



# RC 800 Fertilizer Spreader

Owner's Manual and Parts Book  
(Originating w/Serial Number 79-193)

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





# Table of Contents

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## Warranty

## Table of Contents

## Introduction

Owner Information . . . . .	1
Warranty Policy . . . . .	1
Serial Number Location . . . . .	1
Manual Storage . . . . .	1
Features . . . . .	2
Options . . . . .	2

## Safety Instructions

Safety First . . . . .	3
Owner's Responsibility . . . . .	3
Safety Rules . . . . .	4
Operating Safety . . . . .	4
Transporting Safety . . . . .	4
Maintenance Safety . . . . .	4
Hydraulic Safety . . . . .	5
Chemical Fertilizer Safety . . . . .	5
RC 800 Fertilizer Spreader Identification . . . . .	6
Apron and Spinner Drive Options . . . . .	7
Safety Decal Locations . . . . .	8

## Set-up and Operation

Preparation for Use . . . . .	9
Adjusting Track Width . . . . .	9
Monitors/Controllers . . . . .	10
Connecting to Tractor . . . . .	10
For PTO Drive Models . . . . .	10
Attaching PTO . . . . .	11
For Variable Rate Ready and Ground Drive Models . . . . .	11
Controller/Monitor Connections (Variable Rate Ready Only) . . . . .	11
Scale Set-up and Calibration . . . . .	11
Wiring Connections . . . . .	12
Hydraulic Connections . . . . .	12
Setting Tractor Hydraulics . . . . .	12
For Clutch Disengage: . . . . .	12
For Apron Drive and Spinners: . . . . .	12
Connecting to Truck - Transporting . . . . .	13
Determining Product Density . . . . .	13
Scale Operation . . . . .	13
Variable Rate Ready (VRR) . . . . .	14
Setting the Metering Gate Opening (VRR) . . . . .	14
Calibrate Spreader Constant (VRR) . . . . .	14
Catch Test . . . . .	14
Engaging the Apron (VRR) . . . . .	14

# Table of Contents

---

## Set-up and Operation (Cont'd)

Mechanical Ground Drive .....	15
Prepare For Field Use .....	15
Setting the Metering Gate Opening (Mechanical Ground Drive) .....	15
Adjusting for High or Low Range (Mechanical Ground Drive) .....	16
Spreading Speed and Interval .....	16
Speed .....	16
Driving Interval .....	16
Calibration (VRR Models) .....	17
Rate Chart Selector .....	17
Spreader Constants/Rate Charts .....	18
Hydraulic (Variable Rate Ready) - N129459 .....	18
40 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129460 .....	19
50 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129461 .....	20
60 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129462 .....	21
80 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129463 .....	22
88 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129464 .....	23
90 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129465 .....	24
40 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129480 .....	25
50 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129481 .....	26
60 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129482 .....	27
80 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129483 .....	28
88 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129484 .....	29
90 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129485 .....	30
Spread Pattern Test .....	31
Machine Preparation .....	31
Course Set-up .....	31
You will need: .....	31
Spread Pattern Course .....	32
Spread Procedure .....	32
Spread Pattern Test Results Sheet .....	33
Spread Pattern Recording .....	34
Graphing the Test Results .....	34
Acceptable Patterns .....	35
Unacceptable Patterns .....	35
Spread Pattern Adjustments .....	36
Spinner Blade Positions .....	36
Rear Deflector Adjustment .....	36
Spinner RPM .....	36
For Hydraulic Spinner Drive (HSD) .....	37
For Controlled Spinner Drive (CSD) .....	37
Spinner RPM (PTO Powered Spinners) .....	37

## Maintenance

General Maintenance .....	39
Maintenance Schedule .....	39
Fluids And Lubricants .....	39
Lubrication .....	40
Grease Points .....	40

# Table of Contents

---

## Maintenance (Cont'd)

Wheel Bearing Maintenance . . . . .	43
Roller Chain(s) . . . . .	43
Removing the Rear End . . . . .	43
Tightening Apron . . . . .	44
Replacing Metering Shaft . . . . .	44
Tire Inflation . . . . .	44
Cleaning . . . . .	44
Storage . . . . .	45
For Short-term Storage: . . . . .	45
For Long-term or End of Season Storage: . . . . .	45
Troubleshooting . . . . .	46

## Parts Identification

Spreader Frame . . . . .	50
Spreader Frame (Cont'd) . . . . .	52
Spinner Mount and Cover . . . . .	53
Wheels, Brakes, and Suspension - Scale . . . . .	54
Wheels, Brakes, and Suspension - No Scale . . . . .	56
Disconnect, Hydraulic . . . . .	57
Drive, PTO Model . . . . .	58
Spinner Drive, Hydraulic . . . . .	60
Manifold, Spinner Motor - Hydraulic Spinner Drive (HSD) (N113478) . . . . .	62
Manifold, Spinner Motor - Controlled Spinner Drive (CSD) (N141475) . . . . .	63
Spinner Drive, Belt . . . . .	64
Apron Drive, Hydraulic . . . . .	66
Motor and Valve Assembly (N102345) . . . . .	68
Apron Drive, Ground . . . . .	70
Clutch Assembly (N109201) . . . . .	72
Extension Kit (N62005) and Tarp . . . . .	73
Spinner Speed Sensor . . . . .	74
Electrical . . . . .	75
Raven 660 Controller (N89543) - (parts not shown) . . . . .	75
Window . . . . .	76
Manual Holder . . . . .	76
Machine Decals and Signs . . . . .	77
Application Rate Chart Decals . . . . .	78
Control Harness Schematic . . . . .	79
Variable Rate Harness Schematic . . . . .	80

## Appendix

Specifications . . . . .	81
Dimensions . . . . .	82
Torque Specifications . . . . .	83
Inches Hardware and Lock Nuts . . . . .	83
Metric Hardware and Lock Nuts . . . . .	84



## 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.

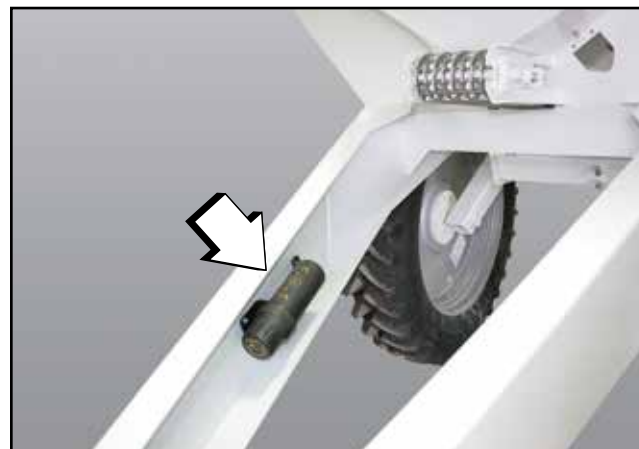
## Serial Number Location



The arrows indicate the location of the Loftness serial number tag (1), and the location of the serial number stamped into the frame (2).

Always use your model and serial number when requesting information or when ordering parts.

## 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 to all operators.

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

# Introduction

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## 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.

### Adjustable Axles

- 80 in. (203.2 cm) to 120 in. (304.8 cm) track setting.

### Adjustable Height Hitch

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

### Integral Hitch

- Hitch is integral to frame.

### Apron Drive Options

- Hydraulic Drive, variable rate ready (VRR).
- Mechanical Ground Drive - Positive mechanically driven from 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.

### Spinner Drive Options

- Hydraulic driven.
  - Hydraulic Spinner Drive (HSD)
  - Controlled Spinner Drive (CSD)
- PTO Driven.

## Options

### Roll Tarp

- Optional (Contact your dealer for a hopper roll tarp.) Shur-Co.<sup>®</sup> or Agri-Cover<sup>®</sup> (Specify Loftness RC800)

## 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.



### Safety Alert Symbol

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.

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

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## 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 (30 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!*

## 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.

# Safety Instructions

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## RC 800 Fertilizer Spreader Identification

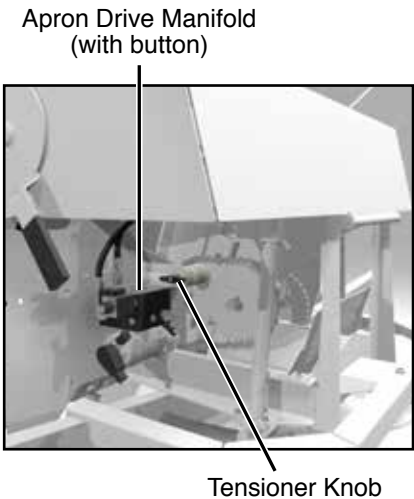


**RC 800 Fertilizer Spreader Identification (Cont'd)**

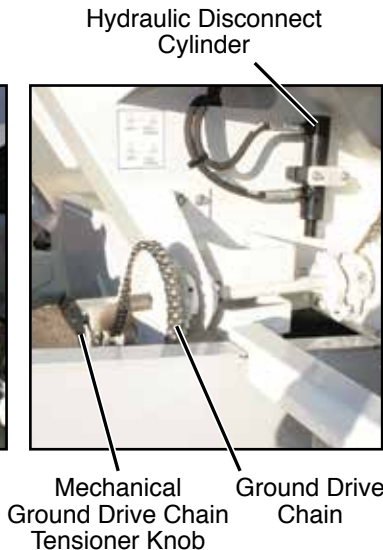
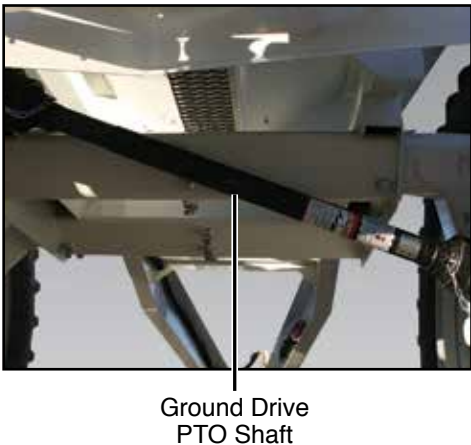
**Apron and Spinner Drive Options**

**Apron Drive Options**

Hydraulic Drive (VRR)

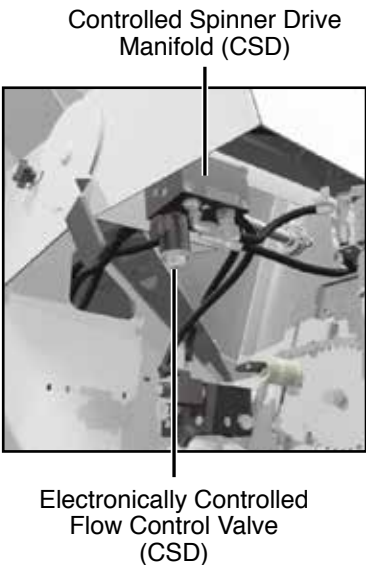
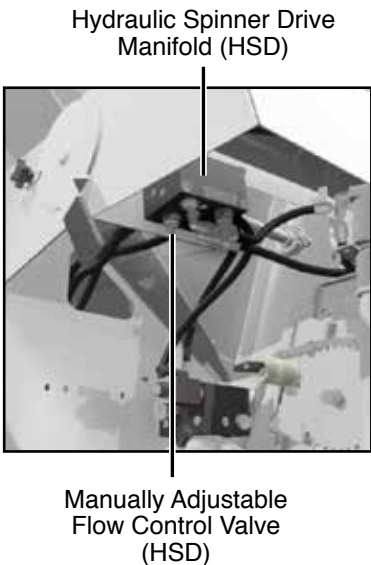


Mechanical Ground Drive

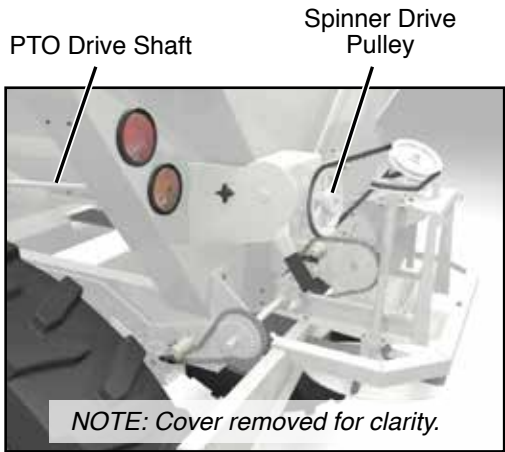


**Spinner Drive Options**

Hydraulic Drive



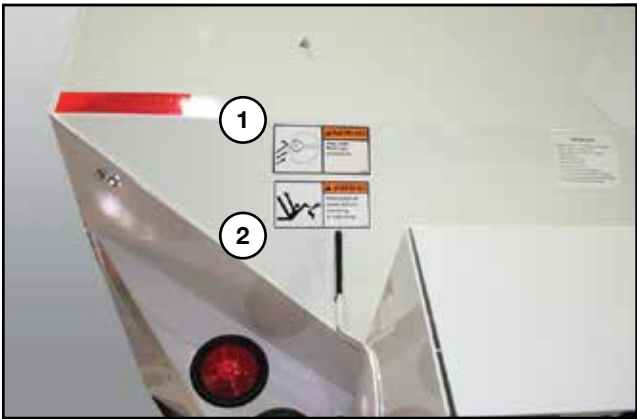
PTO Drive



# Safety Instructions

## Safety Decal Locations

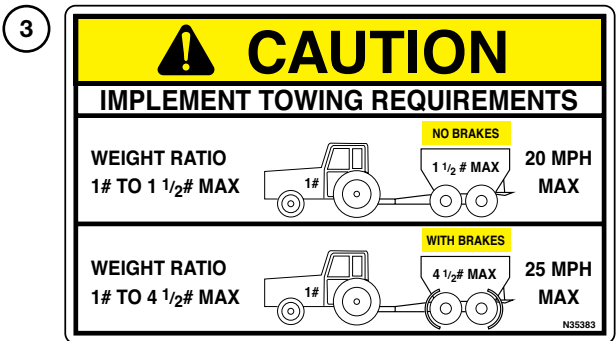
Check and replace any worn, torn, hard to read or missing safety decals on your machine.



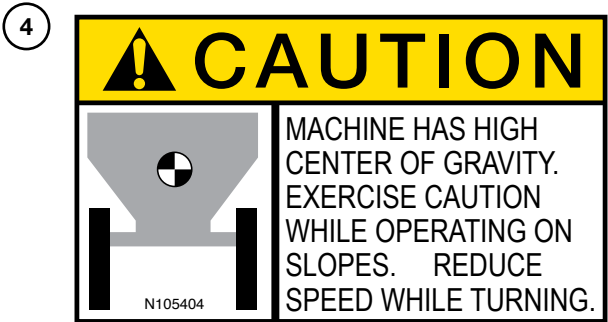
Part No. N35380



Part No. N35391



Part No. N35383



Part No. N105404

# 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 upper 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.
- 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 31 for instructions.*

## Adjusting Track Width

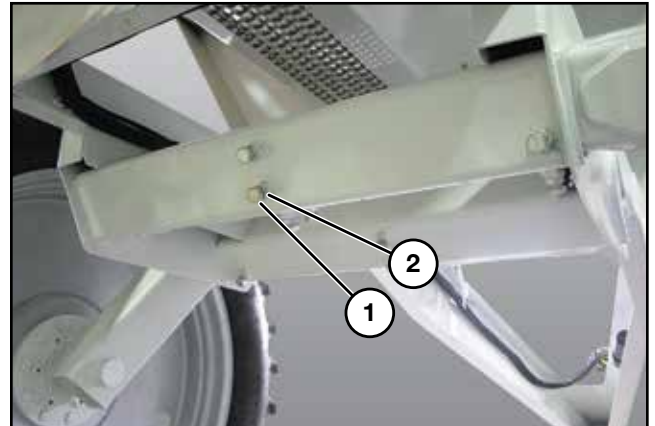
Safely raise the machine up so the tires are off of the ground and can easily be moved.



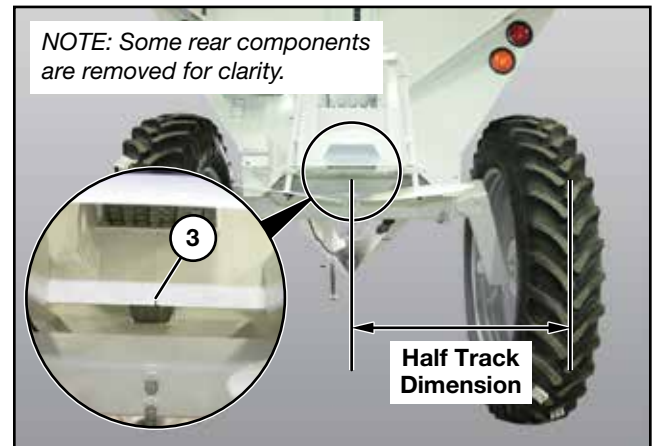
**WARNING:** *To avoid serious injury or death, do not walk or sit underneath the spreader while it is being lifted.*

Carefully place blocks under the frame and tongue to support the spreader.

**NOTE:** *When placing blocks under the axles, do not obstruct access to the axle set bolts/jam nuts (1).*



Loosen all set bolts (1) and jam nuts (2) (6 per axle).



Attach end of tape measure to notch in center of the frame (3) and extend out to center of right tire to see the current half track dimension.

Slide wheel in or out to desired setting. This will be half of the track width.

**IMPORTANT:** *Center of frame to center of tire can not exceed 60 in. (152.4 cm). Track width for the factory-supplied tires cannot exceed 120 in. (304.8 cm) (center of tire to center of opposite tire).*

*(Procedure continued on following page.)*

# Set-up and Operation

## Adjusting Track Width (Cont'd)

Hand tighten the set bolts for the right wheel axle and then recheck measurement to ensure desired setting is still accurate.

**Repeat the procedure for the left side wheel.**

**IMPORTANT:** *Make sure the dimension from center of the frame to the center of the left wheel is exactly the same as that of the right wheel.*

When new track width has been set, tighten all of the set bolts (6 per axle) to 175 ft./lbs. (237.26 Nm).

Tighten all jam nuts.

Raise spreader slightly and remove blocks.



**WARNING:** *To avoid serious injury or death, do not walk or sit underneath the spreader while it is being lowered.*

Lower the spreader to the ground.

## 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.

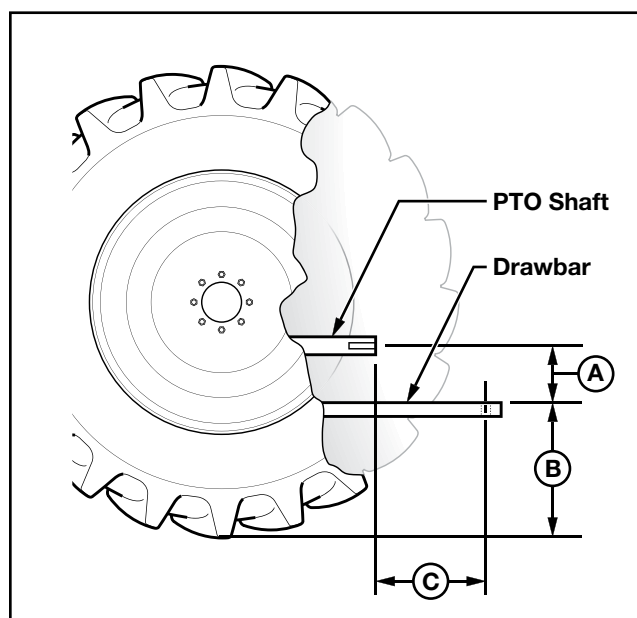
**IMPORTANT:** *Monitors and Controllers that have power supplied via constant 12V power will not turn off with tractor key. Turn off monitor when tractor is not running.*

## 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.)

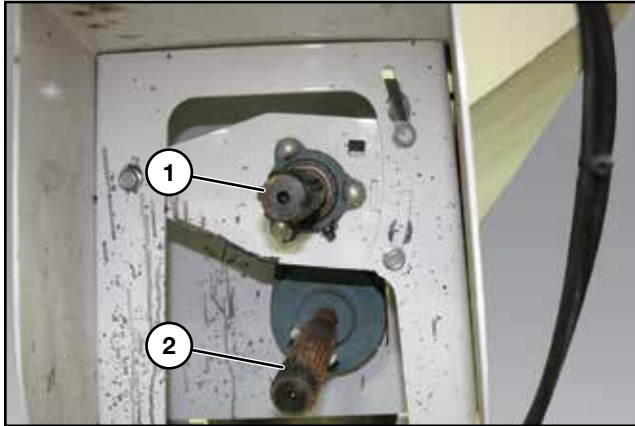


# Set-up and Operation

## 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.

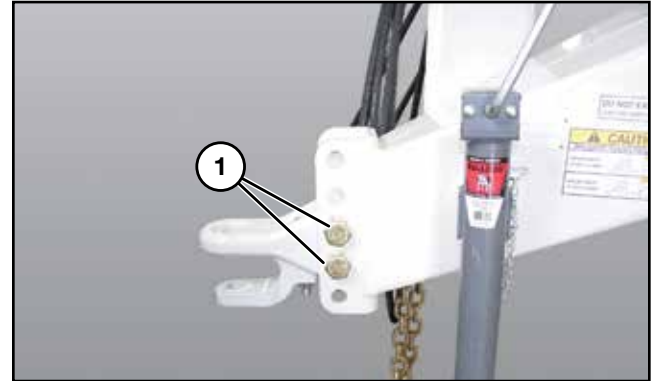
#### 540 RPM Input Shaft

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



Remove the jack and secure in the storage position.

## 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.

Remove the jack and secure in the storage position. (See photo to the left).

## 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.

For spreaders equipped with scale, connect scale harness to scale display.

### Scale Set-up and Calibration

Refer to scale manufacturers owner/instruction manual for setup, calibration, and operation of the scale system.

# Set-up and Operation

## Connecting to Tractor (Cont'd)

### 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:

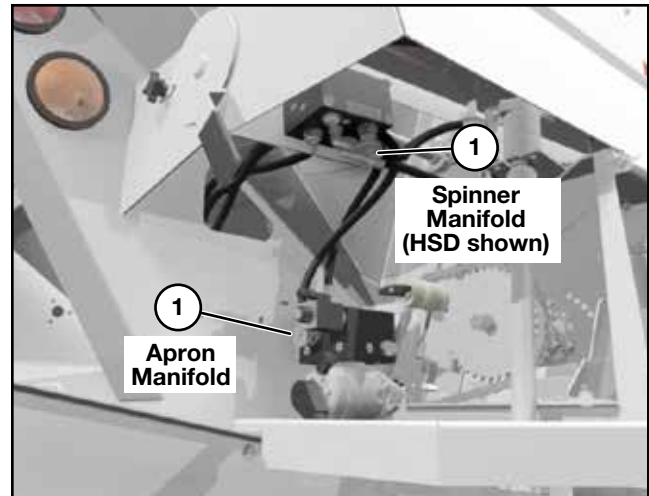
1. Valve should be set fully so cylinder extend/retract time is 3 seconds.

**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.

## 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.

## Scale Operation

Machines equipped with a scale are capable of determining weight of product added to hopper or applied on field. Consult scale operators manual for operation of the scale.

# Set-up and Operation

## Variable Rate Ready (VRR)

### Setting the Metering Gate Opening (VRR)

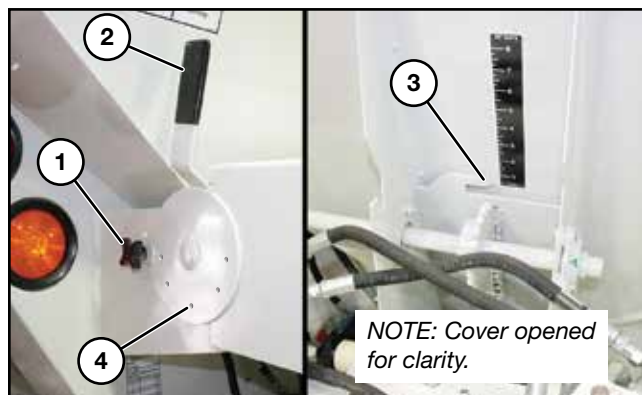
The metering gate opening, along with the speed of the apron chain, determines the spreader constant. Refer to the spreader setup chart, "Hydraulic (Variable Rate Ready) - N129459" on page 18, for the spreader constant as it relates to the metering gate opening.

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 18 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)

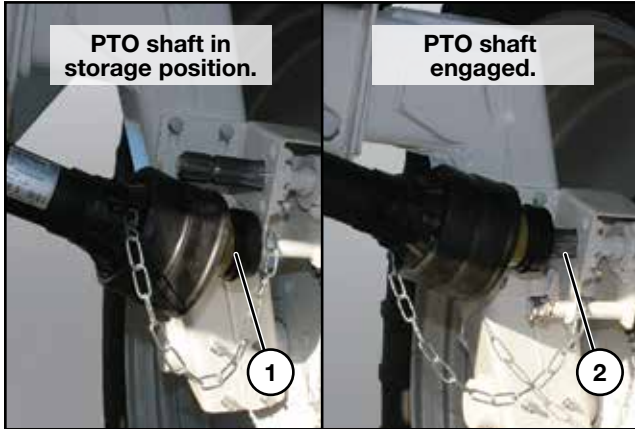
The apron is engaged from the controls in the tractor cab. Hydraulic valves on the tractor need to be activated. Set the valves to continuous flow.

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

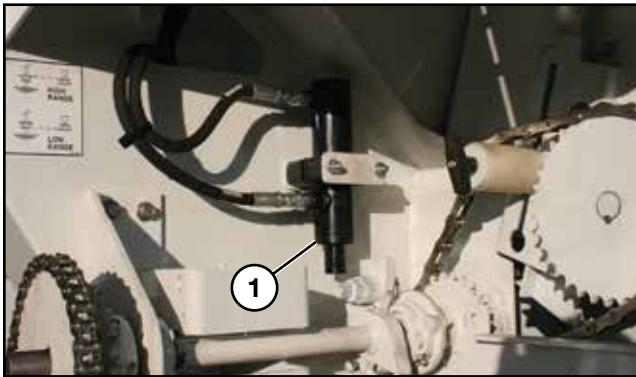
# Set-up and Operation

## Mechanical Ground Drive

### Prepare For Field Use



1. Move the PTO from its storage location (1) to the axle driven shaft position (2).
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.

**IMPORTANT:** Return the PTO back into its storage/transport position when field work is complete. Do not transport the spreader with the PTO engaged. Also, make sure the hydraulic disconnect cylinder is extended to prevent product from spilling.



**CAUTION:** Transporting the spreader at above rated speeds with the PTO engaged could cause serious damage to the spreader.

## Setting the Metering Gate Opening (Mechanical Ground Drive)

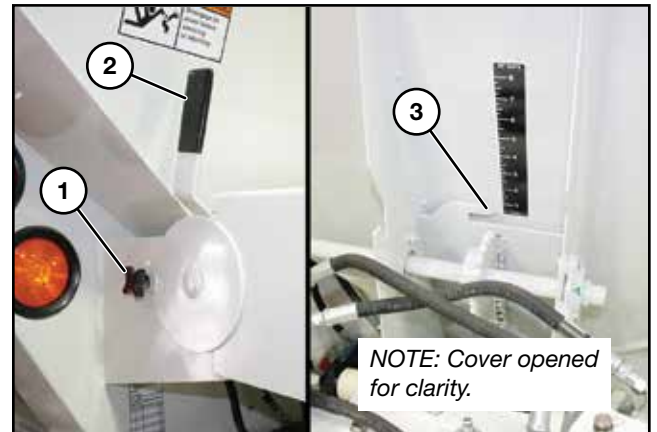
The application rate is determined by the metering gate opening and the speed range (high or low) of the apron chain.

To determine the gate opening:

1. Find the fertilizer density. See “Determining Product Density” on page 13.

**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 17. Use this chart to find the correct Application Rate Chart within this manual that corresponds with your desired spread width and the machine's tire size.
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.

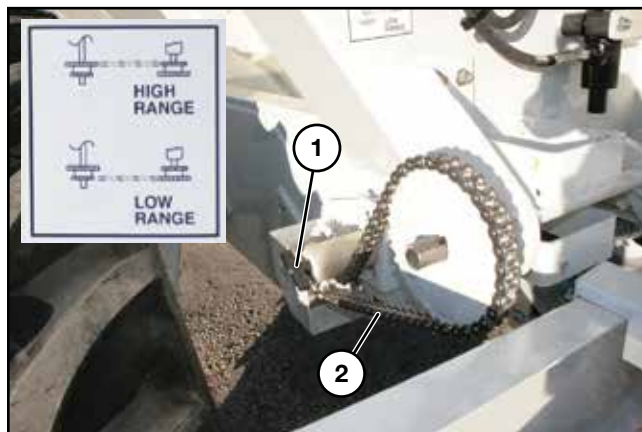


Loosen knob (1). Move the gate control lever (2) until the indicator (3) is at the proper opening size. Lock gate by retightening the knob (1).

# 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, with the smallest sprocket driving the largest sprocket.

**High range** - The chain must be on the inside sprockets with the larger sprocket driving the smaller sprocket.

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 31.
2. From the Spread Pattern Test Results Sheet found on page 33, 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.

## 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), tire size, 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 tire size and/or 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 78 to order a new decal.

Rate Chart Selector Guide						
		Apron Drive				Hydraulic (Variable Rate Ready)
		Mechanical Ground Drive				
		Tire Size				
		320/90R50	380/90R46	480/80R42		
		12.4R50	14.9R46	18.4R42		
Driving Interval (ft)	40	N129460 (page 19)		N129480 (page 25)		N129459 (page 18)
	50	N129461 (page 20)		N129481 (page 26)		
	60	N129462 (page 21)		N129482 (page 27)		
	80	N129463 (page 22)		N129483 (page 28)		
	88	N129464 (page 23)		N129484 (page 29)		
	90	N129465 (page 24)		N129485 (page 30)		



# 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	3 - 2 - 3 - 2
50	830	
60	950	
80	740	3 - 3 - 3 - 3
88	780	
90	790	

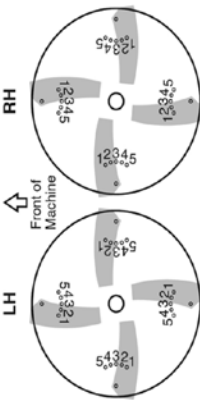
LH

↑  
Front of  
Machine

RH

## Spreader Constants/Rate Charts (Cont'd)

40 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129460

APPLICATION RATE -- lbs/ACRE													N129460					
40FT													MACHINE: RC800		BLADE SETTING		SPINNER RPM	
													TIRE SIZES: 380/90R46 (14.9R46) 320/90R50 (12.4R50)		3 - 2 - 3 - 2		700	
LOW RANGE		APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS																
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES																
Gate													Product Density lbs/ft3					
Opening		45	50	55	58	60	62	65	67	70	75	80						
1"		64	71	78	82	85	88	92	95	99	106	113						
1 1/2"		131	146	160	169	175	180	189	195	204	218	233						
		90	101	111	117	121	125	131	135	141	151	161						
2"		187	207	228	241	249	257	270	278	290	311	332						
		121	134	148	156	161	167	175	180	188	202	215						
2 1/2"		250	277	305	322	333	344	361	372	388	416	444						
		151	168	184	195	201	208	218	225	235	252	268						
3"		311	346	380	401	415	429	450	463	484	519	553						
		178	198	217	229	237	245	257	265	277	296	316						
3 1/2"		367	408	448	473	489	505	530	546	571	611	652						
		203	225	248	262	271	280	293	302	316	338	361						
4"		419	465	512	539	558	577	605	623	651	698	744						
		229	254	280	295	305	315	330	341	356	381	407						
4 1/2"		472	524	577	608	629	650	681	702	734	786	839						
		257	286	314	331	343	354	371	383	400	428	457						
5"		530	589	648	683	707	731	766	789	825	884	943						
		287	319	351	370	383	395	414	427	446	478	510						
5 1/2"		592	658	723	763	789	815	855	881	921	986	1,052						
		314	349	384	405	419	433	454	468	489	524	559						
6"		648	720	792	835	864	893	936	965	1,008	1,080	1,152						
		335	372	409	432	446	461	484	498	521	558	595						
		690	767	844	890	921	951	997	1,028	1,074	1,151	1,228						

# Set-up and Operation

## Spreader Constants/Rate Charts (Cont'd)

50 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129461

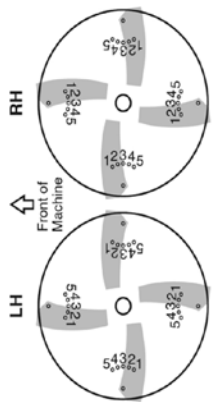
APPLICATION RATE -- lbs/ACRE										N129461									
50FT										MACHINE: RC800		BLADE SETTING		SPINNER RPM					
										TIRE SIZES:  380/90R46 (14.9R46) 320/90R50 (12.4R50)		3 - 2 - 3 - 2		830					
LOW RANGE		APPLICATION RATE BASED ON 50 FT DRIVING INTERVALS										Front of Machine							
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										LH		RH					
Gate		Product Density lbs/ft3																	
Opening		45	50	55	58	60	62	65	67	70	75	80							
1"	51	56	62	65	68	70	73	76	79	85	90								
	105	116	128	135	140	144	151	156	163	175	186								
1 1/2"	72	80	88	93	97	100	105	108	113	121	129								
	149	166	182	192	199	206	216	222	232	249	265								
2"	97	108	118	125	129	133	140	144	151	161	172								
	200	222	244	257	266	275	288	297	311	333	355								
2 1/2"	121	134	148	156	161	166	174	180	188	201	215								
	249	277	304	321	332	343	360	371	387	415	443								
3"	142	158	174	183	190	196	206	212	221	237	253								
	293	326	359	378	391	404	424	437	457	489	522								
3 1/2"	162	180	198	209	216	224	234	242	253	271	289								
	335	372	409	432	446	461	484	499	521	558	595								
4"	183	203	224	236	244	252	264	272	285	305	325								
	377	419	461	486	503	520	545	562	587	629	671								
4 1/2"	206	229	251	265	274	283	297	306	320	343	366								
	424	471	518	547	566	584	613	632	660	707	754								
5"	230	255	281	296	306	316	332	342	357	383	408								
	473	526	579	610	631	652	684	705	736	789	842								
5 1/2"	251	279	307	324	335	346	363	374	391	419	447								
	518	576	634	668	691	714	749	772	806	864	922								
6"	268	298	327	345	357	369	387	399	417	446	476								
	552	614	675	712	737	761	798	822	859	921	982								



## Spreader Constants/Rate Charts (Cont'd)

60 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129462

APPLICATION RATE -- lbs/ACRE												N129462					
60FT												MACHINE: RC800		BLADE SETTING		SPINNER RPM	
												TIRE SIZES:  380/90R46 (14.9R46) 320/90R50 (12.4R50)		3 - 2 - 3 - 2		950	
														<div><div>LH</div><div>RH</div><div>Front of Machine</div></div>			
LOW RANGE HIGH RANGE		APPLICATION RATE BASED ON 60 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										Product Density lbs/ft3					
Gate	45	50	55	58	60	62	65	67	70	75	80						
Opening																	
1"	42	47	52	55	56	58	61	63	66	71	75						
	87	97	107	113	116	120	126	130	136	146	155						
1 1/2"	60	67	74	78	80	83	87	90	94	101	107						
	124	138	152	160	166	171	180	185	194	207	221						
2"	81	90	99	104	108	111	117	120	125	134	143						
	166	185	203	214	222	229	240	248	259	277	296						
2 1/2"	101	112	123	130	134	139	145	150	157	168	179						
	208	231	254	267	277	286	300	309	323	346	369						
3"	119	132	145	153	158	163	171	177	184	198	211						
	245	272	299	315	326	337	353	364	380	408	435						
3 1/2"	135	150	165	174	180	186	195	201	210	225	241						
	279	310	341	360	372	384	403	415	434	465	496						
4"	152	169	186	197	203	210	220	227	237	254	271						
	315	349	384	405	419	433	454	468	489	524	559						
4 1/2"	171	190	209	221	229	236	248	255	267	286	305						
	353	393	432	456	471	487	511	526	550	589	628						
5"	191	213	234	247	255	264	276	285	298	319	340						
	395	438	482	508	526	544	570	587	614	658	701						
5 1/2"	209	233	256	270	279	289	303	312	326	349	372						
	432	480	528	557	576	595	624	643	672	720	768						
6"	223	248	273	288	298	308	322	332	347	372	397						
	460	511	563	593	614	634	665	685	716	767	818						



APPLICATION RATE -- lbs/ACRE													N129463					
80FT													MACHINE: RC800		BLADE SETTING		SPINNER RPM	
													TIRE SIZES:  380/90R46 (14.9R46) 320/90R50 (12.4R50)		3 - 3 - 3 - 3		740	
LOW RANGE		APPLICATION RATE BASED ON 80 FT DRIVING INTERVALS											<div><div>LH</div><div>Front of Machine</div><div>RH</div></div>					
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES																
Gate		Product Density lbs/ft3																
Opening		45	50	55	58	60	62	65	67	70	75	80						
1"		32	35	39	41	42	44	46	47	49	53	56						
		66	73	80	84	87	90	95	98	102	109	116						
1 1/2"		45	50	55	58	60	62	65	67	70	75	80						
		93	104	114	120	124	129	135	139	145	156	166						
2"		61	67	74	78	81	83	87	90	94	101	108						
		125	139	153	161	166	172	180	186	194	208	222						
2 1/2"		75	84	92	97	101	104	109	112	117	126	134						
		156	173	190	201	208	214	225	232	242	259	277						
3"		89	99	109	115	119	123	128	132	138	148	158						
		183	204	224	236	245	253	265	273	285	306	326						
3 1/2"		101	113	124	131	135	140	147	151	158	169	180						
		209	233	256	270	279	288	302	312	326	349	372						
4"		114	127	140	147	152	158	165	170	178	191	203						
		236	262	288	304	315	325	341	351	367	393	419						
4 1/2"		129	143	157	166	171	177	186	191	200	214	229						
		265	295	324	342	353	365	383	395	412	442	471						
5"		143	159	175	185	191	198	207	214	223	239	255						
		296	329	362	381	395	408	427	441	460	493	526						
5 1/2"		157	175	192	202	209	216	227	234	244	262	279						
		324	360	396	418	432	446	468	482	504	540	576						
6"		167	186	205	216	223	231	242	249	260	279	298						
		345	384	422	445	460	476	499	514	537	575	614						

## Spreader Constants/Rate Charts (Cont'd)

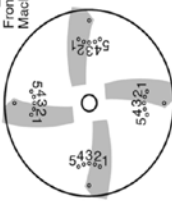
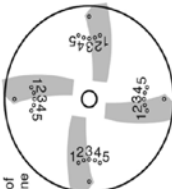
88 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129464

APPLICATION RATE -- lbs/ACRE													N129464										
88FT					MACHINE: RC800		BLADE SETTING		SPINNER RPM		<div><div><div>LH</div><div>RH</div></div><div><div>Front of Machine</div><div>↑</div></div><div><div><div><div><div>12345</div><div>54321</div></div><div><div>12345</div><div>54321</div></div></div><div><div><div>12345</div><div>54321</div></div><div><div>12345</div><div>54321</div></div></div></div></div></div>												
					TIRE SIZES:		3 - 3 - 3 - 3		780														
					380/90R46 (14.9R46) 320/90R50 (12.4R50)																		
LOW RANGE		APPLICATION RATE BASED ON 88 FT DRIVING INTERVALS																					
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES																					
Gate												Product Density lbs/ft3											
Opening		45	50	55	58	60	62	65	67	70	75	80											
1"		29	32	35	37	38	40	42	43	45	48	51											
		60	66	73	77	79	82	86	89	93	99	106											
1 1/2"		41	46	50	53	55	57	59	61	64	69	73											
		85	94	104	109	113	117	123	126	132	141	151											
2"		55	61	67	71	73	76	79	82	86	92	98											
		113	126	139	146	151	156	164	169	176	189	202											
2 1/2"		69	76	84	88	91	95	99	102	107	114	122											
		141	157	173	182	189	195	204	211	220	236	252											
3"		81	90	99	104	108	111	117	120	126	135	144											
		167	185	204	215	222	230	241	248	259	278	296											
3 1/2"		92	102	113	119	123	127	133	137	143	154	164											
		190	211	233	245	254	262	275	283	296	317	338											
4"		104	116	127	134	139	143	150	155	162	173	185											
		214	238	262	276	286	295	310	319	334	357	381											
4 1/2"		117	130	143	151	156	161	169	174	182	195	208											
		241	268	295	311	321	332	348	359	375	402	428											
5"		130	145	159	168	174	180	188	194	203	217	232											
		269	299	329	347	359	371	389	400	418	448	478											
5 1/2"		143	159	175	184	190	197	206	213	222	238	254											
		295	327	360	380	393	406	425	439	458	491	524											
6"		152	169	186	196	203	210	220	227	237	254	271											
		314	349	384	405	418	432	453	467	488	523	558											

# Set-up and Operation

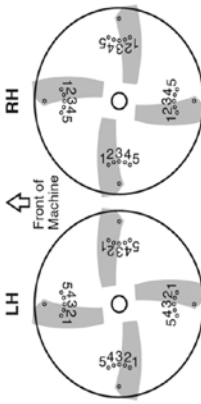
## Spreader Constants/Rate Charts (Cont'd)

90 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50) - N129465

APPLICATION RATE -- lbs/ACRE										N129465									
90FT										MACHINE: RC800		BLADE SETTING		SPINNER RPM					
										TIRE SIZES:  380/90R46 (14.9R46) 320/90R50 (12.4R50)		3 - 3 - 3 - 3		790					
												LH		RH					
APPLICATION RATE BASED ON 90 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										 									
LOW RANGE HIGH RANGE		Product Density lbs/ft3																	
Gate Opening		45	50	55	58	60	62	65	67	70	75	80							
1"		28	31	35	36	38	39	41	42	44	47	50							
1 1/2"		40	45	49	52	54	55	58	60	63	67	71							
2"		54	60	66	69	72	74	78	80	84	90	96							
2 1/2"		67	75	82	86	89	92	97	100	104	112	119							
3"		79	88	97	102	105	109	114	118	123	132	141							
3 1/2"		90	100	110	116	120	124	130	134	140	150	160							
4"		102	113	124	131	136	140	147	151	158	169	181							
4 1/2"		114	127	140	147	152	157	165	170	178	190	203							
5"		128	142	156	164	170	176	184	190	198	213	227							
5 1/2"		140	155	171	180	186	192	202	208	217	233	248							
6"		149	165	182	192	198	205	215	222	231	248	265							
		307	341	375	396	409	423	443	457	477	511	546							

## Spreader Constants/Rate Charts (Cont'd)

40 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129480

APPLICATION RATE -- lbs/ACRE												N129480	
40FT				MACHINE: RC800		BLADE SETTING		SPINNER RPM		700			
				TIRE SIZES:		3 - 2 - 3 - 2							
480/80R42 (18.4R42)				APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS								<div><div>LH</div><div>RH</div><div>Front of Machine</div></div>	
				TIRE SIZES:									
LOW RANGE		APPLICATION RATE BASED ON 40 FT DRIVING INTERVALS											
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES											
Gate		Product Density lbs/ft3											
Opening		45	50	55	58	60	62	65	67	70	75	80	
1"		65	72	80	84	87	90	94	97	101	109	116	
		134	149	164	173	179	185	194	200	209	224	239	
1 1/2"		93	103	113	120	124	128	134	138	144	155	165	
		191	213	234	247	255	264	276	285	298	319	340	
2"		124	138	152	160	165	171	179	185	193	207	221	
		256	284	313	330	341	353	370	381	398	426	455	
2 1/2"		155	172	189	199	206	213	223	230	241	258	275	
		319	355	390	411	425	440	461	475	496	532	567	
3"		182	203	223	235	243	251	263	271	284	304	324	
		376	418	460	485	501	518	543	560	585	627	669	
3 1/2"		208	231	254	268	277	287	300	310	324	347	370	
		429	477	524	553	572	591	620	639	667	715	763	
4"		234	261	287	302	313	323	339	349	365	391	417	
		484	537	591	623	645	666	699	720	752	806	860	
4 1/2"		264	293	322	340	351	363	381	392	410	439	468	
		544	604	664	701	725	749	785	809	845	906	966	
5"		294	327	359	379	392	405	425	438	458	490	523	
		607	674	741	782	809	836	876	903	944	1,011	1,078	
5 1/2"		322	358	394	415	429	444	465	480	501	537	573	
		664	738	812	856	886	915	960	989	1,033	1,107	1,181	
6"		343	381	419	442	458	473	496	511	534	572	610	
		708	786	865	912	944	975	1,022	1,054	1,101	1,180	1,258	

# Set-up and Operation

## Spreader Constants/Rate Charts (Cont'd)

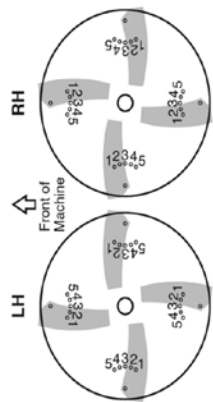
50 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129481

APPLICATION RATE -- lbs/ACRE										N129481									
50FT										MACHINE: RC800		BLADE SETTING		SPINNER RPM					
										TIRE SIZES:  480/80R42 (18.4R42)		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/ft3									
Opening		45	50	55	58	60	62	65	67	70	75	80							
1"		52	58	64	67	69	72	75	78	81	87	93							
		107	119	131	138	143	148	155	160	167	179	191							
1 1/2"		74	82	91	96	99	102	107	110	115	124	132							
		153	170	187	197	204	211	221	228	238	255	272							
2"		99	110	121	128	132	137	143	148	154	165	176							
		205	227	250	264	273	282	296	305	318	341	364							
2 1/2"		124	138	151	160	165	171	179	184	193	206	220							
		255	284	312	329	340	352	369	380	397	425	454							
3"		146	162	178	188	194	201	211	217	227	243	259							
		301	334	368	388	401	415	435	448	468	501	535							
3 1/2"		166	185	203	214	222	229	240	248	259	277	296							
		343	381	420	442	458	473	496	511	534	572	610							
4"		188	208	229	242	250	258	271	279	292	313	334							
		387	430	473	499	516	533	559	576	602	645	688							
4 1/2"		211	234	258	272	281	290	305	314	328	351	375							
		435	483	531	560	580	599	628	647	676	725	773							
5"		235	261	288	303	314	324	340	350	366	392	418							
		485	539	593	626	647	669	701	723	755	809	863							
5 1/2"		258	286	315	332	344	355	372	384	401	429	458							
		531	591	650	685	709	732	768	791	827	886	945							
6"		275	305	336	354	366	378	397	409	427	458	488							
		566	629	692	730	755	780	818	843	881	944	1,007							

LH

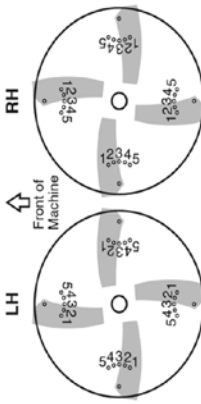
RH

Front of Machine



## Spreader Constants/Rate Charts (Cont'd)

60 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129482

APPLICATION RATE -- lbs/ACRE										N129482		
60FT				MACHINE: RC800		BLADE SETTING		SPINNER RPM		<div>3 - 2 - 3 - 2</div> <div>950</div> <div><div><div><div>LH</div><div>RH</div></div><div><div>Front of Machine</div><div>↑</div></div><div></div></div></div>		
				TIRE SIZES:								
				480/80R42 (18.4R42)								
LOW RANGE		APPLICATION RATE BASED ON 60 FT DRIVING INTERVALS										
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES										
Gate		Product Density lbs/ft3										
Opening		45	50	55	58	60	62	65	67	70	75	80
1"		43	48	53	56	58	60	63	65	68	72	77
		90	99	109	115	119	123	129	133	139	149	159
1 1/2"		62	69	76	80	82	85	89	92	96	103	110
		128	142	156	164	170	176	184	190	198	213	227
2"		83	92	101	107	110	114	119	123	129	138	147
		171	190	208	220	227	235	246	254	265	284	303
2 1/2"		103	115	126	133	138	142	149	154	160	172	183
		213	236	260	274	284	293	307	317	331	355	378
3"		122	135	149	157	162	167	176	181	189	203	216
		251	279	306	323	334	345	362	373	390	418	446
3 1/2"		139	154	170	179	185	191	200	206	216	231	247
		286	318	350	369	381	394	413	426	445	477	509
4"		156	174	191	201	208	215	226	233	243	261	278
		322	358	394	416	430	444	466	480	502	537	573
4 1/2"		176	195	215	226	234	242	254	262	273	293	312
		362	403	443	467	483	499	523	540	564	604	644
5"		196	218	240	253	261	270	283	292	305	327	349
		404	449	494	521	539	557	584	602	629	674	719
5 1/2"		215	239	262	277	286	296	310	320	334	358	382
		443	492	541	571	591	610	640	659	689	738	787
6"		229	254	280	295	305	315	330	341	356	381	407
		472	524	577	608	629	650	682	703	734	786	839

# Set-up and Operation

## Spreader Constants/Rate Charts (Cont'd)

80 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129483

APPLICATION RATE -- lbs/ACRE

80FT

MACHINE: RC800

BLADE SETTING

SPINNER RPM

3 - 3 - 3 - 3

740

LH

RH

Front of Machine

480/80R42 (18.4R42)

TIRE SIZES:

APPLICATION RATE BASED ON 80 FT DRIVING INTERVALS  
SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES

Gate Opening

Product Density lbs/ft3

45

50

55

58

60

62

65

67

70

75

80

1"

33

36

40

42

43

45

47

48

51

54

58

1 1/2"

46

52

57

60

62

64

67

69

72

77

82

96

106

117

123

128

132

138

142

149

159

170

2"

62

69

76

80

83

85

90

92

96

103

110

128

142

156

165

171

176

185

190

199

213

227

2 1/2"

77

86

95

100

103

107

112

115

120

129

138

160

177

195

206

213

220

230

238

248

266

284

3"

91

101

111

118

122

126

132

136

142

152

162

188

209

230

242

251

259

272

280

292

313

334

3 1/2"

104

116

127

134

139

143

150

155

162

173

185

215

238

262

277

286

296

310

319

334

358

381

4"

117

130

143

151

156

162

169

175

182

195

208

242

269

296

312

322

333

349

360

376

403

430

4 1/2"

132

146

161

170

176

182

190

196

205

220

234

272

302

332

350

362

374

393

405

423

453

483

5"

147

163

180

190

196

203

212

219

229

245

261

303

337

371

391

404

418

438

452

472

506

539

5 1/2"

161

179

197

208

215

222

233

240

251

268

286

332

369

406

428

443

458

480

495

517

554

591

6"

172

191

210

221

229

236

248

255

267

286

305

354

393

433

456

472

488

511

527

551

590

629

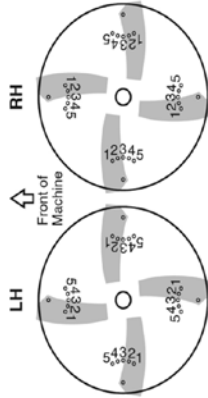
N129483



## Spreader Constants/Rate Charts (Cont'd)

88 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129484

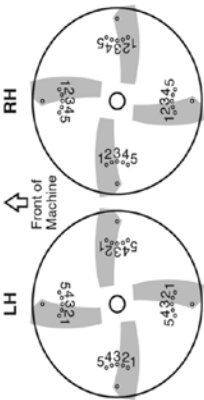
APPLICATION RATE -- lbs/ACRE													N129484												
88FT					MACHINE: RC800		BLADE SETTING		SPINNER RPM		780														
					TIRE SIZES:		3 - 3 - 3 - 3																		
480/80R42 (18.4R42)													<div><div>LH</div><div>RH</div><div>Front of Machine</div></div>												
LOW RANGE		APPLICATION RATE BASED ON 88 FT DRIVING INTERVALS																							
HIGH RANGE		SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES																							
Gate													Product Density lbs/ft3												
Opening		45	50	55	58	60	62	65	67	70	75	80													
1"		30	33	36	38	39	41	43	44	46	49	53													
		61	68	75	79	81	84	88	91	95	102	109													
1 1/2"		42	47	52	54	56	58	61	63	66	70	75													
		87	97	106	112	116	120	126	129	135	145	155													
2"		56	63	69	73	75	78	81	84	88	94	100													
		116	129	142	150	155	160	168	173	181	194	207													
2 1/2"		70	78	86	91	94	97	102	105	109	117	125													
		145	161	177	187	193	200	209	216	226	242	258													
3"		83	92	101	107	111	114	120	123	129	138	147													
		171	190	209	220	228	236	247	255	266	285	304													
3 1/2"		95	105	116	122	126	130	137	141	147	158	168													
		195	217	238	251	260	269	282	290	303	325	347													
4"		107	118	130	137	142	147	154	159	166	178	189													
		220	244	269	283	293	303	318	327	342	366	391													
4 1/2"		120	133	146	154	160	165	173	178	186	200	213													
		247	275	302	318	329	340	357	368	384	412	439													
5"		134	149	163	172	178	184	193	199	208	223	238													
		276	306	337	355	368	380	398	411	429	460	490													
5 1/2"		146	163	179	189	195	202	211	218	228	244	260													
		302	336	369	389	403	416	436	450	470	503	537													
6"		156	173	191	201	208	215	225	232	243	260	277													
		322	357	393	415	429	443	465	479	500	536	572													



# Set-up and Operation

## Spreader Constants/Rate Charts (Cont'd)

90 Ft. Mechanical Drive, 480/80R42 (18.4R42) - N129485

APPLICATION RATE -- lbs/ACRE										N129485									
90FT										MACHINE: RC800		BLADE SETTING		SPINNER RPM					
										TIRE SIZES: 480/80R42 (18.4R42)		3 - 3 - 3 - 3		790					
												LH		RH					
APPLICATION RATE BASED ON 90 FT DRIVING INTERVALS SEE MANUAL FOR OTHER DRIVING INTERVALS / TIRE SIZES																			
LOW RANGE HIGH RANGE		Product Density lbs/ft3																	
Gate	Opening	45	50	55	58	60	62	65	67	70	75	80							
1"	1"	29	32	35	37	39	40	42	43	45	48	51							
	1 1/2"	60	66	73	77	80	82	86	89	93	99	106							
2"	1 1/2"	41	46	50	53	55	57	60	61	64	69	73							
	2"	85	94	104	110	113	117	123	127	132	142	151							
2 1/2"	2"	55	61	67	71	74	76	80	82	86	92	98							
	2 1/2"	114	126	139	147	152	157	164	169	177	190	202							
3"	2 1/2"	69	76	84	89	92	95	99	102	107	115	122							
	3"	142	158	173	183	189	195	205	211	221	236	252							
3 1/2"	3"	81	90	99	104	108	112	117	121	126	135	144							
	3 1/2"	167	186	204	215	223	230	241	249	260	279	297							
4"	3 1/2"	92	103	113	119	123	127	134	138	144	154	164							
	4"	191	212	233	246	254	263	275	284	297	318	339							
4 1/2"	4"	104	116	127	134	139	144	151	155	162	174	185							
	4 1/2"	215	239	263	277	287	296	310	320	334	358	382							
5"	4 1/2"	117	130	143	151	156	161	169	174	182	195	208							
	5"	242	268	295	311	322	333	349	360	376	403	429							
5 1/2"	5"	131	145	160	168	174	180	189	195	203	218	232							
	5 1/2"	270	300	330	348	359	371	389	401	419	449	479							
6"	5 1/2"	143	159	175	185	191	197	207	213	223	239	255							
	6"	295	328	361	381	394	407	426	440	459	492	525							
	6"	153	169	186	197	203	210	220	227	237	254	271							
		315	350	385	405	419	433	454	468	489	524	559							

## 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.**

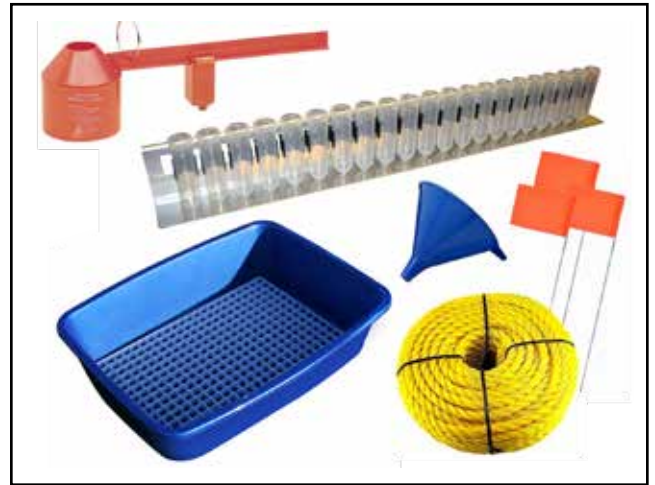
**NOTE:** A spread pattern test must also be performed at the beginning of each season, and after adjustments have been made.

## 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 36 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.

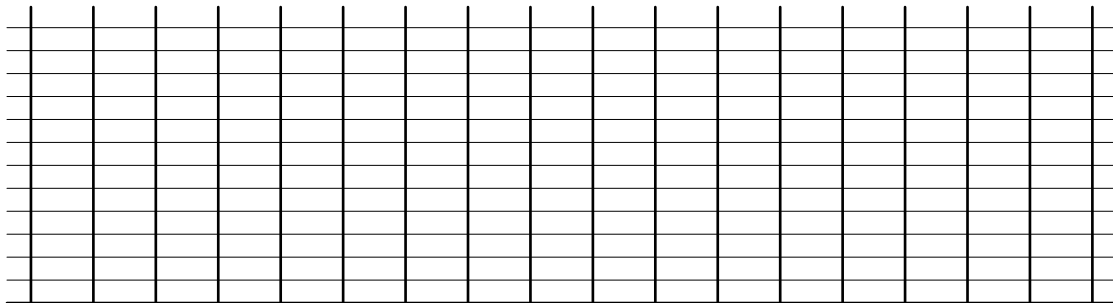


## Spread Pattern Test (Cont'd)

### 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

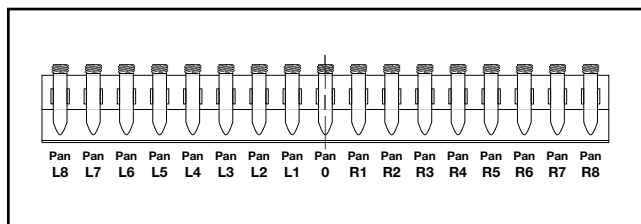
## Spread Pattern Test (Cont'd)

### Spread Pattern Recording

The material collected in the pans will be measured in the Spread Pattern Test Results sheet found on page 33 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.*

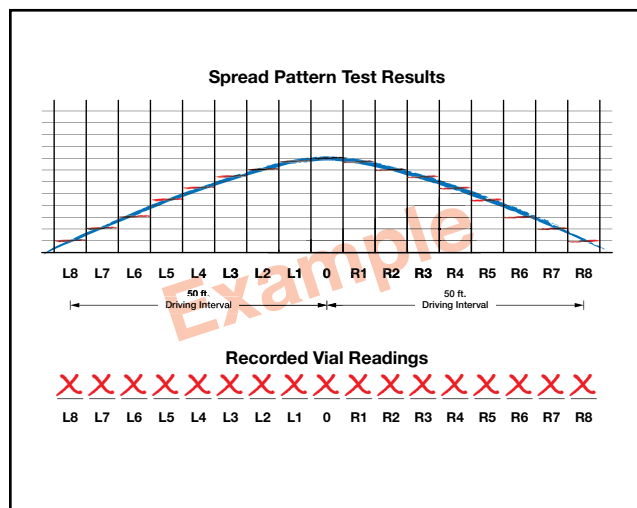


Using the funnel, empty the contents of each pan into its corresponding vial, starting with the L8 pan and vial.

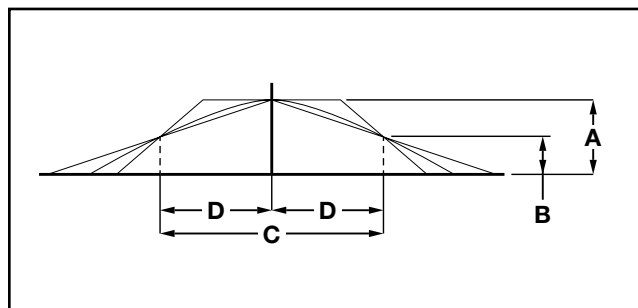
Measure the weight of the material in each vial using a scale. Record the weight for each vial in its proper square on the Test Pattern Results sheet.

**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.

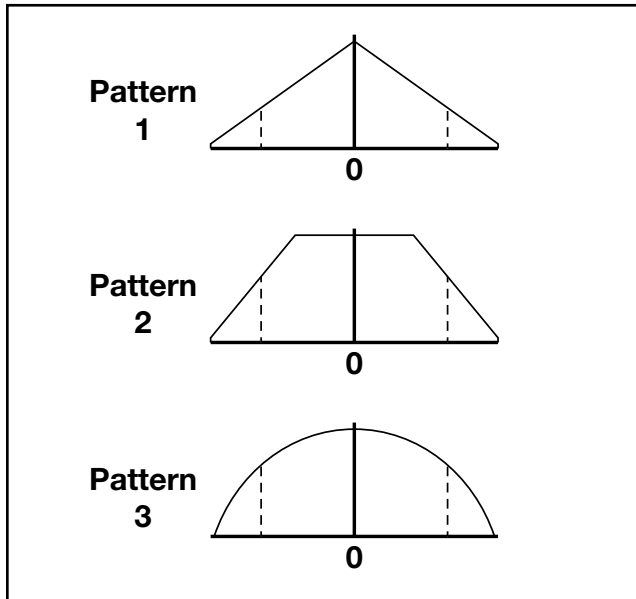
D - One half of driver interval width.

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

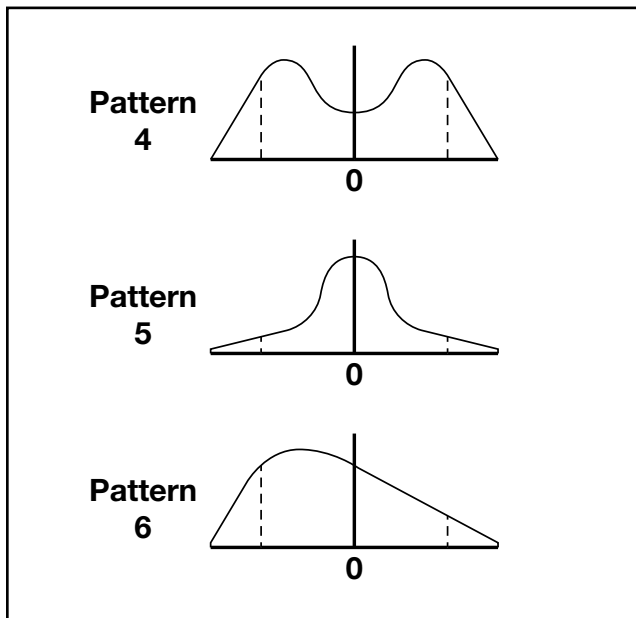
## Spread Pattern Test (Cont'd)

### Acceptable Patterns



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

### Unacceptable Patterns

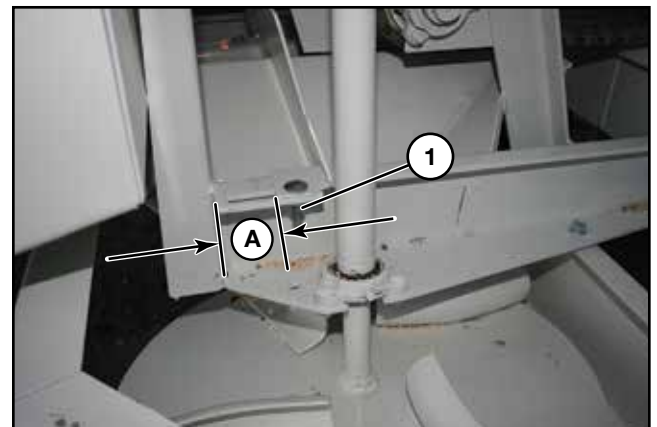


If the shape resembles any of the undesirable patterns above, take the recommended corrective action described in the following chart.

Spread Pattern	Recommended Corrective Action
<b>Pattern 4</b> 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.
<b>Pattern 5</b> 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.
<b>Pattern 6</b> 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 36 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 36.

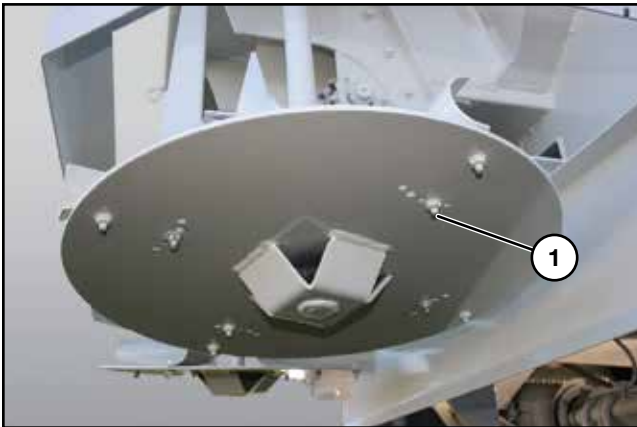
# Set-up and Operation

## Spread Pattern Adjustments

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

### Spinner Blade Positions

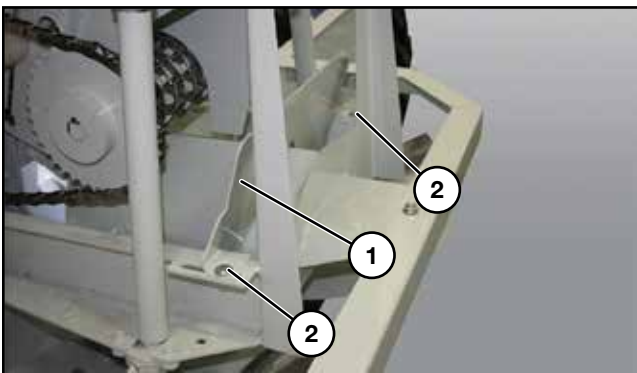
The spinner blades are the primary means of adjustment.



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.

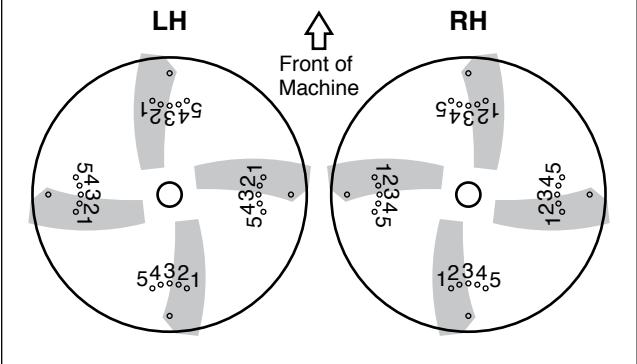
## Spinner RPM


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				
88 ft.	780		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.

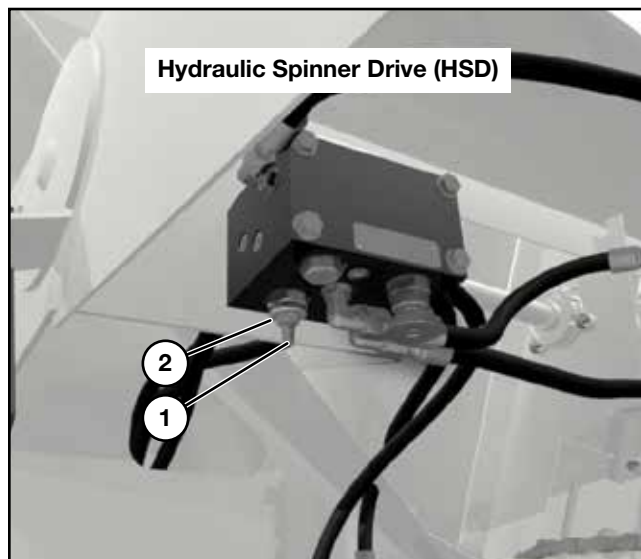
(Procedure continued on following page.)



### 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.

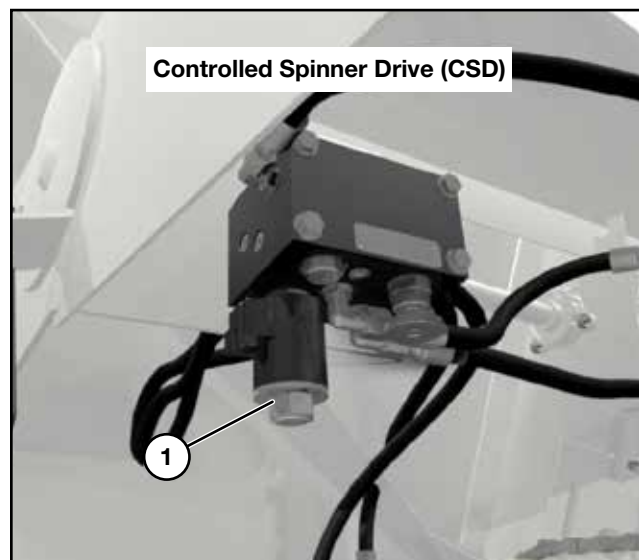
Turn the adjustment screw (1) clockwise to decrease RPM and counterclockwise to increase spinner RPM.

**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 17.

##### 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 (Spinner, Apron, Metering Gate)				X		
	Chain Tension	X					
	PTO Shaft	X			X		
Every 50	Apron	X					
	Safety Labels	X					
	Wheels and Tires	X					
Every 60	Bearing Set Screws	X				X	
Every 500	Wheel Bearings	X			X		
	Jack				X		



**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.

1. Grease - Use an SAE multipurpose high temperature grease with extreme-pressure (EP) rating. Also acceptable is an SAE multipurpose lithium based grease.
3. 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

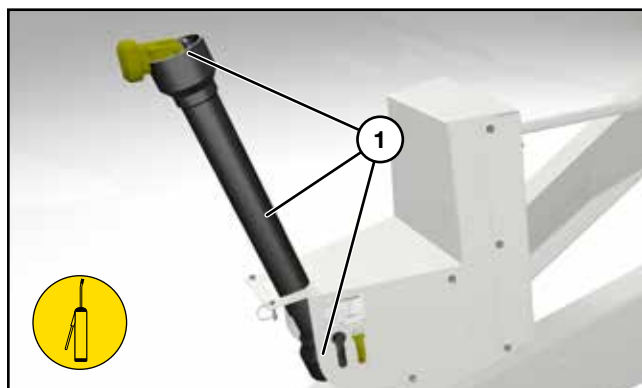


**WARNING:** Do not lubricate parts while the machine is running.

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

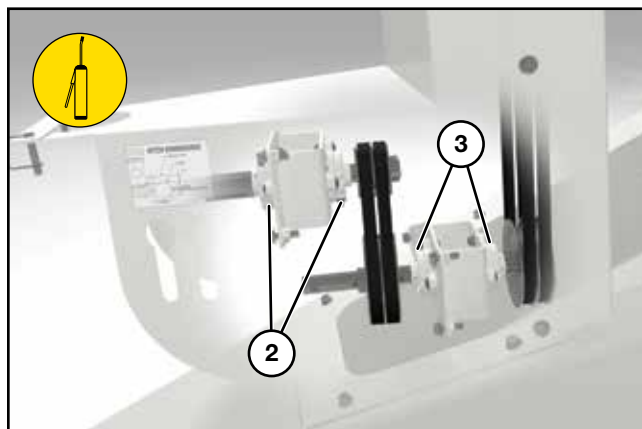
**NOTE:** Replace any broken or missing grease fittings. Be sure to clean fittings before greasing.

**NOTE:** See pages 6 and 7 for component location and identification.



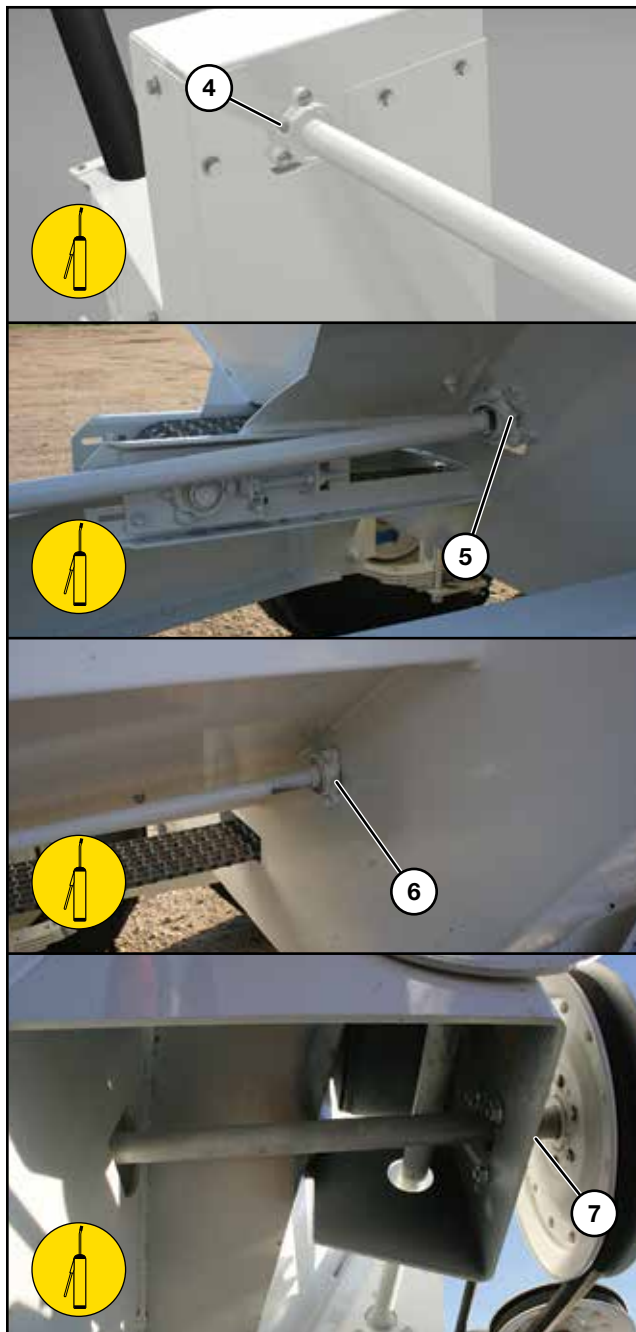
**Location:** PTO tube and U-joints (1).  
(PTO drive models only.)

**Interval:** Every 8 hours of operation.



**Location:** 1,000 RPM PTO shaft (2).  
540 RPM PTO shaft (3).  
(PTO drive models only.)

**Interval:** Every 8 hours of operation.

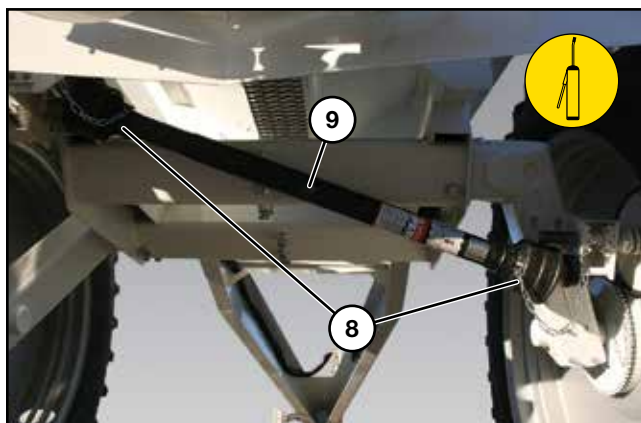


**Location:** Line shaft bearings (4, 5, 6, 7).  
(PTO drive models only.)

**Interval:** Every 8 hours of operation.

## Lubrication (Cont'd)

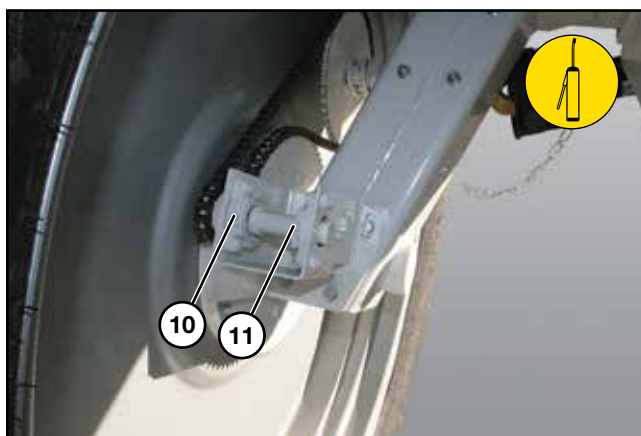
### Grease Points (Cont'd)



**Location:** PTO tube and U-joints (8, 9).  
(Mechanical ground drive models only.)

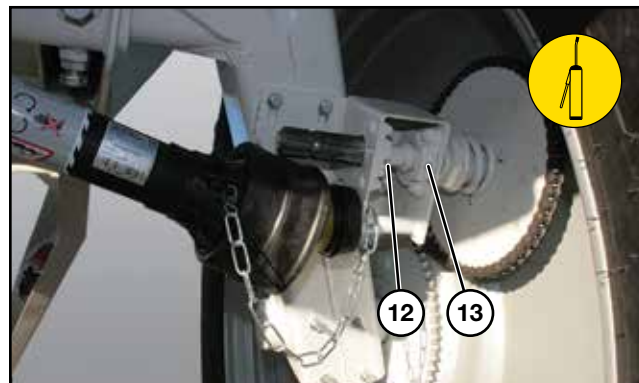
**Interval:** Every 8 hours of operation.

**NOTE:** Cover can be marked and a hole cut in tube to access grease zerk (19) without having to remove shaft from drive couplings.



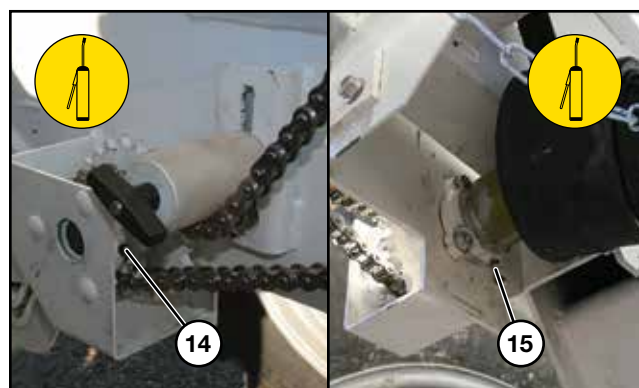
**Location:** Right idler shaft bearing. (10, 11).  
(Mechanical ground drive models only.)

**Interval:** Every 8 hours of operation.



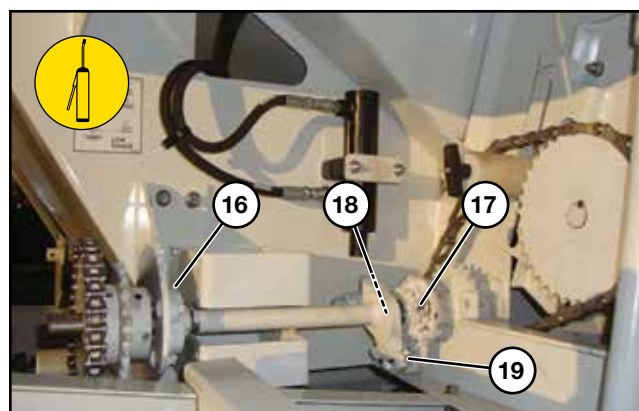
**Location:** Ground drive shaft bearings (12, 13).  
(Mechanical ground drive models only.)

**Interval:** Every 8 hours of operation.



**Location:** Intermediate shaft bearings (14, 15).  
(Mechanical ground drive models only.)

**Interval:** Every 8 hours of operation.



**Location:** Clutch shaft bearings (16, 17).  
Slip clutch cylinder bearings (18, 19).  
(Mechanical ground drive models only.)

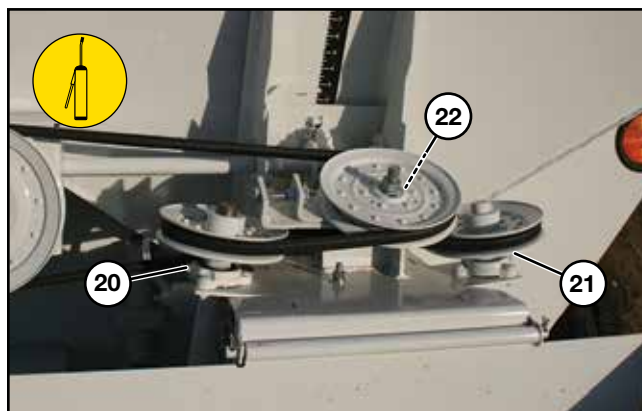
**Interval:** Every 8 hours of operation.



# Maintenance

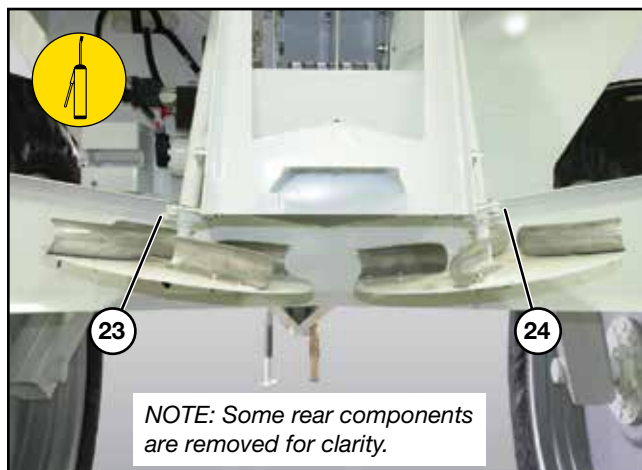
## Lubrication (Cont'd)

### Grease Points (Cont'd)



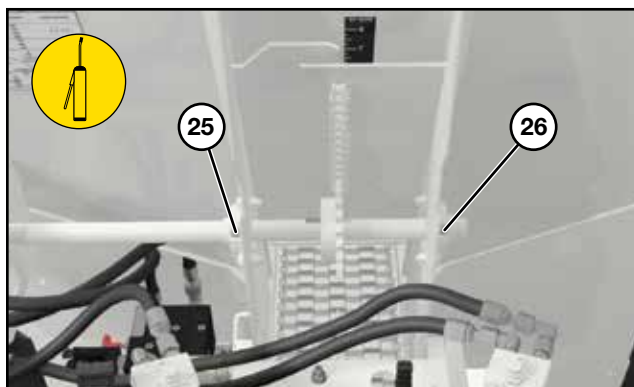
**Location:** Spinner bearings, top (20, 21).  
Idler pulley bearing (22).  
(PTO drive models only.)

**Interval:** Every 8 hours of operation.



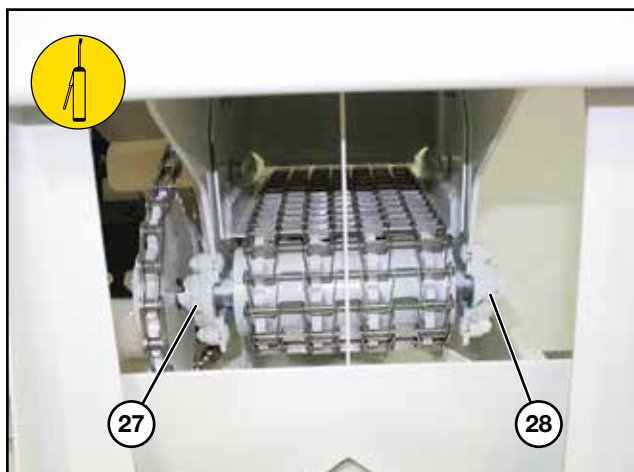
**Location:** Spinner bearings (23, 24).

**Interval:** Every 8 hours of operation.



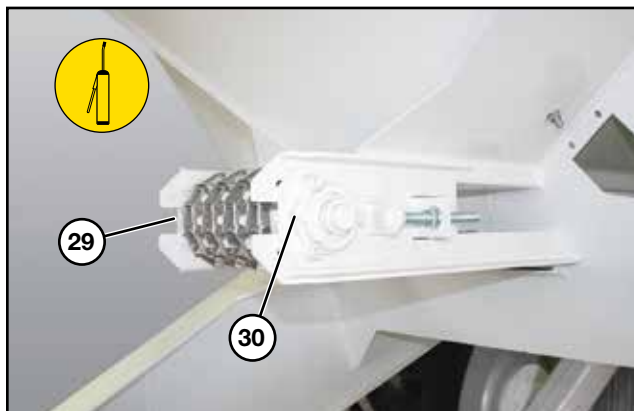
**Location:** Metering gate bearings (25, 26).

**Interval:** Every 8 hours of operation.



**Location:** Apron roller bearings; rear (27, 28).

**Interval:** Every 8 hours of operation.

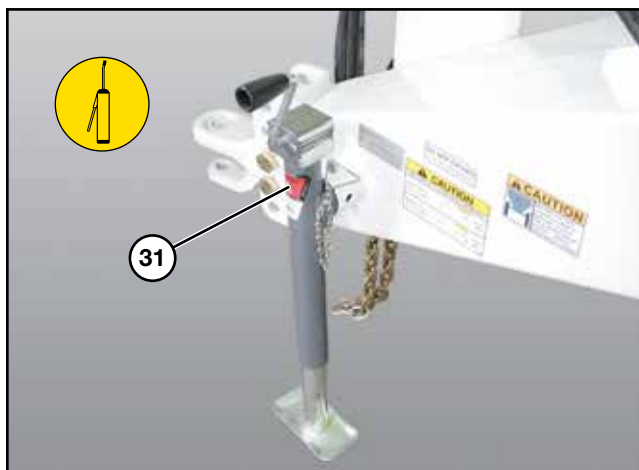


**Location:** Apron roller bearings; front (29, 30).

**Interval:** Every 8 hours of operation.

## Lubrication (Cont'd)

### Grease Points (Cont'd)



**Location:** Jack (31).

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



**Location:** Wheel bearings - both tires (32).

**Interval:** Every 500 hours of operation.

**NOTE:** See "Wheel Bearing Maintenance" 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.

## Roller Chain(s)



Remove the roller chain(s) every two weeks during the season and soak in oil for at least 4 hours.

Wipe off excess oil before reinstalling.

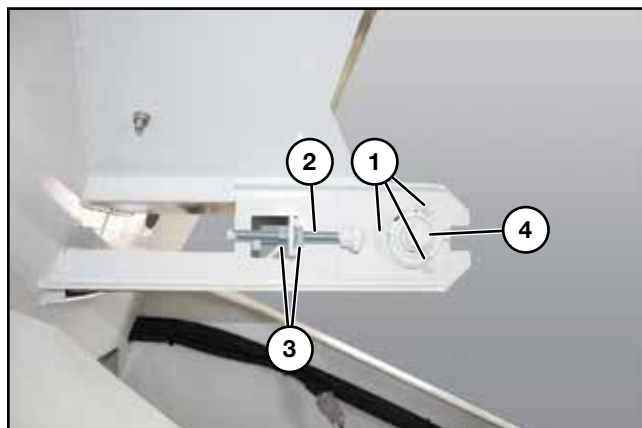
## Removing the Rear End

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

To disassemble, remove the apron chain, bumper, and both spinners. Locate splice pin in apron chain. Remove the bolts securing the rear end.

# Maintenance

## Tightening Apron



Loosen nuts on the bearing mounting bolts (1) (three on each side of apron).

Adjust the take-up bolt (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 locking collar set screws (4) for tightness (both sides).

Reset take-up nuts (3). Tighten.

## 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.

## Tire Inflation

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

Tire Size	Inflation Pressure
320/90R50	70 psi
380/90R46	52 psi
480/80R42	37 psi

## 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:** Chemical ingredients in some fertilizers may cause paint to blister or peel.

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:** *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.*

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.

# Maintenance

## 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.

## Troubleshooting (Cont'd)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Application rate inaccurate.	Driving at wrong interval.	Drive at correct interval. (Example: Drive at 40 ft. intervals for 40 ft. spread pattern; 50 ft. intervals for 50 ft. spread pattern, etc.)
		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.

# Maintenance

## Troubleshooting (Cont'd)

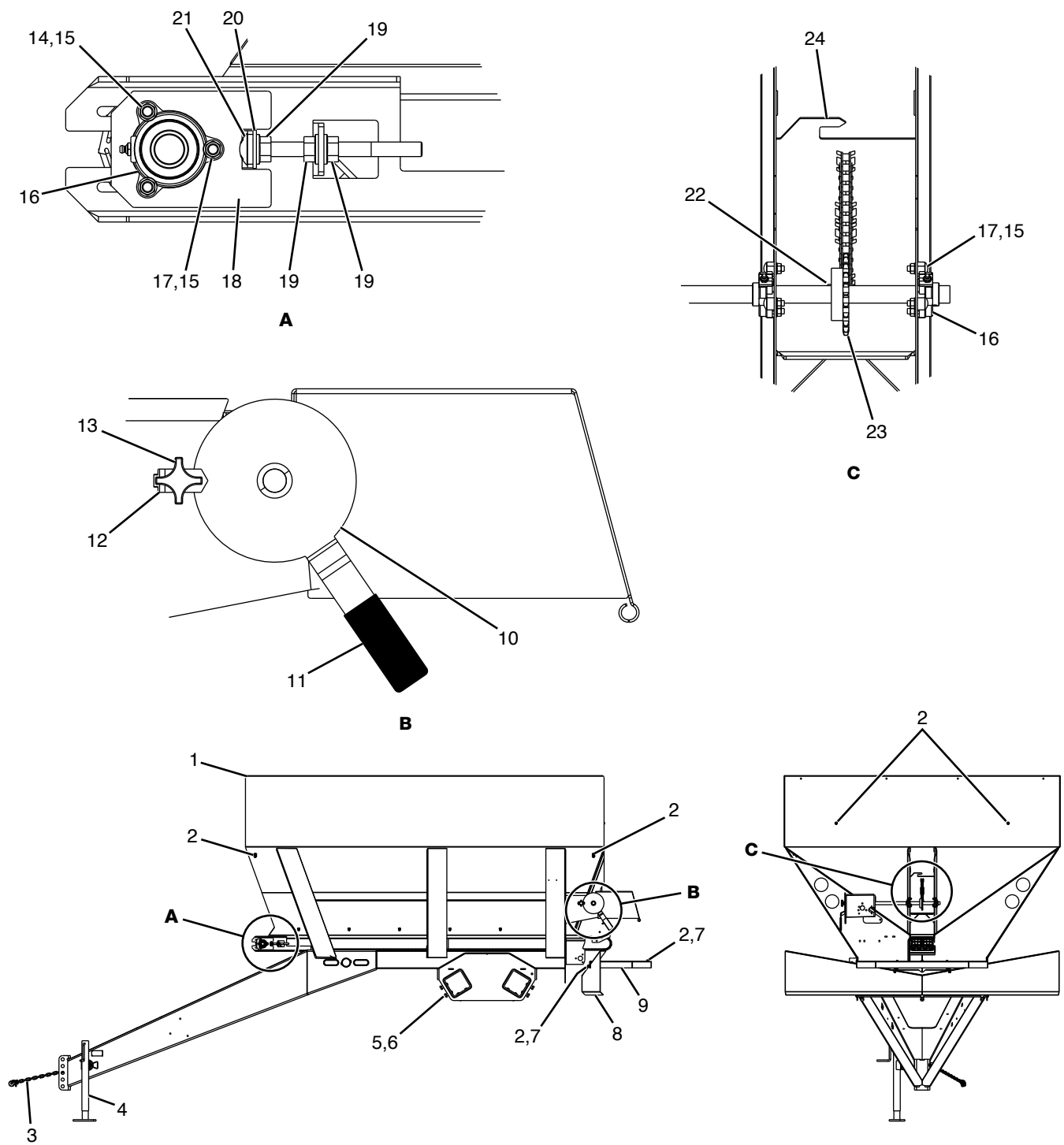
PROBLEM	POSSIBLE CAUSE	SOLUTION
Apron speed will not change.	Controller in test mode.	Exit test mode.
	Rate set to manual.	Set rate to automatic mode.
Apron ratches.	Rate set too low.	Increase rate.
		Decrease gate opening and adjust spreader constant.
	Speed too slow.	Drive faster.
Slip clutch slips.	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.
Wheel has moved in or out (track width).	Set bolts on axle are loose.	Tighten set bolts.
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.
Load will not stabilize. (Scale model)	Defective Load Cell	Disconnect load cells, one at a time to isolate defective load cell. Replace defective load cell.
Load decreased with additional weight. (Scale model)	Load cell(s) installed incorrectly.	Connect one load cell at a time to determine which load cells are installed correctly. Correct load cells that are installed incorrectly.



## **PARTS IDENTIFICATION AND SCHEMATICS**

# Parts Identification

## Spreader Frame

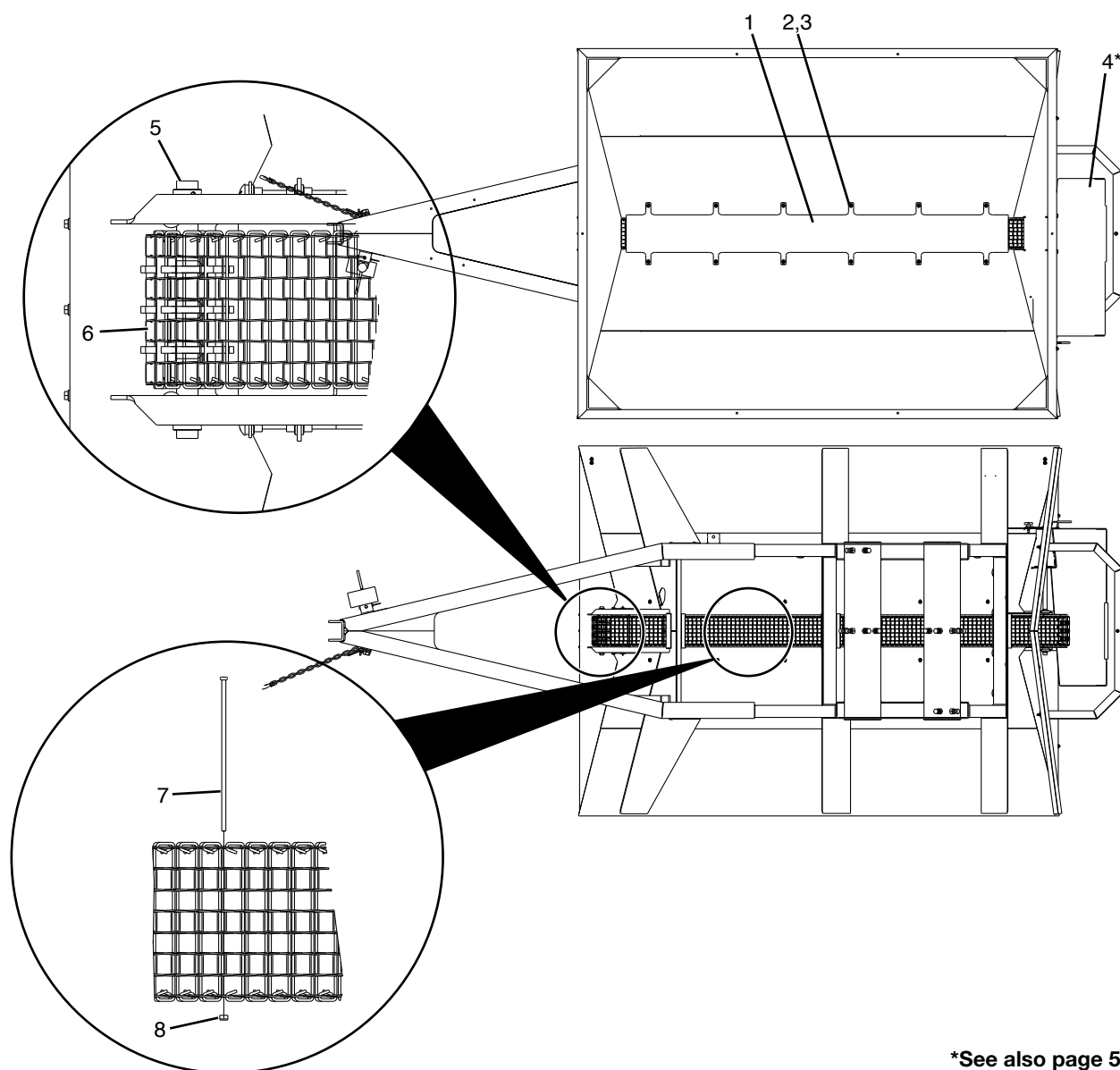


### Spreader Frame

#	QTY.	PART #	DESCRIPTION
1	1	N85440	BIN WLDMT
2	11	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
3	1	N50260	CHAIN,SAFETY 21,000 LB W/HDWR
4	1	N84670	JACK, BULLDOG SWL 5K
5	12	4475	BOLT, 3/4" X 2-1/4" GRADE 5
6	12	4954	NUT, 3/4" JAM
7	3	N73940	NUT, LOCK 3/8" SER FLG SS
8	1	N108276	DEFLECTOR, SPREADER SPINNER
9	1	N109413	GUARD, SPREADER SPINNER
10	1	N43352	ADJUSTER,GATE
11	1	N50757	COVER, PLASTIC HANDLE
12	1	N43362	POINTER, SPREADER GAUGE
13	1	N23873	KNOB, 3/8" X 1-1/2 FOUR PRONG
14	4	N62391	BOLT, CARRIAGE 5/16 X 1-1/4, SS
15	12	N41427	NUT, LOCK 5/16" SER FLG, SS
16	4	N33830	BEARING, 1" DODGE 3-BOLT FLG
17	8	N41428	BOLT, CARRIAGE 5/16" X 1", SS
18	2	N62318	PLATE, SPREADER B
19	6	N29075	NUT, LOCK 1/2" SERATED FLANGE
20	2	4997	WASHER, FLAT 5/8" SAE
21	2	4988	BOLT, CARRIAGE 1/2" X 6" GR 5
22	1	7187-03	KEY, 1/4" X 1-1/2"
23	1	N43498	SPROCKET, 50B22 1/4 KEYWAY & SS
24	1	N43400	GATE WLDMT

## Parts Identification

### Spreader Frame (Cont'd)

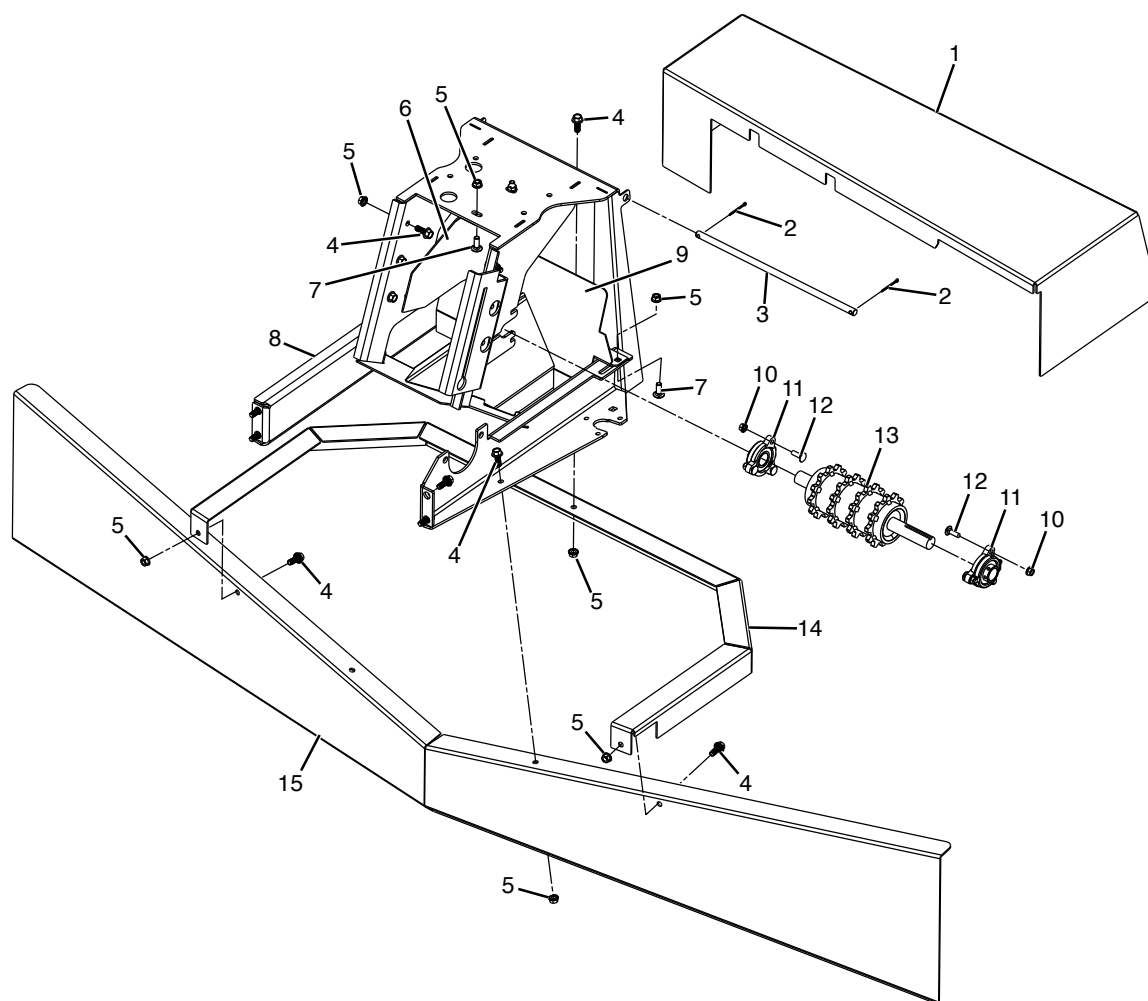


\*See also page 53.

#	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	N44127	SHIELD, SPREADER BELT
5	1	N43841	SPROCKET WLDMT, IDLER
6	1	N41429	BELT, FLATWIRE 7" X 241"
7	1	204030	BOLT, 7" FLATWIRE BELT SPLICE
8	1	204031	NUT, LOCK #10-32 NYLOC SS



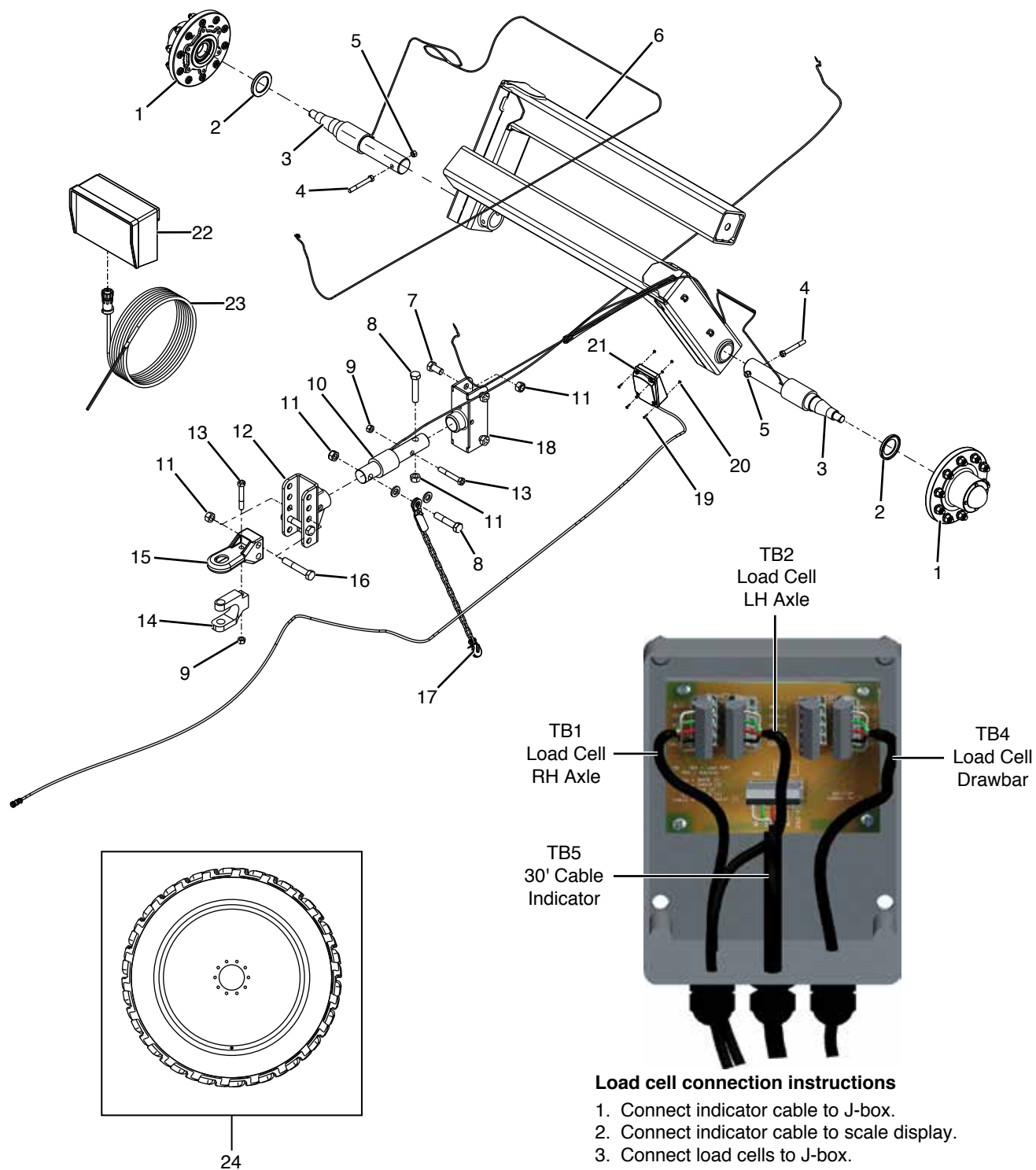
## Spinner Mount and Cover



#	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	N108276	DEFLECTOR, SPREADER SPINNER

## Parts Identification

### Wheels, Brakes, and Suspension - Scale



#### Load cell connection instructions

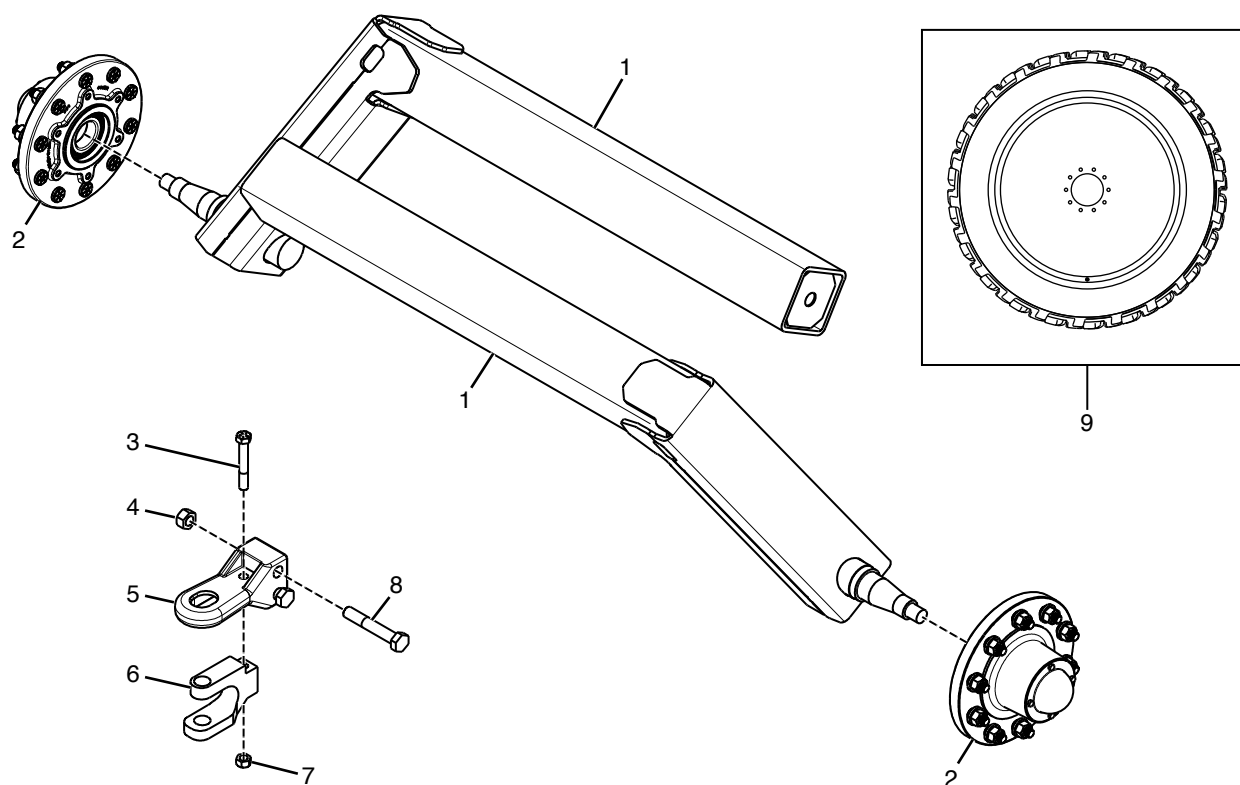
1. Connect indicator cable to J-box.
2. Connect indicator cable to scale display.
3. Connect load cells to J-box.
4. Test scale to verify that load stabilizes.  
Load will increase with weight added to machine.
5. Install J-box cover.

### Wheels, Brakes, and Suspension - Scale

#	QTY.	PART #	DESCRIPTION
1	2	N84268	HUB ASM,10 ON 11.25,8.66 PILOT
2	2	N150423	SEAL,GREASE 871 HUB 2.875 SPINDLE
3	2	N124832	SPINDLE, LOAD CELL - 2.875"
4	2	N128940	BOLT, 5/8" X 5" GR 8 FN TH
5	2	4057	NUT, 5/8" FINE THREAD TOP LOCK
6	2	N128899	WELDMENT, AXLE
7	4	N21496	BOLT, 1" X 2" FINE THREAD GRADE 8
8	2	N17023	BOLT, 1-14 X 5" GR. 8 FN. THR
9	2	N16352	NUT, LOCK 3/4" GRADE 8 FINE
10	1	N124844	MOUNT, LOAD CELL 2
11	8	N16700	NUT, 1"-14 GR. 8 FINE THREAD TOPLOCK
12	1	N129044	MOUNT, LOAD CELL 2
13	2	4577	BOLT, 3/4" X 5" FN TH GR 8
14	1	N37463	CLEVIS, CAT 2 BOLT-ON HITCH
15	1	N37474	BASE, CAT 2 BOLT-ON REC HITCH
16	2	N28583	BOLT, 1 X 6" FN TH GR 8
17	REF	N50260	CHAIN,SAFETY 21,000 LB W/HDWR
18	1	N129042	MOUNT, LOAD CELL 1
19	4	N22358	BOLT, #10-32 X 3/4" BHCS
20	4	N16334	NUT, NYLON INSERT #10
21	1	N124852	KIT, J-BOX 3PT/4PT-30FT CBL
22	1	N124848	GT400, SERIAL (J905) & REMOTE (Not Shown)
23	1	N124850	CABLE, POWER 17' 2-WIRE
24	1	N104727	WHEEL, 320/90R50 161 RIGHT
		N104728	WHEEL, 320/90R50 161 LEFT
		N87290	WHEEL, 380/90R46 RIGHT
		N87289	WHEEL, 380/90R46 LEFT
		N152372	WHEEL, 480/80R42 LEFT
		N152371	WHEEL, 480/80R42 RIGHT

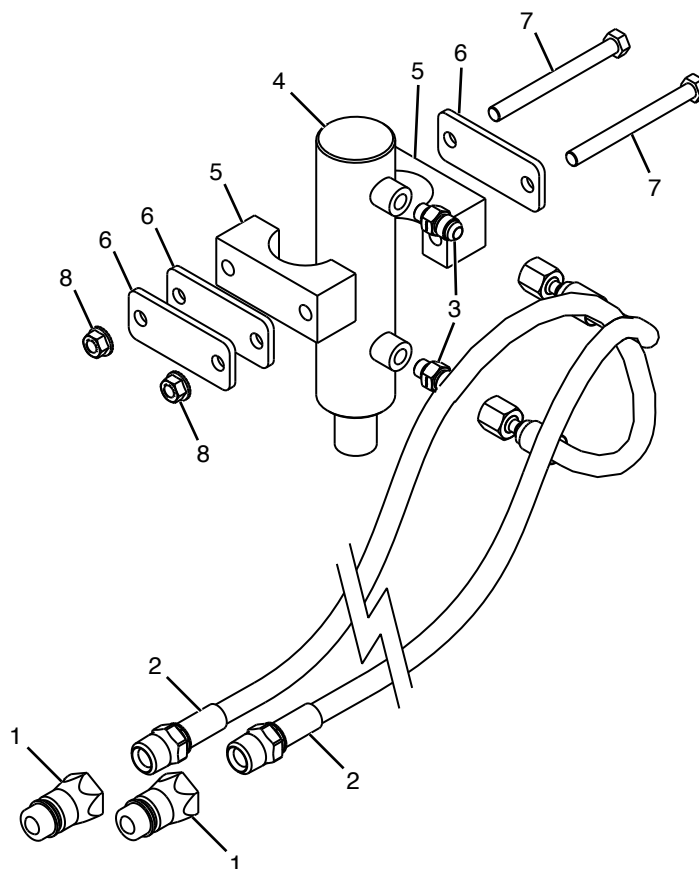
## Parts Identification

### Wheels, Brakes, and Suspension - No Scale



#	QTY.	PART #	DESCRIPTION
1	2	N85996	AXLE WLDMT 2
2	2	N84268	HUB ASM,10 ON 11.25,8.66 PILOT
3	1	4577	BOLT, 3/4" X 5" FN TH GR 8
4	2	N16700	NUT, 1"-14 GR. 8 FINE THREAD TOPLOCK
5	1	N37474	BASE, CAT 2 BOLT-ON REC HITCH
6	1	N37463	CLEVIS, CAT 2 BOLT-ON HITCH
7	1	N16352	NUT, LOCK 3/4" GRADE 8 FINE
8	2	N28583	BOLT, 1 X 6" FN TH GR 8
9	1	N104727	WHEEL, 320/90R50 161 RIGHT
		N104728	WHEEL, 320/90R50 161 LEFT
		N87290	WHEEL, 380/90R46 RIGHT
		N87289	WHEEL, 380/90R46 LEFT
		N152372	WHEEL, 480/80R42 LEFT
		N152371	WHEEL, 480/80R42 RIGHT

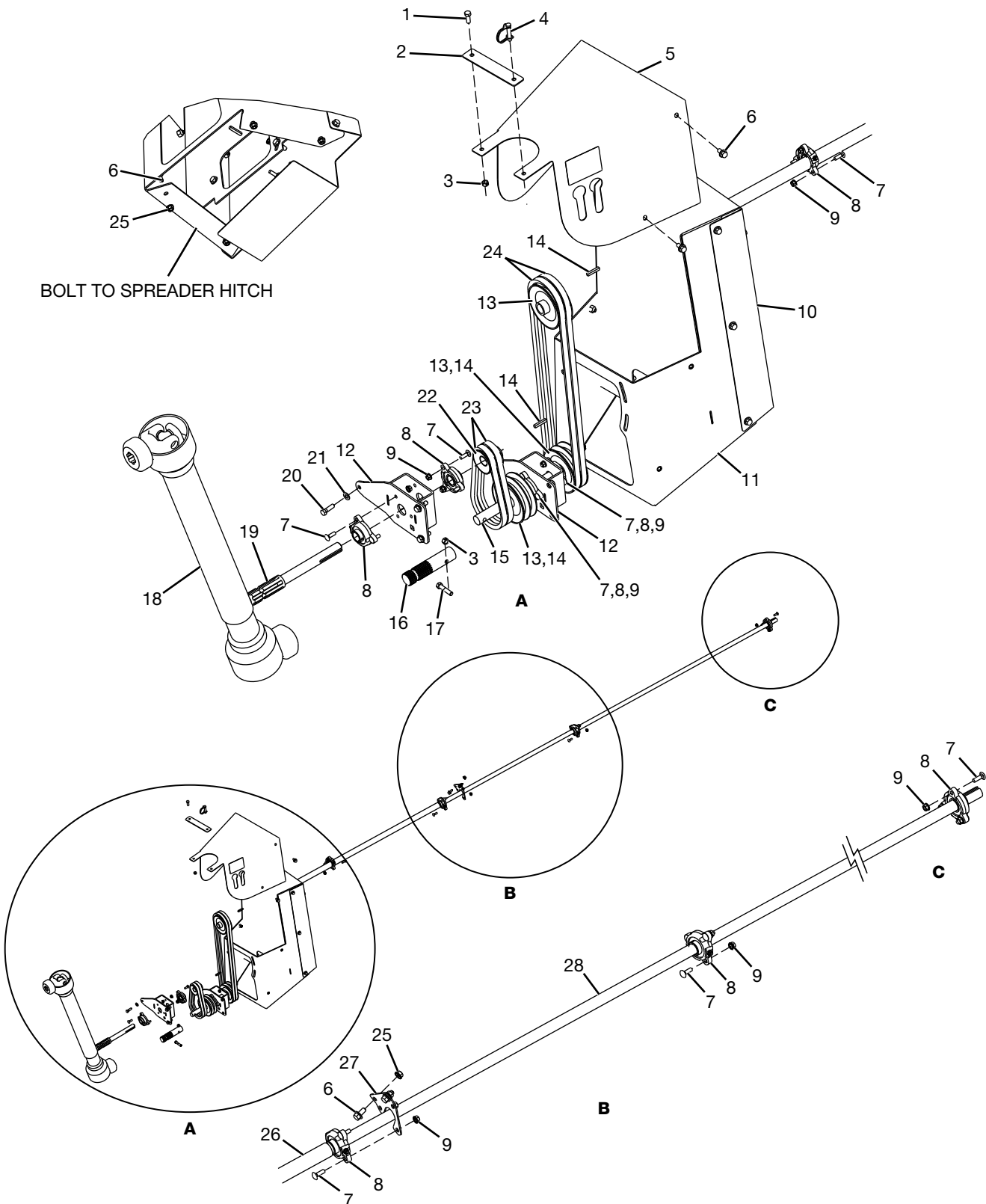
## Disconnect, Hydraulic



#	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

# Parts Identification

## Drive, PTO Model



## Parts Identification

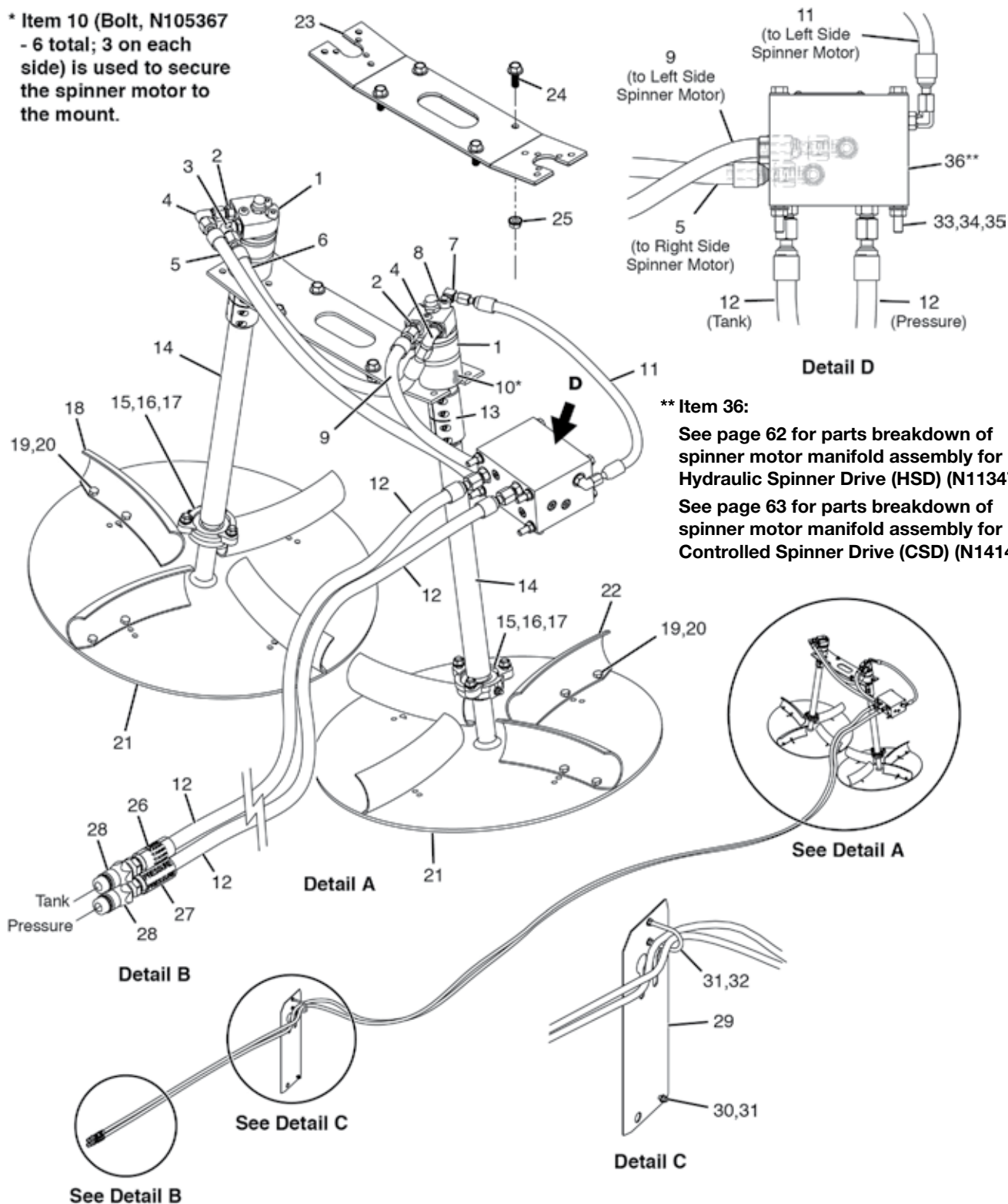
### Drive, PTO Model

#	QTY.	PART #	DESCRIPTION
1	1	4195	BOLT, 3/8" X 1" GRADE 5
2	1	N41760	PLATE, SPREADER PTO LATCH
3	2	4052	NUT, LOCK 3/8"
4	1	N27991	PIN, 3/8" X 1-3/8" RETAINER
5	1	N62253	COVER, SPREADER PTO
6	22	N36497	BOLT, 3/8" X 3/4" SER FLG
7	24	N26741	BOLT, CARRIAGE 5/16" X 1"
8	8	N33830	BEARING, 1" DODGE 3-BOLT FLG
9	24	N26742	NUT, LOCK 5/16" SER FLG
10	1	N110013	COVER
11	1	N109975	SUPPORT WLDMT, PTO
12	2	N43548	MOUNT WLDMT, SHAFT - 1000 RPM
13	3	N41550	PULLEY, 2BK52 X 1 TTN BRL
14	4	7187-03	KEY, 1/4" X 1-1/2"
15	1	N110001	DRIVELINE, SPREADER PTO
16	1	N33992	SHAFT, 1-3/8" 21 SPLINED 6"
17	1	4232	BOLT, 3/8" X 1-3/4" GRADE 5
18	1	N41664	SHAFT, PTO 540/1000
19	1	N41458	SHAFT, SPREADER PTO DRIVE
20	6	4005	BOLT, 3/8" X 1-1/4" GRADE 5
21	6	N31741	WASHER, FLAT 3/8" SAE
22	1	N39162	PULLEY, 2BK27 X 1 TTN BRL
23	2	N41602	BELT, B22 (5L250)
24	2	N110007	BELT, 5V600
25	6	4979	NUT, LOCK 3/8" SER FLG
26	1	N110005	SHIELD, SPREADER DRIVESHAFT
27	1	N62281	SUPPORT, DRIVESHAFT
28	1	N109989	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.





## 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 62)
		N141475	MANIFOLD ASM, SPINNER MTR VSD (see page 63)

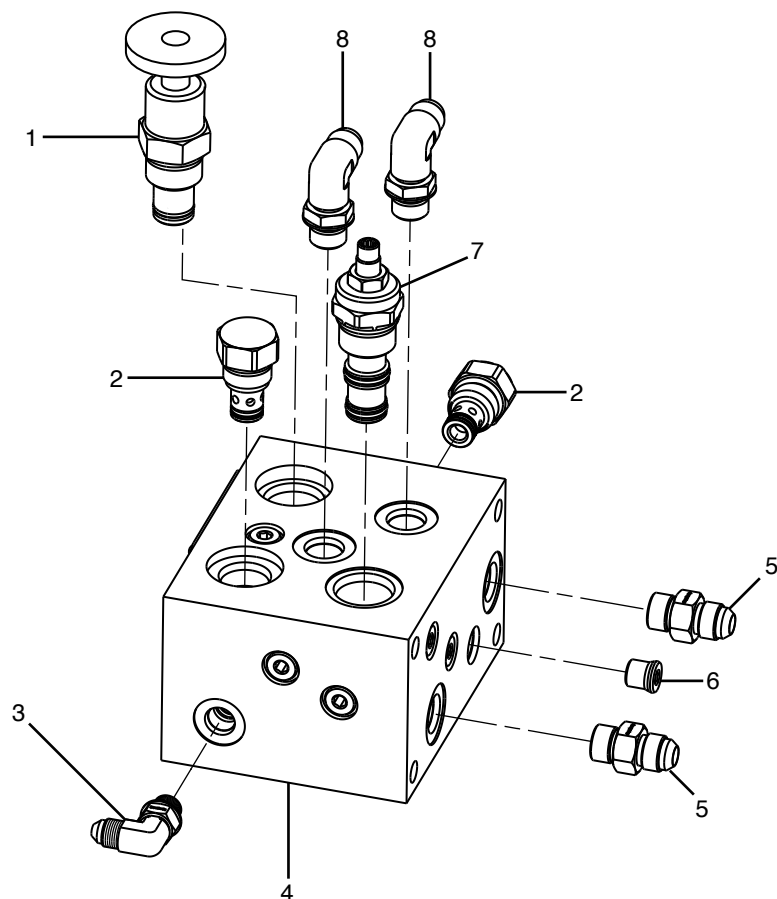
**\*\* Item 36:**

See page 62 for parts breakdown of spinner motor manifold assembly for Hydraulic Spinner Drive (HSD) (N113478).

See page 63 for parts breakdown of spinner motor manifold assembly for Controlled Spinner Drive (CSD) (N141475).

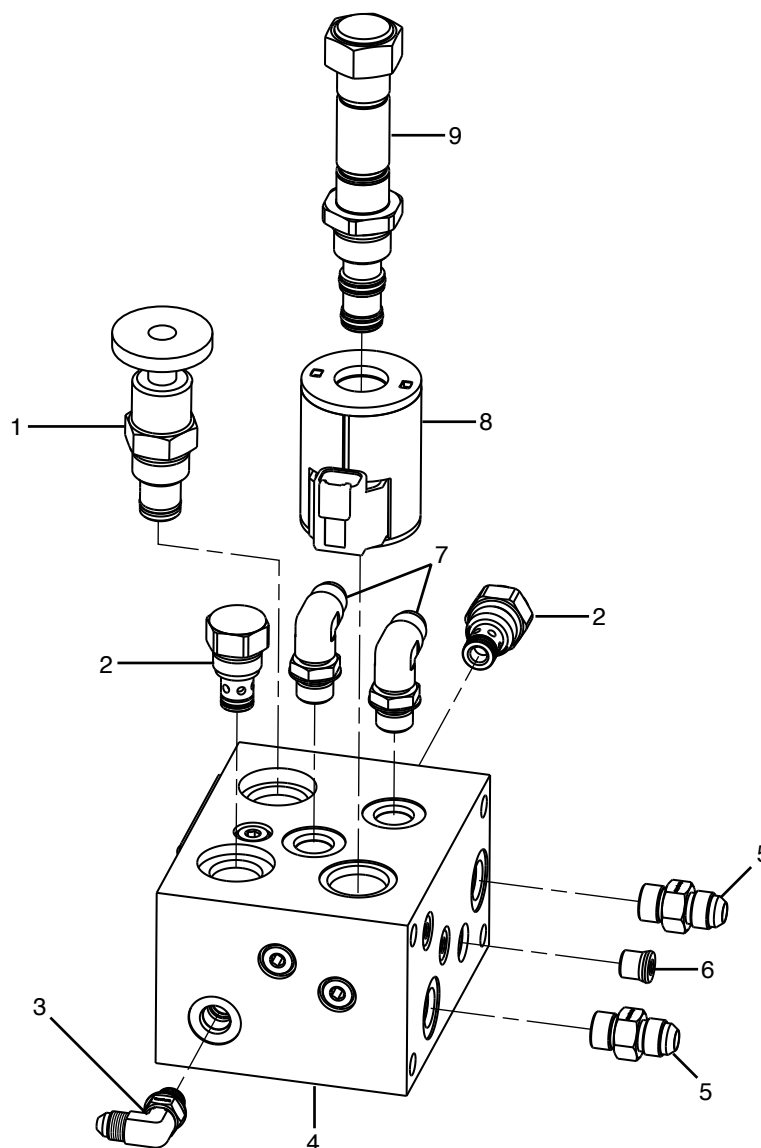
## Parts Identification

### 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)

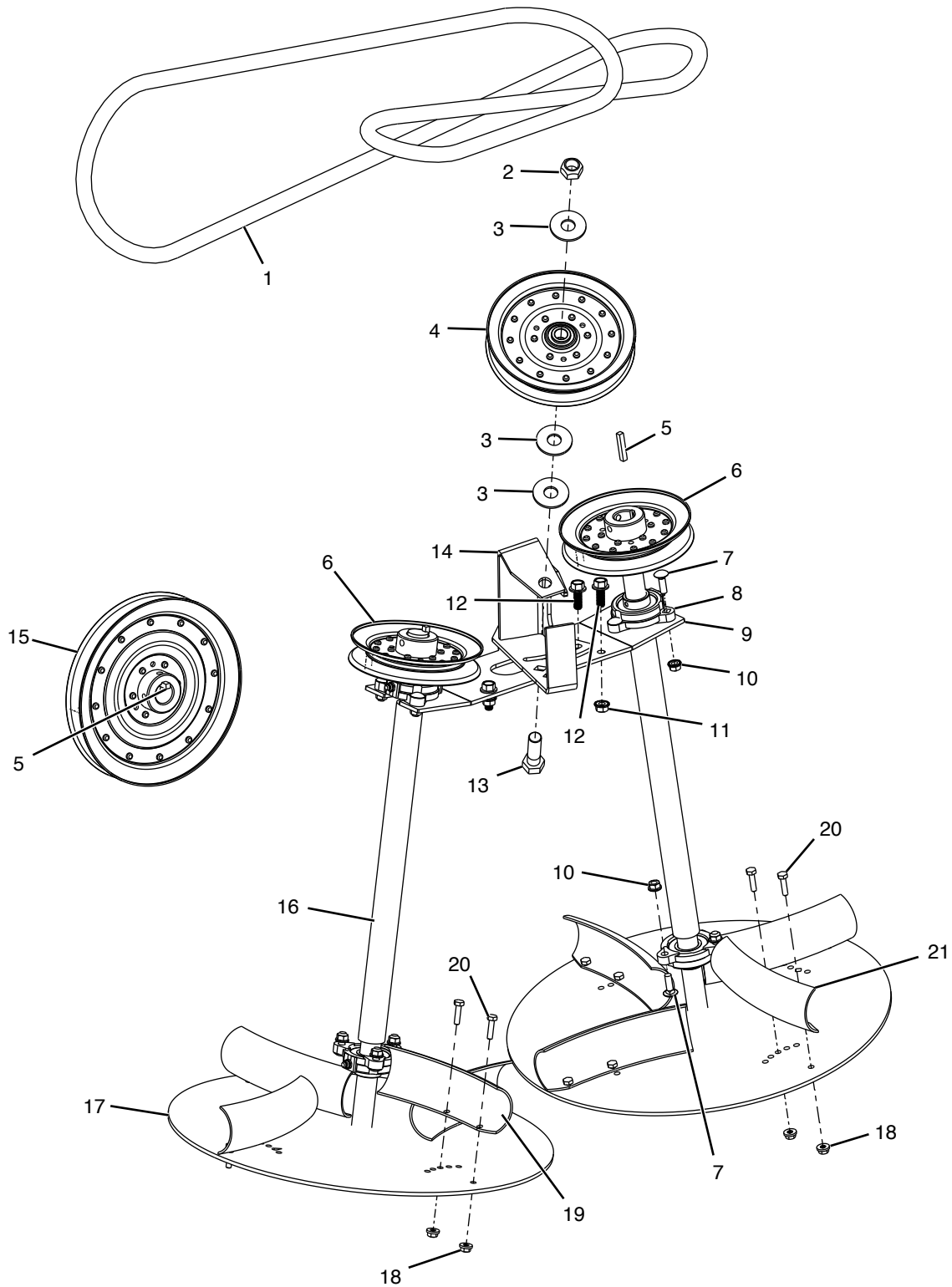


#	QTY.	PART #	DESCRIPTION
1	1	204086	CARTRIDGE, TURN
2	2	N139972	CARTRIDGE, CHECK VALVE 5PSI
3	1	N142378	ELBOW, 90 DEG -4MJIC -4MORB
4	1	N139970	BLOCK, MANIFOLD
5	2	N24821	ADAPTER, 6MOR - 6MJIC
6	7	N139982	PLUG, SAE -04
7	2	N26204	ELBOW, 90 DEG - 6MJIC - 6MOR
8	1	N139978	COIL, 12V 2 PIN DEUTSCH
9	1	N139976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

## Parts Identification

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### Spinner Drive, Belt



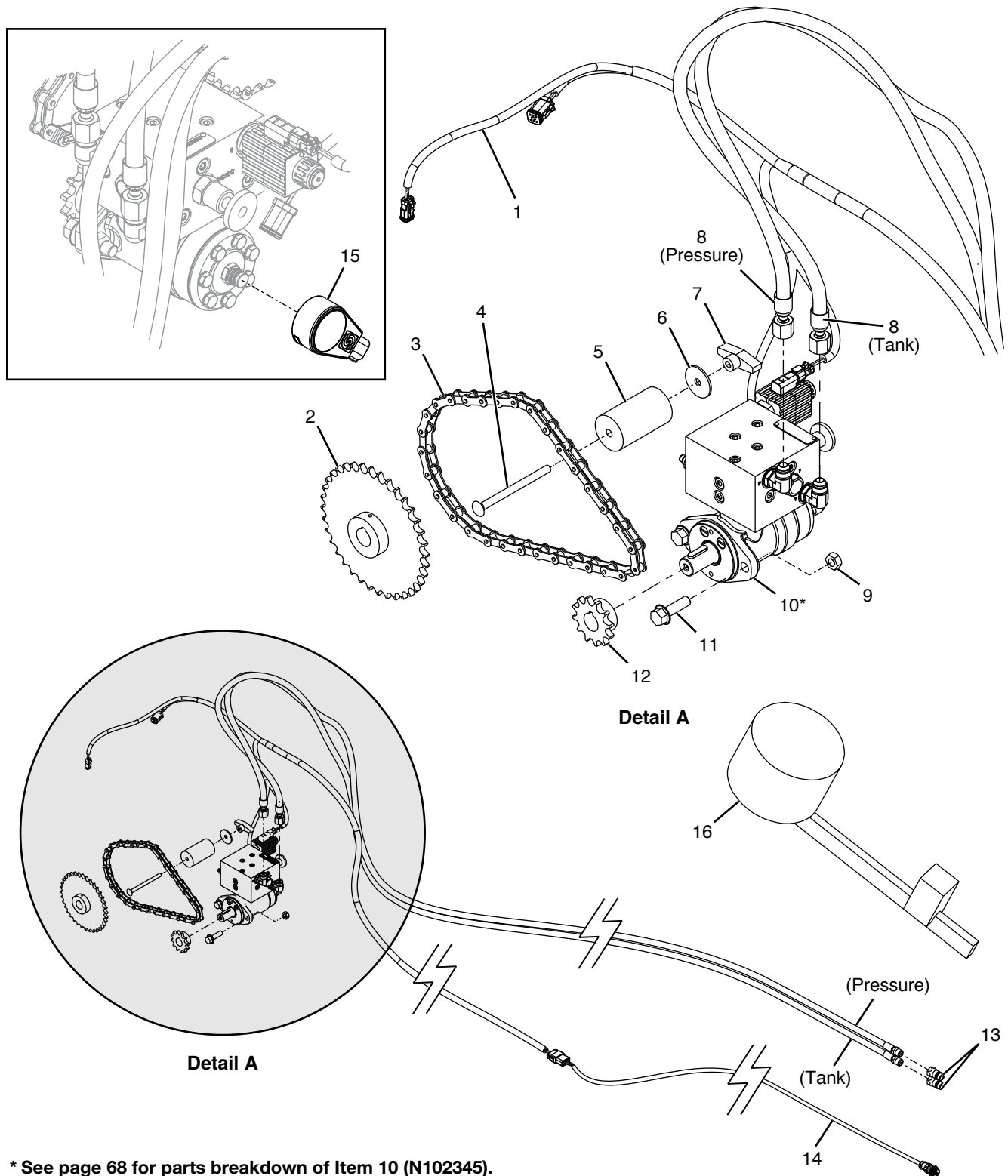
## Parts Identification

### Spinner Drive, 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	3	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	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)
16	2	N41848	SHIELD, SPREADER SPINNER SHAFT
17	2	N43950	SPINNER
18	16	N68480	NUT, LOCK 1/4" SER FLG SS
19	4	N44111	SLINGER, LH
20	16	N68478	BOLT, 1/4" X 1" SS
21	4	N33836	SLINGER, RH

## Parts Identification

### Apron Drive, Hydraulic

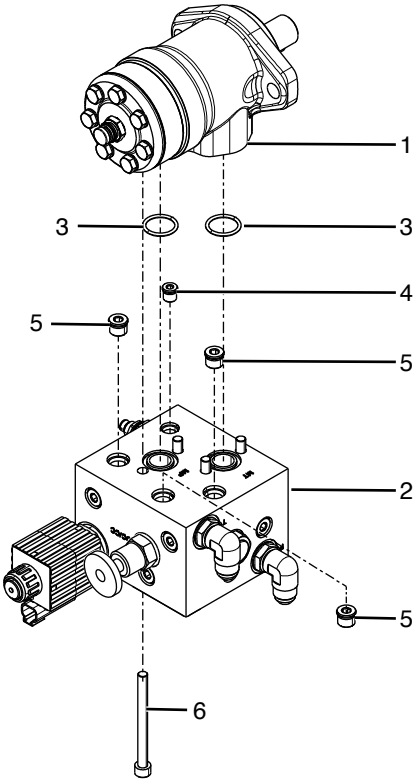


### Apron Drive, Hydraulic

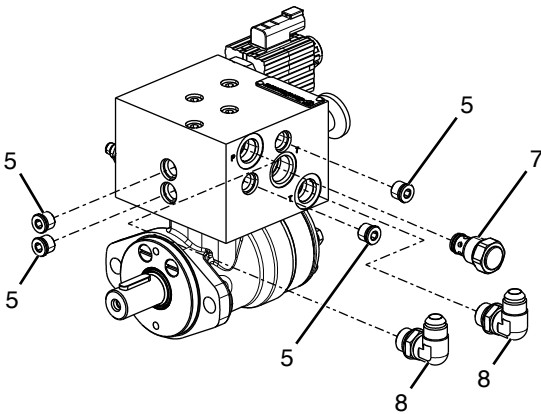
#	QTY.	PART #	DESCRIPTION
1	1	N107992	HARNESS, VARIABLE RATE READY
2	1	N87343	SPROCKET, 50B36-1.000
3	1	N42066	CHAIN, #2050 X 37.50
4	1	4569	BOLT, CARRIAGE 3/8" X 5" SS FT
5	1	N114840	TENSIONER, MOS2 2" DIA
6	1	4067	WASHER, 1-3/4" X 3/8" X 1/4"
7	1	N33933	KNOB, 3/8" THREADED TWO PRONG
8	2	N86859	HOSE, 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

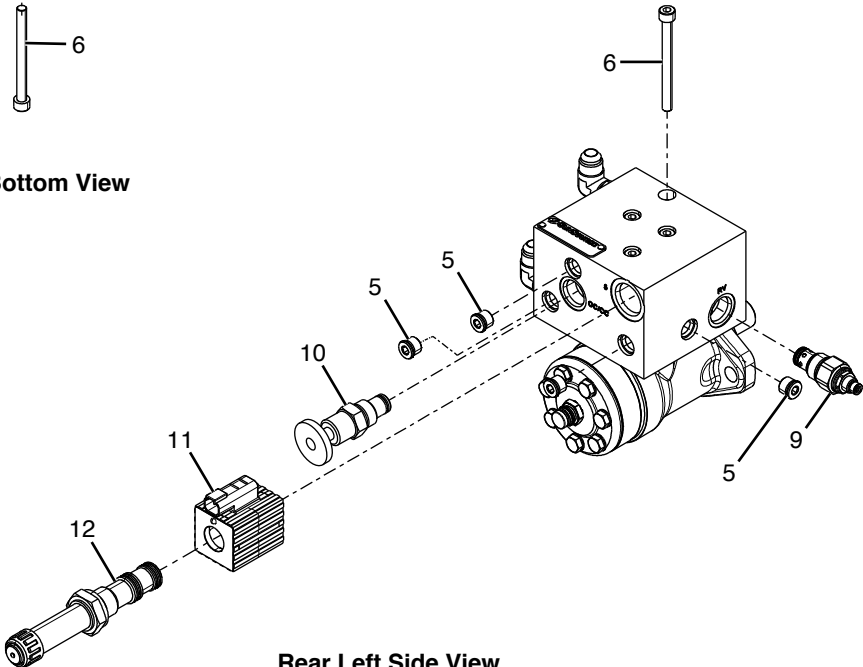
## Motor and Valve Assembly (N102345)



Bottom View



Rear Right Side View



Rear Left Side View

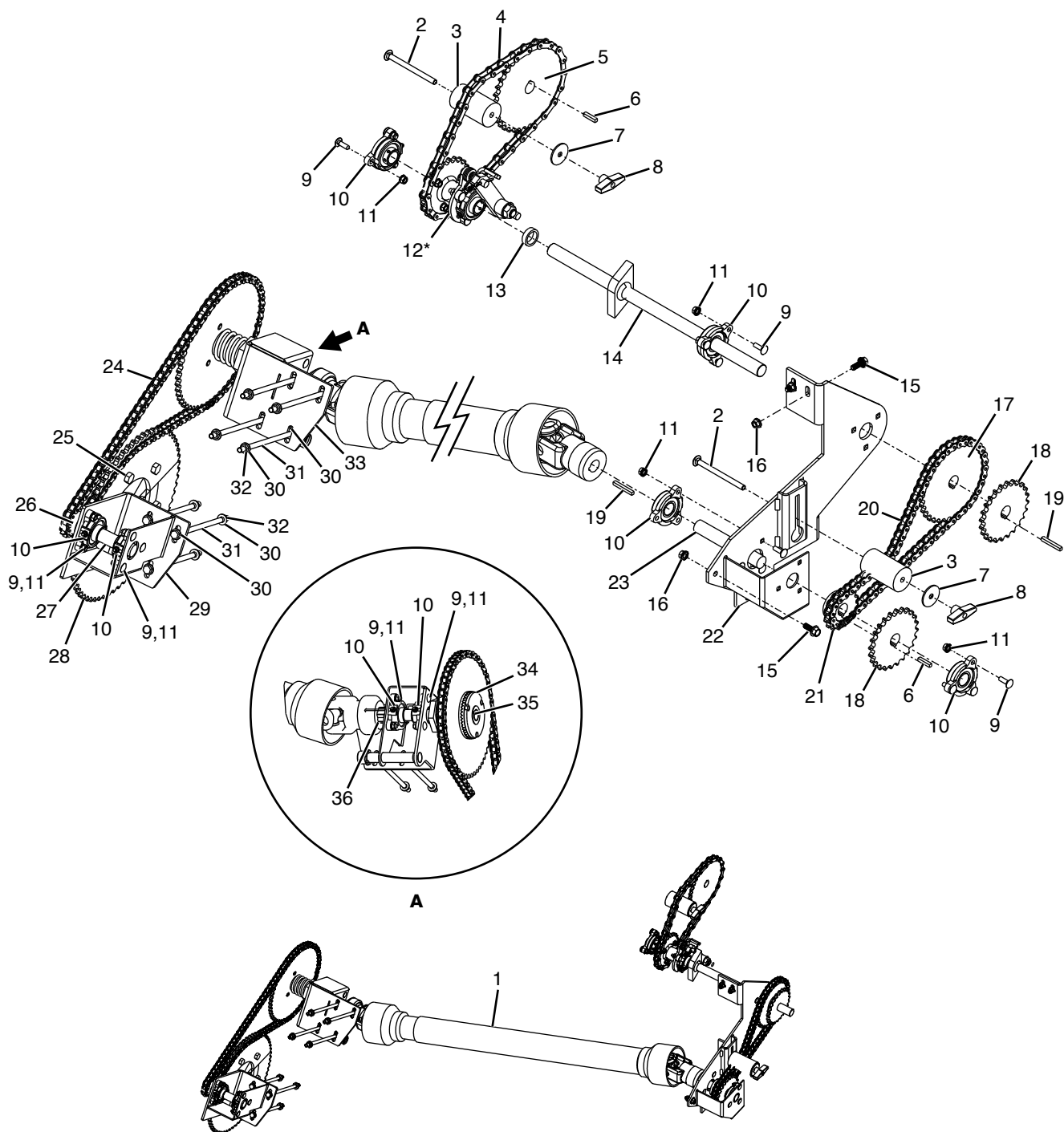


### Motor and Valve Assembly (N102345)

#	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

### Apron Drive, Ground



\* See page 72 for parts breakdown of Item 12 (N109201).

## Parts Identification

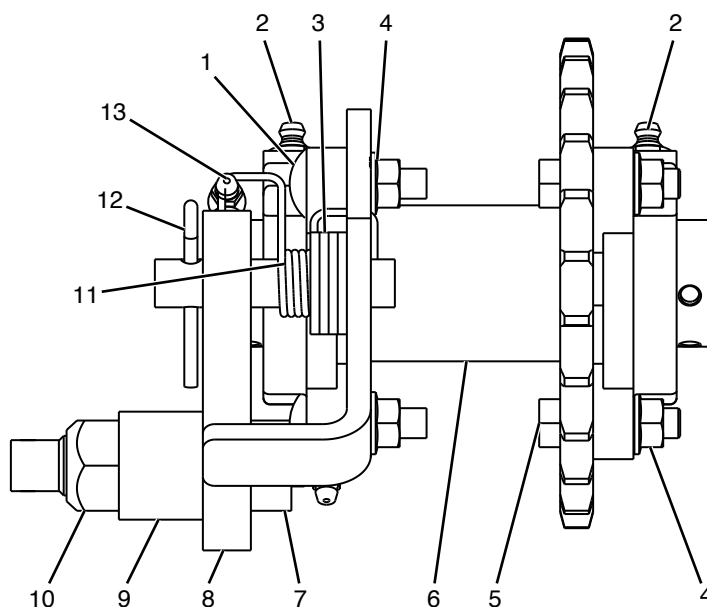
### Apron Drive, Ground

#	QTY.	PART #	DESCRIPTION
1	1	N109055	SHAFT,PTO 540x1.00RB KW SS
2	2	4569	BOLT, CARRIAGE 3/8" X 5" SS FT
3	2	N114840	TENSIONER, MOS2 2" DIA
4	1	N109230	CHAIN, #2050 X 40.00 SS
5	1	N87343	SPROCKET, 50B36-1.000
6	2	7187-02	KEY, 1/4" X 1-1/4"
7	2	4067	WASHER, 1-3/4" X 3/8" X 1/4"
8	2	N33933	KNOB, 3/8" THREADED TWO PRONG
9	24	N41428	BOLT, CARRIAGE 5/16" X 1", SS
10	8	N33830	BEARING, 1" DODGE 3-BOLT FLG
11	25	N41427	NUT, LOCK 5/16" SER FLG, SS
12	1	N109201	CLUTCH ASM
13	1	N109256	SPACER, 1.05 ID X 1.38 OD X .375
14	1	N43508	SHAFT WLDMT
15	5	N50815	BOLT, 3/8" X 1" SS SER FL GR 5
16	5	N73940	NUT, LOCK 3/8" SER FLG SS
17	1	N114719	SPROCKET, 50B33-1.000 KW SS
18	2	N114466	SPROCKET, 50B24-1.000 KW SS
19	2	7187-05	KEY, 1/4" X 2"
20	1	N114839	CHAIN, #50 X 42.50"
21	1	N114460	SPROCKET, 50B16-1.000 KW SS
22	1	N114733	MOUNT, SPREADER DRIVE
23	1	N109157	SHAFT, INTERMEDIATE DRIVE
24	1	N109003	CHAIN, #2050 X 61.25"
25	6	4012	BOLT, 1/2" X 1-1/4" GRADE 5
26	1	8317	SPROCKET, 50B42 1" BORE
27	1	N114713	SHAFT, IDLER
28	2	N108893	SPROCKET, HALF 50A70-6.125
29	1	N114009	MOUNT, IDLER SHAFT
30*	16	N31741	WASHER, FLAT 3/8" SAE
31	8	4995	BOLT, 3/8" X 8" GRADE 5
32	8	4233	NUT, STANDARD 3/8"
33	1	N108993	MOUNT, SPREADER DRIVE
34	1	N33893	CLUTCH, RATCHED SLIP SC-X4
35	1	7187-04	KEY, 1/4" X 1-3/4"
36	1	N41458	SHAFT, SPREADER PTO DRIVE

\* See page 72 for parts breakdown of Item 12 (N109201).

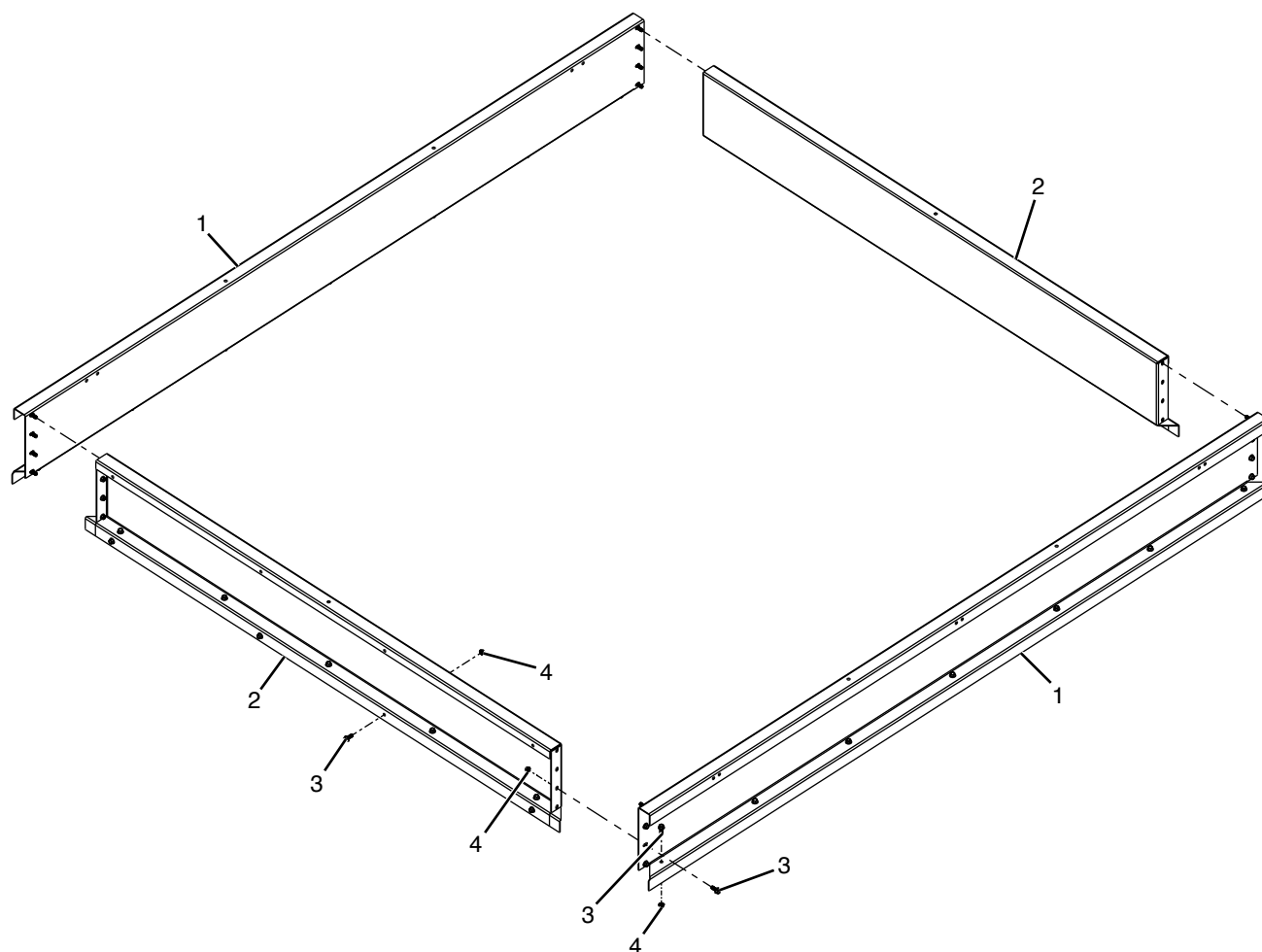
## Parts Identification

### Clutch Assembly (N109201)



#	QTY.	PART #	DESCRIPTION
1	N62391	3	BOLT, CARRIAGE 5/16 X 1-1/4, SS
2	N33830	2	BEARING, 1" DODGE 3-BOLT FLG
3	4068	4	WASHER, 1/2" SAE FLAT
4	N41427	6	NUT, LOCK 5/16" SER FLG, SS
5	N143908	3	BOLT, 5/16" X 1-1/4" SS
6	N109203	1	BASE, SPRDR CLUTCH SPRKT
7	N33958	1	BOLT, SPRDR CLUTCH STOP
8	N109212	1	ARM, SPRDR CLUTCH
9	N33959	1	BUSHING, SPRDR CLUTCH STOP
10	4055	1	NUT, LOCK 5/8" TOP
11	N62413	1	SPRING,SPREADER CLUTCH
12	4325	1	PIN, COTTER 3/16" X 1-1/2"
13	4107	2	GREASE-ZERK, 1/4" SCREW-IN 90 DEG

## 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)

# Parts Identification

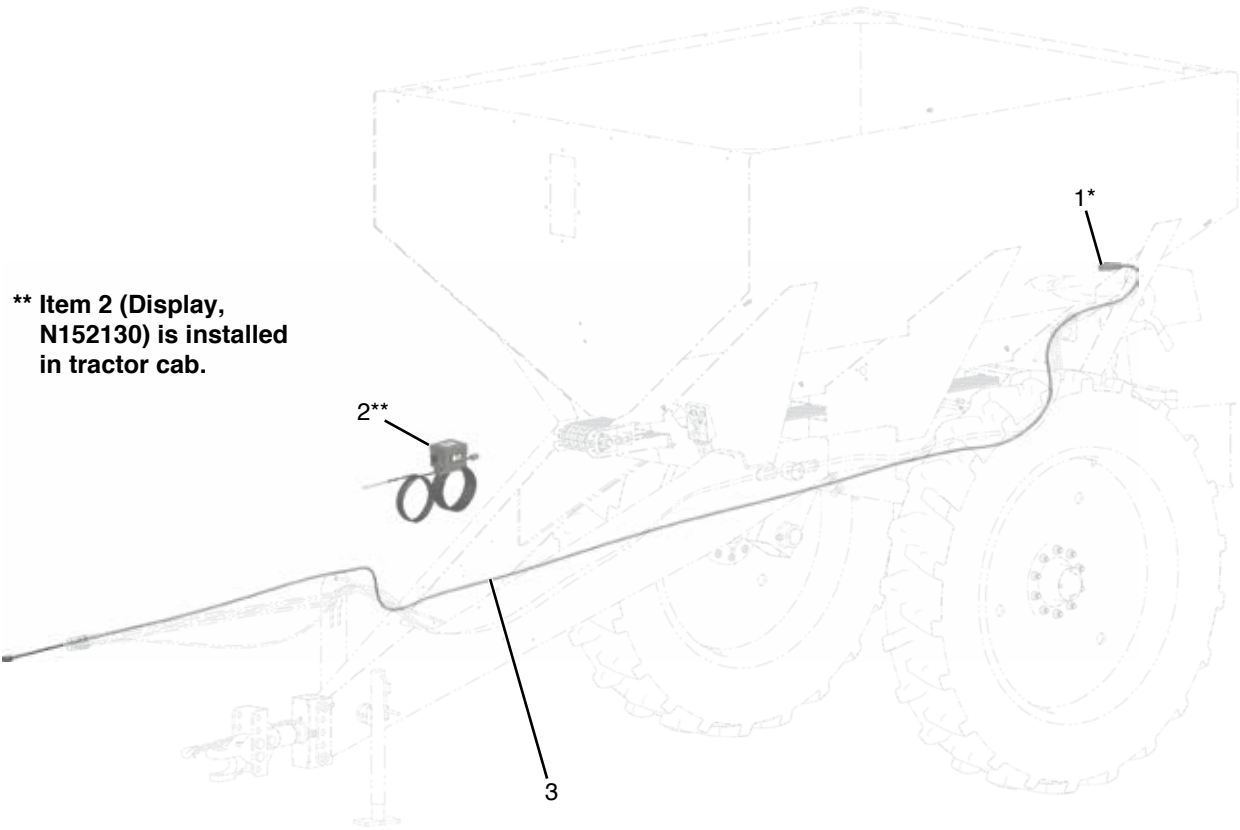
## Spinner Speed Sensor



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

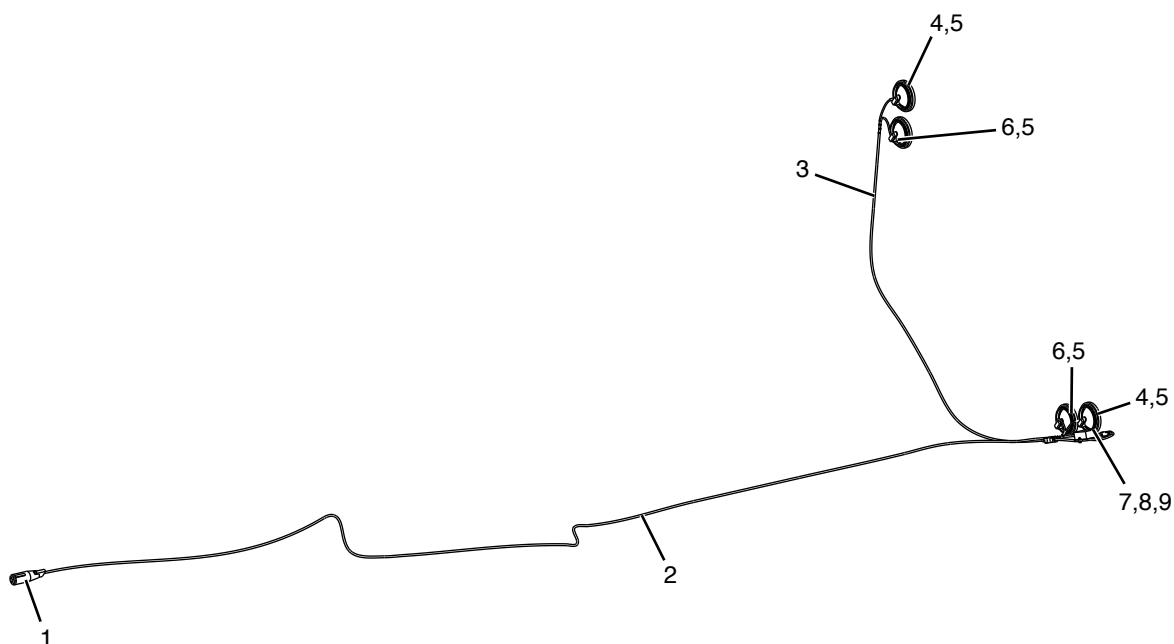
- 1. Install speed sensor on left spinner motor.  
Orient connector to face left on machine.  
Orient such that wrenches will not damage sensor.
- 2. Sensor clips onto stub on port end of motor.
- 3. Connect sensor to VRR harness connector C4.

**\*\* 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	HARNESS, SPINNER SENSOR EXT

## Electrical



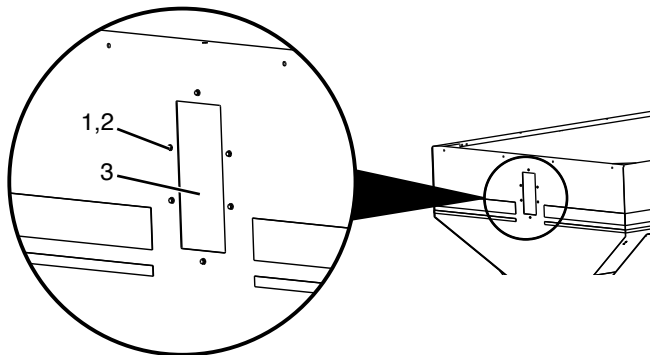
#	QTY.	PART #	DESCRIPTION
1	1	N62721	ADAPTER, 7 ROUND TO 4 FLAT
2	1	N44871	HARNESS, SPREADER FRONT
3	1	N62707	HARNESS, SPREADER REAR
4	2	N41423	LIGHT, 4" STTL AMBER
5	4	N41426	GROMMET, 4" STTL
6	2	N41422	LIGHT, 4" STTL RED
7	1	N62625	MODULE, LIGHTING
8	2	N22358	BOLT, #10-32 X 3/4" BHCS
9	2	N16334	NUT,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

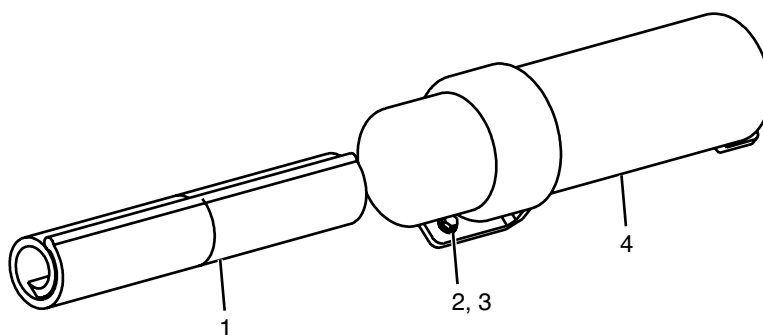
## Parts Identification

### Window



#	QTY.	PART #	DESCRIPTION
1	6	N68478	BOLT, 1/4" X 1" SS
2	6	N68480	NUT, LOCK 1/4" SER FLG SS
3	1	N37022	WINDOW, SPREADER FRONT

### Manual Holder



#	QTY.	PART #	DESCRIPTION
1	1	N105189	OPERATORS MANUAL RC800
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

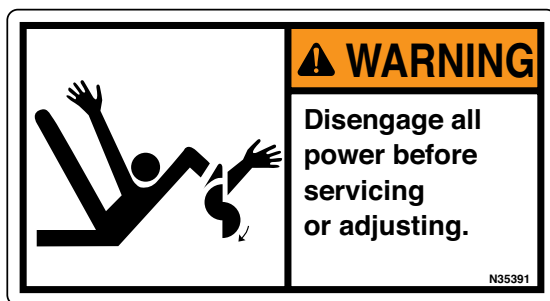


## Machine Decals and Signs

**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 8.

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

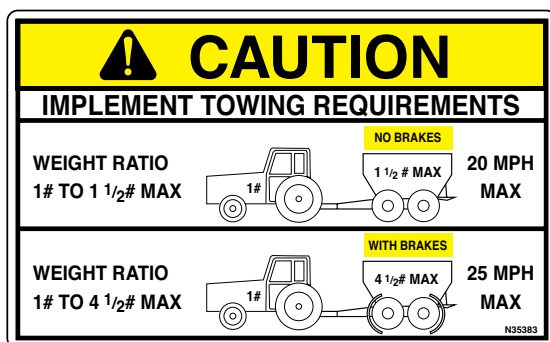
Part No. N35391



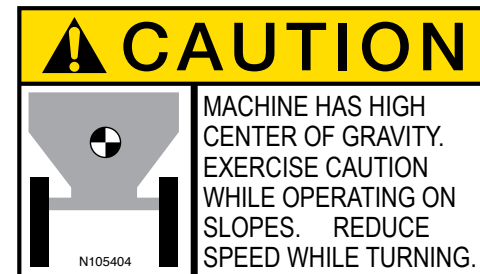
Part No. N35380



Part No. N35383



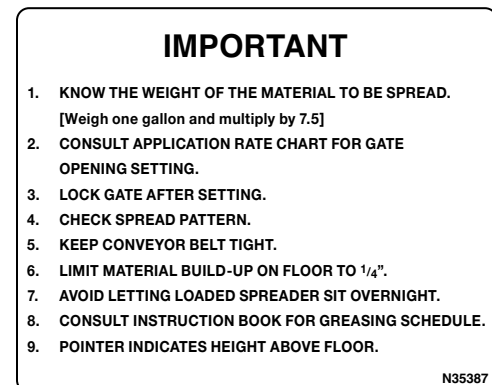
Part No. N105404



Part No. N35382



Part No. N35387



Part No. 4132



Part No. N35392



## Parts Identification

### Machine Decals and Signs (Cont'd)

Part No. 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	

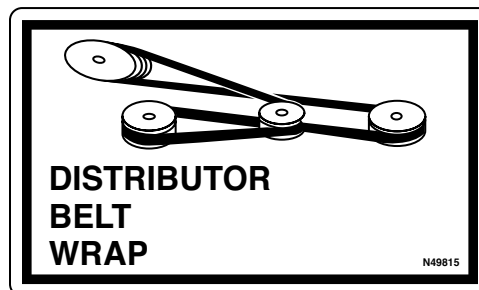
  

### Application Rate Chart Decals

**NOTE:** For application rate chart decals for mechanical drive spreaders, see pages 19 through 30. 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.

- N129460 - 40 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50)
- N129461 - 50 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50)
- N129462 - 60 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50)
- N129463 - 80 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50)
- N129464 - 88 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50)
- N129465 - 90 Ft. Mechanical Drive, 380/90R46 (14.9R46) - 320/90R50 (12.4R50)
- N129480 - 40 Ft. Mechanical Drive, 480/80R42 (18.4R42)
- N129481 - 50 Ft. Mechanical Drive, 480/80R42 (18.4R42)
- N129482 - 60 Ft. Mechanical Drive, 480/80R42 (18.4R42)
- N129483 - 80 Ft. Mechanical Drive, 480/80R42 (18.4R42)
- N129484 - 88 Ft. Mechanical Drive, 480/80R42 (18.4R42)
- N129485 - 90 Ft. Mechanical Drive, 480/80R42 (18.4R42)

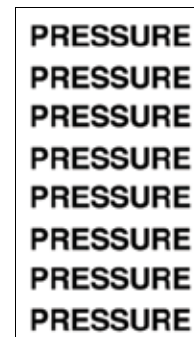
Part No. N49815



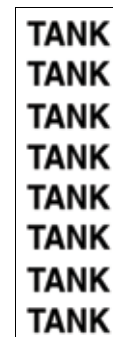
Part No. N35386



Part No. N24822



Part No. N24823



Part No. N47490



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



(Decal length shortened to fit on page.)

Part No. N87065

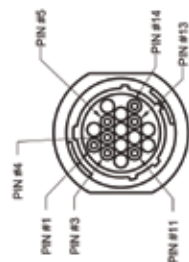


## Control Harness Schematic

**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 HARNESSES

RAVEN 16 PIN



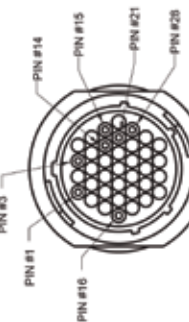
PIN	COLOR	SIGNAL
1	WHITE	COMMON
2		
3	YELLOW	APRON_VALVE_INC
4	GREEN	APRON_VALVE_DEC
5	BLUE	SPIN_SPEED
6		
7		
8		
9		
10		
11	GRAY	FLOW_COMMON
12		
13	RED	FLOW_SIGNAL
14	ORANGE	SWITCHED_12V+
15		
16		

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

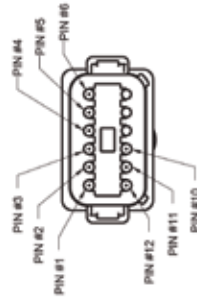


PIN	COLOR	SIGNAL
1	WHITE	COMMON
2		
3	ORANGE	SWITCHED_12V+
4		
5		
6		
7		
8		
9		
10		
11		
12		
13	BLUE	SPIN_SPEED
14	GREEN	APRON_VALVE_DEC
15	YELLOW	APRON_VALVE_INC
16		
17		
18		
19		
20		
21	GRAY	FLOW_COMMON
22		
23		
24		
25		
26		
27		
28	RED	FLOW_SIGNAL
29		
30		
31		
32		
33		
34		
35		
36	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

PIN	COLOR	SIGNAL
A	YELLOW	SPIN_VALVE_INC_2
B	GREEN	SPIN_VALVE_DEC_2



LOFTNESS 12 PIN



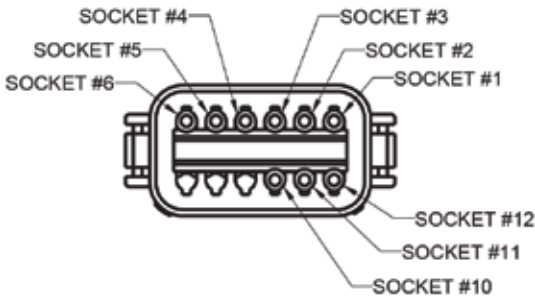
PIN	COLOR	SIGNAL
1	WHITE	COMMON
2	ORANGE	SWITCHED_12V+
3	GRAY	FLOW_COMMON
4	RED	FLOW_SIGNAL
5	YELLOW	APRON_VALVE_INC
6	GREEN	APRON_VALVE_DEC
7		
8		
9		
10	BLUE	SPIN_SPEED
11	YELLOW	SPIN_VALVE_INC
12	GREEN	SPIN_VALVE_DEC

# 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



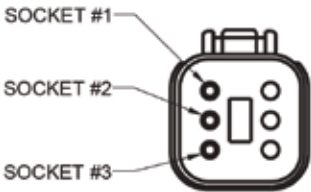
DEUTSCH 12 SOCKET CONNECTOR

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

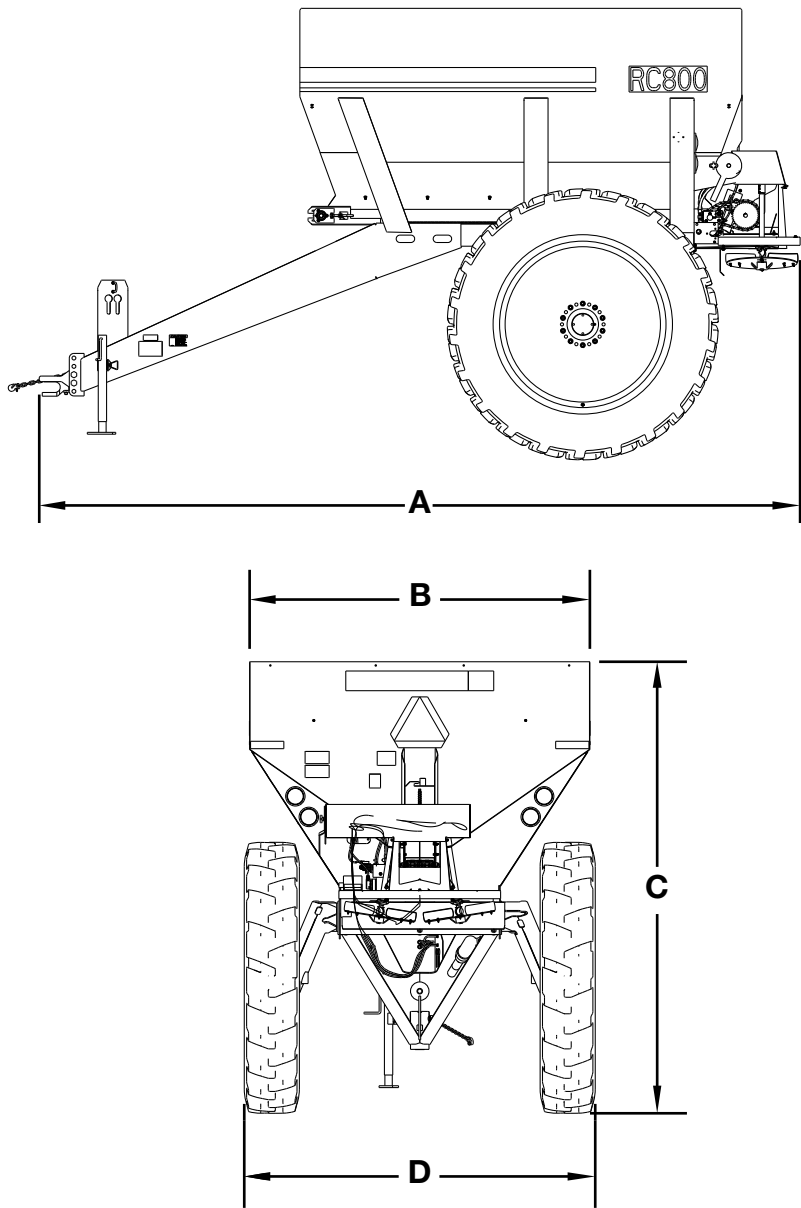
SOCKET	COLOR	SIGNAL
1	ORANGE	POWER
2(APRN)	GRAY	GROUND
2(SPNR)	WHITE	GROUND
3(APRN)	RED	FLOW_SIGNAL
3(SPNR)	BLUE	SPIN_SPEED
4		

## Specifications

DESCRIPTION	RC 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	380/90R46 156B/320/90R50 161B
Axles/Suspension	6x6 rigid axle, adjustable 80 in.-120 in. tread
Frame	6 x 3 x 10 ga. rectangular tubing
Hitch	¼ 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	RC 800 FERTILIZER SPREADER
Length (A)	205.7 in. (522.48 cm)
Hopper Width (B)	92 in. (233.68 cm)
Height (C)	122.1 in. (310.13 cm)
Wheel Width (D)	adjustable; 94.9 - 134.9 in (241 - 342.64 cm)
<b>Note:</b> Frame/crop clearance is 44 in. (111.76 cm)	

## Torque Specifications

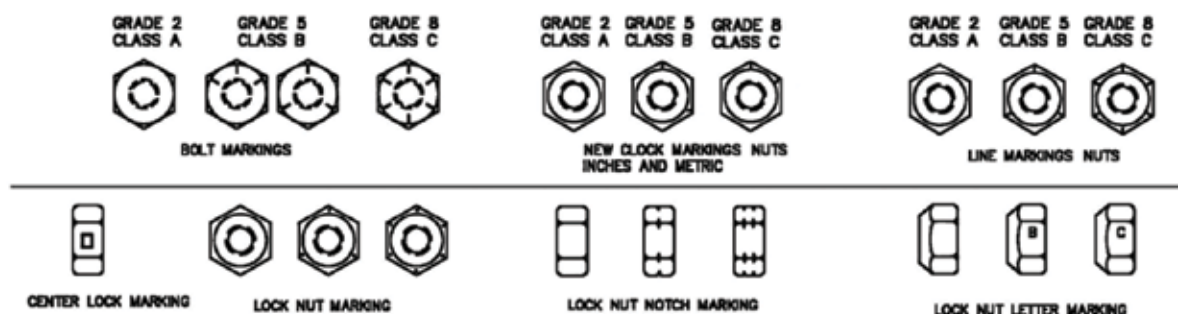
### Inches Hardware and Lock Nuts

#### TORQUE CHARTS

Minimum Hardware Tightening Torques

Normal Assembly Applications  
(Standard Hardware and Lock Nuts)

SAE Gr. 2	SAE Grade 5		SAE Grade 8		LOCK NUTS			
Nominal Size	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)





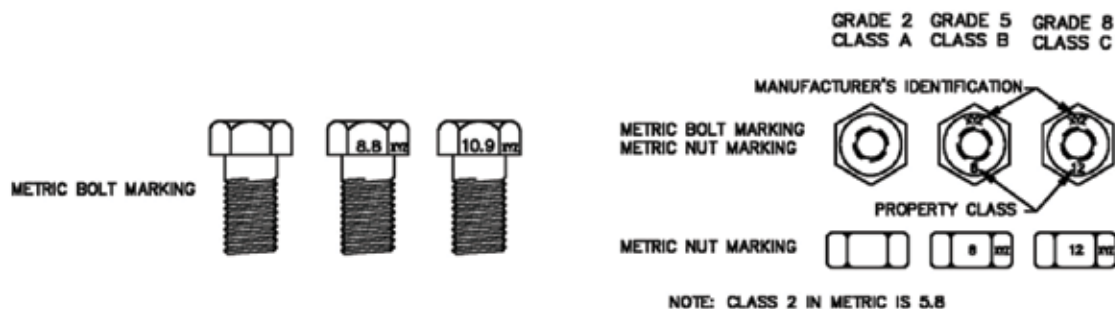
## Appendix

### 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
	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Unplated or Plated Silver	Plated W / ZnCr Gold	Class 8 W / CL. 8,8 Bolt
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.)









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**[www.loftness.com](http://www.loftness.com)**

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