
- Brake System - Use DOT 3 brake fluid.
- Storing Lubricants - Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

Maintenance

Lubrication

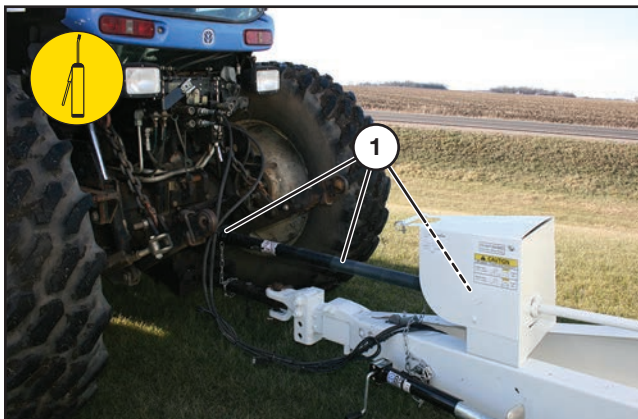
Grease Points

 **WARNING:** Do not lubricate parts while the machine is running.

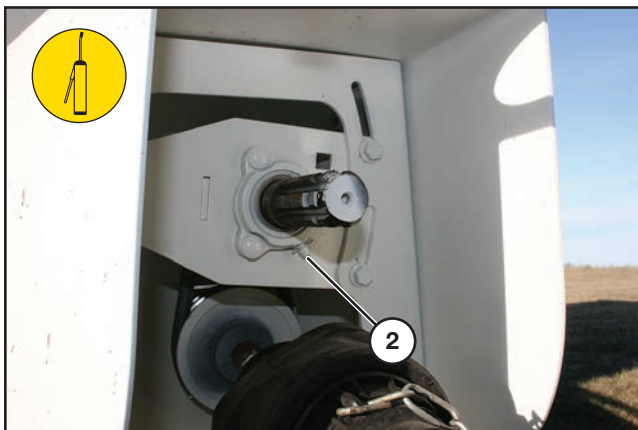
Use an SAE multipurpose high temperature grease with extreme-pressure (EP) rating.

NOTE: Replace any broken or missing grease fittings. Be sure to clean fittings before greasing.

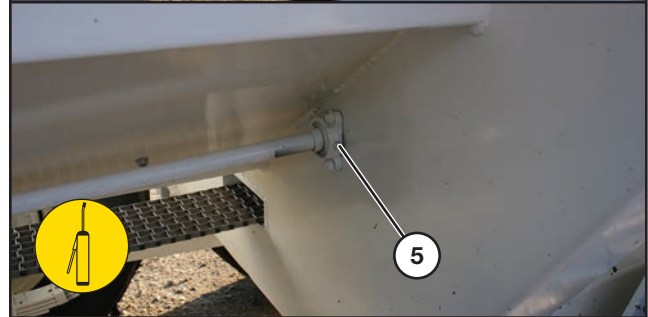
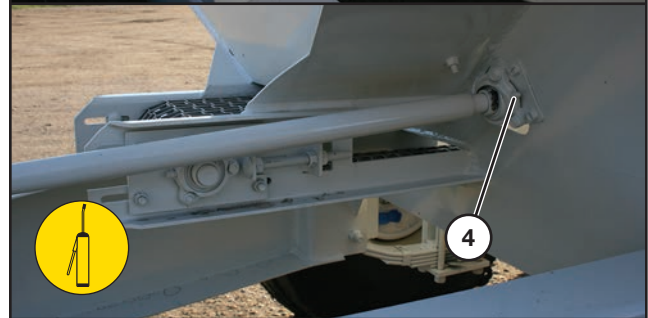
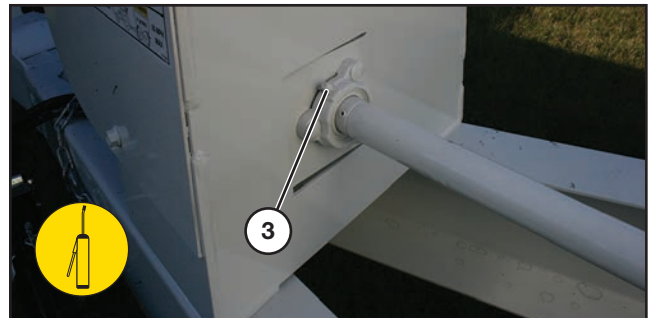
NOTE: See pages 7 and 8 for component location and identification.



Location: PTO tube and U-joints (1).
(PTO drive models only.)
Interval: Every 8 hours of operation.



Location: PTO shaft (2).
(PTO drive models only.)
Interval: Every 8 hours of operation.

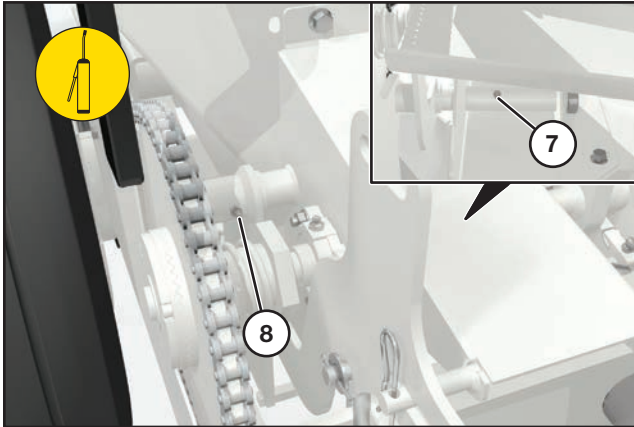


Location: Line shaft bearings (3, 4, 5, 6).
(PTO drive models only.)
Interval: Every 8 hours of operation.

(Continued on following page.)

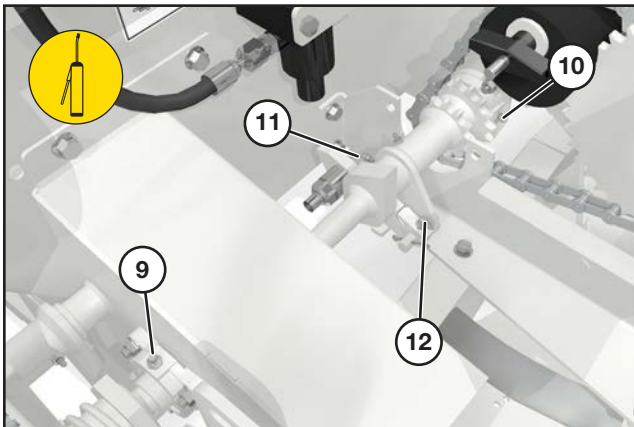
Lubrication (Cont'd)

Grease Points (Cont'd)



Location: Ground drive engaging lever (7, 8).
(Ground drive models only.)

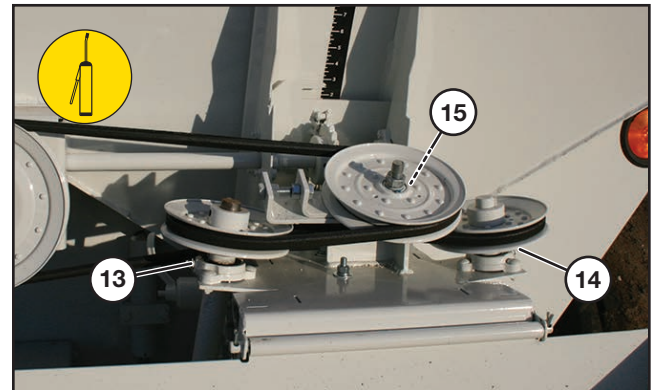
Interval: Every 8 hours of operation.



Location: Ground drive jack shaft bearings (9, 10).
(Ground drive models only.)

Location: Slip clutch cylinder bearings (11, 12).
(Ground drive models only.)

Interval: Every 8 hours of operation.



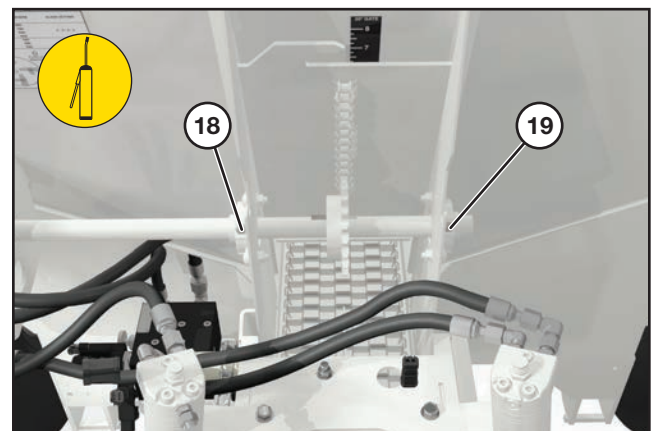
Location: Spinner bearings, top (13, 14).
Idler pulley bearing (15).
(PTO drive models only.)

Interval: Every 8 hours of operation.



Location: Spinner bearings, bottom (16, 17).

Interval: Every 8 hours of operation.



Location: Metering gate bearings (18, 19).

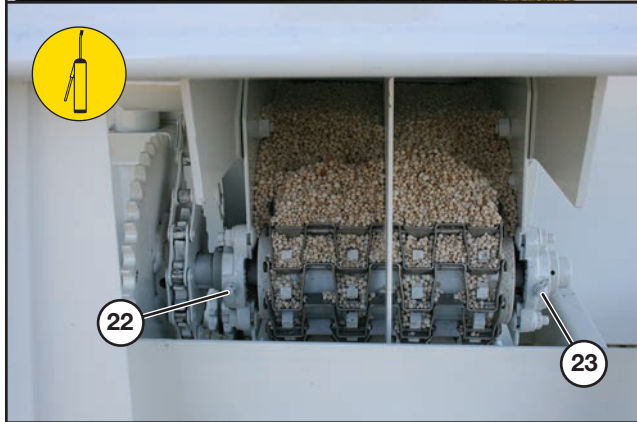
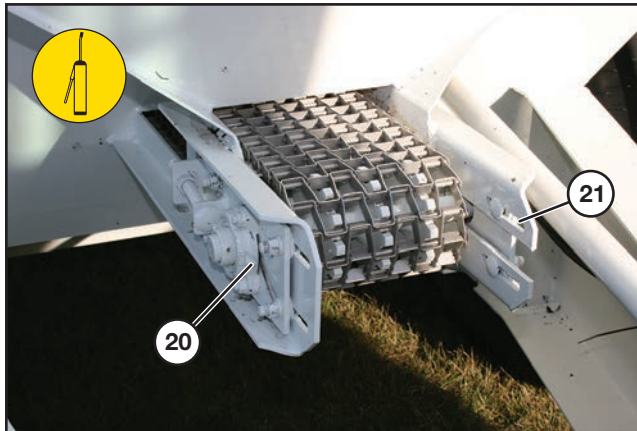
Interval: Every 8 hours of operation.

(Continued on following page.)

Maintenance

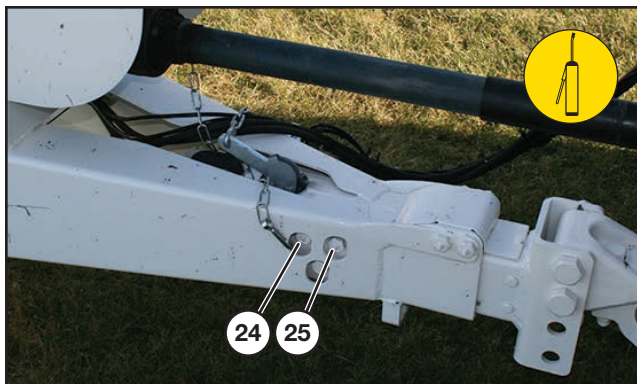
Lubrication (Cont'd)

Grease Points (Cont'd)



Location: Apron roller bearings; front (20, 21).
Apron roller bearings; rear (22, 23).

Interval: Every 8 hours of operation.



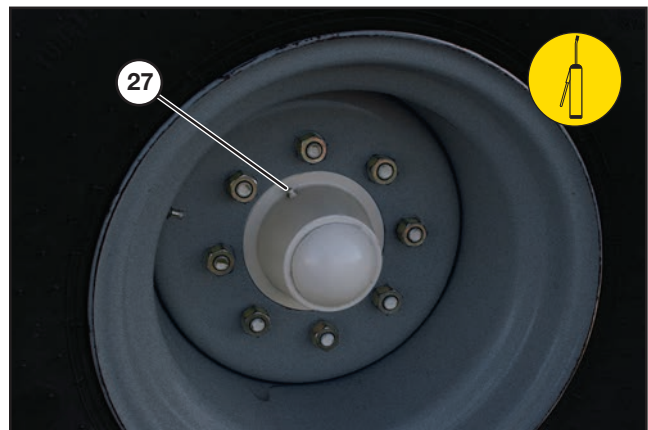
Location: Brake actuator (24, 25).

Interval: Every 8 hours of operation.



Location: Jack (26).

Interval: Every 500 hours of operation.
Disassemble jack and clean and re-pack acme screw and thrust bearing after each season.



Location: Wheel bearings - all four tires (27).

Interval: Every 500 hours of operation.

NOTE: See "Wheel Bearing Maintenance" on page 37 for more information on wheel bearing maintenance.

Wheel Bearing Maintenance



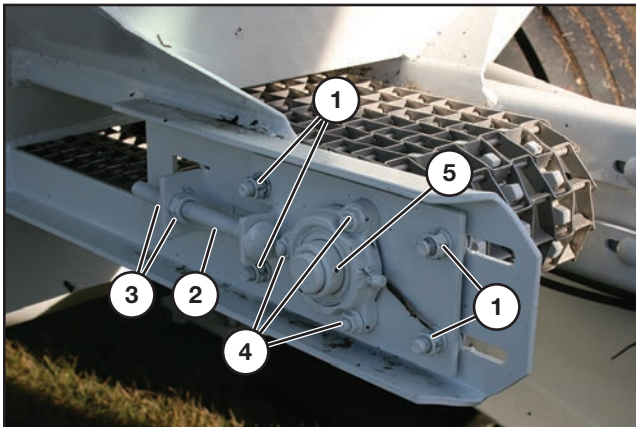
CAUTION: Do not remove wheel hubs with wheels and tires attached.



WARNING: Block and support the spreader securely before removing the tires and wheels to prevent it from falling.

Thoroughly clean all parts in solvent and check for bearing wear or cracked spindles. Repack bearings by forcing grease between the rollers. Assemble washer and nut on spindle and rotate hub while tightening the nut to 20-25 ft/lbs. Back off the nut until it becomes loose. While rotating the hub, hand tighten the nut, and align the cotter pin hole in the spindle with the slot in the nut. There should be .001-.005 in of end play. Insert cotter pin and bend it around the nut.

Tightening Apron



Loosen nuts (1) on outside of front end of the apron frame (4 on each side).

Adjust the take-up bolts (2) and nuts (3) on both sides of the frame evenly until apron chain clears frame by 1/2 in. to 1 in.

Check shaft bearing mounting bolts (4) and shaft locking collar set screws (5) for tightness (both sides).

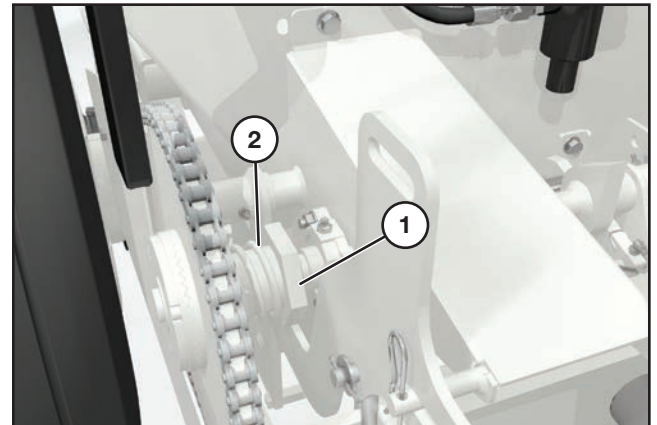
Reset take-up nuts (3). Tighten.

Roller Chains

Remove roller chains every two weeks during the season and soak in oil for at least 4 hours.

Wipe off excess oil before reinstalling them.

Slip Clutch Adjustment



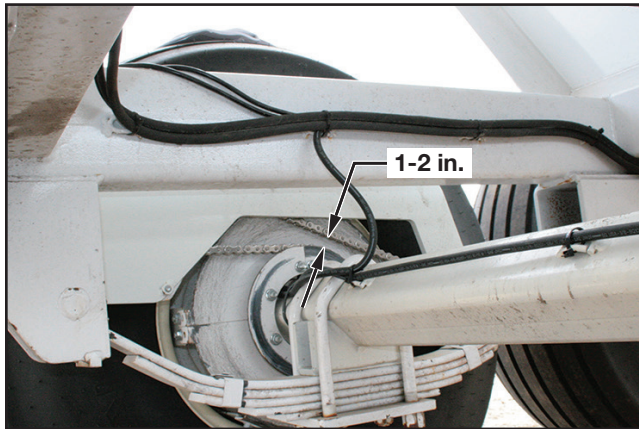
To adjust slip clutch spring tension, turn the adjusting nut (1) by hand until it makes contact with spring (2). Proceed with 2-1/2 more turns, leaving .25 in. (6.35 mm) of thread behind the nut.



CAUTION: Do not overtighten or slip clutch may not provide protection to drive the mechanism.

Maintenance

Ground Drive Train Adjustment



Ground drive chain tension is automatically spring-adjusted, however the length of chain determines the amount of chain wrap on the drive hub sprocket. Maintain about 1 to 2 inches (2.54 cm to 5.08 cm) between chain path at idler sprocket as shown above.

Hydraulic Surge Brakes (Optional)

Operation

Before towing the spreader, check the following.

1. Make sure bearings at forward end of actuator are greased.
2. Make sure breakaway lever is in the released position (towards rear of machine).
3. Secure breakaway chain to tow vehicle. Make sure there is enough slack in chain for turns.
4. Periodically check brake adjustment and master cylinder reservoir fluid level.

Bleeding Brakes

1. Remove master cylinder reservoir cover.
2. Fill reservoir with clean DOT 3 brake fluid.
3. Loosen bleeder fitting at top of brake drum assembly one turn.
4. Connect a bleeder hose to the fitting on the drum and place end of hose in a clean container.

5. Operate safety breakaway lever to fill and bleed the system. Add fluid as required.

DO NOT pump reservoir empty as air will be introduced into the system.

6. Purge each cylinder one at a time until system is completely free of air. Close bleeder screw as each cylinder is purged.
7. Breakaway lever will pull up to a hard stop when all air has been purged.
8. With breakaway lever pulled forward (actuator extended), check for leaks in the hydraulic system.

Brake Adjustment



WARNING: This procedure requires raising the wheels of the spreader off of the ground. Block and support the spreader securely to prevent it from falling.

Make sure brake drums are cool.

1. With wheels mounted, raise and block the spreader until the wheels are off of the ground.
2. With actuator extended in the towing position, pull the safety breakaway lever forward several times to center the shoes in the drums.
3. Release the breakaway lever.
4. Turn adjustment on brake assembly until there is a heavy drag. Back off adjustment until the wheel turns freely. Adjust both shoes.

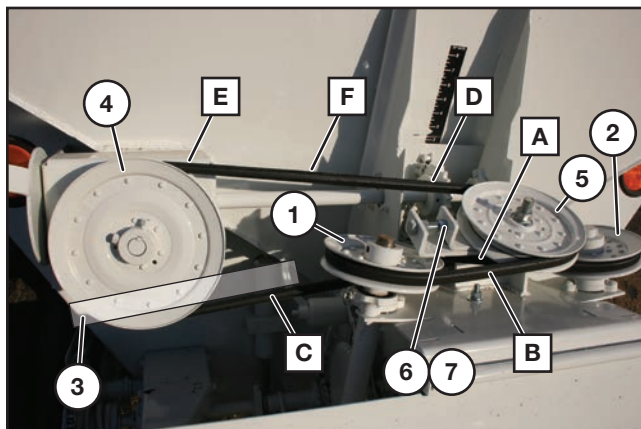
Repeat step 4 for each wheel.

Removing the Rear End

The rear end can be removed if repairs, replacement, or reconditioning should ever be needed.

To disassemble, remove the apron chain, rear spindle drive belt (PTO drive models), bumper, and both spinners. Locate splice pin in apron chain. Remove the bolts securing the rear end.

Rear Belt Alignment (PTO Spinner Drive Models)



Section of belt marked as “A” in the photo above should be in line. If adjustment needs to be made, align the two spinner sheaves (1 - left spinner; 2 - right spinner) to the same height and as high as possible, maintaining clearance between belt and underside of idler bracket.

Section of belt marked as “B” should be in line or slightly lower than idler.

Section of belt marked as “C” should be parallel to a straight edge (3) placed along the face of the line shaft sheave (4). Move the sheave on the line shaft to adjust.

Section of belt marked as “D” should run parallel to the face of the idler sheave (5). If an adjustment is needed, bend the idler sheave bracket to reach proper alignment.

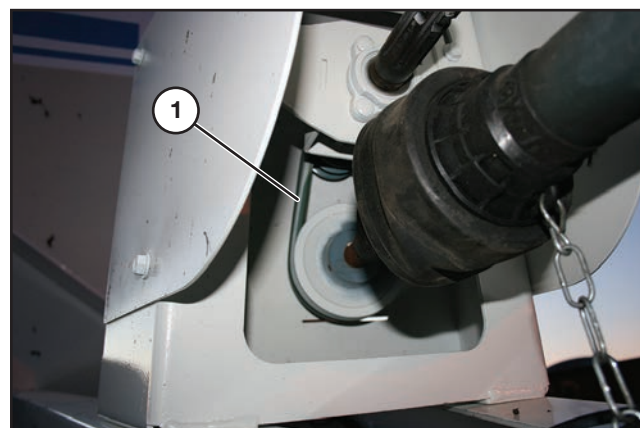
Section of belt marked as “E” must have a 90° clockwise twist between sections “D” and “E” to run same surface of belt through the grooves of the line shaft and idler pulleys.

Section of belt marked as “F” should be tightened so 1 in. (2.54 cm) deflection occurs with 20 lbs. of pressure applied at mid point between the line shaft sheave and the idler sheave. Tension should be rechecked after 2 hours of field use.

To tighten belt tension, loosen inner nut on the belt tension bolt (6) and tighten the outer nut (7) until proper belt tension is achieved. To loosen the belt tension, reverse this procedure.

Belt guide stop must be tight against mounting bracket to assure proper protection by guide.

Optional 540/1000 RPM Dual Drive



Adjusting Belt Tension

Belt (1) should be tightened so .094 in. (2.38 mm) deflection occurs with 11 lb. of pressure applied at midpoint between pulleys. Inspect for proper tension and retighten if necessary after each load.

Alignment of HTD (High Torque Drive) Belts

Alignment is critical in use of HTD drives. Shafts at each end of belt must be absolutely parallel to one another so the belt engages evenly across the sheaves.

Poor assembly and alignment will damage a HTD belt. Never pry or force a belt onto a sheave. Belts must be slid onto sheaves by either removing a flange or moving sheaves closer together.

Use Loftness part number N41602 when replacing a drive belt.


Replacing Metering Shaft

With old shaft out, install new metering shaft with handle up and approximately 1 to 1-1/2 in. away from hopper. Install and align sprocket with chain on gate, be sure gate is closed all the way.

Maintenance

Cleaning

To extend the life of the spreader and to keep it running efficiently, it should be cleaned after each day of use and before both short-term and long term storage. Left unchecked, accumulation of fertilizer will cause corrosion on the machine. Fertilizer buildup in and around the apron and rear gate could also decrease the spreader constant.

	CAUTION: <i>Chemical ingredients in some fertilizers may cause paint to blister or peel.</i>
---	---

Position so one end of the spreader is lower than the other and place blocks under the apron chain to lift it up off of the floor of the spreader.

Using a high-pressure water sprayer, clean the apron, rear end, spinners, and everywhere that the fertilizer accumulates.

IMPORTANT: *To avoid damage to the apron mechanism, make sure all fertilizer is removed in the areas around the spinners and on the floor of the spreader.*


Storage


Because of the corrosiveness of granular fertilizers, the machine should be kept clean and lubricated to extend the life of the machine and prevent damage to the driveline and other moving parts.

For Short-term Storage

1. Make sure the spreader hopper is completely empty.
2. Wash machine thoroughly to remove all fertilizer, grease, and oil.
3. Lubricate machine per instructions in this manual.

For Long-term or End of Season Storage:

	CAUTION: <i>Do not remove wheel hubs with wheels and tires attached.</i>
---	---

	WARNING: <i>Block and support the spreader securely before removing the tires and wheels to prevent it from falling.</i>
---	---

1. Make sure the spreader hopper is completely empty.
2. Wash machine thoroughly to remove all fertilizer, grease, and oil.
3. Lubricate machine per instructions in this manual. Remove all roller chains and store them in a container of oil. Remove wheel hubs and repack the wheel bearings. Do not remove hubs with wheels and tires attached.
4. Sand and clean any rusted areas. Apply a coat of metal primer and finish with a top coat of paint.
5. Park spreader with one end lower for drainage. Do not cover during storage. If equipped, do not have cover on hopper.

Troubleshooting

To assist with maintenance and repair, the following list of common problems and corrections is provided.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Spreader constant inaccurate.	Driving at wrong interval.	Drive at correct interval for pattern. Check controller settings for application width.
	Incorrect metering gate setting and/or incorrect range being used.	Verify metering gate setting and ensure operation range is correct.
	Fertilizer build-up on floor and around metering gate.	Clear fertilizer build up.
	Spreader not calibrated correctly.	Calibrate spreader.
Spread pattern not the same on both sides of the spreader.	For PTO spinner drive models, check wrap on rear V-belt.	Tighten/adjust rear V-belt.
	Rear deflector and/or divider is misaligned.	Check alignment.
	Spinners height not consistent.	Verify and adjust spinners to be the same height.
Spread pattern heavy or light at center line of spreader.	Spinner RPM is incorrect.	Use tachometer to verify spinner RPM. Adjust if necessary.
	For PTO spinner drive models, rear V-belt is slipping, or too loose.	Tighten V-belt.
	Spinner blades and deflector position are in incorrect position.	Adjust blades and deflector accordingly.
	Driving at wrong interval.	Drive at correct interval for pattern. Check controller settings for application width.
Spread pattern too narrow.	Low spinner RPM.	Increase spinner speed.
Spread pattern too wide.	High spinner RPM.	Decrease spinner speed.
Applied rate low.	Speed too fast.	Drive slower.
	Rate set too high.	Increase gate opening and adjust spreader constant.
		Decrease rate.

Maintenance

Troubleshooting (Cont'd)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Application rate inaccurate.	Driving at wrong interval.	Drive at correct interval. <i>(Example: Drive at 40 ft. intervals for 40 ft. spread pattern; 50 ft. intervals for 50 ft. spread pattern, etc.)</i>
		See Rate Charts.
	Wrong interval entered.	Enter correct interval in controller.
	Calibration number incorrect.	Calibrate spreader.
	Incorrect metering gate setting and/or incorrect range being used.	Verify metering gate setting and ensure operation range is correct.
	Fertilizer build-up on floor and around metering gate.	Clear fertilizer build up.
Spinner speed does not increase.	Low tractor hydraulic flow.	Increase flow from tractor.
Spinner speed not stable.	Flow control set too high.	Decrease flow until speed is stable.
Spinners not spinning.	Tractor hydraulics not running.	Turn on tractor hydraulics.
	Incorrect hydraulic setting.	Set tractor hydraulics to motor/continuous.
		Check priority setting of tractor hydraulics.
Tank line pressurized.	Pressurize "Pressure" line.	
Spinner speed not reading.	Sensor not connected.	Connect sensor.
	Calibration not entered.	Enter correct calibration number.
	Incorrect calibration.	Enter correct calibration number.
	Poor electrical connection.	Check electrical connections.
		See Troubleshooting in controller manufacturer's manual.
Failed sensor.	Replace sensor.	
Apron will not move.	Tractor hydraulics not running	Turn on tractor hydraulics.
	Incorrect hydraulic setting.	Set tractor hydraulics to motor/continuous.
		Check priority setting of tractor hydraulics.
	Tank line pressurized.	Pressurize "Pressure" line.
	Master switch off.	Turn on master switch.
	No rate entered.	Enter desired rate.
	Tractor not moving.	Drive tractor.
		Enter test mode.
Insufficient tractor speed.	Drive faster than minimum application speed.	

Troubleshooting (Cont'd)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Apron speed will not change.	Controller in test mode.	Exit test mode.
	Rate set to manual.	Set rate to automatic mode.
Apron ratches.	Rate set too low.	Increase rate.
		Decrease gate opening and adjust spreader constant.
	Speed too slow.	Drive faster.
Slip clutch slips.	Apron is catching or has obstructions such as caked fertilizer.	Fully open metering gate, drive a few feet to free apron of packed fertilizer.
		Shift to low range and use a larger gate opening.
		Remove built up fertilizer from floor and around metering gate.
	Adjust slip clutch tension.	
	Ground drive chain wrapped incorrectly.	Check ground drive chain wrap.
Rear V-belt comes off. (PTO spinner drive models.)	Sheaves are misaligned.	Realign sheaves and adjust belt tension.
	Wrong sheaves and V-belt are being used.	Use only sheaves and deep-groove belts.

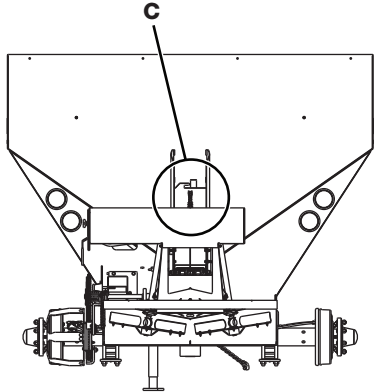
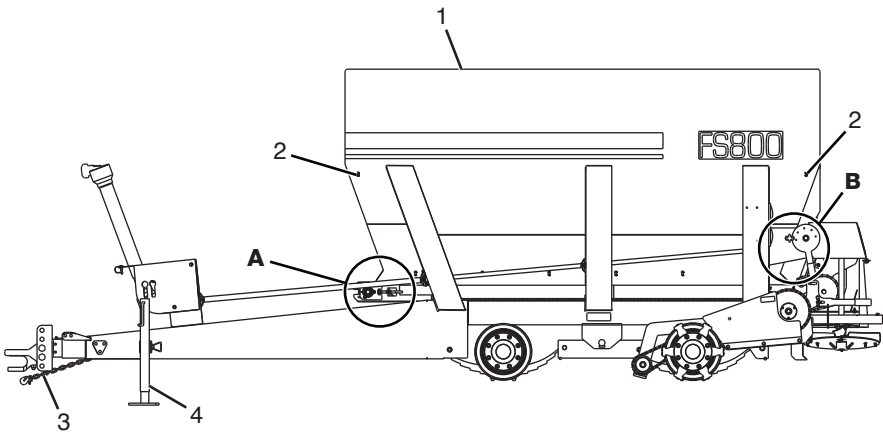
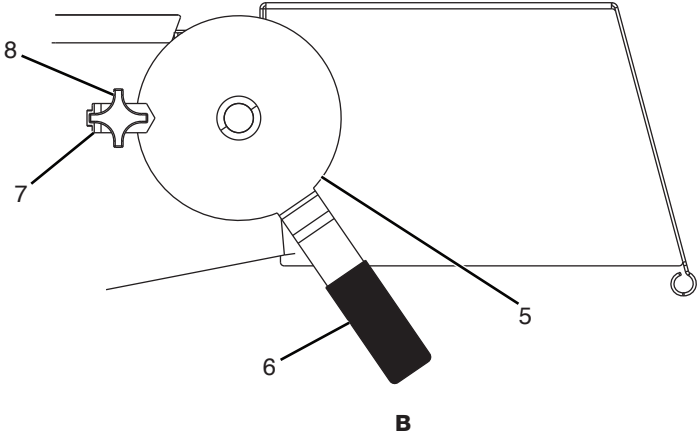
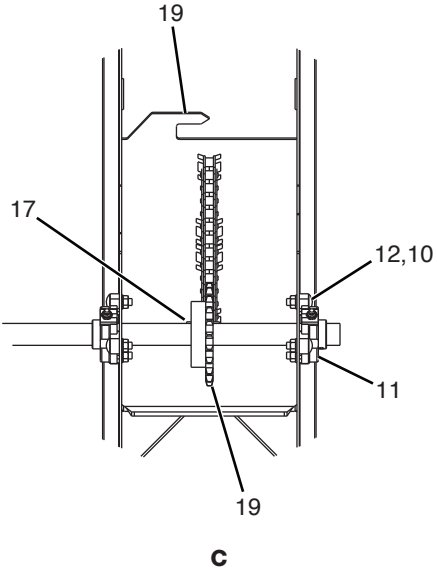
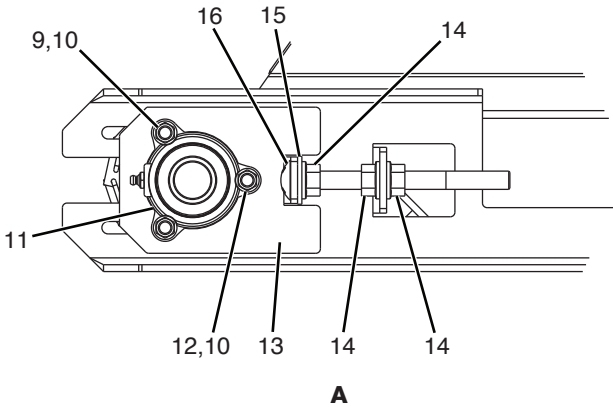




PARTS IDENTIFICATION AND SCHEMATICS

Parts Identification

Spreader Frame



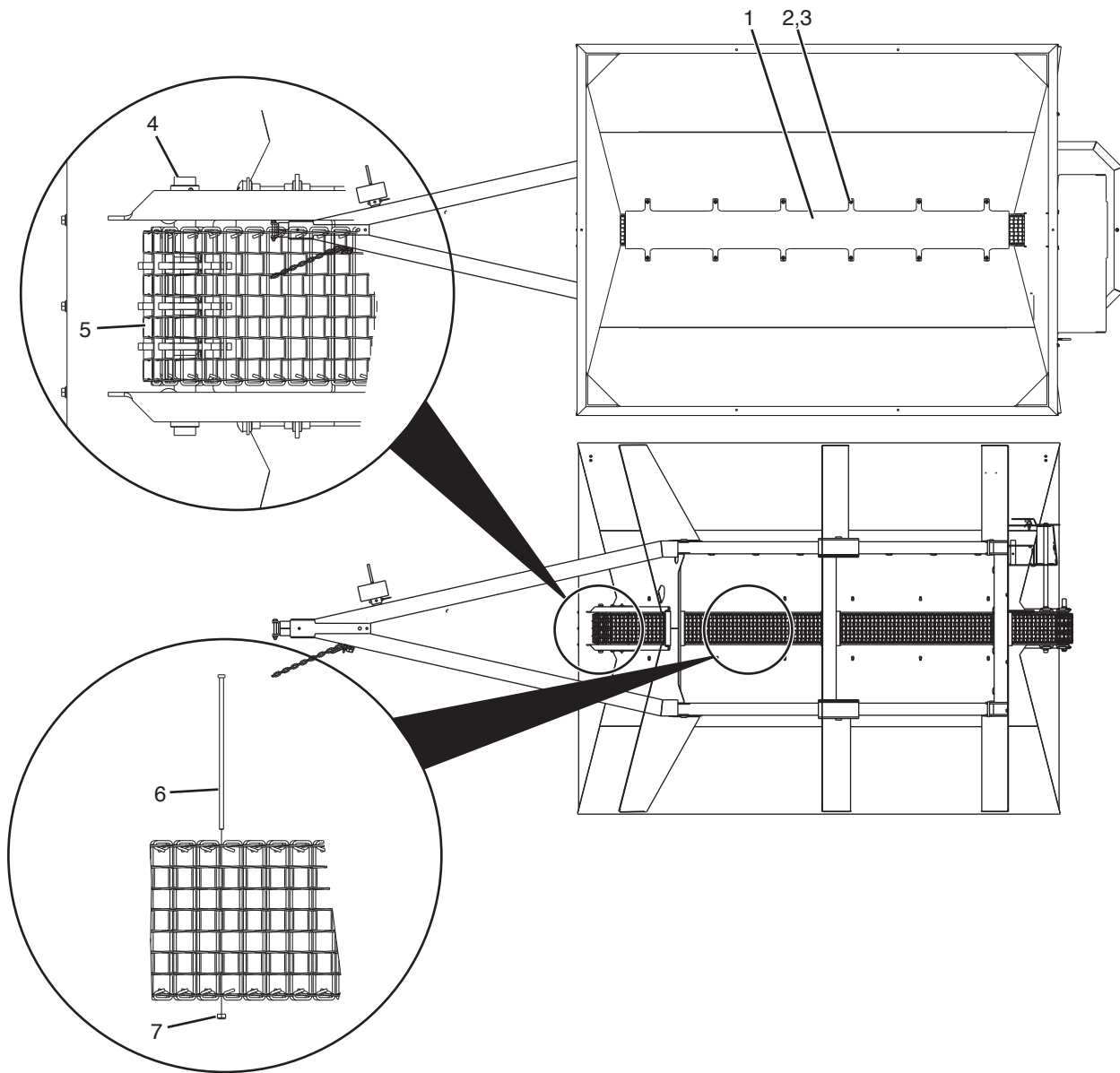
Parts Identification

Spreader Frame

#	QTY.	PART #	DESCRIPTION
1	1	N139000	BIN WLDMT
2	4	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
3	1	N50260	CHAIN,SAFETY 21,000LB W/ HDWR
4	1	8047	JACK, BULLDOG SWL 158DTSF
5	1	N43352	ADJUSTER,GATE
6	1	N50757	COVER, PLASTIC HANDLE
7	1	N43362	POINTER, SPREADER GAUGE
8	1	N23873	KNOB, 3/8" X 1-1/2 FOUR PRONG
9	4	N62391	BOLT, CARRIAGE 5/16 X 1-1/4, SS
10	12	N41427	NUT, LOCK 5/16" SER FLG, SS
11	4	N33830	BEARING, 1" DODGE 3-BOLT FLG
12	8	N41428	BOLT, CARRIAGE 5/16" X 1", SS
13	2	N62318	PLATE, SPREADER B
14	6	N29075	NUT, LOCK 1/2" SERATED FLANGE
15	2	4997	WASHER, FLAT 5/8" SAE
16	2	4988	BOLT, CARRIAGE 1/2" X 6" GR 5
17	1	7187-03	KEY, 1/4" X 1-1/2"
18	1	N43498	SPROCKET, 50B22 1/4 KEYWAY & SS
19	1	N43400	GATE WLDMT

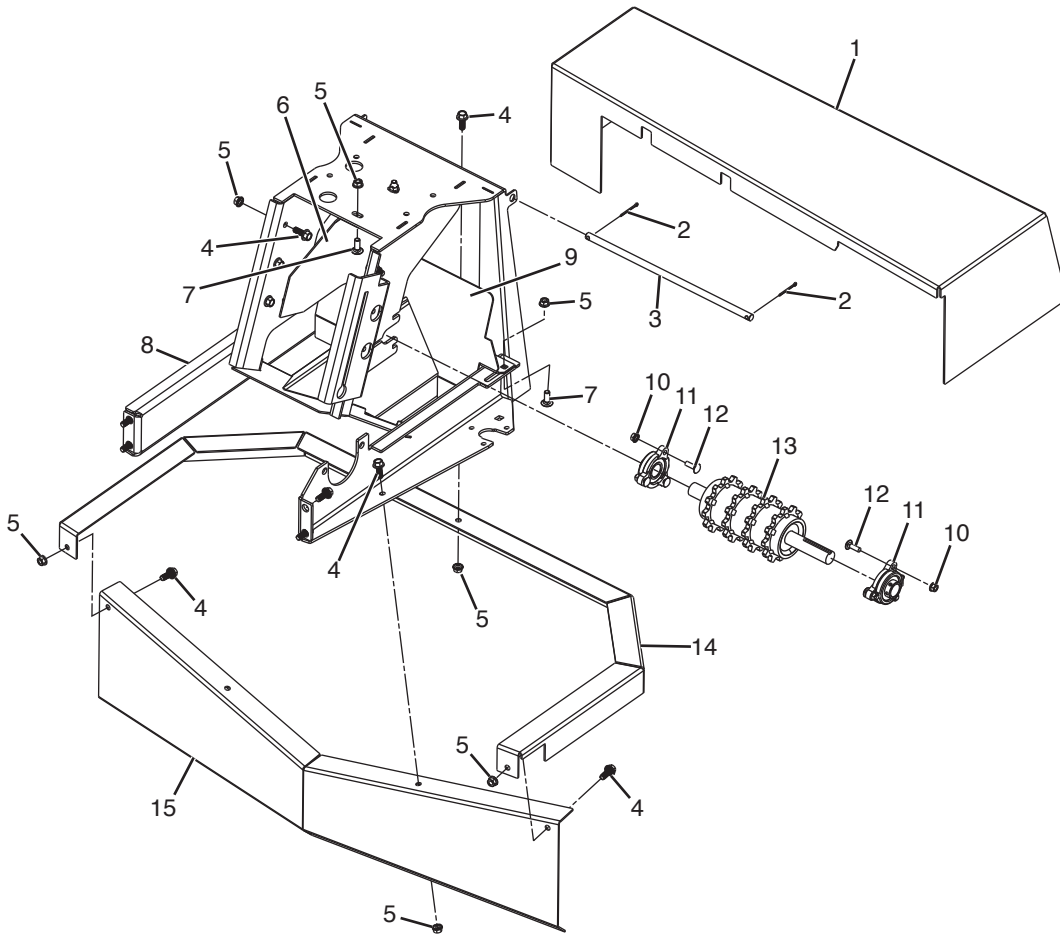
Parts Identification

Apron



#	QTY.	PART #	DESCRIPTION
1	1	N41898	HOOD, SRDR 6 & 8 FLOOR CHAIN
2	12	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
3	12	N73940	NUT, LOCK 3/8" SER FLG SS
4	1	N43841	SPROCKET WLDMT, IDLER
5	1	N41429	BELT, FLATWIRE 7" X 241"
6	1	204030	BOLT, 7" FLATWIRE BELT SPLICE
7	1	204031	NUT, LOCK #10-32 NYLOC SS

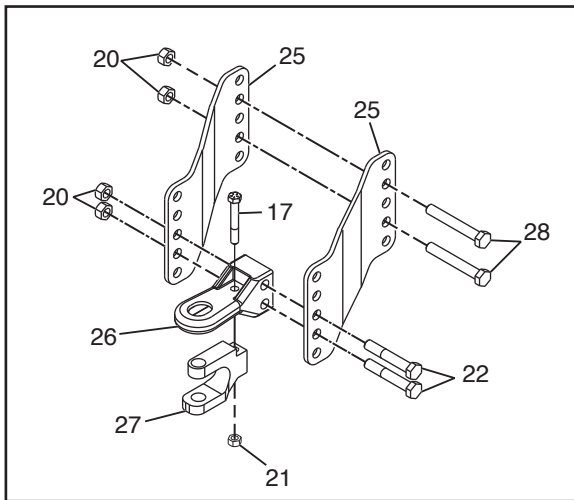
Spinner Mount and Cover



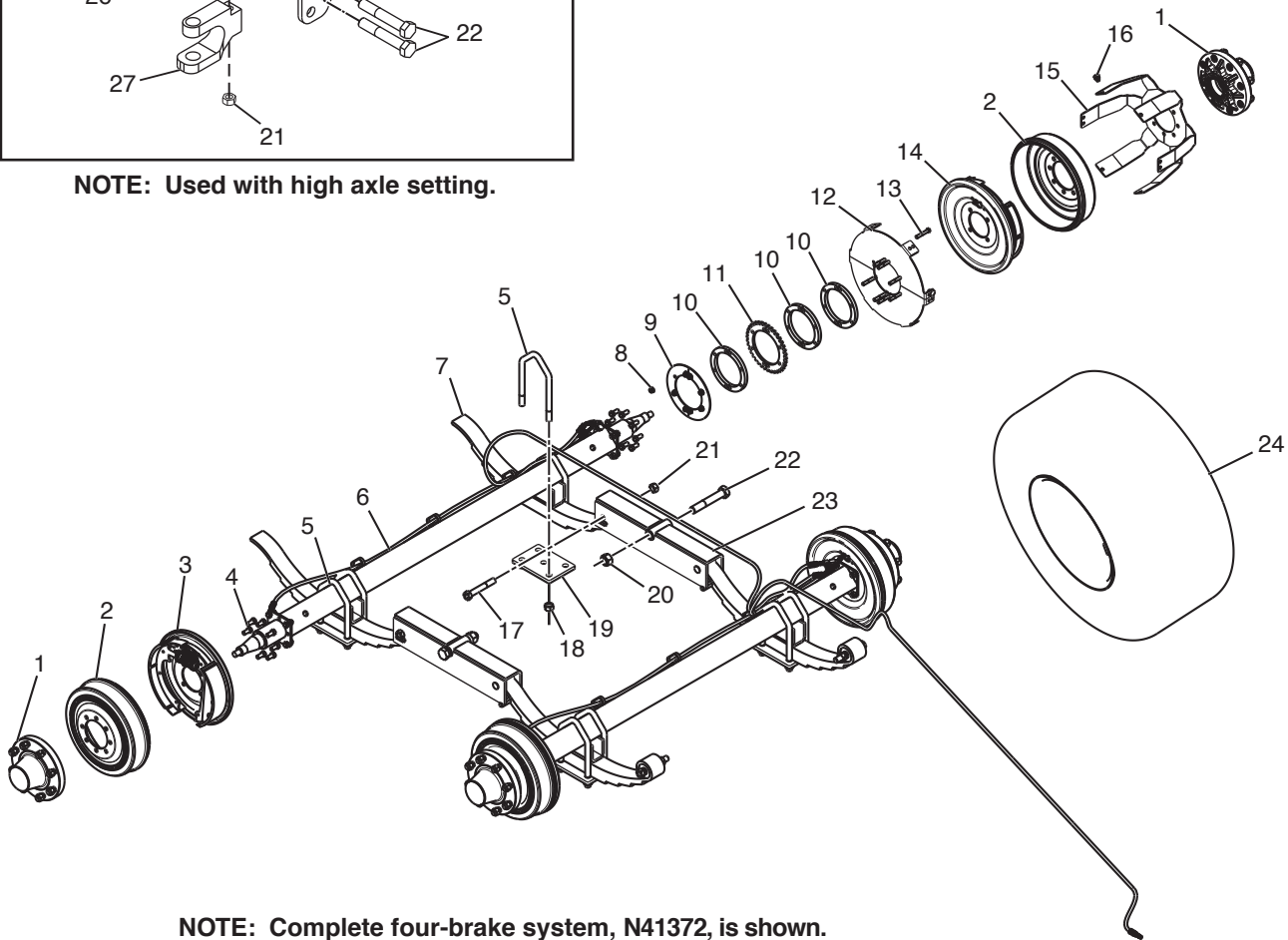
#	QTY.	PART #	DESCRIPTION
1	1	N44127	SHIELD, SPREADER BELT
2	2	4099	PIN, COTTER 1/8" X 1-1/2"
3	1	N44143	PIN, SPREADER BELT SHIELD
4	15	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
5	15	N73940	NUT, LOCK 3/8" SER FLG SS
6	1	N44105	DIVIDER, SPRDR CTR DISCHARGE
7	4	4567	BOLT, CARRIAGE 3/8" X 1" SS
8	1	N101005	MOUNT, SPREADER SPINNER
9	1	N43924	PLATE, SPRDR DUAL SPNR STOP
10	6	N41427	NUT, LOCK 5/16" SER FLG, SS
11	2	N33830	BEARING, 1" DODGE 3-BOLT FLG
12	6	N41428	BOLT, CARRIAGE 5/16" X 1", SS
13	1	N51441	DRUM WLDMT, DRIVER
14	1	N109413	GUARD, SPREADER SPINNER
15	1	N151370	DEFLECTOR, SPREADER SPINNER

Parts Identification

Wheels, Brakes, and Suspension



NOTE: Used with high axle setting.



NOTE: Complete four-brake system, N41372, is shown.
N41373 (two-brake option) has brakes installed on the front axle only.
N41374 option has no brakes installed.

Parts Identification

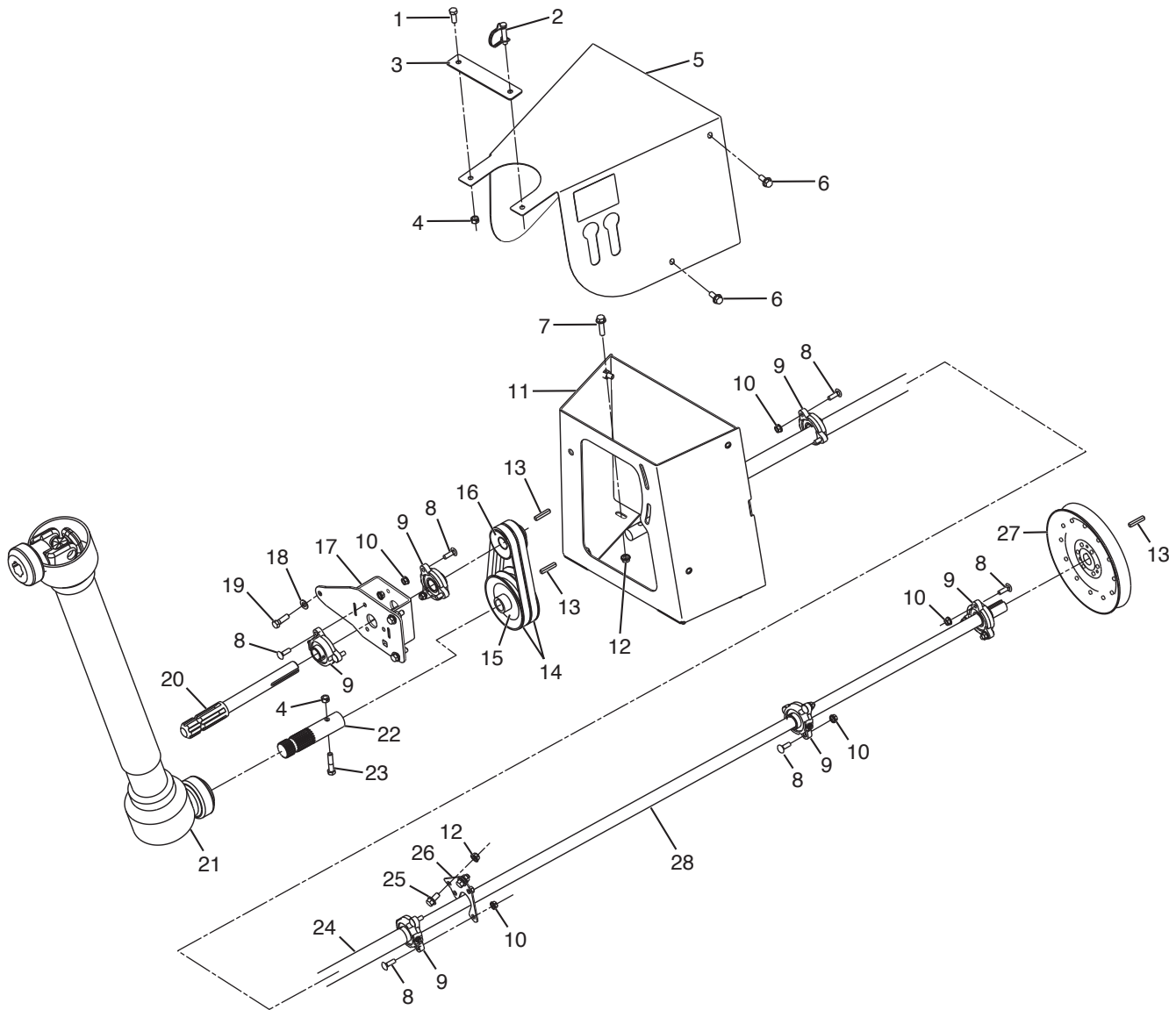
Wheels, Brakes, and Suspension

#	QTY.	PART #	DESCRIPTION
1	4	N41447	HUB, 8 BOLT 4.0" BOLT CIRCLE
2*	4	N41448	DRUM, SPREADER BRAKE
3*	2	N41443	BRAKE, FREE-BACKING 13" RIGHT
4	48	4465	BOLT, 1/2" X 1" GRADE 8
5	8	N41450	V-BOLT, 3/4-16 X 4.625 X 9.500
6	2	N39125	AXLE, SPREADER - 74" GAUGE
	2	206253	AXLE, SPREADER - 68" GAUGE
7	4	N41440	SPRING, ML SLIP 30 5000 72-80
8	16	4979	NUT, LOCK 3/8" SER FLG
9	2	N35353	GUIDE, SPRDR WHL DRIVE RETAIN
10	6	N35350	SPACER, SPRDR WHEEL DRIVE
11	2	N35351	SPROCKET, 50A38
12	2	N35349	RING, SPRDR WHL DRIVE RETAIN
13	8	4538	BOLT, 3/8 X 2-3/4" GRADE 5
14*	2	N41444	BRAKE, FREE-BACKING 13" LEFT
15	2	N47644	HUB,DRIVE
16	8	4033	BOLT, CARRIAGE 3/8" X 3/4" GR5
17	5	4577	BOLT, 3/4" X 5" FN TH GR 8
18	16	4341	NUT, 3/4" FINE THREAD GRADE 8
19	4	N41451	PLATE, SPREADER SPRING MOUNT
20	6	N16700	NUT, 1"-14GR.8FINE THREADTOPLOCK
21	5	N16352	NUT, LOCK 3/4" GRADE 8 FINE
22	4	N28583	BOLT, 1 X 6" FN TH GR 8
23	2	N35357	EQUALIZER, SPREADER SUSPENSION
24	4	N33812	WHEEL, 19L16.1 -16" RIM - 10PLY
25	2	206255	PLATE, DROP HITCH
26	1	N37474	BASE, CAT 2 BOLT-ON REC HITCH
27	1	N37463	CLEVIS, CAT 2 BOLT-ON HITCH
28	2	N24607	BOLT, 1"-14 X 7" FINE THD GRD 8

* Used on four-brake option (N41372) and two-brake option (N41373) only. The two-brake option has brakes installed on the front axle only. These parts are not used on N41374, units equipped with no brakes.

Parts Identification

Driveline, 540/1000



Parts Identification

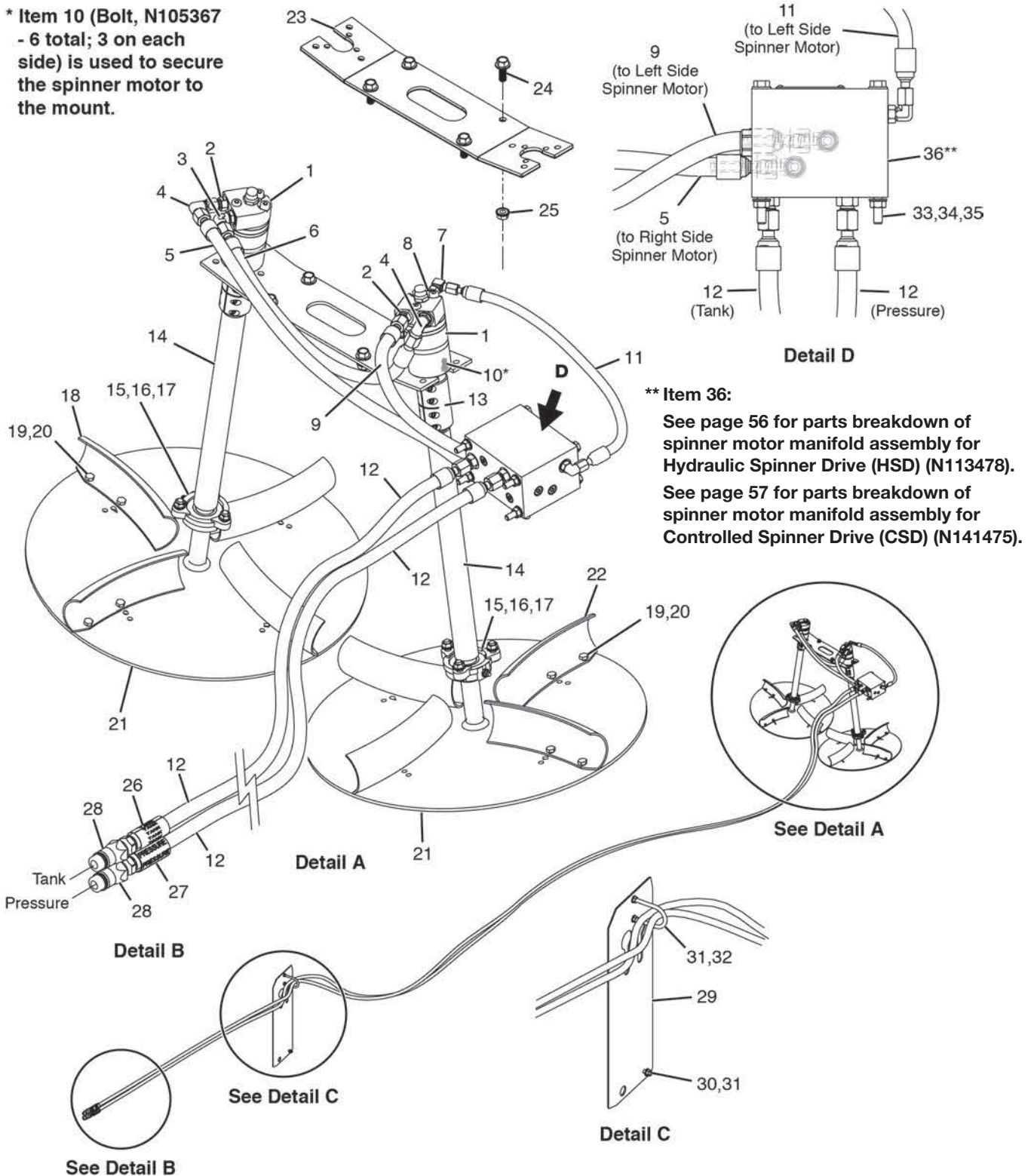
Driveline, 540/1000

#	QTY.	PART #	DESCRIPTION
1	1	4195	BOLT, 3/8" X 1" GRADE 5
2	1	N27991	PIN, 3/8" X 1-3/8" RETAINER
3	1	N41760	PLATE, SPREADER PTO LATCH
4	2	4052	NUT, LOCK 3/8"
5	1	N62253	COVER, SPREADER PTO
6	4	N26743	BOLT, 3/8" X 1" SER FLG
7	4	N37775	BOLT, 3/8" X 1-1/2" SER FLG
8	18	N26741	BOLT, CARRIAGE 5/16" X 1"
9	6	N33830	BEARING, 1" DODGE 3-BOLT FLG
10	18	N26742	NUT, LOCK 5/16" SER FLG
11	1	N43568	SUPPORT WLD,MT,PTO
12	6	4979	NUT, LOCK 3/8" SER FLG
13	3	7187-03	KEY, 1/4" X 1-1/2"
14	2	N41602	BELT, B22 (5L250)
15	1	N41550	PULLEY, 2BK52 X 1 TTN BRL
16	1	N39162	PULLEY, 2BK27 X 1 TTN BRL
17	1	N43548	MOUNT WLD,MT,SHAFT-1000RPM
18	3	N31741	WASHER, FLAT 3/8" SAE
19	3	4005	BOLT, 3/8" X 1-1/4" GRADE 5
20	1	N41458	SHAFT, SPREADER PTO DRIVE
21	1	N41664	SHAFT,PTO 540/1000
22	1	N33992	SHAFT, 1-3/8" 21 SPLINED 6"
23	1	4232	BOLT, 3/8" X 1-3/4" GRADE 5
24	1	N62284	SHIELD, SPREADER DRIVESHAFT
25	2	N36497	BOLT, 3/8" X 3/4" SER FLG
26	1	N62281	SUPPORT,DRIVESHAFT
27	1	N143590	PULLEY, V-BELT 7.45" (for 40' spread)
		N33863	PULLEY, V-BELT 9.50" C-GROOVE (for 50' spread)
		N143211	PULLEY, V-BELT 11.00" C-GROOVE (for 60' spread)
28	1	N39156	DRIVELINE, SPREADER PTO

Parts Identification

Spinner Drive, Hydraulic

* Item 10 (Bolt, N105367 - 6 total; 3 on each side) is used to secure the spinner motor to the mount.



Parts Identification

Spinner Drive, Hydraulic

#	QTY.	PART #	DESCRIPTION
1	2	N101185	MOTOR, SPINNER DANFOSS
2	2	N28847	ADAPTER, -6MJIC -6MBSPP
3	2	N105368	ELBOW, 90 DEG -6MJIC -6MBSPP
4	1	N29078	ELBOW, 90 DEG - 6MJIC - 6FJIC
5	1	N23834	HOSE, 3/8 X 28 -6FJX -6FJX
6	1	N26319	HOSE, 3/8 X 18 -6FJX -6FJX
7	1	N25125	ELBOW, 90 DEG - 4FJIC - 4MJIC
8	1	N110162	ADAPTER. -4MJIC -2BSPP
9	1	N53062	HOSE, 3/8 X 16 -6FJX -6FJX
10	6	N105367	BOLT, SHCS M6X1.0X12
11	1	206016	HOSE, 1/4" X 21"-06FJIX-06FJIX
12	2	206017	HOSE, 3/8 X 263" -6FJIC -8MP
13	2	N55903	COUPLING, CLAMP-TYPE 1"x5/8"
14	2	N62261	SHIELD, SPREADER SPINNER SHAFT
15	2	N33830	BEARING, 1" DODGE 3-BOLT FLG
16	6	N41427	NUT, LOCK 5/16" SER FLG, SS
17	6	N41428	BOLT, CARRIAGE 5/16" X 1", SS
18	4	N33836	SLINGER, RH
19	16	N68480	NUT, LOCK 1/4" SER FLG SS
20	16	N68478	BOLT, 1/4" X 1" SS
21	2	N62257	SPINNER
22	4	N44111	SLINGER, LH
23	1	206022	PLATE, SPINNER MOTOR 50'
24	4	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
25	4	N73940	NUT, LOCK 3/8" SER FLG SS
26	1	N24823	DECAL, TANK
27	1	N24822	DECAL, PRESSURE
28	2	N11825	COUPLER, 1/2" MALE PIONEER
29	1	N102127	BRACKET, HOSE HOLDER
30	1	4195	BOLT, 3/8" X 1" GRADE 5
31	5	4979	NUT, LOCK 3/8" SER FLG
32	1	N19296	U-BOLT, 3/8 X 2 X 4 GR 5
33	4	206019	BOLT, 5/16" X 5" GR 5
34	4	N28927	WASHER, FLAT 5/16 SAE
35	4	N26742	NUT, LOCK 5/16" SER FLG
36	1	N113478	MANIFOLD ASM, SPINNER MTR HSD (see page 56)
		N141475	MANIFOLD ASM, SPINNER MTR VSD (see page 57)

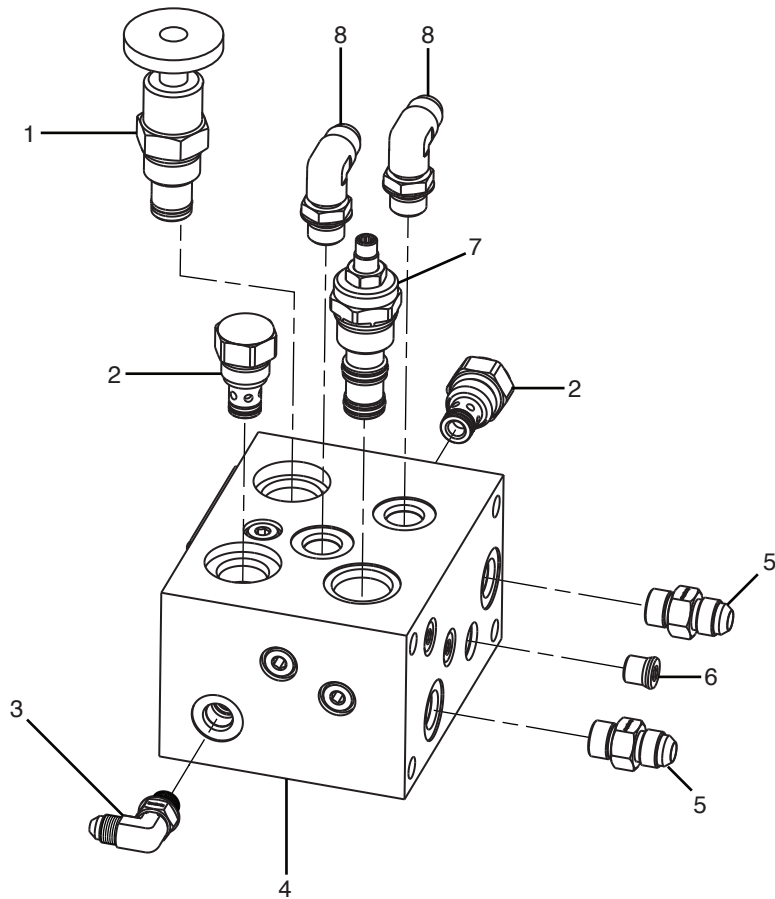
**** Item 36:**

See page 56 for parts breakdown of spinner motor manifold assembly for Hydraulic Spinner Drive (HSD) (N113478).

See page 57 for parts breakdown of spinner motor manifold assembly for Controlled Spinner Drive (CSD) (N141475).

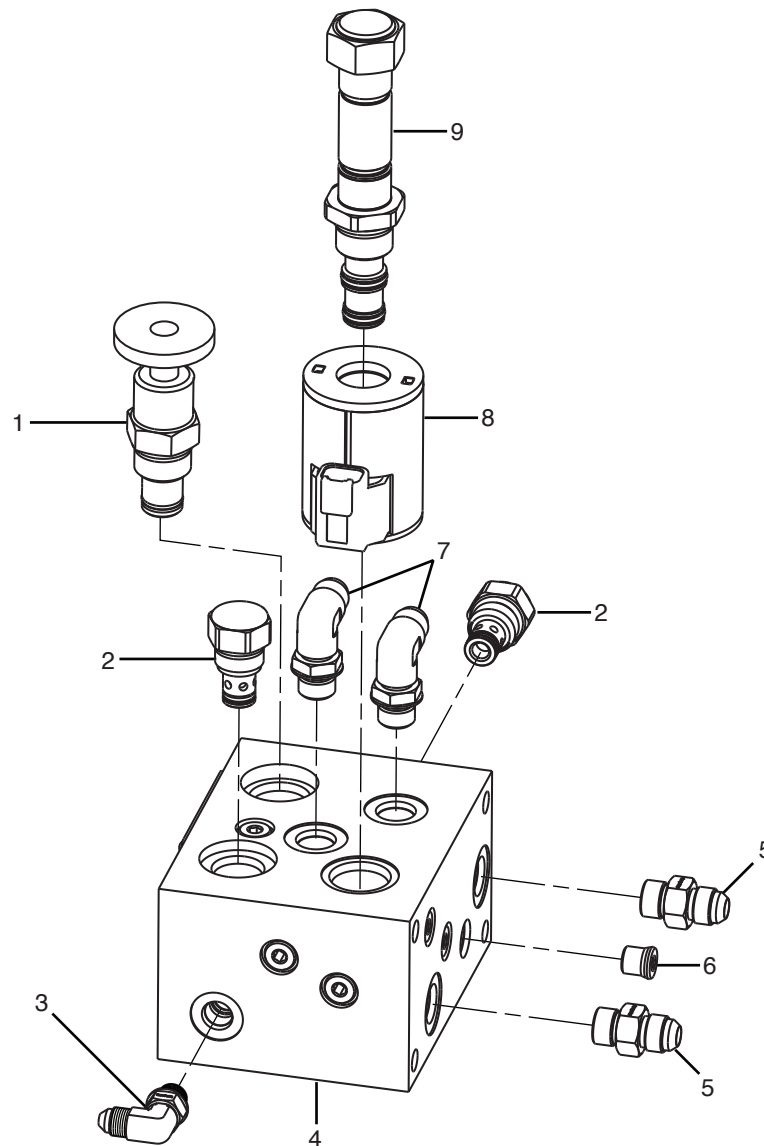
Parts Identification

Manifold, Spinner Motor - Hydraulic Spinner Drive (HSD) (N113478)



#	QTY.	PART #	DESCRIPTION
1	1	204086	CARTRIDGE, TURN
2	2	N139972	CARTRIDGE, CHECK VALVE 5PSI
3	1	N142378	ELBOW, 90 DEG -4MJIC -4MORB
4	1	N139970	BLOCK, MANIFOLD
5	2	N24821	ADAPTER, 6MOR - 6MJIC
6	7	N139982	PLUG, SAE -04
7	1	N139980	CARTRIDGE, PCFC
8	2	N26204	ELBOW, 90 DEG - 6MJIC - 6MOR

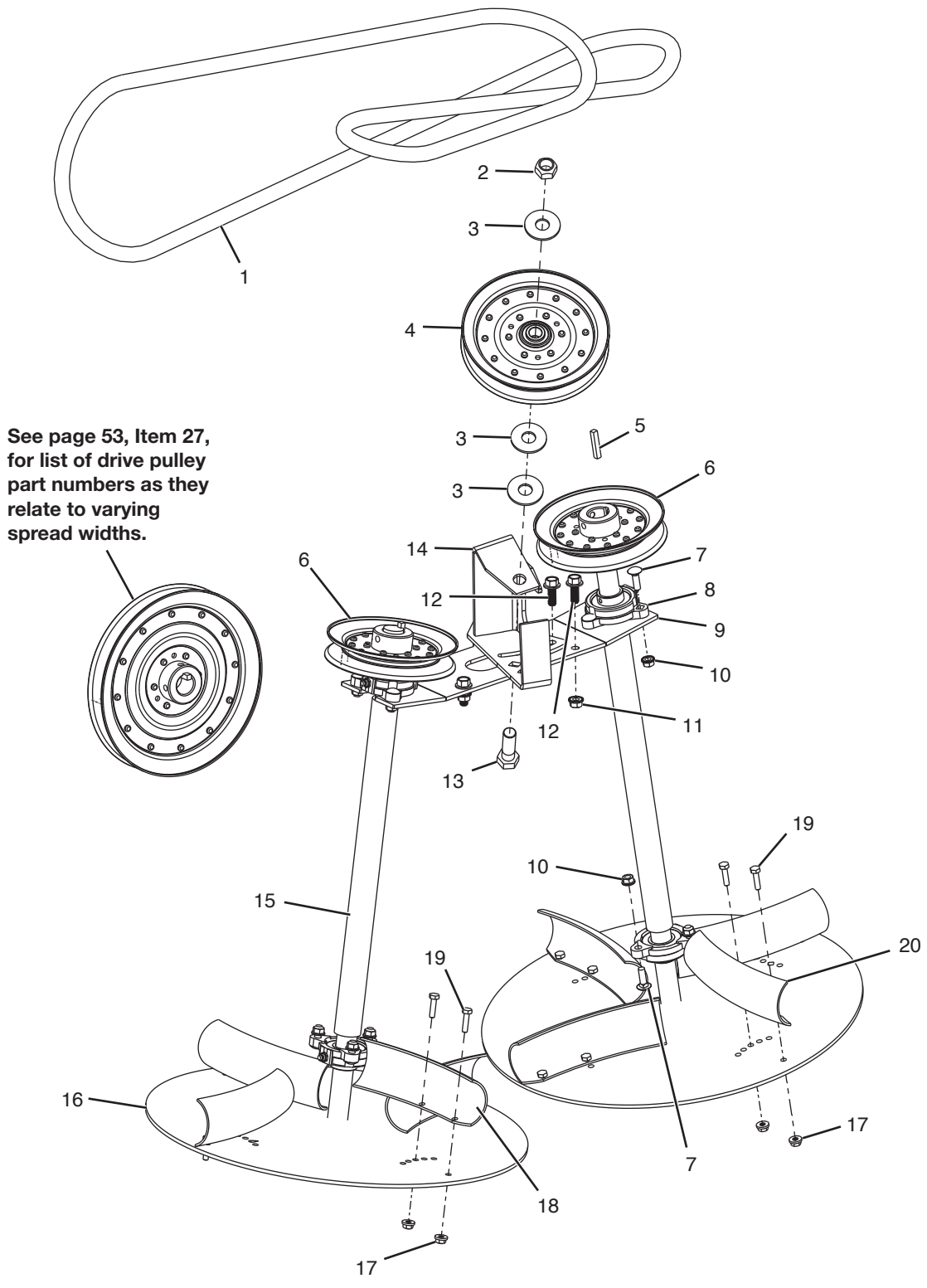
Manifold, Spinner Motor - Controlled Spinner Drive (CSD) (N141475)



#	QTY.	PART #	DESCRIPTION
1	1	204086	CARTRIDGE, TURN
2	2	N139972	CARTRIDGE, CHECK VALVE 5PSI
3	1	N142378	ELBOW, 90 DEG -4MJIC -4MORB
4	1	N139970	BLOCK, MANIFOLD
5	2	N24821	ADAPTER, 6MOR - 6MJIC
6	7	N139982	PLUG, SAE -04
7	2	N26204	ELBOW, 90 DEG - 6MJIC - 6MOR
8	1	N139978	COIL, 12V 2 PIN DEUTSCH
9	1	N139976	CARTRIDGE, FLOW REGULATOR

Parts Identification

Spinner Drive, PTO/Belt



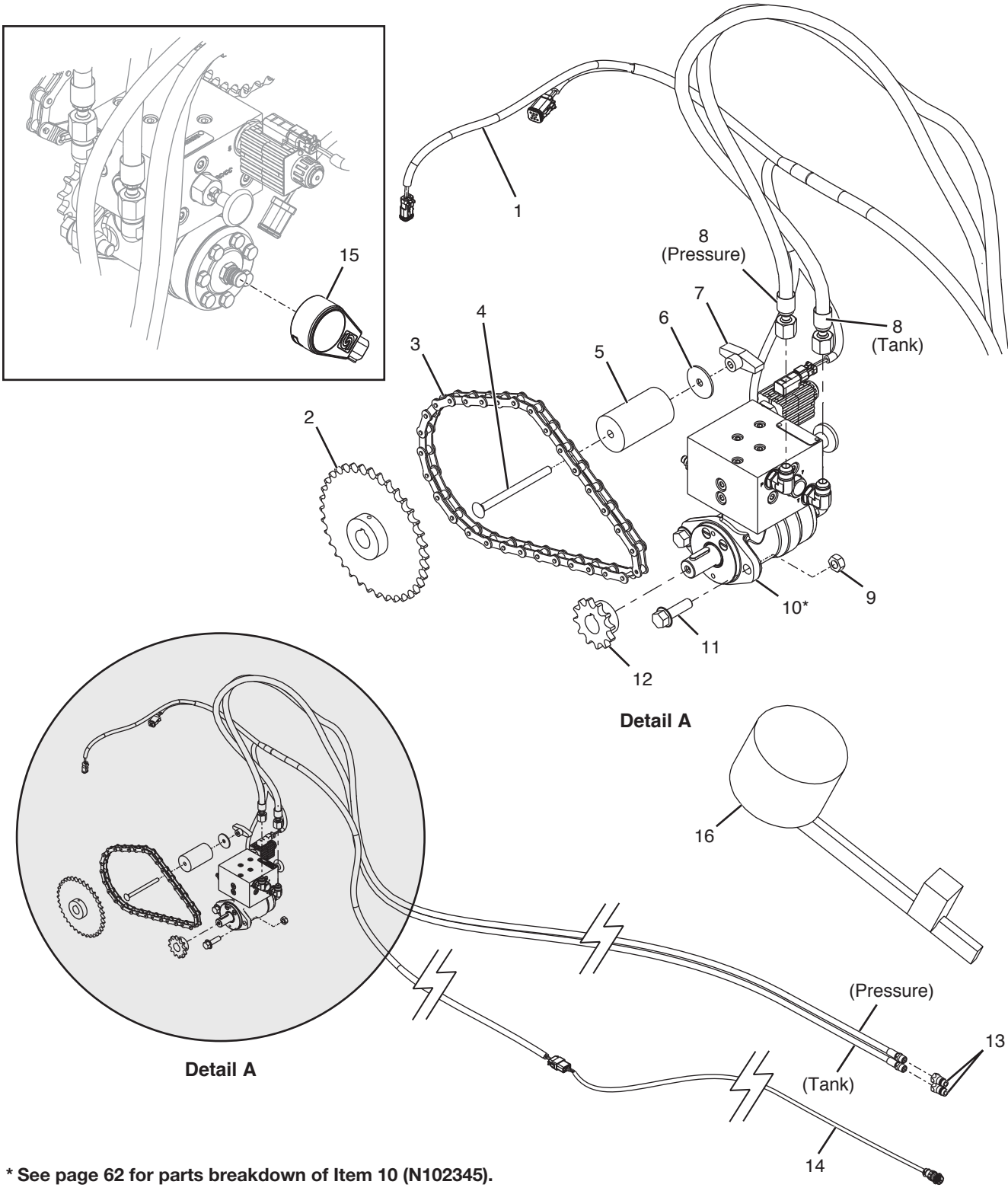
Parts Identification

Spinner Drive, PTO/Belt

#	QTY.	PART #	DESCRIPTION
1	1	N150927	BELT, BB110 DBL V (for 40' spread)
		N39157	BELT, BB112 DBL V (for 50' and 60' spread)
2	1	4055	NUT, LOCK 5/8" TOP
3	3	4069	WASHER, FLAT 5/8"
4	1	N33864	PULLEY, V-BELT 7.31" IDLER
5	2	7187-03	KEY, 1/4" X 1-1/2"
6	2	N33862	PULLEY, V-BELT 6.50" C-GROOVE
7	12	N41428	BOLT, CARRIAGE 5/16" X 1", SS
8	4	N33830	BEARING, 1" DODGE 3-BOLT FLG
9	1	N124412	SPINNER WLDMT
10	12	N41427	NUT, LOCK 5/16" SER FLG, SS
11	3	N73940	NUT, LOCK 3/8" SER FLG SS
12	5	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
13	1	4022	BOLT, 5/8" X 2" GRADE 5
14	1	N109469	ADJUSTOR, BELT
15	2	N41848	SHIELD, SPREADER SPINNER SHAFT
16	2	N43950	SPINNER
17	16	N68480	NUT, LOCK 1/4" SER FLG SS
18	4	N44111	SLINGER, LH
19	16	N68478	BOLT, 1/4" X 1" SS
20	4	N33836	SLINGER, RH

Parts Identification

Apron Drive, Hydraulic



* See page 62 for parts breakdown of Item 10 (N102345).

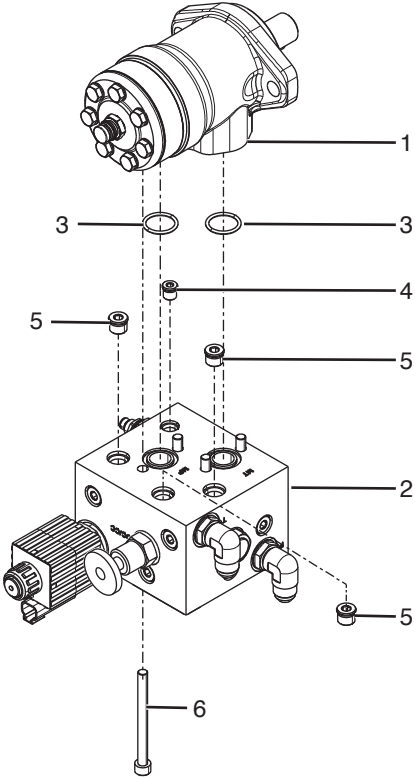
Parts Identification

Apron Drive, Hydraulic

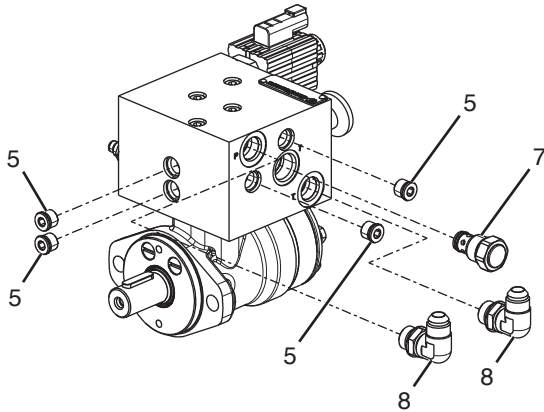
#	QTY.	PART #	DESCRIPTION
1	1	N107992	HARNESS, VARIABLE RATE READY
2	1	N87343	SPROCKET, 50B36-1.000
3	1	N42066	CHAIN, #2050 X 37.50
4	1	4569	BOLT, CARRIAGE 3/8" X 5" SS FT
5	1	N114840	TENSIONER, MOS2 2" DIA
6	1	4067	WASHER, 1-3/4" X 3/8" X 1/4"
7	1	N33933	KNOB, 3/8" THREADED TWO PRONG
8	2	N86859	HOSE, 3/8" X 270 -8FJX -8MPT
9	2	4054	NUT, LOCK 1/2" TOP
10*	1	N102345	MOTOR/VALVE ASM
11	2	N18159	BOLT, 1/2" X 1-3/4" SER FLG
12	1	8317	SPROCKET, 50B42 1" BORE
13	2	N11825	COUPLER, 1/2" MALE PIONEER
14	1	N108462	HARNESS, CONTROL RAVEN 16 PIN
		N150788	HARNESS, CONTROL RAVEN 22 PIN
		N150789	HARNESS, CONTROL RAVEN 37 PIN
15	1	N113376	SENSOR, SPIN SPEED
16	1	N105370	DENSITY SCALE, FERTILIZER

Parts Identification

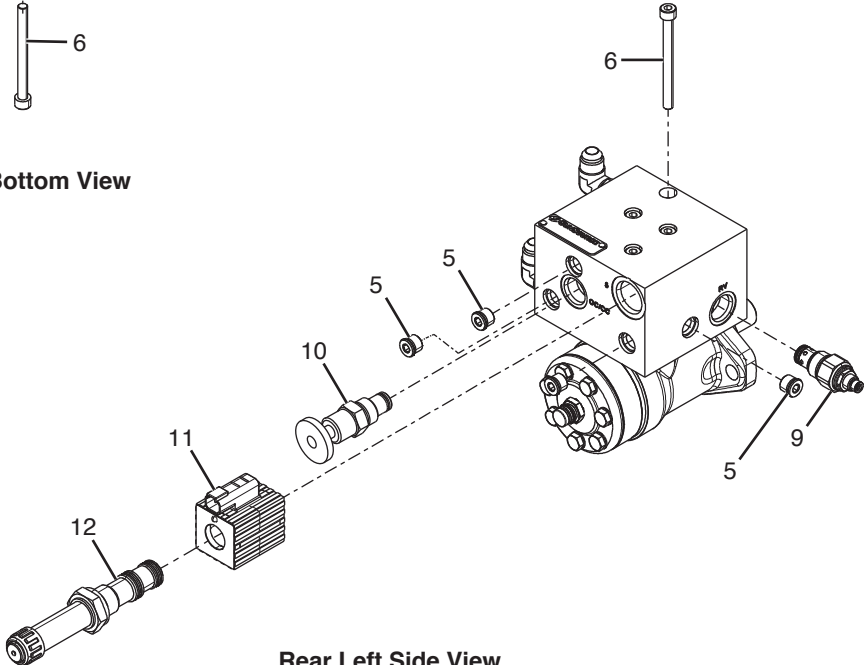
Motor and Valve Assembly (N102345)



Bottom View



Rear Right Side View



Rear Left Side View

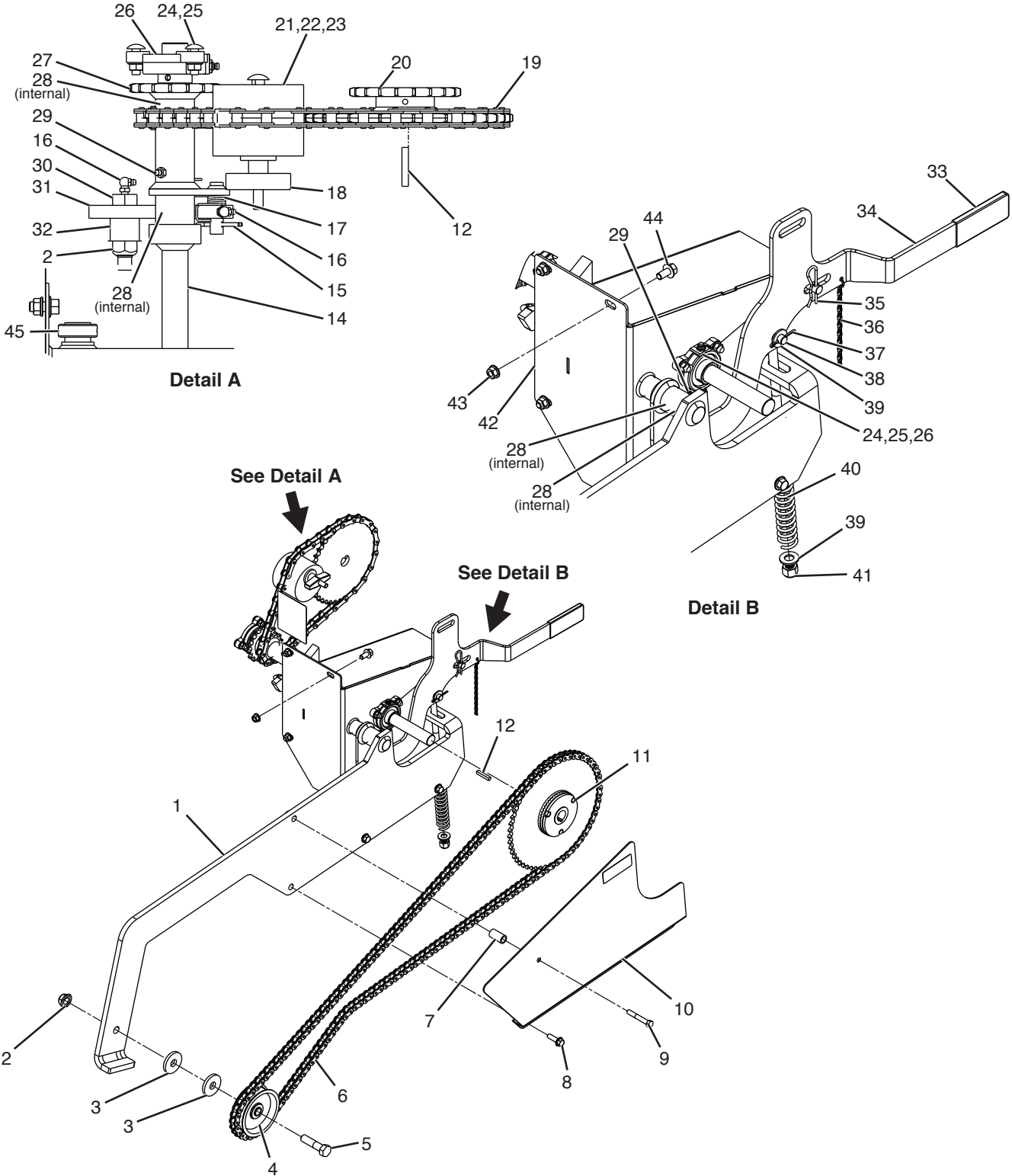
Parts Identification

Motor and Valve Assembly (N102345)

#	QTY.	PART #	DESCRIPTION
1	N101181	1	MOTOR, 9.53 CI DANFOSS
2	N142486	1	MANIFOLD, APRON MOTOR
3	N142496	1	O-RING, SAE 568-119
4	N139982	1	PLUG, SAE -04
5	N142494	11	PLUG, SAE -06
6	N142520	4	BOLT, SHCS M8X1.25X90
7	N142508	1	CARTRIDGE, CHECK VALVE 5PSI
8	N11952	2	ELBOW, 90 DEG - 08MJIC - 08MOR
9	N142510	1	CARTRIDGE, RELIEF VALVE ADJ
10	204086	1	CARTRIDGE, TURN
11	N142518	1	COIL, 12VDC 3AMP DEUTSCH
12	N142516	1	CARTRIDGE, PROPORTIONAL PCFC

Parts Identification

Drive, Ground



Parts Identification

Drive, Ground

#	QTY.	PART #	DESCRIPTION
1	1	N42382	ARM WLDMT,WHEEL DRIVE
2	2	4055	NUT, LOCK 5/8" TOP
3	2	4062	WASHER, 2"OD X 11/16"ID X 1/4T
4	1	N33879	PULLEY, IDLER 4-1/2" OD X 5/8" ID
5	1	4023	BOLT, 5/8" X 2-1/2" GRADE 5
6	1	N42418	CHAIN, #50 X 103.75
**		N88335	LINK, #50 CHAIN SS
**		N88333	LINK, #50 CHAIN HALF SS
7	1	N43322	BUSHING, SPRDR WHL DRIVE
8	3	N47855	BOLT, 3/8" X 1-1/4" SER FLG
9	1	4313	BOLT, 3/8" X 2-1/2" GRADE 5
10	1	N62727	COVER, SPRDR WHL DRIVE CHAIN
11	1	N33893	CLUTCH, RATCHED SLIP SC-X4
12	2	7187-03	KEY, 1/4" X 1-1/2"
14	1	N43508	SHAFT WLDMT
15	1	4325	PIN, COTTER 3/16" X 1-1/2"
16	2	4107	GREASE-ZERK, 1/4" SCREW-IN 90 DEG
17	1	N62413	SPRING,SPREADER CLUTCH
18	1	N33933	KNOB, 3/8" THREADED TWO PRONG
19	1	N42066	CHAIN, #2050 X 38.75
*		N67132	LINK, #2050 CHAIN SS
*		N88332	LINK, #2050 CHAIN HALF SS
20	1	N47307	SPROCKET,COMBINATION #50X40/20
21	1	N33889	TENSIONER, MOS2 3.5" DIA
22	1	4569	BOLT, CARRIAGE 3/8" X 5" SS FT
23	1	4067	WASHER,1-3/8" X 3/8" X 1/4"T
24	6	N41427	NUT, LOCK 5/16" SER FLG, SS
25	6	N41428	BOLT, CARRIAGE 5/16" X 1", SS
26	2	N33830	BEARING, 1" DODGE 3-BOLT FLG
27	1	N45532	BASE, SPRDR CLUTCH SPRKT
28	4	N37062	BUSHING, 1" ID NYLON X 1" LG
29	3	4105	GREASE-ZERK, 1/4" SCREW-IN
30	1	N33958	BOLT, SPRDR CLUTCH STOP
31	1	N43522	ARM, SPRDR CLUTCH OUTER
32	1	N33959	BUSHING, SPRDR CLUTCH STOP
33	1	N50757	COVER, PLASTIC HANDLE
34	1	N142078	ARM, SPRDR WHEEL DRIVE LEVER

Parts list continues on following page.

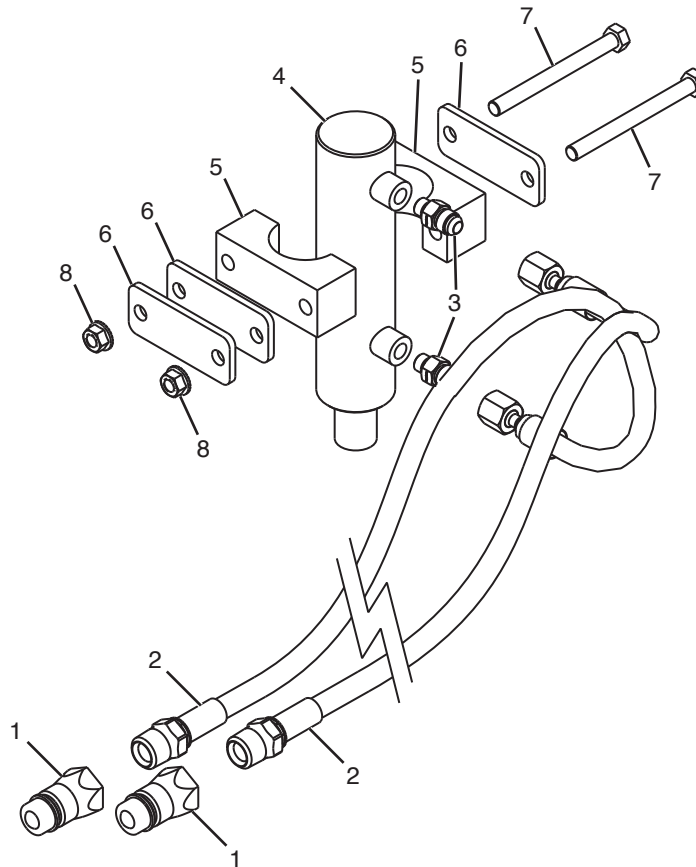
Parts Identification

Drive, Ground (Cont'd)

#	QTY.	PART #	DESCRIPTION
35	1	4336	CLIP, HAIRPIN 1/8" X 2-1/4"
36	1	N36092	LANYARD, SASH CHAIN 6" SIZE 8
37	1	4099	PIN, COTTER 1/8" X 1-1/2"
38	1	N33906	ROD, SPRDR BENT SPRING
39	2	4068	WASHER, 1/2" SAE FLAT
40	1	N33907	SPRING, 6" CLUTCH
41	1	N149702	NUT, LOCK 1/2-13 NYLOCK
42	1	N141541	WELDMENT, COVER 2
43	4	4979	NUT, LOCK 3/8" SER FLG
44	4	N36497	BOLT, 3/8" X 3/4" SER FLG
45	1	N33901	COLLAR, 1" SHAFT SET SCREW

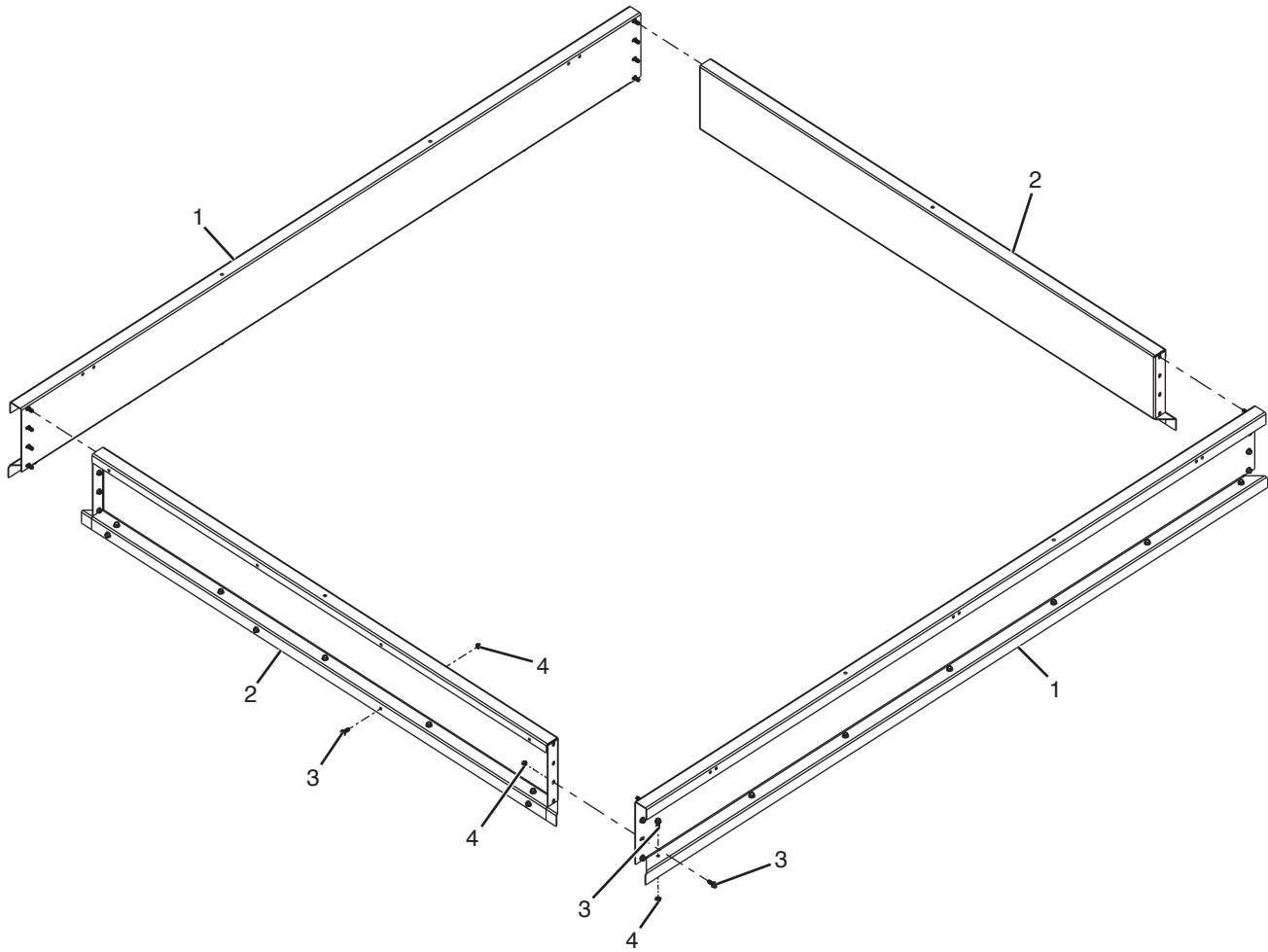
Parts Identification

Disconnect, Hydraulic



#	QTY.	PART #	DESCRIPTION
1	2	N11825	COUPLER, 1/2" MALE PIONEER
2	2	N66861	HOSE, 1/4" X 257" -8MPT -6FJX
3	2	N28824	ADAPTER, 6MJIC -4MOR
4	1	N43516	CYLINDER, 1-1/2" x 3"
5	2	N43518	BODY, CLAMP 1.75"
6	3	N43520	PLATE, SPREADER CYL CLAMP
7	2	4456	BOLT, 3/8" X 4" GRADE 5
8	2	4979	NUT, LOCK 3/8" SER FLG

Extension Kit (N62005) and Tarp



#	QTY.	PART #	DESCRIPTION
1	2	N88892	EXTENSION, SIDE
2	2	N88930	EXTENSION, END
3	48	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
4	48	N73940	NUT, LOCK 3/8" SER FLG SS
	1	N89415	N89415 TARP KIT BLUE (not shown)

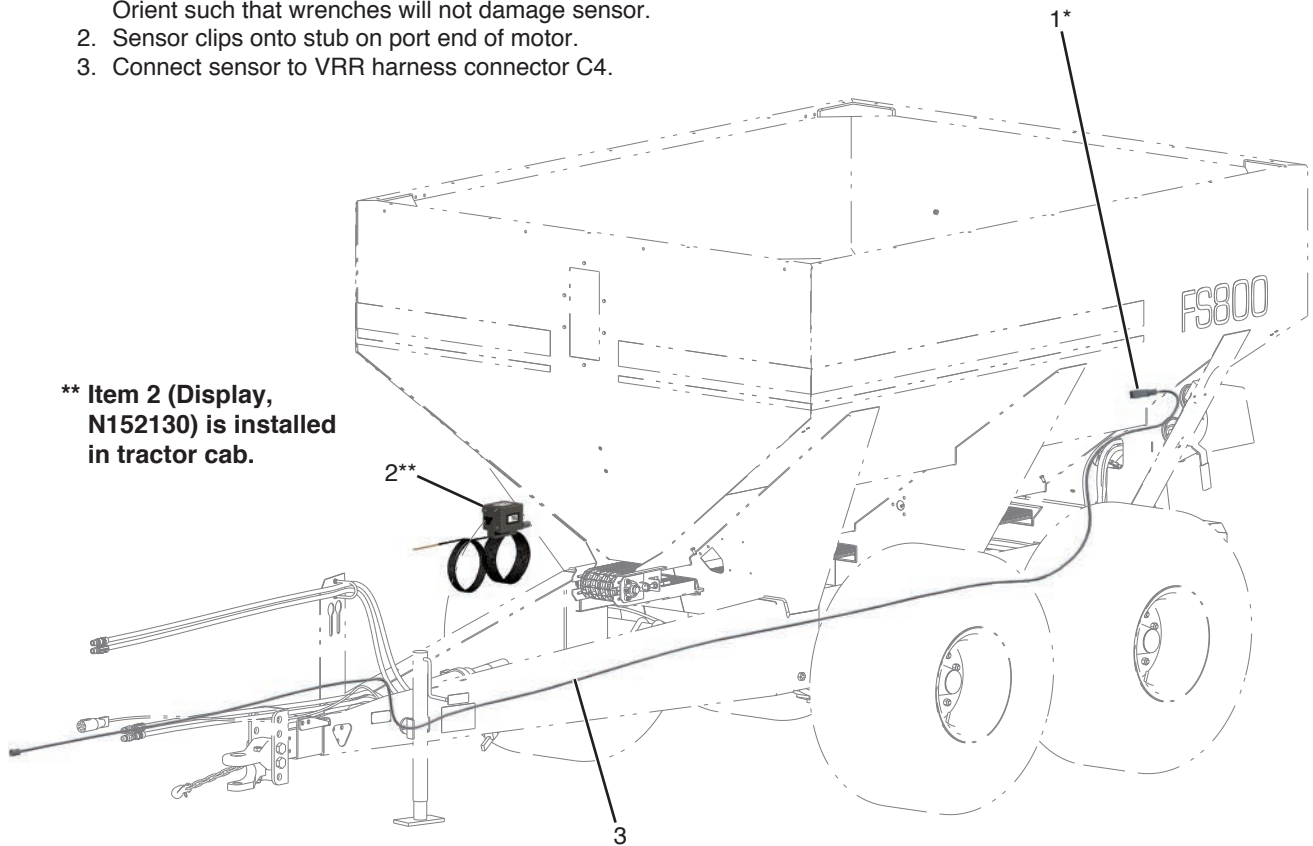
Spinner Speed Sensor



*** Item 1 - Speed Sensor (N113354)**

1. Install speed sensor on left spinner motor.
Orient connector to face left on machine.
Orient such that wrenches will not damage sensor.
2. Sensor clips onto stub on port end of motor.
3. Connect sensor to VRR harness connector C4.

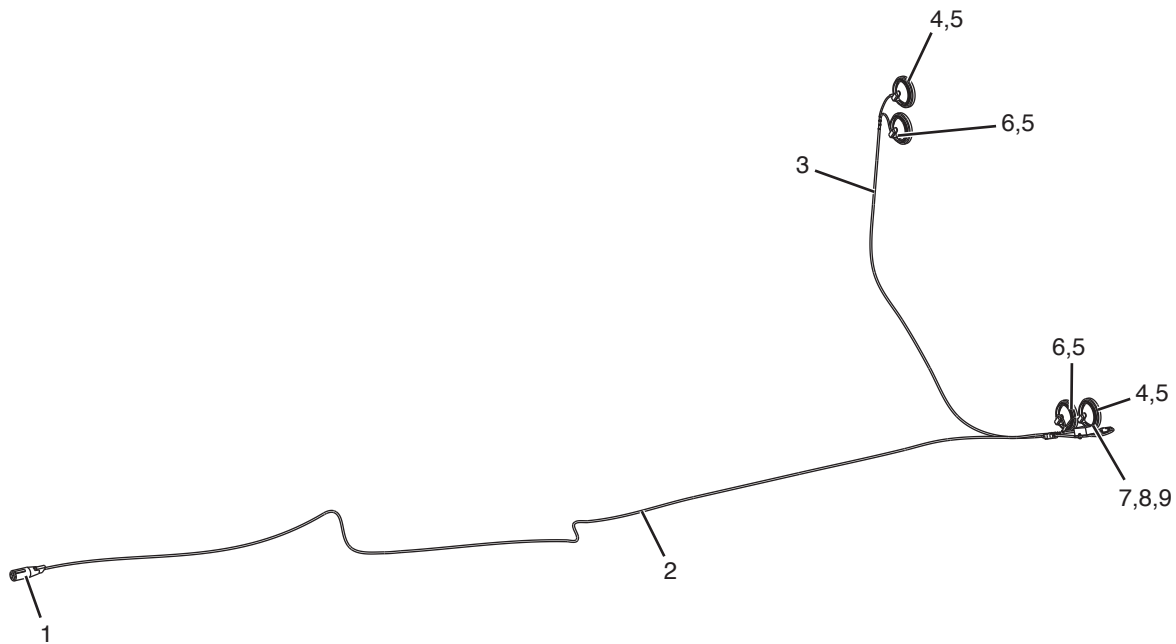
**** Item 2 (Display, N152130) is installed in tractor cab.**



#	QTY.	PART #	DESCRIPTION
1	1	N113354	SENSOR, SPIN SPEED
2	1	N152130	DISPLAY ASM, SPINNER SPEED
3	1	N152222	HARNES, SPINNER SENSOR EXT

Parts Identification

Electrical

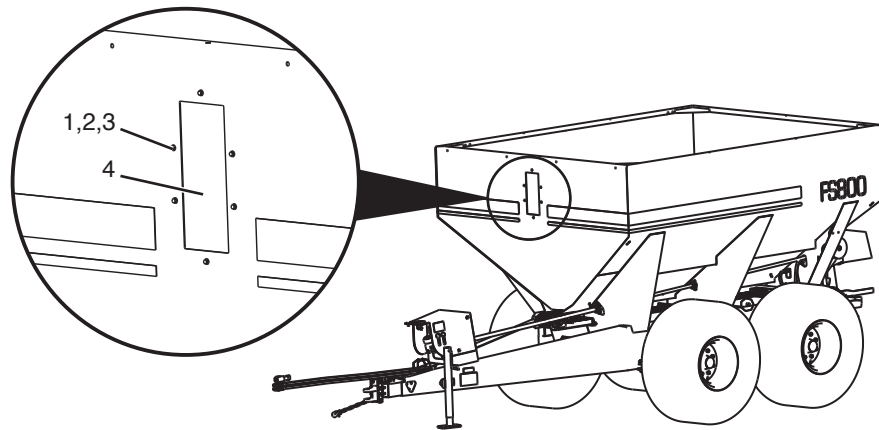


#	QTY.	PART #	DESCRIPTION
1	1	N62721	ADAPTER, 7 ROUND TO 4 FLAT
2	1	N44871	HARNESS, SPREADER FRONT
3	1	N62707	HARNESS, SPREADER REAR
4	2	N41423	LIGHT, 4" STTL AMBER
5	4	N41426	GROMMET, 4" STTL
6	2	N41422	LIGHT, 4" STTL RED
7	1	N62625	MODULE, LIGHTING
8	2	N22358	BOLT, #10-32 X 3/4" BHCS
9	2	N16334	NUT, NYLON INSERT #10

Raven 660 Controller (N89543) - (parts not shown)

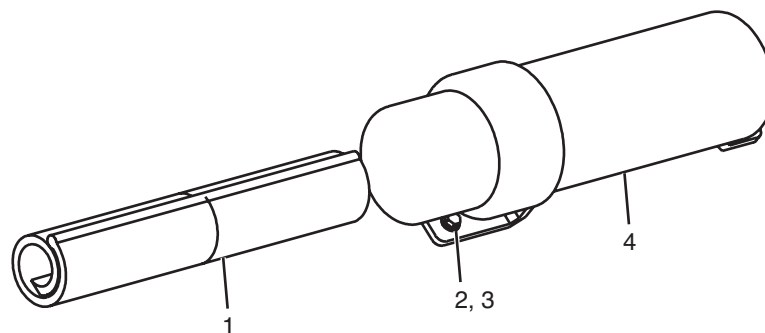
#	QTY.	PART #	DESCRIPTION
1		N89543	CONTROLLER KIT RAVEN 660 (INCLUDES N89545, N89553, N90023)
2		N89545	CONSOLE, RAVEN 660M
3		N89553	CABLE, 660 3'
4		N90023	MANUAL, RAVEN 660 CONSOLE
5		N89596	SENSOR-SPEED, GPS
6		N89555	CONTROLLER KIT ISO (INCLUDES N89557 & N89559)
7		N89557	ECU-RAVEN ISO
8		N89559	CABLE, ISO HITCH 12'

Window



#	QTY.	PART #	DESCRIPTION
1	6	4573	BOLT, 1/4" X 3/4" SER FLANGE
2	6	4460	WASHER, 1/4" SAE FLAT
3	6	4996	NUT, LOCK 1/4" NYLOCK
4	1	N37022	WINDOW, SPREADER FRONT

Manual Holder



#	QTY.	PART #	DESCRIPTION
1	1	N62775	OPERATORS MANUAL FS800
2	3	4573	BOLT, 1/4" X 3/4" SER FLANGE
3	3	4996	NUT, LOCK 1/4" NYLOCK
4	1	N19600	HOLDER, 01-315A STND. MANUAL

Parts Identification

Machine Decals and Signs

NOTE: All safety related decals are also shown in the Safety Instructions section along with their location on the machine. See "Safety Decal Locations" on page 9.

Check and replace any worn, torn, hard to read or missing decals on your machine.

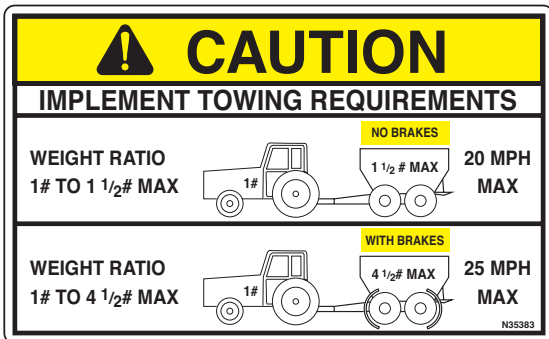
Part No. N35391



Part No. N35380



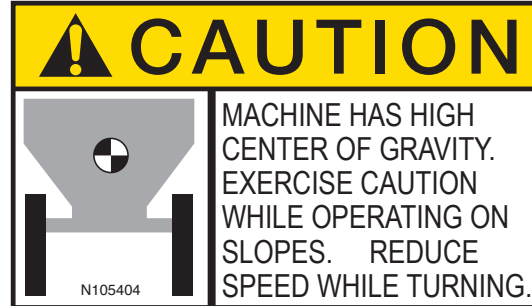
Part No. N35383



Part No. N35382



Part No. N105404



Part No. 203264



Part No. N35385



Part No. N35384



Machine Decals and Signs (Cont'd)

Part No. N35387

IMPORTANT

1. **KNOW THE WEIGHT OF THE MATERIAL TO BE SPREAD.**
[Weigh one gallon and multiply by 7.5]
2. **CONSULT APPLICATION RATE CHART FOR GATE OPENING SETTING.**
3. **LOCK GATE AFTER SETTING.**
4. **CHECK SPREAD PATTERN.**
5. **KEEP CONVEYOR BELT TIGHT.**
6. **LIMIT MATERIAL BUILD-UP ON FLOOR TO 1/4".**
7. **AVOID LETTING LOADED SPREADER SIT OVERNIGHT.**
8. **CONSULT INSTRUCTION BOOK FOR GREASING SCHEDULE.**
9. **POINTER INDICATES HEIGHT ABOVE FLOOR.**

N35387

Part No. N35392



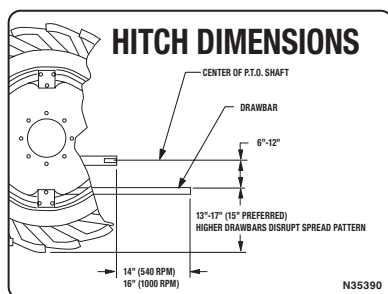
Part No. N24822

**PRESSURE
PRESSURE
PRESSURE
PRESSURE
PRESSURE
PRESSURE
PRESSURE
PRESSURE**

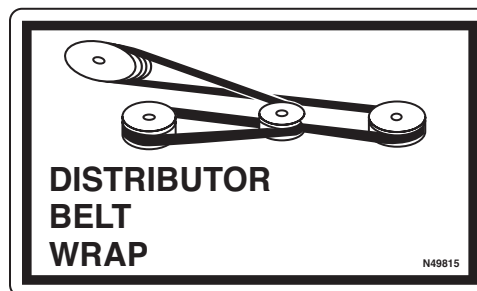
Part No. N24823

**TANK
TANK
TANK
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TANK
TANK
TANK
TANK**

Part No. N35390



Part No. N49815



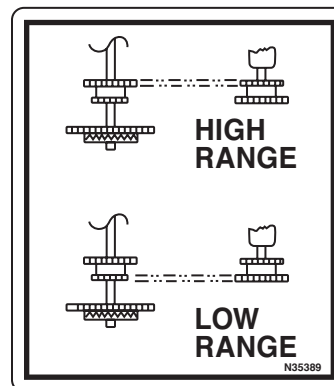
Part No. N35386



Part No. 4132



Part No. N35389



Parts Identification

Machine Decals and Signs (Cont'd)

Part No. N129459

SPREADER SETUP			
MACHINE: FS800, RC800, OS170			N129459
GATE OPENING INCHES	SPREADER CONSTANT	CUBIC FEET PER REVOLUTION	
1.00	3,170	0.0568	
2.00	1,664	0.1082	
3.00	1,132	0.1590	
4.00	880	0.2045	
5.00	702	0.2565	
6.00	601	0.2993	
DRIVING INTERVAL	SPINNER RPM	BLADE SETTING	
40	700		
50	830	3 - 2 - 3 - 2	
60	950		
80	740		
88	780	3 - 3 - 3 - 3	
90	790		

LH	Front of Machine	RH

Part No. N47490



Part No. N47482 (sides); N55874 (front)



(Decal length shortened to fit on page.)

Part No. N47488



Application Rate Chart Decals

NOTE: For application rate chart decals for mechanical drive spreaders, see pages 20 through 24. The part number is printed in the upper right-hand corner of each decal. Below is a list of the application rate charts for mechanical spreaders.

- N139852 - 40 Ft. Mechanical Drive
- N139853 - 50 Ft. Mechanical Drive
- N139854 - 60 Ft. Mechanical Drive
- N139855 - 80 Ft. Mechanical Drive
- N139856 - 90 Ft. Mechanical Drive

Part No. N13721

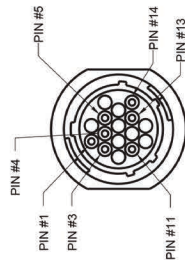


Control Harness Schematic

NOTE: Correct pin out of controller harness is necessary for correct operation of spreader. Pin outs for connectors on the harnesses are provided below and can be used for building adapters and trouble shooting.

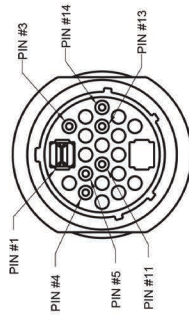
CONTROL HARNESSSES

RAVEN 16 PIN



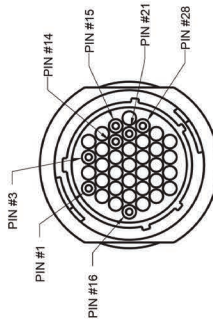
PIN	COLOR	SIGNAL
1	WHITE	COMMON
2		
3	YELLOW	APRON_VALVE_INC
4	GREEN	APRON_VALVE_DEC
5	BLUE	SPIN_SPEED
6		
7		
8		
9		
10		
11	GRAY	FLOW_COMMON
12		
13	RED	FLOW_SIGNAL
14	ORANGE	SWITCHED_12V+
15		
16		

RAVEN 22 PIN



PIN	COLOR	SIGNAL
1	WHITE	COMMON
2		
3	YELLOW	APRON_VALVE_INC
4	GREEN	APRON_VALVE_DEC
5	BLUE	SPIN_SPEED
6		
7		
8		
9		
10		
11	GRAY	FLOW_COMMON
12		
13	RED	FLOW_SIGNAL
14	ORANGE	SWITCHED_12V+
15		
16		
17		
18		
19		
20		
21		
22		

RAVEN 37 PIN

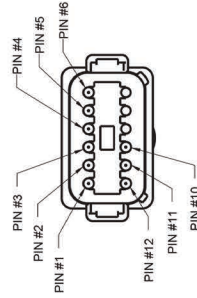


PIN	COLOR	SIGNAL
1	WHITE	COMMON
2		
3	ORANGE	SWITCHED_12V+
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14	BLUE	SPIN_SPEED
15	GREEN	APRON_VALVE_DEC
16	YELLOW	APRON_VALVE_INC
17		
18		
19		
20		
21	GRAY	FLOW_COMMON
22		
23		
24		
25		
26		
27		
28	RED	FLOW_SIGNAL
29		
30		
31		
32		
33		
34		
35		
36		
37		

PIN	COLOR	SIGNAL
A	YELLOW	SPIN_VALVE_INC_2
B	GREEN	SPIN_VALVE_DEC_2



LOFTNESS 12 PIN



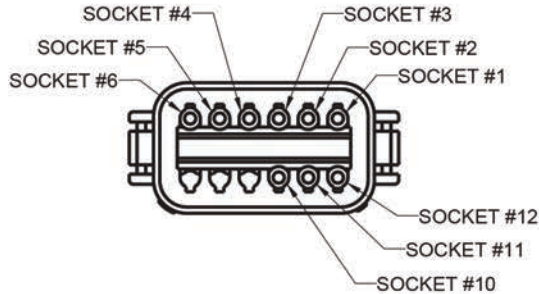
PIN	COLOR	SIGNAL
1	WHITE	COMMON
2	ORANGE	SWITCHED_12V+
3	GRAY	FLOW_COMMON
4	RED	FLOW_SIGNAL
5	YELLOW	APRON_VALVE_INC
6	GREEN	APRON_VALVE_DEC
7		
8		
9		
10	BLUE	SPIN_SPEED
11	YELLOW	SPIN_VALVE_INC
12	GREEN	SPIN_VALVE_DEC

Parts Identification

Variable Rate Harness Schematic

NOTE: Correct pin out of controller harness is necessary for correct operation of spreader. Pin outs for connectors on the harnesses are provided below and can be used for building adapters and trouble shooting.

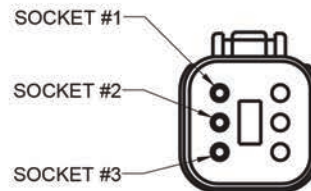
VARIABLE RATE HARNESS



DEUTSCH 12 SOCKET CONNECTOR		
SOCKET	COLOR	SIGNAL
1	WHITE	COMMON
2	ORANGE	SWITCHED_12V+
3	GRAY	FLOW_COMMON
4	RED	FLOW_SIGNAL
5	YELLOW	APRON_VALVE_INC
6	GREEN	APRON_VALVE_DEC
7		
8		
9		
10	BLUE	SPIN_SPEED
11	YELLOW	SPIN_VALVE_INC
12	GREEN	SPIN_VALVE_DEC



DEUTSCH 2 SOCKET CONNECTOR APRON / SPINNER VALVE		
SOCKET	COLOR	SIGNAL
1	YELLOW	VALVE_INC
2	GREEN	VALVE_DEC



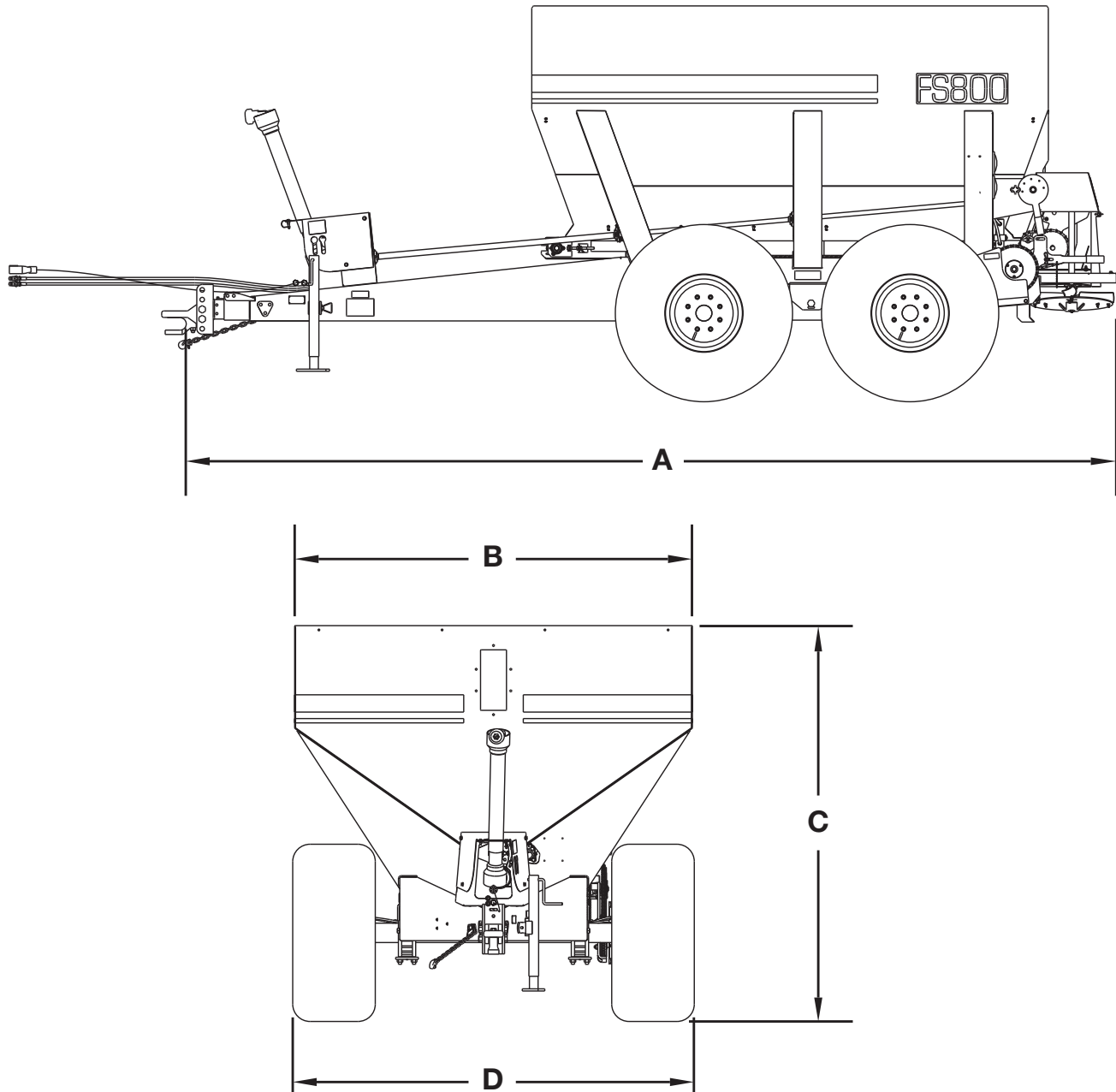
DEUTSCH 6 SOCKET CONNECTOR APRON / SPINNER SENSOR		
SOCKET	COLOR	SIGNAL
1	ORANGE	POWER
2(APRN)	GRAY	GROUND
2(SPNR)	WHITE	GROUND
3(APRN)	RED	FLOW_SIGNAL
3(SPNR)	BLUE	SPIN_SPEED
4		

Specifications

DESCRIPTION	FS 800 FERTILIZER SPREADER
Spread Pattern (Dual)	40-90 ft. (12.19 m - 27.43 m)
Hopper Capacity-Struck	241 cu. ft. (6.8 cu. m)
Hopper Capacity-Heaped	266 cu. ft. (7.5 cu. m)
Weight-Empty	4,000 lbs. (1,814.4 kg)
Max Gross Weight	20,000 lbs. (9,071.8 kg)
Tires	19L-16.1, 12 ply
Axles/Suspension	Walking tandem 10,000 lb. axles, 2.5 in. wide leaf springs
Frame	6 x 3 x 1/8-in. rectangular tubing
Hitch	1/4 in., hot-rolled sheet, channel-formed
Drawbar	Bolt in, adjustable position
Hopper	12-gauge, 409 stainless steel
Skid	12-gauge, 409 stainless steel
Gate	7-gauge, 409 stainless steel
Apron Chain	7 in. wide, 304 stainless steel with 1 in. x 1 in. mesh
Spinner Dish	19 in. (48.26 cm) dia. 7 gauge, 409 stainless steel

Appendix

Dimensions



DESCRIPTION	FS 800 FERTILIZER SPREADER
Length (A)	215.5 in. (547.4 cm)
Hopper Width (B)	92 in. (233.7 cm)
Height (C)	91.6 in. (232.6 cm)
Wheel Width (D)	92.9 in (235.9 cm)

Torque Specifications

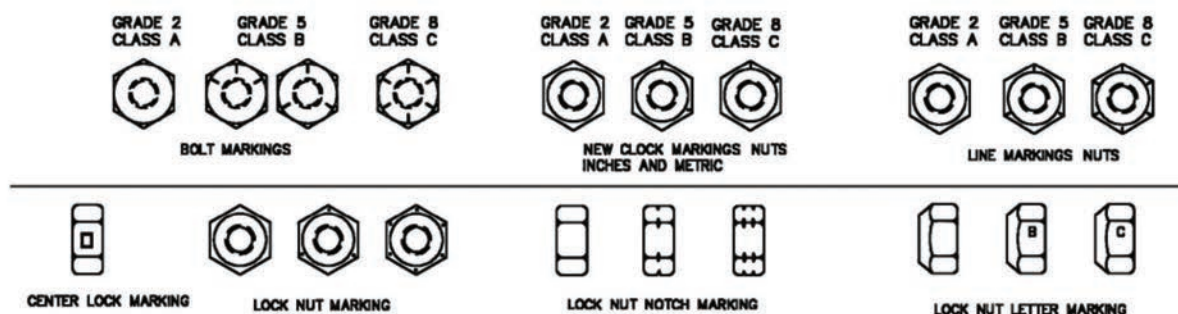
Inches Hardware and Lock Nuts

TORQUE CHARTS

Minimum Hardware Tightening Torques

Normal Assembly Applications
(Standard Hardware and Lock Nuts)

SAE Gr. 2 Nominal Size	SAE Grade 5		SAE Grade 8		LOCK NUTS			
	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Grade W / Gr. 5 Bolt	Grade W / Gr. 8 Bolt
1/4	55 in.-lb. (6.2 N•m)	72 in.-lb. (8.1 N•m)	86 in.-lb. (9.7 N•m)	112 in.-lb. (12.6 N•m)	121 in.-lb. (13.6 N•m)	157 in.-lb. (17.7 N•m)	61 in.-lb. (6.9 N•m)	86 in.-lb. (9.8 N•m)
5/16	115 in.-lb. (13 N•m)	149 in.-lb. (17 N•m)	178 in.-lb. (20 N•m)	229 in.-lb. (26 N•m)	250 in.-lb. (28 N•m)	324 in.-lb. (37 N•m)	125 in.-lb. (14 N•m)	176 in.-lb. (20 N•m)
3/8	17 ft.-lb. (23 N•m)	22 ft.-lb. (30 N•m)	26 ft.-lb. (35 N•m)	34 ft.-lb. (46 N•m)	37 ft.-lb. (50 N•m)	48 ft.-lb. (65 N•m)	19 ft.-lb. (26 N•m)	26 ft.-lb. (35 N•m)
7/16	27 ft.-lb. (37 N•m)	35 ft.-lb. (47 N•m)	42 ft.-lb. (57 N•m)	54 ft.-lb. (73 N•m)	59 ft.-lb. (80 N•m)	77 ft.-lb. (104 N•m)	30 ft.-lb. (41 N•m)	42 ft.-lb. (57 N•m)
1/2	42 ft.-lb. (57 N•m)	54 ft.-lb. (73 N•m)	64 ft.-lb. (87 N•m)	83 ft.-lb. (113 N•m)	91 ft.-lb. (123 N•m)	117 ft.-lb. (159 N•m)	45 ft.-lb. (61 N•m)	64 ft.-lb. (88 N•m)
9/16	60 ft.-lb. (81 N•m)	77 ft.-lb. (104 N•m)	92 ft.-lb. (125 N•m)	120 ft.-lb. (163 N•m)	130 ft.-lb. (176 N•m)	169 ft.-lb. (229 N•m)	65 ft.-lb. (88 N•m)	92 ft.-lb. (125 N•m)
5/8	83 ft.-lb. (112 N•m)	107 ft.-lb. (145 N•m)	128 ft.-lb. (174 N•m)	165 ft.-lb. (224 N•m)	180 ft.-lb. (244 N•m)	233 ft.-lb. (316 N•m)	90 ft.-lb. (122 N•m)	127 ft.-lb. (172 N•m)
3/4	146 ft.-lb. (198 N•m)	189 ft.-lb. (256 N•m)	226 ft.-lb. (306 N•m)	293 ft.-lb. (397 N•m)	319 ft.-lb. (432 N•m)	413 ft.-lb. (560 N•m)	160 ft.-lb. (217 N•m)	226 ft.-lb. (306 N•m)
7/8	142 ft.-lb. (193 N•m)	183 ft.-lb. (248 N•m)	365 ft.-lb. (495 N•m)	473 ft.-lb. (641 N•m)	515 ft.-lb. (698 N•m)	667 ft.-lb. (904 N•m)	258 ft.-lb. (350 N•m)	364 ft.-lb. (494 N•m)
1	213 ft.-lb. (289 N•m)	275 ft.-lb. (373 N•m)	547 ft.-lb. (742 N•m)	708 ft.-lb. (960 N•m)	773 ft.-lb. (1048 N•m)	1000 ft.-lb. (1356 N•m)	386 ft.-lb. (523 N•m)	545 ft.-lb. (739 N•m)



Appendix

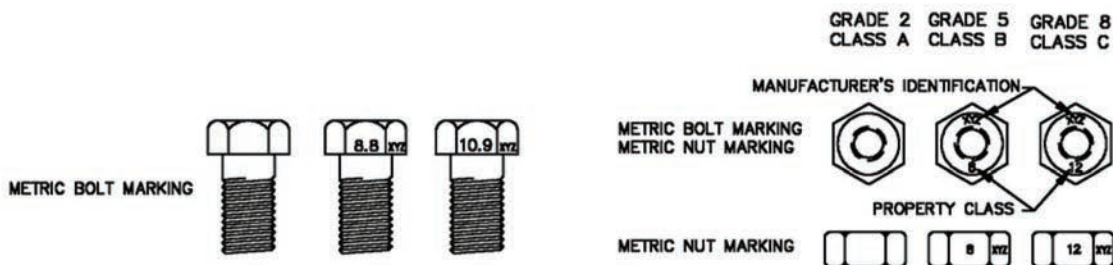
Torque Specifications (Cont'd)

Metric Hardware and Lock Nuts

TORQUE CHARTS Minimum Hardware Tightening Torques

Normal Assembly Applications
(Metric Hardware and Lock Nuts)

Nominal Size	Class 5,8		Class 8,8		Class 10,9		Lock nuts Class 8 W / CL. 8,8 Bolt
	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	
M4	1.7 N•m (15 in.-lb.)	2.2 N•m (19 in.-lb.)	2.6 N•m (23 in.-lb.)	3.4 N•m (30 in.-lb.)	3.7 N•m (33 in.-lb.)	4.8 N•m (42 in.-lb.)	1.8 N•m (16 in.-lb.)
M6	5.8 N•m (51 in.-lb.)	7.6 N•m (67 in.-lb.)	8.9 N•m (79 in.-lb.)	12 N•m (102 in.-lb.)	13 N•m (115 in.-lb.)	17 N•m (150 in.-lb.)	6.3 N•m (56 in.-lb.)
M8	14 N•m (124 in.-lb.)	18 N•m (159 in.-lb.)	22 N•m (195 in.-lb.)	28 N•m (248 in.-lb.)	31 N•m (274 in.-lb.)	40 N•m (354 in.-lb.)	15 N•m (133 in.-lb.)
M10	28 N•m (21 ft.-lb.)	36 N•m (27 ft.-lb.)	43 N•m (32 ft.-lb.)	56 N•m (41 ft.-lb.)	61 N•m (45 ft.-lb.)	79 N•m (58 ft.-lb.)	30 N•m (22 ft.-lb.)
M12	49 N•m (36 ft.-lb.)	63 N•m (46 ft.-lb.)	75 N•m (55 ft.-lb.)	97 N•m (72 ft.-lb.)	107 N•m (79 ft.-lb.)	138 N•m (102 ft.-lb.)	53 N•m (39 ft.-lb.)
M16	121 N•m (89 ft.-lb.)	158 N•m (117 ft.-lb.)	186 N•m (137 ft.-lb.)	240 N•m (177 ft.-lb.)	266 N•m (196 ft.-lb.)	344 N•m (254 ft.-lb.)	131 N•m (97 ft.-lb.)
M20	237 N•m (175 ft.-lb.)	307 N•m (226 ft.-lb.)	375 N•m (277 ft.-lb.)	485 N•m (358 ft.-lb.)	519 N•m (383 ft.-lb.)	671 N•m (495 ft.-lb.)	265 N•m (195 ft.-lb.)
M24	411 N•m (303 ft.-lb.)	531 N•m (392 ft.-lb.)	648 N•m (478 ft.-lb.)	839 N•m (619 ft.-lb.)	897 N•m (662 ft.-lb.)	1160 N•m (855 ft.-lb.)	458 N•m (338 ft.-lb.)





www.loftness.com

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