



# Vegetable Shredder

12' • 13' • 15' • 18' • 20' • 24'

Owner's Manual and Parts Book  
(Originating w/Serial Number 03-269)



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.

The following Loftness products have a two (2) year limited warranty;

XLB10 Grain Bag Loader, Battle Ax L-series Skid Steer, Battle Ax S-series Skid Steer, Battle Ax H-series Skid Steer, Battle Ax Excavator 20-series, Battle Ax Excavator 30-series, Battle Ax Excavator 40-series, Battle Ax Excavator 50-series, Battle Ax Extreme, Bad Ax Skid Steer, Timber Ax Skid Steer, Stump Ax, BT20, Kwik Cut.

All other Loftness products have a one (1) year limited warranty.

If any Loftness product is used as rental or leased equipment 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, Conveyors, Improper knife replacement, Auger wear, Missing knives, Saw blades, Striking foreign objects, Brakes and brake pads, Lack of lubrication, Tires, Failures caused by running in an "out-of-balance" condition, Hydraulic hoses damaged by being caught in "pinch points" or by moving parts, and Damage caused by excessive force from the power unit.

### 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. (August 2023)

**LOFTNESS** ™

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## Ordering Code

### Vegetable Shredder (Example)

The ordering code will consist of three numbers with letter "V" (machine model), one letter (knife type), one number (gearbox RPM), one number (belt style), one letter (mounting type), one number (PTO type), one number (rear wheel setup), one number (lifting mechanism), and one to three numbers (options). An example for a Vegetable Shredder of this type would be as shown below.

Example: **288VV46P246.7**

                  |          |          |          |          |          |          |          |          |

                  1          2          3          4          5          6          7          8          9

- 1 MODEL**
  - 144V = 12 ft - Vegetable
  - 156V = 13 ft - Vegetable
  - 180V = 15 ft - Vegetable
  - 216V = 18 ft - Vegetable
  - 240V = 20 ft - Vegetable
  - 288V = 24 ft - Vegetable
- 2 KNIVES**
  - V = Vegetable - Potato - Contour Knives (Specify Bed Dimensions)
- 3 GEARBOX - 280 HP**
  - 4 = 1450 rpm in Lieu of 1700 RPM
- 4 BELTS**
  - 4 = 4 Section Banded Belts
  - 6 = 6 Section Banded Beltsff
- 5 MOUNTING**
  - P = Pull-Type Clevis
  - M = Fully-Mounted - Requires Category II or III Quick Hitch (Not Included)
  - S = Semi-Mounted - Requires Category II or III Quick Hitch (Not Included)
- 6 PTO - 1000 RPM**
  - 2 = Pull-Type, 1-3/8" Constant Velocity
  - 3 = Pull-Type, 1-3/4" Constant Velocity
  - 6 = Pull-Type, 1-3/4" CV w/Slip-Clutch
  - 4 = Mounted, 1-3/8"
  - 5 = Mounted, 1-3/4"
  - 7 = Mounted, 1-3/4" w/Slip-Clutch

*(Remainder of code continued on next page.)*

# Ordering Code

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## Ordering Code (Cont'd)

Example: **288VV46P246.7**

                  |          |          |          |          |          |          |          |          |

                  1          2          3          4          5          6          7          8          9

**7**

### REAR WHEELS AND TIRES

- 2 = 2 Rear Wheels, Rigid (Pull-Type/Fully-Mounted)
- 5 = 2 Rear Wheel-Swivel (Mounted Only)
- 3 = 3 Rear Wheel-Swivel (Mounted Only)
- B = 6 Rear Wheels, Rigid (Pull-Type/Fully-Mounted)
- 4 = 4 Rear Wheels, Rigid (Pull-Type/Fully-Mounted)
- 6 = 4 Rear Wheel-Swivel (Mounted Only)
- 7 = 4 Bed Rollers (Fully-Mounted Only)
- 8 = 6 Bed Rollers (Fully-Mounted Only)
- 9 = 8 Bed Rollers (Fully-Mounted Only)
- 1 = 4 Vine Cutting Bed Rollers (Fully-Mounted Only)
- D = 4 Bed Top Rollers (Fully-Mounted Only)
- E = 6 Bed Top Rollers (Fully-Mounted Only)
- F = 8 Bed Top Rollers (Fully-Mounted Only)

**8**

### REAR LIFTING MECHANISM

- 0 = No Lift Mechanism (Shipping Brackets Only)
- 1 = 1 Ratchet
- 4 = 1 Hydraulic Lift Cylinder & Hoses, Single-Acting
- 2 = 2 Ratchets
- 6 = 2 Hydraulic Lift Re-Phasing Cylinder & Hoses
- 3 = 3 Ratchets
- 7 = 3 Hydraulic Lift Re-Phasing Cylinder & Hoses

**9**

### OPTIONS

- 1 = 1 Front Wheel-Rigid for Transporting (Semi-Mounted)
- 2 = 2 Front Wheels & Ratchets, Rigid (Semi-Mounted)
- 3 = 2 Front Wheels, Swivel (2 Hyd. Re-Phasing & Hoses)
- 7 = Hood Liner
- 8 = Hydraulic Transport (Pull-Type/Fully Mtd) - Factory Installed
- 9 = Transport Hitch (Semi-Mounted Only)

## Owner Information

Thank you for your decision to purchase a vegetable shredder from Loftness. To ensure maximum performance of your machine, 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.

**NOTE:** *This manual provides setup, operation, and maintenance instructions for several sizes and models of the vegetable shredder. The information provided in this manual applies to all models unless specified by model number.*

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, set-up, installation and maintenance procedures.

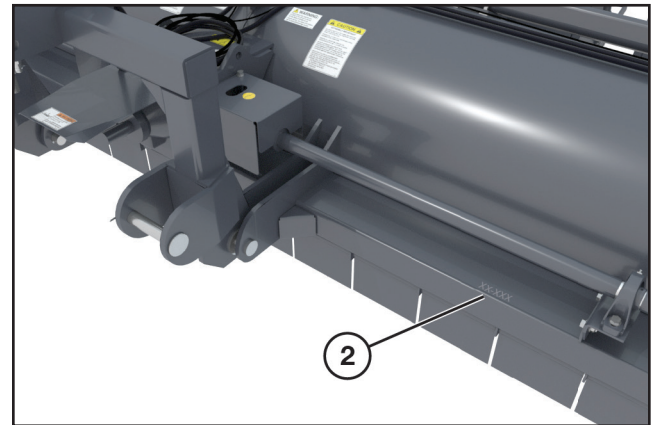
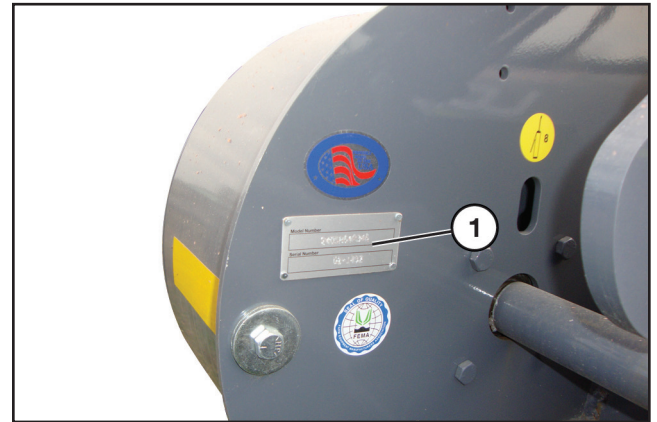
Make sure the shredder is set-up correctly before being placed in service and at regular intervals thereafter serviced in accordance with procedures outlined in this manual.

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.

## 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 with your dealer so as not to void the warranty.

## Serial Number Location



The arrows indicate the location of the 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.

# Introduction

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## Owner's Manual Access



The shredder is shipped with a printed owner's manual. The manual must be available for all operators. Keep in a safe, dry location.

To access a digital owner's manual, use a smart phone to scan the QR Code (1) located on the left end of the shredder. This code will link to the vegetable shredder owner's manual on the Loftness website.

## Vegetable Shredder Features


- 12', 13', 15', 18', 20', and 24' Cutting Widths
- Pull-type Hitch
  - Semi-mounted Hitch
  - Fully Mounted Hitch
- 1-3/8 in. or 1-3/4 in. Constant Velocity  
1000 RPM PTO
- 1,450 RPM Rotor
- Heavy Contoured Vegetable Knives
- 4-Groove or 6-Groove Banded Belts
- Spring-loaded Push-type Idler System
- Rear Lift Provides Precise Height Adjustment
- 280 HP Gearbox
- Computer Balanced Rotors
- Optimized Rotor Speed
- Reinforced Rotor Tube

- Lateral Stabilization
- Recutter Bar
- Extreme Duty Class Frame
- Bed Rollers
- Bearing Anti-wrap (12' - 24')

## Vegetable Shredder Options

- Hood Liner
- Hydraulic Transport (PT/FM) (18', 20' and 24')
- Folding Transport Hitch With Jack Stand
- 1 Rigid Transport Wheel
- 2 Front Wheels and Ratchets (SM)

## Safety First

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

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




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

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

**IMPORTANT:** Highlights information that must be heeded.

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

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

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

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

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

## Owner's Responsibility

Due to the potential danger of flying debris, it is the owner's responsibility and is "**ABSOLUTELY MANDATORY** that **IMPACT-RESISTANT SHIELDING**" be installed on the machine to protect the operator.

It is **ABSOLUTELY MANDATORY** that all personnel read and follow all safety precautions before operating the machine and attachment.

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

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 know how to stop the machine and attachment by disengaging all controls. See "Mandatory Shut-Down Procedure" on page 5.

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

## Mandatory Shut-Down Procedure

- Stop the machine and attachment on a level surface and lower the attachment to the ground.
- Move throttle to idle position.
- Disengage all power to the attachment.
- Shut off engine and remove the key.
- Wait until the rotor has stopped completely before inspecting the attachment.

# 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.

- Never allow children to operate equipment. Never allow adults to operate equipment without proper instructions.
- Keep the area of operation clear of all unauthorized persons.
- Remove from area of operation all foreign objects such as sticks, wire, rocks, etc., that might become tangled in rotors, causing damage to the shredder or be thrown from the shredder striking other objects.
- Never attempt to make any adjustments while the engine is running or the key is in the “ON” position of the tractor. Before leaving the operator’s position, disengage power to the shredder and remove ignition key.
- Disengage PTO, clutch and hydraulic valve and shift tractor into neutral or park before starting engine.

## Safety Instructions for Operation and Maintenance

The following safety warnings are used here and on the shredder. Become familiar with them before operating this machine.

### CAUTION:

- Do not start, operate, or work on this machine until you have carefully read and thoroughly understand the contents of the operator’s manual.
- Failure to follow safety, operating, and maintenance instructions could result in death or serious injury to the operator or bystanders, poor operation, or costly breakdown.

- Unless instructed by decal or operator’s manual, stop engine before leaving operator’s position and wait for all movement to stop before attempting to adjust, lubricate, unclog or inspect. Exercise mandatory shut-down procedure. After the service has been performed, be sure to restore all guards, shields and covers to their original position.
- Always observe all safety rules shown on decals. Replace any damaged decals immediately. If the unit is repainted, be sure to replace all decals which apply to the machine.
- Become familiar with and know how to use all the safety devices and controls on the shredder before attempting to operate the unit. Know how to stop the unit before starting it.
- Before working under any hydraulically controlled implement, be sure to securely block implement in position.
- Keep children and spectators off and away from the machine while it is in operation.
- Never operate the shredder with a 540 RPM tractor.
- Never use a steel hammer when connecting or disconnecting a PTO shaft.

### CAUTION:

- Repeated impact of the knives with frozen ground or hard objects can cause excessive wear and damage to tractor or shredder. Be sure to maintain recommended ground clearance as specified in this manual.
- Should excessive vibration occur, disengage the tractor PTO immediately and shut off tractor. Do not continue to operate the machine until the problem has been determined and corrected.
- Be sure the rotor has stopped completely before checking the knives.

### WARNING:

- Keep all guards, shields and decals in place.
- Always repair or replace any front flipper shields that are damaged or missing.

## Safety Instructions for Operation and Maintenance (Cont'd)

- Be sure PTO outer guard turns freely before operating machine.

### **WARNING:**

- Keep hands, feet and clothing away from moving components.
- Do not wear loose or baggy clothing around rotating machinery. Machine must be clear of people, tools, and other objects before engaging PTO.
- Engage the PTO slowly at idle speed to prevent unnecessary stress to drive-line.
- Read and observe all warnings on the machine before attempting to operate the shredder. Do not attempt to operate this machine unless all factory-installed safety devices are in place.
- Never attempt to lubricate the shredder with the engine running. Always be sure to exercise the mandatory shut-down procedure.
- Be extremely careful not to bottom out or extend PTO shaft too far, damage to tractor or shredder could occur. Be careful to avoid lifting shredder too high, which results in excessive PTO shaft wear if machine is operated during turning maneuver. **DO NOT USE PTO ADAPTERS OF ANY KIND.**
- Do not operate the shredder without the universal joints locked to the tractor and gearbox shafts.
- Operating the shredder at less than rated RPM will reduce drum speed and cause improper cutting. In difficult conditions, reduce tractor speed by down-shifting gears while maintaining rated engine RPM. Severely difficult conditions may require a delay until conditions improve.
- Do not operate the shredder above the rated RPM.

### **DANGER:**

- Escaping fluid under pressure can be invisible and can penetrate the skin. Do not use hands to search for leaks!
- Hydraulic lines or other components can be hot after operation! “DO NOT TOUCH”!
- Keep hands and feet out! Do not step on or over the machine while it is in operation!
- Rotating drive-line. Personal injury or death can result from entanglement.

### 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.



**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!*

### California Proposition 65 Warning

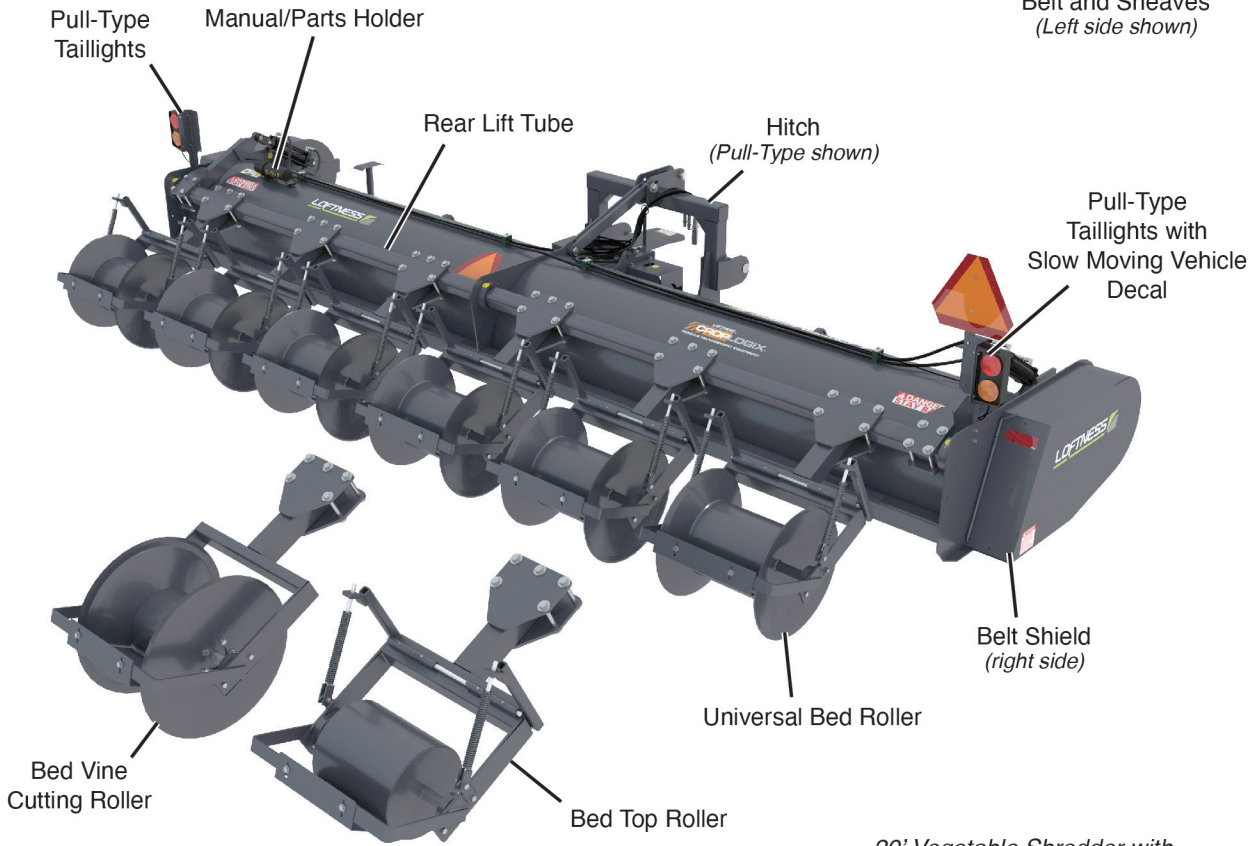
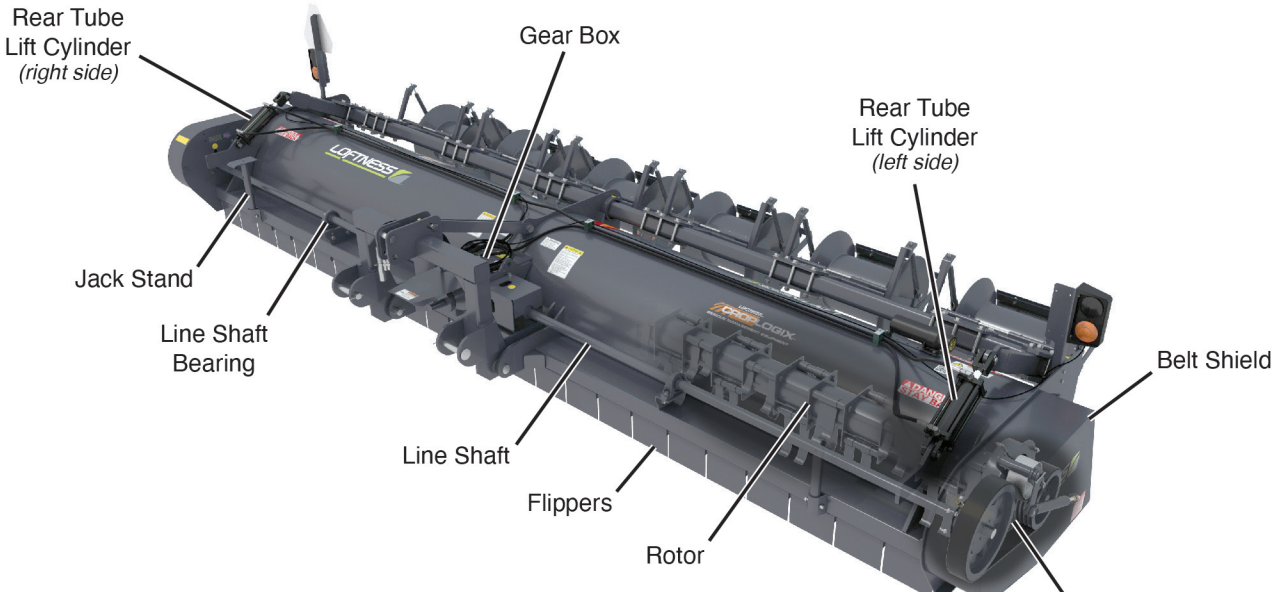


**WARNING:** *This product can expose you to Mineral Oil, which is known to the State of California to cause cancer. For more information, go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).*

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

# Safety Instructions

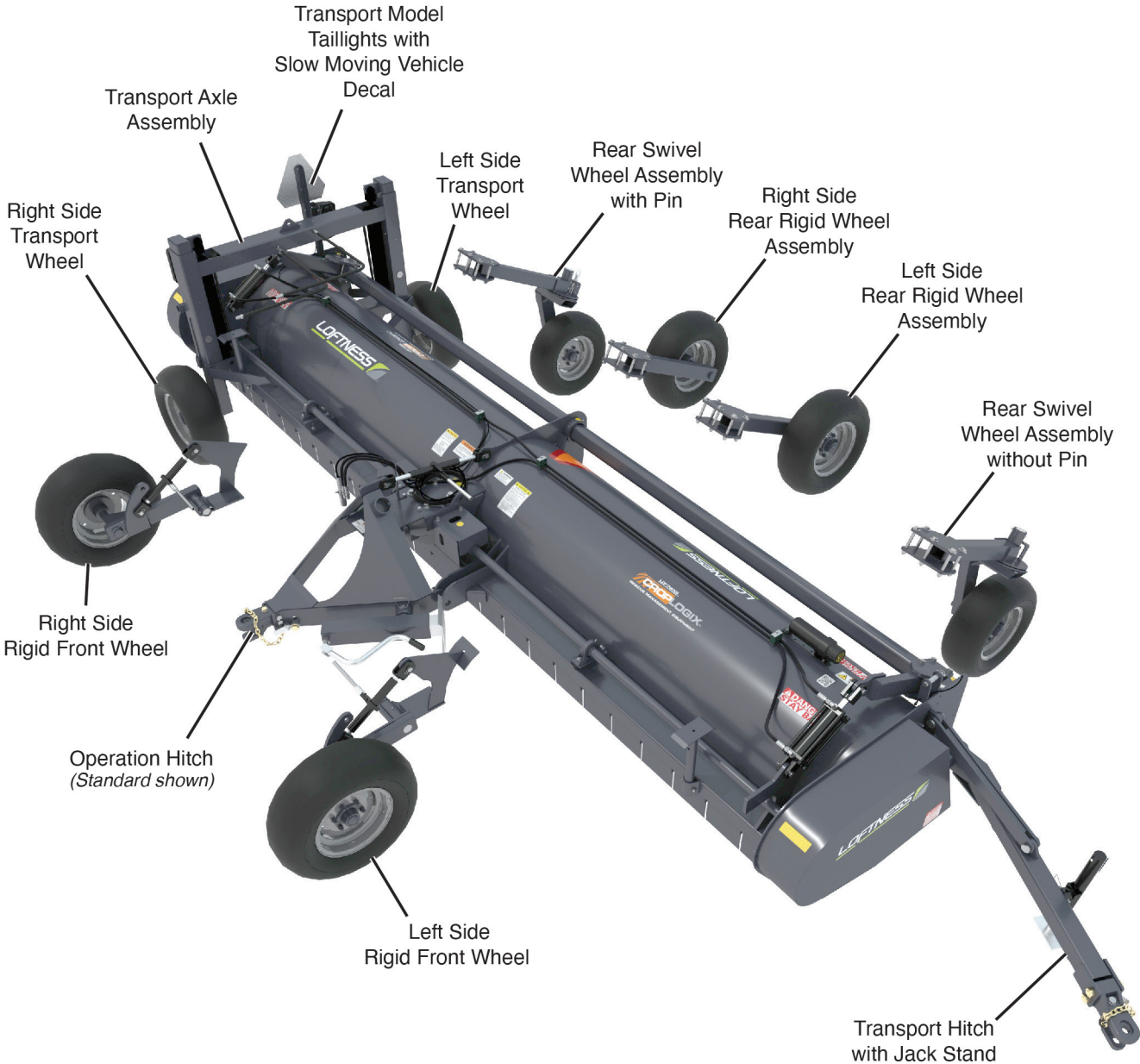
## Standard Vegetable Shredder Identification - with Bed Roller Options



20' Vegetable Shredder with Pull-Type Hitch shown.



**Vegetable Shredder with Transport Identification - with Wheel Options**

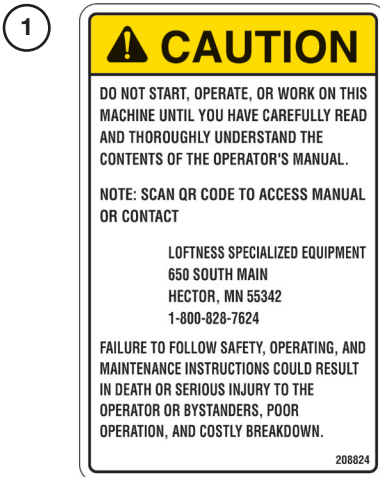
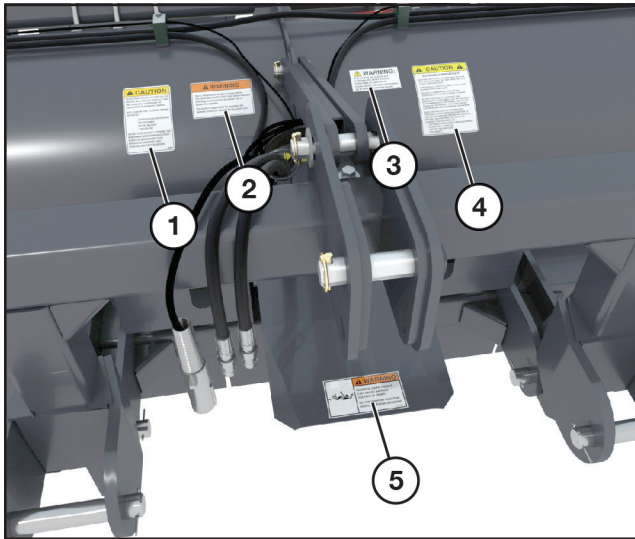


*20' Vegetable Shredder shown.*

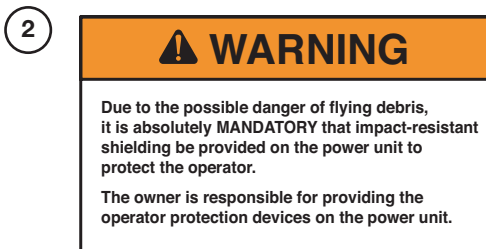
# Safety Instructions

## Safety Decal Locations

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



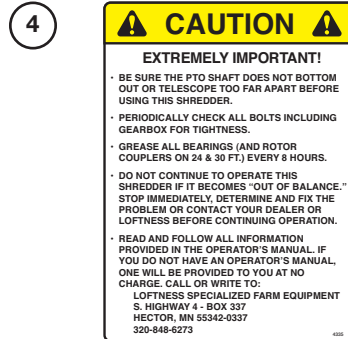
Part No. 208824



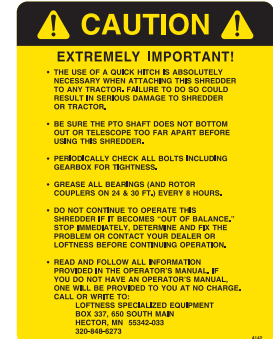
Part No. N17013



Part No. 203264



Part No. 4335



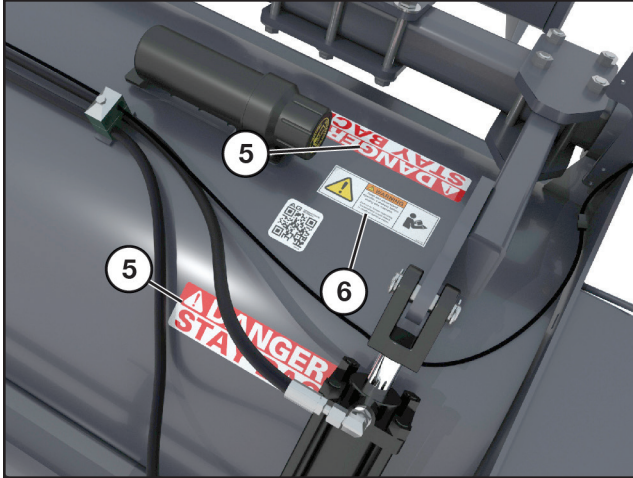
Part No. 4142

**NOTE:** Either decal 4142 or 4335 will be used depending on which hitch configuration is installed on the machine.



Part No. 4189

## Safety Decal Locations (Cont'd)



Part No. 4334



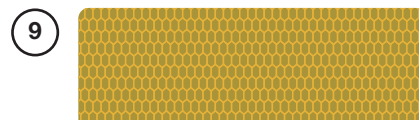
Part No. N22763



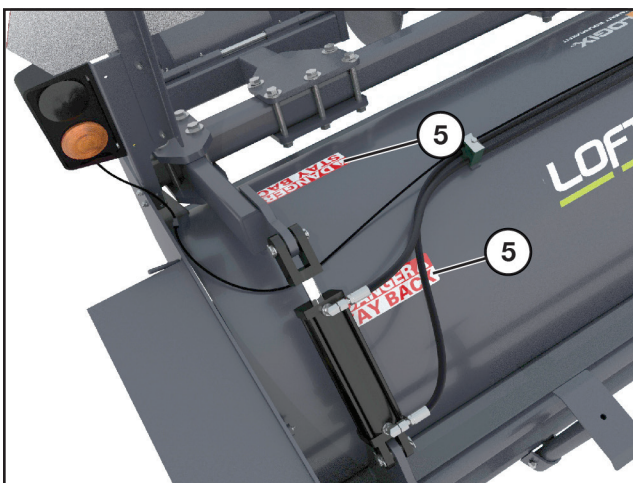
Part No. 4135



Part No. 4141

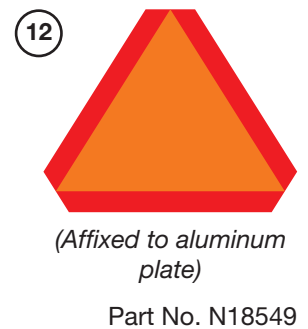
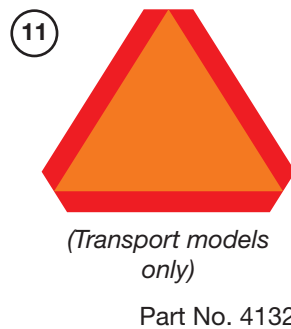
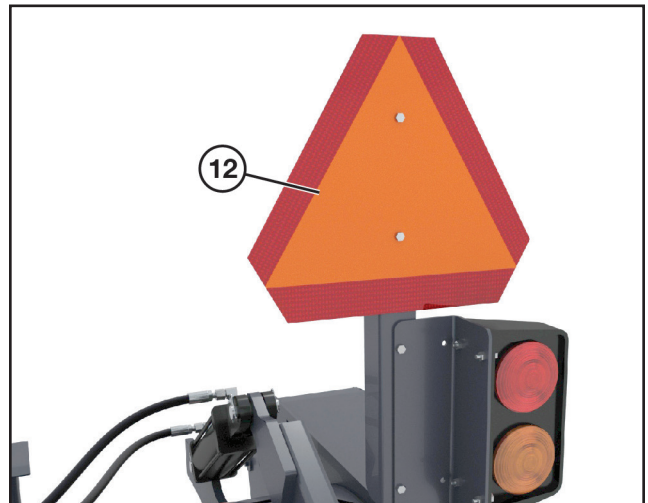
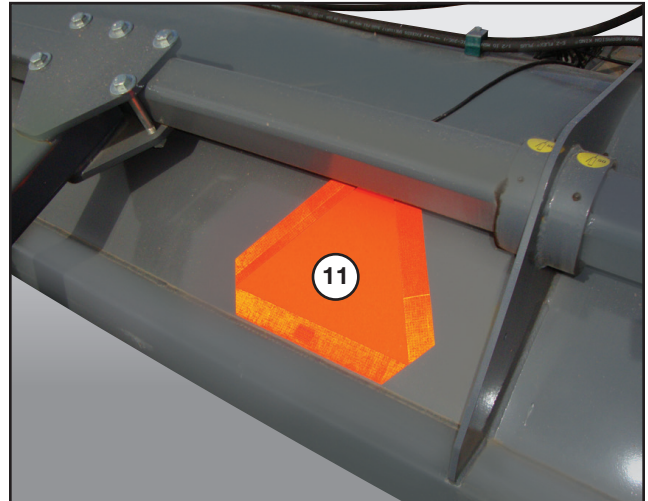


Part No. 4140



# Safety Instructions

## Safety Decal Locations (Cont'd)

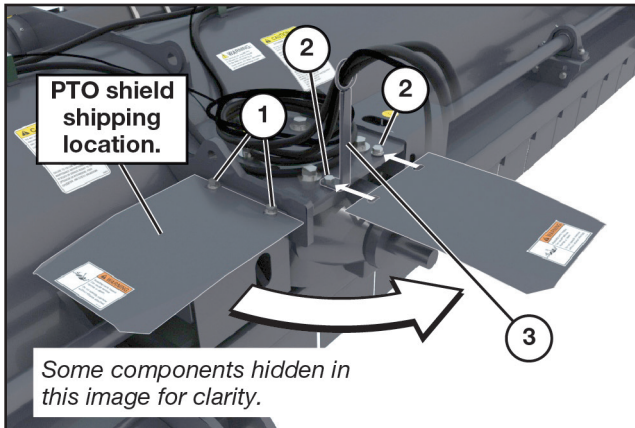


# Set-up Instructions

## Equipment Set-up

The shredder is shipped partly assembled with the lights and PTO shield hardware partially disassembled. The hitch is also separate and will need to be attached.

### PTO Shield

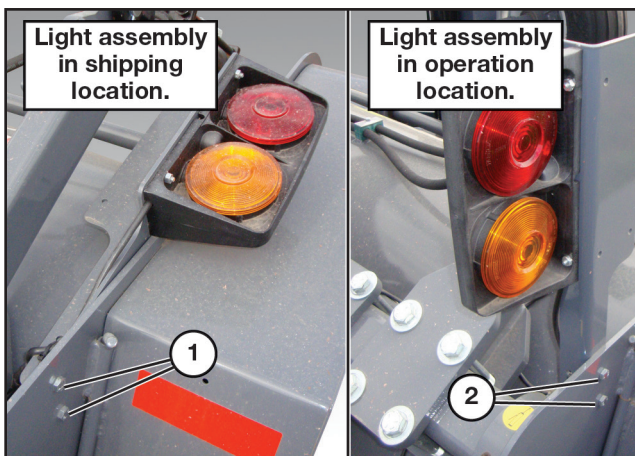


Move the PTO shield from the shipping location to operating position by removing two bolts with washers (1). Reinsert the hardware back into holes to secure the driveline shield.

Remove the two bolts with washers (2) and the hydraulic hose guide (3).

Move the shield into the new position. Return the hydraulic hose guide back into its original position on top of the shield and secure with the bolts and washers that were removed earlier.

### Lights

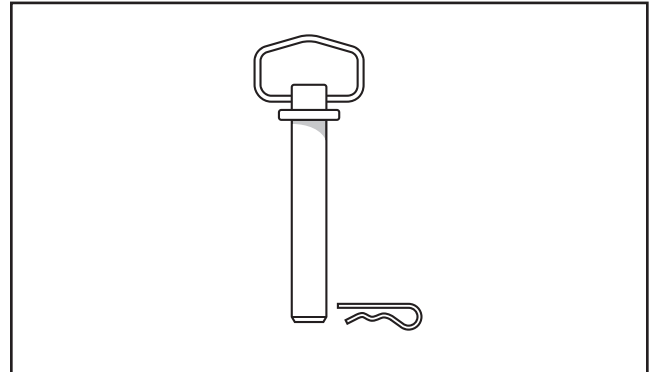


Remove hardware (1) securing light assembly in the

shipping configuration. Move light assembly into upright position and reinsert the hardware (2).

Repeat procedure at each light assembly.

### Hitch Pin



**IMPORTANT:** Use a safety-locking pin when connecting hitch pins.



**DANGER:** Failure to install a safety locking pin could result in loss of hitch pin, causing the shredder to become disconnected from the tractor during operation, or in transport, which could cause serious injury, or death, to those near by.

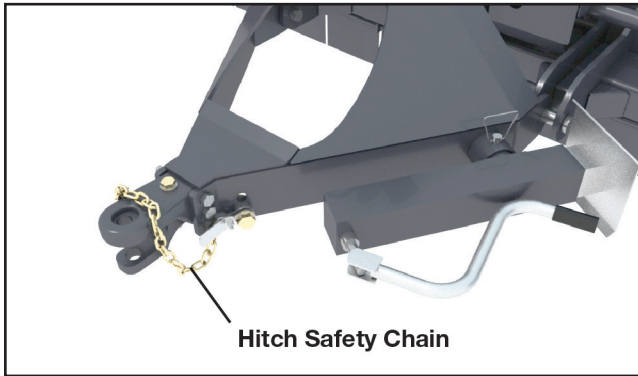
### Jack Stands



**IMPORTANT:** During operation and transport, the jack stands should be locked in their highest position.

# Set-up Instructions

## Hitch Safety Chain



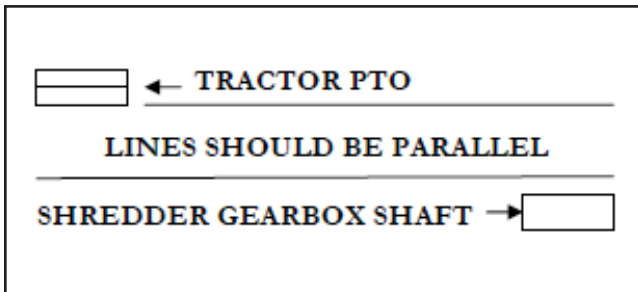
**IMPORTANT:** Always connect the hitch safety chains from the shredder to the tractor when transporting the shredder.

	<b>DANGER:</b> Failure to connect the safety chains could cause the shredder to break away from the tractor if the hitch connection fails during operation, or in transport, which could cause serious injury, or death, to those near by.
--	--

## Attaching the Pull-Type and Pull-Type Floating Shredder

The shredder can be attached to any tractor with a PTO that conforms to ASAE-SAE standards. Use a tractor with a 1,000 RPM PTO only or serious damage to the shredder could occur. Connect hitch to draw bar. Adjust hitch to permit PTO shaft to run as straight as possible.

Attach safety chains on hitch to tractor.



	<b>WARNING:</b> Be extremely careful not to bottom out or extend PTO shaft too far, damage to tractor or shredder could occur. Do NOT use PTO adapters of any kind.
--	---

	<b>WARNING:</b> Do not operate without universal joints locked to the tractor and implement shafts. Re-torque (150 ft. lbs.) mounting bolts whenever PTO is removed and reinstalled. Recheck after 10 minutes of operation and again after 1 hour of operation.
--	---

	<b>CAUTION:</b> Operate shredder only with a tractor of the same PTO RPM rating as the shredder.
--	--

	<b>CAUTION:</b> Never use a steel hammer when connecting or disconnecting a PTO shaft.
--	--

**IMPORTANT:** Use a safety-locking pin when connecting hitch pins. Failure to do so could result in loss of pin and possible damage to equipment and become a safety hazard. See "Hitch Pin" on page 13

During operation and transport, the jack stands should be locked in their highest position. See "Jack Stands" on page 13.

## Attaching the Semi-Mount Shredder

The shredder must be connected to the tractor using a CAT II or CAT III quick hitch. Do not attempt to use shredder without a quick hitch or damage to shredder and/or tractor could result. Spacers are not included with the machine. Adjust hitch to permit PTO shaft to run as straight as possible. After attaching PTO shaft to tractor, make sure that shaft does not telescope apart or bottom out before using shredder. Refer to "PTO Set-up" on page 22 for proper PTO use.

**IMPORTANT:** Do not operate without universal joints locked to the tractor and implement shafts. Re-torque (150 ft. lbs.) mounting bolts whenever PTO is removed and reinstalled. Recheck after 10 minutes of operation and again after 1 hour of operation.

	<b>CAUTION:</b> Operate shredder only with a tractor of the same PTO RPM rating as the shredder.
--	--

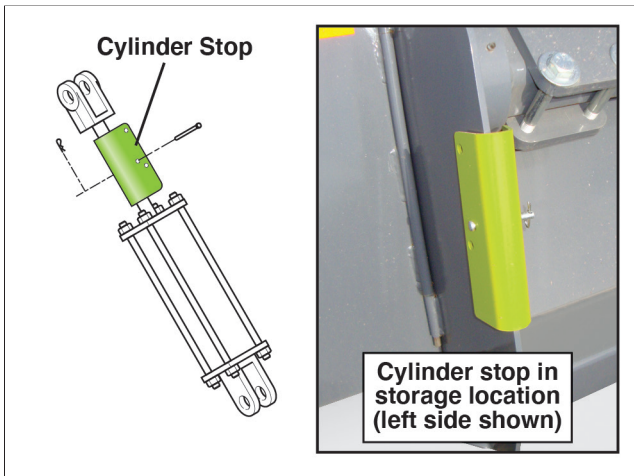
	<b>CAUTION:</b> Never use a steel hammer when connecting or disconnecting a PTO shaft.
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# Set-up Instructions

## Attaching the Semi-Mount Shredder (Cont'd)

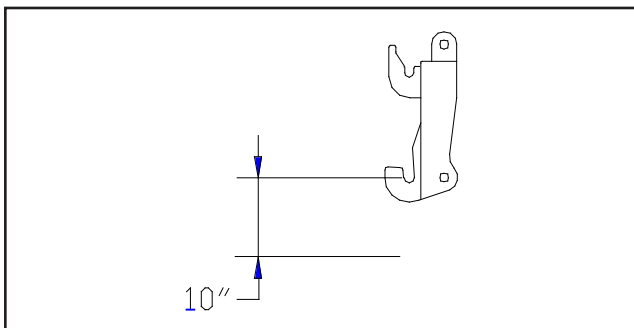
**IMPORTANT:** Use a safety-locking pin when connecting hitch pins. Failure to do so could result in loss of pin and possible damage to equipment and become a safety hazard. See "Hitch Pin" on page 13

During operation and transport, the jack stands should be locked in their highest position. See "Jack Stands" on page 13.



Hydraulic cylinder stops are furnished with each cylinder used on the shredder and are intended for field operation. The two different size stops provided will assist in helping to achieve the recommended cutting height of 4".

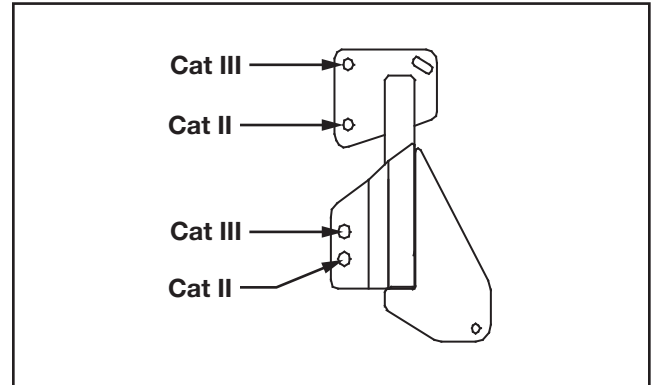
Customer may need to supply additional cylinder stops to aid in obtaining the recommended cutting height.



Distance between center of lower pin at lowest operating position and ground must be 10". Adjust three-point hitch accordingly.

**CAUTION:** Excessive operating height could result in PTO shaft failure or personal injury.

## Attaching the Fully-Mounted Shredder



The shredder must be connected to the tractor using a CAT II or CAT III quick hitch (not supplied). Do not attempt to use shredder without a quick hitch or damage to shredder and/or tractor could result. Spacers are not included with the machine. After attaching PTO shaft to tractor, make sure that shaft does not telescope apart or bottom out before using shredder. Select proper pin configuration on shredder hitch for the particular tractor application. The two lower pin hole selections are for CAT II hitches, and the two upper pin hole selections are for CAT III applications. Adjust hitch to permit PTO shaft to run as straight as possible. See "Attaching the Pull-Type and Pull-Type Floating Shredder" on page 14 for reference.

**WARNING:** Be extremely careful not to bottom out or extend PTO shaft too far apart, damage to tractor or shredder could occur. Do NOT use PTO adapters of any kind.

**WARNING:** Do not operate without universal joints locked to the tractor and implement shafts. Re-torque (150 ft. lbs.) PTO mounting bolts whenever PTO is removed and reinstalled. Recheck after 10 minutes of operation and again after 1 hour of operation.


**CAUTION:** Distance between center of lower pin at LOWEST OPERATING POSITION and ground must be 10". Adjust three-point hitch accordingly. Excessive operating height could result in PTO shaft failure or personal injury.


(Procedure continued on following page.)

# Set-up Instructions

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## Attaching the Fully-Mounted Shredder (Cont'd)

	<b>CAUTION:</b> Operate shredder only with a tractor of the same PTO RPM rating as the shredder.
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	<b>CAUTION:</b> Never use a steel hammer when connecting or disconnecting a PTO shaft.
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**IMPORTANT:** Use a safety-locking pin when connecting hitch pins. Failure to do so could result in loss of pin and possible damage to equipment and become a safety hazard. See "Hitch Pin" on page 13

During operation and transport, the jack stands should be locked in their highest position. See "Jack Stands" on page 13.

## Hydraulic Connections



Connect the hydraulic hoses to the tractor's hydraulic system.

**NOTE:** Make sure there is enough slack in the hydraulic hoses to allow for sharp turns.

Connect the shredder's wiring harness to the tractor's wiring connection.



# Operating Instructions


## Getting Started


### Pre-Start Checklist

- Grease the machine. See “Grease Point Locations” on page 26 through page 29 for grease point locations.
- Adjust air in tires to recommended pressure.
- Check oil level in gearbox (maintain level to the lower check plug hole on side of gearbox case). See “Adding Oil to Gearbox” on page 29 for gearbox oil information.
- Drive Belt tension – if belt needs adjustment, see “Belt Adjustment” on page 30 for instructions.
- Check all bolts, nuts and set screws for tightness.
- Review operator’s manual.

### Operating Speed

Various shredding conditions require different ground speeds. Under most conditions, the tractor can be driven between 3 and 7 MPH without causing undue wear on the shredder.


	<b>WARNING:</b> <i>Operating the shredder below rated RPM speed will reduce rotor speed and cause improper cutting. In difficult conditions, reduce tractor speed by down-shifting gears while maintaining rated engine RPM. Severely difficult conditions may require a delay until conditions improve.</i>
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	<b>WARNING:</b> <i>Do not operate above rated RPM.</i>
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### Maintaining Rotor Balance

The rotors of the shredder are factory balanced and must remain in balance during the life of the machine. Should any knives on the machine need replacing, be sure to also replace the knives directly opposite to avoid vibration and maintain the rotor balance. See “Knife Replacement” on page 34 for instructions on replacing the knives.


If a knife is not available, take the opposite one off until two new knife sets can be replaced.

	<b>CAUTION:</b> <i>Should excessive vibration occur, disengage the tractor PTO immediately and shut off the tractor. Do not continue operation until the problem has been determined and corrected.</i>
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	<b>CAUTION:</b> <i>Be sure the rotors have stopped completely before checking the knives.</i>
---	---


	<b>CAUTION:</b> <i>Repeated impact of the knives with frozen ground or other hard objects can cause excessive wear and damage to tractor or shredder. Be sure to maintain recommended ground clearance as specified in this manual.</i>
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### Knives - Pivot

	<b>CAUTION:</b> <i>Be sure the rotors have stopped completely before checking the knives.</i>
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The knives will pivot to avoid damage when striking stones or other obstructions. They will swing back to clear obstacles, and they will return to working position automatically.

	<b>CAUTION:</b> <i>Repeated impact to the knives from frozen ground or other hard objects can cause excessive wear and damage to tractor or shredder. Repeated impact to hard objects can cause the metal ring constraining knives to rotor to open up and release the knife from the rotor. Be sure to maintain recommended ground clearance as specified earlier in this.</i>
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	<b>CAUTION:</b> <i>Should excessive vibration occur, disengage the tractor PTO immediately and shut off the tractor. Do not continue operation until the problem has been determined and corrected.</i>
---	---

# Operating Instructions

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## Belt Tension

The rotor drive belts should have 1/2" maximum deflection at the midpoint between the pulleys.

**IMPORTANT:** *To avoid damage or excessive wear, always engage or disengage PTO with engine at idle speed.*

## Cutting Height Adjustment

The recommended cutting height is 4". Continually cutting below this height increases the likelihood that ground scalping could occur. Frequent scalping greatly reduces shredder component lifetimes. Loftness considers this pattern to be misuse, and subsequently will not be covered under warranty. It is recommended that cutting height be adjusted and controlled with the appropriate hydraulic cylinder or ratchet and three-point hitch stopping devices. By using a pre-adjusted shredder cutting height, uniform crop shredding will result. It is also easier to begin the new round by eliminating the need to adjust the cutting height every time. The most important advantage is that it eliminates repositioning. Another important consideration is the PTO shaft angle. For the longest PTO shaft life and minimum vibration, the tractor PTO shaft and the stub shaft on the shredder need to be parallel after adjustment into the operating position. It might be necessary to remove the PTO shaft from the shredder when adjusting the cutting height for a better viewpoint to get the shaft angles similar. See "Attaching the Pull-Type and Pull-Type Floating Shredder" on page 14 for reference.

## Pull Type Models

Lower the shredder with the hydraulic cylinders or ratchet jack(s) to the recommended cutting height of 4". Using the ratchet jack on the hitch, level the shredder according to the guide lines shown in "Attaching the Pull-Type and Pull-Type Floating Shredder" on page 14.

If necessary, adjust hydraulic cylinder or ratchet jack to return the shredder to the recommended cutting height. Install hydraulic cylinder stops to allow repeated return to this setting.

## Semi-Mounted Models

Lower the shredder using the remote hydraulic cylinder and the three-point hitch to the desired cutting height of 4". By adjusting the appropriate lifting mechanisms, level the shredder using the guidelines above for the PTO shaft

angle shown in "Attaching the Pull-Type and Pull-Type Floating Shredder" on page 14. When proper shredder alignment is achieved, adjust tractor three-point hitch stops and install collar stops on the hydraulic cylinders.

If the shredder is equipped with gauge wheels, adjust the gauge wheels so that the tractor and assist wheels carry approximately the same amount of weight.

**IMPORTANT:** *Do not carry the weight of the shredder on the gauge wheels. Set stop of three-point hitch so tractor hitch and the assist-wheels carry the weight of the shredder. Gauge wheels are designed to prevent the ends of the shredder from scalping the ground.*

## Fully Mounted Models

Lower shredder to the recommended cutting height using the three-point hitch. Level the shredder by adjusting the adjustable top link of the tractors 3-point hitch to the position shown in "Attaching the Fully-Mounted Shredder" on page 15. When the shredder is leveled at the recommended operating height, lower the rear wheels with the ratchet jack(s) so that the wheels carry approximately 50% of the shredder's weight

## Turning

**IMPORTANT:** *All models with constant velocity PTO shaft can be turned with PTO engaged.*

## Pull Type Models

**IMPORTANT:** *To avoid damage or excessive wear, always engage or disengage PTO with engine at idle speed.*



**WARNING:** *Be extremely careful not to bottom out or extend PTO shaft too far, damage to tractor or shredder could occur. Be careful to avoid lifting shredder too high, which results in excessive PTO shaft wear if machine is operated during turning maneuver. Do NOT use PTO adapters of any kind.*

# Operating Instructions

## Turning (Cont'd)


### Semi-Mounted Models

If equipped with rigid gauge wheels, the front of the shredder must be completely lifted to prevent damage to gauge wheel struts. The following is the recommended procedure for turning:

**NOTE:** *If shredder is equipped with cylinders on the gauge wheels, it is recommended that the front of the shredder be lifted with the three-point hitch to obtain clearance for the gauge wheels instead of using the cylinders to lift the gauge wheels. This method will obtain faster and more consistent cutting height adjustment after completion of the turn.*

1. Raise rear assist-wheels with hydraulic cylinders, then raise the tractor three-point hitch.
2. After the turn is completed, lower the tractor three-point first. Then lower the rear assist-wheels.


**IMPORTANT:** *Do not carry the weight of the shredder on the gauge wheels. Set stop of three-point hitch so tractor hitch and the assist-wheels carry the weight of the shredder. Gauge wheels are designed to prevent the ends of the shredder from scalping the ground.*

	<b>WARNING:</b> <i>Be extremely careful not to bottom out or extend PTO shaft too far, damage to tractor or shredder could occur, refer to "PTO Set-up" on page 22. Be careful to avoid lifting shredder too high, which results in excessive PTO shaft wear if machine is operated during turning maneuver. DO NOT use PTO adapters of any kind.</i>
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**IMPORTANT:** *To avoid damage or excessive wear, always engage or disengage PTO with engine at idle speed.*

### Fully Mounted Models

When turning, the shredder must be lifted completely off the ground to prevent damage to rear wheels.

	<b>WARNING:</b> <i>Be extremely careful not to bottom out or extend PTO shaft too far, damage to tractor or shredder could occur, refer to "PTO Set-up" on page 22. Be careful to avoid lifting shredder too high, which results in excessive PTO shaft wear if machine is operated during turning maneuver. DO NOT use PTO adapters of any kind.</i>
---	---

**IMPORTANT:** *To avoid damage or excessive wear, always engage or disengage PTO with engine at idle speed.*

### Transporting with Optional Hitches

To assist in identifying the front, back, left or right of the shredder with regards to these transport instructions, the shredder will be identified from the field operating position.

**IMPORTANT:** *DO NOT EXCEED 20 MPH WHEN TRANSPORTING YOUR SHREDDER.*

### Semi-Mount Model (With Rigid Front Gauge Wheels)

Changing from field use to transport, follow these procedures:

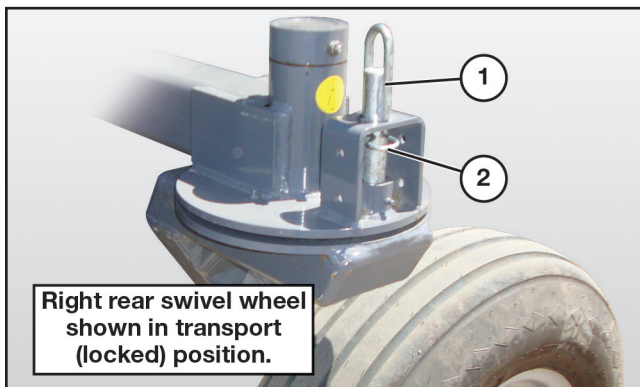
1. To change the shredder from field use to transport, first back the shredder up until the right rear swivel wheel is turned approximately 90 degrees to the right of field position.

*(Procedure continued on following page.)*

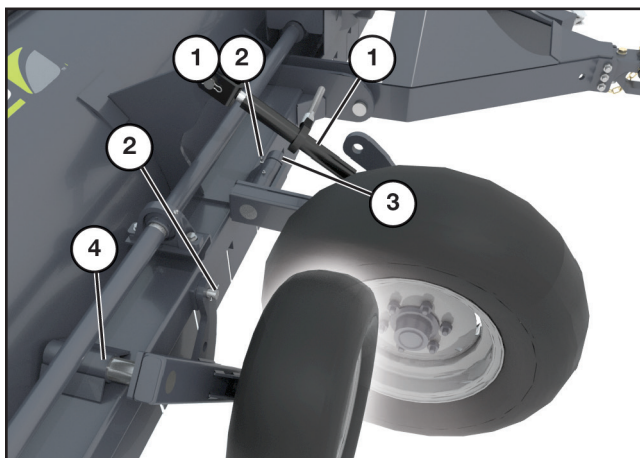
# Operating Instructions

## Transporting with Optional Hitches (Cont'd)

### Semi-Mount Model (With Rigid Front Gauge Wheels) (Cont'd)



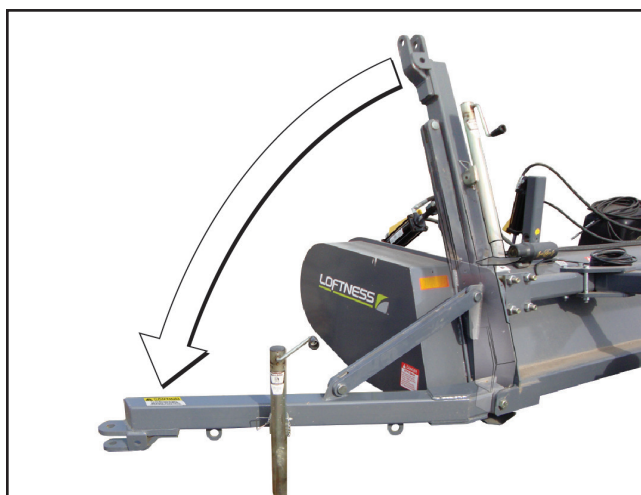
Remove the locking pin safety clip (2) allowing the pin to drop into the locked position for transport. Ensure the locking pin (1) is fully engaged in the locked position. Replace the safety clip (2) into the upper hole of the locking pin (install under the upper guide plate to prevent pin from disengaging during transport).



2. Lift machine completely. Remove ratchet jack (1) from right side gauge wheel strut. Remove pin (1), cotter pin (2), and collar (3). Slide strut out of receiver and rotate 90° counter-clockwise and insert into transport receiver (4) as shown. Secure with cotter pin (2).

**IMPORTANT:** Keep ratchet jack, collar, and pin in a secure location. This will be reinstalled when returning the front rigid wheel into the operation position.

3. Adjust cylinder stops on rear lift assist wheels to match the height of the rigid front gauge wheel set in towing position.
4. Position the ratchet jack for the left side gauge wheel at approximately the midpoint of the cylinder stroke.
5. Lower and disconnect the shredder. Remove tractor PTO half and store in a safe location. Fasten shredder half to three point hitch using a light chain or other appropriate method.
6. Lower the end transport hitch and lock into place with the pin in the upper link. Rotate the jack 90 degrees from stored position to assist in connecting the shredder to the tractor.



7. Raise the left side front gauge wheel completely during transport.
8. Attach safety chains from hitch to the tractor.

To set up the shredder for field operation, follow the above steps in reverse order.

### Pull-Type and Fully-Mounted Models (With Hydraulic Transport)

1. Lower the shredder completely. Disconnect the tractor. Remove tractor half of PTO and store in a safe location. Fasten the shredder half PTO to hitch using a light chain or other appropriate means.
2. Lower the end transport hitch and lock into place with the pin in the upper link. Rotate the jack 90 degrees from stored position to assist in connecting the shredder to the tractor.

*(Procedure continued on following page.)*

## Transporting with Optional Hitches (Cont'd)

### Pull-Type and Fully-Mounted Models (With Hydraulic Transport) (Cont'd)

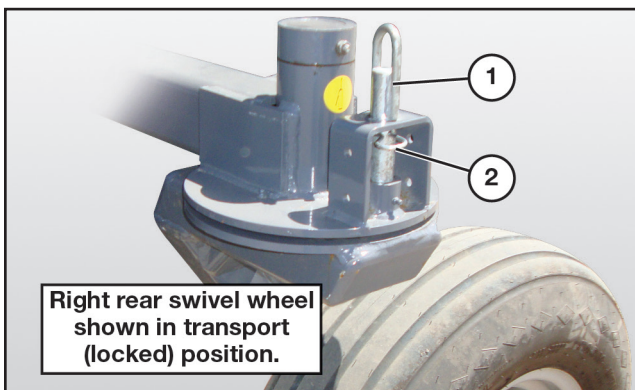
3. Position transport hitch with the bulldog jack and connect to the tractor, connect hydraulic lines. Lift the shredder with the transport wheels. Lock wheels with pin in the transport position and release pressure from hydraulic system.
4. Attach safety chains from hitch to the tractor.

To set up shredder for operation, follow steps in reverse order.

### Operation to Transport Configuration (24' models with Front Swivel Wheels)

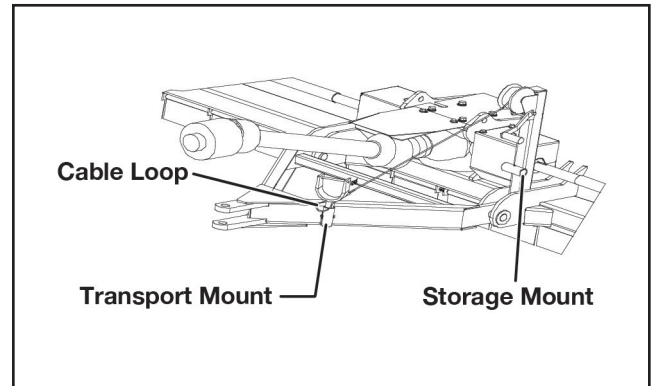
Changing from field use to transport, follow these procedures:

1. To change the shredder from field use to transport, first back the shredder up until the right rear swivel wheel is turned approximately 90° to the right of field position.



Remove the locking pin safety clip (2) allowing the pin to drop into the locked position for transport. Ensure the locking pin (1) is fully engaged in the locked position. Replace the safety clip (2) into the upper hole of the locking pin. (install under the upper guide plate to prevent pin from disengaging during transport).

2. Move the PTO cradle from its storage mount (located on the winch stand) to the transport mount (located on the left side of the hitch).



**NOTE:** Check the cables end loop to ensure it is securely fastened to the underside of the cradle after it is pinned into place.

3. Disconnect the PTO and secure to the transport cradle using the safety pin provided. Remove drawbar pin to disconnect the tractor. Use the cable winch to lift the hitch and PTO upwards until the tractor half of the PTO is at an angle to prevent it from becoming detached from the shredder during transport.
4. Lower the floating transport hitch and connect to the tractor using jack provided. Connect the safety chains.
5. Drive the tractor forward until the right front swivel wheel can be safely locked into the transport position repeating the procedure required to lock the right rear wheel into the transport position.

**IMPORTANT:** Ensure that the right front and right rear wheels are locked into the transport position, while all other wheels are allowed to swivel during transport.

Reverse the above steps to return to full field operating position.

# Operating Instructions

## PTO Set-up

When connecting the PTO to both the shredder and tractor, it is the owner's/operator's responsibility to ensure that the PTO length is correct and will not bottom out or become disengaged.

The PTO provided with each Loftness shredder will work on most tractors without modification.

Variations in the PTO and hitch geometry on some tractors may make it necessary to adjust the length of the PTO.

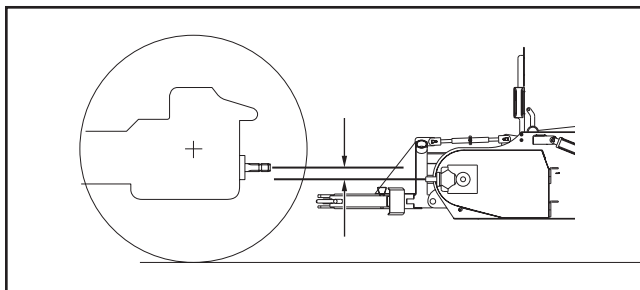
Check PTO length (6" overlap minimum). Lubricate CV before initial start-up and before connecting to tractor to allow movement of tractor yoke in all directions to help distribute grease through out the moving parts. Lubricate after every 8 hours of use. Tighten PTO clamp bolts (torque to 150 ft. lbs.), then recheck after 10 minutes of operation and again after 1 hour of operation.

## PTO Attaching and Use

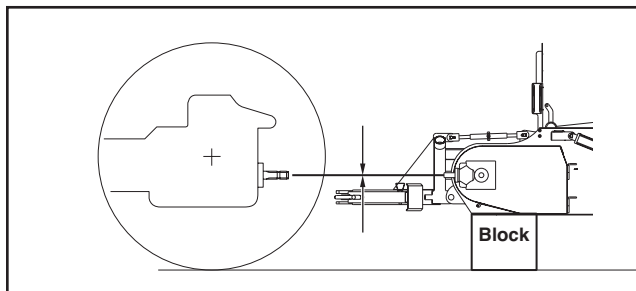
The shredder can be attached to any tractor with a PTO that conforms to ASAE-SAE standards. Use a tractor with a 1,000 RPM PTO only or serious damage to the shredder could occur.

The procedures listed below are provided to assist you in obtaining the correct PTO length.

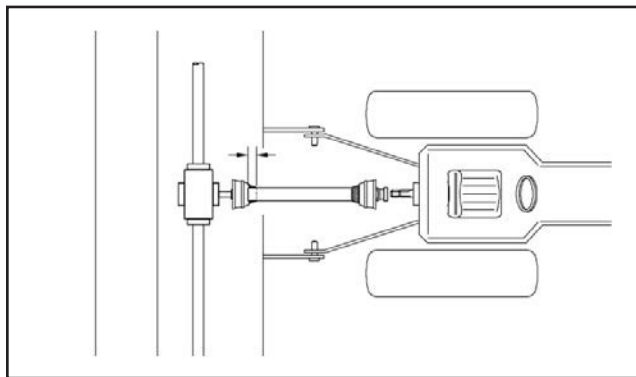
1. Attach shredder to tractor lift arms.



2. Adjust tractor top link until shredder gearbox input shaft is parallel with tractor input shaft as shown above.



3. Raise shredder until the gearbox input shaft is level with the tractor PTO shaft. Position blocks under the shredder to stabilize as shown above.
4. Attach PTO implement half onto the shredder gearbox.
5. Position tractor half of the PTO against the tractor's PTO shaft, but do not attach.



6. Line up both halves of the PTO so they are parallel to each other. Measure 1/2" back from the universal joint bell shield and mark on opposite half. Repeat this measuring to other half of the PTO.
7. Remove the blocks, raise and lower the shredder to determine the position which has the greatest distance between gearbox input shaft and tractor PTO shaft. Replace blocks under the shredder to stabilize when the greatest distance is determined.
8. Line up both halves of the PTO parallel to each other and measure the distance between the two marks. This measurement will indicate the overlap of the two halves. A minimum of 6" overlap must be available or the PTO cannot be used.

*(Procedure continued on following page.)*

# Operating Instructions

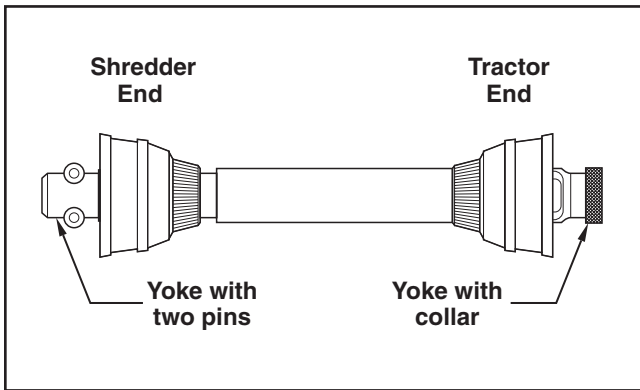
## PTO Set-up (Cont'd)

### PTO Attaching and Use (Cont'd)

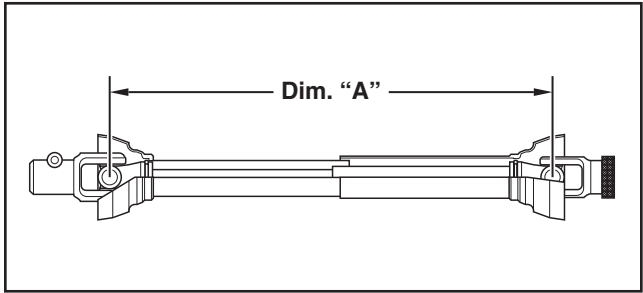
9. Clamp PTO in padded vise to prevent damage to shield. Cut off the shield where marked (determined in step 6).
10. Use the cut off section of shield as a guide and cut off the same amount of the shaft.
11. Repeat steps 9 and 10 to other half of PTO.
12. Deburr cut ends of PTO sections and remove all chips and filings.
13. Apply grease to male half of PTO. Assemble PTO with shields in place and install on tractor and shredder, insuring the yokes lock into place.

### PTO Sizing

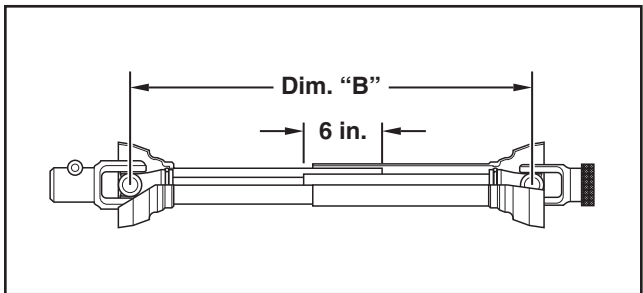
The following diagrams assist in sizing the PTO as outlined in "PTO Set-up" on page 22.



**IMPORTANT:** Before operating shredder, check to make sure the PTO will not bottom out or become disengaged.

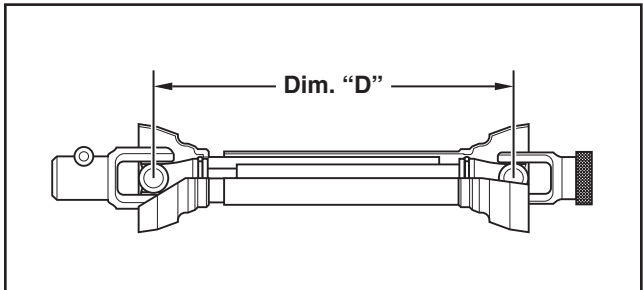


Extend the PTO until it is fully extended, but not completely separated. This will determine dimension "A".



Subtract 5" from dimension "A" to determine dimension "B". This will be your maximum operating length.

**IMPORTANT:** Never operate equipment with the PTO extended further than dimension "B".



Push PTO halves together, as far as possible, to determine dimension "C". Add 1" to this dimension "D" which will be the minimum operating length.

**IMPORTANT:** Never operate equipment with PTO collapsed to less than dimension "D".






## General 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 shredder after each use.

Maintenance of any type on equipment is dangerous when the machine is running.

	<p><b>DANGER:</b> Always shut-down all equipment prior to cleaning, adjusting, lubricating or performing service of any kind. Review and become familiar with the mandatory shutdown procedure before attempting any service work. See “Mandatory Shut-Down Procedure” on page 5 for shutdown instructions.</p>
---	---

When reassembling components, always use new lock nuts and a thread-locking compound to ensure against vibration loosening. Use an anti-seize compound on all bearing/shaft contacts.

## Maintenance Schedule

HOURS	SERVICE POINTS	SERVICE REQUIRED					
		CHECK	CLEAN	CHANGE	GREASE	ADJUST	OIL
Every 8	Machine		X				
	Loose Bolts					X	
	Hoses and Wiring	X					
	Oil Leaks	X					
	Rotor Bearings				X		
	Line Shaft Bearings	X			X		
	Knives	X					
	Bed Roller Bearings				X		
	Belt Tensioner				X		
PTO CV Shaft	X			X			
Every 25	Telescoping PTO Tube	X			X		
	Line Shaft U-Joints	X			X		
Every 50	PTO Overrunning Clutch	X			X		
	Wheel Lift Tubes	X			X		
	Drive Belt Tension	X					
	Drive Belt	X					
	Bed Roller Pivot Hinges				X		
Safety Labels	X						
Every 100	Wheel Bearings	X			X		
	Gearbox (w/oil change)	X					X

# Maintenance

## Lubrication

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

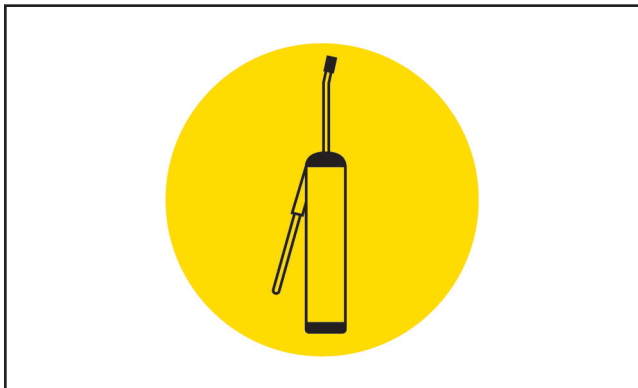
The operation and component lifetimes of this machine are very dependent on regular and proper lubrication. The frequency of lubrication recommended is based on normal conditions. Severe or unusual conditions may determine actual service requirements.

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

### Grease Points Location

Use a #2 general purpose lithium based grease unless noted otherwise.

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

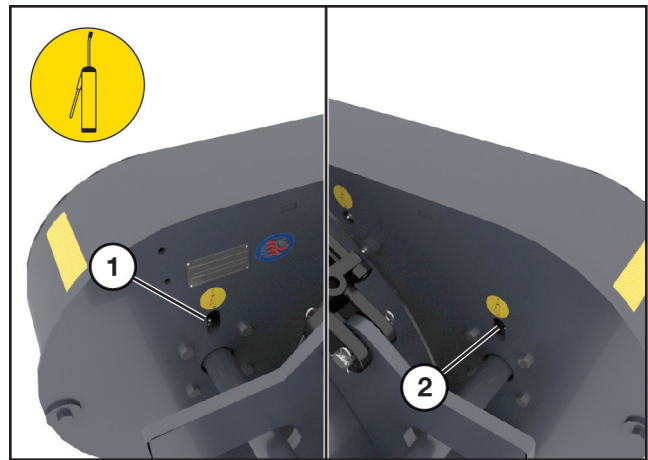


**NOTE:** *To assist in locating the grease points, the decal shown above is located adjacent to each grease point on the shredder .*

	<b>DANGER:</b> <i>Do not lubricate parts while the machine is running. Failure to remove power to the shredder while lubricating could result in severe injury or death.</i>
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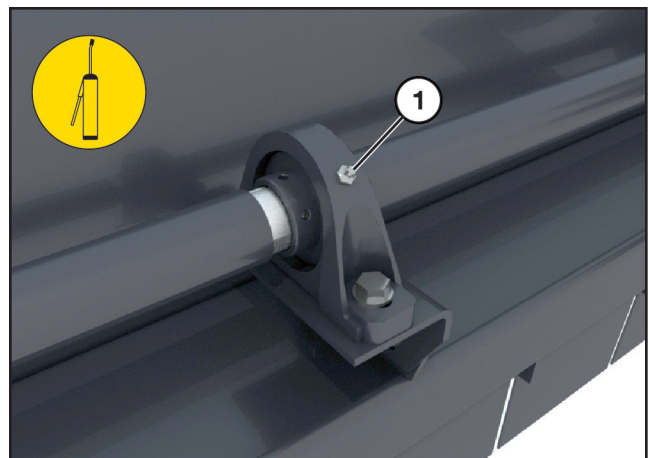
See page 8 for component location and identification.

### Grease Points for All Models



**Location:** Line shaft end bearings - right side (1); left side (2).

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



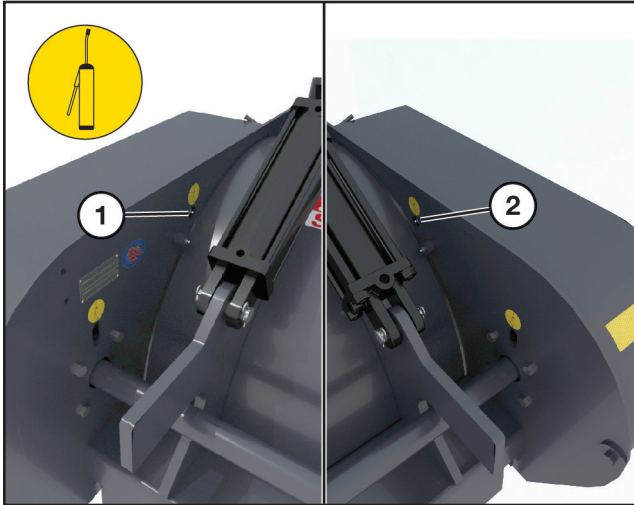
**Location:** Line shaft bearings (pillow blocks) - (1); located on the driveline on each side of the gearbox.

*(There are two pillow blocks on 12' through 20' models, and four on the 24' model.)*

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

## Lubrication (Cont'd)

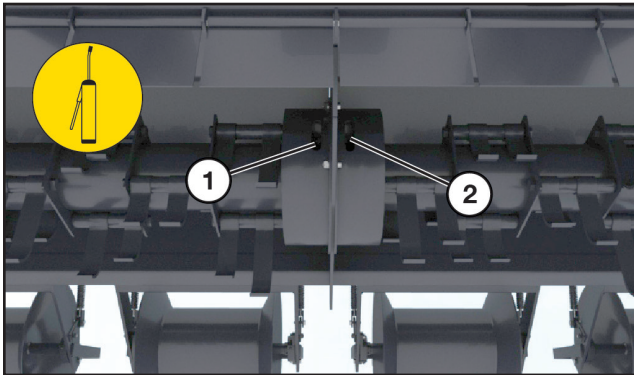
### Grease Points Location (Cont'd)



**Location:** Rotor bearings - outside (1, 2).

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

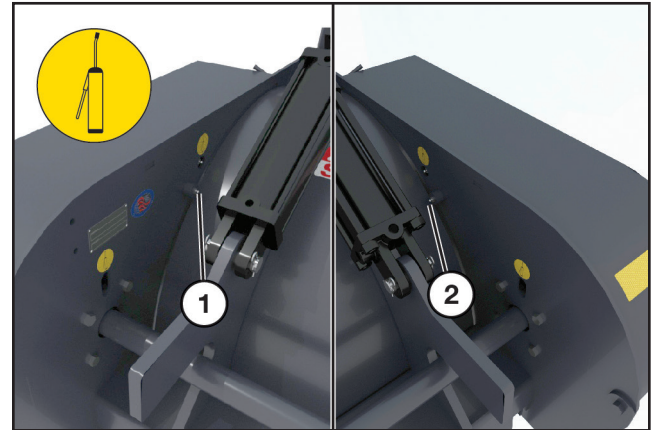
**NOTE:** Rotor bearings cannot be damaged by overgreasing. Grease fittings until a small amount of grease is purged from the bearing.



**Location:** Rotor bearings - inside (1, 2).  
 (Access the fittings from underneath the shredder near the operation hitch.)  
 (There are two inside rotor bearings on 12' through 20' models, and four bearings on the 24' model)

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

**NOTE:** Rotor bearings cannot be damaged by overgreasing. Grease fittings until a small amount of grease is purged from the bearing.

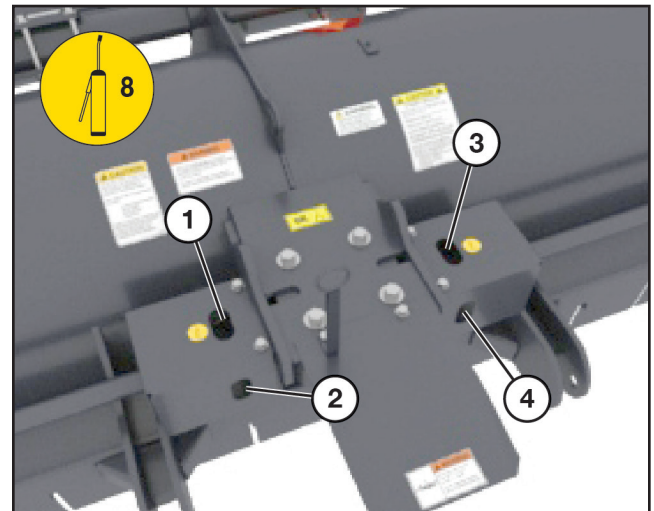


**Location:** Belt tensioner (1, 2).

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

**NOTE:** Remove the belt cover when lubricating the fitting. Visually inspect the idler pulley components while lubricating. Do Not over lubricate the idler tensioner shaft.

**NOTE:** Over lubricating may be transferred to the belt, causing the belt to slip, resulting in loss of rotor RPM speed and loss of power to the rotor



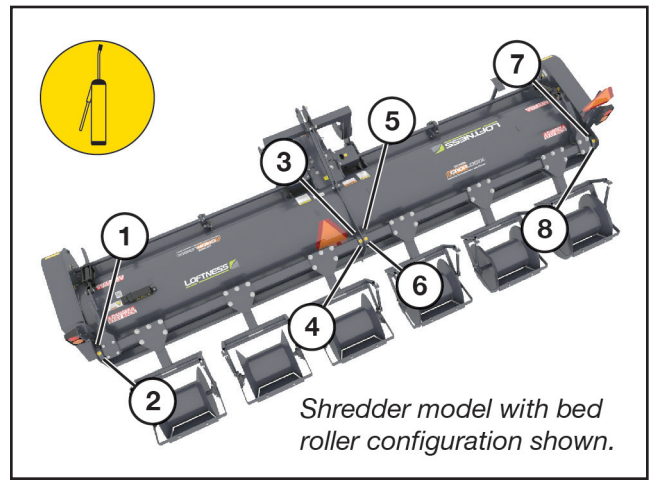
**Location:** Line shaft U-joint (1, 2, 3, 4).  
 (Access fittings via holes on top or side of gearbox/line shaft shields.)

**Interval:** Every 25 hours of operation.

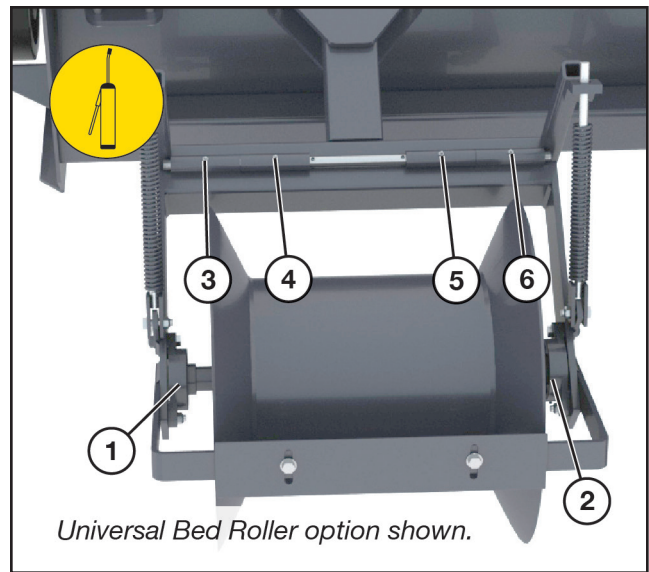
# Maintenance

## Lubrication (Cont'd)

### Grease Points Location (Cont'd)

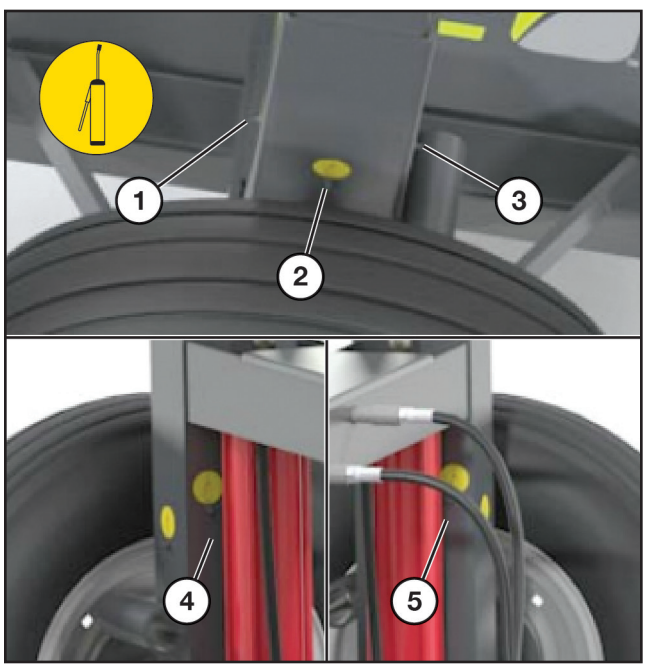


**Location:** Rear lift tube (1, 2, 3, 4, 5, 6, 7, 8).  
*(Eight fittings on the rear lift tube.)*  
**Interval:** Every 50 hours of operation.

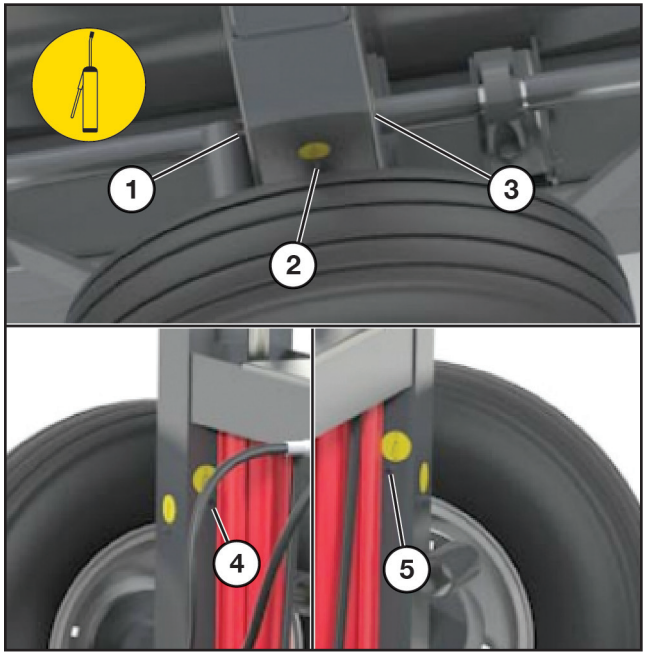


**Location:** Universal bed rollers - bearings (1, 2).  
*(One fitting located on each of the roller bearings.)*  
**Interval:** Every 8 hours of operation.  
**Location:** Bed roller hinges (3, 4, 5, 6).  
*(Four fittings located on the hinge of each bed roller assembly - Universal and Bed Top roller versions only.)*  
**Interval:** Every 50 hours of operation.

### Grease Points for Shredder Models with Transport Option



**Location:** Street side transport axle tube (1, 2, 3, 4, 5).  
*(Five fittings located on the tube.)*  
**Interval:** Every 50 hours of operation.

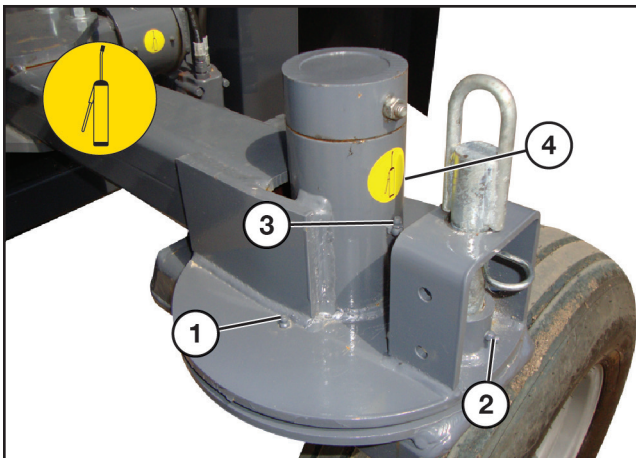


**Location:** Curb side transport axle tube (1, 2, 3, 4, 5).  
*(Five fittings located on the tube.)*  
**Interval:** Every 50 hours of operation.

## Lubrication (Cont'd)

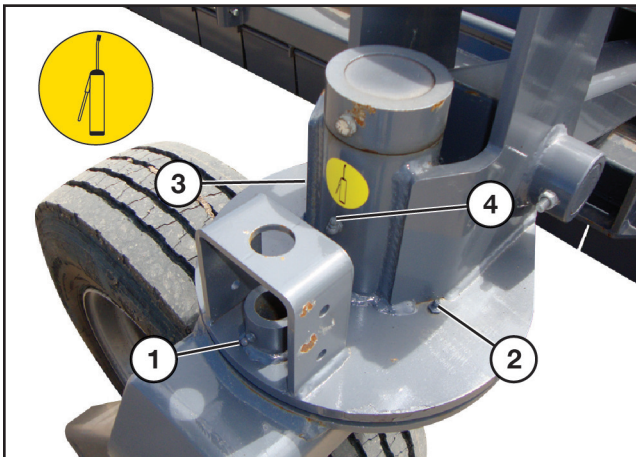
### Grease Points Location (Cont'd)

#### Grease Points for Shredder Models with Rear Pivot and Front Gauge Wheels



**Location:** Rear pivot wheel fittings (1, 2, 3, 4).  
(Four fittings located on the pivot of each of the rear wheel assemblies.)

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



**Location:** Front gauge wheel fittings (1, 2, 3, 4).  
(Four fittings located on the pivot of each of the two front wheel assemblies.)

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

### PTO Shafts

**Location:** Standard PTO CV shaft fittings (Not Shown)  
(Three U-joints and two additional fittings located under the bell housing.)

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

**Location:** Telescoping PTO tube fittings (Not Shown)  
(One located by lining up the hole in the PTO guard with grease zerk.)

**Interval:** Every 25 hours of operation.

**Location:** PTO overrunning clutch fittings (Not Shown)  
(Located near U-joint yoke.)

**Interval:** Every 50 hours of operation.

### Wheels

**Location:** Wheel bearings - all (Not Shown)

**Interval:** Every 100 hours of operation.

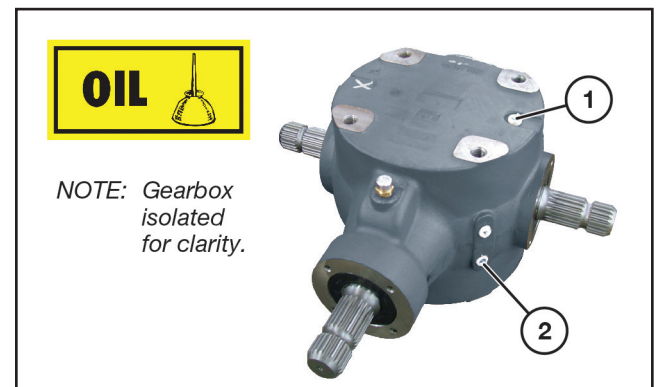
**NOTE:** Grease and re-pack.

### Ratchet Jacks (if equipped)

**Location:** Ratchet jacks - all (Not Shown)

**Interval:** Every 100 hours of operation.

### Adding Oil to Gearbox



Remove the plug from the upper port (1), and the plug from the lower port (2).

Using a funnel, add a #90 wt. gear oil into the upper port until it runs out through the bottom port. Reinsert the plug back into the lower port and tighten.

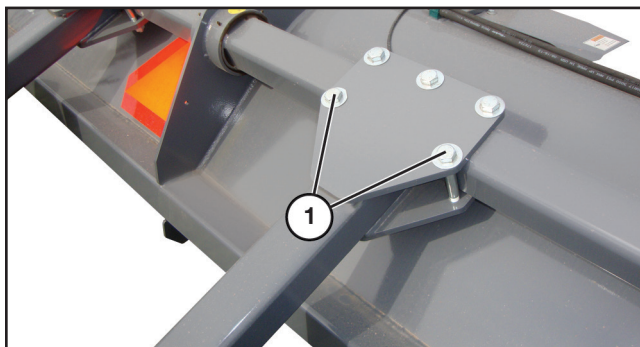
Return the remaining plug back into the upper port and tighten.

# Maintenance

## Wheel Spacing Adjustment (Pull-type and Fully Mounted Models)

To obtain the best results from the shredder, wheel spacing should conform to crop row spacing. To adjust wheel spacing, raise shredder and install blocks under shredder end plates.

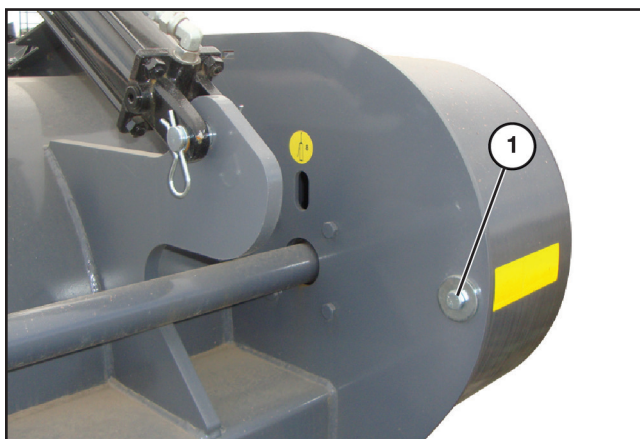
Raise rear wheels with ratchet jack.



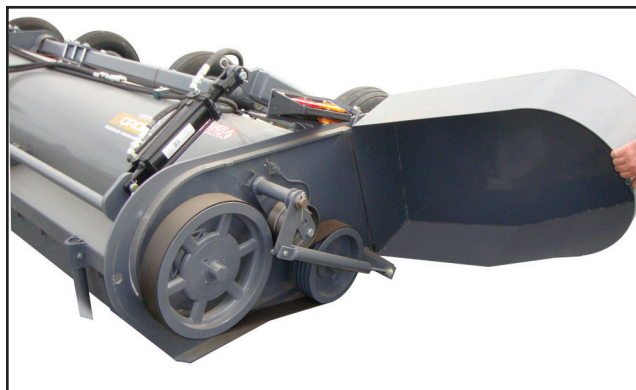
Loosen wheel strut clamping bolts (1) and adjust wheels to desired spacing.

**NOTE:** The center plate of shredder should ride in center between crop rows.

## Belt Shields



To open the belt shields, remove bolt (1) and washer securing the belt shield to the frame.



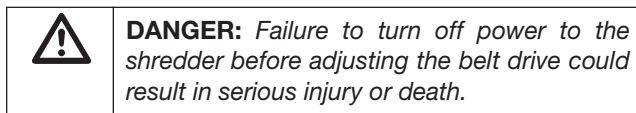
Swing belt shield open, pivoting on hinge pins. This will expose the belt drive components.

**NOTE:** To completely detach the belt shield from the shredder, remove the two hinge pins and lift off of the machine.

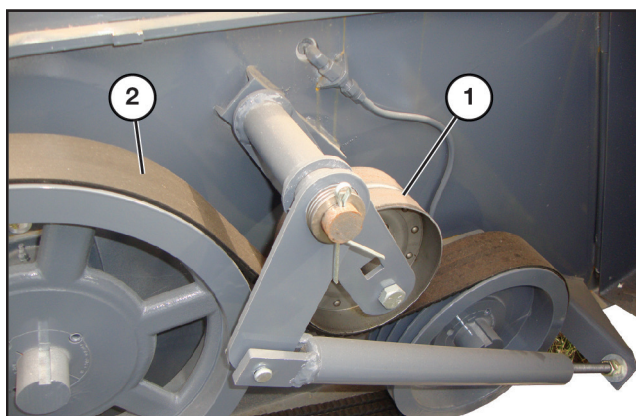
## Belt Adjustment

**NOTE:** Refer to “4-Band Drive” on page 39 or “6-Band Drive” on page 41 for parts breakdown and assembly of belt drive components.

Turn off all power to the shredder.



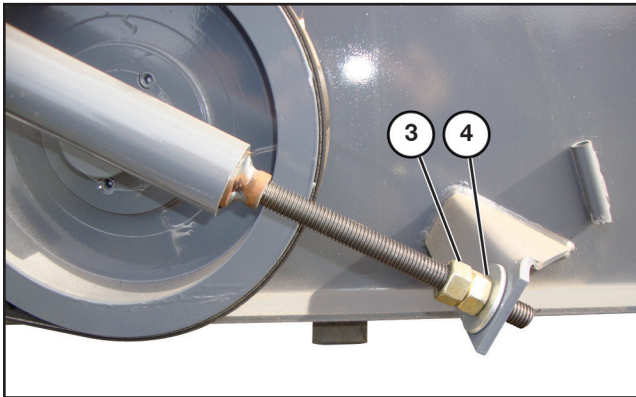
Open belt shield. See “Belt Shields” on page 30 for instructions on opening the belt shield.



Check belt idler (1) position to ensure it is centered on the belt (2).

*(Procedure continued on following page.)*

## Belt Adjustment (Cont'd)



Loosen the jam nut (3).

Turn the hex nut (4) next to the adjustment bracket clockwise until the washer on the spring base is recessed into the tightener tube. Tighten jam nut (3) to lock.

Rotate the pulleys manually in the direction of normal machine rotation to check alignment of idler on the belt. Adjust if necessary.

## Belt Replacement

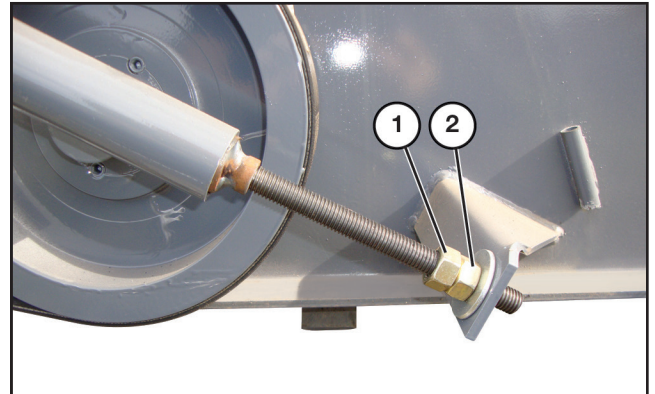
**NOTE:** Refer to “4-Band Drive” on page 39 or “6-Band Drive” on page 41 for parts breakdown and assembly of belt drive components.

Turn off all power to the shredder.

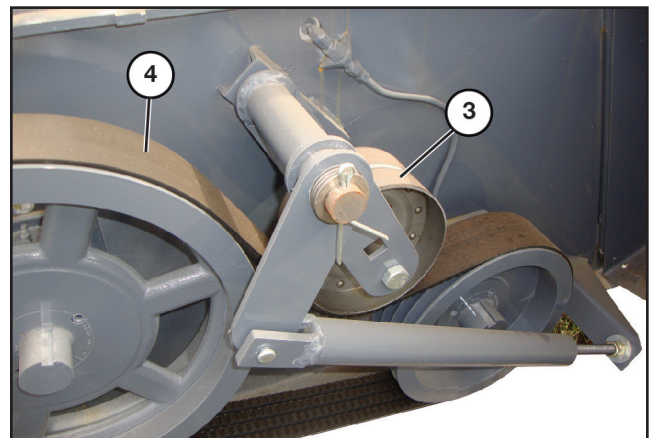


**DANGER:** Failure to turn off power to the shredder before replacing the belt could result in serious injury or death.

Open belt shield. See “Belt Shields” on page 30 for instructions on opening the belt shield.



Loosen jam nuts (1 & 2) on the belt tightener which will release the tension from the belt.



Rotate idler (3) up to clear belt, then remove the belt (4).

Replace with new belt.


Reinsert idler arm and pin. Tighten jam nuts.

# Maintenance

## Sheave Removal

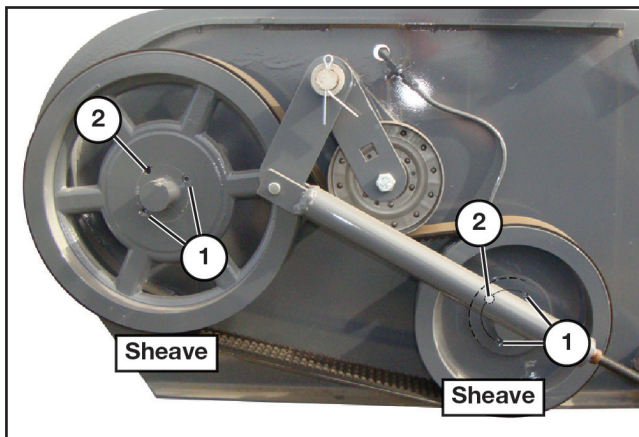
**NOTE:** Refer to “4-Band Drive” on page 39 or “6-Band Drive” on page 41 for parts breakdown and assembly of belt drive components.

Turn off all power to the shredder.

	<b>DANGER:</b> Failure to turn off power to the shredder before removing the pulleys could result in serious injury or death.
---	---

Open belt shield. See “Belt Shields” on page 30 for instructions on opening the belt shield.

Remove the idler arm and drive belt, following the instructions in “Belt Replacement” on page 31.





Remove the taper lock bushing set screws (1).

Insert set screw into threaded hole (2).

Tighten screw until bushing grip is released. If excessively tight, lightly hammer face of pulley using drift or sleeve.

**IMPORTANT:** Never hit sheave directly with hammer.

	<b>CAUTION:</b> Excessive or uneven pressure on set screws may damage the bushing, making removal difficult or possibly damaging the sheave.
---	--

	<b>CAUTION:</b> Excessive screw torque may cause damage to the bushing or sheave. Recommended torque is 430 in/lbs.
---	---

## Sheave Assembly

Clean shaft, bore of bushing, outside of bushing and hub bore of all oil, paint and dirt. File away any burrs

Insert bushing in hub. Match the hole pattern, not threaded holes (each complete hole will be threaded on one side only).

Apply a thread-locking compound to setscrews and thread into the two opposing holes.

Position assembly on shaft and alternately torque set screws to 35 ft. lbs.

To increase gripping force, hammer face of bushing using drift or sleeve.

**IMPORTANT:** Never hit bushing directly with hammer.

Re-torque screws after hammering.

Recheck screw torque after initial run-in, and periodically thereafter. If loose, hammer face of bushing and re-torque screws again and recheck screw torque.

Check alignment of the sheaves. Repeat sheave removal and assembly procedures if necessary.

Install belt. See “Belt Replacement” on page 31 for reference.



## Rotor Removal

This service section is written as if the shredder is upside down. If procedure is done with machine in operating position, movable jacks will be needed to support and move the rotors. The first rotor removed must be the last rotor installed. The center bearing with the bolts started through it must be on the last rotor removed (first rotor installed).

**NOTE:** Refer to “4-Band Drive” on page 38, “6-Band Drive” on page 40, “Rotor Bearings and Antiwrap - 12’, 13’, 15’, 18’, and 20’ Models” on page 56 and “Rotor with Bearings - 24’ Models” on page 58 for parts breakdown and assembly of rotor components.

Turn off all power to the shredder.



**DANGER:** Failure to turn off power to the shredder before removing the rotors could result in serious injury or death.

1. Apply an appropriate supporting mechanism to both rotors. (Chains and hoist)
2. Loosen the set screws on bearing lock collars.
3. Loosen and remove the outer bearing from the shaft of the first rotor to be removed.
4. Remove the four nuts from the bolts holding the two center bearings to the center plate. (The rotor on the side of the removed nuts is the first to be removed from the machine).
5. Slide the rotor outward away from center plate. (This step might require the removal of the stripper bolts located on the outside balancing ring. Make note of which hole the stripper bolts are removed from and replace in the same holes to ensure proper balance.
6. Slide the four inner bearing bolts outward until the center bearing on the first rotor is free. Be careful not to slide them too far out or the second rotor might fall free prematurely.
7. Remove rotor from the machine by lifting inner end of rotor first to clear center plate and then sliding outer shaft in through end plate.
8. To remove inner rotor bearing, loosen and remove flat head cap screw, star washer and retaining washer. Slide bearing off shaft. Remove collar.

Repeat steps 3 through 8 for the opposite rotor.

## Rotor Assembly

1. Slide bearing spacer on shorter shaft of the rotor. (Shaft with 1/2 in. [1.27 cm] tapped hole in center).
2. Install roll pin into end of shaft.
3. Insert the four bolts through the bearing housing and then slide it completely on the shaft.
4. Apply thread-locking compound to flat head screw. Slide through washers and install into threaded hole in shaft. Torque to 75 ft. lbs.


**NOTE:** To determine left and right rotor, install so that the bolt head on the knife U-clamp faces the front of the machine.

5. Insert four outer bearing bolts into end plate with the heads of the bolts inside the rotor cavity (nuts will be inside belt housing).
6. Install rotor by inserting the outer end (long shaft) into the bearing hole of the end plate.
7. Align the four bearing bolts with the center plate holes and insert the bolts so that they protrude about 1/4 in. (.635 cm) through opposite side of plate. To allow for easier future greasing, point the grease fitting toward the rear of the machine.
8. Repeat steps 1-5 (without the four bolts through the bearing) on the second rotor.
9. Align the holes in bearing and push center bolts completely through both bearings and center plate. Install new locking nuts but do not torque.
10. Install outer bearings onto shafts (grease fitting to point up when machine is in operating position) and tighten new lock nuts to 170 ft. lbs.
11. While supporting the rotor at the center plate, tighten the bearing bolts to 170 ft. lbs.
12. Apply a thread locking compound and tighten the set screws.
13. Replace stripper bolts directly across from each other to maintain proper rotor balance.

# Maintenance

## Knife Replacement

Turn off all power to the shredder.

	<b>DANGER:</b> Failure to turn off power to the shredder before replacing knives could result in serious injury or death.
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Before removing worn or damaged knives, document the order/orientation in which the knives and spacers are assembled. The new knives and spacers must be reinstalled in the same order.

Refer to “Rotors with Vegetable Knives” on page 55 for a detailed parts list of all knife components.

**IMPORTANT:** The rotors of the shredder are factory balanced and must remain in balance during the life of the machine. Should any knives on the machine need replacing, be sure to also replace the knives directly opposite to avoid vibration and maintain the rotor balance. If a knife is not available, take the opposite one off until two new knife sets can be replaced.

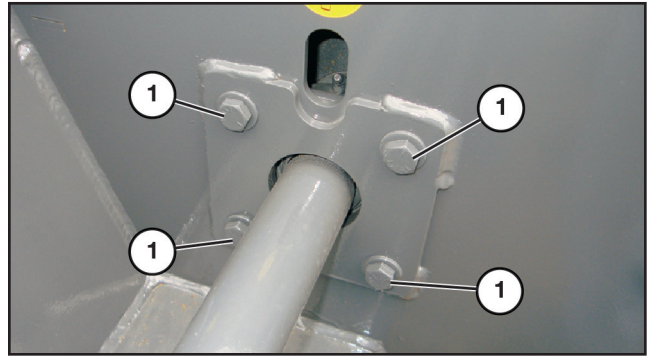
## Gearbox Repair

Repairs to the gearbox by the customer will be limited to the replacing of the cross or pinion shaft seals. See the parts breakdown for the gearbox on page 82. These seals can be removed and replaced by using a screwdriver or similar instrument without opening the gearbox.

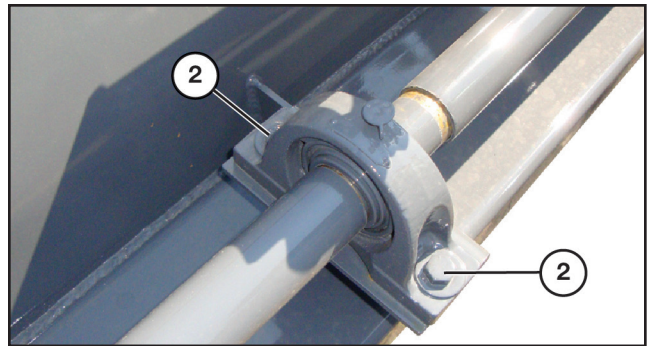
If the machine is still under warranty, do not attempt to repair the gearbox as unauthorized repairs will void the warranty. All warranty repairs should be done through your Authorized Loftness Dealer. Contact your dealer or the Loftness factory for specific details concerning the gearbox warranty.

## Gearbox Removal

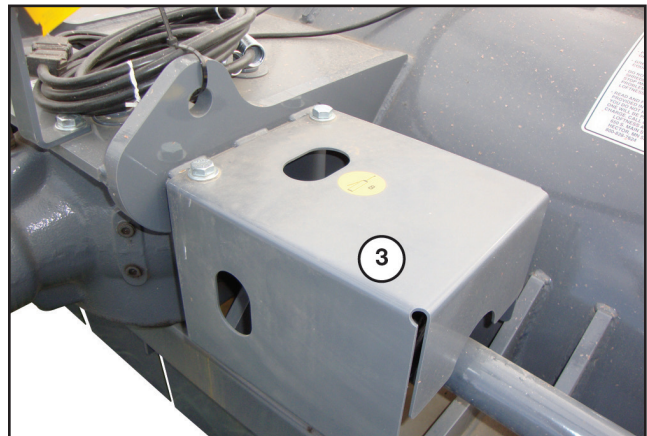
Remove the drive belt. Follow instructions in “Belt Replacement” on page 31 up until the point where the drive belt is removed.



Remove the bolts (1) with washers securing the line-shaft bearing located behind the large pulley.



Remove the bolts (2) securing the pillow block bearing supporting the line-shaft.



Remove drive line shield (3).

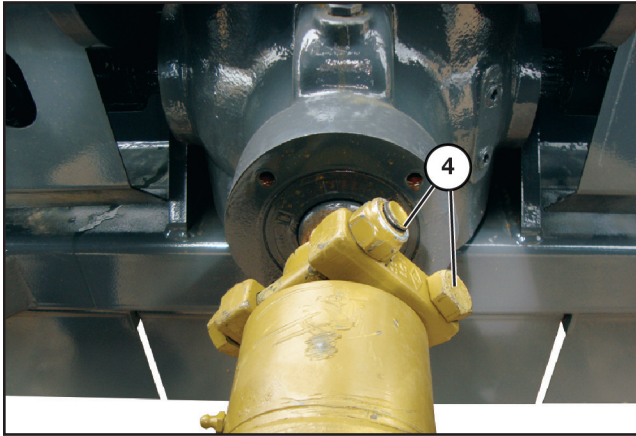
*(Procedure continued on following page.)*

## Gearbox Removal (Cont'd)

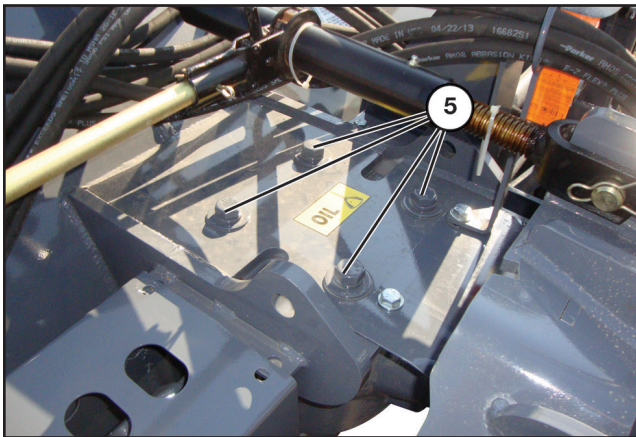
Loosen and remove the clamp bolts securing the U-joint to the gearbox shaft.

Slide the line-shaft outward until the U-joint is free of the shaft.

Repeat steps to remove opposite side line-shaft.



Remove PTO shaft by loosening and removing the clamp bolts (4). Then slide it off the shaft.



Remove the four bolts (5) with lock washers and washers securing the gearbox to the frame.

## Storage

### End of the Season

- Clean entire shredder thoroughly.
- Paint all parts that are worn.
- Lubricate all parts of the machine. Refer to “Lubrication” on page 26 for all lubrication points.
- Block up the frame of the shredder. DO NOT deflate the tires.
- Store shredder in a dry area.
- Review your operator's manual.

### Beginning of the Season

- Review your operator's manual.
- Check air pressure in the tires.
- Drain and refill gearbox to proper level. Gearbox should be filled to the lower plug.
- Lubricate all parts of the machine. Refer to “Lubrication” on page 26 for all lubrication points.
- Tighten all loose bolts, nuts and set screws.
- Check and replace all worn knives.
- Should any knives need replacing, remember to replace the worn knives and those directly across from the those being replaced to avoid rotor imbalance and subsequent vibration.

# Maintenance

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## Troubleshooting

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

PROBLEM	POSSIBLE CAUSE	SOLUTION
Excessive Vibration	Broken or missing knives.	Replace broken/missing knives plus the worn knives on the opposite side of the rotor to maintain a balanced rotor.
	Mud and/or debris wrapped around the drum or knives.	Clean & remove all debris/mud.
	Bearing malfunction.	Check rotor & drive-line bearings, replace faulty bearings.
	Rotor damage.	Inspect rotor for physical damage. If damaged, remove and return to factory for proper repair.
Rotor Does Not Turn	Knife has become wedged.	Dislodge wedged knife between the end plate and the balancing ring.
	Gearbox malfunction.	Disconnect PTO and manually rotate the gearbox, if unable to rotate, remove gearbox and contact dealer for servicing.

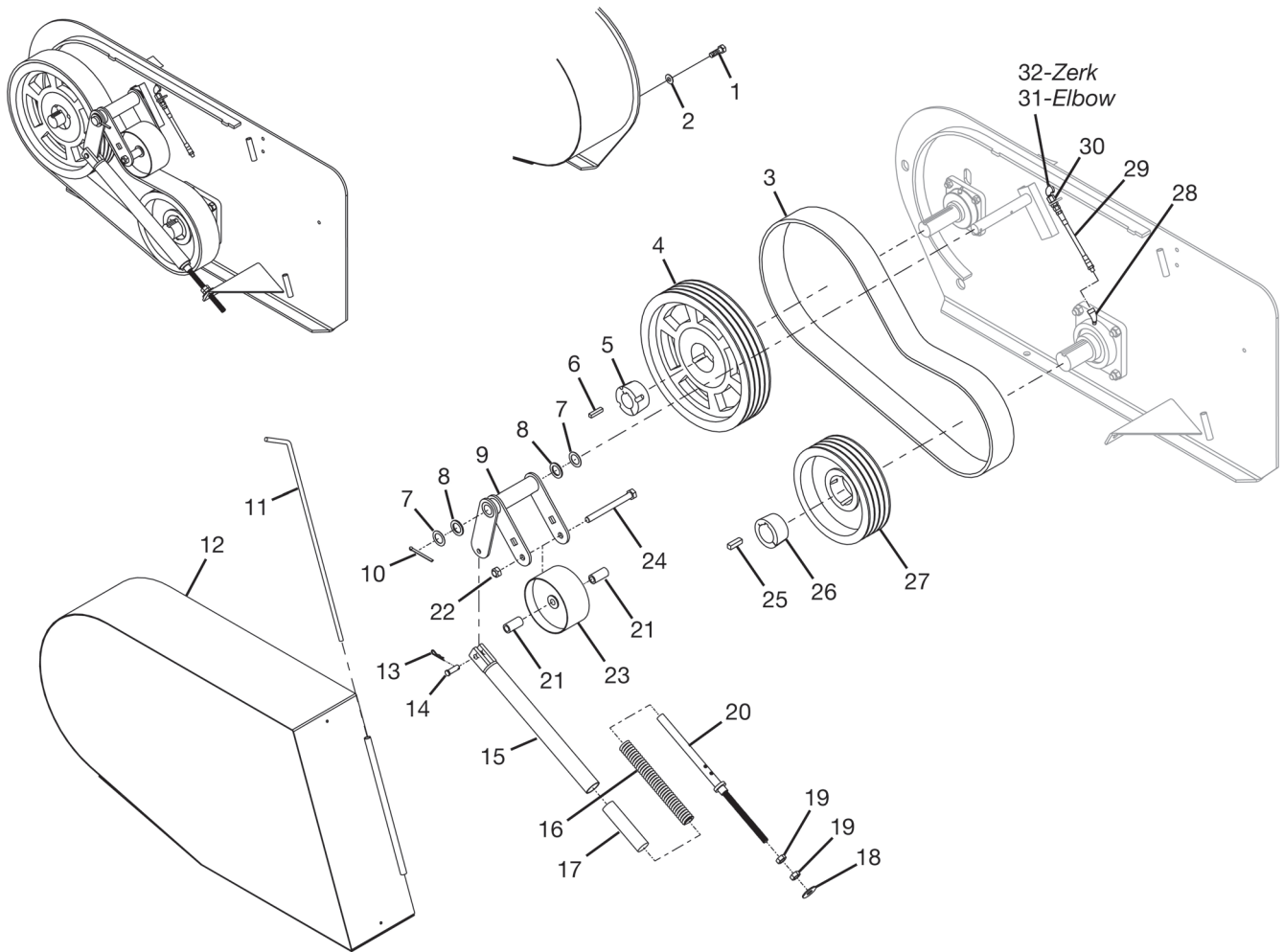
**Parts Identification**



*20' Vegetable Shredder with Universal Bed Roller option shown.*

# Parts Identification

## 4-Band Drive



To order a complete LEFT side belt tightener assembly (Items 9, 21, 22, 23, 24), use part number N13387.

To order a complete RIGHT side belt tightener assembly (Items 9, 21, 22, 23, 24), use part number N13386.

**NOTE:** Quantities shown are for both the right and left sides of the shredder.

Left side shown.

## Parts Identification

### 4-Band Drive

#	QTY.	PART #	DESCRIPTION
1	2	4012	BOLT, 1/2" X 1-1/4" GRADE 5
2	2	4074	WASHER, 2" OD X 1/2" ID X 1/4T
3	2	N13406	BELT, 4B X 93"
4	2	8140	SHEAVE, 4B X 16" TAPERLOCK
5	2	8127	BUSHING, 1-3/4 TAPERLOCK
6	2	7121-02	KEY, 3/8" X 1-3/4'
7	Varies	4491	WASHER, 1-1/8" ID X 1-3/4" OD X 18 GA
8	Varies	4470	WASHER, 1-1/8" ID X 1-3/4" OD X 10 GA
9	1	N13457	BRACKET, UNV SHRD BELT TIGHTENER LEFT (Shown)
	1	N13456	BRACKET, UNV SHRD BELT TIGHTENER RIGHT
10	2	4322	PIN, COTTER 1/4" X 3"
11	2	N12018	PIN, UNV SHRD BELT SHIELD BACK
12	1	203272	SHIELD, SHREDDER UNV BELT 2-DRM W/DECALS LEFT (Shown)
	1	203273	SHIELD, SHREDDER UNV BELT 2-DRM W/DECALS RIGHT
13	2	4089	CLIP, HAIRPIN .093 X 1-5/8'
14	2	4392	PIN, 1/2" X 1-1/4"
15	2	N12003	TUBE, UNV SHRD BELT TIGHTENER
16	2	8067	SPRING, BELT TIGHTENER
17	2	N12006	SPACER, UNV SHRD BELT TIGHTENER TUBE (INCLUDED W/N12003)
18	2	4069	WASHER, FLAT 5/8"
19	4	4438	NUT, 5/8" STANDARD GRADE 8
20	2	N12000	SHAFT, UNV SHRD BELT TIGHTENER
21	4	N11995	PIPE, UNV SHRD BELT TIGHTENER SPACER
22	2	4055	NUT, LOCK 5/8" TOPLOCK
23	2	N10508	PULLEY, IDLER BELT 6-1/2" OD X 5/8" BORE
24	2	4457	BOLT, 5/8" X 6-1/2" GR 5
25	2	N27290	KEY, 1/2" X 1-3/4"
26	2	8165	BUSHING, 2-3/16" TAPERLOCK
27	2	8139	SHEAVE, 4B X 11" TAPERLOCK
28	2	4471	ELBOW, 45 1/8 STREET
29	2	4304	HOSE, GREASE 1/8 X 15
30	2	4304-10	BULKHEAD, FITTING-GREASE HOSE
31	2	4472	ELBOW, 90 STREET 1/8
32	2	N17007	GREASE ZERK, 1/8 NPT





## Parts Identification

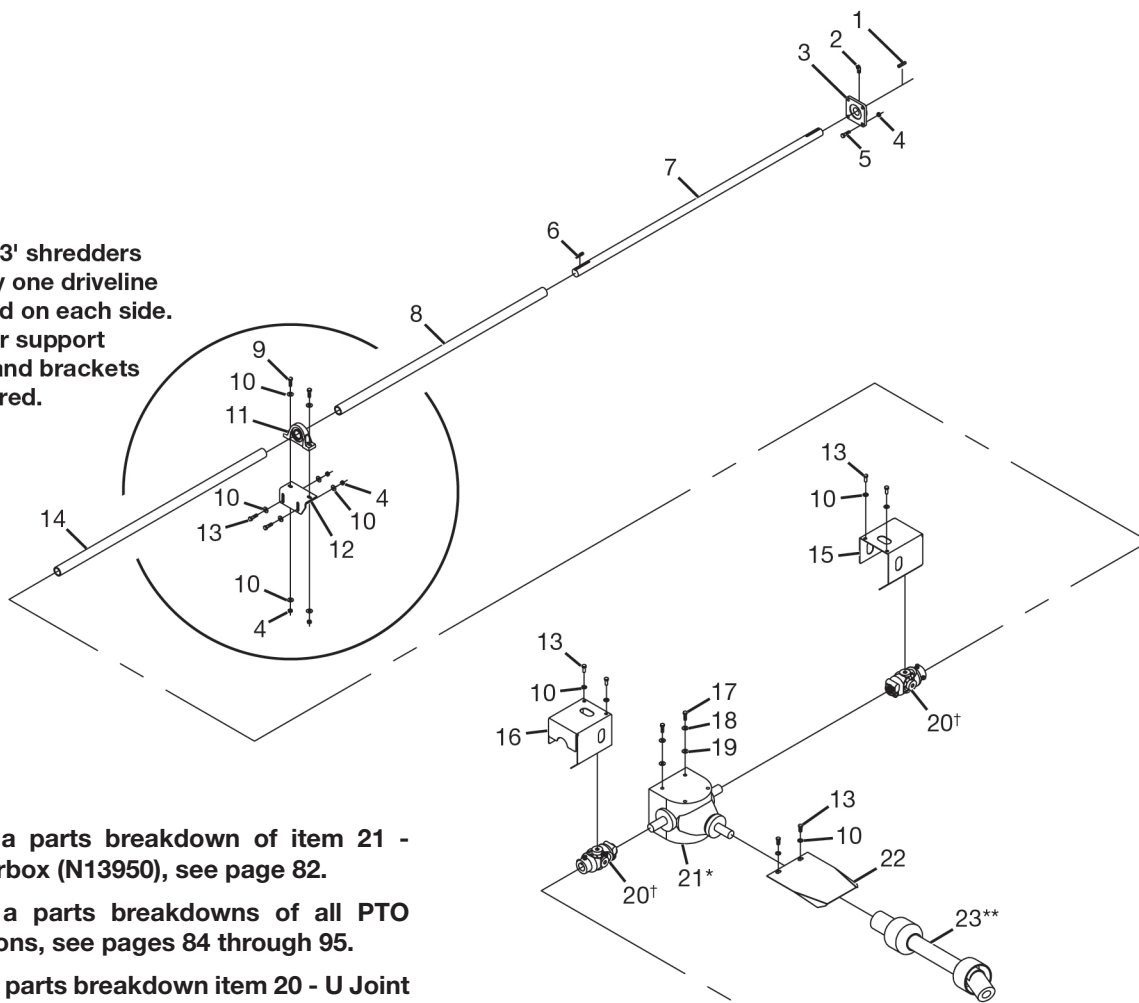
### 6-Band Drive

#	QTY.	PART #	DESCRIPTION
1	2	4012	BOLT, 1/2" X 1-1/4" GRADE 5
2	2	4074	WASHER, 2" OD X 1/2" ID X 1/4T
3	4	N13390	BELT, 3B X 93 "
4	2	8119	SHEAVE, LARGE 6B X 16" TAPERLOCK
5	2	8127	BUSHING, 1-3/4 TAPERLOCK
6	2	7121-02	KEY, 3/8" X 1-3/4'
7	Varies	4491	WASHER, 1-1/8" ID X 1-3/4" OD X 18 GA
8	Varies	4470	WASHER, 1-1/8" ID X 1-3/4" OD X 10 GA
9	1	N13457	BRACKET, UNV SHRD BELT TIGHTENER LEFT (Shown)
	1	N13456	BRACKET, UNV SHRD BELT TIGHTENER RIGHT
10	2	4322	PIN, COTTER 1/4" X 3"
11	2	N12018	PIN, UNV SHRD BELT SHIELD BACK
12	1	203272	SHIELD, SHREDDER UNV BELT 2-DRM W/DECALS LEFT (Shown)
	1	203273	SHIELD, SHREDDER UNV BELT 2-DRM W/DECALS RIGHT
	1	203274	SHIELD, UNV SHREDDER W/DECALS LEFT (24' Models)
	1	203275	SHIELD, UNV SHREDDER W/DECALS RIGHT (24' Models)
13	2	4089	CLIP, HAIRPIN .093 X 1-5/8'
14	2	4392	PIN, 1/2" X 1-1/4"
15	2	N12003	TUBE, UNV SHRD BELT TIGHTENER
16	2	8067	SPRING, BELT TIGHTENER
17	2	N12006	SPACER, UNV SHRD BELT TIGHTENER TUBE (INCLUDED W/N12003)
18	2	4069	WASHER, FLAT 5/8"
19	4	4438	NUT, 5/8" STANDARD GRADE 8
20	2	N12000	SHAFT, UNV SHRD BELT TIGHTENER
21	4	N11995	PIPE, UNV SHRD BELT TIGHTENER SPACER
22	2	4055	NUT, LOCK 5/8" TOPLOCK
23	2	N11999	PULLEY, SHREDDER IDLER BELT 6B X 5/8" BORE
24	2	4457	BOLT, 5/8" X 6-1/2" GR 5
25	2	N27290	KEY, 1/2" X 1-3/4"
26	2	8165	BUSHING, 2-3/16" TAPERLOCK
27	2	8107	SHEAVE, SMALL 6B X 11" TAPERLOCK
28	2	4471	ELBOW, 45 1/8 STREET
29	2	4304	HOSE, GREASE 1/8 X 15
30	2	4304-10	BULKHEAD, FITTING-GREASE HOSE
31	2	4472	ELBOW, 90 STREET 1/8
32	2	N17007	GREASE ZERK, 1/8 NPT

# Parts Identification

## Drive Line - 12', 13', 15', 18', and 20' Models

12' and 13' shredders have only one driveline and shield on each side. No center support bearing and brackets are required.

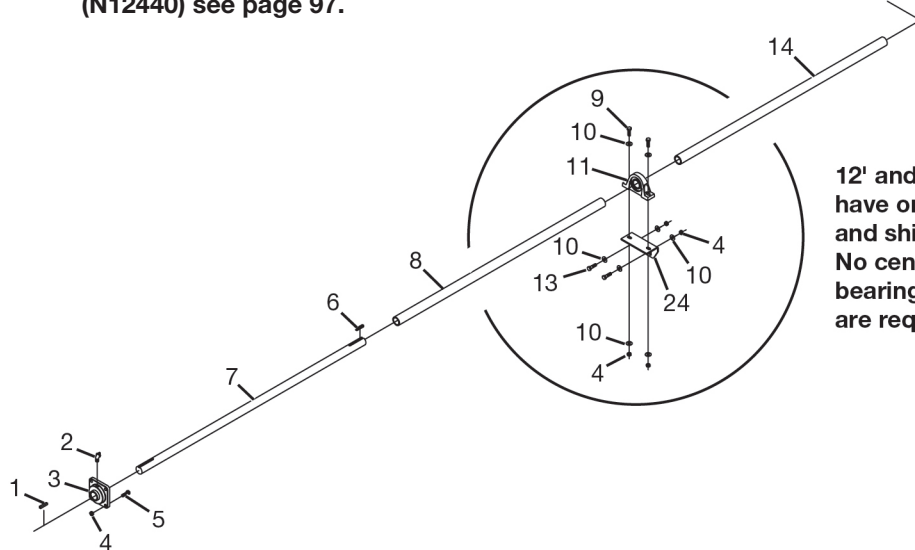


\* For a parts breakdown of item 21 - Gearbox (N13950), see page 82.

\*\*For a parts breakdowns of all PTO options, see pages 84 through 95.

† For a parts breakdown item 20 - U Joint (N12440) see page 97.

12' and 13' shredders have only one driveline and shield on each side. No center support bearing and brackets are required.



## Parts Identification

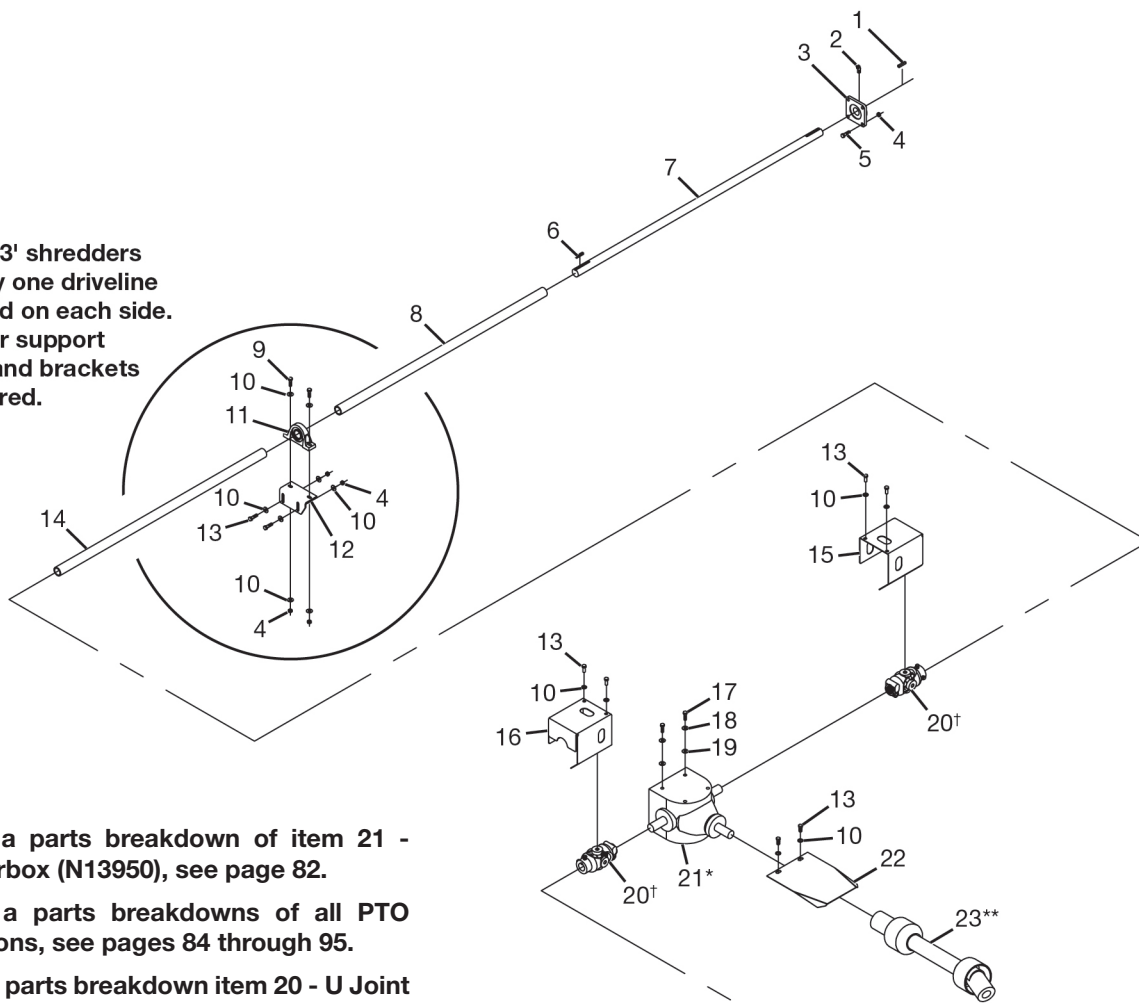
### Drive Line - 12', 13', 15, 18', and 20' Models

#	QTY.	PART #	DESCRIPTION
1	2	7121-02	KEY, 3/8" X 1-3/4'
2	2	N154810	GREASE ZERK, 45° SCREW-IN 1/8" NPT
3	2	8087	BEARING, 1-3/4" 4-BOLT FLANGE
4	16	4054	NUT, LOCK 1/2" TOP
5	8	4013	BOLT, 1/2" X 1-1/2" GRADE 5
6	2	7121-03	KEY, 3/8" X 2"
7	2	9091	SHAFT, DRIVELINE 1-3/4" X 64-1/2" LG. (12' SHREDDER)
	2	9133	SHAFT, DRIVELINE 1-3/4" X 70-1/2" LG. (13' SHREDDER)
	2	9092	SHAFT, DRIVELINE 1-3/4" X 82-1/2" LG. (15' SHREDDER)
	2	9093	SHAFT, DRIVELINE 1-3/4" X 100-1/2" LG. (18' SHREDDER)
	2	9094	SHAFT, DRIVELINE 1-3/4" X 112-1/2" LG. (20' SHREDDER)
8		N/A	SHIELD, OUTER DRIVELINE (12' and 13' SHREDDER)
	2	N13132	SHIELD, OUTER DRIVELINE (15' SHREDDER)
	2	N13119	SHIELD, OUTER DRIVELINE (18' SHREDDER)
	2	N13023	SHIELD, OUTER DRIVELINE (20' SHREDDER)
9	4	4014	BOLT, 1/2" X 1-3/4" GRADE 5
10	22	4068	WASHER, FLAT 1/2" SAE
11	2	8089	BEARING, 1-3/4" PILLOW BLOCK
12	1	9098	MOUNT, LEFT DRIVELINE BEARING
13	10	4012	BOLT, 1/2 X 1-1/4" GRADE 5
14	2	N13157	SHIELD, INNER DRIVELINE (12' SHREDDER)
	2	N13145	SHIELD, INNER DRIVELINE (13' SHREDDER)
	2	N13022	SHIELD, INNER DRIVELINE (15 SHREDDER)
	2	N13022	SHIELD, INNER DRIVELINE (18' SHREDDER)
	2	N13022	SHIELD, INNER DRIVELINE (20' SHREDDER)
15	1	N11988	SHIELD, LEFT DRIVELINE
16	1	N11987	SHIELD, RIGHT DRIVELINE

# Parts Identification

## Drive Line - 12', 13', 15', 18', and 20' Models (Cont'd)

12' and 13' shredders have only one driveline and shield on each side. No center support bearing and brackets are required.

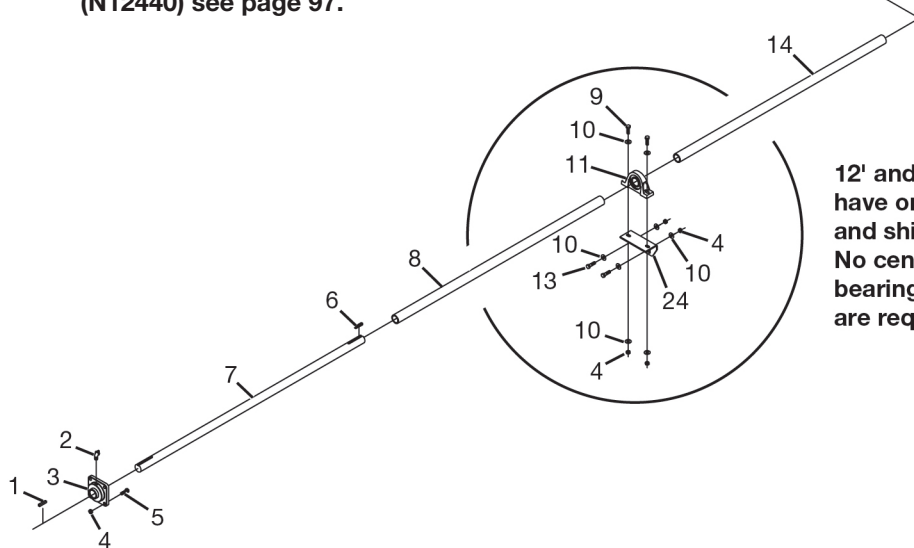


\* For a parts breakdown of item 21 - Gearbox (N13950), see page 82.

\*\*For a parts breakdowns of all PTO options, see pages 84 through 95.

† For a parts breakdown item 20 - U Joint (N12440) see page 97.

12' and 13' shredders have only one driveline and shield on each side. No center support bearing and brackets are required.



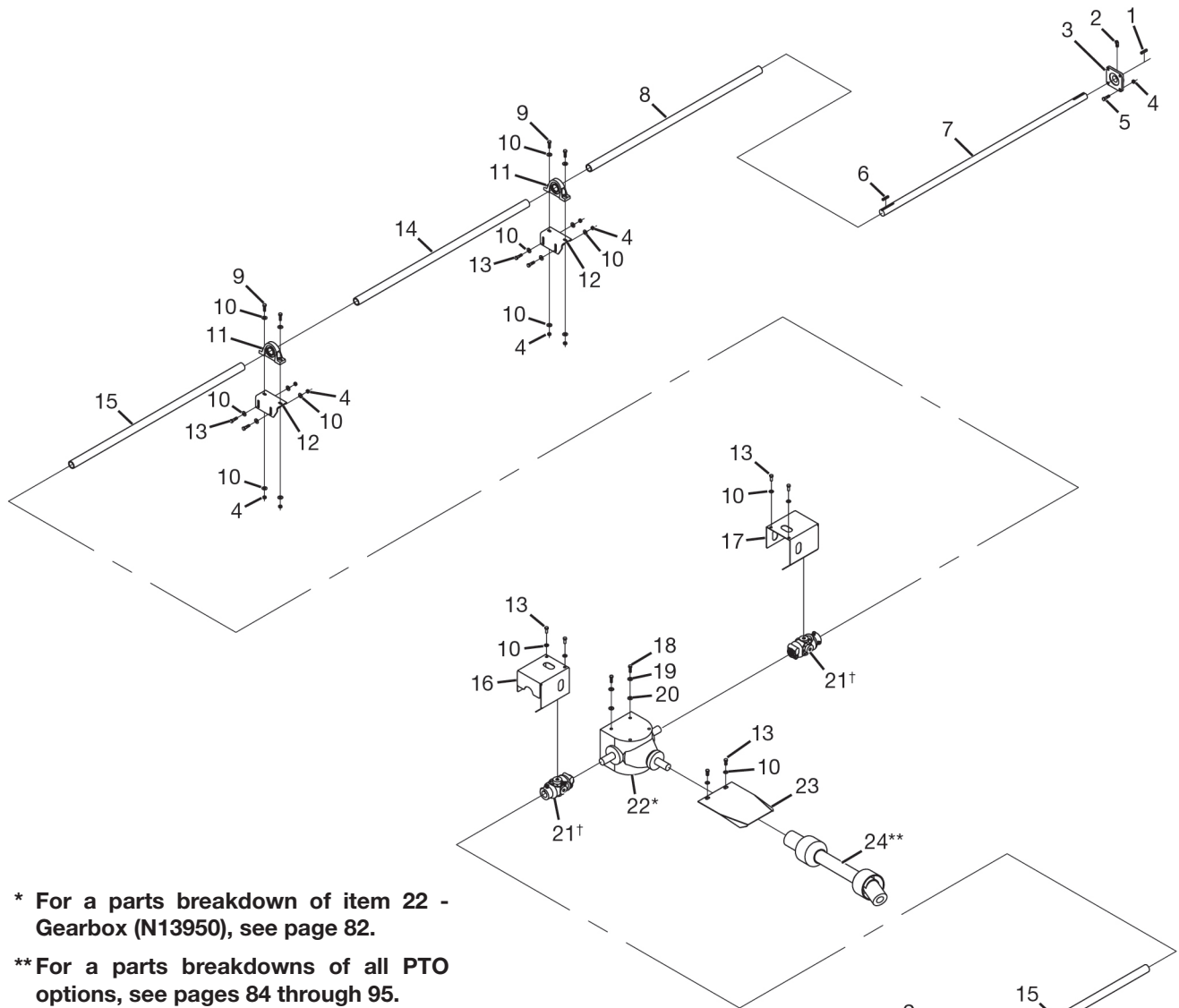
## Parts Identification

### Drive Line - 12', 13', 15, 18', and 20' Models (Cont'd)

#	QTY.	PART #	DESCRIPTION
17	4	N13997	BOLT, 3/4" X 1-3/4" GR5
18	4	4287	WASHER, LOCK 3/4"
19	4	4071	WASHER, FLAT 3/4"
20	2	N12440	U-JOINT, 1-3/4" RB X 1-3/4"-20 SPLINE
21	1	N13950	GEARBOX, BONDIOLI 1:1 RATIO 1450 RPM (3/4" BOLTS)
22	1	203276	SHIELD, SHRD PTO 12"X16" W/DECAL
23	1	8173	PTO, MTD (1-3/8"-21 SPLINED W/OVERRUNNING CLUTCH)
	1	8174	PTO, MTD (1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)
	1	8175	PTO, PT (1-3/8"-21 SPLINED W/OVERRUNNING CLUTCH)
	1	8176	PTO, PT (1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)
	1	N10512	PTO, PT (1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)
24	1	9127	MOUNT, RIGHT DRIVELINE BEARING

# Parts Identification

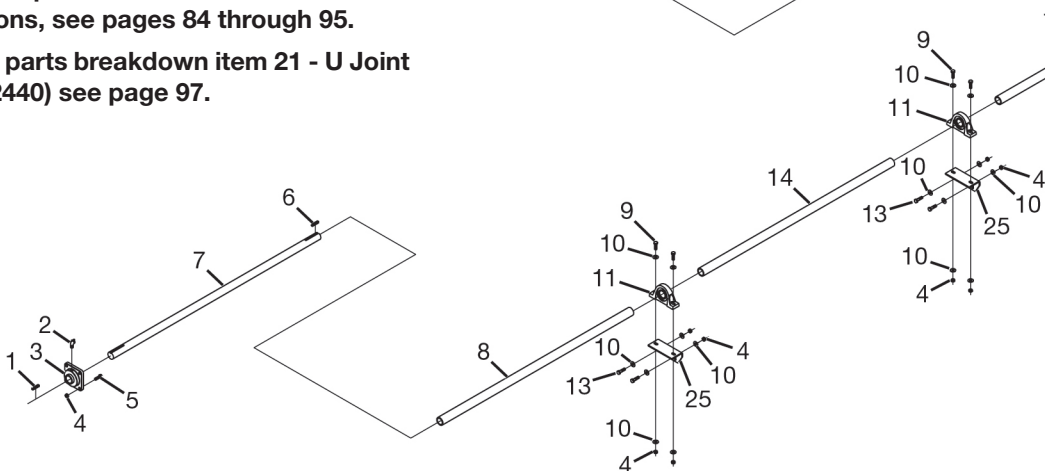
## Drive Line - 24' Model



\* For a parts breakdown of item 22 - Gearbox (N13950), see page 82.

\*\*For a parts breakdowns of all PTO options, see pages 84 through 95.

† For a parts breakdown item 21 - U Joint (N12440) see page 97.



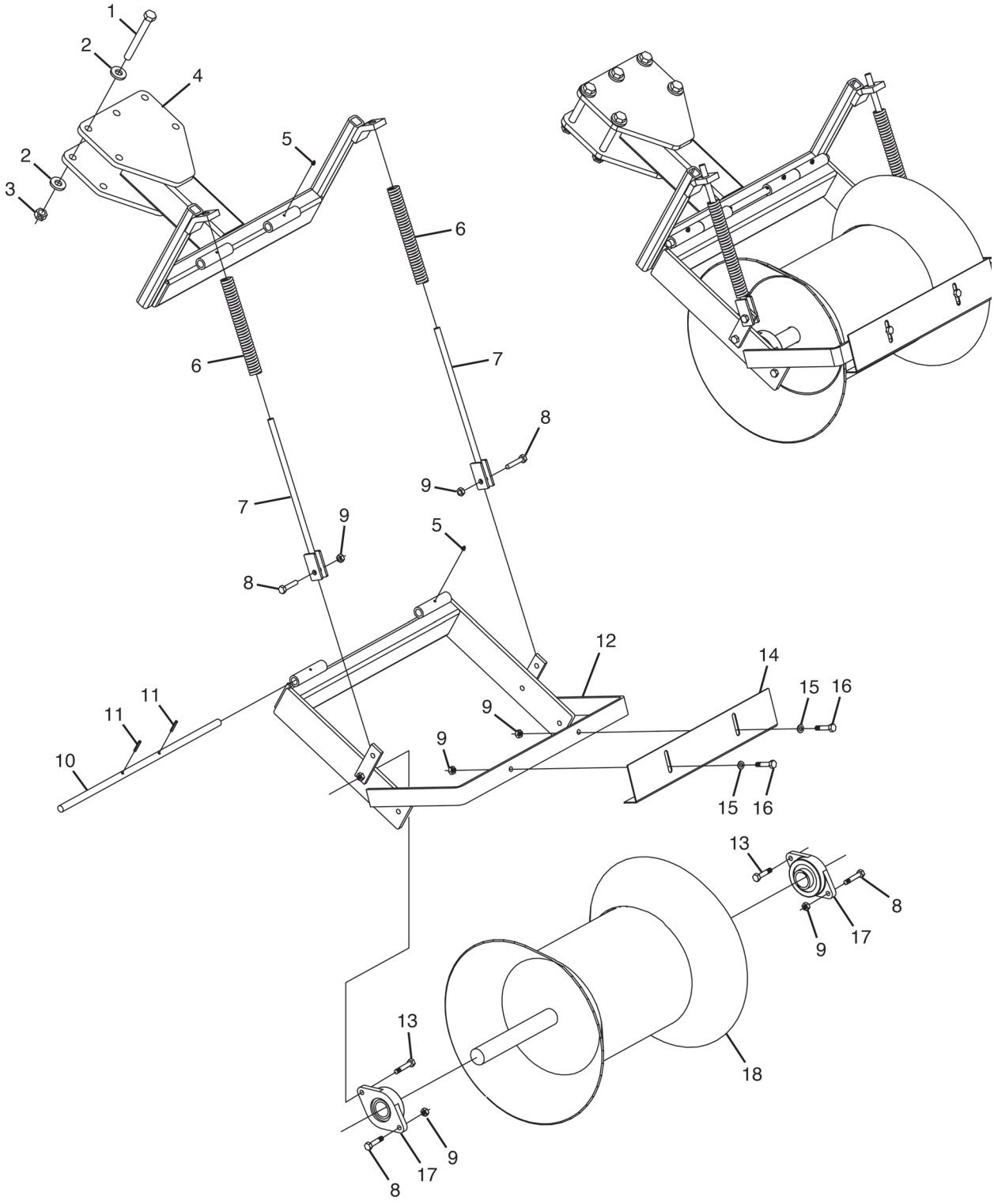
## Parts Identification

### Drive Line - 24' Model

#	QTY.	PART #	DESCRIPTION
1	2	7121-02	KEY, 3/8" X 1-3/4'
2	2	N154810	GREASE ZERK, 45° SCREW-IN 1/8" NPT
3	2	8087	BEARING, 1-3/4" 4-BOLT FLANGE
4	24	4054	NUT, LOCK 1/2" TOP
5	8	4013	BOLT, 1/2" X 1-1/2" GRADE 5
6	2	7121-03	KEY, 3/8" X 2"
7	2	9349	SHAFT, DRIVELINE 1-3/4" X 136-1/2" LG. (24' SHREDDER)
8	2	N13195	SHIELD, OUTER DRIVELINE (24' SHREDDER)
9	8	4014	BOLT, 1/2" X 1-3/4" GRADE 5
10	38	4068	WASHER, FLAT 1/2" SAE
11	4	8089	BEARING, 1-3/4" PILLOW BLOCK
12	2	9098	MOUNT, LEFT DRIVELINE BEARING
13	14	4012	BOLT, 1/2 X 1-1/4" GRADE 5
14	2	N13194	SHIELD, MIDDLE DRIVELINE (24' SHREDDER)
15	2	N13022	SHIELD, INNER DRIVE LINE (24' SHREDDER)
16	1	N11987	SHIELD, RIGHT DRIVELINE
17	1	N11988	SHIELD, LEFT DRIVELINE
18	4	N13997	BOLT, 3/4" X 1-3/4" GR5
19	4	4287	WASHER, LOCK 3/4"
20	4	4071	WASHER, FLAT 3/4"
21	2	N12440	U-JOINT, 1-3/4" RB X 1-3/4"-20 SPLINE
22	1	N13950	GEARBOX, BONDIOLI 1:1 RATIO 1450 RPM (3/4" BOLTS)
23	1	203276	SHIELD, PTO 12" X 16" W/DECALS
24	1	8173	PTO, MTD (1-3/8"-21 SPLINED W/OVERRUNNING CLUTCH)
	1	8174	PTO, MTD (1-3/4"-20 SPLINED W/OVER RUNNING CLUTCH)
	1	8175	PTO, PT (1-3/8"-21 SPLINED W/OVER RUNNING CLUTCH)
	1	8176	PTO, PT (1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)
	1	N10512	PTO, PT (1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)
	1	N10515	PTO, PT (1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)
25	2	9127	MOUNT, RIGHT DRIVE LINE BEARING

# Parts Identification

## Roller, Universal Bed (212301)





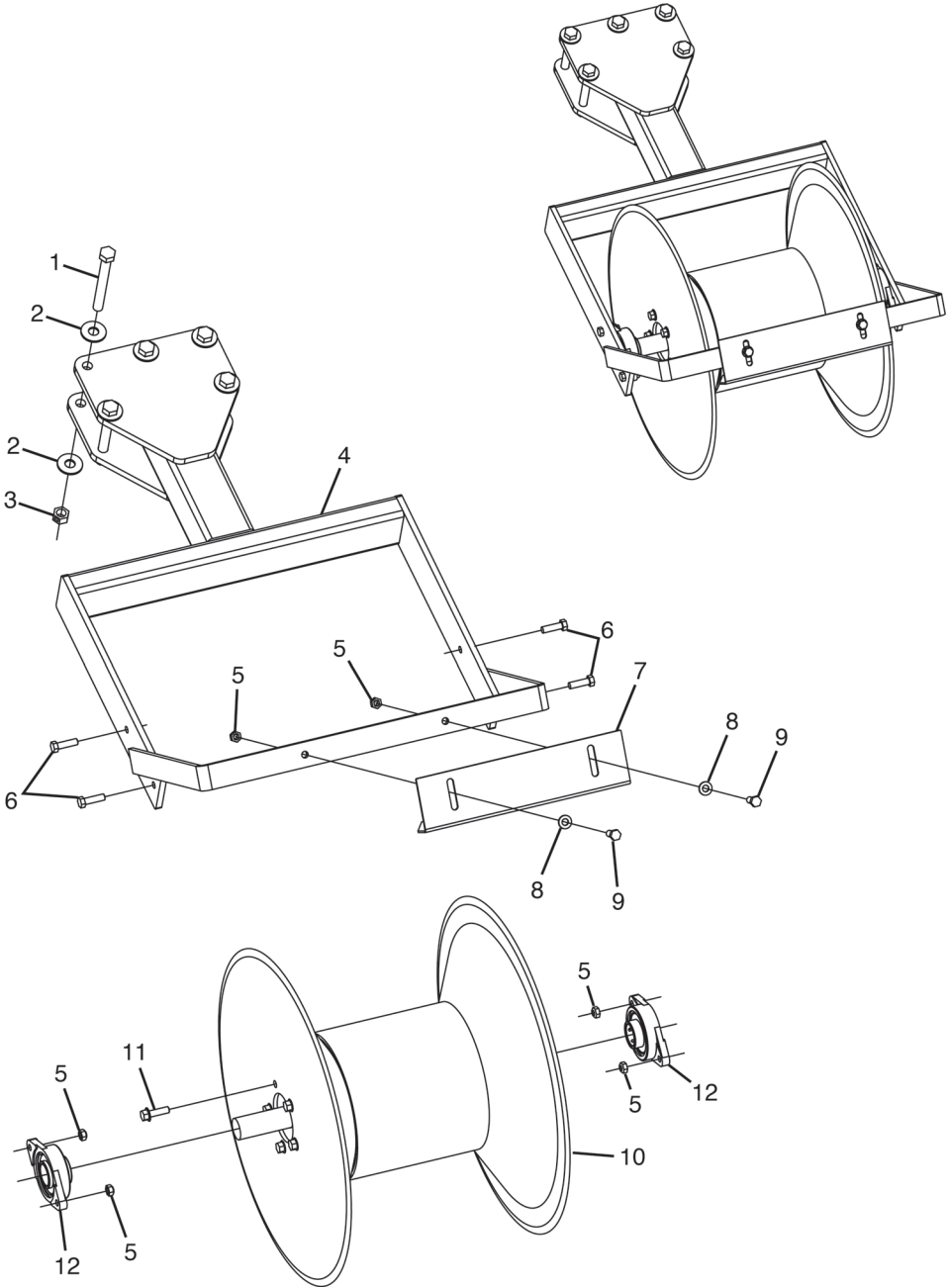
## Parts Identification

### Roller, Universal Bed (212301)

#	QTY.	PART #	DESCRIPTION
1	5	4458	BOLT, 3/4" X 6-1/2" GR. 5
2	10	4071	WASHER, 3/4" FLAT
3	5	4056	NUT, LOCK 3/4"
4	1	N13486	MOUNT, HINGED BED ROLLER UNV
5	4	4105	GREASE-ZERK, 1/4" SCREW-IN
6	2	8067	SPRING, BELT TIGHTENER
7	2	N13481	GUIDE, SPRING BED ROLLER
8	4	4014	BOLT, 1/2" X 1-3/4" GRADE 5
9	6	4054	NUT, LOCK 1/2" TOP
10	1	N13467	ROD, HINGE BED ROLLER
11	2	4498	PIN, ROLL 1/4" X 1"
12	1	212302	MOUNT, BED ROLLER NG
13	2	4015	BOLT, 1/2" X 2" GRADE 5
14	1	212305	SCRAPER, WHEEL BED ROLLER NG
15	2	4068	WASHER, 1/2" SAE FLAT
16	2	4012	BOLT, 1/2" X 1-1/4" GRADE 5
17	2	N30232	BEARING, 1-3/4" DODGE 2-BLT FL
18	1	212303	DRUM, BED ROLLER NG

# Parts Identification

## Roller, Bed Vine Cutting (N36471)



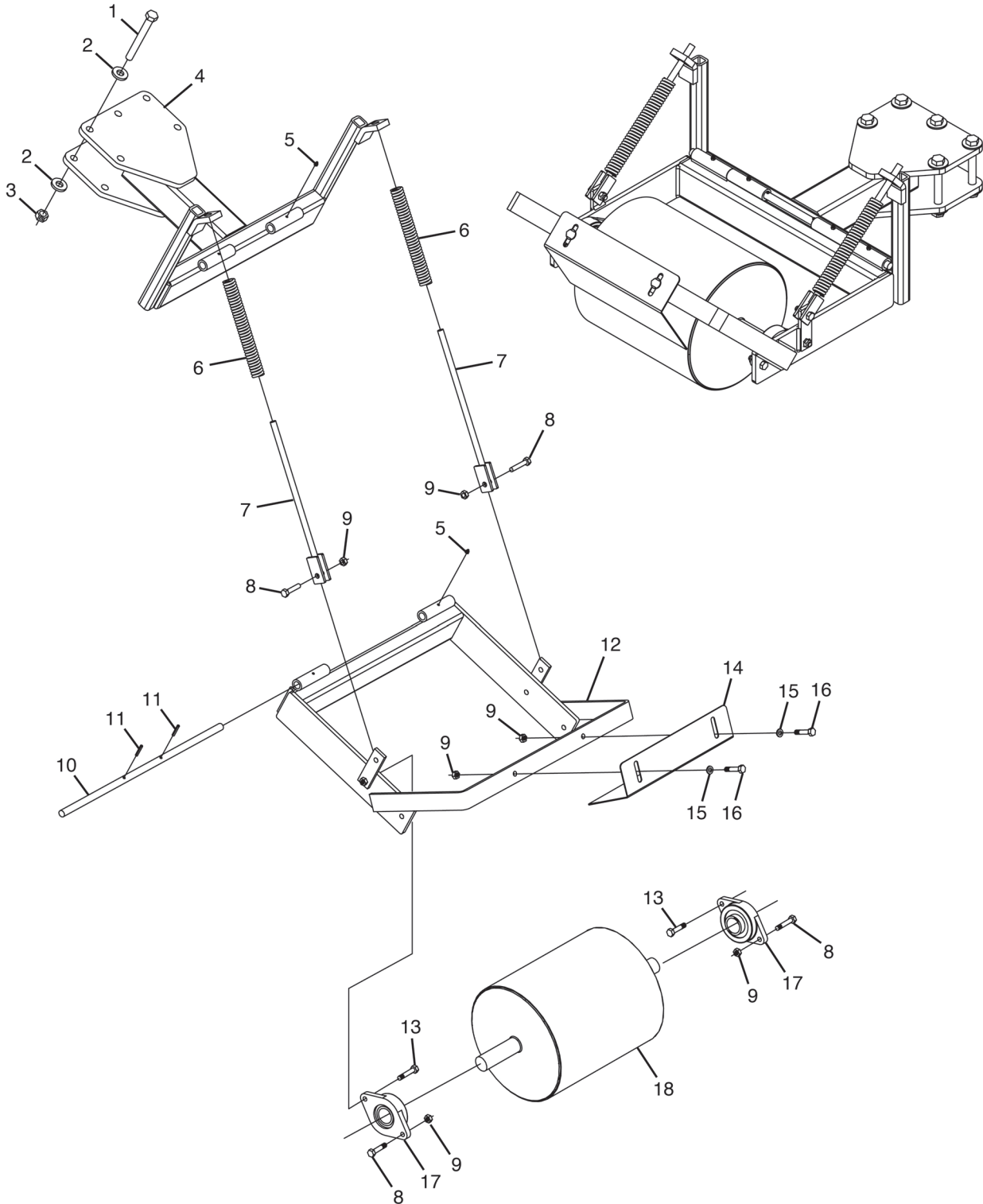
## Parts Identification

### Roller, Bed Vine Cutting (N36471)

#	QTY.	PART #	DESCRIPTION
1	5	4458	BOLT, 3/4" X 6-1/2" GR. 5
2	10	4071	WASHER, 3/4" FLAT
3	5	4056	NUT, LOCK 3/4"
4	1	N36469	MOUNT, BED ROLLER VC
5	6	4054	NUT, LOCK 1/2" TOP
6	4	4014	BOLT, 1/2" X 1-3/4" GRADE 5
7	1	N36470	SCRAPER, WHEEL BED ROLLER VC
8	2	4068	WASHER, 1/2" SAE FLAT
9	2	4012	BOLT, 1/2" X 1-1/4" GRADE 5
10	1	N36466	DRUM, BED ROLLER VC 12"
11	10	N18159	BOLT, 1/2" X 1-3/4" SER FLG
12	2	N30232	BEARING, 1-3/4" DODGE 2-BLT FL

# Parts Identification

## Roller, Bed Top (212725)



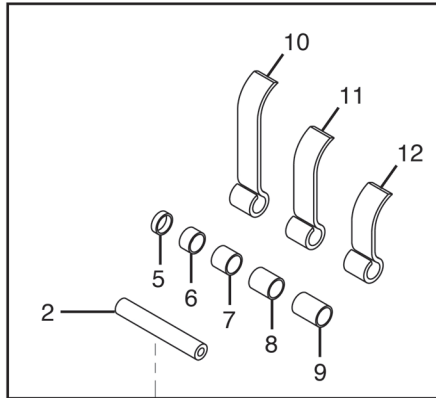
## Parts Identification

### Roller, Bed Top (212725)

#	QTY.	PART #	DESCRIPTION
1	5	4458	BOLT, 3/4" X 6-1/2" GR. 5
2	10	4071	WASHER, 3/4" FLAT
3	5	4056	NUT, LOCK 3/4"
4	1	N13486	MOUNT, HINGED BED ROLLER UNV
5	4	4105	GREASE-ZERK, 1/4" SCREW-IN
6	2	8067	SPRING, BELT TIGHTENER
7	2	N13481	GUIDE, SPRING BED ROLLER
8	4	4014	BOLT, 1/2" X 1-3/4" GRADE 5
9	6	4054	NUT, LOCK 1/2" TOP
10	1	N13467	ROD, HINGE BED ROLLER
11	2	4498	PIN, ROLL 1/4" X 1"
12	1	212302	MOUNT, BED ROLLER NG
13	2	4015	BOLT, 1/2" X 2" GRADE 5
14	1	212729	SCRAPER, WHEEL BED TOP ROLLER
15	2	4068	WASHER, 1/2" SAE FLAT
16	2	4012	BOLT, 1/2" X 1-1/4" GRADE 5
17	2	N30232	BEARING, 1-3/4" DODGE 2-BLT FL
18	1	212727	DRUM, BED TOP ROLLER

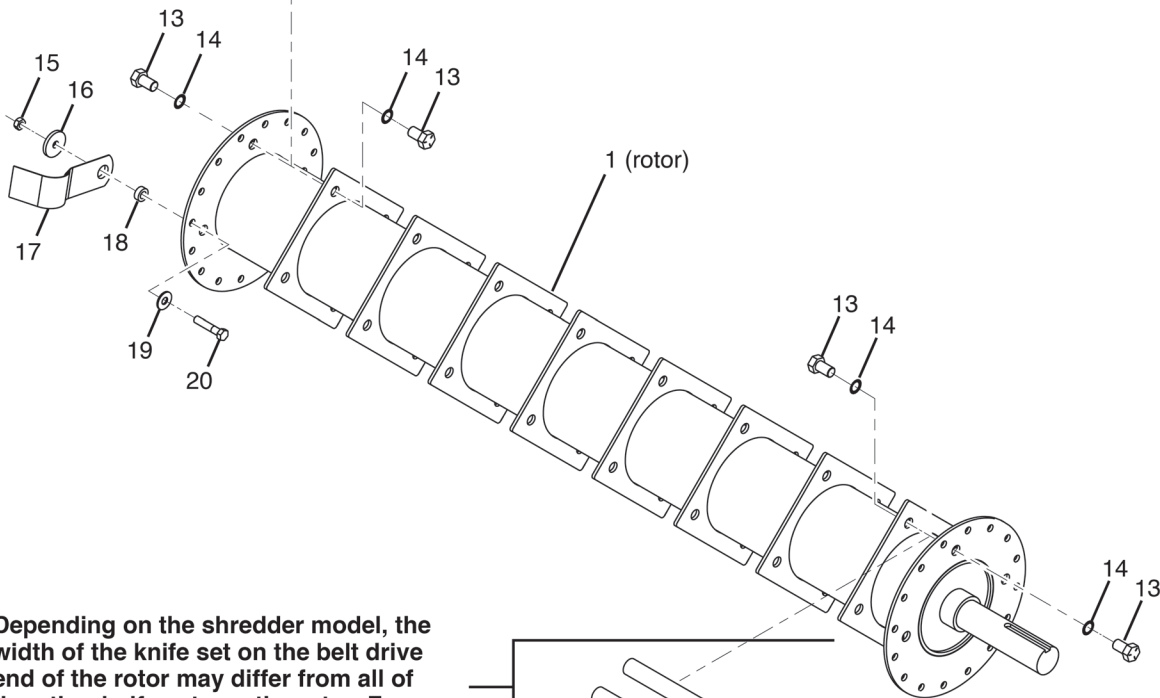
# Parts Identification

## Rotors with Vegetable Knives



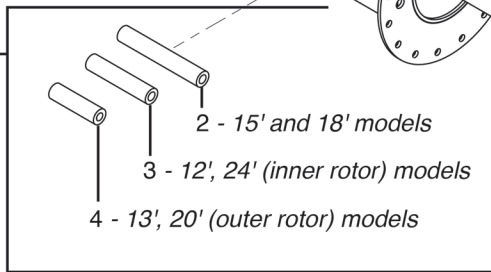
Each knife set will consist of one mount (item 2), any variation spacers (items 5, 6, 7, 8 and/or 9), and two of any of the three knife sizes (items 10, 11, 12).

**IMPORTANT:** Record the knife and spacer configuration on your shredder before disassembling and ordering replacement parts.



Depending on the shredder model, the width of the knife set on the belt drive end of the rotor may differ from all of the other knife sets on the rotor. For some models, a different mount (item 1) is used instead. Refer to the model numbers listed after the item numbers to the right.

**IMPORTANT:** As with all other knife sets, record the knife and spacer configuration on your shredder before disassembling and ordering replacement parts.



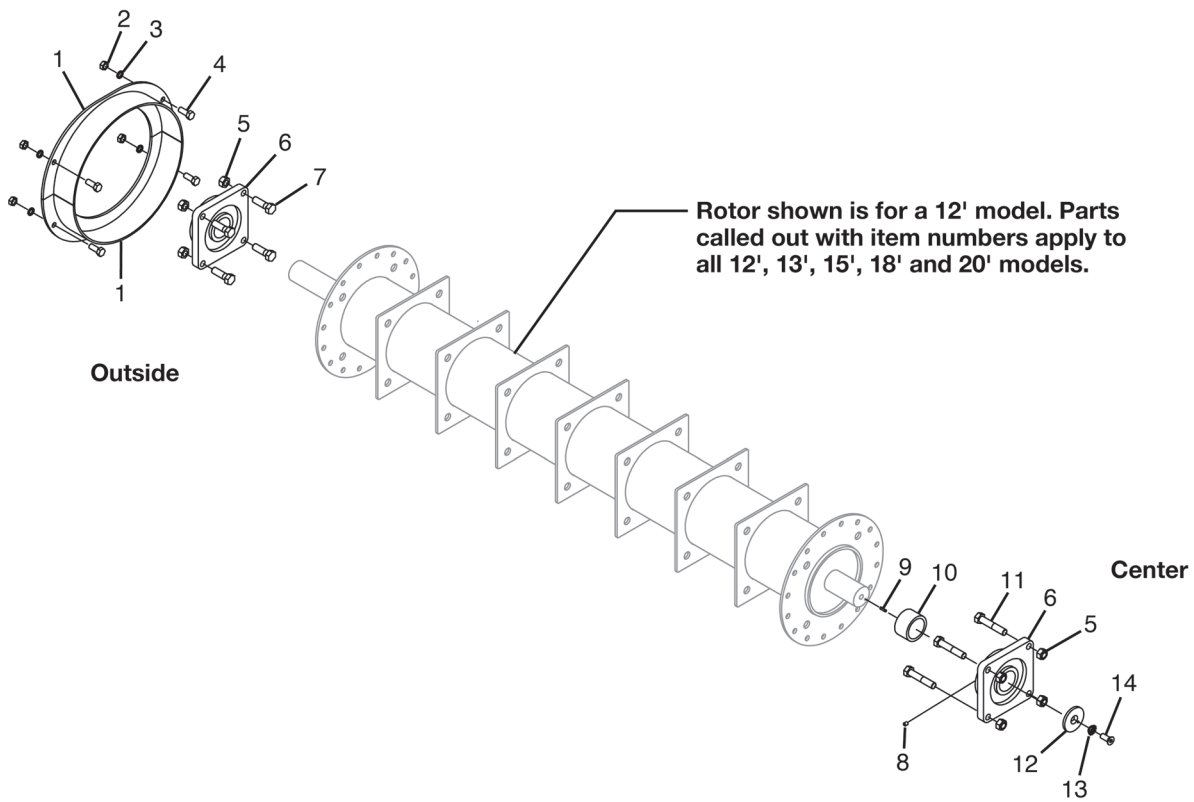
- 2 - 15' and 18' models
- 3 - 12', 24' (inner rotor) models
- 4 - 13', 20' (outer rotor) models

## Rotors with Vegetable Knives

#	QTY.	PART #	DESCRIPTION
1	2	N13521	ROTOR, 12' POTATO SHRD W/O
	2	N10840	ROTOR, 13' POTATO SHRD W/O
	2	N13520	ROTOR, 15' POTATO SHRD W/O
	2	N13512	ROTOR, 18' POTATO SHRD W/O
	2	N24216	ROTOR, 20' POTATO SHRD W/O
	2	N13355	ROTOR, 24' INNER POTATO SHRD W/O
	2	N13354	ROTOR, 24' VEG OUTER POTATO SHRD W/O
2	Varies	9123	MOUNT, CONTOUR VEGETABLE KNIFE 8"
3	Varies	N18337	MOUNT, CONTOUR VEGETABLE 6"
4	Varies	N28884	MOUNT, CONTOUR VEGETABLE 4.5"
5	Varies	N28886	SPACER, CONTOUR 2.45"
6	Varies	9122	SPACER, CONTOUR VEGETABLE KNIFE 1.9375"
7	Varies	N28887	SPACER, CONTOUR 1.43"
8	Varies	N28866	SPACER, CONTOUR VEGETABLE SHORT .953"
9	Varies	N28882	SPACER, CONTOUR VEGETABLE SHORT .477"
10	Varies	N36139	KNIVES, CONTOUR VEG HVY (10")
11	Varies	N36138	KNIVES, CONTOUR VEG HVY (8")
12	Varies	N36137	KNIVES, CONTOUR VEG HVY (6")
13	Varies	4307	BOLT, 3/4" X 1-1/4" FN TH GR 5
14	Varies	4308	WASHER, 3/4" INT.TOOTH LOCK
15	2	4054	NUT, LOCK 1/2" TOP
16	2	4074	WASHER, 2" OD X 1/2" ID X 1/4"
17	2	8027	KNIFE, CENTER CUT
18	2	9111	BUSHING, CENTER CUT KNIFE
19	2	4486	WASHER, 1/2" FLAT
20	2	4218	BOLT, 1/2" X 2-1/2" GRADE 5

# Parts Identification

## Rotor Bearings and Antiwrap - 12', 13', 15', 18', and 20' Models



The quantity of parts are shown for one rotor.  
Two rotors are required for each shredder.



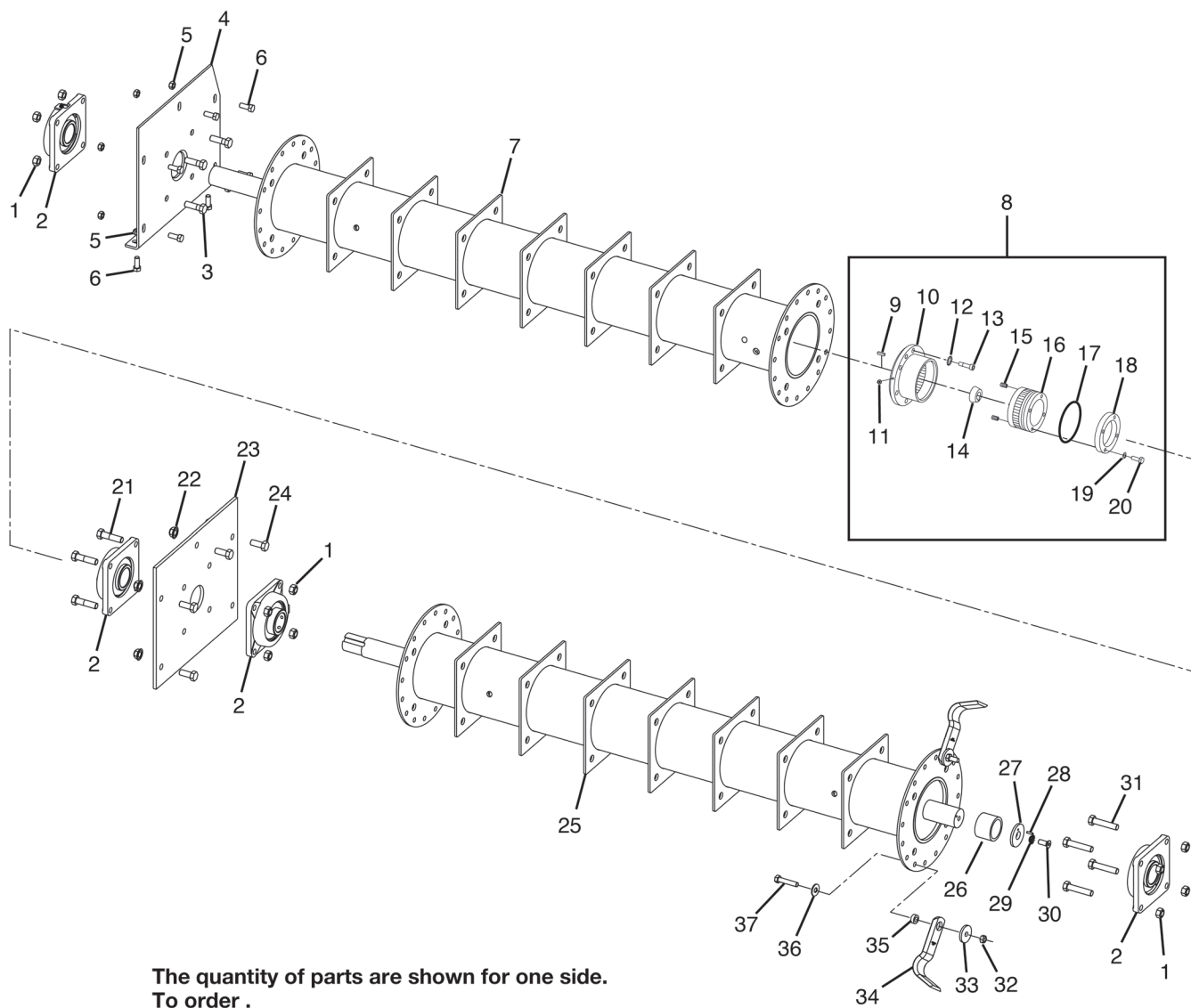
## Parts Identification

### Rotor Bearings and Antiwrap - 12', 13', 15', 18', and 20' Models

#	QTY.	PART #	DESCRIPTION
1	1	N28861	ANTIWRAP, VEG END - <i>For 12' and 15' models</i>
		N28864	ANTIWRAP, VEG END - <i>For 13' model</i>
		N28867	ANTIWRAP, VEG END - <i>For 18' model</i>
		N24110	ANTIWRAP, VEG END - <i>For 20' model</i>
2	4	4054	NUT, LOCK 1/2" TOP
3	4	4068	WASHER, FLAT 1/2
4	4	4012	BOLT, 1/2" X 1-1/4" GRADE 5
5	8	4057	NUT, 5/8" FINE THREAD TOP LOCK
6	2	211873	BEARING, 2-3/16"4 BOLT
7	4	4042	BOLT, 5/8" X 2" FINE THRD.GR.8
8	1	N17007	ZERK, 1/8 NPT
9	1	4085	PIN, ROLL 3/16" X 3/4"
10	1	211877	SPACER, SHRD ROTOR VEG - <i>For 12', 13', and 15' models</i>
	1	211869	SPACER, SHRD ROTOR VEG - <i>For 18' models</i>
	1	211873	SPACER, SHRD ROTOR VEG - <i>For 20' models</i>
11	4	4306	BOLT, 5/8" X 3" GRD 8 FINE
12	1	4075	WASHER, 2-5/8" OD
13	1	4076	WASHER, 1/2" EXT CNTSK LOCK
14	1	4468	BOLT, 1/2-20UNF X 1-1/4 FL HD

# Parts Identification

## Rotor with Bearings - 24' Models



The quantity of parts are shown for one side.  
To order .

#	QTY.	PART #	DESCRIPTION
1	16	4057	NUT, LOCK 5/8 FN TH GR 8
2	4	211873	BEARING, 2-3/16 4 BOLT DODGE
3	4	4042	BOLT, 5/8 X 2 FN TH GR8
4	1	N13346	PLATE, OUTER VEG RIGHT
5	7	4054	NUT, LOCK 1/2 TOP
6	7	4012	BOLT, 1/2 X 1-1/4 GR 5
7	1	N13554	ROTOR, 24FT VEG OUTER W/O KNVS

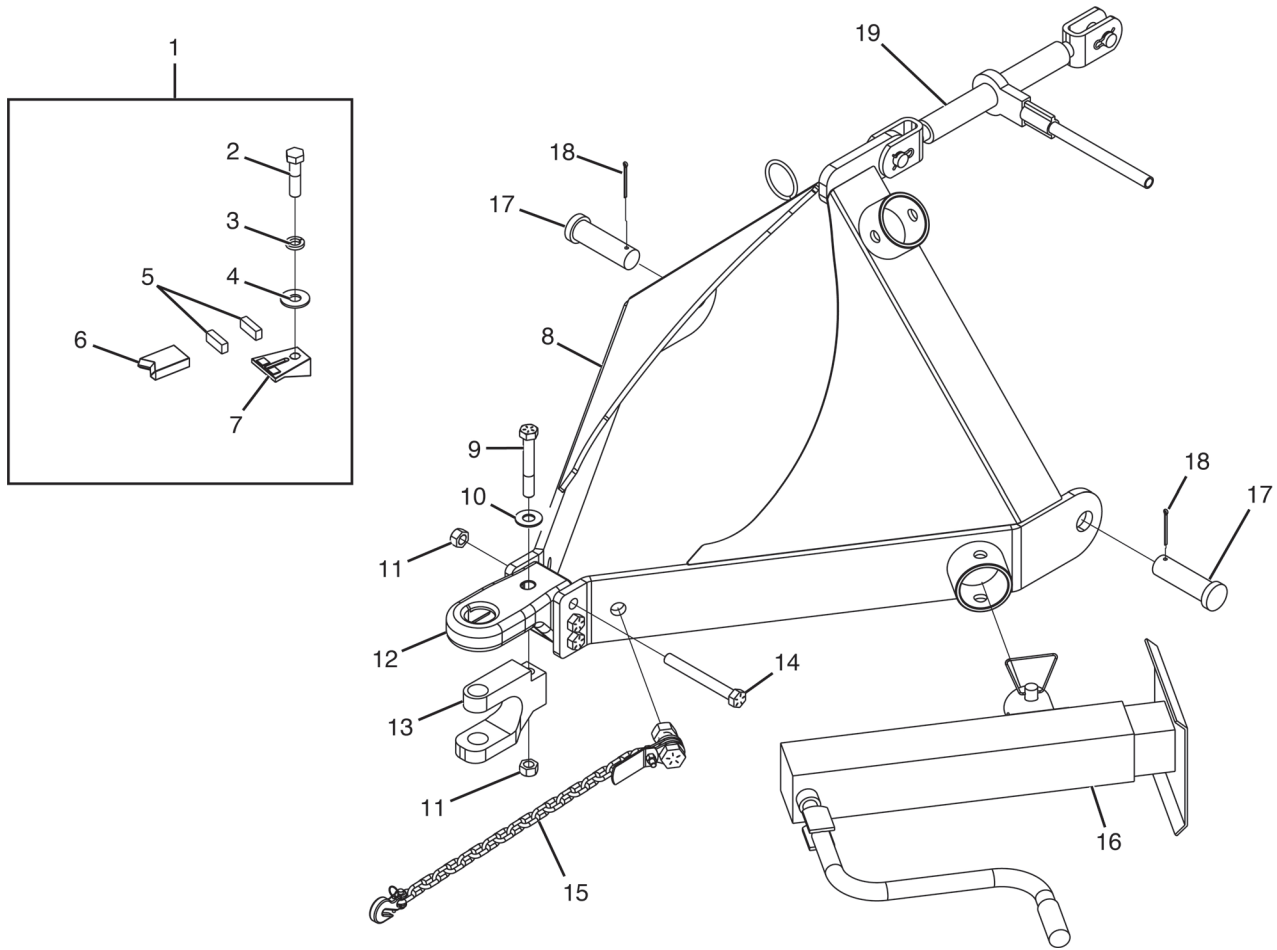
## Parts Identification

### Rotor with Bearings - 24' Models

#	QTY.	PART #	DESCRIPTION
8	1	8037	COUPLER, VALLEY DRIVE (2IN)
9	1	7122-04	KEY, 1/2" X 2"
10	1	NA	SLEEVE, SPECIAL F2
11	2	4105	ZERK, GREASE 1/4" SCREW-IN
12	6	1099	WASHER, 1/2" INTERNAL TOOTH LOCK
13	6	1100	SCREW, 1/2" X 2" ALLEN HD
14	1	N14191	BUSHING, F, 2 SPEC. DTL 2"B
15	2	8128-10	SCREW, SET 1/2-13" X 1"
16	1	NA	HUB, SPECIAL F2 FLEX
17	1	8463	O-RING, VALLEY DRIVE COUPLER (INCLUDED W/8037)
18	1	9346	COVER, DUST
19	4	4231	WASHER, LOCK 1/4"
20	4	3211	BOLT, 1/4" X 1/2"
21	4	4044	BOLT, 5/8 X 2-1/2 GR 8 FN TH
22	5	4055	NUT, LOCK 5/8-11 NC TOPLOCK
23	1	N13358	PLATE, POT.DVD.2-3/16BRG MNT
24	5	4020	BOLT, 5/8 X 1-1/2 GR 5
25	1	N13355	ROTOR, 24FT VEG INNER W/O KNVS
26	1	211877	SPACER, SHRD ROTOR VEG
27	1	4075	WASHER, 2-5/8 OD
28	1	4085	PIN, ROLL 3/16 X 3/4
29	1	4076	WASHER, 1/2 EXT CNTSK LOCK
30	1	4468	FHCS 1/2-20UNF X 1-1/4
31	4	4306	BOLT, 5/8 X 3 GR 8 FN TH
32	2	4054	NUT, LOCK 1/2" TOP
33	2	4074	WASHER, 2" OD X 1/2" ID X 1/4"
34	2	8027	KNIFE, CENTER CUT
35	2	9111	BUSHING, CENTER CUT KNIFE
36	2	4486	WASHER, 1/2" FLAT
37	2	4218	BOLT, 1/2" X 2-1/2" GRADE 5

# Parts Identification

## Hitch, Pull-Type (N40152)



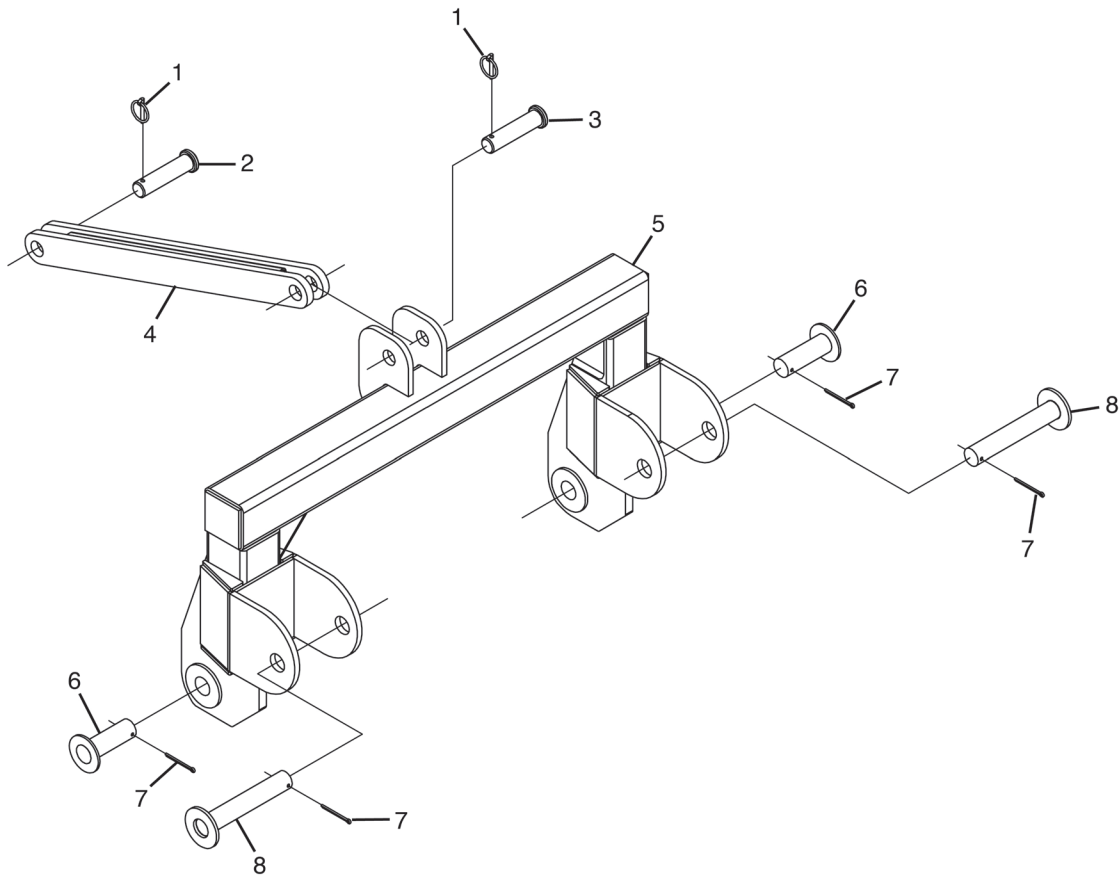
## Parts Identification

### Hitch, Pull-Type (N40152)

#	QTY.	PART #	DESCRIPTION
1	1	N37609	KIT, GBU HITCH CONV PART
2	1	4352	BOLT, 3/4" X 3" GRADE 5
3	1	4287	WASHER, 3/4" LOCK
4	1	4071	WASHER, 3/4" FLAT
5	2	N37477	CUSHION, CAT 2 BOLT-ON REC
6	1	N37475	BLOCK, CAT 2 BOLT-ON REC V
7	1	N37476	PLATE, CAT 2 BOLT-ON REC TOP
8	1	N36635	HITCH, SHWD PULL-TYPE
9	1	4577	BOLT, 3/4" X 5" FN TH GR 8
10	1	N35327	WASHER, FLAT 3/4 SAE
11	4	N16352	NUT, LOCK 3/4" GRADE 8 FINE
12	1	N32970	HITCH, BOLT-ON, CAT 3
13	1	N37463	CLEVIS, CAT 2 BOLT-ON HITCH
14	3	N16351	BOLT, 3/4" X 6-1/2" FN TH GR 8
15	1	N50260	CHAIN,SAFETY 21,000LB W/ HDWR
16	1	N13732	JACK, PULL-TYPE HITCH
17	2	N13095	PIN, HITCH 1-1/2" X 4-3/8"
18	2	4355	PIN, COTTER 3/16" X 2-1/2"
19	1	8048	JACK, REAR RATCHET

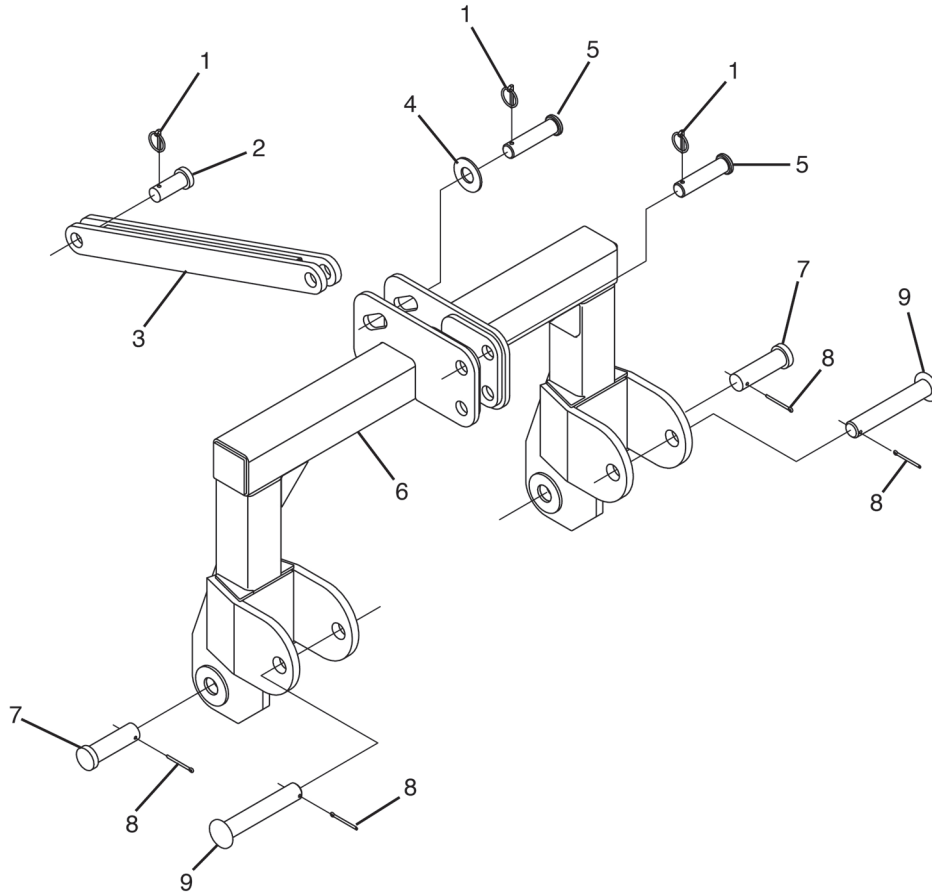
# Parts Identification

## Hitch Assembly, Semi-Mounted (N13427)



#	QTY.	PART #	DESCRIPTION
1	2	4095	CLIP, LYNCH PIN
2	1	4290	PIN, MOUNTED HITCH (1-1/4" X 3")
3	1	4291	PIN, MOUNTED HITCH (1-1/4" X 5")
4	1	9286	BAR, UPPER LINK HITCH
5	1	N32984	HITCH, SEMI-MOUNTED
6	2	N13095	PIN, 1-1/2" X 4-3/8" (5-1/2")
7	4	4329	PIN, COTTER (7/32" X 2-1/2")
8	2	N13218	PIN, LOWER HITCH (1-7/16" X 8")

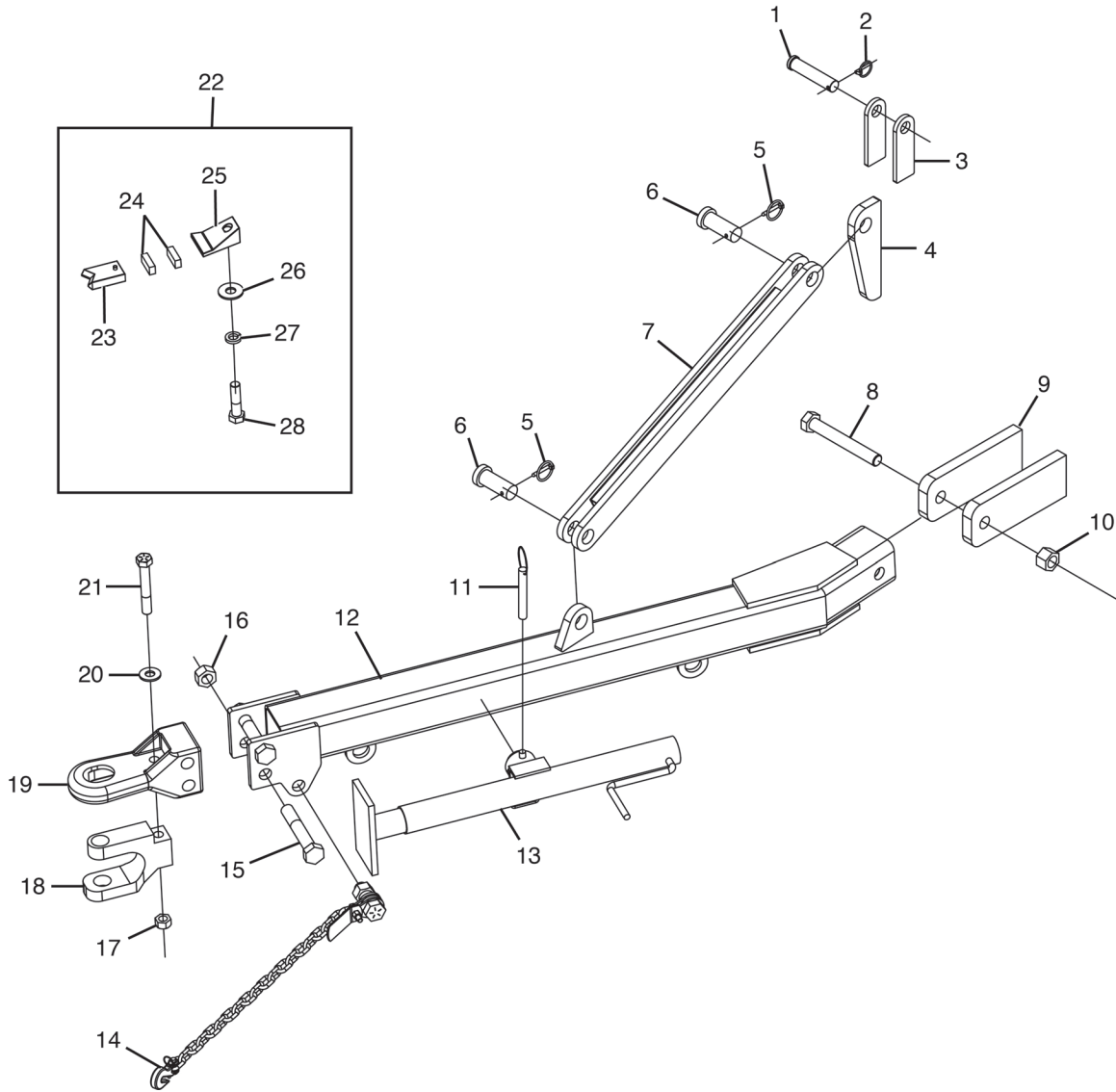
## Hitch Assembly, Fully Mounted (N13080)



#	QTY.	PART #	DESCRIPTION
1	2	4095	CLIP, LYNCH PIN
2	1	4290	PIN, MOUNTED HITCH (1-1/4" X 3")
3	1	9286	BAR, UPPER LINK HITCH
4	1	N28586	WASHER, FLAT 1-1/4"
5	2	4291	PIN, MOUNTED HITCH (1-1/4" X 5")
6	1	N10312	HITCH, UNIV.SHRD. FULL MOUNTED
7	2	N13095	PIN, 1-1/2" X 4-3/8" (5-1/2")
8	4	4329	PIN, COTTER (7/32" X 2-1/2")
9	2	N13218	PIN, LOWER HITCH (1-7/16" X 8")

# Parts Identification

## Hitch Assembly, Transport (N13373) - 18', 20', 24' Models





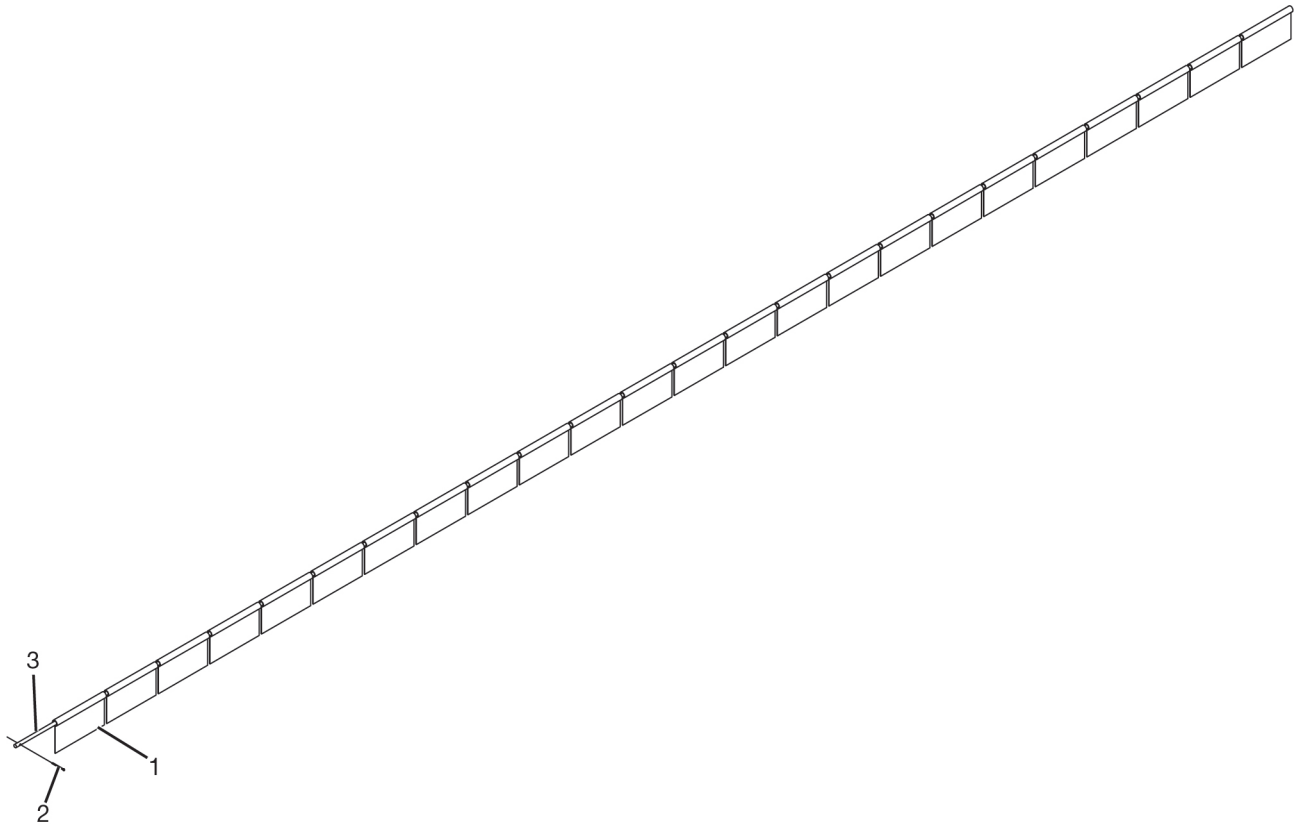
## Parts Identification

### Hitch Assembly, Transport (N13373) - 18', 20', 24' Models

#	QTY.	PART #	DESCRIPTION
1	1	N11932	PIN, HITCH (1" X 4-1/2")
2	1	N22192	PIN, LYNCH 3/16" X 1-9/16"
3	2	N13380	PLATE, HITCH UPRIGHT
4	1	N13372	ANCHOR, TRANSPORT BODY
5	2	4095	CLIP, LYNCH PIN
6	2	4290	PIN, MOUNTED HITCH (1-1/4" X 3")
7	1	9286	BAR, UPPER LINK HITCH
8	1	N13410	BOLT, TRANSPORT HITCH
9	2	N13370	EAR, TRANSPORT FOLD-UP
10	1	4249	NUT, LOCK 1" GR 8 TOP
11	1	8047-10	PIN, BULLDOG JACK (INCLUDED W/8047)
12	1	N36751	WELDMENT, SHRD TRANSPORT HITCH
13	1	8047	JACK, BULLDOG INCLUDED W/N13374
14	1	N50260	CHAIN, SAFETY 21,000LB. W/HDWR
15	2	N28583	BOLT, 1 X 6" FN TH GR 8
16	2	N16700	NUT, 1"-14 GR.8 FINE THREAD TOPLOCK
17	1	N16352	NUT, LOCK 3/4" GRADE 8 FINE
18	1	N37463	CLEVIS, CAT 2 BOLT-ON HITCH
19	1	N37474	BASE, CAT 2 BOLT-ON REC HITCH
20	1	N35327	WASHER, FLAT 3/4" SAE
21	1	4577	BOLT, 3/4" X 5" FN TH GR 8
22	1	N37609	KIT, GBU HITCH CONV PART
23	1	N37475	BLOCK, CAT 2 BOLT-ON REC V
24	2	N37477	CUSHION, CAT 2 BOLT-ON REC
25	1	N37476	PLATE, CAT 2 BOLT-ON REC TOP
26	1	4071	WASHER, 3/4" FLAT
27	1	4287	WASHER, 3/4" LOCK
28	1	4352	BOLT, 3/4" X 3" GRADE 5

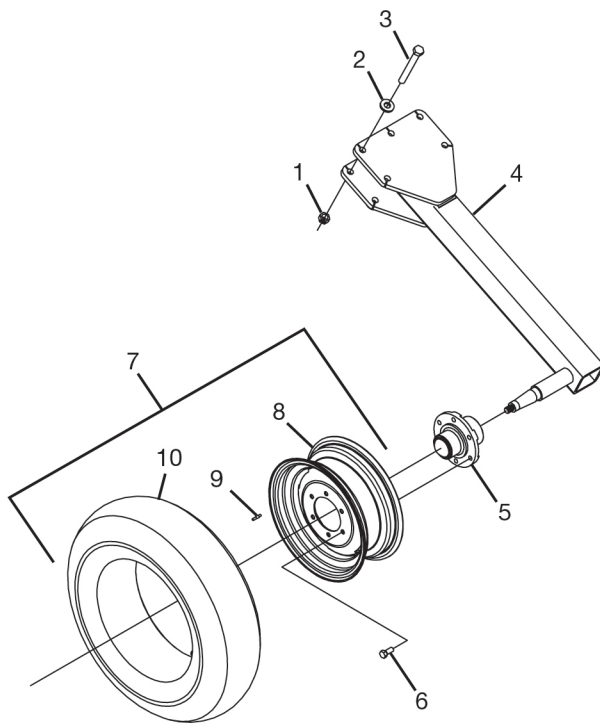
# Parts Identification

## Flippers and Rods



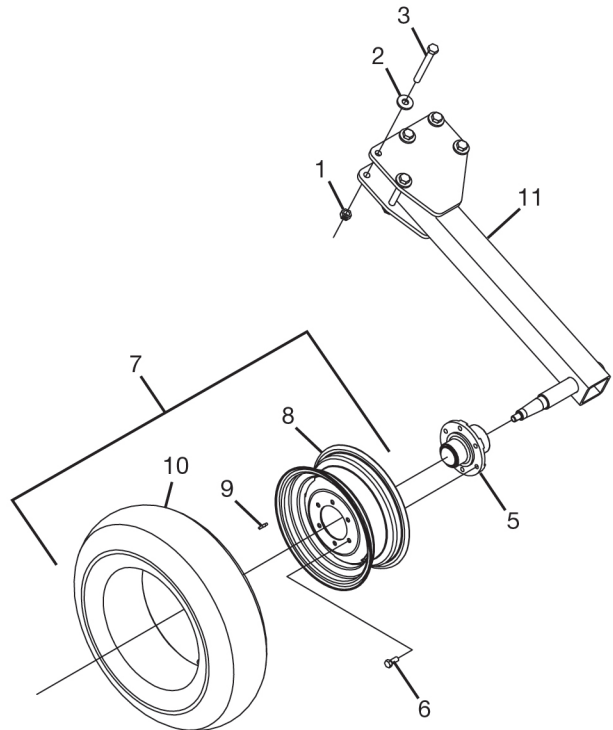
#	QTY.						PART #	DESCRIPTION
	12'	13'	15'	18'	20'	24'		
1	14	15	18	21	24	28	N18774	FLIPPER, SHREDDER (9-1/2" X 8-1/2")
2	2	2	2	2	2	4	4092	PIN, COTTER 5/32" X 2"
3	1	-	-	-	-	-	9082	ROD, FLIPPER 12' SHREDDER
	-	1	-	-	-	-	9130	ROD, FLIPPER 13' SHREDDER
	-	-	1	-	-	-	9083	ROD, FLIPPER 15' SHREDDER
	-	-	-	1	-	-	9084	ROD, FLIPPER 18' SHREDDER
	-	-	-	-	1	-	9085	ROD, FLIPPER 20' SHREDDER
	-	-	-	-	-	2	8446	ROD, FLIPPER 24' SHREDDER

## Non Swivel Assist Wheel Assemblies - Rear Wheel Options



### Assist Wheel Assembly

To order a complete assist wheel assembly (Items 1, 2, 3, 4, 5, 6, 7), use part number N10223.



### Offset Assist Wheel Assembly

To order a complete offset assist wheel assembly (Items 1, 2, 3, 5, 6, 7, 11), use part number N13413.

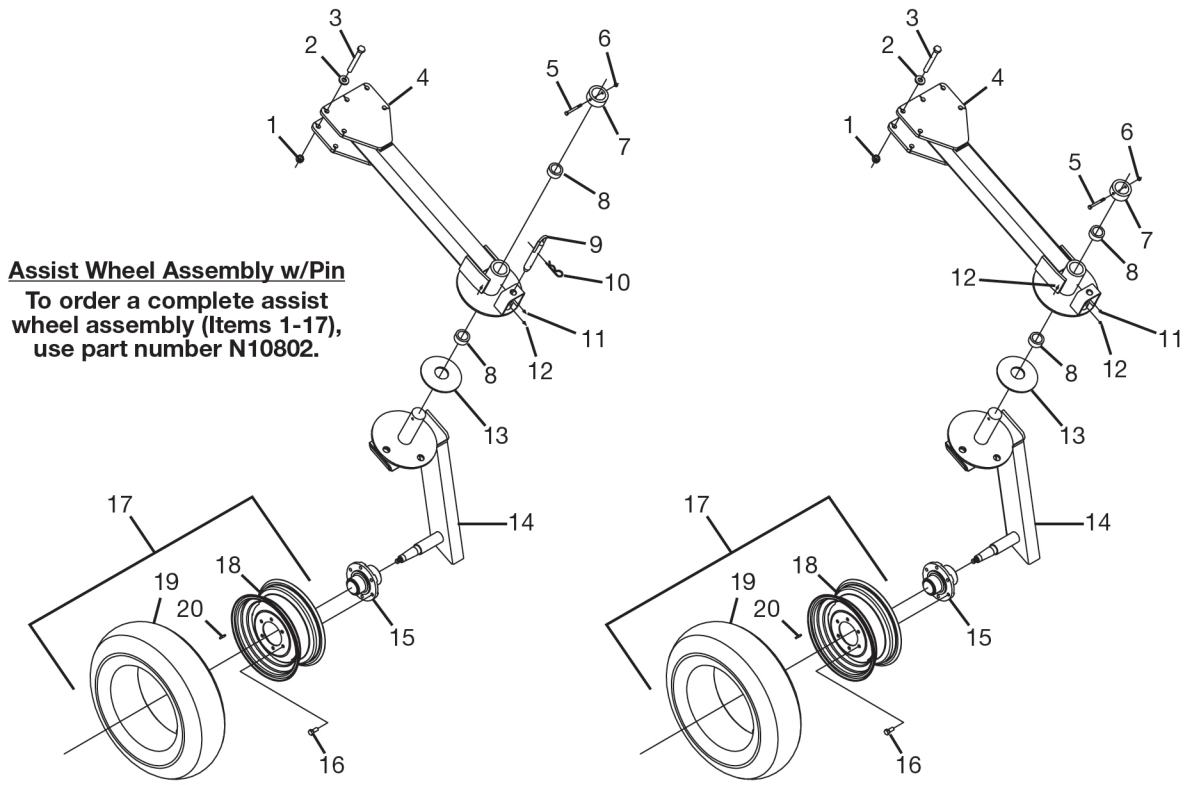
### NOTE:

1) See page 74 for parts breakdown of Item 5 (N23778), 6-bolt hub parts.

#	QTY.	PART #	DESCRIPTION
1	5	4056	NUT, LOCK 3/4"
2	5	4071	WASHER, FLAT 3/4"
3	5	4458	BOLT, 3/4"-10 X 6-1/2" GRADE 5
4	1	N11618	STRUT, REAR WHEEL
5	1	N23778	HUB, 6 BOLT 6" PAT W/STUDS
6	1	N23764	NUT, LUG 9/16-18UNF (INCLUDED W/N23778)
7	1	N22459	WHEEL, 11L15 COMPLETE ASS'Y (INCLUDES ITEMS 8, 9, 10)
8	1	N22460	RIM, 15 X 8 LB - 8" WIDE (INCLUDED W/N22459)
9	1	8079	STEM, TIRE VALVE (INCLUDED W/N22459)
10	1	N22461	TIRE, 11L15 - 10 PLY (INCLUDED W/N22459)
11	1	N13414	STRUT, REAR OFFSET WHEEL

# Parts Identification

## Swivel Assist Wheel Assemblies - Rear Wheel Options



**NOTE:**

- 1) See page 74 for parts breakdown of Item 15 (N23778), 6-bolt hub parts.

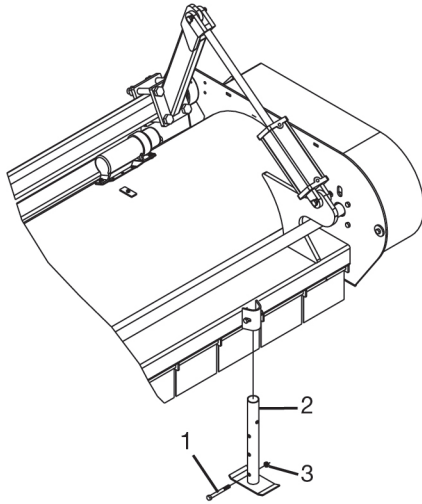
## *Parts Identification*

### Swivel Assist Wheel Assemblies - Rear Wheel Options

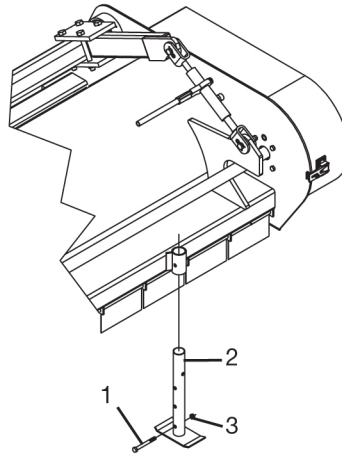
#	QTY.	PART #	DESCRIPTION
1	5	4056	NUT, LOCK 3/4"
2	5	4071	WASHER, FLAT 3/4"
3	5	4458	BOLT, 3/4"-10 X 6-1/2" GRADE 5
4	1	N13329	ARM, ASSIST WHEEL (REAR)
5	1	4975	BOLT, 1/2" X 4" GR 5
6	1	4436	NUT, LOCK 1/2"
7	1	214435	COLLAR, ASSIST WHEEL
8	2	N13331	BUSHING, BRONZE (2-3/4" OD X 2-1/2" ID X 2")
9	1	N10806	PIN, ASSIST WHEEL LOCKING
10	1	4394	CLIP, HAIRPIN (1/4" X 3-1/2")
11	1	4107	GREASEZERK, 90 DEG SCW-IN 1/4
12	3	4105	ZERK, 1/4" SCREW-IN GREASE
13	1	N10214	INSERT, ASSIST WHEEL
14	1	214437	CASTER, REAR ASSIST WHEEL
15	1	N23778	HUB, 6 BOL T 6" PAT W/STUDS
16	6	N23764	NUT, LUG 9/16-18UNF (INCLUDED W/N23778)
17	1	N22459	WHEEL, 11L15 COMPLETE ASS'Y (INCLUDES ITEMS 18,19,20)
18	1	N22460	RIM, 15 X 8 LB - 8" WIDE (INCLUDED W/N22459)
19	1	N22461	TIRE, 11L15 - 10 PLY (INCLUDED W/N22459)
20	1	8079	STEM, TIRE VALVE (INCLUDED W/N13245)

# Parts Identification

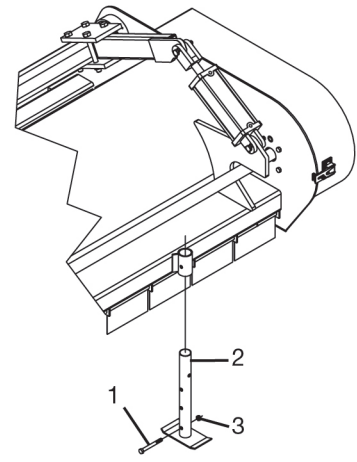
## Rear Wheel Adjustment Options



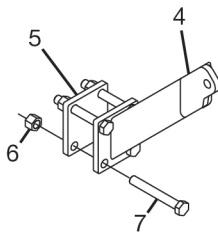
**Semi-Mount w/Hydraulic Cylinder**  
LEFT side shown.



**Pull-Type w/Ratchet Jack**  
LEFT side shown.

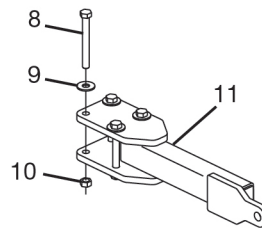


**Pull-Type w/Hydraulic Cylinder**  
LEFT side shown.



To order a complete rear wheel LEFT side lift cylinder arm (Items 4, 5, 6, 7), use part number N13394.

To order a complete rear wheel RIGHT side lift cylinder arm (Items 4, 5, 6, 7), use part number N13393.



To order a complete universal REAR wheel lift arm (Items 7, 8, 9, 10), use part number N13391.

### Rear Wheel Adjustment Options

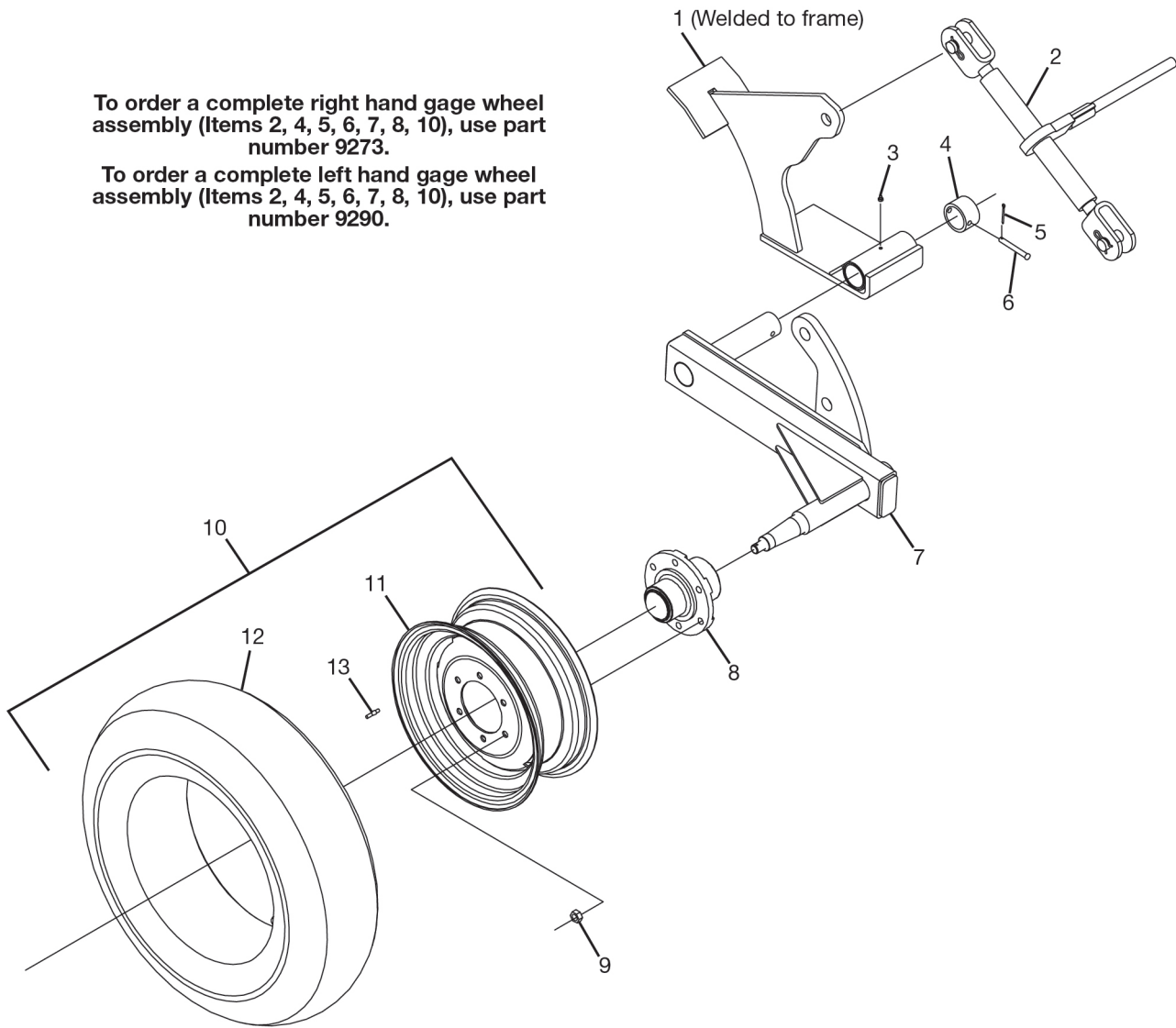
#	QTY.	PART #	DESCRIPTION
1	1	4154	BOLT, 1/2" X 3-1/2" GR 5
2	1	9011	JACK, STORAGE STAND
3	1	4054	NUT, LOCK 1/2" TOP
4	1	N16410	ARM, REAR WHEEL L.H. CYLINDER LIFT (Shown)
	1	N16411	ARM, REAR WHEEL R.H. CYLINDER LIFT
5	1	N16412	PLATE, UNV AST WHL CYL ARM MNT
6	4	4249	NUT, LOCK 1" GR 8 TOP
7	4	N16413	BOLT, 1"-8UNC X 1-1/2" GRADE 8
8	4	4458	BOLT, 3/4" X 6-1/2" GR. 5
9	4	4071	WASHER, 3/4" FLAT
10	4	4056	NUT, 3/4" LOCK
11	1	N10254	ARM, UNV SHRD REAR WHL CYL

# Parts Identification

## Front Gauge Wheel Assembly Option

To order a complete right hand gage wheel assembly (Items 2, 4, 5, 6, 7, 8, 10), use part number 9273.

To order a complete left hand gage wheel assembly (Items 2, 4, 5, 6, 7, 8, 10), use part number 9290.



Right Side Gage Wheel Assembly Shown.

**NOTE:**

- 1) See page 74 for parts breakdown of Item 8 (N23778), 6-bolt hub parts.

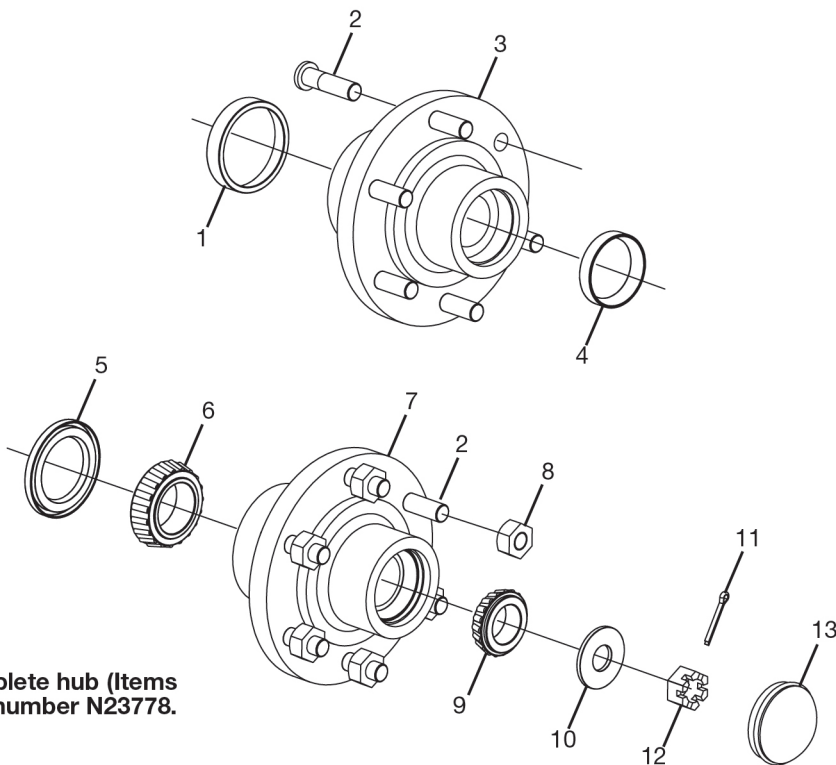


### Front Gauge Wheel Assembly Option

#	QTY.	PART #	DESCRIPTION
1	1	N13288	MOUNT, GAUGE WHEEL RIGHT (Shown)
	1	N13283	MOUNT, GAUGE WHEEL LEFT
2	1	8048	JACK, RATCHET
3	1	4105	GREASE-ZERK , 1/4" SCREW-IN
4	1	9280	COLLAR, ASSIST WHEEL LOCK
5	1	4099	PIN, COTTER (1/8" X 1-1/2")
6	1	4093	PIN, 3/8" X 3" PLATED
7	1	9292	STRUT, LEFT GAUGE WHEEL
	1	9291	STRUT, RIGHT GAUGE WHEEL (Shown)
8	1	N23778	HUB, 6 BOL T 6" PAT W/STUDS
9	6	N23764	NUT, LUG 9/16-18UNF (INCLUDED W/N23778)
10	1	N22459	WHEEL, 11L15 COMPLETE ASS'Y (INCLUDES ITEMS 11,12,13)
11	1	N22460	RIM, 15 X 8 LB - 8" WIDE (INCLUDED W/N22459)
12	1	N22461	TIRE, 11L15 - 10 PLY (INCLUDED W/N22459)
13	1	8079	STEM, TIRE VALVE (INCLUDED W/N22459)

# Parts Identification

## 6 Bolt Hub



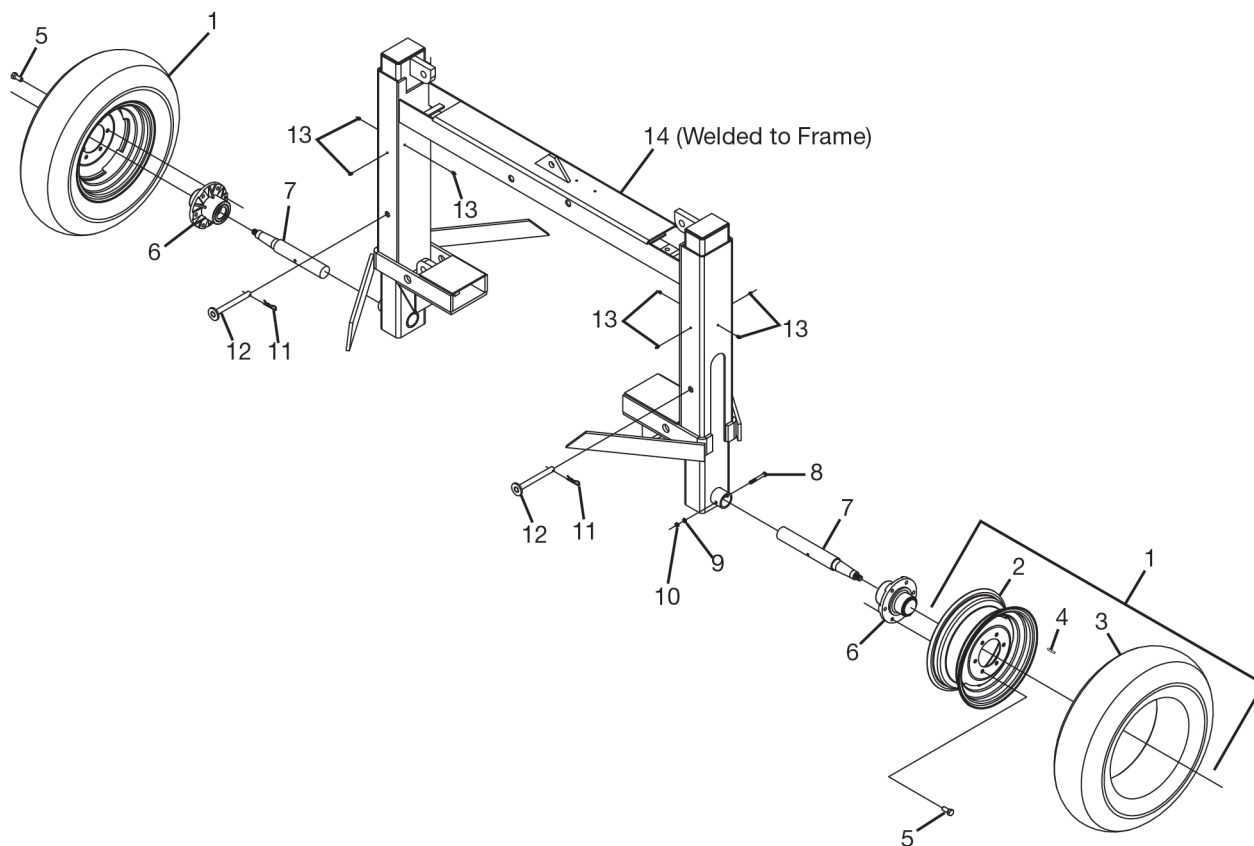
To order a complete hub (Items 6-14), use part number N23778.

#	QTY.	PART #	DESCRIPTION
1	1	8082-02	CUP, BEARING (LARGE)
2	6	N27304	STUD, HUB 9/16 - 18UNF
3	1	NA	CASTING, HUB 6 BOLT (NO PARTS)
4	1	8082-05	CUP, BEARING (SMALL)
5	1	8082-04	SEAL, GREASE (6-BOLT HUB)
6	1	8082-03	CONE, BEARING (LARGE)
7	1	N23676	HUB, 6-BOLT STUD CASTING ONLY
8	6	N23764	NUT, LUG 9/16"-18 UNF
9	1	8082-06	CONE, BEARING (SMALL)
10	1	8082-07	WASHER, SPINDLE
11	1	8082-09	PIN, COTTER 3/16" X 1-1/2"
12	1	8082-08	NUT, CASTLE SPINDLE (3/4"-16 UNF)
13	1	8082-10	CAP, END (6-BOLT HUB)

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# Parts Identification

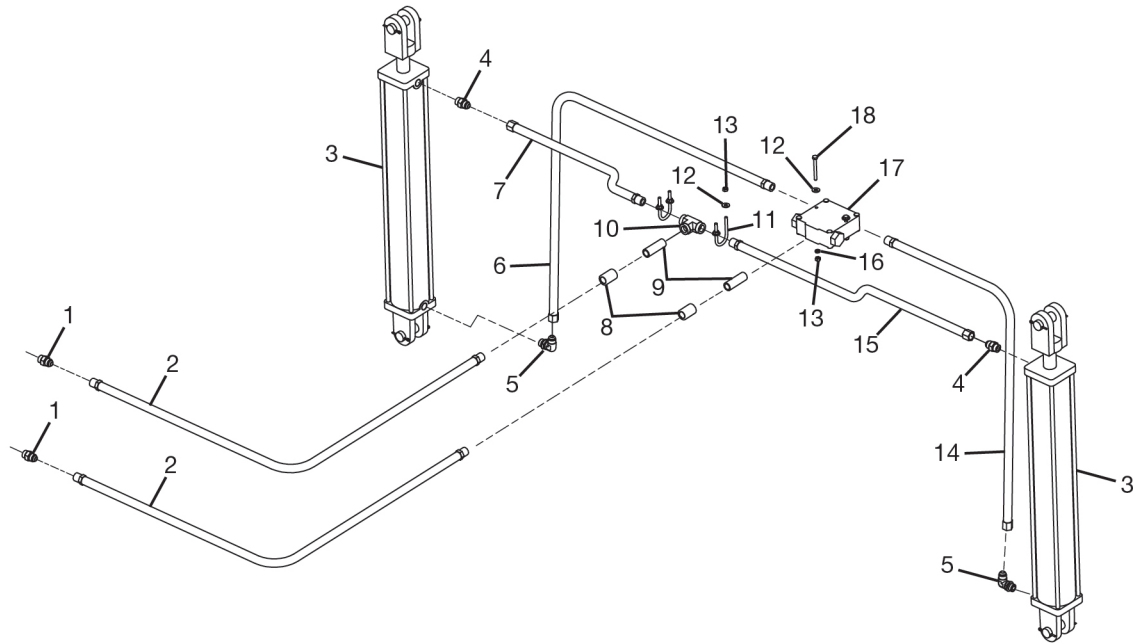
## Hydraulic Transport (N13078) - 18', 20', and 24' Models



#	QTY.	PART #	DESCRIPTION
1	2	N22459	WHEEL, 11L15 COMPLETE ASS'Y (INCLUDES ITEMS 2,3,4)
2	2	N22460	RIM, 15 X 8 LB - 8" WIDE (INCLUDED W/N22459)
3	2	N22461	TIRE, 11L15 - 10 PLY (INCLUDED W/N22459)
4	2	8079	STEM, TIRE VALVE (INCLUDED W/ N22459)
5	12	N23764	NUT, LUG 9/16-18UNF (INCLUDED W/N23778)
6	2	N23778	HUB, 6 BOLT 6" PAT W/STUDS
7	2	8076-01	SPINDLE, 2" X 15" W/HOLE
8	2	4007	BOLT, 3/8" X 3" GRADE 5
9	2	4065	WASHER, LOCK 3/8"
10	2	4233	NUT, STANDARD 3/8"
11	2	4336	CLIP, HAIRPIN (1/8" X 2-1/4")
12	2	9240	PIN, LOCKING 3/4 X 7
13	10	4105	ZERK, GREASE 1/4" SCREW IN
14	1	N/A	FRAME, HYDRAULIC TRANSPORT

## Parts Identification

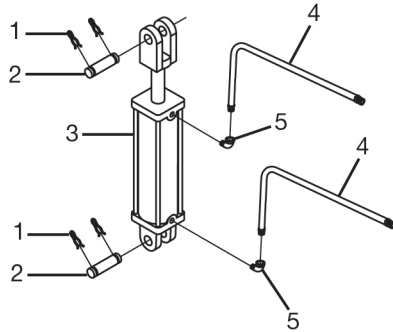
Hydraulics, Transport Axle - 18', 20', and 24' Models (Included with N13078 shown on previous page.)



#	QTY.	PART #	DESCRIPTION
1	2	N11825	COUPLER, 1/2" MALE PIONEER
2	2	N13650	HOSE, 1/2" X 14' HYDRAULIC TRANSPORT (18', 20')
	2	N13651	HOSE, 1/2" X 12' HYDRAULIC TRANSPORT (24')
3	2	N24091	CYLINDER, 3" X 24" 3000 PSI
4	2	N20228	ADAPTER, 8MJIC - MOR
5	2	N11952	ELBOW, 90 DEG - 8MJIC - 8MOR
6	1	N31055	HOSE, 1/2" X 53' - 8MPX - 8FJIX SWL
7	1	N31056	HOSE, 1/2" X 15-1/2" - 8MPX -8FJIX SWL
8	2	4353	COUPLING, PIPE (1/2")
9	2	4320	NIPPLE, PIPE (1/2" X 2-1/2")
10	1	4177	TEE, 1/2
11	2	4178	U-BOLT, 1/4" X 1-1/4" X 2-1/4"
12	6	4460	WASHER, FLAT 1/4" SAE
13	6	4230	NUT, STANDARD 1/4"
14	1	N31054	HOSE, 1/2" X 39' - 8MPX -8FJIX SWL
15	1	N31057	HOSE, 1/2" X 27-1/2"-8MPX-8FJIX SWL
16	2	4231	WASHER, LOCK 1/4"
17	1	8143	VALVE, FLOW DIVIDER
18	2	4003	BOLT, 1/4" X 2-1/2" GRADE 5

# Parts Identification

## Hydraulics, Rear Wheel Height - 12', 13', 15' Models



Hose Bracket

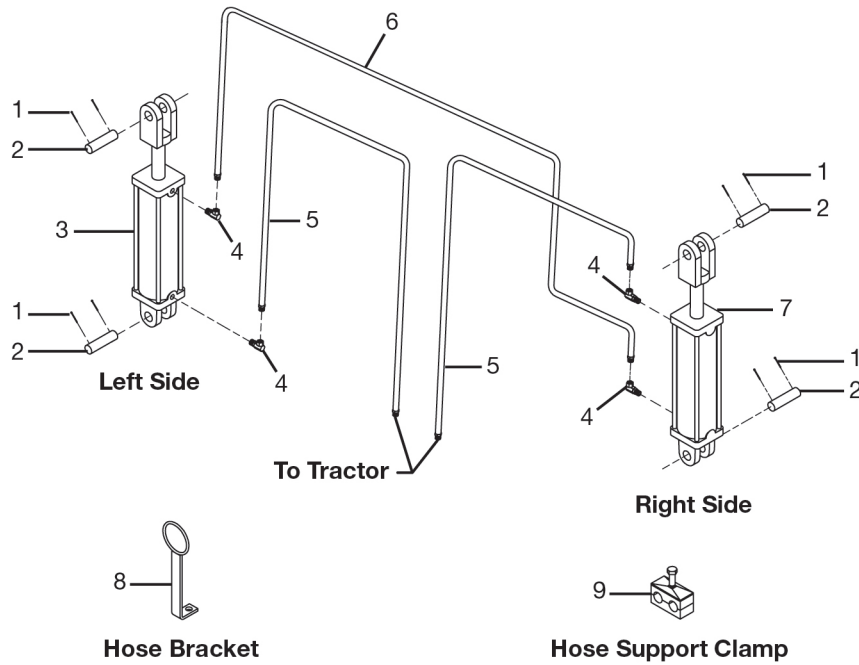


Hose Support Clamp

#	QTY.	PART #	DESCRIPTION
1	4	8039-12	CLIP, RETAINER
2	2	8039-11	PIN, 1" X 2-3/4"
3	1	N21715	CYLINDER, HYDRAULIC SINGLE ACTING (3" X 8")
4	2	N13653	HOSE, 1/2" X 13' (SWIVEL FITTING ONE END / 12' - 15')
5	2	4359	ELBOW, 90 DEG - 8MOR - 8FP SWL
6	1	N13652	BRACKET, HOSE
7	Varies	N13383	CLAMP, HOSE SUPPORT

# Parts Identification

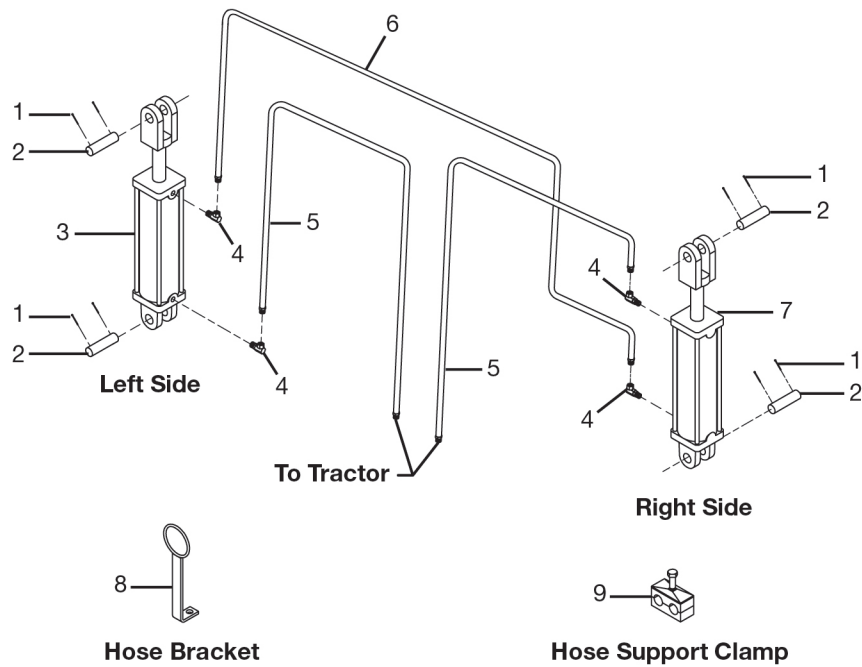
## Hydraulics, Two Phasing Cylinder System - 12', 13', 15', 18', 20' Models



#	QTY.	PART #	DESCRIPTION
1	8	8042-03	PIN, COTTER 5/32" X 1-1/2" (INCLUDED W/CYLINDER)
2	4	8042-01	PIN, 1" X 3-1/4" (INCLUDED W/CYLINDER)
3	1	8043	CYLINDER, HYDRAULIC PHASING (3-1/4")
4	4	4359	ADAPTER, 3/4" M O-RING BOSS X 90° 1/2" SWIVEL FEMAL
5	2	N13640	HOSE, 1/2" X 13' (NON-SWIVEL ENDS / 12' - 13' SEMI-HT)
	2	N13647	HOSE, 1/2" X 15' (NON-SWIVEL ENDS - 15' SEMI-MT)
	2	N13641	HOSE, 1/2" X 16' (NON-SWIVEL ENDS - 18' MODEL)
	2	N13643	HOSE, 1/2" X 18' (NON-SWIVEL ENDS - 20' MODEL)
6	1	N13641	HOSE, 1/2" X 16' (NON-SWIVEL ENDS / 12' - 15' MODEL)
	1	N13642	HOSE, 1/2" X 19' (NON-SWIVEL ENDS - 18' MODEL)
	1	N13644	HOSE, 1/2" X 21' (NON-SWIVEL ENDS - 20' MODEL)
7	1	8042	CYLINDER, HYDRAULIC PHASING (3")
8	1	N13652	BRACKET, HOSE
9	Varies	N13383	CLAMP, HOSE SUPPORT

# Parts Identification

## Hydraulics, Two Phasing Cylinder System w/Front Swivel Wheels - 24' Model

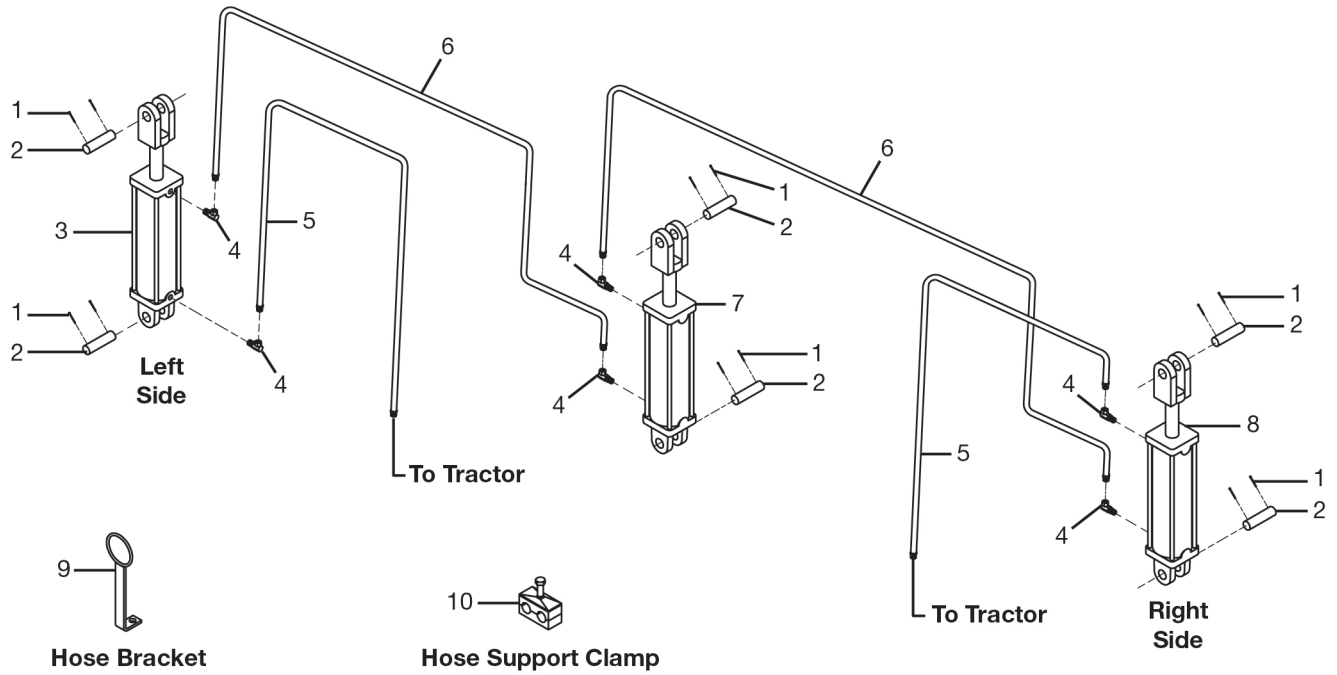


#	QTY.	PART #	DESCRIPTION
1	8	8042-03	PIN, COTTER 5/32" X 1-1/2" (INCLUDED W/CYLINDER)
2	4	8042-01	PIN, 1" X 3-1/4" (INCLUDED W/CYLINDER)
3	1	8043	CYLINDER, HYDRAULIC PHASING (3-1/4")
4	4	4359	ADAPTER, 3/4" M O-RING BOSS X 90° 1/2" SWIVEL FEMAL
5	2	N13641	HOSE, 1/2" X 16' (NON-SWIVEL ENDS - 24' MODEL)
6	1	N13642	HOSE, 1/2" X 19' (NON-SWIVEL-ENDS - 24' MODEL)
7	1	8042	CYLINDER, HYDRAULIC PHASING (3")
8	1	N13652	BRACKET, HOSE
9	Varies	N13383	CLAMP, HOSE SUPPORT



# Parts Identification

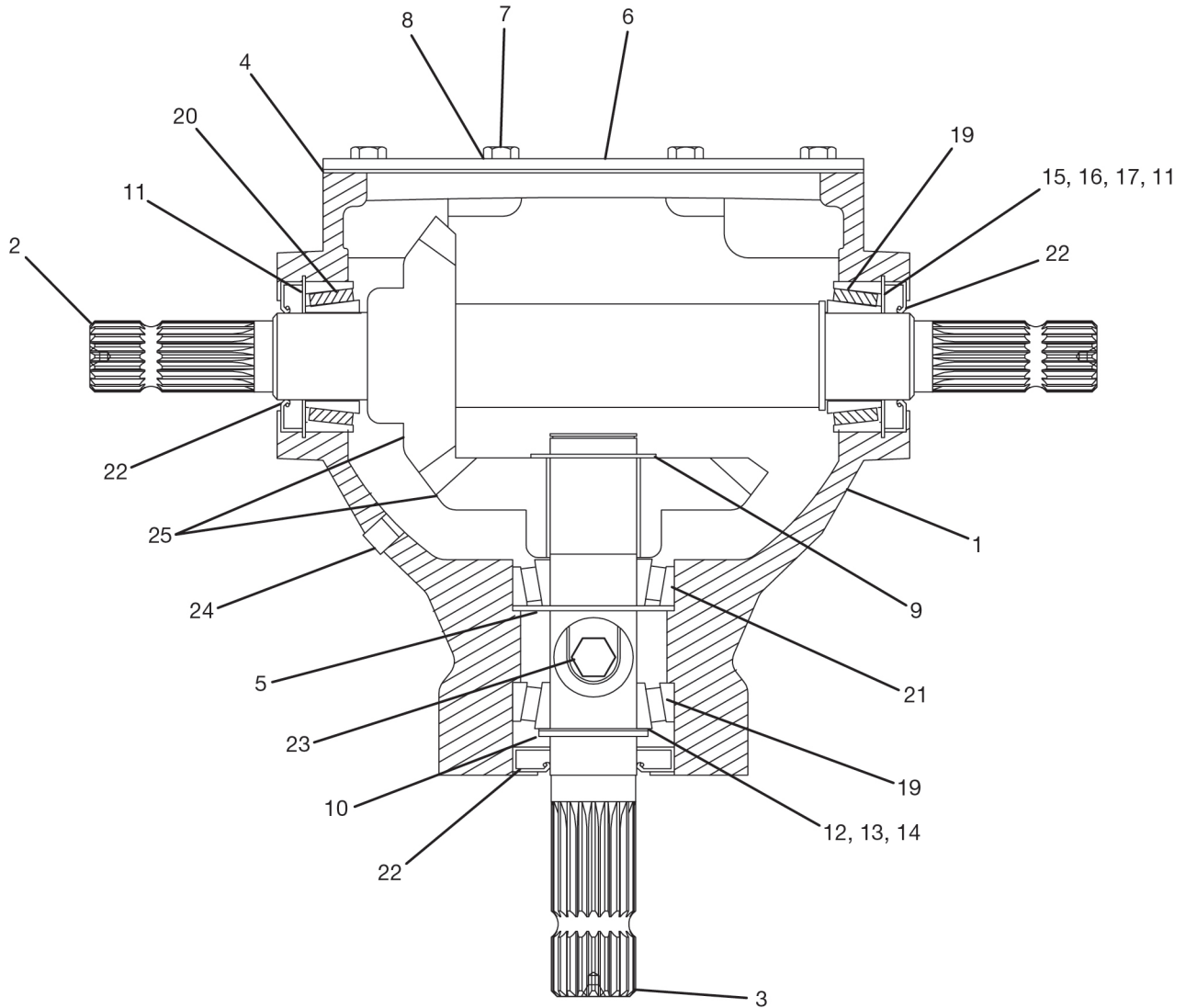
## Hydraulics, Three Phasing Cylinder System - 24' Model



#	QTY.	PART #	DESCRIPTION
1	8	8042-03	PIN, COTTER 5/32" X 1-1/2" (INCLUDED W/CYLINDER)
2	4	8042-01	PIN, 1" X 3-1/4" (INCLUDED W/CYLINDER)
3	1	8044	CYLINDER, HYDRAULIC PHASING (3-1/2")
4	6	4359	ADAPTER, 3/4" M O-RING BOSS X 90° 1/2" SWIVEL FEMAL
5	2	N13644	HOSE, 1/2" X 21' (NON-SWIVEL ENDS - 24' MODEL)
6	2	N13646	HOSE, 1/2" X 14' (NON-SWIVEL ENDS - 24' MODEL)
7	1	8043	CYLINDER, HYDRAULIC PHASING (3-1/4")
8	1	8042	CYLINDER, HYDRAULIC PHASING (3")
9	1	N13652	BRACKET, HOSE
10	6	N13383	CLAMP, HOSE SUPPORT

# Parts Identification

## Gearbox, 1450 RPM Bondioli (N13950)



To order a complete gearbox (Items 1-25), use part number N13950.

This gearbox uses 3/4"-10 NC bolts for mounting to the shredder.

To order a complete pinion shaft ring kit (items 12, 13, 14) use part number 8170-26.

To order a complete through shaft ring kit (items 11, 15, 16, 17) use part number 8170-27.

## Parts Identification

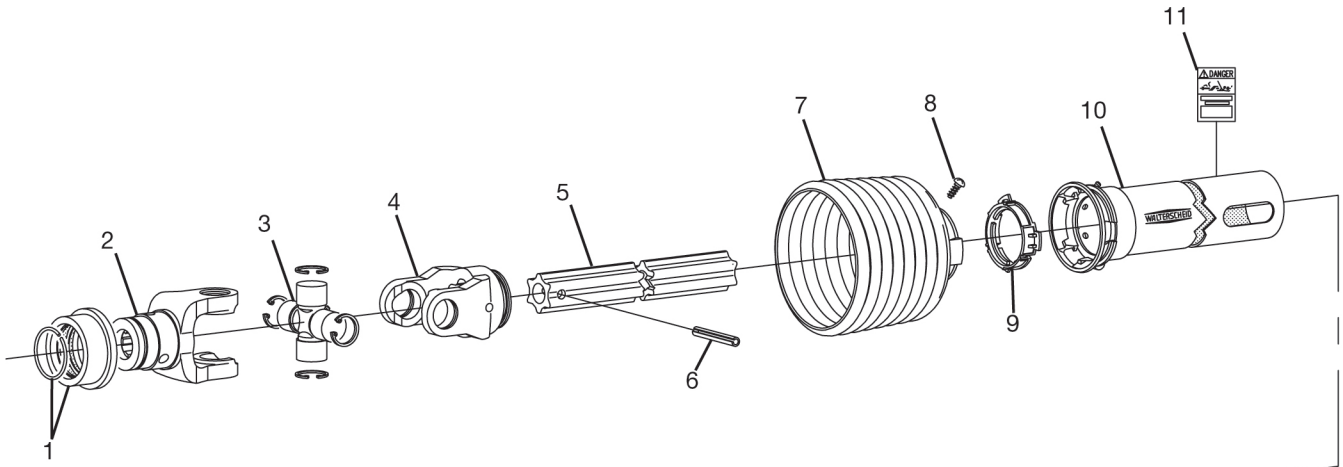
### Gearbox, 1450 RPM Bondioli (N13950)

#	QTY.	PART #	DESCRIPTION
1	1	N14122	HOUSING, GEARBOX
2	1	8170-02	SHAFT, THROUGH
3	1	N14121	SHAFT, PINION
4	1	8170-04	GASKET, COVER
5	1	N14120	SPACER, PINION SHAFT
6	1	8170-06	COVER, HOUSING
7	8	8170-07	SCREW, COVER
8	8	8170-08	WASHER, COVER SCREW
9	1	8170-09	CIRCLIP, PINION SHAFT
10	1	8170-10	SNAP-RING, PINION SHAFT
11	2	N/A	SNAP-RING, THROUGH SHAFT
12	1	N/A	RING, PINION SHAFT
13	1	N/A	RING, PINION SHAFT
14	1	N/A	RING, PINION SHAFT
15	2	N/A	RING, THROUGH SHAFT
16	2	N/A	RING, THROUGH SHAFT
17	2	N/A	RING, THROUGH SHAFT
18	2	8170-18	RING, THROUGH SHAFT
19	2	8170-19	BEARING, TAPERED ROLLER
20	1	8170-20	BEARING, THROUGH SHAFT
21	1	8170-21	BEARING, PINION SHAFT
22	3	8170-22	SEAL OIL
23	1	8001-18	PLUG, OIL VENT
24	5	8001-19	PLUG, OIL
25	1	N14119	GEAR, BEVEL 1:1 (SET)

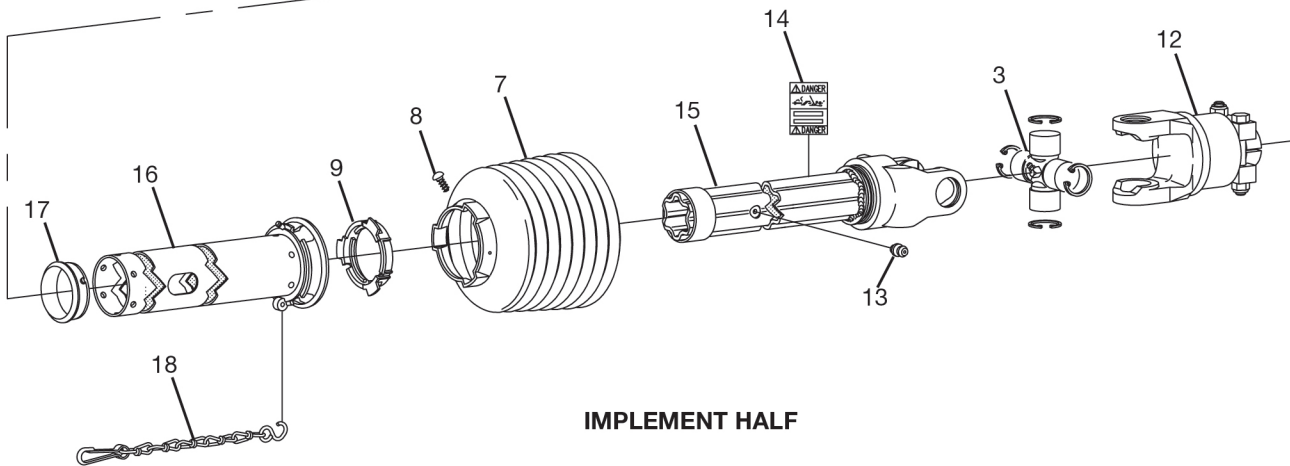
# Parts Identification

## PTO, 1-3/8" Walterscheid w/Overrunning Clutch (8173)

### TRACTOR HALF



### IMPLEMENT HALF



Refer to page 96 for the complete parts breakdown of the overrunning clutch (Item 12), part number 8192.

To order the complete PTO, use part number 8173.

## Parts Identification

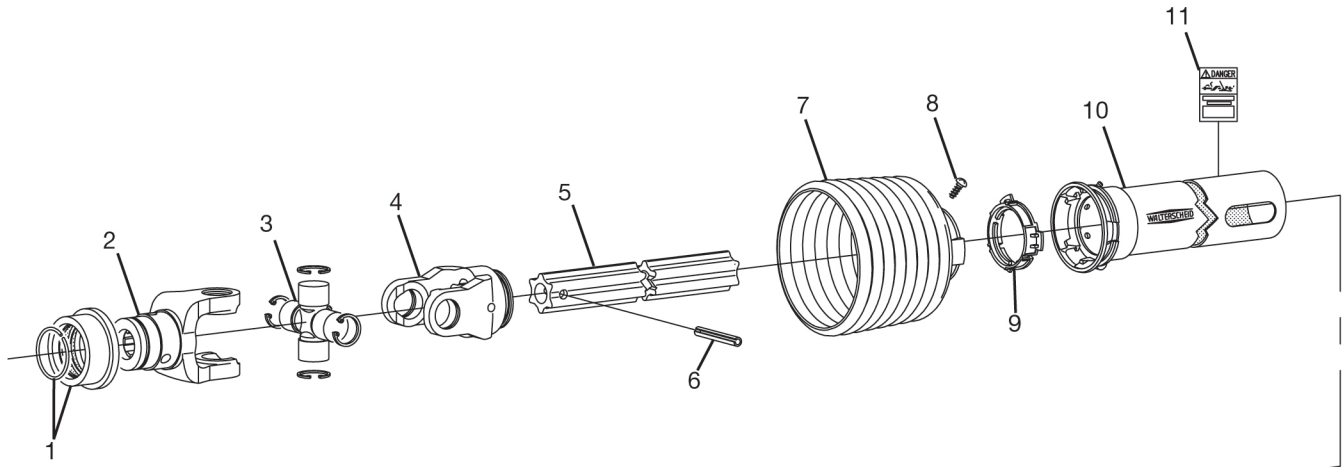
### PTO, 1-3/8" Walterscheid w/Overrunning Clutch (8173)

#	QTY.	PART #	DESCRIPTION
1	1	N10360	KIT, 1-3/8" YOKE SLIDE LOCK (INCLUDED W/N10346)
2	1	N10346	YOKE, PTO 1-3/8"-21 SPLINE ASG
3	2	N10347	KIT, PTO CROSS & BEARING
4	1	N10364	YOKE, PTO INBOARD
5	1	N10866	SHAFT, PTO PROFILE & SLEEVE
6	1	N10342	PIN, PTO SPRING (10MM X 90MM)
7	2	N10367	SHIELD, PTO CONE 7-RIB
8	2	N11750	SCREW, PTO RIBBED SHIELD (W/N10367)
9	2	N10348	RING, PTO BEARING (SC25)
10	1	N10867	GUARD, PTO SHAFT OUTER
11	1	N/A	DECAL, PTO SHAFT GUARD (INCLUDED W/N10867)
12	1	8192	CLUTCH, PTO OVERRUNNING
13	1	N10359	ZERK, PTO GREASE (INCLUDED W/N10865)
14	1	N/A	DECAL, PTO TUBE GUARD (INCLUDED W/N10865)
15	1	N10865	TUBE, PTO PROFILE W/SLEEVE & YOKE
16	1	N10868	GUARD, PTO INNER TUBE
17	1	N10355	BEARING, PTO TUBE GUARD SUPPORT
18	1	N10356	CHAIN, PTO SAFETY

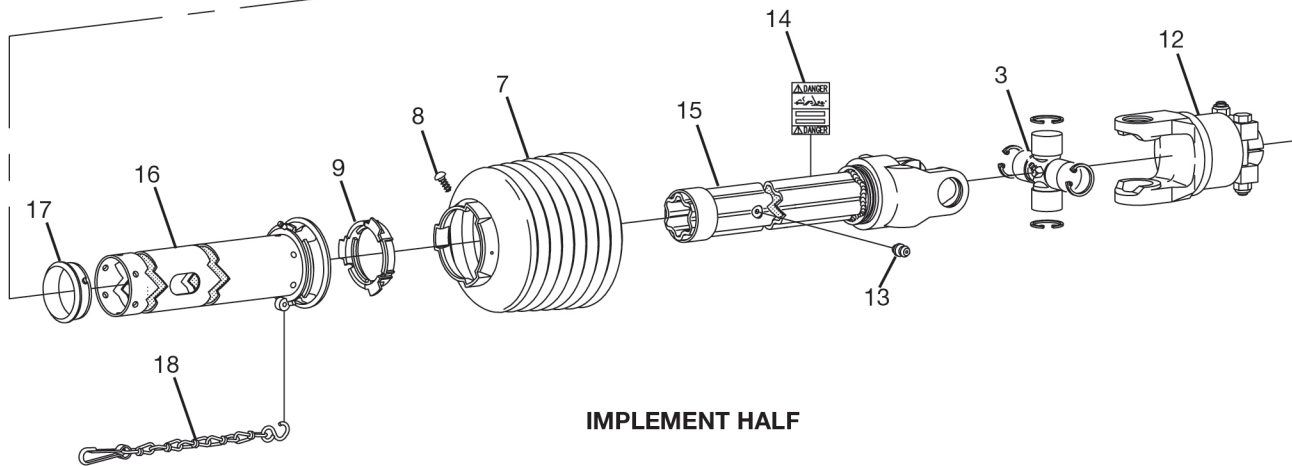
# Parts Identification

## PTO, 1-3/4" Walterscheid w/Overrunning Clutch (8174)

### TRACTOR HALF



### IMPLEMENT HALF



Refer to page 96 for the complete parts breakdown of the overrunning clutch (Item 12), part number 8192.

To order the complete PTO, use part number 8173.

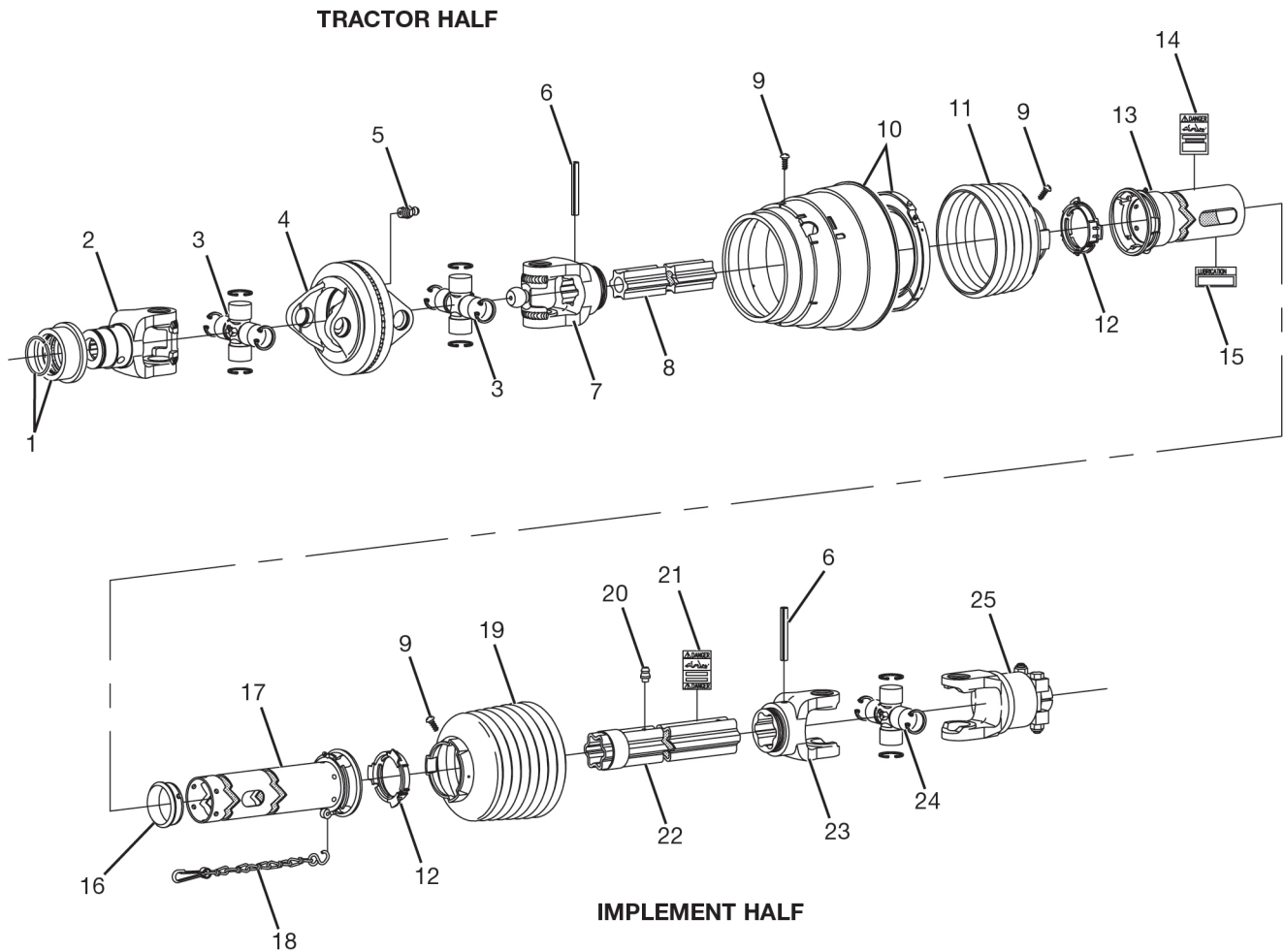
## Parts Identification

### PTO, 1-3/4" Walterscheid w/Overrunning Clutch (8174)

#	QTY.	PART #	DESCRIPTION
1	1	N10362	KIT, 1-3/4" YOKE SLIDE LOCK (INCLUDED W/N10370)
2	1	N10370	YOKE, PTO 1-3/4"-20 SPLINE AS
3	2	N10347	KIT, PTO CROSS & BEARING
4	1	N10364	YOKE, PTO INBOARD
5	1	N10866	SHAFT, PTO PROFILE & SLEEVE
6	1	N10342	PIN, PTO SPRING (10MM X 90MM)
7	2	N10367	SHIELD, PTO CONE 7-RIB
8	2	N11750	SCREW, PTO RIBBED SHIELD (W/N10367)
9	2	N10348	RING, PTO BEARING (SC25)
10	1	N10867	GUARD, PTO SHAFT OUTER
11	1	N/A	DECAL, PTO SHAFT GUARD (INCLUDED W/N10867)
12	1	8192	CLUTCH, PTO OVERRUNNING
13	1	N10359	ZERK, PTO GREASE (INCLUDED W/N10865)
14	1	N/A	DECAL, PTO TUBE GUARD (INCLUDED W/N10865)
15	1	N10865	TUBE, PTO PROFILE W/SLEEVE & YOKE
16	1	N10868	GUARD, PTO INNER TUBE
17	1	N10355	BEARING, PTO TUBE GUARD SUPPORT
18	1	N10356	CHAIN, PTO SAFETY

# Parts Identification

## PTO, 1-3/8" Walterscheid w/Overrunning Clutch (8175)



Refer to page 96 for the complete parts breakdown of the overrunning clutch (Item 12), part number 8192.

To order the complete PTO, use part number 8175.



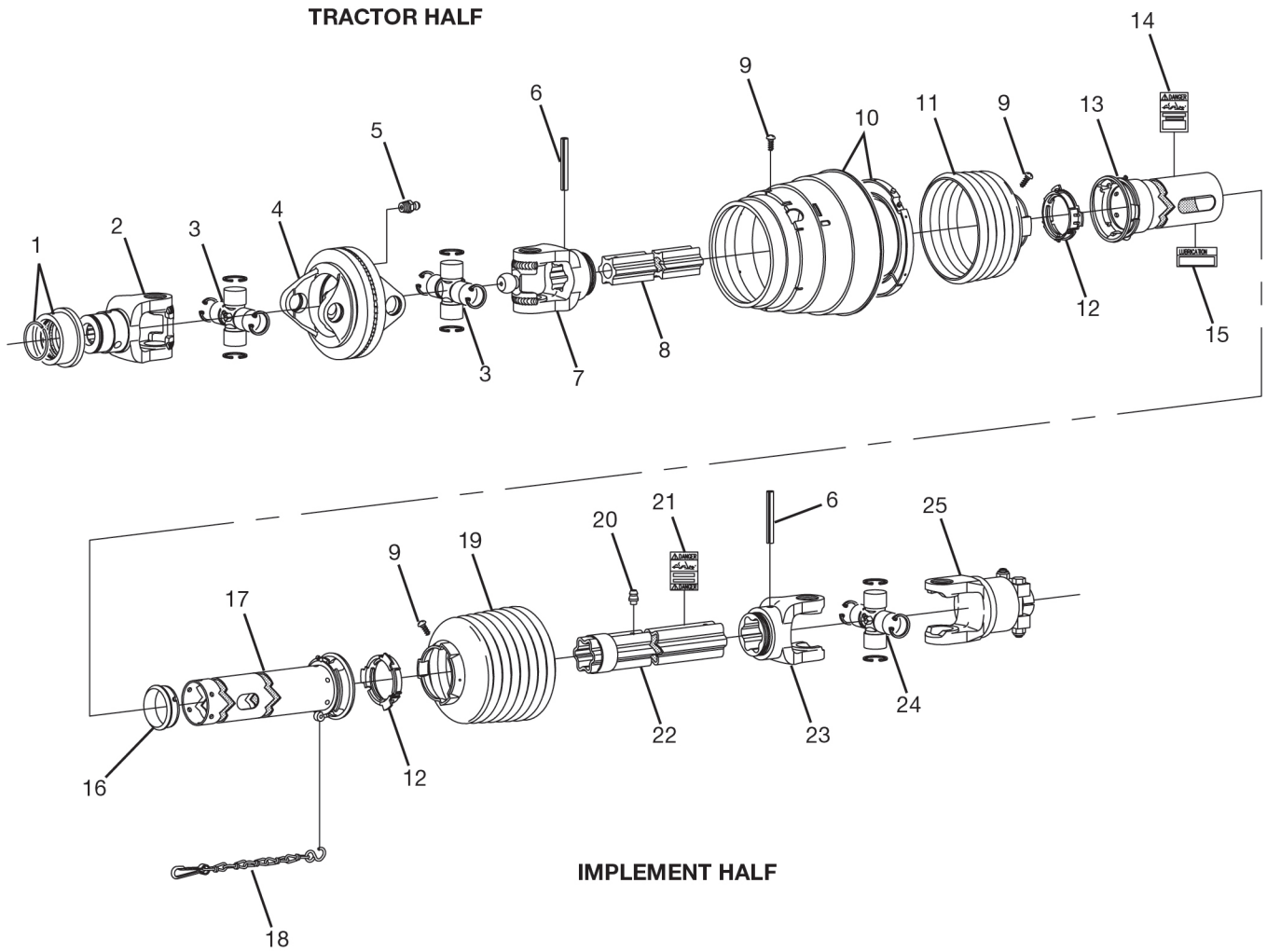
## Parts Identification

### PTO, 1-3/8" Walterscheid w/Overrunning Clutch (8175)

#	QTY.	PART #	DESCRIPTION
1	1	N10360	KIT, 1-3/8" YOKE SLIDE LOCK(INCLUDED W/N10337)
2	1	N10337	YOKE, PTO 1-3/8"-21 SPLINE AS
3	2	N10341	KIT, PTO CROSS & BEARING
4	1	N10338	YOKE, PTO DOUBLE
5	1	N10339	ZERK, PTO GREASE (INCLUDED W/N10338)
6	2	N10342	PIN, PTO SPRING (10MM X 90MM)
7	1	N10340	YOKE, PTO INBOARD (S4)
8	1	N10343	SHAFT, PTO PROFILE (S4GA)
9	8	N11750	SCREW, PTO RIBBED SHIELD (W/N10351, NI0352 & N10367)
10	1	N10351	BEARING, PTO CV CONE
11	1	N10352	SHIELD, PTO CONE 4-RIB
12	2	N10348	RING, PTO BEARING (SC25)
13	1	N10349	GUARD, PTO SHAFT OUTER
14	1	N/A	DECAL, PTO SHAFT GUARD (INCLUDED W/N10349)
15	1	N10862	DECAL, PTO LUBRICATION
16	1	N10355	BEARING, PTO TUBE GUARD SUPPORT
17	1	N10350	GUARD, PTO TUBE INNER
18	1	N10356	CHAIN, PTO SAFETY
19	1	N10367	SHIELD, PTO CONE 7-RIB
20	1	N10359	ZERK, PTO GREASE (INCLUDED W/N10861)
21	1	N/A	DECAL, PTO TUBE GUARD (INCLUDED W/N10861)
22	1	N10861	TUBE, PTO PROFILE W/SLEEVE
23	1	N10345	YOKE, PTO INBOARD (S5)
24	1	N10347	KIT, PTO CROSS & BEARING
25	1	8192	CLUTCH, PTO OVERRUNNING

# Parts Identification

## PTO, 1-3/4" Walterscheid w/Overrunning Clutch (8176)



Refer to page 96 for the complete parts breakdown of the overrunning clutch (Item 12), part number 8192.

To order the complete PTO, use part number 8176.

## Parts Identification

### PTO, 1-3/4" Walterscheid w/Overrunning Clutch (8176)

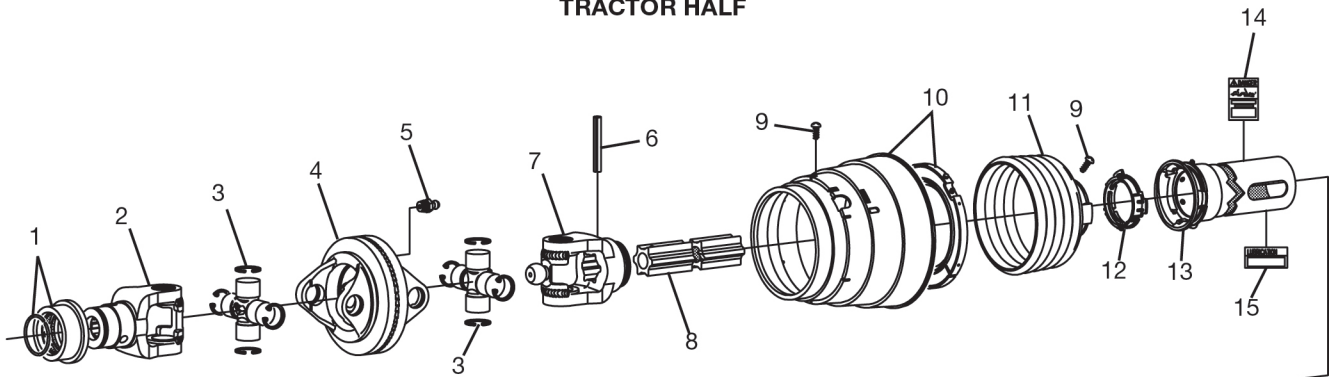
#	QTY.	PART #	DESCRIPTION
1	1	N10362	KIT, 1-3/4" YOKE SLIDE LOCK (INCLUDED W/N10361)
2	1	N10361	YOKE, PTO 1-3/4"-20 SPLINE AS
3	2	N10341	KIT, PTO CROSS & BEARING
4	1	N10338	YOKE, PTO DOUBLE
5	1	N10339	ZERK, PTO GREASE (INCLUDED W/N10338)
6	2	N10342	PIN, PTO SPRING (10MM X 90MM)
7	1	N10340	YOKE, PTO INBOARD (S4)
8	1	N10343	SHAFT, PTO PROFILE (S4GA)
9	8	N11750	SCREW, PTO RIBBED SHIELD (W/N10351, N10352 & N10367)
10	1	N10351	BEARING, PTO CV CONE
11	1	N10352	SHIELD, PTO CONE 4-RIB
12	2	N10348	RING, PTO BEARING (SC25)
13	1	N10349	GUARD, PTO SHAFT OUTER
14	1	N10357	DECAL, PTO SHAFT GUARD
15	1	N/A	DECAL, PTO LUBRICATION (INCLUDED W/N10349)
16	1	N10355	BEARING, PTO TUBE GUARD SUPPORT
17	1	N10350	GUARD, PTO TUBE INNER
18	1	N10356	CHAIN, PTO SAFETY
19	1	N10367	SHIELD, PTO CONE 7-RIB
20	1	N10359	ZERK, PTO GREASE (INCLUDED W/N10861)
21	1	N/A	DECAL, PTO TUBE GUARD (INCLUDED W/N10861)
22	1	N10861	TUBE, PTO PROFILE W/SLEEVE
23	1	N10345	YOKE, PTO INBOARD (S5)
24	1	N10347	KIT, PTO CROSS & BEARING
25	1	8192	CLUTCH, PTO OVERRUNNING

# Parts Identification

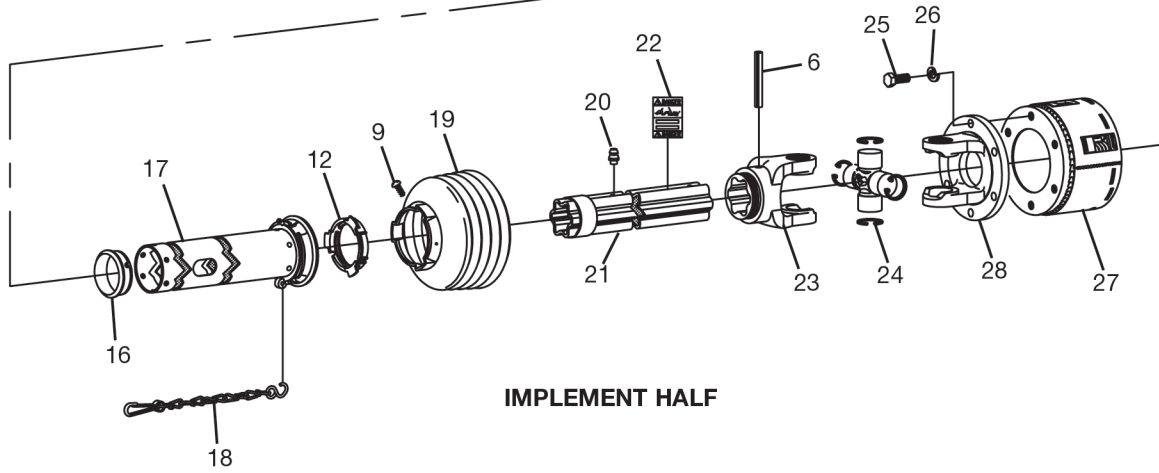
## PTO, 1-3/4" Walterscheid W/97 Friction Overrunning Clutch (N10512)

### PULL TYPE SHREDDER

#### TRACTOR HALF



#### IMPLEMENT HALF



Refer to page 98 for the complete parts breakdown of the friction/overrunning clutch (Item 27), part number N10856.

To order the complete PTO, use part number N10512.

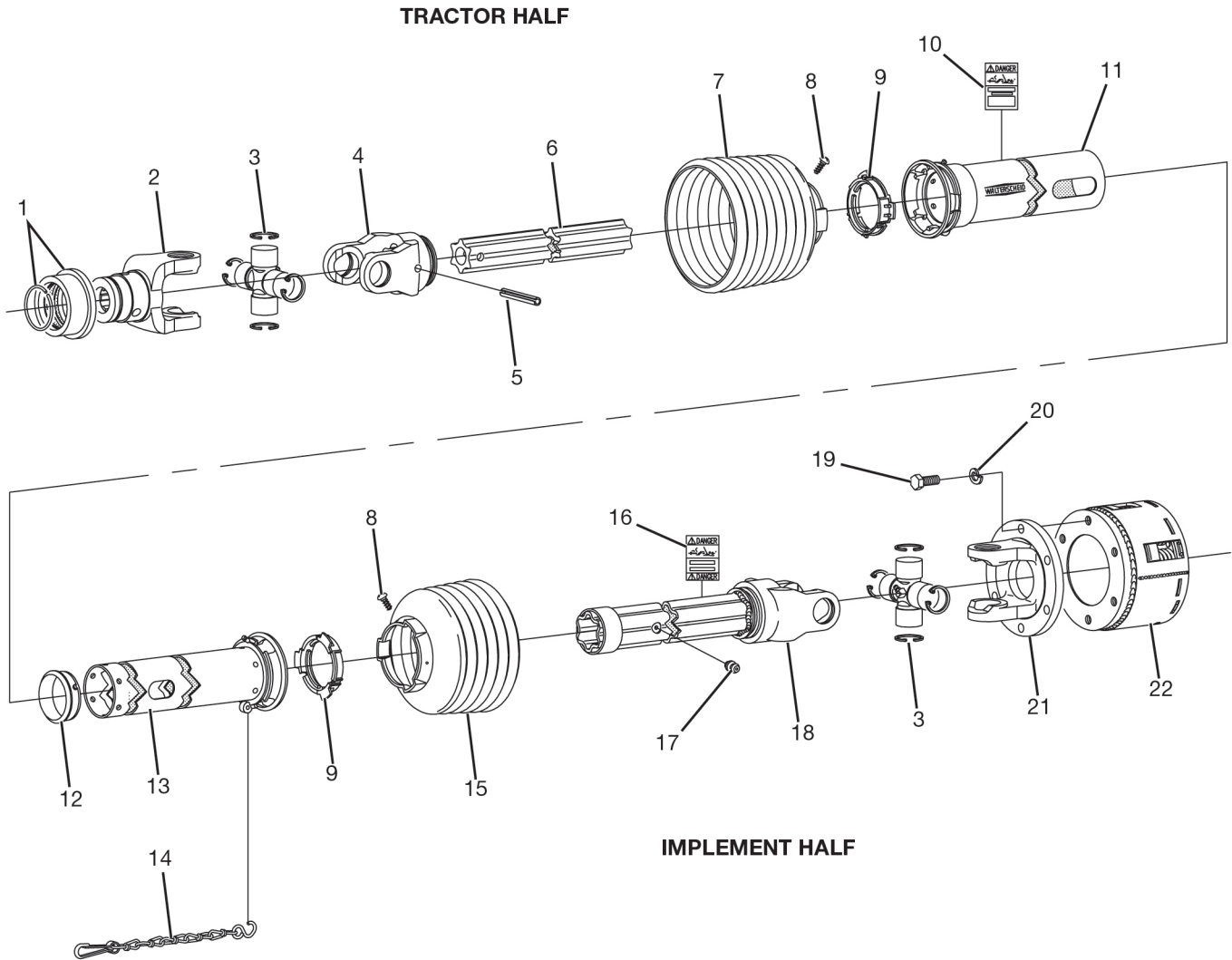
## Parts Identification

### PTO, 1-3/4" Walterscheid W/97 Friction Overrunning Clutch (N10512)

#	QTY.	PART #	DESCRIPTION
1	1	N10362	KIT, 1-3/4" YOKE SLIDE LOCK (INCLUDED W/N10361)
2	1	N10361	YOKE, PTO 1-3/4"-20 SPLINE ASS'Y
3	2	N10341	KIT, PTO CROSS & BEARING
4	1	N10338	YOKE, PTO DOUBLE
5	1	N10339	ZERK, PTO DOUBLE YOKE GREASE (INCLUDED W/N10338)
6	2	N10342	PIN, PTO SPRING (10MM X 90MM)
7	1	N10340	YOKE, PTO INBOARD (S4)
8	1	N10343	SHAFT, PTO PROFILE (S4GA)
9	8	N11750	SCREW, PTO RIBBED SHIELD (W/N10351, N10352 & N10353)
10	1	N10351	BEARING, PTO CV CONE
11	1	N10352	SHIELD, PTO CONE 4-RIB
12	2	N10348	RING, PTO BEARING (SC25)
13	1	N10349	GUARD, PTO SHAFT OUTER
14	1	N/A	DECAL, PTO SHAFT GUARD
15	1	N10862	DECAL, PTO GUARD LUBRICATON (INCLUDED W/N10349)
16	1	N10355	BEARING, PTO TUBE GUARD SUPPORT
17	1	N10350	GUARD, PTO TUBE INNER
18	1	N10356	CHAIN, PTO SAFETY
19	1	N10353	SHIELD, PTO CONE 6-RIB
20	1	N10359	ZERK, PTO GREASE
21	1	N10861	TUBE, PTO PROFILE W/SLEEVE
22	1	N/A	DECAL, PTO TUBE GUARD
23	1	N10345	YOKE, PTO INBOARD (S5)
24	1	N10347	KIT, PTO CROSS & BEARING
25	6	N10859	BOLT, M12 X 30MM
26	6	N10860	WASHER, M12 LOCK
27	1	N10856	CLUTCH, PTO 97 FRICTION/OVERRUNNING
28	1	N10858	YOKE, PTO FLANGE

# Parts Identification

## PTO, 1-3/4" Walterscheid w/97 Friction Overrunning Clutch (N10515)



Refer to page 98 for the complete parts breakdown of the friction/overrunning clutch (Item 27), part number N10856.

To order the complete PTO, use part number N10515.

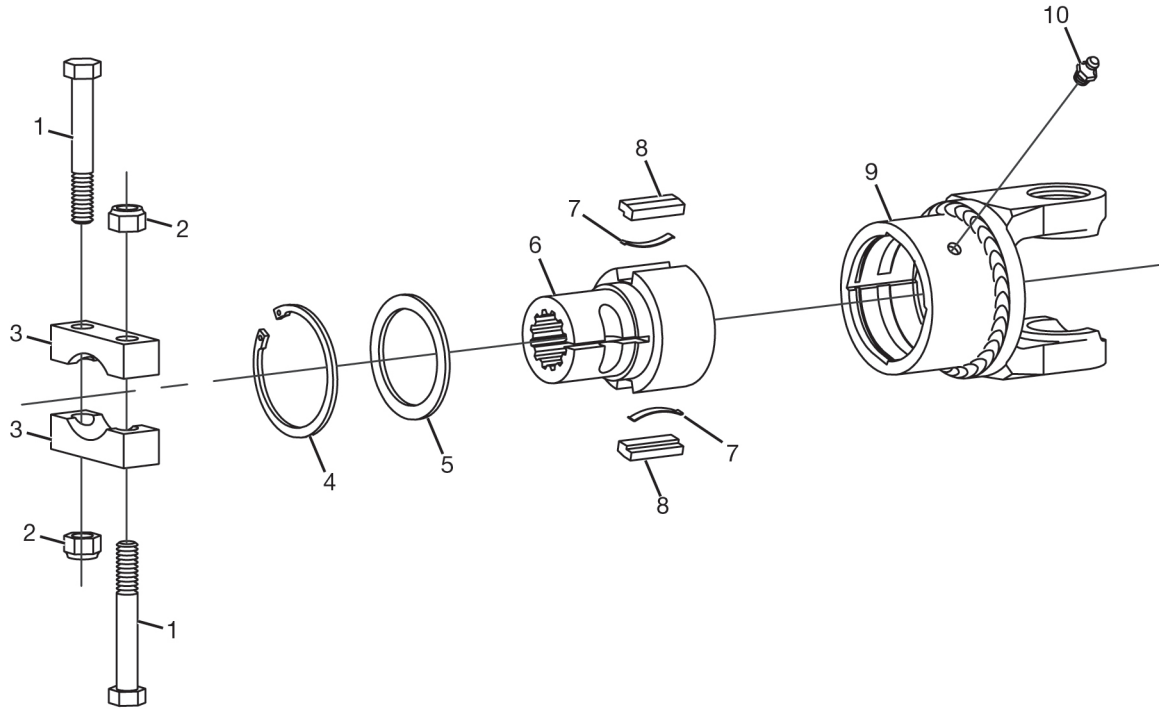
## Parts Identification

### PTO, 1-3/4" Walterscheid w/97 Friction Overrunning Clutch (N10515)

#	QTY.	PART #	DESCRIPTION
1	1	N10362	KIT, 1-3/4" YOKE SLIDE LOCK (INCLUDED W/N10370)
2	1	N10370	YOKE, PTO 1-3/4"-20 SPLINE AS
3	2	N10347	KIT, PTO CROSS & BEARING
4	1	N10364	YOKE, PTO INBOARD
5	1	N10342	PIN, PTO SPRING (10MM X 90MM)
6	1	N14075	SHAFT, WALTERSCHIED PTO PROFILE (S4GA)
7	1	N10367	SHIELD, PTO CONE 7-RIB
8	2	N11750	SCREW, PTO RIBBED SHIELD (INCLUDED W/N10367 & N10353)
9	2	N10348	RING, PTO BEARING (SC25)
10	1	N/A	DECAL, PTO SHAFT GUARD (INCLUDED W/N13068)
11	1	N10368	GUARD, PTO SHAFT OUTER
12	1	N10355	BEARING, PTO TUBE GUARD SUPPORT
13	1	N10369	GUARD, PTO TUBE INNER
14	1	N10356	CHAIN, PTO SAFETY
15	1	N10353	SHIELD, PTO CONE 6-RIB
16	1	N/A	DECAL, PTO TUBE GUARD (INCLUDED W/N10857)
17	1	N10359	ZERK, PTO GREASE (INCLUDED W/N10857)
18	1	N10857	TUBE, PTO PROFILE W/SLEEVE & YOKE
19	6	N10859	BOLT, M12 X 30MM
20	6	N10860	WASHER, M12 LOCK
21	1	N10858	YOKE, PTO FLANGE
22	1	N10856	CLUTCH, PTO 97 FRICTION/OVERRUNNING

# Parts Identification

## Clutch, 1-3/4" Walterscheid Overrunning (8192)



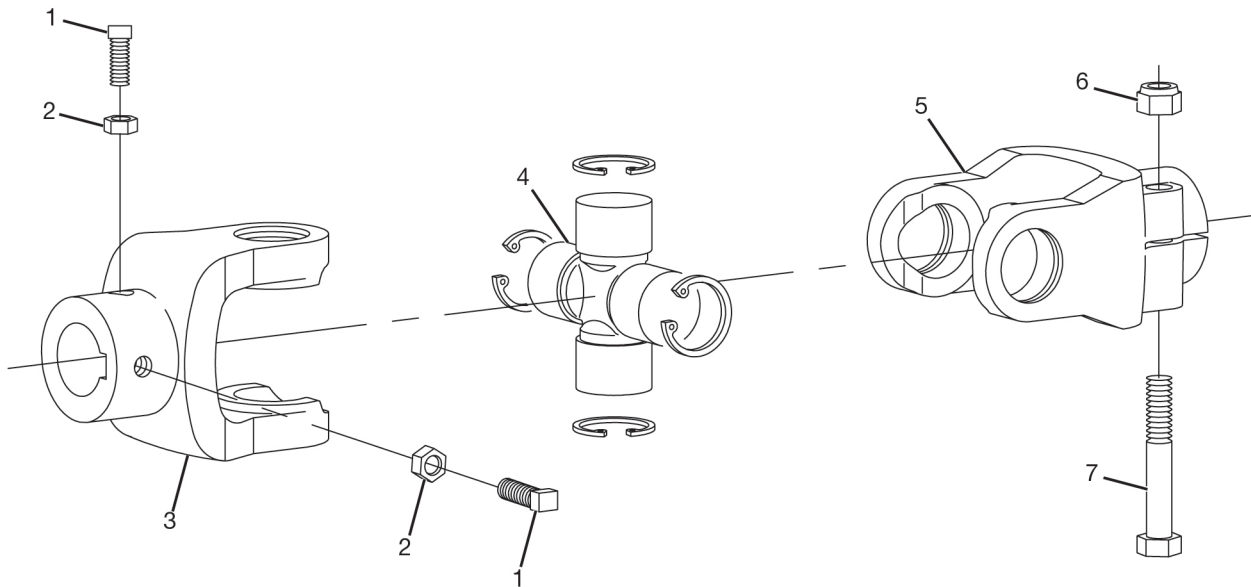
To order a complete overrunning clutch (items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10), use part number 8192.

#	QTY.	PART #	DESCRIPTION
1	2	4448	BOLT, M16 X 110MM HEX HD.
2	2	4449	NUT, M16 LOCK
3	2	N10388	BRIDGE, CLUTCH CLAMP
4	1	N10873	1-3/4" HD CLUTCH RETAINING
5	1	N10878	WASHER, 1-3/4" HD CLUTCH (59.8 X 72)
6	1	N10892	HUB, 1-3/4"-20 SPLINE CLUTCH
7	2	N10877	SPRING, 1-3/4" HD CLUTCH LEAF
8	2	N10888	KEY, CLUTCH
9	1	N10887	HOUSING, CLUTCH
10	1	N10339	ZERK, GREASE (INCLUDED W/N10887)



## Parts Identification

### U-Joint, 1-3/4" RB X 1-3/4"- 20 Spline (N12440)

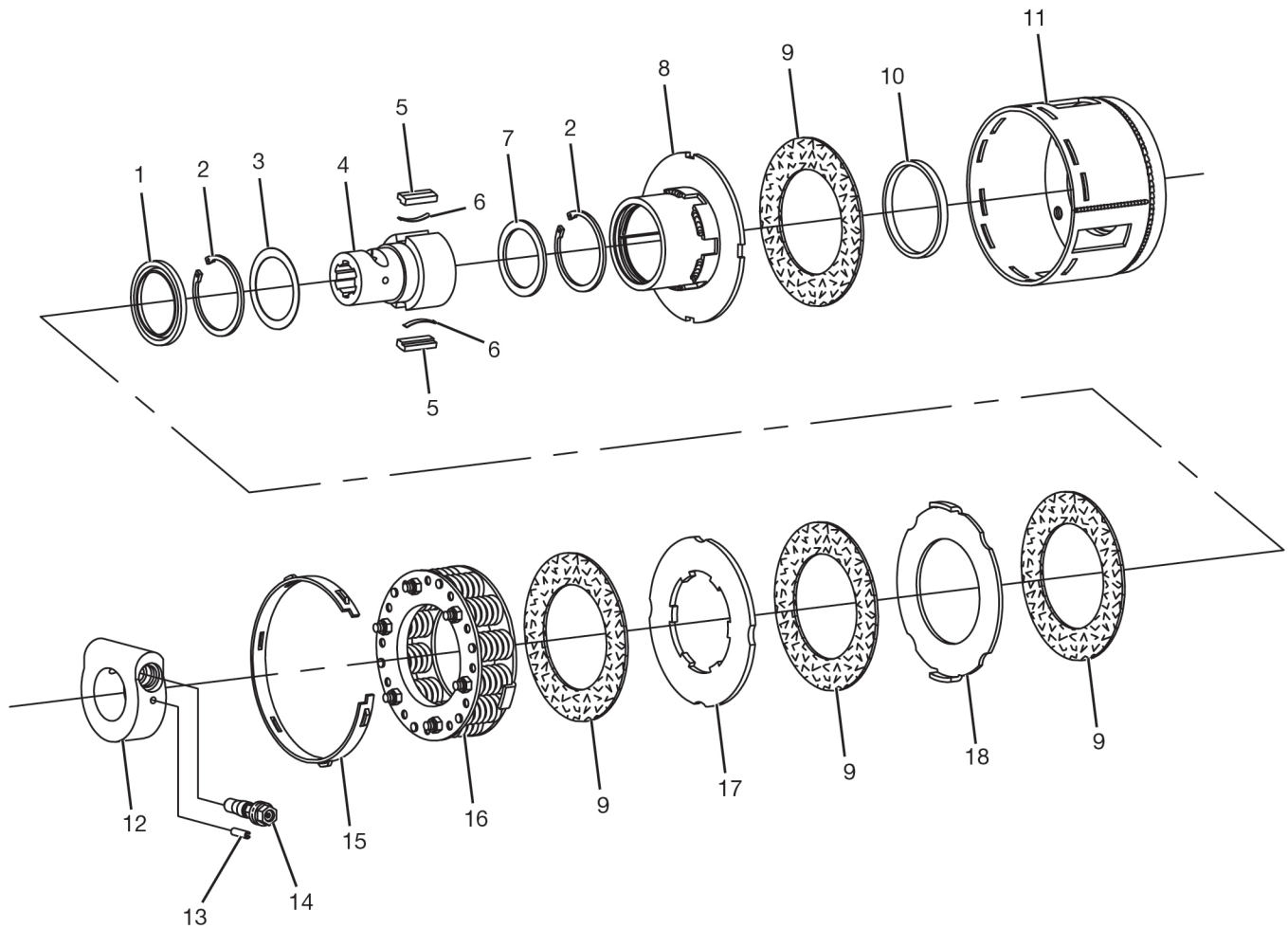


To order a complete overrunning clutch (items 3, 4, 5, 6, 7), use part number N12440.

#	QTY.	PART #	DESCRIPTION
1	2	4082	SCREW, SQ HD SET 3/8" X 1-1/4"
2	2	4061	NUT, 3/8" JAM
3	1	N14072	YOKE, 1-3/4" RB W/3/8" KEYWAY
4	1	N10347	KIT, CROSS & BEARING
5	1	N14073	YOKE, 1-3/4"-20 SPLINE IC
6	1	4449	NUT, M16 LOCK
7	1	4500	BOLT, M16 X 90MM HEX HD

# Parts Identification

## Clutch, PTO 97 Friction/Overrunning (N10856)



To order a complete 97 Friction/  
Overrunning Clutch, use part  
number N10856.

## Parts Identification

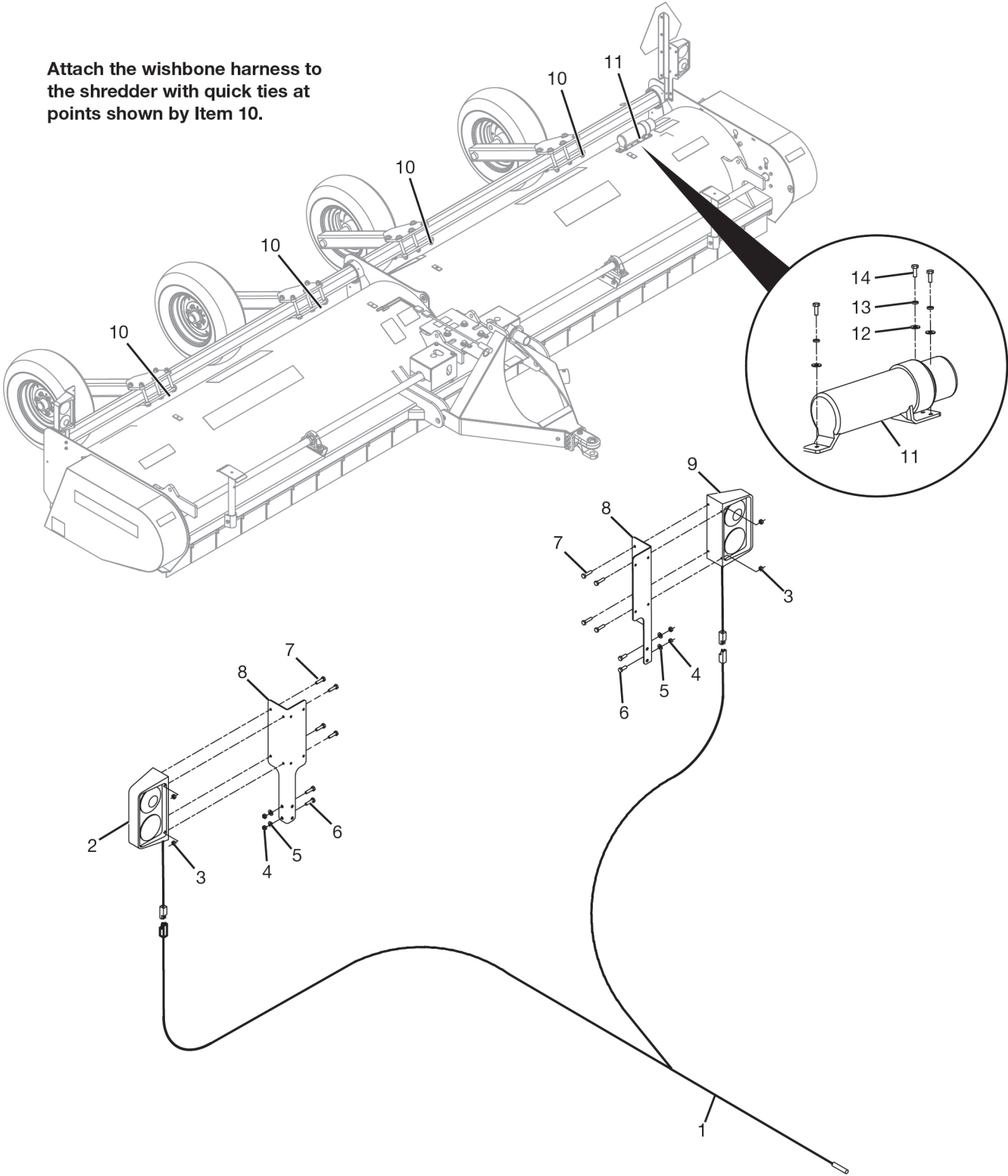
### Clutch, PTO 97 Friction/Overrunning (N10856)

#	QTY.	PART #	DESCRIPTION
1	1	N10879	RING, CLUTCH SEAL
2	2	N10873	RING, CLUTCH RETAINING
3	1	N10878	WASHER, CLUTCH (59.8 x 72)
4	1	N10875	HUB, CLUTCH
5	2	N10876	KEY, CLUTCH
6	2	N10877	SPRING, CLUTCH LEAF
7	1	N10874	WASHER, CLUTCH (56x72)
8	1	N10872	HOUSING, CLUTCH OVERRUNNING
9	4	N10871	DISK, CLUTCH FRICTION
10	1	N10870	RING, CLUTCH WEAR
11	1	N10869	HOUSING, CLUTCH
12	1	N10884	RING, CLUTCH CLAMPING
13	1	N10886	PIN, CLUTCH SPRING (6 x 22)
14	1	N10885	CONE, CLUTCH CLAMPING
15	1	N10883	RING, CLUTCH SETTING
16	1	N10882	SPRING, CLUTCH PACK
17	1	N10881	PLATE CLUTCH INNER DRIVE
18	1	N10880	PLATE, CLUTCH OUTER DRIVE

# Parts Identification

## 12' - 18' Light Kit and Manual Holder

Attach the wishbone harness to the shredder with quick ties at points shown by Item 10.



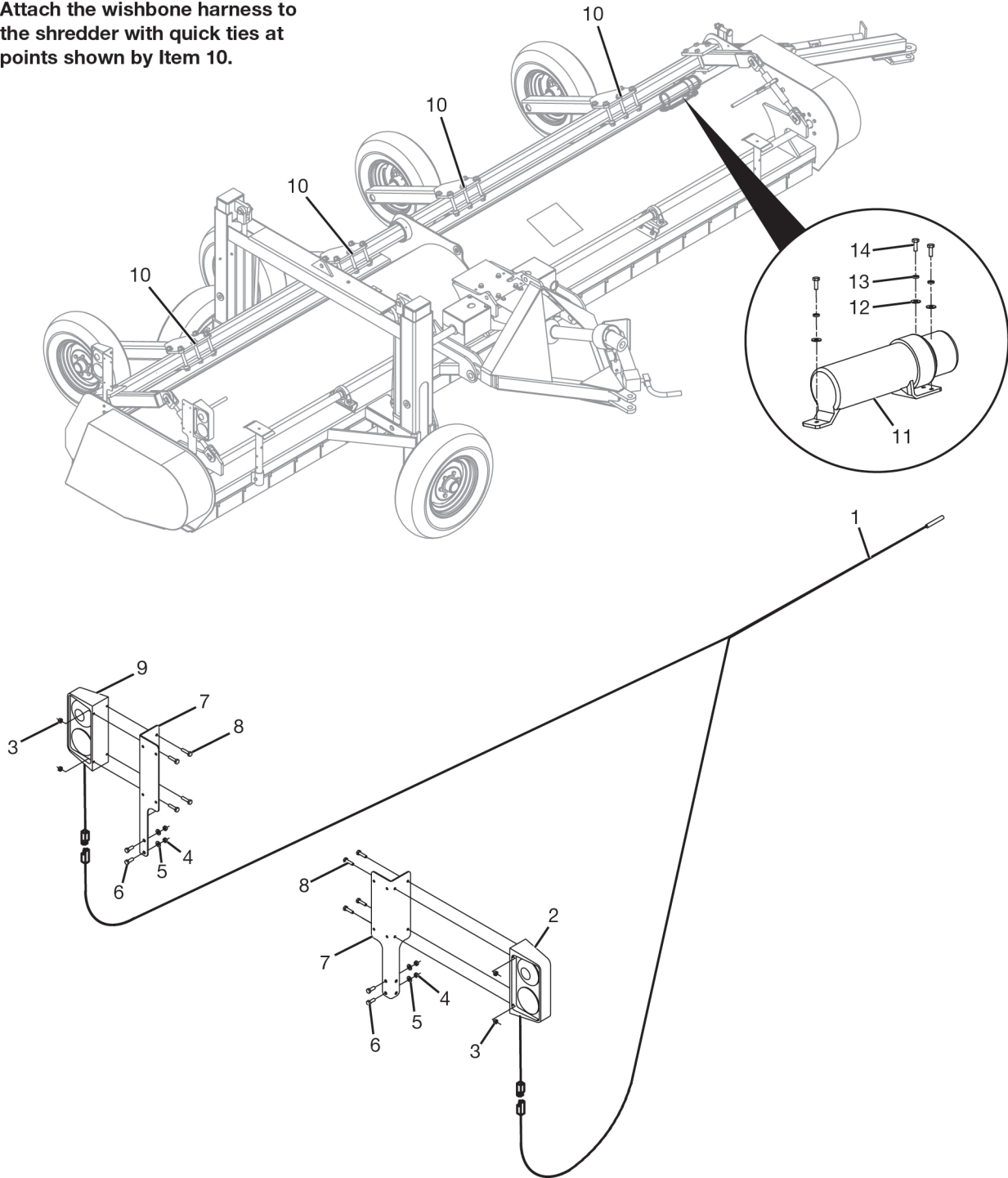
### 12' - 18' Light Kit and Manual Holder

#	QTY.	PART #	DESCRIPTION
1	1	210314	HARNESS-LIGHT, 30FT WISHBONE
2	1	N16290	LIGHT, DUAL AG RIGHT
3	8	4050	NUT, LOCK 1/4"
4	4	4233	NUT, STD 3/8"
5	4	4065	WASHER, LOCK 3/8"
6	4	4195	BOLT, 3/8" X 1" GRADE 5
7	8	4000	BOLT, 1/4" X 1" GRADE 5
8	2	N16182	MOUNT, LIGHT
9	1	N16289	LIGHT, DUAL AG LEFT
10	Varies	-	TIE, QUICK (ZIP - NOT SHOWN)
11	1	N19600	HOLDER, LG. OPERATORS MANUAL
12	3	4460	WASHER, FLAT 1/4"
13	3	4231	WASHER, LOCK 1/4"
14	3	4340	BOLT, 1/4" X 3/4" GRADE 5

# Parts Identification

## 20', 24' Light Kit and Manual Holder

Attach the wishbone harness to the shredder with quick ties at points shown by Item 10.



### 20', 24' Light Kit and Manual Holder

#	QTY.	PART #	DESCRIPTION
1	1	210314	HARNESS-LIGHT, 30FT WISHBONE
2	1	N16290	LIGHT, DUAL AG RIGHT
3	8	4050	NUT, LOCK 1/4"
4	4	4233	NUT, STD. 3/8'
5	4	4065	WASHER, LOCK 3/8"
6	4	4195	BOLT, 3/8" X 1" GRADE 5
7	2	N16182	MOUNT, LIGHT
8	8	4000	BOLT, 1/4" X 1" GRADE 5
9	1	N16289	LIGHT, DUAL AG LEFT
10	Varies	-	TIE, QUICK (ZIP - NOT SHOWN)
11	1	N19600	HOLDER, LG. OPERATORS MANUAL
12	3	4460	WASHER, FLAT 1/4"
13	3	4231	WASHER, LOCK 1/4"
14	3	4340	BOLT, 1/4" X 3/4" GRADE 5

# Parts Identification

## Machine Decals and Signs

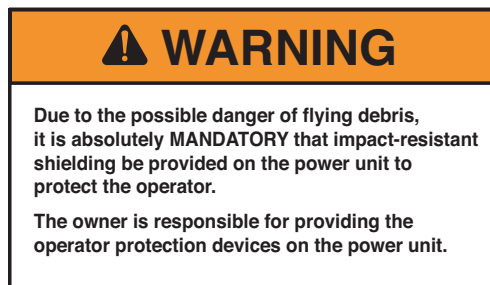
**NOTE:** All safety related decals are also shown in the Safety Instructions Section along with their location on the machine. See "Safety Decal Locations" on page 10.

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

Part No. 4135



Part No. N17013



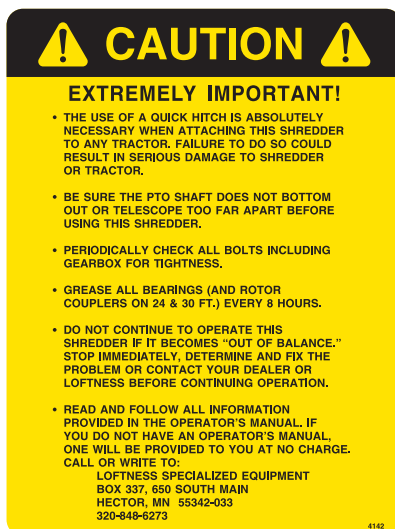
Part No. 4334



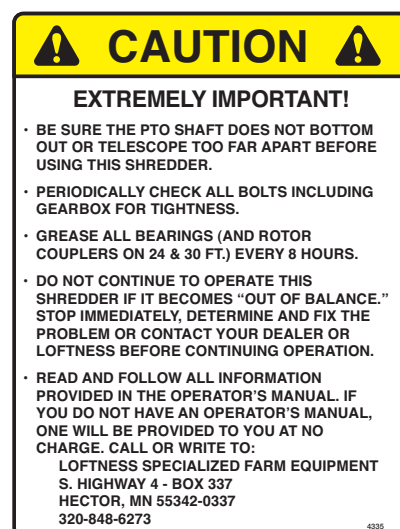
Part No. 208824



Part No. 4142



Part No. 4335



**NOTE:** Either decal 4142 or 4335 is used depending on which hitch configuration is installed on the machine.



## Machine Decals and Signs (Cont'd)

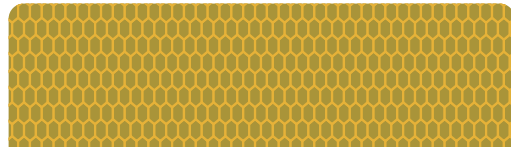
Part No. 4189



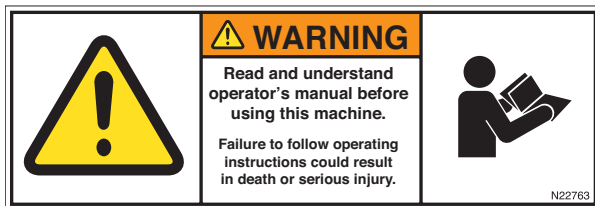
Part No. 4141



Part No. 4140



Part No. N22763



Part No. 4132



(Transport models only)

Part No. N18549



(Affixed to aluminum plate)

Part No. N23931



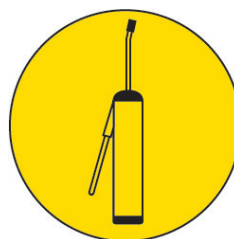
Part No. 4136



Part No. 203264



Part No. 4137



# Parts Identification

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## Machine Decals and Signs (Cont'd)

Part No. N32275



Part No. N26973 - (medium)



Part No. N26972 - (large)



Part No. N13721



Part No. 209528



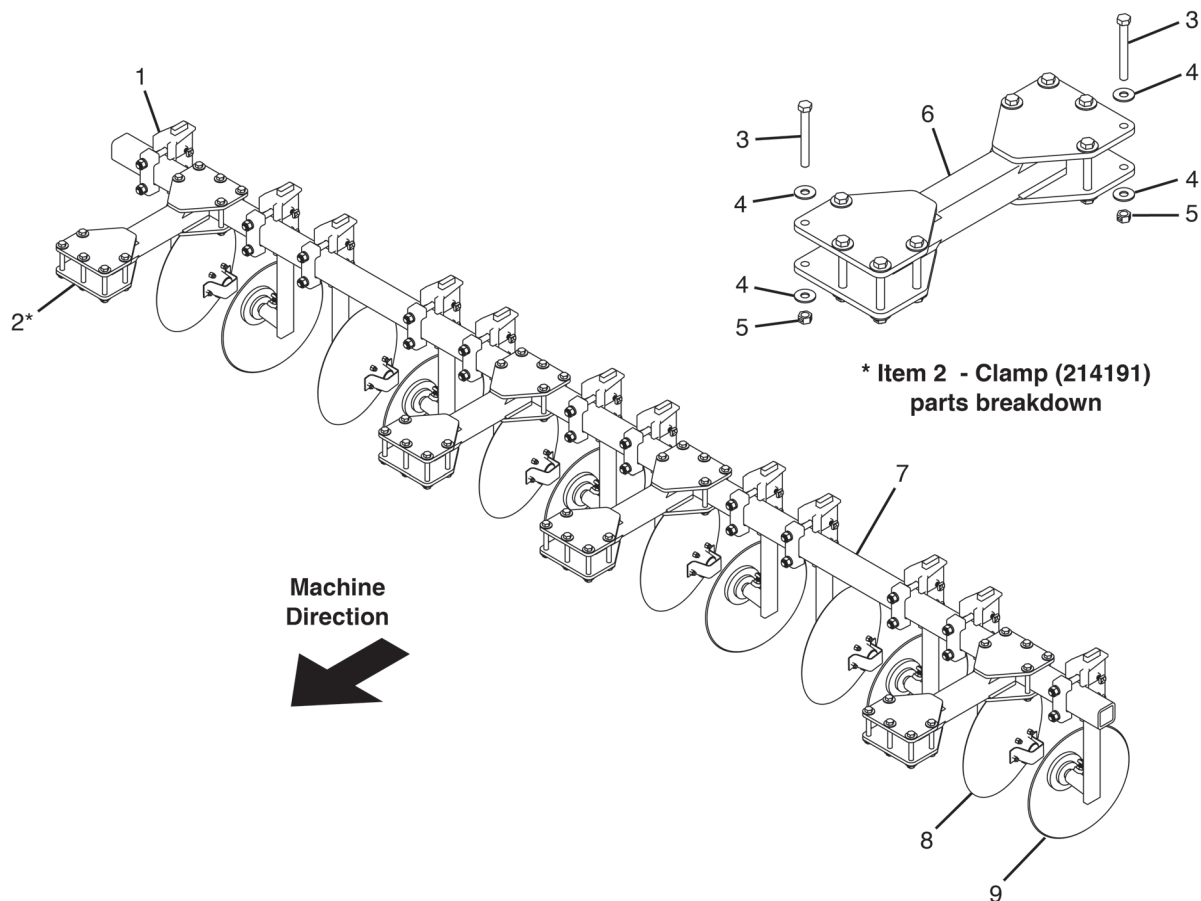
Part No. N13517



Part No. 4138



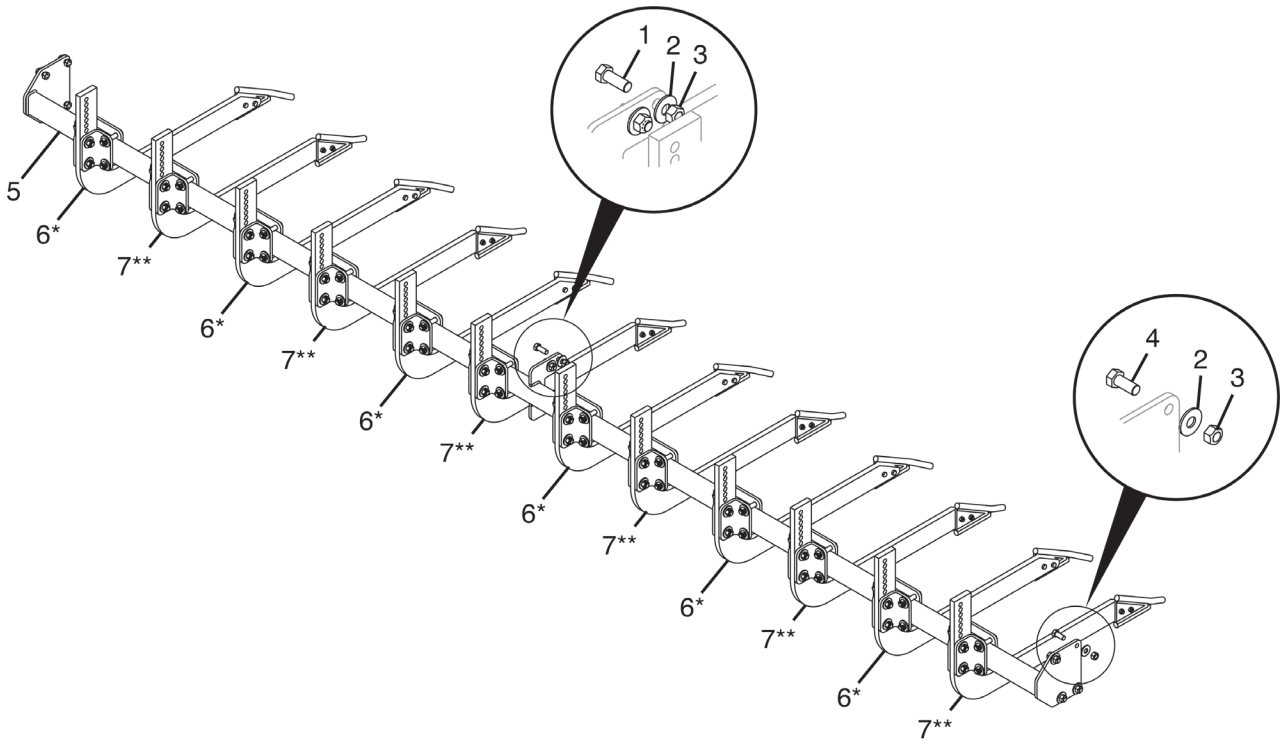
## Disc, Vine (214192) - 20' Model only



#	QTY.	PART #	DESCRIPTION
1	12	214202	SHANK HOLDER, 1 X 3, 4 X 4
2	4	214191	CLAMP, DISC VEGETABLE
3	10	4458	BOLT, 3/4" X 6-1/2" GR. 5
4	20	4071	WASHER, 3/4" FLAT
5	10	4056	NUT, LOCK 3/4"
6	1	214190	MOUNT, DISC
7	1	214170	TUBE, DISC MOUNT
8	6	214172	CONE GUIDE ASSEMBLY, RIGHT
9	6	214207	CONE GUIDE ASSEMBLY, LEFT

# Options

## Vine Lift (214178)

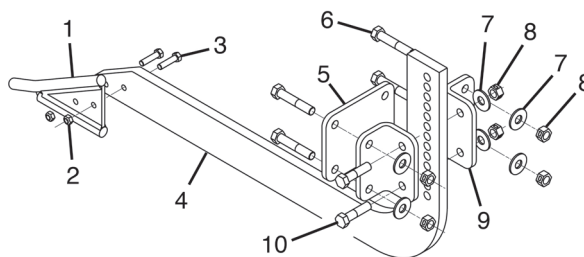


\* For a complete parts breakdown of item 6 - Left Vine Lifter (214180) see page 109.

\*\* For a complete parts breakdown of item 7 - Right Vine Lifter (214187) see page 109.

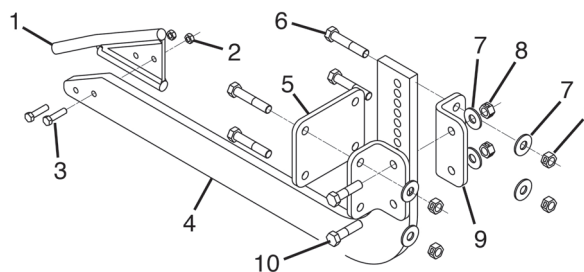
#	QTY.	PART #	DESCRIPTION
1	4	N16509	BOLT, 3/4" X 2" FN THD GR 8
2	12	4071	WASHER, 3/4" FLAT
3	12	N16352	NUT, LOCK 3/4" GRADE 8 FINE
4	8	N16753	BOLT, 3/4" X 1-3/4" FN THD GR 8
5	1	214163	MOUNT, VINE LIFT
6	6	214180	LIFTER, VINE LEFT
7	6	214187	LIFTER, VINE RIGHT

## Left Vine Lifter (214180)



#	QTY.	PART #	DESCRIPTION
1	1	214196	POINT, RIGHT
2	2	4054	NUT, LOCK 1/2" TOP
3	2	4015	BOLT, 1/2" X 2" GRADE 5
4	1	214186	LIFTER, VINE
5	1	214179	PLATE, CLAMP
6	4	4169	BOLT, 3/4" X 4" BOLT GR 5
7	6	4071	WASHER, 3/4" FLAT
8	6	4056	NUT, LOCK 3/4"
9	2	214177	PLATE, MOUNT LIFTER
10	2	4352	BOLT, 3/4" X 3" GRADE 5

## Right Vine Lifter (214187)



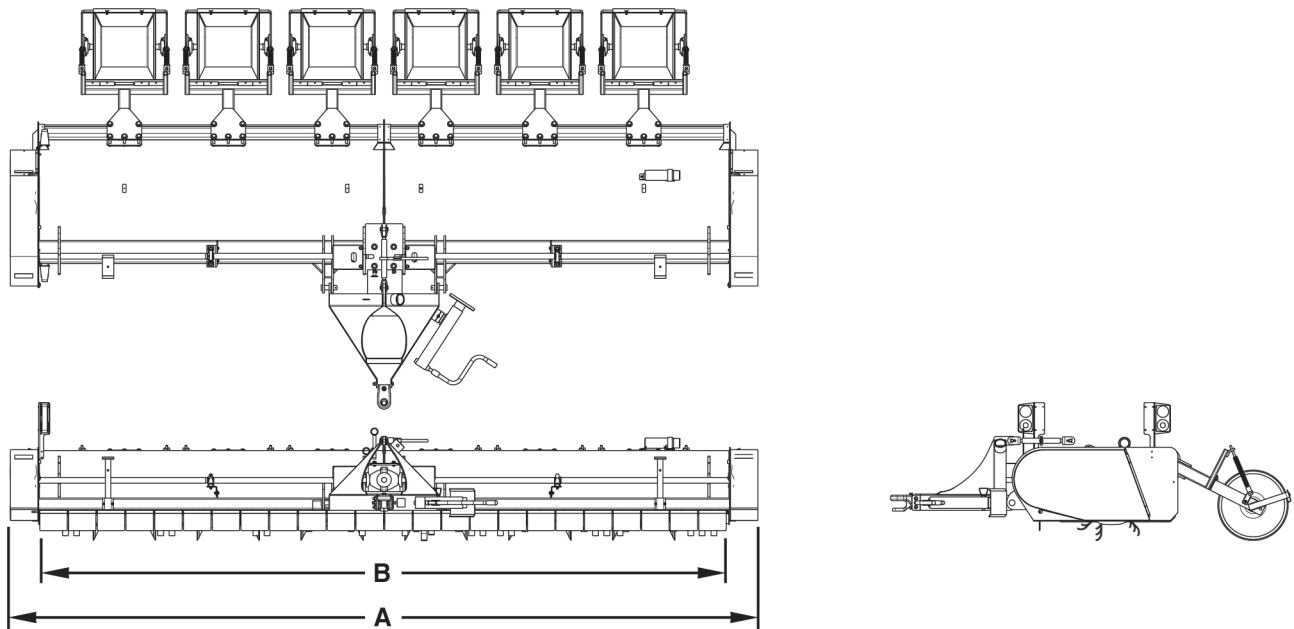
#	QTY.	PART #	DESCRIPTION
1	1	214200	POINT, LEFT
2	2	4054	NUT, LOCK 1/2" TOP
3	2	4015	BOLT, 1/2" X 2" GRADE 5
4	1	214186	LIFTER, VINE
5	1	214179	PLATE, CLAMP
6	4	4169	BOLT, 3/4" X 4" BOLT GR 5
7	6	4071	WASHER, 3/4" FLAT
8	6	4056	NUT, LOCK 3/4"
9	2	214177	PLATE, MOUNT LIFTER
10	2	4352	BOLT, 3/4" X 3" GRADE 5



## Specifications

DESCRIPTION	Standard Shredder
Weight (Standard Unit)	12' Model - approx. 4,000 lbs. (1,815 kg)
	13' Model - approx. 4,100 lbs. (1,860 kg)
	15' Model - approx. 4,500 lbs. (1,996 kg)
	18' Model - approx. 5,400 lbs. (2,450 kg)
	20' Model - approx. 6,000 lbs. (2994 kg)
	24' Model - approx. 7,500 lbs. (3,402 kg)
Rotor	1450 RPM Computer Balanced
	7 1/2 in. (19.05 cm) Tube Diameter
	2 3/16 in. (5.55 cm) Shaft Diameter
Drive	1,000 RPM PTO
	Bondioli 280 HP

## Dimensions



DESCRIPTION	12'	13'	15'	18'	20'	24
Overall Width (A)	144 in. (365 cm)	156 in. (396 cm)	180 in. (457 cm)	216 in. (549 cm)	240 in. (610 cm)	288 in. (732 cm)
Cutting Width (A)	163 in. (414 cm)	175 in. (444.5 cm)	199 in. (505.5 cm)	235 in. (597 cm)	259 in. (657.9 cm)	307 in. (779.8 cm)

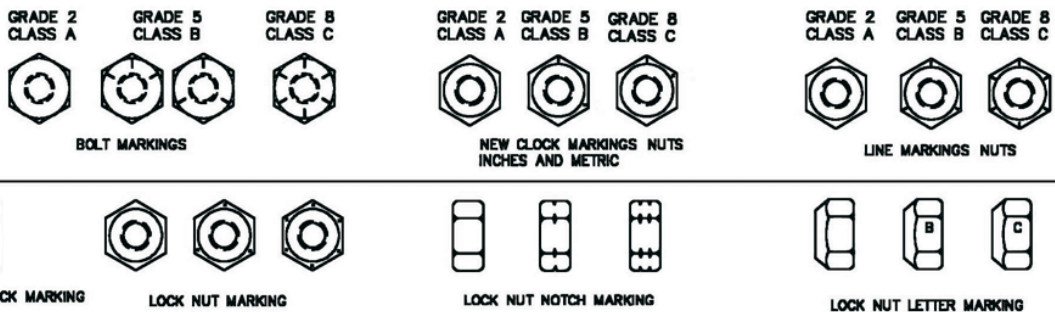
# Appendix

## 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			
	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)





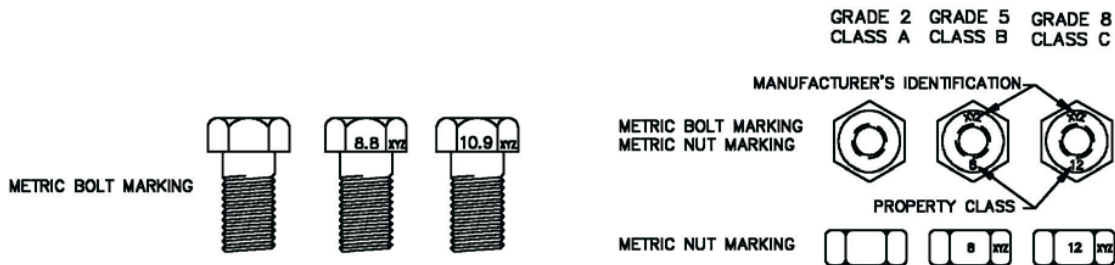
Torque Specifications (Cont'd)

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.)



NOTE: CLASS 2 IN METRIC IS 5.8



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