LOFTNESS

Draper Windrower Shredder

30' Model

Owner's Manual and Parts Book
(Originating w / Serial Number 59-163)

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

N32999

09.10.14


LOFTNESS

LOFTNESS SPECIALIZED EQUIPMENT, INC.
WARRANTY POLICY

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

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

If any Loftness product is used as rental equipment, the warranty period extends for only 30 days from the delivery date to the original customer.

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. 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.

WARRANTY REQUIREMENTS

Warranty registration form must be filled out and returned to Loftness Specialized Equipment to validate all future warranty claims.

LIMITATIONS OF WARRANTY

All Products - 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:

All Shredders, Axes, Cutters & Mowers – Rotor Balance: Critical rotor balance can be affected by conditions beyond LOFTNESS' control, such as the operation of a shredder beyond the Company's rated capacity, improper knife replacement, missing knives, striking foreign objects, lack of lubrication, etc. Any failure resulting from running in as "out-of-balance" condition, such as, but not limited to bearing and or drive-line failure, metal fatigue, cracks, etc. will be considered abuse and will not be covered under warranty. LOFTNESS may elect to have an area representative evaluate the condition of the machine before warranty is considered.

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.

EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, LOFTNESS makes no representation or warranty of any kind, expressed or implied, and makes no warranty of merchantability in respect to its machinery and/or attachments and makes no warranty that its machinery and/or attachments are fit for any particular purpose. LOFTNESS shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to inconvenience, rental or replacement equipment, loss of profits or other commercial loss. Upon purchase the buyer assumes all liability, all personal injury and property damage resulting from the handling, possession or use of the goods by the buyer.

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

April 2009


LOFTNESS

LOFTNESS
SPECIALIZED EQUIPMENT. UNLIMITED INNOVATION.

650 South Main Street
Hector, MN 55342 USA
loftness.com 320-848-6266
US & Canada 800-828-7624

International: 320-848-6266 Fax: 320-848-6269 Parts Fax: 320-848-6055 E-mail: info@loftness.com Web Address: www.loftness.com

WARRANTY REGISTRATION

Dealer No.: _____

Dealer Name: _____ Dealer Phone: _____

Shipping Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Invoice No.: _____ Part No.: _____

Model No.: _____ Serial No.: _____

PLEASE PRINT

FOLLOWING INFORMATION MUST BE FILLED IN COMPLETELY FOR WARRANTY:

Customer:
Last Name: _____ First _____ Middle Initial _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

County: _____ Warranty (Delivered) Date

Phone: _____ Month _____ Day _____ Year _____

DEALER

The machine was properly set up, adjusted and inspected before delivery. The following items were explained to the purchaser.

* How to operate machine properly as shown in the owner's manual.
* The importance of safety precaution, safety equipment and preventative maintenance.
* Loftness Warranty for this machine.

X _____
Dealer's Signature

_____
Date

PURCHASER

I have received and reviewed the operator's manual for the above machine and understand the proper and safe operation as well as the applicable warranty outlined therein.

A customer's manual is included with each machine.

The unit was delivered to me in satisfactory condition.

X _____
Purchaser's Signature

_____
Date

Customer Copy

LOFTNESS
SPECIALIZED EQUIPMENT. UNLIMITED INNOVATION.

650 South Main Street
Hector, MN 55342 USA
loftness.com 320-848-6266
US & Canada 800-828-7624

International: 320-848-6266 Fax: 320-848-6269 Parts Fax: 320-848-6055 E-mail: info@loftness.com Web Address: www.loftness.com

WARRANTY REGISTRATION

Dealer No.: _____

Dealer Name: _____ Dealer Phone: _____

Shipping Address: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Invoice No.: _____ Part No.: _____

Model No.: _____ Serial No.: _____

PLEASE PRINT

FOLLOWING INFORMATION MUST BE FILLED IN COMPLETELY FOR WARRANTY:

Customer:
Last Name: _____ First _____ Middle Initial _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

County: _____ Warranty (Delivered) Date

Phone: _____ Month _____ Day _____ Year _____

DEALER

The machine was properly set up, adjusted and inspected before delivery. The following items were explained to the purchaser.

* How to operate machine properly as shown in the owner's manual.
* The importance of safety precaution, safety equipment and preventative maintenance.
* Loftness Warranty for this machine.

X _____
Dealer's Signature

_____
Date

PURCHASER

I have received and reviewed the operator's manual for the above machine and understand the proper and safe operation as well as the applicable warranty outlined therein.

A customer's manual is included with each machine.

The unit was delivered to me in satisfactory condition.

X _____
Purchaser's Signature

_____
Date

Loftness Copy

Table of Contents

Table of Contents

Operating Instructions

Maintenance

Parts Identification

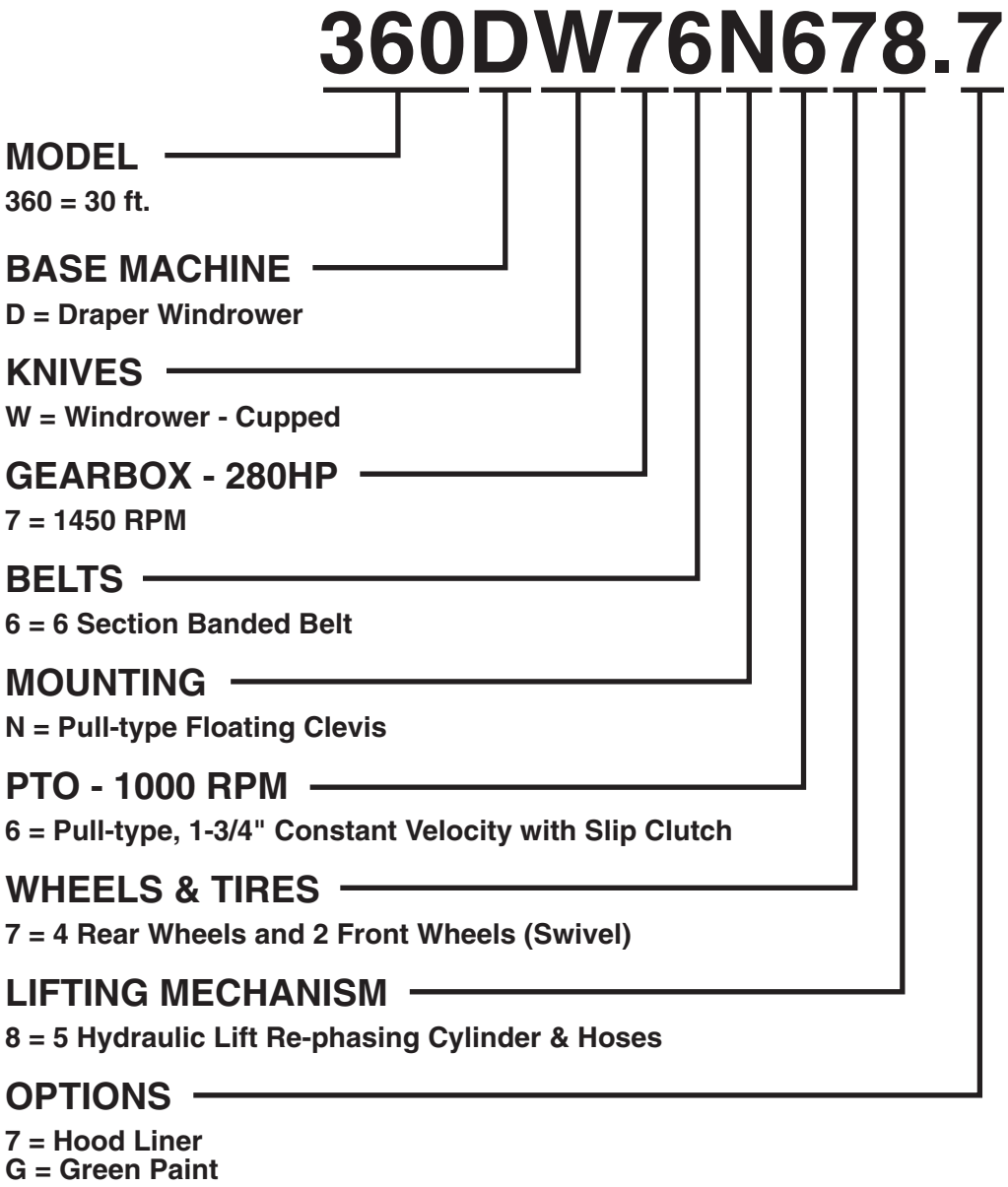
Appendix


LOFTNESS

Ordering Code

Draper Windrower Shredder (Example)

The ordering code will consist of three number (model), one letter (base machine), one letter (knives type), one number (gearbox rpm), one number (belt style), one letter (mounting type), one number (PTO type), one number (wheel setup), one number (lifting mechanism), and one to three numbers/letters (options). An example for a Draper Windrower Shredder of this type would be as shown below.




LOFTNESS

Owner Information

Thank you for your decision to purchase a draper windrower 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.

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.

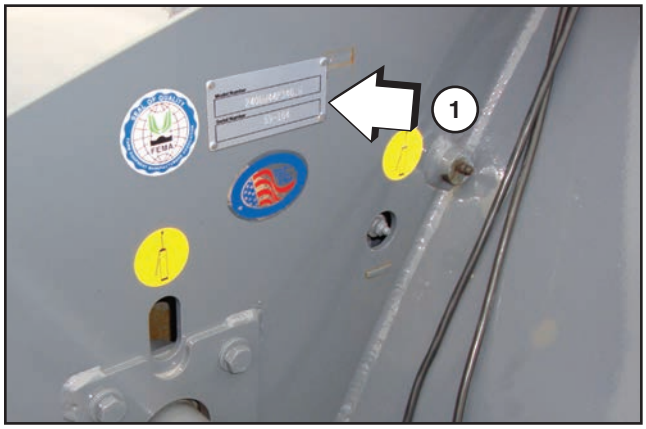
Make sure that all personnel have read this owner's manual and thoroughly understand safe and correct operating, set-up, installation and maintenance procedures.

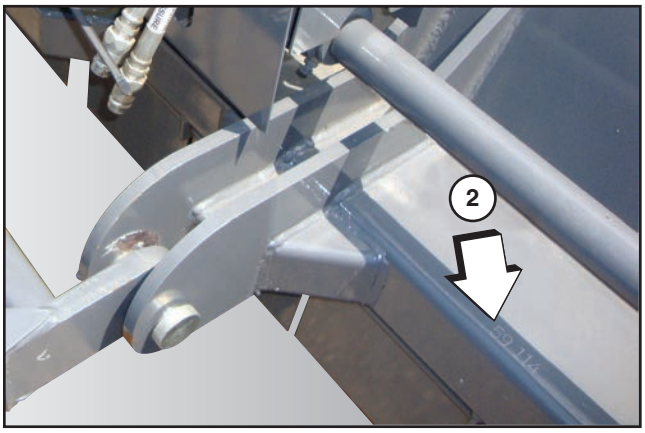
Continuous improvement and advancement of Loftness products may result in changes to your equipment that may not be reflected in this publication. Loftness reserves the right to make product improvements to the machine at any time. Although great care has been taken to ensure the accuracy of this publication,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

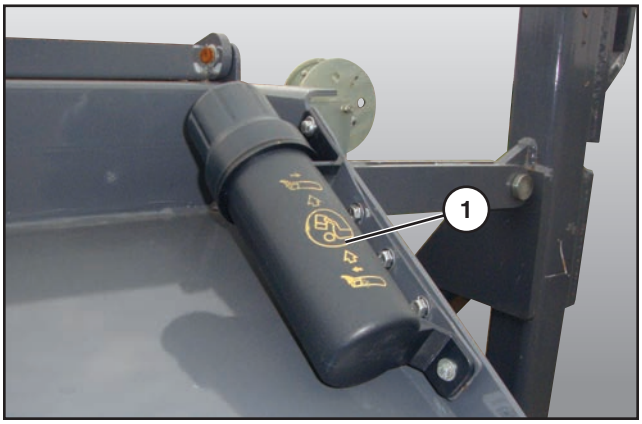




The arrows indicate the location of the serial number tag (1), and the location of the serial number stamped into the frame (2).

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

Manual Storage



Keep the owner's manual and the entire documentation packet in the storage compartment (1) provided on your draper windrower. The owner's manual must be available for all operators.

Introduction

Draper Windrower Shredder Features

- 30' Cutting Width
- Pull-type Hitch
- 30 in. Side Discharge
- 1-3/4 in. 1000 RPM PTO
- 1,450 RPM Rotor
- 4-1/2 in. Wide Cupped Knives - Hardened
- High-speed 33 in. Draper
- Flow Deflectors
- Adjustable Angle Crop Rear Door
- Tunnel Access Doors
- 6-Groove Banded Belts
- Spring-loaded Push-type Idler System
- Adjustable Rear Wheel Spacing
- Four Rotors
- Four Rear Swivel Tires
- Two Front Swivel Tires

Draper Windrower Shredder Options

- Hood Liner
- Green Paint

Safety First

Safety Alert Symbol

This message alert symbol identifies important safety messages on the machine and in the owner's manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

In the owner's manual and on decals used on the machine the words **DANGER, WARNING, CAUTION, IMPORTANT, and NOTE** are used to indicate the following:

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

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

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

IMPORTANT: Highlights information that must be heeded.

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

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

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

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

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

Owner's Responsibility

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 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 draper windrower or be thrown from the draper windrower 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 draper windrower 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 draper windrower. 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 draper windrower 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 draper windrower 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 draper windrower. 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 draper windrower. Do not attempt to operate this machine unless all factory-installed safety devices are in place.
- Never attempt to lubricate the draper windrower 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 draper windrower could occur. Be careful to avoid lifting draper windrower 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 draper windrower without the universal joints locked to the tractor and gearbox shafts.
- Operating the draper windrower 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 draper windrower 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.

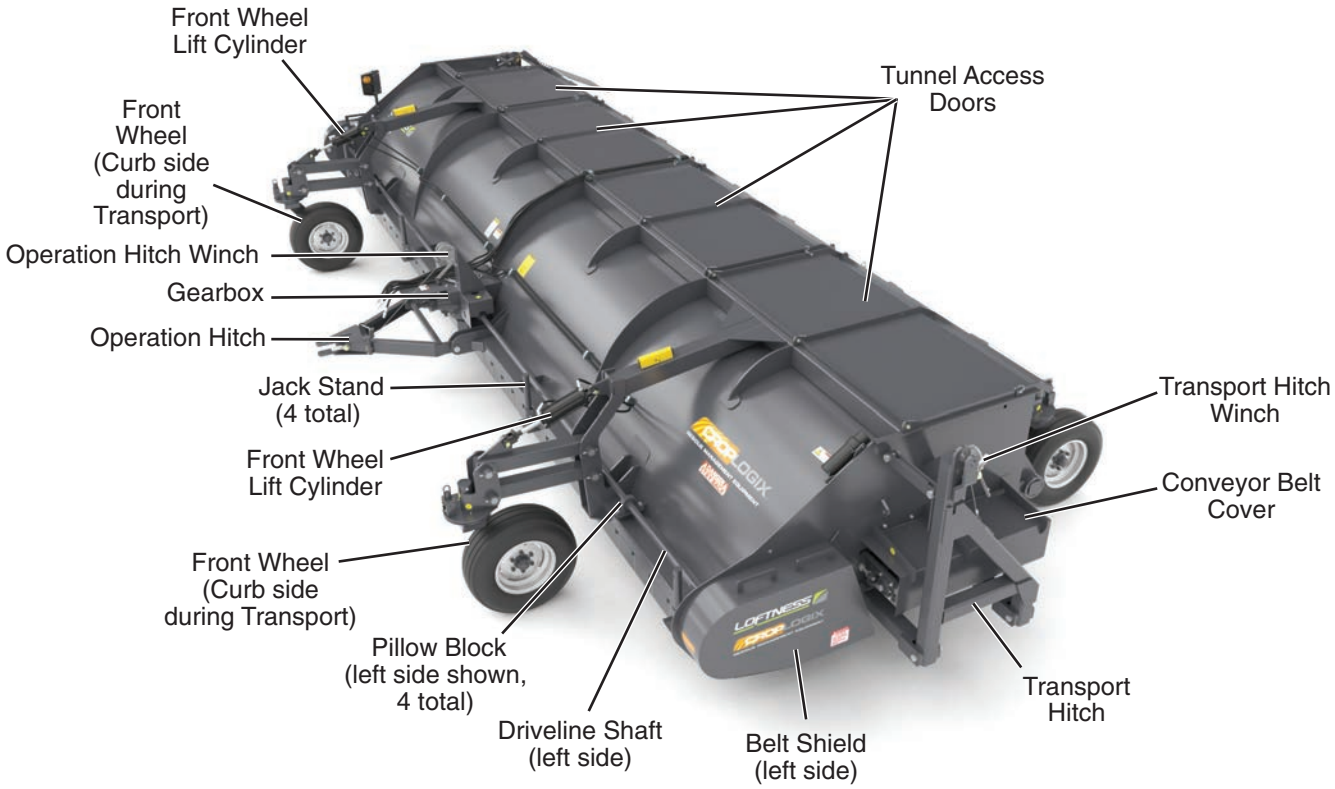
Hydraulic Safety

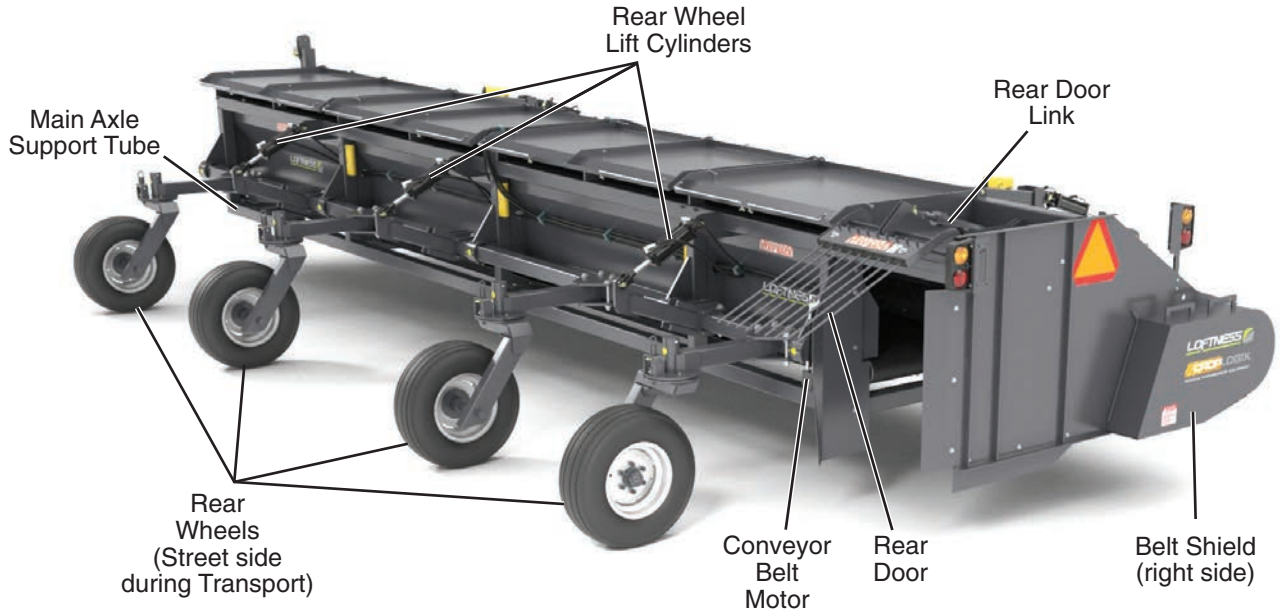
- The hydraulic system is under high pressure. Make sure all lines and fittings are tight and in good condition. These fluids escaping under high pressure can have sufficient force to penetrate skin and cause serious injury.
- Never check for leaks by using any part of your body to feel for escaping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

Hitch Safety

- Make sure the winch is in ratchet position when raising or lowering either the operation hitch or transport hitch. Failure to do so will result in the hitch falling forward suddenly which could result in serious injury to those nearby.

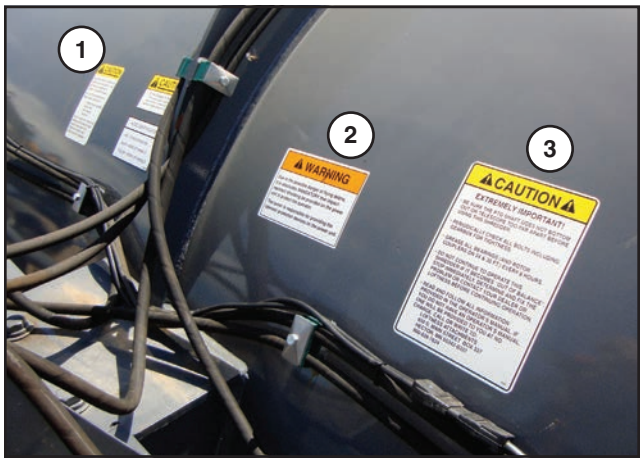
Draper Windrower Shredder Identification





Safety Decal Locations

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



1

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.

NOTE: IF YOU DO NOT HAVE AN OPERATOR'S MANUAL, CONTACT YOUR DEALER OR

LOFTNESS SPECIALIZED EQUIPMENT
650 SOUTH MAIN
HECTOR, MN 55342
1-800-828-7624

FAILURE TO FOLLOW SAFETY, OPERATING, AND MAINTENANCE INSTRUCTIONS COULD RESULT IN DEATH OR SERIOUS INJURY TO THE OPERATOR OR BYSTANDERS, POOR OPERATION, AND COSTLY BREAKDOWN.

Part No. 4256

2

WARNING

Due to the possible danger of flying debris, it is absolutely MANDATORY that impact-resistant shielding be provided on the power unit to protect the operator.

The owner is responsible for providing the operator protection devices on the power unit.

Part No. N17013

3

CAUTION

EXTREMELY IMPORTANT!

- BE SURE THE PTO SHAFT DOES NOT BOTTOM OUT OR TELESCOPE TOO FAR APART BEFORE USING THIS SHREDDER.
- PERIODICALLY CHECK ALL BOLTS INCLUDING GEARBOX FOR TIGHTNESS.
- GREASE ALL BEARINGS (AND ROTOR COUPLERS ON 24 & 30 FT.) EVERY 8 HOURS.
- DO NOT CONTINUE TO OPERATE THIS SHREDDER IF IT BECOMES "OUT OF BALANCE." STOP IMMEDIATELY, DETERMINE AND FIX THE PROBLEM OR CONTACT YOUR DEALER OR LOFTNESS BEFORE CONTINUING OPERATION.
- READ AND FOLLOW ALL INFORMATION PROVIDED IN THE OPERATOR'S MANUAL. IF YOU DO NOT HAVE AN OPERATOR'S MANUAL, ONE WILL BE PROVIDED TO YOU AT NO CHARGE. CALL OR WRITE TO:
  LOFTNESS SPECIALIZED FARM EQUIPMENT
  S. HIGHWAY 4 - BOX 337
  HECTOR, MN 55342-0337
  320-848-6273

4335

Part No. 4335

4

WARNING

Rotating parts hazard. Can cause serious injuries or death.

Do not operate machine without shields attached.

PN 4189

Part No. 4189

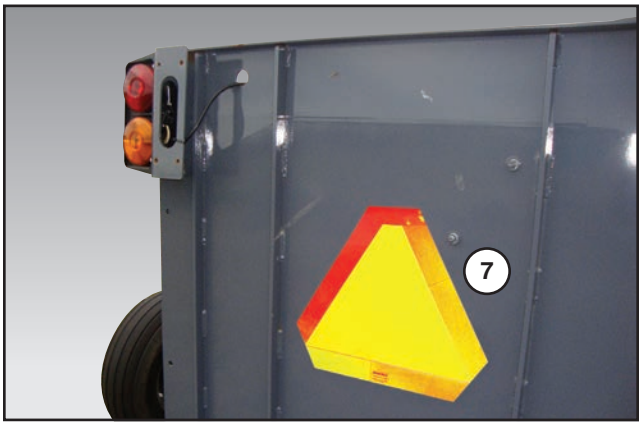
Safety Decal Locations (Cont'd)

5

Part No. N22763

6

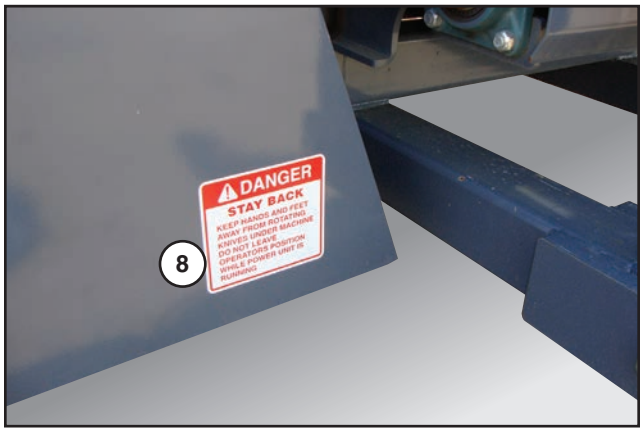
Part No. 4334



7

Part No. 4132

Safety Decal Locations (Cont'd)



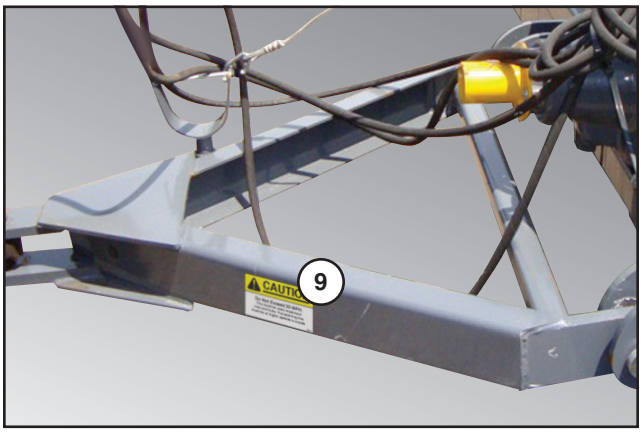
8

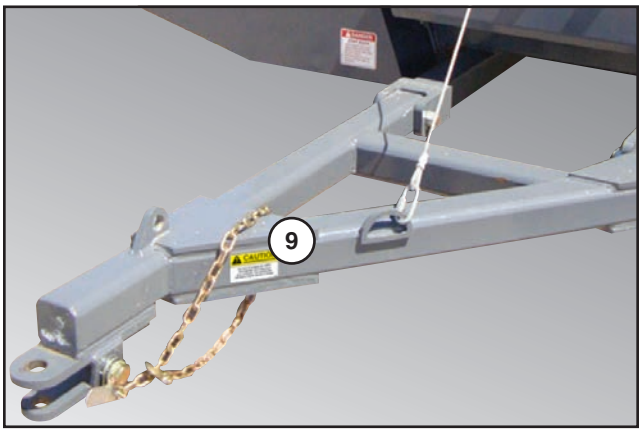
DANGER

STAY BACK

KEEP HANDS AND FEET AWAY FROM ROTATING KNIVES UNDER MACHINE. DO NOT LEAVE OPERATOR'S POSITION WHILE PTO IS ENGAGED AND TRACTOR IS RUNNING.

Part No. 4135





9

CAUTION

Do Not Exceed 20 MPH.

This machine uses implement tires and hubs. Transporting this machine at higher speeds is unsafe.

N23931

Part No. N23931


LOFTNESS

Equipment Set-up

The draper windrower is shipped partially assembled for shipping width. There are six tire assemblies (four rear, two front), one hydraulic motor, one chain coupler, five hydraulic cylinders (three rear, two front), and one operation hitch.

IMPORTANT: *Keep draper windrower on blocks during assembly.*

Rear Wheel Installation and Spacing

NOTE: *See "Rear Wheel and Lift Arm Installation and Spacing" on page 83 for illustration showing rear wheel orientation, location, and spacing when assembling. Dimensions are provided.*

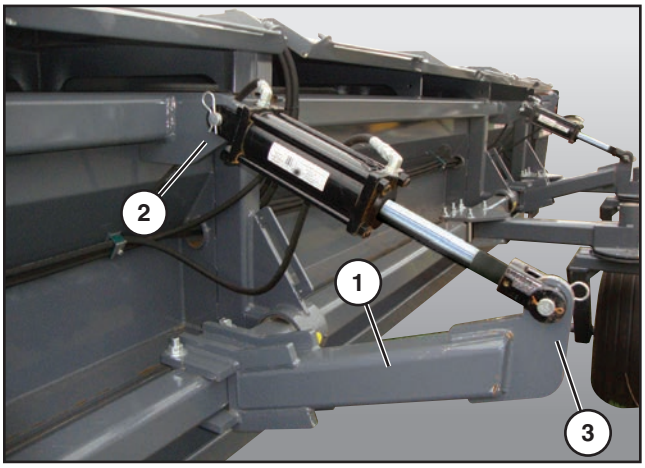
Install the four wheels to the main axle tube using the bolts that are supplied on the arm weldments.

Wheels should be placed to operate between the rows. The wheels closest to the material chute will need to be mounted as close as possible to the opening but will not line up exactly on the crop row center. It will be offset to the inside.

To obtain the best results from the draper windrower, wheel spacing should conform to crop row spacing. To adjust wheel spacing once the draper windrower assembly is complete, raise draper windrower and install blocks under draper windrower end plates. Raise rear wheels with hydraulic cylinders. Loosen wheel strut clamping bolts and adjust wheels to desired spacing.

Rear Wheel Hydraulic Cylinder Installation

Rear wheel lift cylinders will be shipped with hydraulic hoses connected and will be secured adjacent to their final location for easy installation.



Connect lift arm (1) to main axle tube with provided hardware.

NOTE: *See "Rear Wheel and Lift Arm Installation and Spacing" on page 83 for illustration showing locations for lift arms.*

Make sure tabs (2 & 3) for yolks are perfectly aligned.

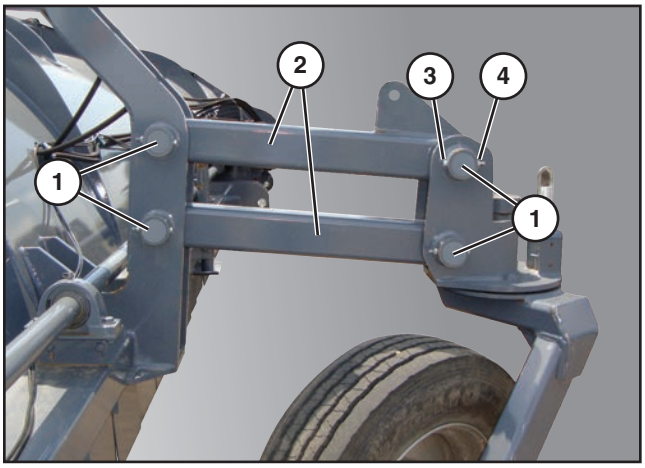
Connect barrel end of cylinder to welded tab on frame of draper as shown, securing with retaining pin and cotter pin.

Connect the rod end of wheel lift cylinder to the lift arm as shown, securing with retaining pin and cotter pin.

Repeat procedure for remaining two rear cylinders.

IMPORTANT: *The rear operation wheel lift cylinders are rephasing cylinders and should never be interchanged.*

Front Wheel Installation



Connect front wheel assembly by inserting pins (1) through weldment on frame and parallel arms (2). Secure by inserting supplied bolt (3) and nut (4) through one flange and the end of each pin (4 places).

Repeat procedure for opposite front wheel assembly.

Front Wheel Hydraulic Cylinder Installation

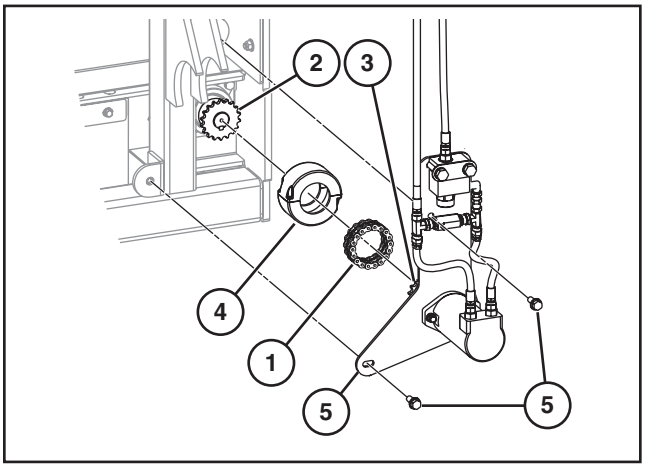
Front lift cylinders will be shipped with hydraulic hoses connected and will be secured adjacent to their final location for easy installation.

Connect barrel end of cylinder to weldment on frame of draper windrower as shown, securing with retaining pin and cotter pin.

Connect the rod end of wheel lift cylinder to the weldment attached to the parallel arm, securing with retaining pin and cotter pin.

Repeat procedure for remaining front wheel lift cylinder.

Hydraulic Motor Installation

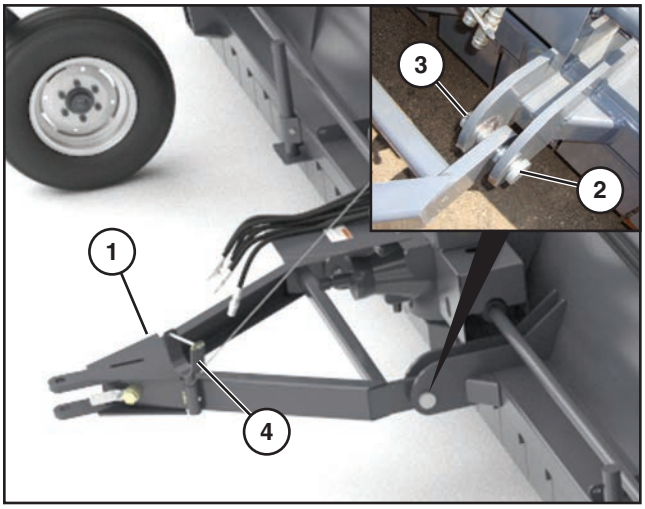


Install chain (1) onto couplers (2 & 3). Install chain cover housing (4).

NOTE: *Add approximately 10 pumps of grease to the chain cover housing at this time.*

Secure plate with attached hydraulic motor (5) using supplied bolts (6).

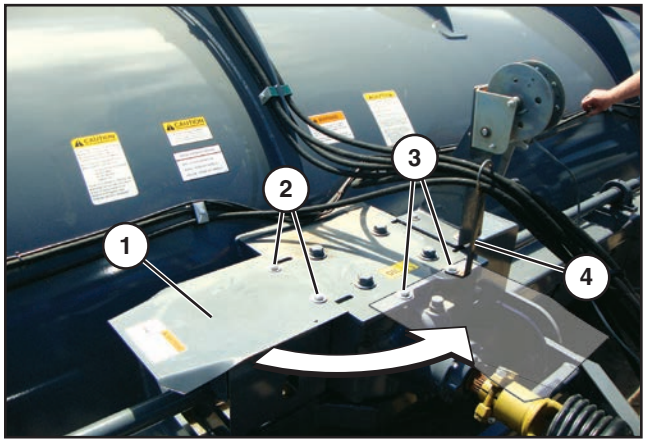
Operation Hitch Installation



Attach the operation hitch (1) by inserting pins (2) and securing with cotter pins (3).

Attach loop end of winch cable to PTO cradle (4).

PTO Shield



Remove PTO shield (1) by removing two bolts and washers (2). Reinsert hardware back into holes to secure driveline shield.

Remove two bolts and washers (3). Remove hydraulic hose guide (4).

Rotate shield into new position as outlined above. Return hydraulic hose guide back into its original position on top of shield and secure with the bolts and washers.

PTO Set-up

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

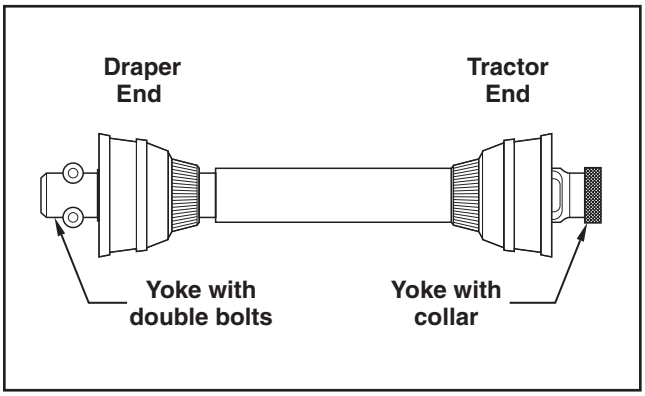
The PTO provided with each Loftness draper windrower will work on most tractors without modification.

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

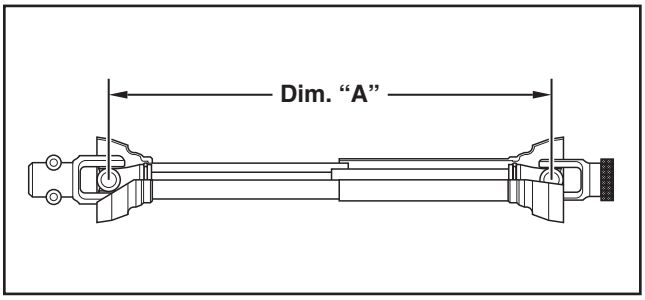
Check PTO length (6" overlap min.). Lubricate CV before initial start-up and before connecting to tractor to allow movement of tractor yoke in all directions to help distribute grease through out the moving parts. Lubricate after every 8 hours of use. Tighten PTO clamp bolts (torque to 150 ft. lbs.),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

PTO Sizing

The following diagrams assist in sizing the PTO as outlined in "PTO Set-up" on page 15.

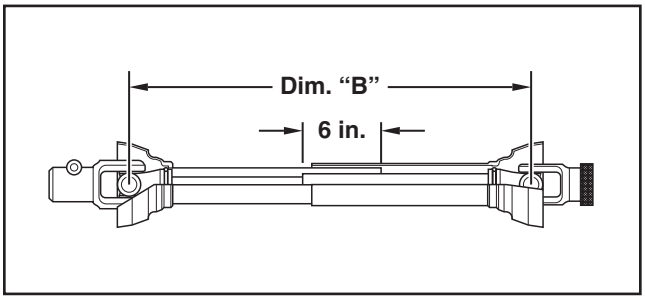


IMPORTANT: *Before operating draper windrower, check to make sure the PTO will not bottom out or become disengaged.*



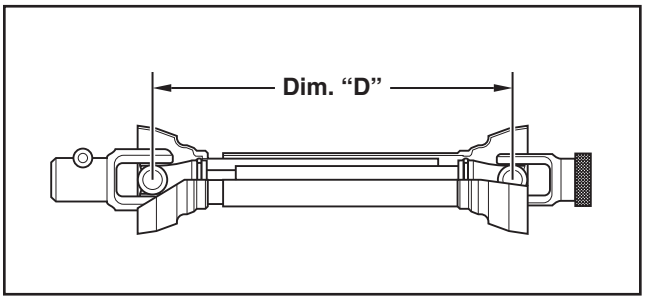
Extend the PTO until it is fully extended, but not completely separated. This will determine dimension "A".

PTO Sizing (Cont'd)



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 for dimension “D” which will be the minimum operating length.

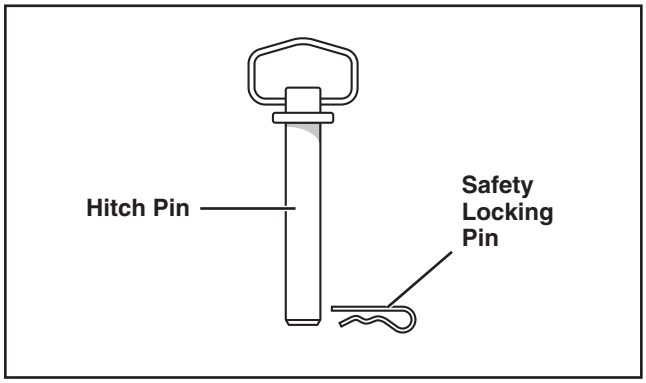
IMPORTANT: *Never operate equipment with PTO collapsed to less than dimension “D”.*

Getting Started

Pre-Start Checklist

- Grease the machine. See “Grease Point Location” on page 28 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).
- Drive Belt tension – if belt needs adjustment, refer to “Belt Tension” on page 18 for instructions.
- Check all bolts, nuts and set screws for tightness.
- Review operator’s manual.

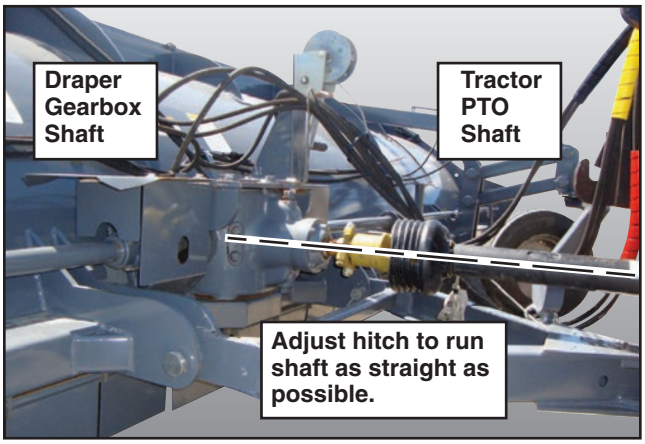
Attaching the Draper Windrower to Tractor



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 draper windrower to become disconnected from the tractor during operation, or in transport, which could cause serious injury, or death, to those nearby.*

The draper windrower can be attached to any tractor with a PTO that conforms to ASAE-SAE standards, see “PTO Set-up” on page 15 for PTO specifications and set-up. Do not use a draper windrower built for 1000 RPM with a 540 RPM tractor or serious damage to the draper windrower could occur.

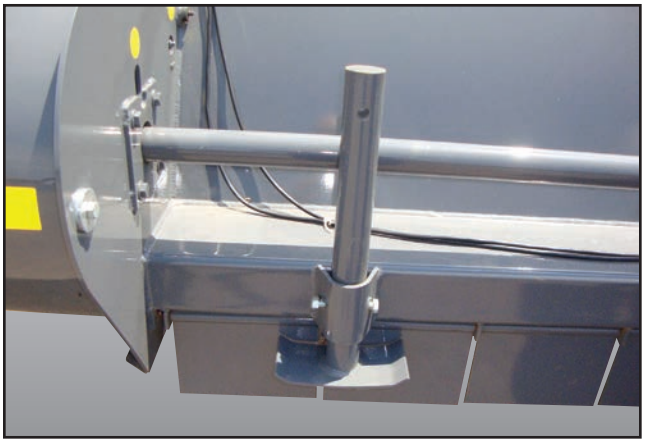


Connect hitch to draw bar. Make necessary adjustments to allow PTO shaft to run as straight as possible.

Connect safety chain to tractor.

⚠	**DANGER:** *Failure to connect safety chain could result in damage to draper windrower or cause serious injury, or death, to those nearby should draper become disconnected during operation or transport.*

Jack Stands



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

Belt Tension

Check the rotor drive belts to ensure they have 1/2" maximum deflection at the midpoint between the pulleys. If adjustments need to be made, see “Belt Adjustment” on page 32 for instructions.

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

Operating Speed

Various shredding conditions require different ground speeds. Under most conditions, the tractor can be driven between 3 and 7 MPH by using lower rpm’s and shifting to a higher gear to maintain the needed ground speed without causing undue wear on the draper windrower.

Maintaining Rotor Balance

The rotors of the draper windrower 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 35 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.

⚠	**CAUTION:** *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.*

⚠	**CAUTION:** *Be sure the rotors have stopped completely before checking the knives.*

The knives will pivot on the D-ring or on knife mounting bolt to avoid damage when striking stones or other obstructions. They will swing back to clear obstacles, and they will return to working position automatically.

⚠	**CAUTION:** *Repeated impact to the knives from frozen ground or other hard objects can cause excessive wear and damage to tractor or draper windrower. Repeated impact to hard objects can cause the metal ring constraining knives to rotor to fail and release the knife from the rotor. Be sure to maintain recommended ground clearance as specified in this manual.*

Cutting Height Adjustment

The recommended minimum cutting height is 5-6". Continually cutting below this height increases the likelihood that ground scalping could occur. Frequent scalping greatly reduces draper windrower component lifetimes. Loftness considers this pattern to be misuse, and subsequently will not be covered under warranty.

The cutting height is adjusted and controlled with the rear hydraulic cylinders. Customer may need to supply cylinder stops to aid in obtaining the recommended cutting height. Maintaining the proper cutting height will provide a uniform crop shredding. 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 draper windrower need to be parallel after adjustment into the operating position. It might be necessary to remove the PTO shaft from the draper windrower when adjusting the cutting height for a better viewpoint to get the shaft angles similar. See “Attaching the Draper Windrower to Tractor” on page 17, and “PTO Set-up” on page 15 for more information on installing and adjusting the PTO shaft.

Turning

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

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

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

⚠	**CAUTION:** *Allow plenty of slack in the hitch cable during operation. Damage to the winch or winch bracket could occur if there is not enough slack allowed when turning.*

Rear Door Angle Adjustment

Adjustments can be made to control the windrow as it comes out of the machine. Moving the link raises or lowers the fingers on the rear door to control the material.

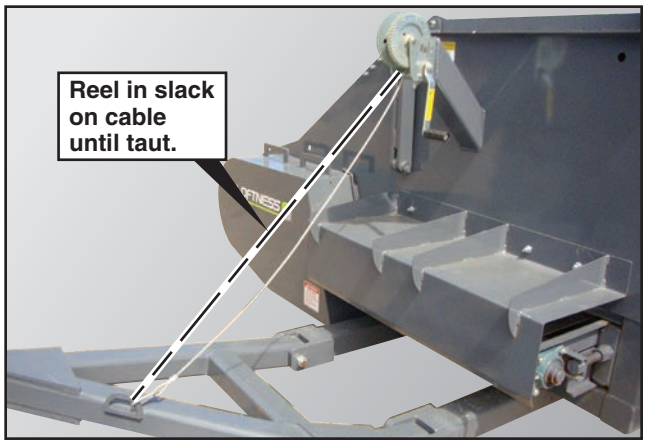
Raise the fingers for wet, heavy material.

Lower the fingers for dry, light material.

⚠	**CAUTION:** *Make sure fingers on rear door are lowered and do not extend beyond the operation wheels when transporting.*

Transport to Operation Configuration Procedure

Follow this section for instructions to safely convert the draper windrower from a transport configuration to an operation configuration.



Reel in slack on cable for ***transport hitch*** until taut, making sure winch is in ratchet position.

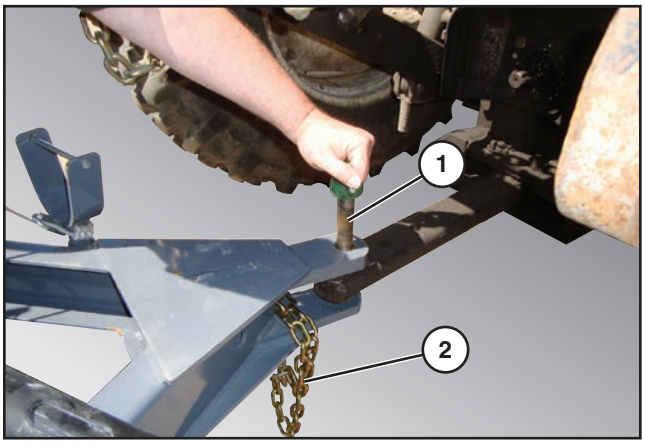
Make sure winch is in the locking position before removing hitch pin and pulling tractor away.

⚠	**DANGER:** *Failure to lock the winch will cause the tongue of the hitch to drop suddenly when pulling away, which could result in serious injury to those nearby.*

Remove hitch pin on ***transport hitch*** and disconnect electrical wiring harness.

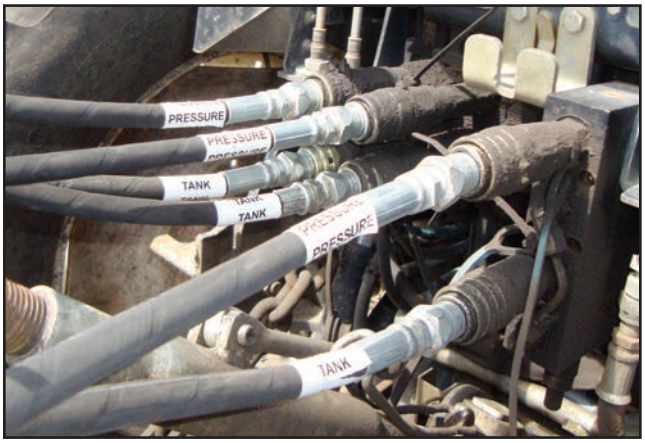
Lower the ***operation hitch*** into position, making sure winch is set in the ratchet position.

⚠	**DANGER:** *Failure to lower the hitch with winch in the ratchet position will cause the tongue of the hitch to drop suddenly, which could result in serious injury to those nearby.*



Move tractor and connect to the ***operation hitch***. Install hitch pin (1) and **secure with safety locking pin**. Attach the safety chain (2) to tractor.

Transport to Operation Configuration Procedure (Cont'd)

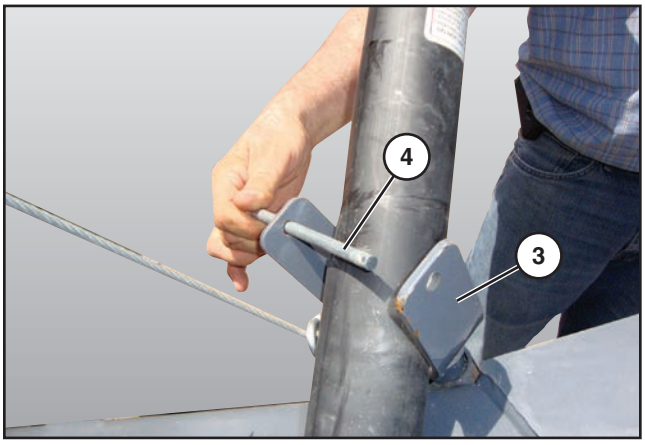


Turn the tractor off and connect the hydraulic hoses to the tractor's hydraulic system.

⚠	**DANGER:** *Failure to turn the tractor off before connecting the hydraulic lines could result in serious injury.*

NOTE: *Hydraulic hoses are labeled to indicate which coupler to connect to on the tractor's hydraulic system.*

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

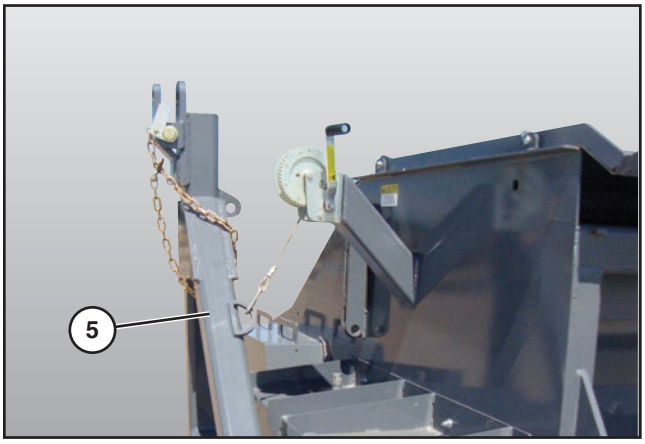


Remove tractor end of PTO shaft from the storage cradle (3) by pulling pin (4) and retaining clip. Return pin and clip to the cradle.

Connect the driveshaft. See “PTO Set-up” on page 15 for reference when installing the driveshaft.

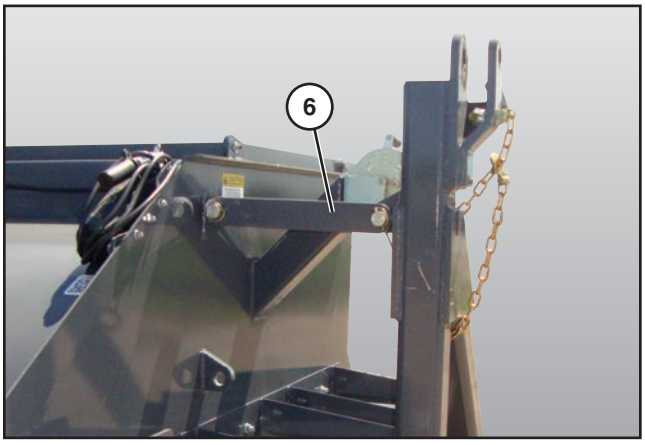
Once connected, add some slack to the ***operation hitch*** cable to allow for sharp turns.

⚠	**CAUTION:** *A taut cable could result in damage to the winch and winch bracket when turning.*



Using the winch, bring the ***transport hitch*** (5) to its upright position, making sure winch is set in the ratchet position.

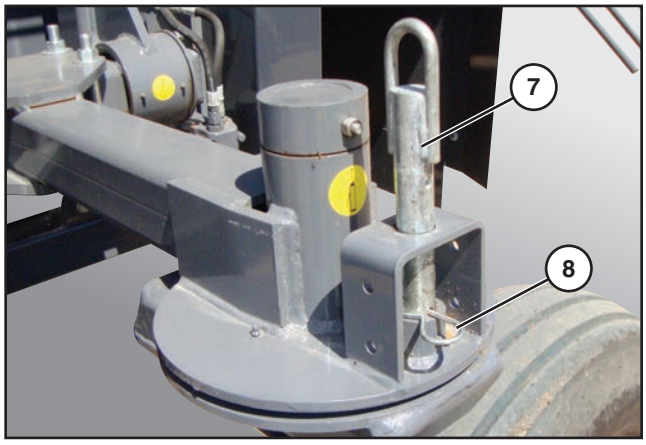
⚠	**DANGER:** *Failure to raise the hitch with winch in the ratchet position could cause the tongue of the hitch to fall forward suddenly, which could result in serious injury to those nearby.*



Connect hitch to link (6), aligning hole in link to corresponding hole on hitch. Insert pin and add linchpin clip to secure.

Wrap safety chain around hitch and secure hook end to chain to keep from unraveling during travel.

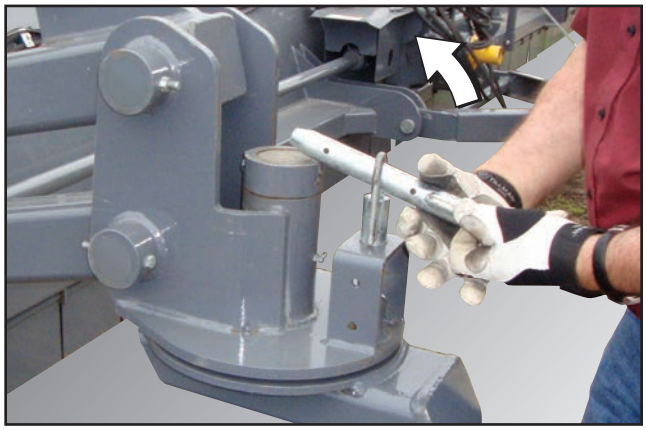
Transport to Operation Configuration Procedure (Cont'd)



Make sure locking pin (7) in all wheel assemblies are in the **UP** position. Note location of retaining clip (8).

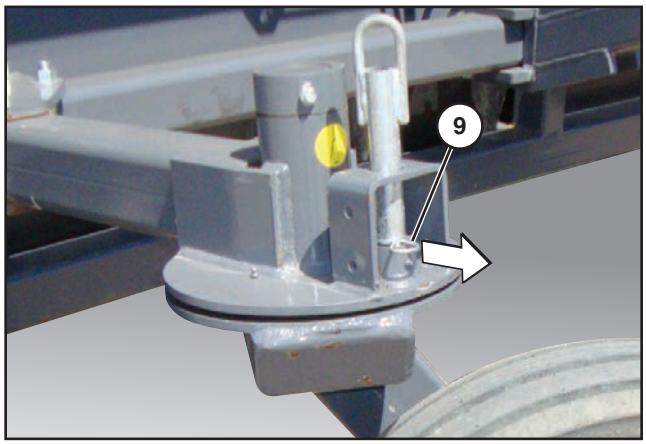
NOTE: *Only the rear left and rear right wheels (those designated in a transport configuration) should have had pins fully inserted during transport.*

NOTE: *There is no locking pin for the left front wheel assembly (that which is designated during an operation configuration).*



If locking pins are difficult to pull up, use another locking pin to pry pin out as shown.

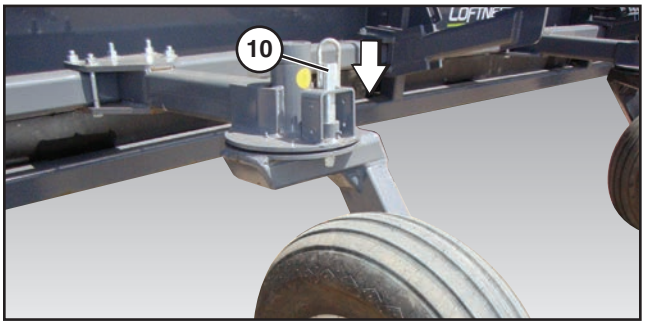
Remount and start tractor. Pull draper windrower forward to make the rear wheels turn enough so the holes in the rear wheel pivots are no longer aligned. Stop.



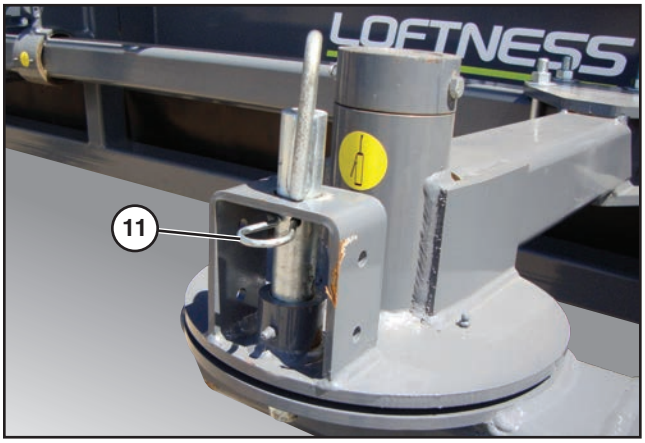
Dismount tractor and pull retaining clip (9) in the locking pins on the ***rear wheel assemblies only***.

DO NOT pull retaining clip on front wheel assembly.

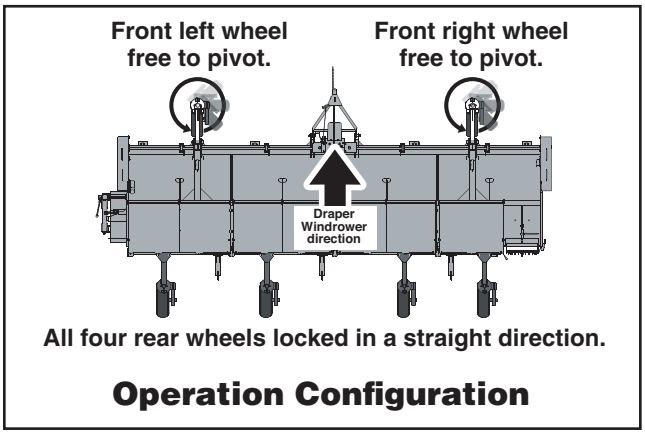
Transport to Operation Configuration Procedure (Cont'd)



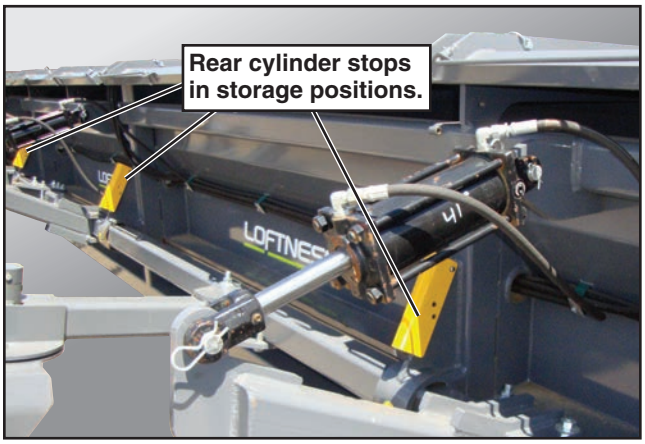
Remount tractor and pull draper windrower forward again until rear wheels straighten to the field operation position and the locking pins (10) drop .



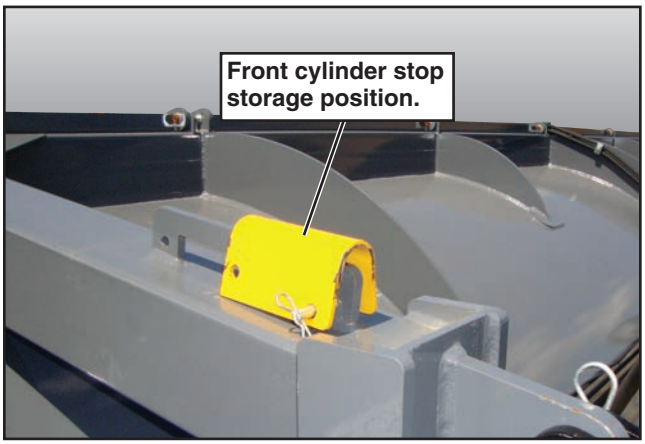
Dismount tractor and secure locking pins with retaining clip (11) in position shown.



NOTE: *During operation, rear wheels are locked in a straight, field operating position. Front wheels should be free to pivot while traveling and turning.*



Remove the yellow cylinder stops from the three rear lift cylinders and secure them in their storage positions using the pins and retaining clips.



Remove the yellow cylinder stops from the two front lift cylinders and secure them in their storage positions on the front wheel assembly arm, using the pins and retaining clips.

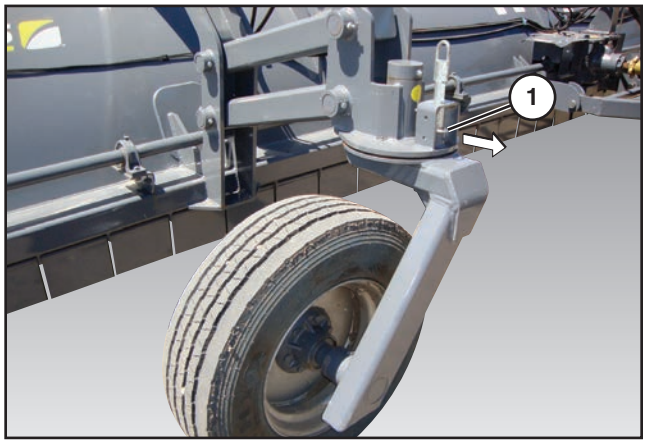
NOTE: *Only right side front cylinder stop shown.*

The unit is now ready for operation. Use the tractors hydraulic system to adjust the draper windrower to the preferred cutting height. See “Cutting Height Adjustment” on page 18 for reference.

Operation to Transport Configuration Procedure

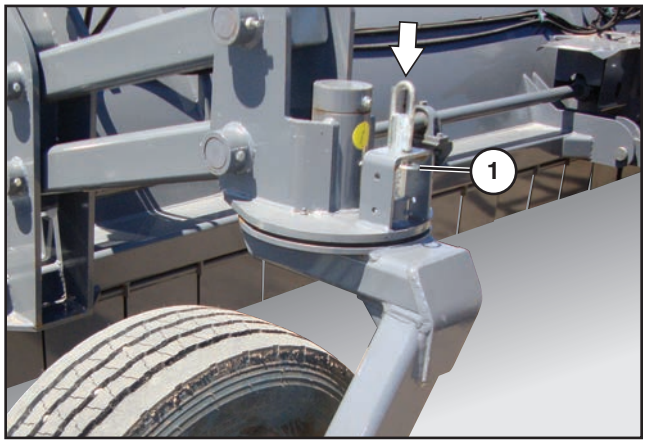
Follow this section for proper instructions to safely convert the draper windrower from a operation configuration to a transport configuration.

Using the tractor's hydraulics, raise the draper windrower to its highest position.



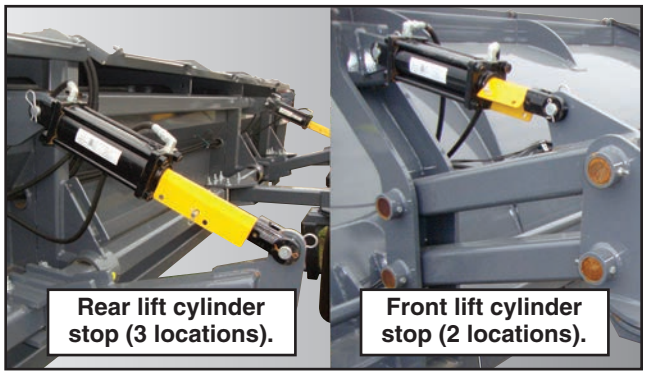
Back draper windrower up until the right front swivel wheel is turned approximately 90° from field operating position into the transport position as shown above.

Dismount tractor and removing retaining pin (1) to allow locking pin to drop into position.



Remount the tractor and move back and forth slightly until the locking pin for the right front swivel drops into position.

Dismount tractor and secure locking pin with retaining clip (1) in location as shown.



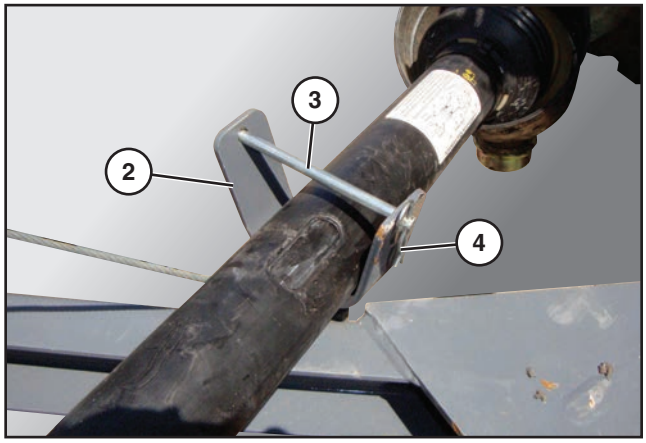
Remove the yellow cylinder locks from their storage positions and place over cylinder rods. There are three locks for the rear, and two for the front.

Using tractor hydraulics, lower the draper windrower by retracting lift cylinders until they reach the yellow cylinder stops. This will relieve pressure in the hydraulic hoses.

Turn the tractor off and disconnect all hydraulic couplers.

⚠	**DANGER:** *Failure to turn the tractor off before disconnecting the hydraulic lines could result in serious injury or death.*

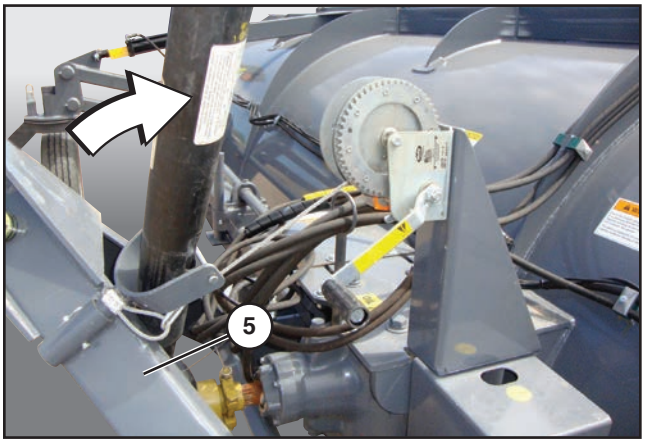
Remove the hitch pin and safety chain.



Disconnect tractor end of PTO shaft. Place in cradle (2) and secure with pin (3) and clip (4).

⚠	**DANGER:** *Failure to turn the tractor off before disconnecting the PTO could result in serious injury or death.*

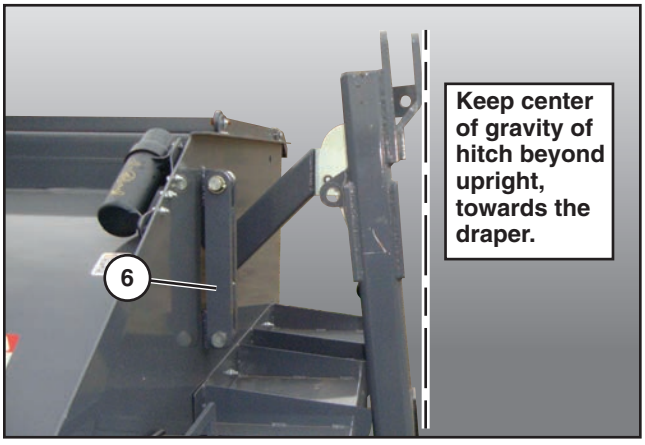
Operation to Transport Configuration Procedure (Cont'd)



Using the winch, bring the ***operation hitch*** (5) to its upright position, making sure winch is set in the ratchet position. Make sure hitch is secure and cannot move during transport.

⚠	**DANGER:** *Failure to raise the hitch with winch in the ratchet position could cause the tongue of the hitch to fall forward suddenly, which may result in serious injury to those nearby.*

CAUTION: *Before this next step, make sure winch on **transport hitch** is in the lock/ratchet position.*



Disconnect end of ***transport hitch*** link (6) and secure in storage position using pin and linchpin clip as shown.

Keep hitch tilted beyond upright, towards the draper windrower.

Lower the ***transport hitch*** into position, making sure winch is set in the ratchet position.

⚠	**DANGER:** *Failure to lower the hitch with winch in the ratchet position will cause the tongue of the hitch to drop suddenly, which could result in serious injury to those near by.*

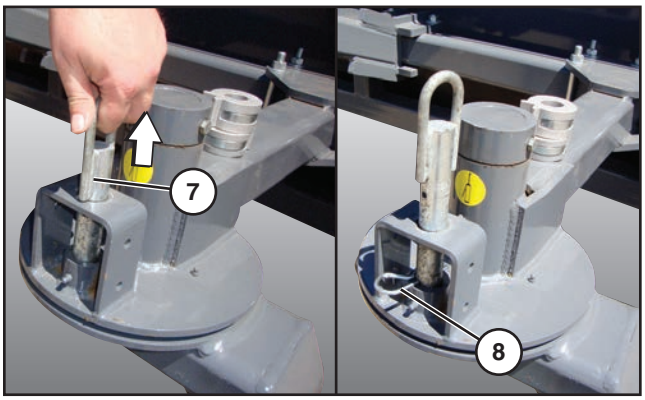
Remount tractor and move into position to connect to the ***transport hitch***.

Dismount tractor and install hitch pin and **secure with safety locking pin.** Attach safety chain.

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

Once connected, add some slack to the hitch cable to allow for sharp turns.

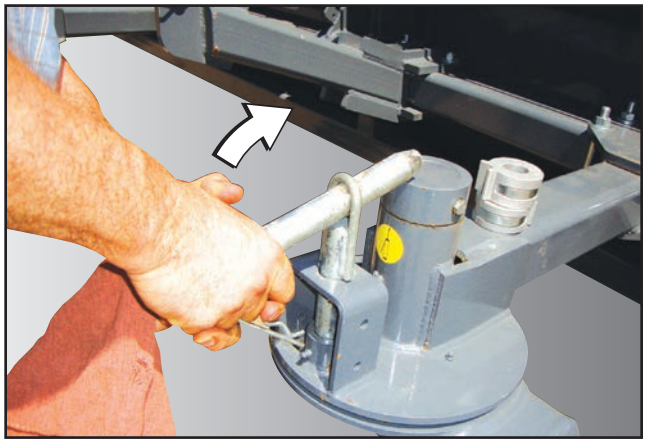
⚠	**CAUTION:** *A taut cable could result in damage to the winch and winch bracket when turning.*



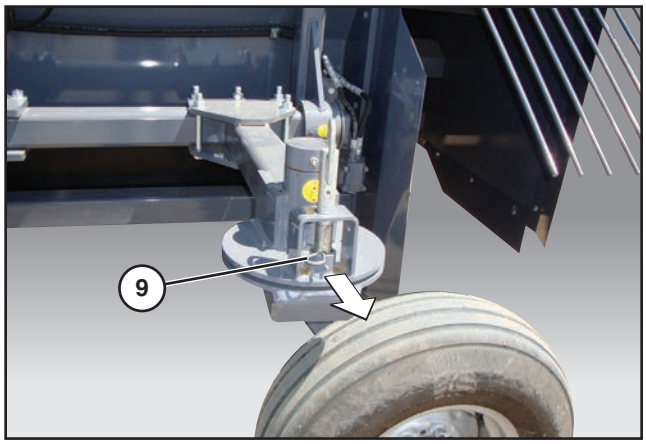
Remove retaining clips and pull up locking pin (7) in ***all four rear operation wheel assemblies***.

Reinsert retaining clips (8) in location shown to prevent pins from dropping into locking position.

Operation to Transport Configuration Procedure (Cont'd)



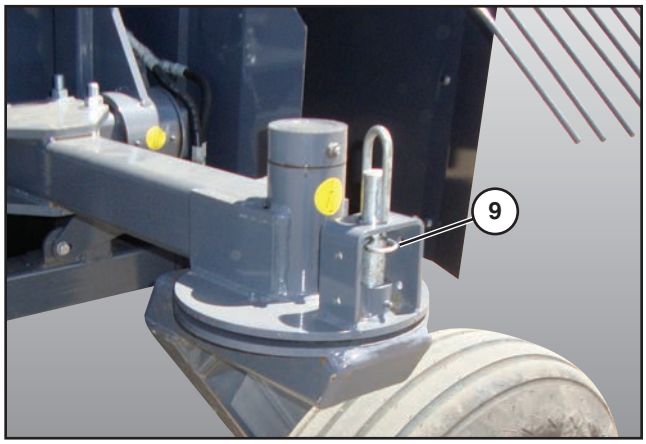
If locking pins are difficult to pull up, use another pin to pry pin out as shown.



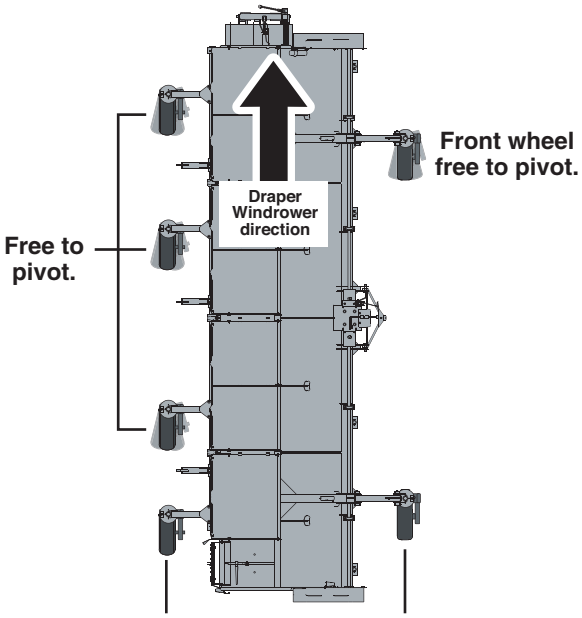
Remount tractor and pull draper windrower forward until rear left wheel is in a straight, transport position as shown. Stop.

Dismount tractor and pull retaining clip (9) in locking pin for rear left wheel.

If pin does not drop into locking position, remount tractor and drive forward until it drops.



Once locking pin drops, insert retaining clip (10) in position as shown.



Transport Configuration

NOTE: *During transport, the two rear wheels should be locked in a straightforward position, all others should be free to pivot while traveling and turning.*

The unit is now ready for transport. Refer to “Transporting” on page 26 for safety instructions before transporting on public roads.

Transporting

Obey these safety instructions before transporting the windrower draper on public roads.

⚠	**CAUTION:** *Do not exceed 20 mph when transporting the draper windrower.*

⚠	**CAUTION:** *Verify warning lights are properly operating before transporting the draper windrower on public roads. Make sure "Slow Moving Vehicle" decal is visible.*

⚠	**CAUTION:** *Verify all jacks have been returned to their storage positions and the jack stands are raised and locked in their highest position before transport.*

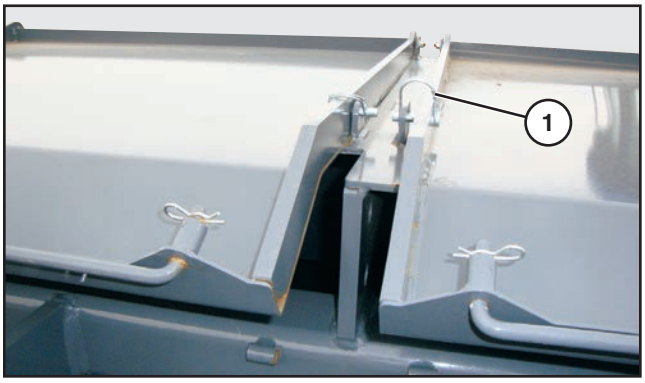
⚠	**CAUTION:** *Verify the **operation hitch** is secure and cannot drop during transport. Failure to secure could result in serious injury, or death, to other drivers on the road.*

⚠	**DANGER:** *Do not transport the windrow draper on public roads in the operation configuration. The width could create a safety hazard for the operator and other drivers on the road.*

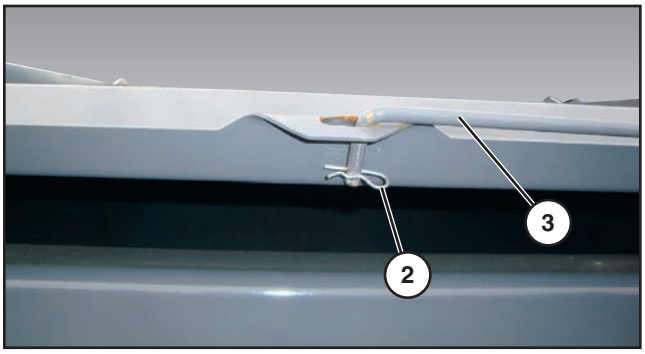
Tunnel Access Doors

There are four access doors on top of the machine that can be opened to remove any material that may become clogged in the machine, or to perform any maintenance.

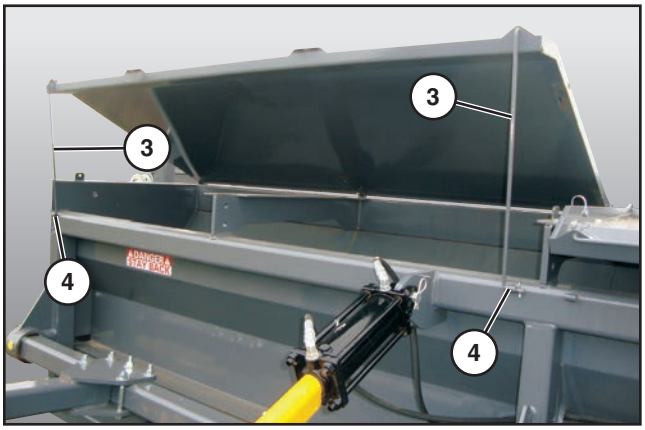
⚠	**DANGER:** *Always turn the tractor off when working inside the draper windrower.*



To open any door, remove the locking pins (1) that are securing door to draper windrower frame. There is a locking pin on the ends of each door.



Remove retaining pin (2) at the end of both supporting rods (3) for each door.



Lift door to open and insert the end of each supporting rod (3) into the tubes welded to the frame (4).

Secure with the retaining pins.

⚠	**CAUTION:** *The access doors are heavy. Use two people to lift door open.*

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 draper windrower after each use.

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

⚠	**DANGER:** *Always shut-down all equipment prior to cleaning, adjusting, lubricating or performing service of any kind. Review and become familiar with the "Mandatory Shut-Down Procedure" before attempting any service work.*

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

Maintenance Schedule

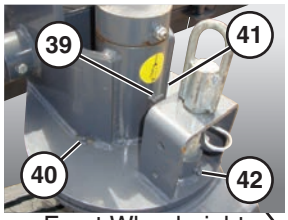
HOURS	SERVICE POINTS	SERVICE REQUIRED					
		CHECK	CLEAN	CHANGE	GREASE	ADJUST	OIL
Every 8	Machine		X				
	Loose Bolts					X	
	Hoses and Wiring	X					
	Oil Leaks	X					
	Rotor Bearings				X		
	Knives	X					
	Belt Tensioner				X		
	PTO CV Shaft	X			X		
	Draper Belt Tension and Tracking	X					
Every 25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

Lubrication

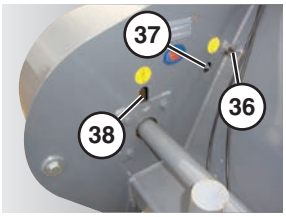
Proper lubrication is important. Too little lubricant will cause premature failure of a bearing. Too much lubrication usually causes high operating temperature and early failure of seals. Follow all lubrication instructions and schedules included in this section.

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.

Grease Point Location



Front Wheel, right
(4 fittings)



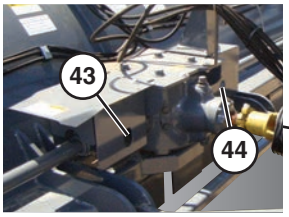
Belt Tensioner,
Rotor Bearing,
Line Shaft Bearing, right

Pillow Block
Bearing, right

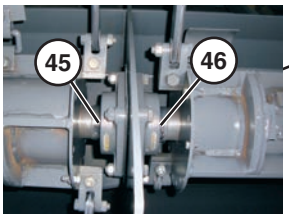
Pillow Block
Bearing,
right center

Pillow Block
Bearing,
left center

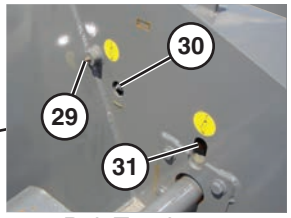
Pillow Block
Bearing, left



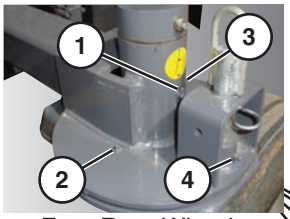
Line Shaft U-joints



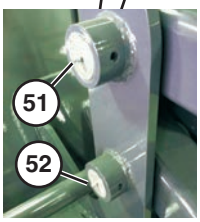
Rotor Bearings, (inside)



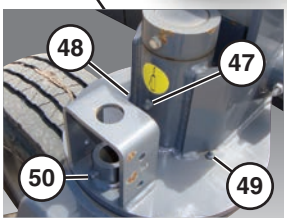
Belt Tensioner,
Rotor Bearing,
Line Shaft Bearing, left



Four Rear Wheels
(4 fittings on each)

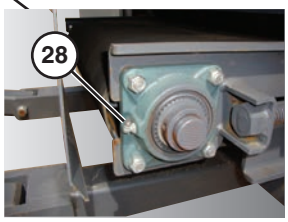


Front Lift Arms
(4 arms, 8 places)

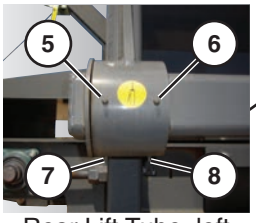


Front Wheel, right
(4 fittings)

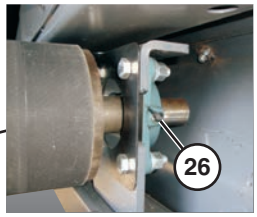
Conveyor Belt,
left/front



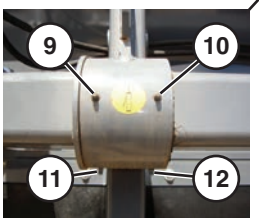
Conveyor Belt, left/rear



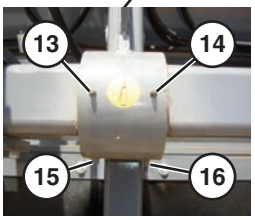
Rear Lift Tube, left



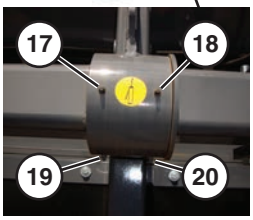
Conveyor Belt,
right/front
(access via rear door)



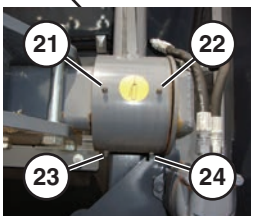
Rear Lift Tube,
left center



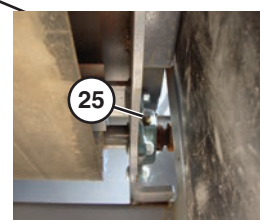
Rear Lift Tube,
center



Rear Lift Tube,
right center



Rear Lift Tube,
right

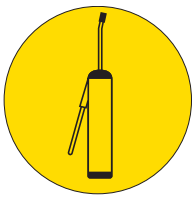


Conveyor Belt, right/rear

Grease Points Location (Cont'd)

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: *Grease points on the machine are indicated on the machine by the decal shown above.*

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

Numbers below after "Location" correspond to grease point locations on opposite page.

See "Draper Windrower Shredder Identification" on page 8 for component location and identification.

- **Rear Wheel Grease Fittings**

  Location: (1-4) - Four fittings located on the pivot of each of the ***four*** rear wheel assemblies (16 grease points total for the four rear wheels).

  Interval: Every 100 hours of operation.

- **Rear Wheel Lift Tube Grease Fittings**

  Location: (5 - 24) - Four fittings in each of the five rear lift tubes.

  Interval: Every 50 hours of operation.

- **Conveyor Belt Grease Fittings**

  Location: (25, 26, 27, 28) - Located on the ends of the conveyor belt, both front and back sides.

NOTE: *#25 located behind conveyor motor.*

Interval: Every 8 hours of operation.

- **Line Shaft U-joint Grease Fittings**

  Location: (43, 44) - Located on the U-joints on each side of the gearbox. Access via holes on top or side of gearbox/line shaft shields.

  Interval: Every 25 hours of operation.

- **Front Wheel Grease Fittings**

  Location: (39-42, 47-50) - Four fittings located on the pivot of each front wheel assembly.

  Interval: Every 100 hours of operation.

- **Rotor Bearing Grease Fittings**

  Location: (30, 37, 45, 46) - Located on the left and right ends of the draper windrower, behind the belt shields. Lubricate the fitting through the opening in the frame.
  There are also two fittings on the bearings located where two rotors meet (3 places). Access those fittings from underneath the draper.

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

Interval: Every 8 hours of operation.

- **Belt Tensioner Grease Fittings**

  Location: (29, 36) - Located on the left and right ends of the draper windrower, behind the belt shields. Fitting located on end of protruding shaft.

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*

Interval: Every 8 hours of operation.

- **Line Shaft Grease Fittings**

  Location: (31, 38) - Located on the left and right ends of the draper windrower, behind the belt shields. Lubricate the fitting through the opening in the frame.

  Interval: Every 8 hours of operation.

- **Pillow Block Grease Fittings**

  Location: (32-35) - Located on pillow blocks on line shafts between the gearbox and the end plates.

  Interval: Every 25 hours of operation.

Continued on next page.

Grease Points Location (Cont'd)

• **Front Lift Arms**

Location: (51, 52) - Located on the end of each pin used to connect the front lift arms to the front wheel swivel and the frame. 8 places total

Interval: Every 100 hours of operation.

• **Standard PTO CV Shaft Grease Fittings**

Location: (not shown) - Three U-joints and two additional fittings located under the bell housing.

Interval: Every 8 hours of operation.

• **Telescoping PTO Tube Grease Fittings**

Location: (not shown) - One located by lining up the hole in the PTO guard with grease zerk.

Interval: Every 25 hours of operation.

• **PTO Overrunning Clutch Grease Fittings**

Location: (not shown) - Fitting located near U-joint yoke.

Interval: Every 50 hours of operation.

Other Lubrications Points

• **Wheel Bearings**

Location: (not shown) - All 6 wheel bearings.

NOTE: *Grease and re-pack.*

Interval: Every 100 hours of operation.

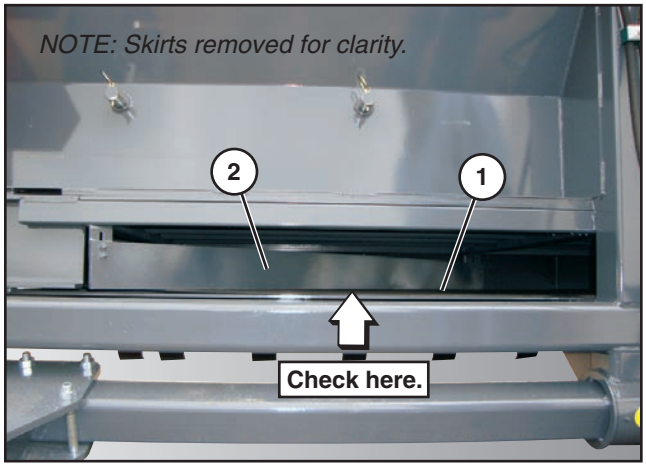
• **Gearbox Oil**

Location: (not shown) - Behind operation hitch assembly.

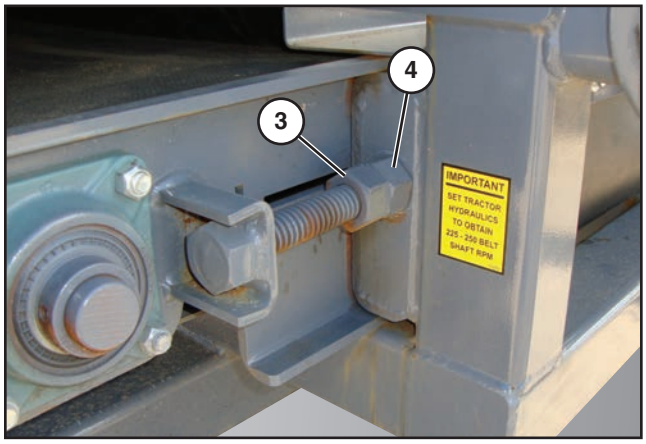
NOTE: *Change oil with #90 wt. Maintain oil level up to the lower plug hole located on side of the gearbox case.*

Interval: Every 100 hours of operation.

Conveyor Belt Adjustment



The conveyor belt (1) should operate without being over-tight. The belt should travel as close to the middle of the conveyor scraper (2) as possible.



To adjust the conveyor belt, turn the tractor off.

DANGER: *Failure to turn the tractor off before adjusting the conveyor belt could result in serious injury or death.*

Loosen the nut (3) on the threaded shaft.

Rotate nut (4) on the threaded shaft to either tighten or loosen belt.

IMPORTANT: *Repeat on opposite side of the belt, adjusting both sides evenly.*

DANGER: *Keep hands, feet, and clothing clear of belts and pulleys while tractor is running.*

Start tractor and slowly turn the belt to check for tracking.

If belt is not tracking, adjust one side only to make belt track in the center, following the same procedure above.

Setting the Conveyor Belt Speed

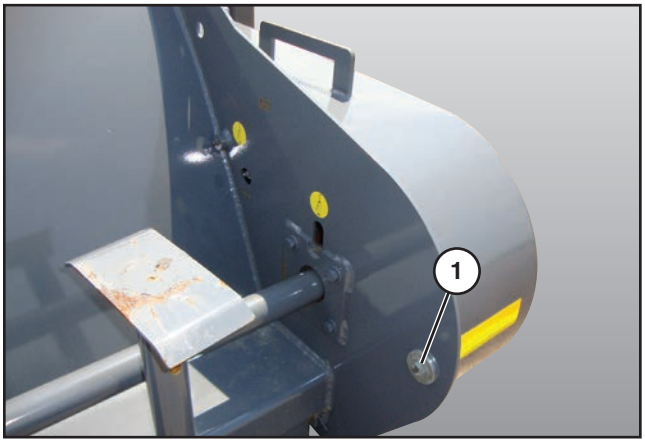
NOTE: *The mechanical tachometer shown above is not supplied with the draper windrower.*

Use a tachometer to measure the belt RPM.

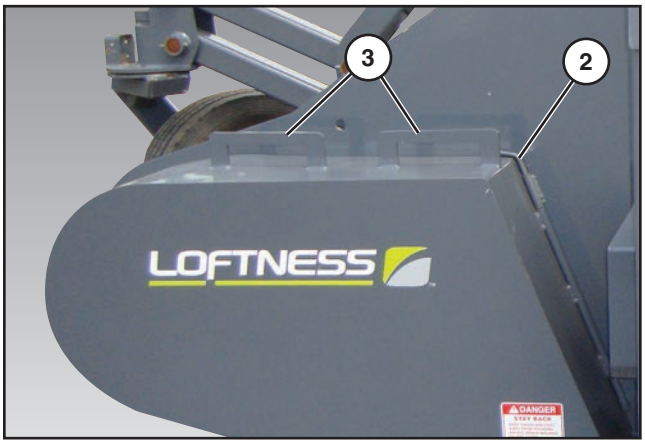
The conveyor belt should operate from a speed of 200 feet/minute to 400 feet/minute. This adjustment is done by using the tractor controls to control the amount of oil flowing per minute. The belt speed should be set at the lowest setting to move material to the discharge end. This will extend belt life.

NOTE: *200 RPM will equal 300 feet/minute.*

Belt Shields



To remove a belt shield (left side shown), remove bolt (1) and washer securing the belt shield to the frame.



Remove hinge pin (2).

Lift up on the handles (3) to remove belt shield.

⚠	**CAUTION:** *Do not swing door open on the hinge. The door may close suddenly, which could cause injury to those nearby. Do use any device to prop the door open.*

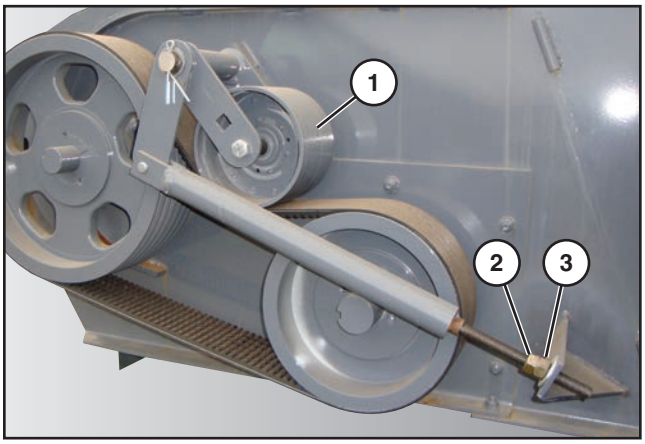
Belt Adjustment

NOTE: *Refer to "Belts and Sheaves" on page 46 for parts breakdown and assembly of belt drive components.*

Turn off all power to the draper windrower.

⚠	**DANGER:** *Failure to turn off power to the draper windrower before adjusting the belt drive could result in serious injury or death.*

Remove belt shield. See "Belt Shields" on page 32 for instructions on removing the belt shields.



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

Loosen the jam nut (2).

Turn the hex nut (3) next to the adjustment bracket clockwise until the washer on the spring base is recessed into the tightener tube. Tighten jam nut (2) to lock.

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

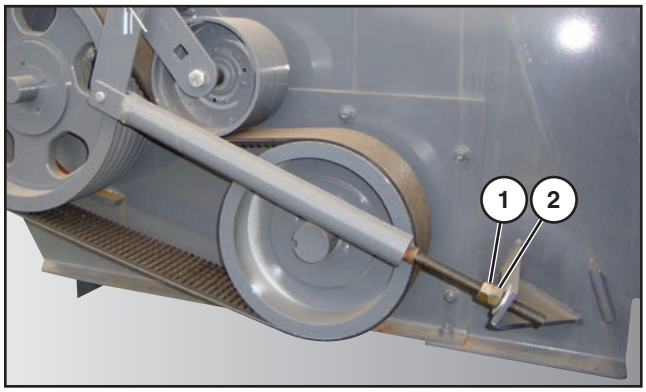
Belt Replacement

NOTE: *Refer to "Belts and Sheaves" on page 46 for parts breakdown and assembly of belt drive components.*

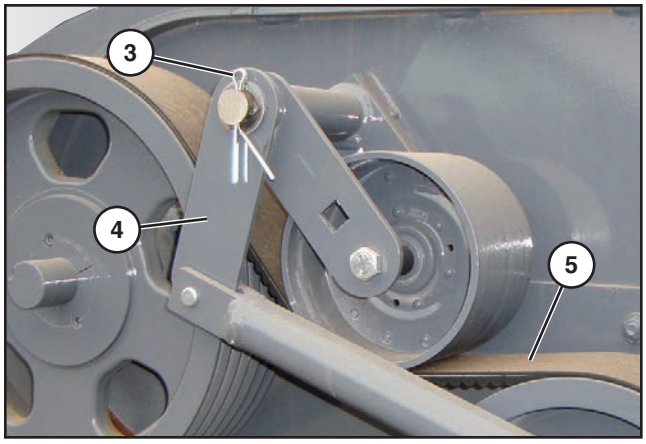
Turn off all power to the draper windrower.

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

Remove belt shield. See "Belt Shields" on page 32 for instructions on removing the belt shields.



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



Remove the pin (3) connecting the idler arm (4) on the tightener bracket to the belt tightener, then remove the belt (5).

Replace with new belt.

Reinsert idler arm and pin. Tighten jam nuts.

Sheave and Pulley Removal

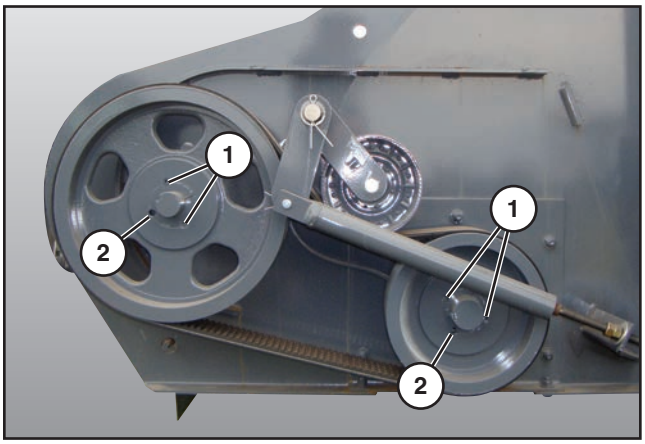
NOTE: *Refer to "Belts and Sheaves" on page 46 for parts breakdown and assembly of belt drive components.*

Turn off all power to the draper windrower.

⚠	**DANGER:** *Failure to turn off power to the draper windrower before removing the pulleys could result in serious injury or death.*

Remove belt shield. See "Belt Shields" on page 32 for instructions on removing the belt shields.

Remove the idler arm and drive belt, following the instructions in "Belt Replacement" on page 33.



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 pulley directly with hammer.*

⚠	**CAUTION:** *Excessive or uneven pressure on set screws may damage the bushing, making removal difficult or possibly damaging the sheave.*

⚠	**CAUTION:** *Excessive screw torque may cause damage to the bushing or sheave. Recommended torque is 430 in/lbs.*

Pulley 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 pulleys. Repeat pulley removal and assembly procedures if necessary.

Install belt. See “Belt Replacement” on page 33 for reference.

Rotor Removal

This service section is written as if the draper windrower 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 “Rotors” on page 48 for parts breakdown and assembly of rotor components.*

Turn off all power to the draper windrower.

⚠	**DANGER:** *Failure to turn off power to the draper windrower 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 insure 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.

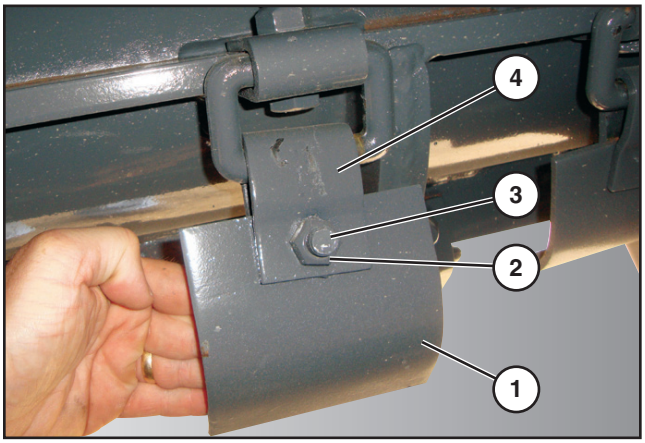
Rotor Assembly (Cont'd)

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.

Knife Replacement

Turn off all power to the draper windrower.

⚠	**DANGER:** *Failure to turn off power to the draper windrower before replacing knives could result in serious injury or death.*



To replace a knife (1), remove lock nut (2) and bolt (3). Remove knife from u-bar (4).

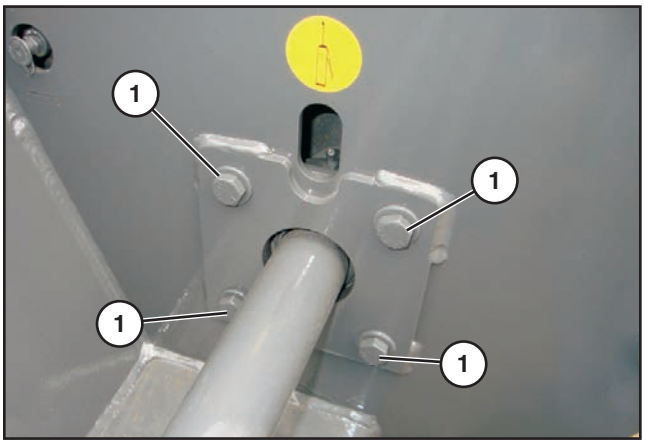
IMPORTANT: *The rotors of the draper windrower are factory balanced and must remain in balance during the life of the machine. Should any knives on the machine need replacing, be sure to also replace the knives directly opposite to avoid vibration and maintain the rotor balance. If a knife is not available,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

Gearbox Repair

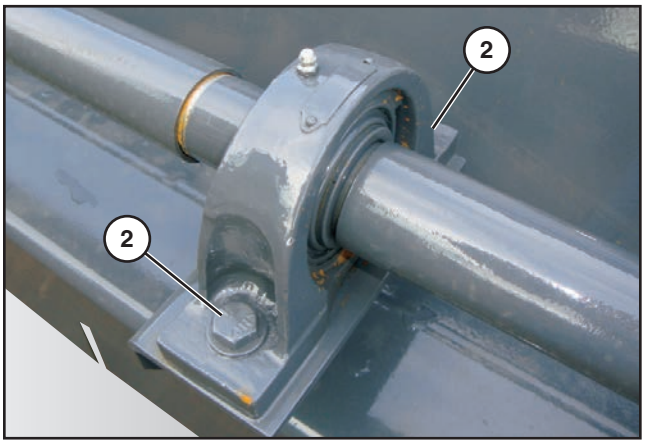
Repairs to the gearbox by the customer will be limited to the replacing of the cross or pinion shaft seals. See “Gearbox, 2200 RPM 1:1 Bondioli (N21532)” on page 54 for parts breakdown. These seals can be removed and replaced by using a screwdriver or similar instrument without opening the gearbox. If 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

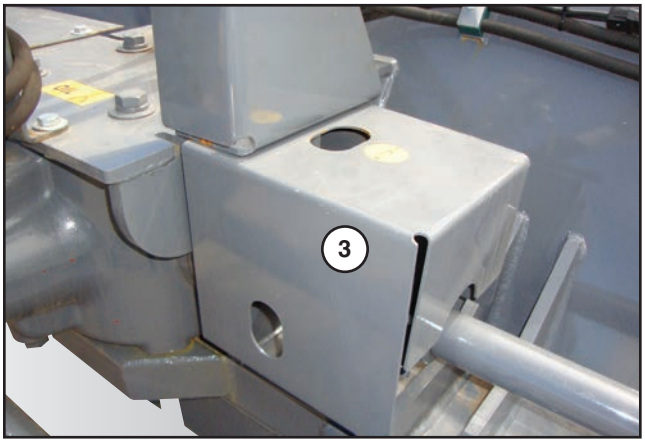
Remove the drive belt. Follow instructions in “Belt Replacement” on page 33 up until the point where the drive belt is removed.



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



Remove the bolts (2) on the ***two*** pillow block bearings supporting the line-shaft on each side of the gearbox.



Remove driveline shield (3).

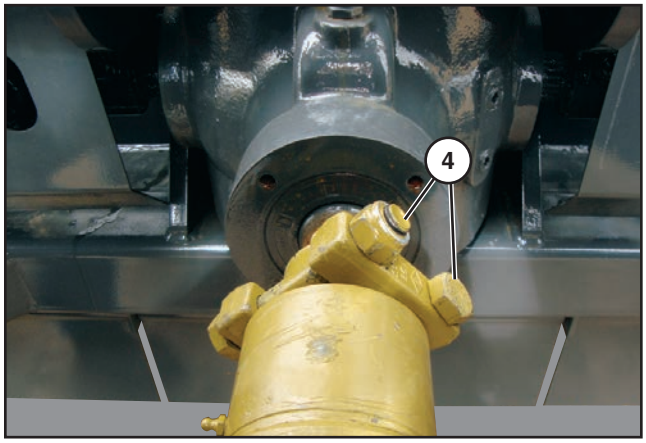
NOTE: *The two bolts that secure the left side driveline shield are also used to attach the winch bracket.*

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

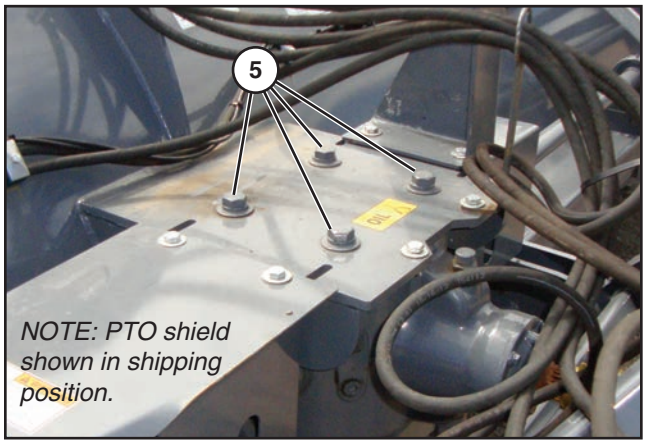
Slide the line-shaft outward until the U-joint is free of the shaft.

Repeat steps to remove opposite side line-shaft.

Gearbox Removal (Cont'd)



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 draper windrower thoroughly.
- Paint all parts that are worn.
- Lubricate all parts of the machine
- Block up the frame of the draper windrower, DO NOT deflate the tires.
- Store draper windrower in a dry area.
- Review your operator's manual.
- Loosen draper windrower belt.

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.
- Tighten all loose bolts, nuts and set screws.
- Tighten draper windrower belt.
- 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.

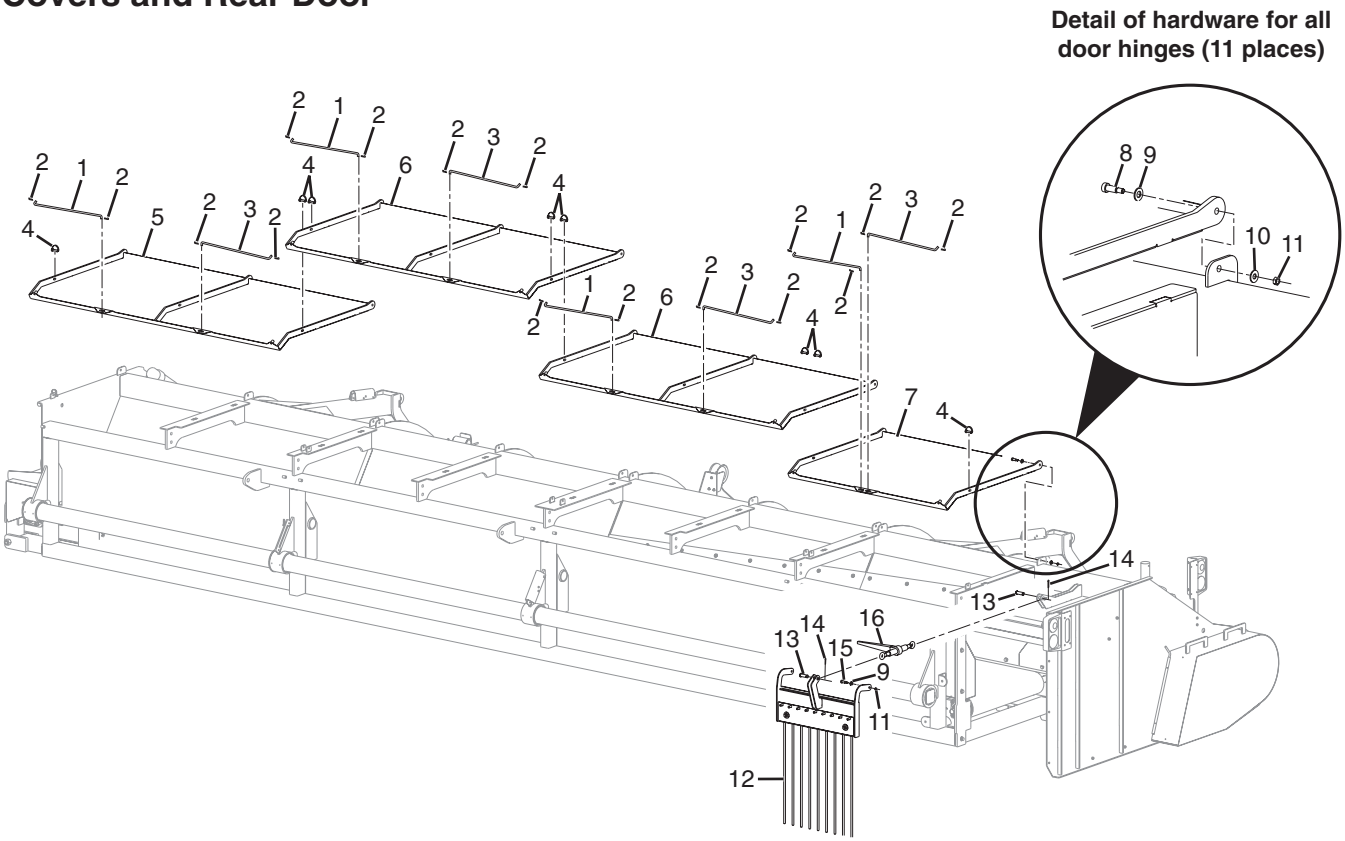
Troubleshooting

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.

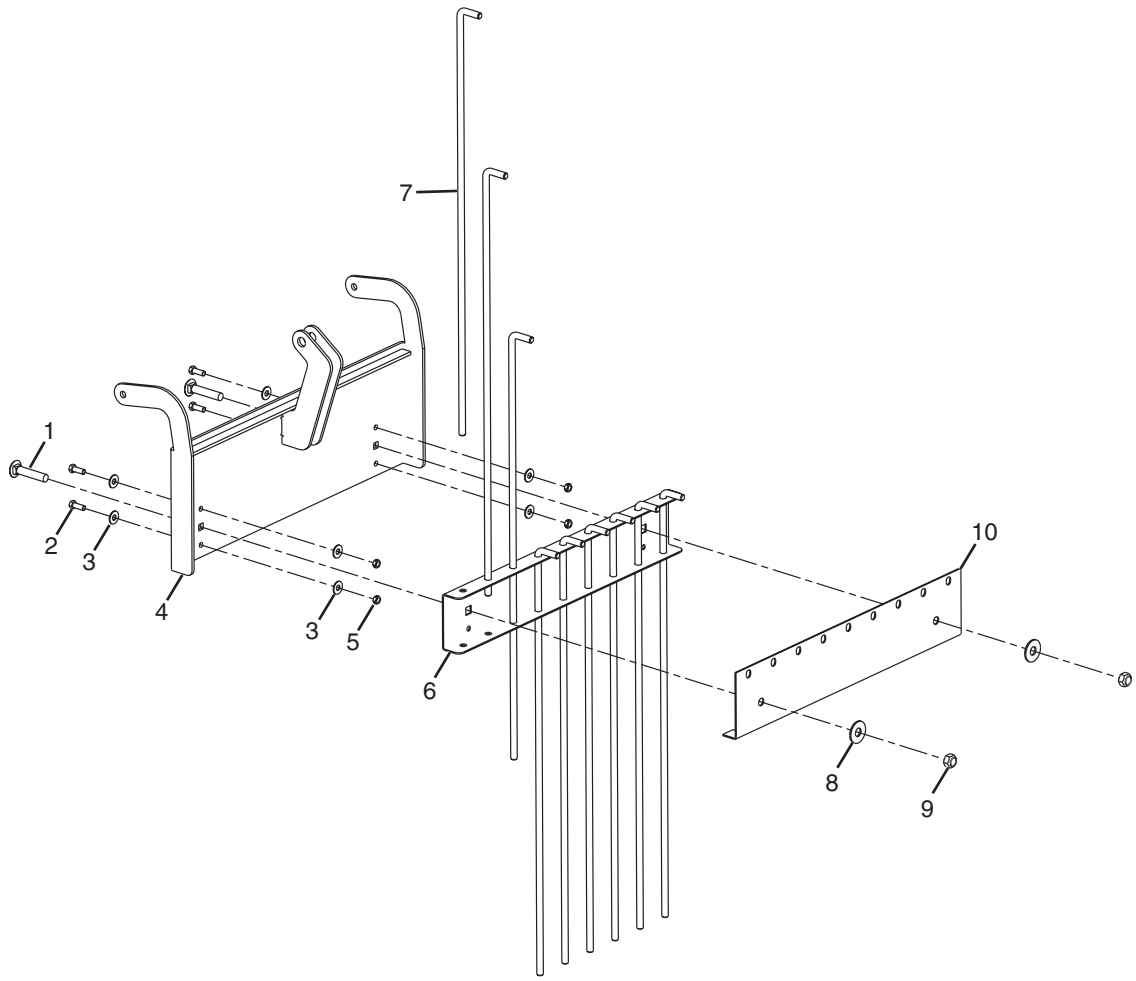
PARTS IDENTIFICATION

Covers and Rear Door



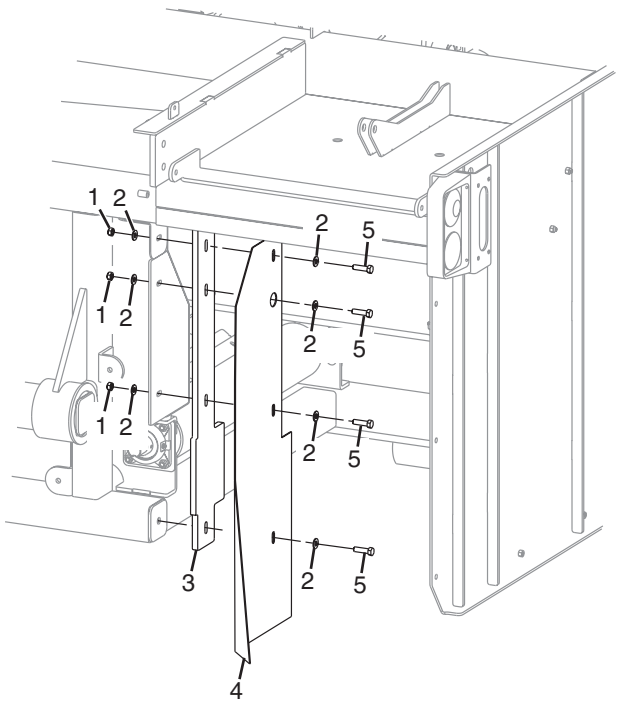
#	QTY.	PART #	DESCRIPTION
1	4	N32655	ROD, PROP LEFT SWING
2	16	4089	CLIP, HAIRPIN .093 X 1-5/8"
3	4	N32654	ROD, PROP RIGHT SWING
4	4	N27991	PIN, 3/8" X 1-3/8" RETAINER
5	1	N32735	HOOD, CARRIAGE ASM L30'
6	2	N32756	HOOD, CARRIAGE ASM L30
7	1	N32737	HOOD, CARRIAGE ASM R 30'
8	11	N36690	BOLT, SHOULDER 1/2" X 3/4"
9	13	4068	WASHER, 1/2" SAE FLAT
10	11	4064	WASHER, FLAT 3/8"
11	13	4052	NUT, LOCK 3/8"
12	1	N32465	DOOR, DRAPER REAR ROD
13	2	4358	PIN, 3/4" X 2"
14	2	4092	CLIP, HAIRPIN 5/32" X 2-1/2"
15	2	N29742	BOLT, SHOULDER 1/2" X 1"
16	1	N25939	BINDER, RATCHET 5400 LB LOAD

Rear Door (N32465)

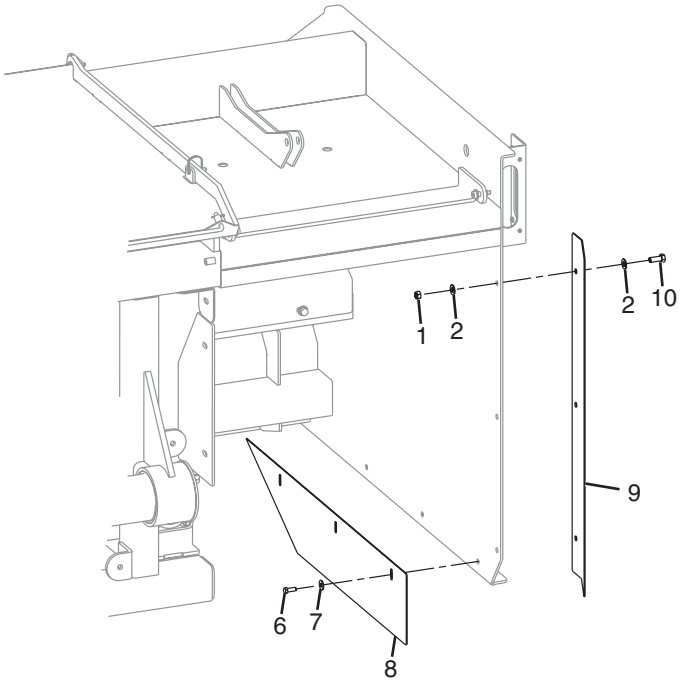


#	QTY.	PART #	DESCRIPTION
1	2	N32023	BOLT, CARRIAGE 5/8" X 2"
2	4	4195	BOLT, 3/8" X 1" GRADE 5
3	8	4064	WASHER, FLAT 3/8"
4	1	N32967	GATE, DRAPER WELDMENT
5	4	4052	NUT, LOCK 3/8"
6	1	N32467	MOUNT, DRAPER REAR DOOR ROD
7	9	N19502	PIN, WIND SHRD TAIL
8	2	4069	WASHER, FLAT 5/8"
9	2	4055	NUT, LOCK 5/8" TOP
10	1	N32468	CAP, DRAPER REAR DOOR ROD

Deflectors and Guards, Rear Door



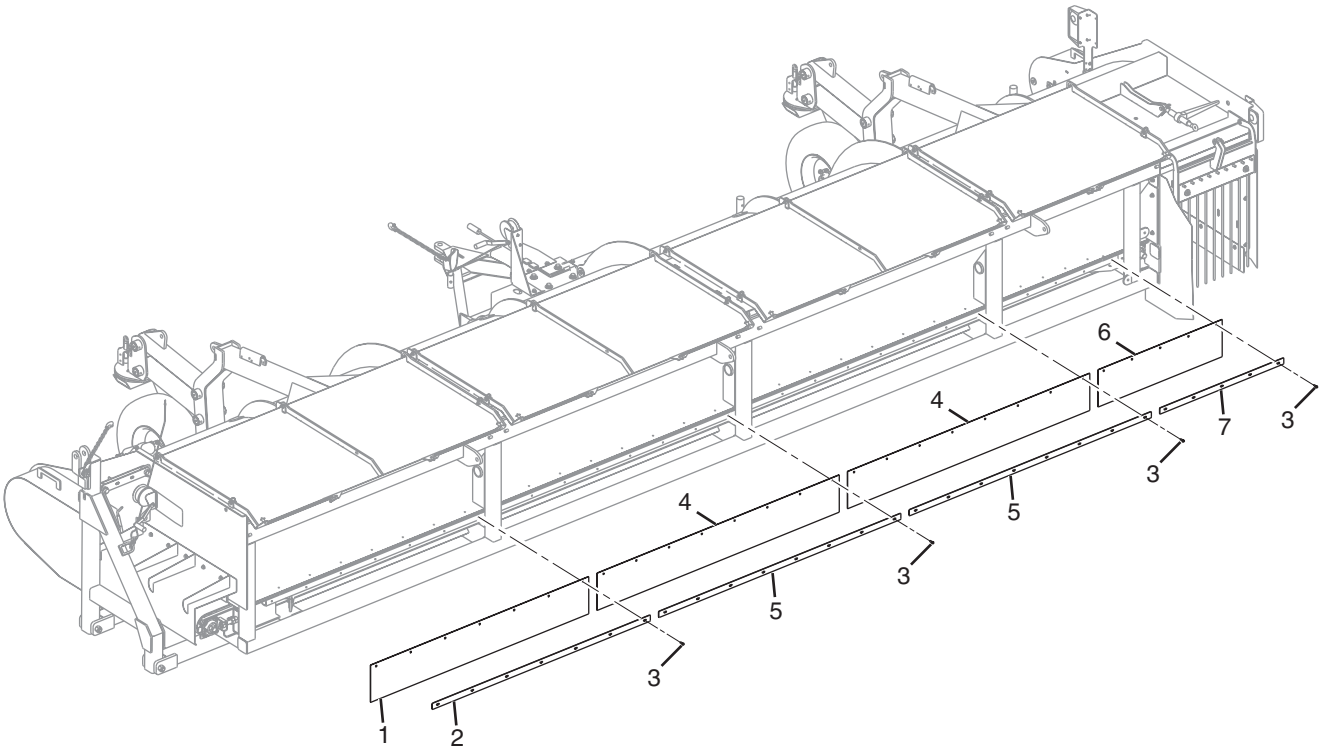
View 1



View 2

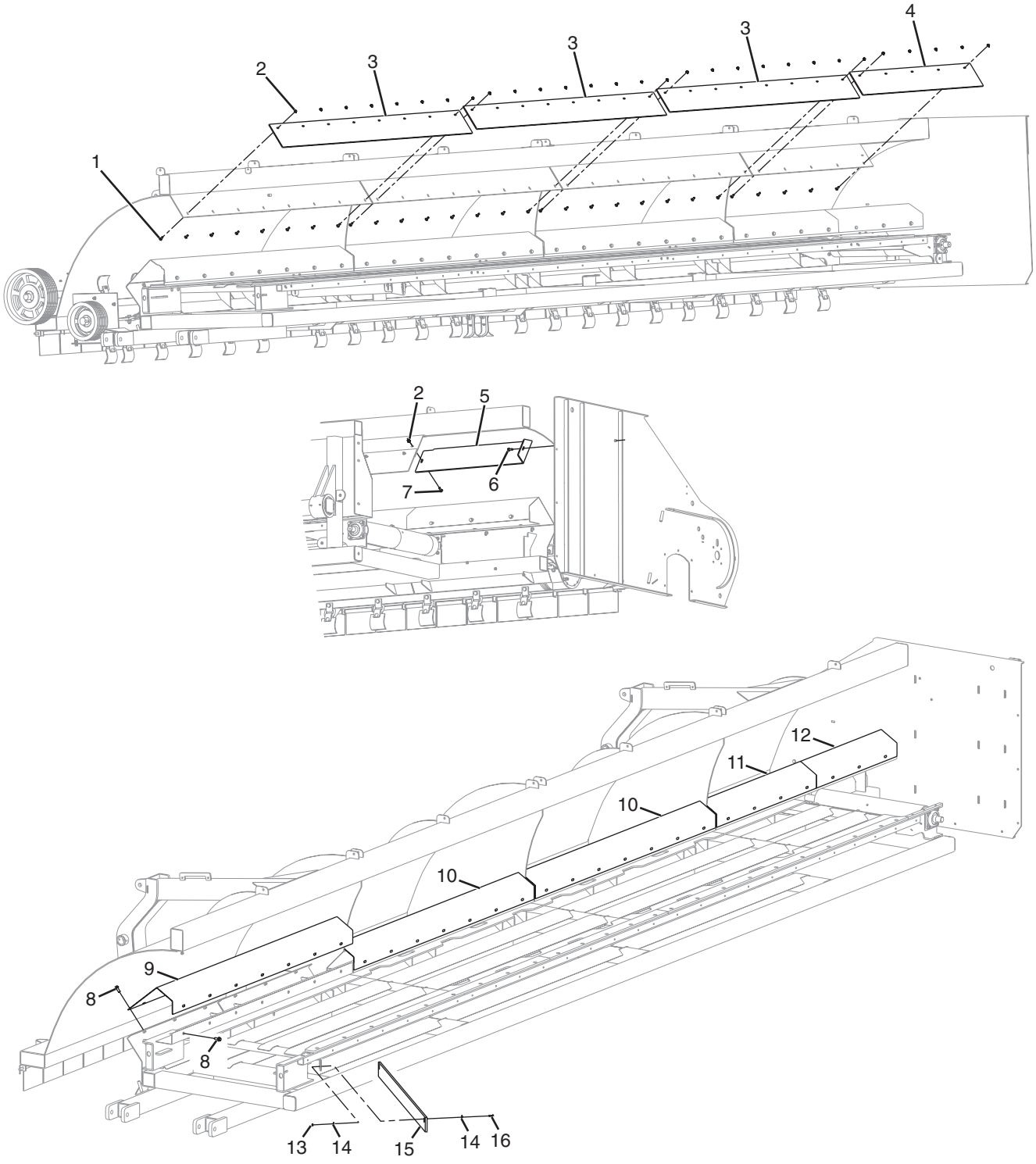
#	QTY.	PART #	DESCRIPTION
1	6	4054	NUT, LOCK 1/2" TOP
2	13	4068	WASHER, 1/2" SAE FLAT
3	1	N32446	PLATE, END SIDE
4	1	N32778	GUARD, FORM ATTACHMENT
5	4	4014	BOLT, 1/2" X 1-3/4" GRADE 5
6	3	4195	BOLT, 3/8" X 1" GRADE 5
7	3	4064	WASHER, FLAT 3/8"
8	1	N32779	GUARD, BOTTOM ATTACHMENT
9	1	N32472	BAR, ANGLE DEFLECTOR
10	3	4012	BOLT, 1/2" X 1-1/4" GRADE 5

Skirting



#	QTY.	PART #	DESCRIPTION
1	1	N32858	SKIRTING, 49.1875" CONV 30 DRAPER
2	1	N32861	STRIP, 78.25" SKIRT MOUNT
3	28	N36497	BOLT, 3/8" X 3/4" SER FLG
4	2	N32859	SKIRTING, 49.1875" CONV 30 DRAPER
5	2	N32862	STRIP, 86.875" SKIRT MOUNT
6	1	N32860	SKIRTING, 49.1875" CONV 30 DRAPER
7	1	N32863	STRIP, 44.5" SKIRT MOUNT

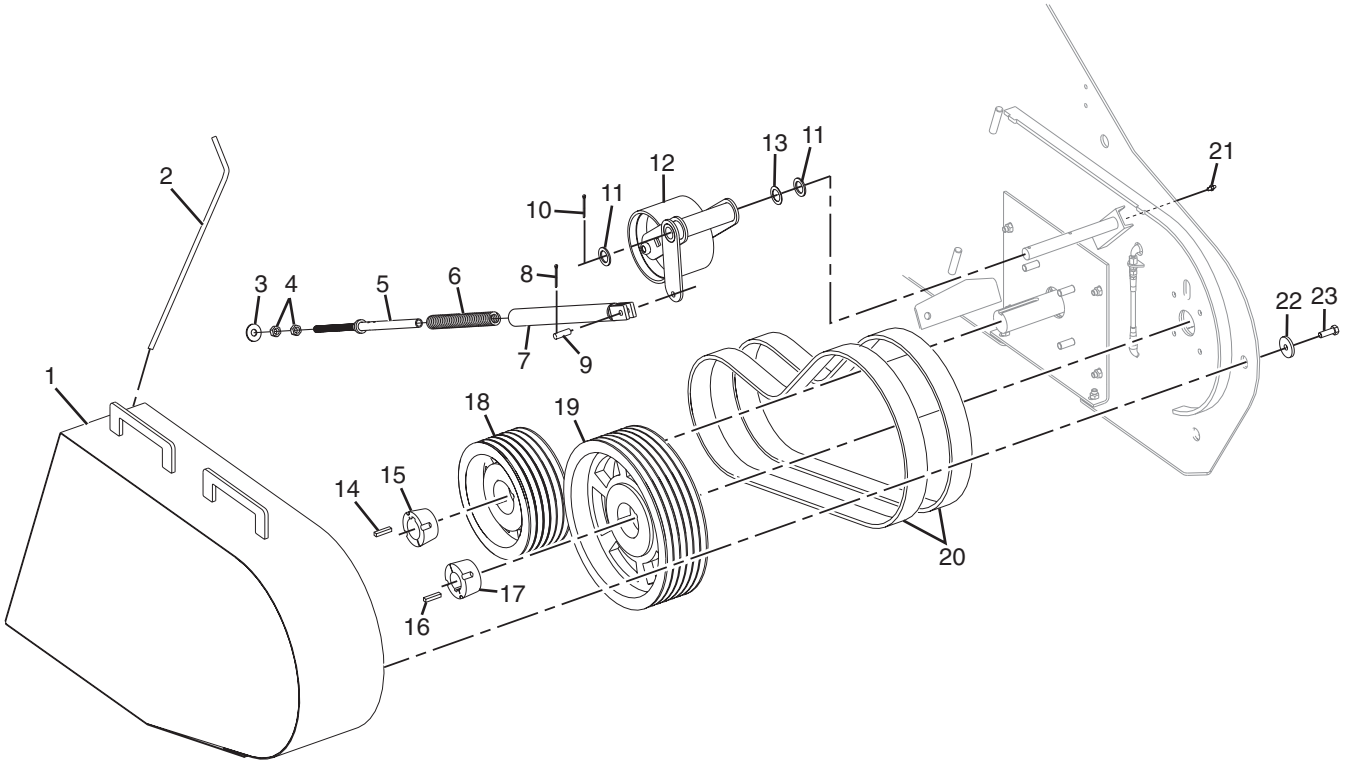
Internal Baffles, Plates, and Conveyor Scraper



Internal Baffles, Plates, and Conveyor Scraper

#	QTY.	PART #	DESCRIPTION
1	29	4034	BOLT, CARRIAGE 3/8" X 1"
2	30	4979	NUT, LOCK 3/8" SER FLANGE
3	3	N36696	BAFFLE, EXT BOLT-IN LG 15-30 L
4	1	N36697	BAFFLE, EXT BOLT-IN LG 15-30 S
5	1	N36639	PLATE, ANGLE DEFLECTOR SHORT
6	1	N26743	BOLT, 3/8" X 1" SER FLG
7	1	4390	BOLT, CARRIAGE 3/8" X 1-1/4"
8	50	N18360	BOLT, 1/2" X 1-1/4" SERATED FLANGE
9	1	N36693	COVER, INTERNAL 89" 30' LEFT
10	3	N32811	COVER, INTERNAL 89"
11	1	N32812	COVER, INTERNAL 49"
12	1	N32813	COVER, INTERNAL 40"
13	4	4050	NUT, 1/4" LOCK
14	8	4460	WASHER, FLAT 1/4"
15	2	N36631	SCRAPER, CONVEYOR
16	4	4000	BOLT, 1/4" X 1" GRADE 5

Belts and Sheaves



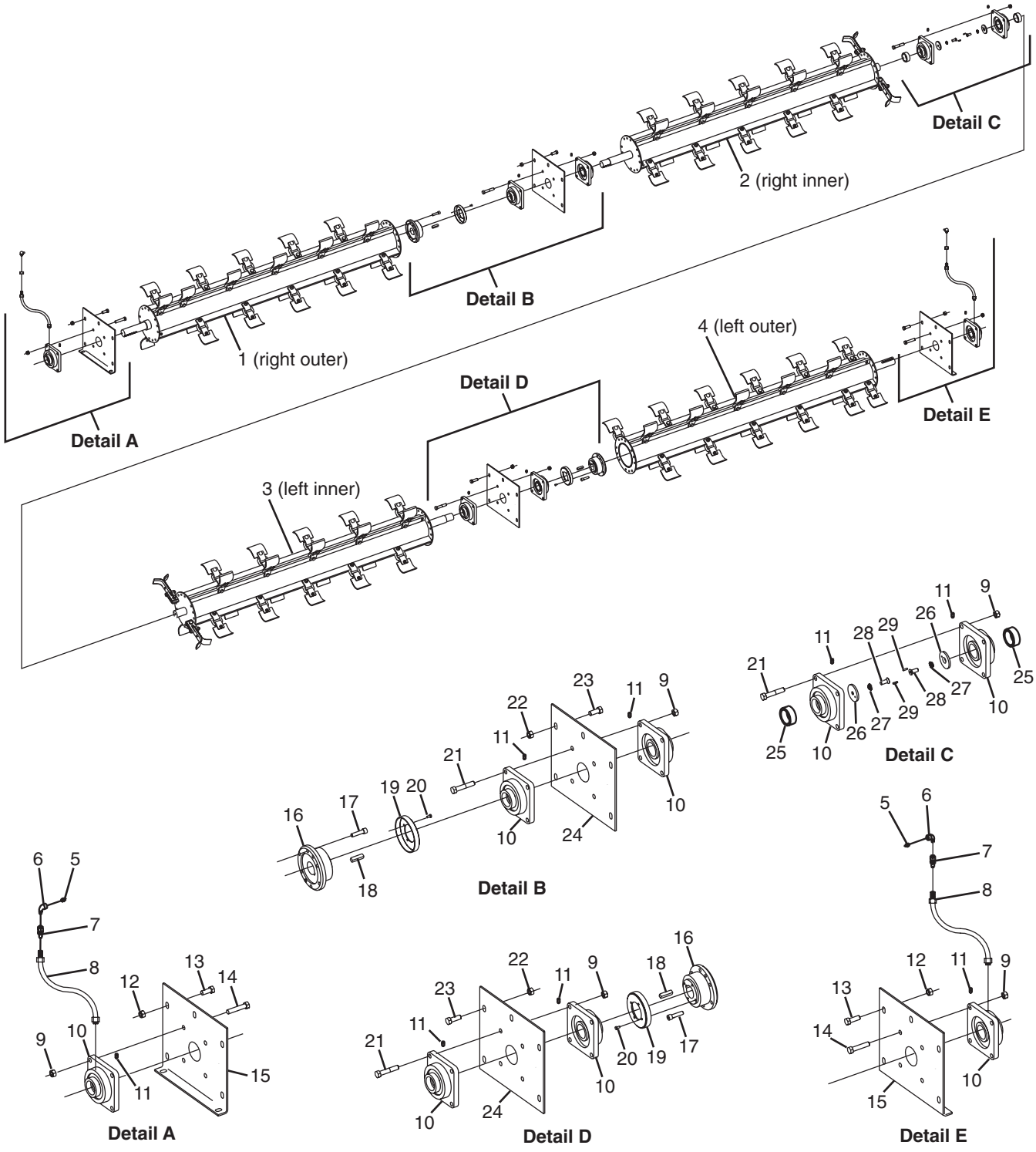
NOTE: Quantities shown are for both the right and left sides of the draper windrower.

Right side shown.

Belts and Sheaves

#	QTY.	PART #	DESCRIPTION
1	1	N32980	SHIELD, BELT LEFT W/HANDLES
	1	N32990	SHIELD, BELT RIGHT W/HANDLES (SHOWN)
2	2	N12018	PIN, UNV SHRD BELT SHIELD BACK
3	2	4069	WASHER, FLAT 5/8"
4	4	4438	NUT, 5/8" STANDARD GRADE 8
5	2	N12000	SHAFT, UNV SHRD BELT TIGHTENER
6	2	8067	SPRING, BELT TIGHTENER
7	2	N12003	TUBE, UNV SHRD BELT TIGHTENER
8	2	4089	CLIP, HAIRPIN .093 X 1-5/8"
9	2	4392	PIN, 1/2" X 1-1/4"
10	2	4329	PIN, COTTER 7/32" X 2-1/2"
11	4	4470	WASHER, 1-1/8" ID X 1-3/4" OD X 10 GA
12	1	N11997	TIGHTENER, UNIVERSAL SHREDDER BELT RIGHT
	1	N11998	TIGHTENER, UNIVERSAL SHREDDER BELT LEFT
13	2	4491	WASHER, 1-1/8" ID X 1-3/4" OD X 18 GA
14	2	N27290	KEY, 1/2" X 1-3/4" EXTRA HARD
15	2	8165	BSHG 2" ID TPL.119124
16	2	7121-02	KEY, 3/8" X 1-3/4"
17	2	8127	BUSHING, 1-3/4 KW TAPERLOCK
18	2	8107	SHEAVE, SMALL 6B X 11" TAPERLOCK
19	2	8119	SHEAVE, LARGE 6B X 16" TPLK
20	4	8172	BELT, 3B X 87"
21	2	4105	GREASE-ZERK, 1/4" SCREW-IN
22	2	4074	15 2 4074 WASHER, 2" OD X 1/2" ID X 1/4"
23	2	4013	4 3 4013 BOLT, 1/2" X 1-1/2" GRADE 5

Rotors

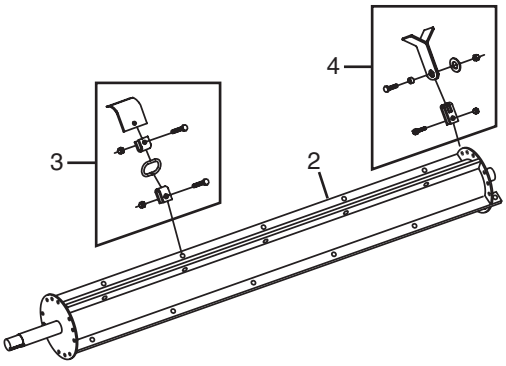


NOTE: See page 84 and page 85in Appendix for rotor knife pattern.

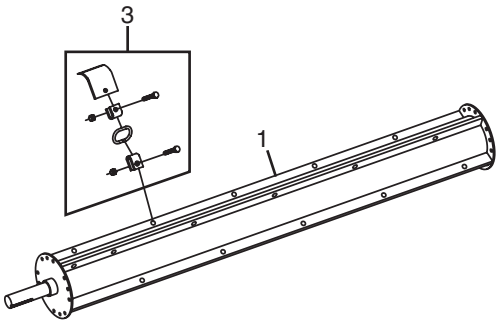
Rotors

#	QTY.	PART #	DESCRIPTION
1	1	N34201	ROTOR, 30 OUTER RIGHT W/KNIVES
2	1	N34200	ROTOR, 30' INNER RIGHT W/KNIVES
3	1	N34192	ROTOR, 30 INNER LEFT W/KNIVES
4	1	N34193	ROTOR, 30 OUTER LEFT W/KNIVES
5	2	N17007	GREASEZERK, 1/8" NPT
6	2	4472	ELBOW, 1/8" 90 DEG.STREET
7	2	4304-10	BULKHEAD, FITTING-GREASE HOSE
8	2	4304	HOSE, 15" GREASE W/FITTINGS
9	20	4057	NUT, 5/8" FINE THREAD TOP LOCK
10	8	N16969	BEARING, 2-3/16" 4-BOLT FLG SEALMASTER
11	8	4261	SCREW, 5/16" UNF X 3/8" SET
12	10	4054	NUT, LOCK 1/2" TOP
13	10	4012	BOLT, 1/2" X 1-1/4" GRADE 5
14	8	4042	BOLT, 5/8" X 2"FINE THRD.GR.8
15	2	N11427	PLATE, OUTER 2-3/16 BRG 4DRUM
16	2	8037	COUPLER, VALLEY DRIVE (2")
17	12	1100	SCREW, ALLEN 1/2" X 2"
18	2	7122-04	KEY, 1/2" X 2"
19	2	9346	COVER, SHRD DUST
20	8	3211	BOLT, 1/4" X 1" GRADE 5
21	12	4047	BOLT, 5/8" X 3-1/4" GRD 8 FINE
22	10	4055	NUT, LOCK 5/8" TOP
23	10	4020	BOLT, 5/8" X 1-1/2" GRADE 5
24	2	N10498	PLATE, SHD.DVD.2-3/16"BRG MNT
25	2	N18075	SPACER, SHRD ROTOR 2-3/16
26	2	4075	WASHER, 2-5/8" OD BEARING RETAINING
27	2	4076	WASHER, 1/2" EXT CNTSK LOCK
28	2	4468	SCREW, 1/2"-20UNF X 1-1/4" FN TD FL HD CAP
29	2	4085	PIN, ROLL 3/16" X 3/4"

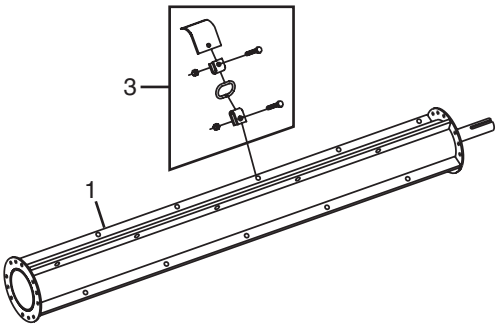
Rotor and Knive Assemblies



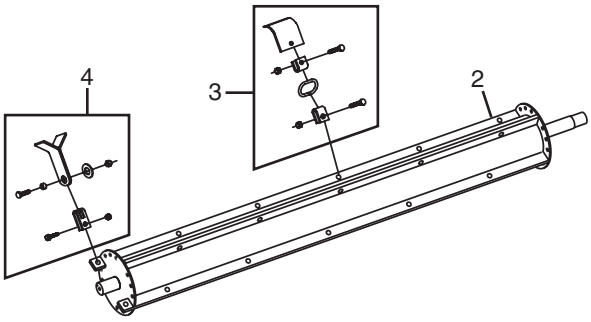
Inner Right Rotor with Knives - N34200



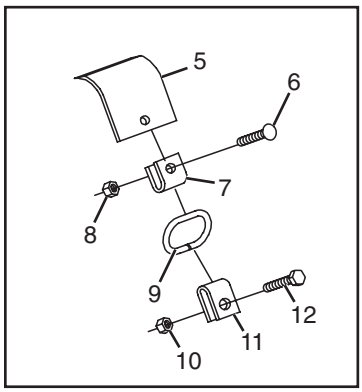
Outer Right Rotor with Knives - N34201



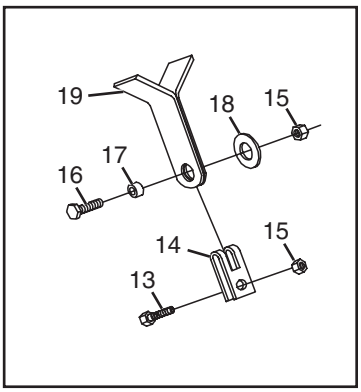
Outer Left Rotor with Knives - N34193



Inner Left Rotor with Knives - N34192



Cupped Knife Detail - 3



High Residue Knife Detail - 4

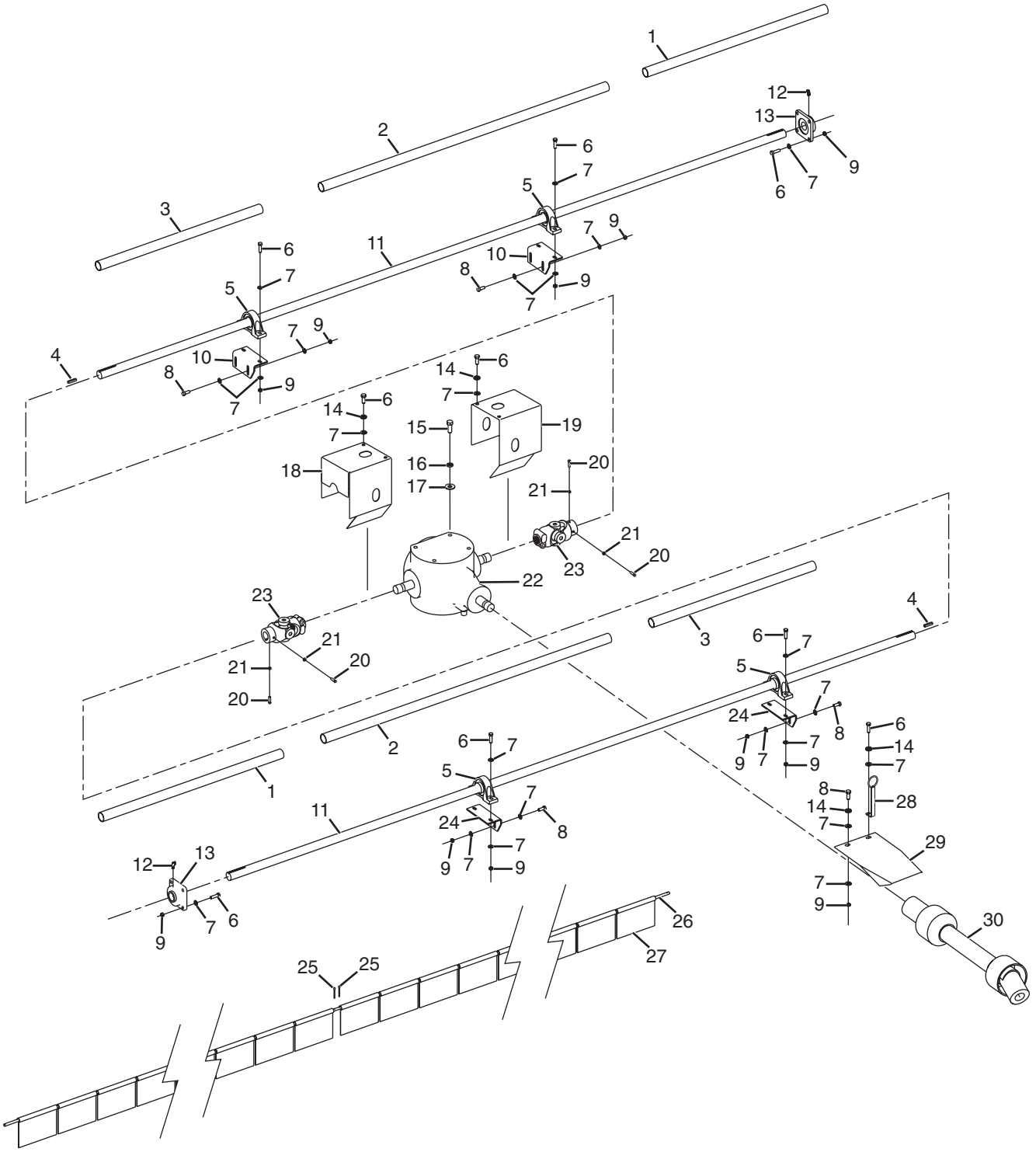
NOTE: See page 84 in Appendix for rotor knife pattern.

Rotor and Knive Assemblies

NOTE: Quantities shown for items 1-4 are for one rotor.

#	QTY.	PART #	DESCRIPTION
1	1	N34186	ROTOR, 30' OUTER W/O KNIVES
2	1	N34187	ROTOR, 30' INNER W/O KNIVES
3	*22 - per Outer Rotor* *20 - per Inner Rotor*	8022-10	KIT, CUPPED KNIFE COMPLETE ASSEMBLY
4	*2 - Inner Rotors only*	8136-10	SET, 70° HIGH RESIDUE KNIFE
NOTE: Quantities shown for items 5-12 are for <u>one</u> complete Cupped Knife (8022-10) assembly.			
5	1	8022	KNIFE, HARD-SURFACED CUPPED
6	1	4039	BOLT, CARRIAGE 1/2" X 1-1/2" GR5
7	1	8035	CLIP, CUPPED KNIFE
8	1	4054	NUT, LOCK 1/2" TOP
9	1	N24282	SQUARE-RING, CUPPED KNIFE
10	1	4055	NUT, 5/8" LOCK
11	1	8033	U-BAR, KNIFE
12	1	4043	BOLT, 5/8" X 2" GR 8
NOTE: Quantities shown for items 13-19 are for <u>one</u> complete High Residue Knife (8136-10) assembly .			
13	1	4043	BOLT, 5/8" X 2" GR 8
14	1	8034	U-BAR, SLOTTED
15	2	4055	NUT, 5/8" LOCK
16	1	4045	BOLT, 5/8" X 2-3/4" GR 8
17	1	9073	BUSHING, KNIFE
18	1	4488	WASHER, .894" I.D. X 1.750" O.D.
19	2	8136	KNIFE, 70° HIGH RESIDUE

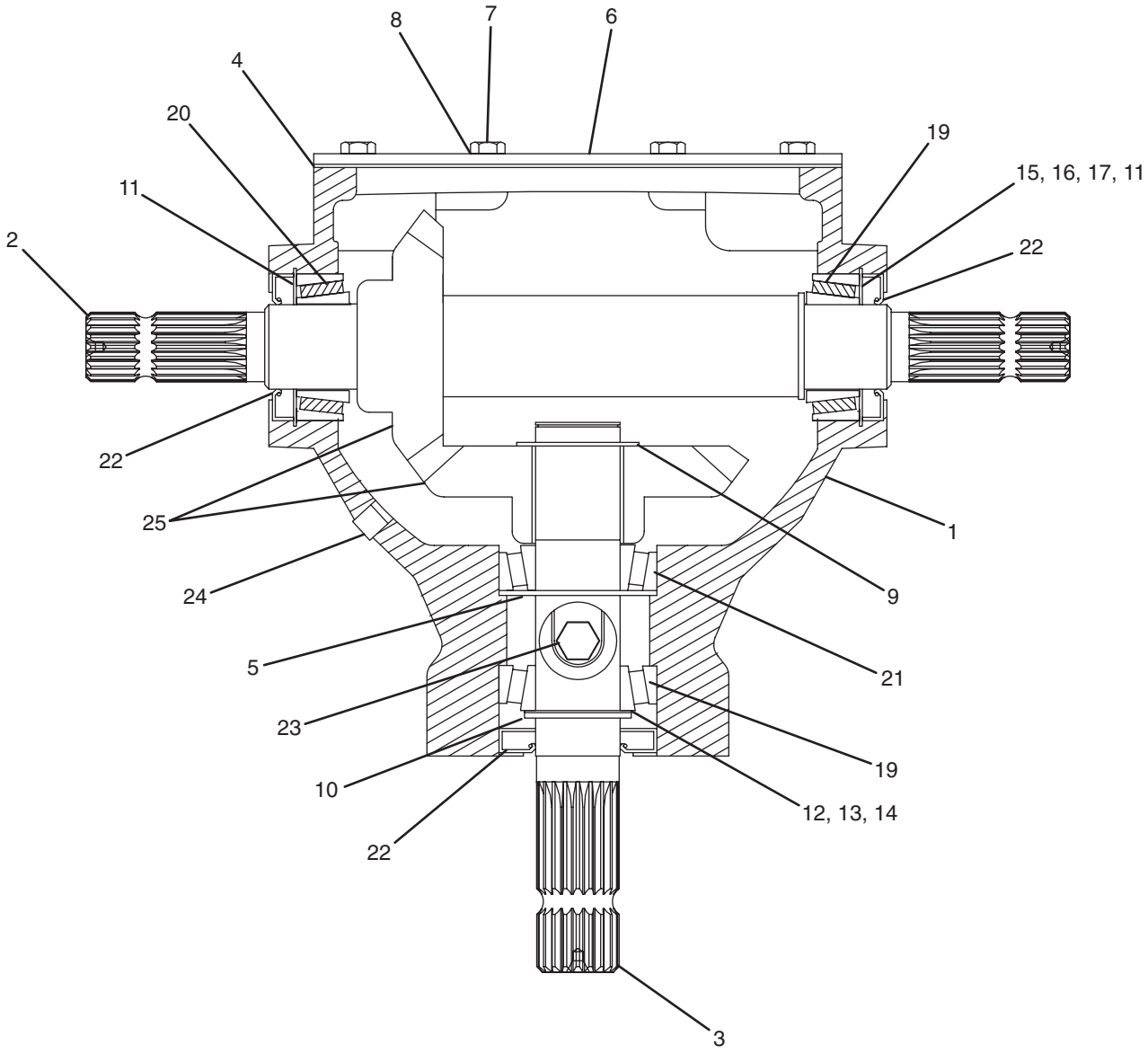
Drive Lines


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

Drive Lines

#	QTY.	PART #	DESCRIPTION
1	2	N11990	SHIELD, 30' SHRD OUTR DRVN PVC
2	2	N11989	SHIELD, 30' SHRD DRIVELINE MIDDLE
3	2	N36496	SHIELD, SHWD DRVLN INNER PVC
4	2	7121-03	KEY, 3/8" X 2"
5	4	N16971	BEARING, 1-3/4 (SEALMASTER) PLWBK
6	21	4014	BOLT, 1/2" X 1-3/4" GRADE 5
7	46	4068	WASHER, 1/2" SAE FLAT
8	9	4012	4012 BOLT, 1/2" X 1-1/4" GRADE 5
9	16	4054	NUT, LOCK 1/2" TOP
10	2	9098	MOUNT, SHRD. DRVLN. BEARING LEFT
11	2	8467	SHAFT, DRIVE 30'
12	2	4106	GREASEZERK,45 DEG SCW-IN 1/8NPT
13	2	N16970	BEARING, 1-3/4" SEALMASTER 4-BOLT FLANGE
14	6	4155	WASHER, LOCK 1/2"
15	4	4517	BOLT, 3/4" X 2" BOLT GR 5
16	4	4287	WASHER, 3/4" LOCK
17	4	4071	WASHER, 3/4" FLAT
18	1	N32753	SHIELD, SHWD BONDIOLI DRIVELINE RIGHT
19	1	N32754	SHIELD, SHWD BONDIOLI DRIVELINE LEFT
20	4	4082	SCREW, SQ HEAD SET 3/8" X 1-1/4"
21	4	4061	NUT, 3/8" JAM
22	1	N21532	GEARBOX,2200 1:1 BONDIOLI
23	2	N12440	U-JOINT, 1-3/4" RB X 1-3/4"-20SPL
24	2	9127	MOUNT, SHRD. DRVLN. BEARING RIGHT
25	2	4092	PIN COTTER 5/32" X 2"
26	2	N36460	ROD, FLIPPER SHWD 30''
27	36	N18774	FLIPPER, SHREDDER 9-1/2" X 8-1/2"
28	1	N13652	HOLDER, HOSE
29	1	9110	SHIELD, SHRD PTO 12" X 16"
30	1	N10512	PTO, 1-3/4"-20 SPLINED W/OVERRUNNING CLUTCH)

Gearbox, 2200 RPM 1:1 Bondioli (N21532)



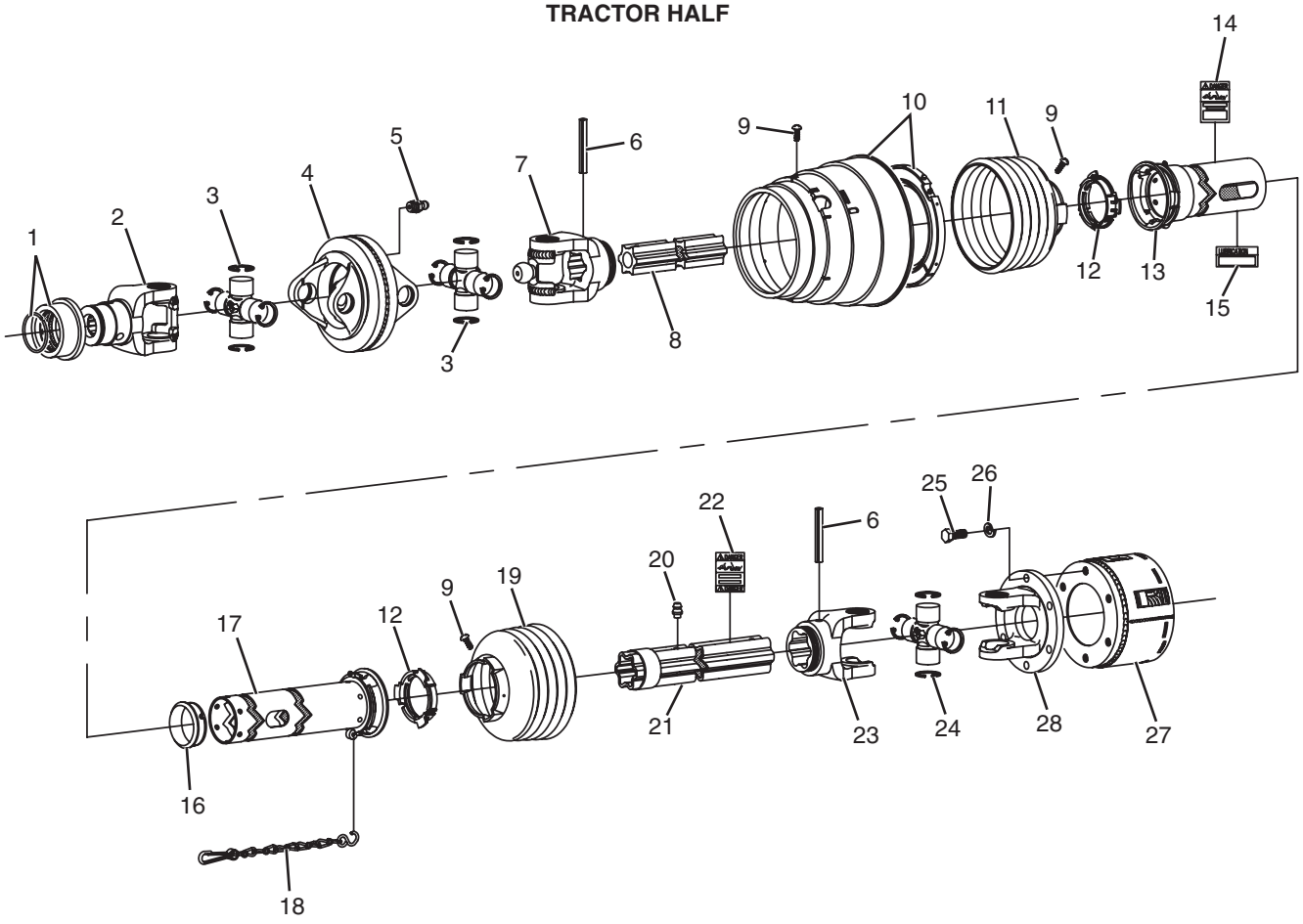
Gearbox, 2200 RPM 1:1 Bondioli (N21532)

#	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	8170-11	SNAP-RING, THROUGH SHAFT
12	1	8170-12	RING, PINION SHAFT
13	1	8170-13	RING, PINION SHAFT
14	1	8170-14	RING, PINION SHAFT
15	2	8170-15	RING, THROUGH SHAFT
16	2	8170-16	RING, THROUGH SHAFT
17	2	8170-17	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)

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

PULL TYPE SHREDDER

TRACTOR HALF



IMPLEMENT HALF

To order a complete tractor half of the PTO, use part number N10334.

To order a complete implement half of the PTO, use part number N11103.

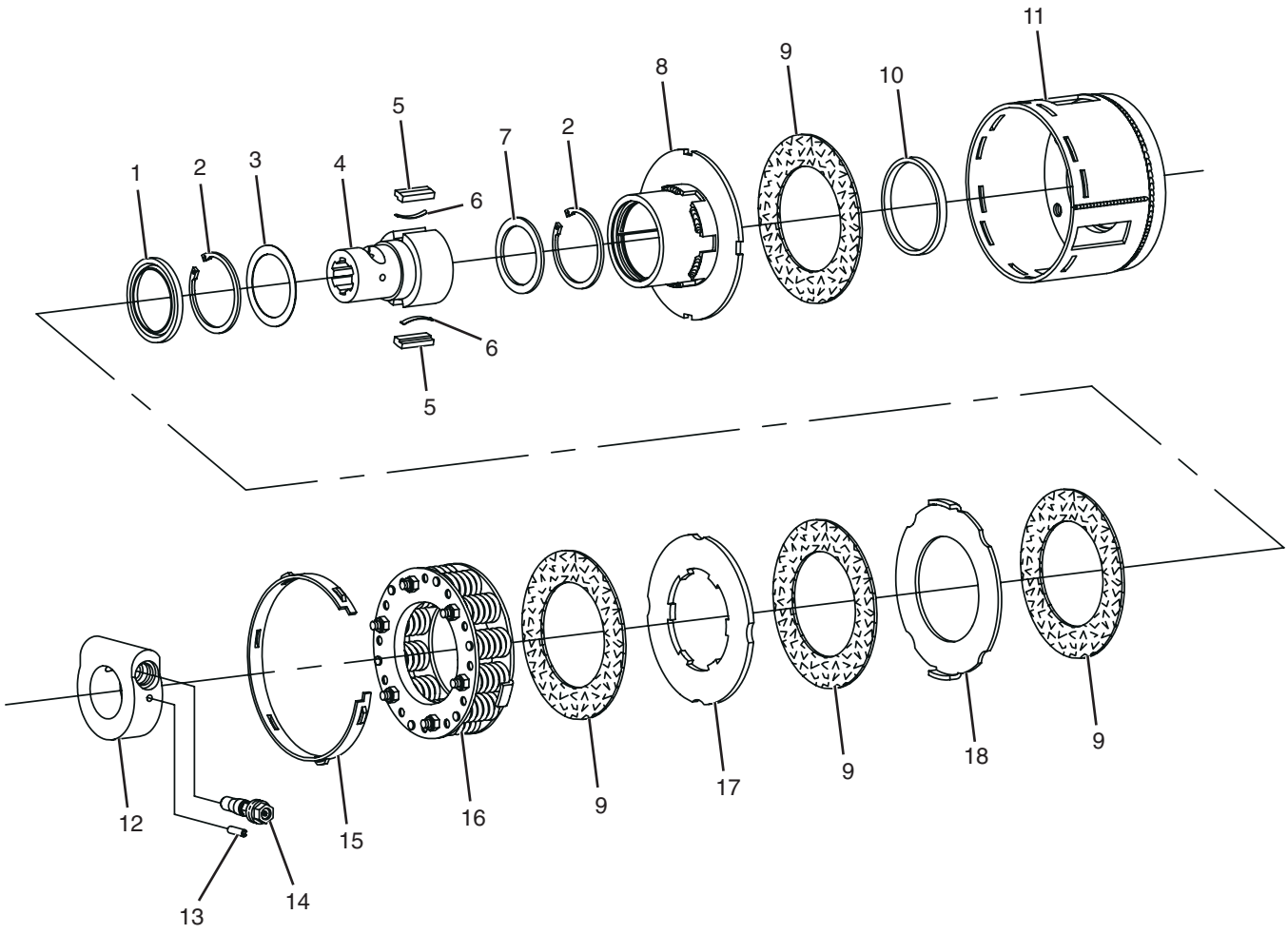
To order a complete PTO, use part number N10512.

Refer to page 58 for the complete parts breakdown on the Friction/ Overrunning Clutch (Item 27), part number N10856.

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

#	QTY.	PART #	DESCRIPTION
1	1	N10362	KIT, PTO SNAP RING (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 & 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	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	N11761	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

Clutch, PTO 97 Friction/Overrunning (N10856)

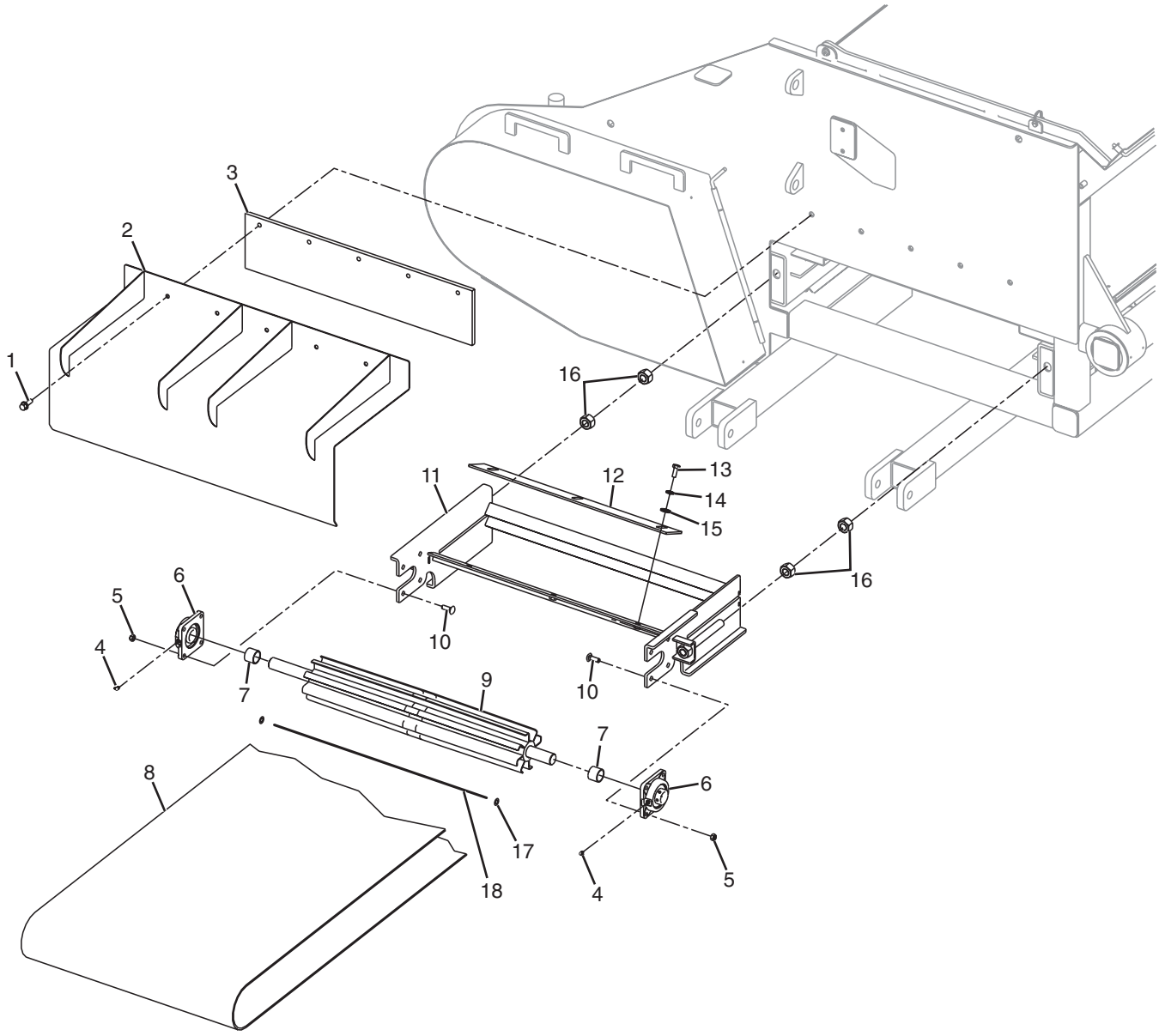


To order a complete 97 Friction/ Overrunning Clutch, use part number N10856.

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

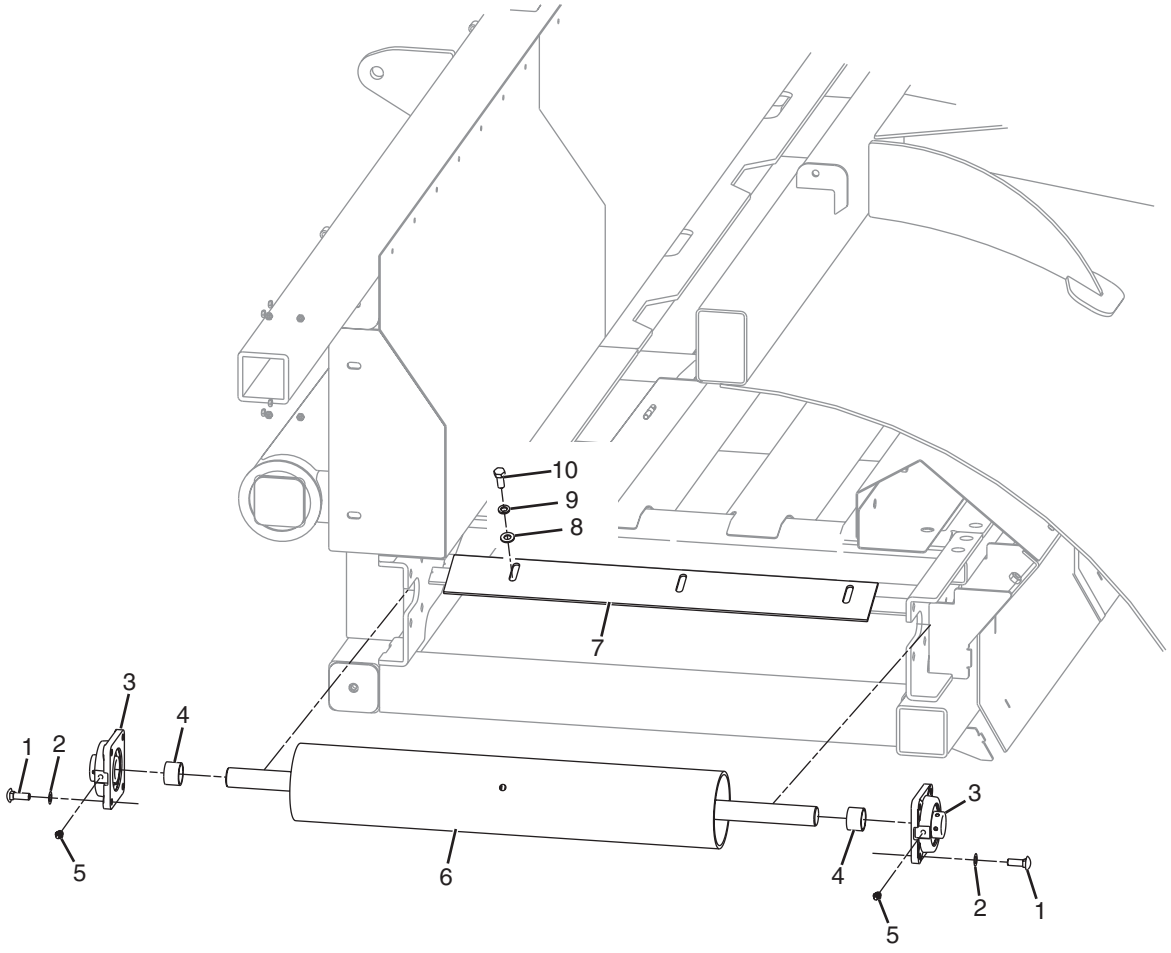
Takeup, Draper Tailstock



Takeup, Draper Tailstock

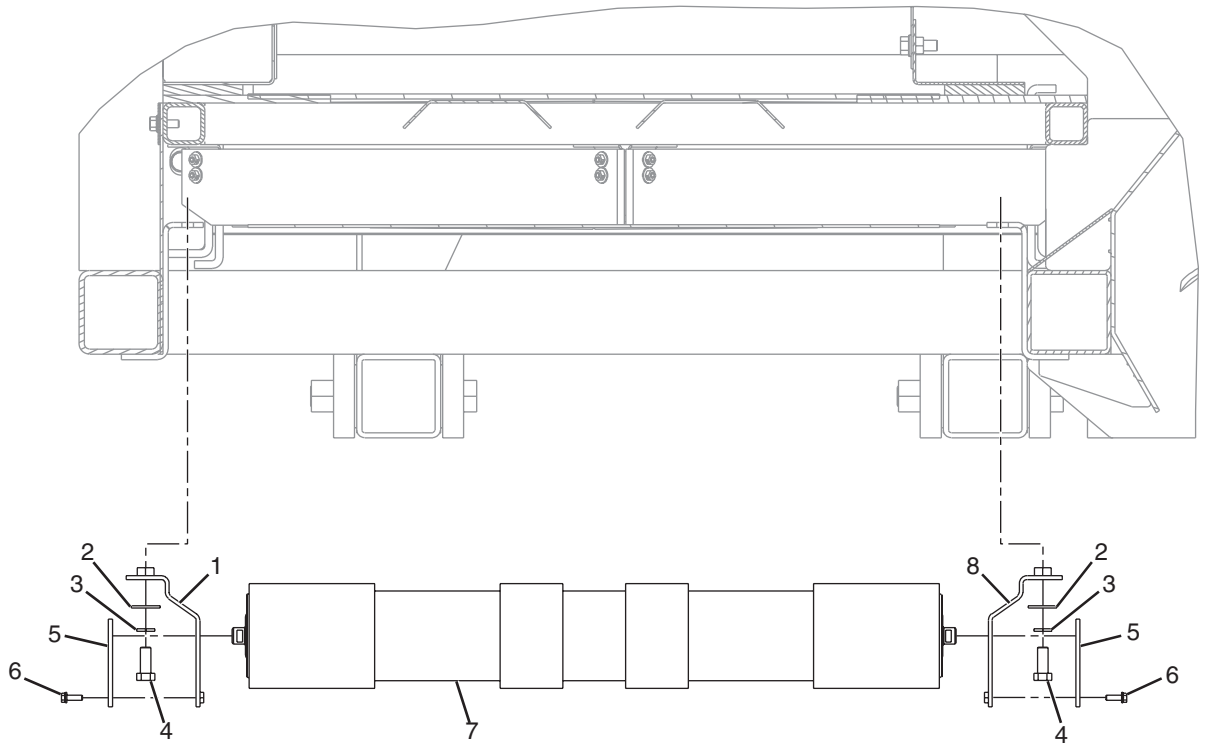
#	QTY.	PART #	DESCRIPTION
1	5	N18360	BOLT, 1/2" X 1-1/4" SERATED FLANGE
2	1	N32832	GUARD, CONV ASM
3	1	N32565	SKIRTING, CONV SHWD
4	2	N25062	GREASEZERK, 90 DEG 1/8" NPT
5	8	4054	NUT, LOCK 1/2" TOP
6	2	N30229	BEARING, 1-1/2" DODGE 4-BLT FLG
7	2	N36510	BUSHING, IDLER .781"
8	1	N32815	BELT, CONVEYOR 33" X 679"
9	1	N36610	PULLEY, DRAPER TAILSTOCK OS
10	8	4039	BOLT, CARRIAGE 1/2" X 1-1/2"
11	1	N36627	TAKEUP, DRAPER TAILSTOCK 2
12	1	N36641	PLATE, CROWNED SCRAPER
13	3	4012	BOLT, 1/2" X 1-1/4" GRADE 5
14	3	4155	WASHER, LOCK 1/2"
15	3	4068	WASHER, 1/2" SAE FLAT
16	4	N28130	NUT, 1" ACME
17	2	N35112	WASHER, SHWD CON BELT CRIMPED
18	1	N35111	CABLE, SHWD CONVEYOR BELT

Drum, Draper Belt Drive



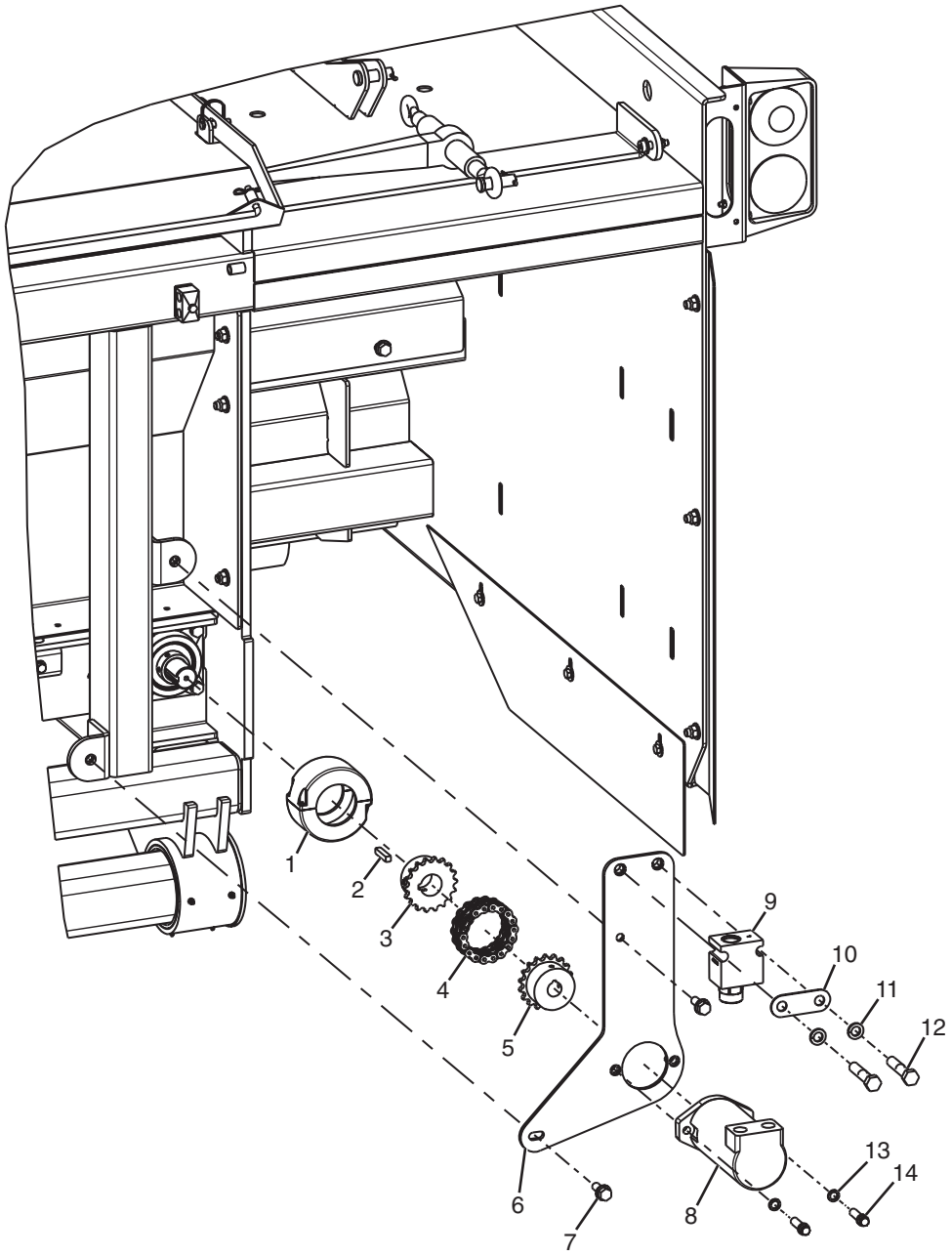
#	QTY.	PART #	DESCRIPTION
1	8	4013	BOLT, 1/2" X 1-1/2" GR 5
2	8	N16472	WASHER, NORD-LOCK 1/2"
3	1	N30229	BEARING, 1-1/2" DODGE 4-BLT FLG
4	2	N36501	BUSHING, DRIVE .594"
5	2	4105	GREASE-ZERK, 1/4" SCREW-IN
6	1	N36613	DRUM, SHWD BELT DRIVE CROWNED
7	1	N36641	PLATE, CROWNED SCRAPER
8	3	4068	WASHER, 1/2" SAE FLAT
9	3	4155	WASHER, LOCK 1/2"
10	3	4012	BOLT, 1/2" X 1-1/4" GRADE 5

Return Roller



#	QTY.	PART #	DESCRIPTION
1	1	N36638	BRACKET, SHWD RETURN ROLL MT B
2	4	4486	WASHER, 1/2" FLAT
3	4	4155	WASHER, LOCK 1/2"
4	4	4012	BOLT, 1/2" X 1-1/4" GRADE 5
5	2	N36678	PLATE, SHWD ROLLER HOLDER
6	4	4573	1/4" X 3/4" SER FLANGE
7	1	N36640	ROLLER, C5 30" RETURN URETHANE
8	1	N36677	BRACKET, SHWED RETURN ROLL MT F

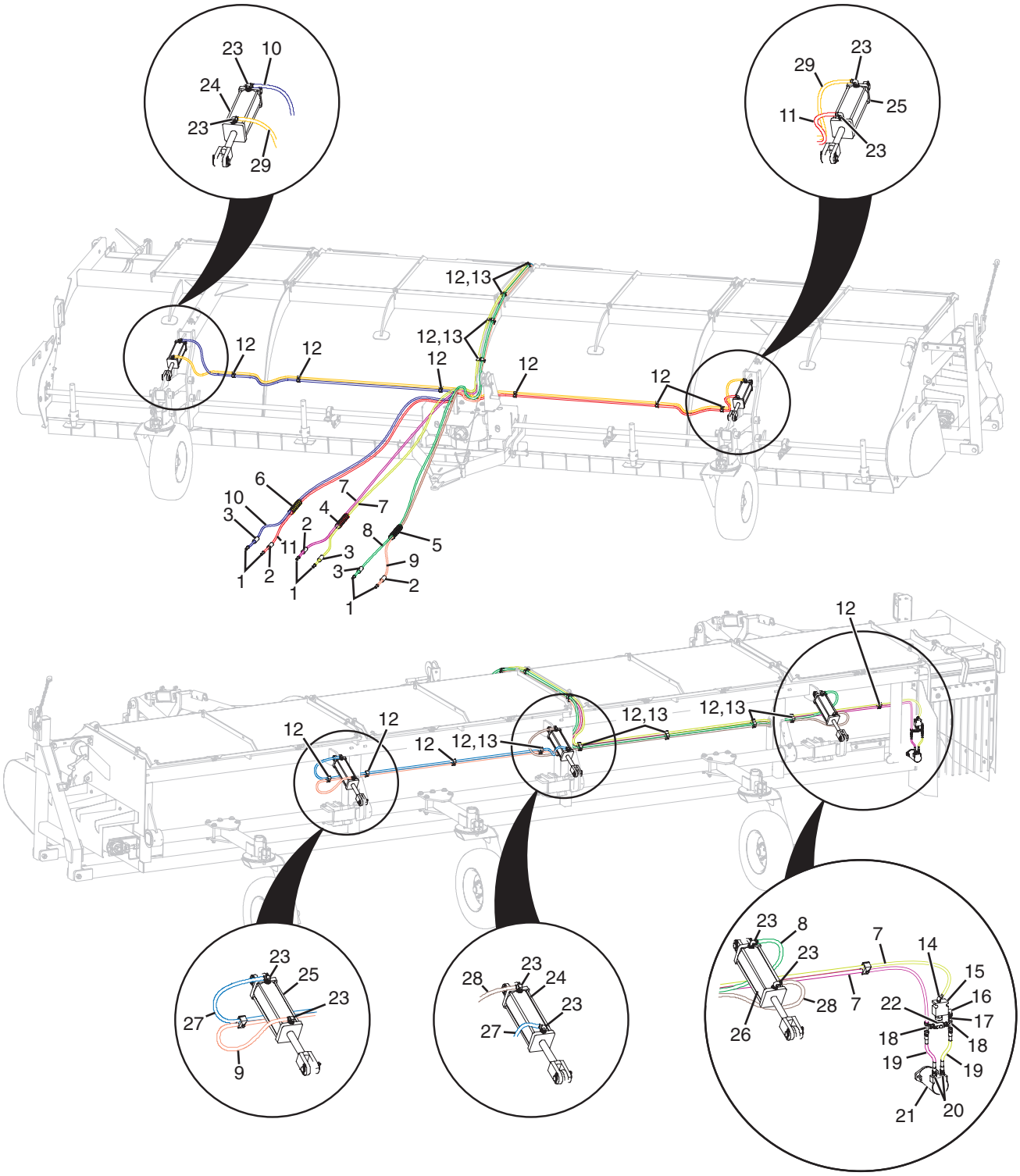
Conveyor Motor



Conveyor Motor

#	QTY.	PART #	DESCRIPTION
1	1	N36502	HOUSING, 50 CHAIN CPL COVER
2	1	7121-02	KEY, 3/8" X 1-3/4"
3	1	N32136	COUPLER, SPROCKET 1.5" BORE 50 C
4	1	N32138	CHAIN, COUPLER #50 - 11 LINKS
5	1	N32137	COUPLER, SPROCKET 1" BORE 50 C
6	1	N32992	PLATE, TQ WELDMENT
7	2	N18360	BOLT, 1/2" X 1-1/4" SER FLG
8	1	N29849	MOTOR, CHAR-LYNN 11.9 CID
9	1	N36628	VALVE, FLOW CONTROL,14 GPM
10	1	N36795	PLATE, SHWD VALVE RETAINER
11	2	4228	WASHER, LOCK 5/16"
12	2	4004	BOLT, 5/16" X 3" GR 5
13	2	N16472	WASHER, NORD-LOCK 1/2"
14	2	N28502	BOLT, 1/2 X 1-1/2 12 PT GRD8

Hydraulics, Main



Hose Kit N35010 includes Items 1, 7, 8, 9, 10, 11, 14, 16, 17, 18, 19, 20, 22, 23, 27, 28, 29.

Hydraulics, Main

#	QTY.	PART #	DESCRIPTION
*1	6	N11825	COUPLER, 1/2" MALE PIONEER
**2	3	N24823	DECAL, TANK
**3	3	N24822	DECAL, PRESSURE
4	1	N32884	HOSE WRAP, RED, LNGTH 1 FOOT
5	1	N32882	HOSE WRAP, BLACK, LNGTH 1 FOOT
6	1	N32883	HOSE WRAP, YELLOW, LNG 1 FOOT
*7	2	N32824	HOSE, 3/8 X 376 - 8FJIC - 8MP
*8	1	N32825	HOSE, 3/8 X 347 - 8FJIC - 8MP
*9	1	N32826	HOSE, 3/8 X 351 - 8FJIC - 8MP
*10	1	N32827	HOSE, 3/8 X 268 - 8FJIC - 8MP
*11	1	N32828	HOSE, 3/8 X 270 - 8FJIC - 8MP
12	27	N21365	CLAMP, 3/8" HYD HOSE DOUBLE
13	7	N28436	BOLT, 5/16" X 2-1/4" GR5
*14	1	N26332	ELBOW, 45 DEG - 8MJIC - 12MOR
15	1	N36628	VALVE, FLOW CONTROL, 14 GPM
*16	1	N26333	ELBOW, 90 DEG - 8MJIC - 12MOR
*17	1	N30040	ADAPTER, 8FJC - 8 FJC
*18	2	N28895	TEE, -8MJIC -8MJIC -8FJIC
*19	2	N25197	HOSE, 3/8" X 12" -8FJIC -8FJIC
*20	2	N12444	ADAPTER, 8MJIC - 10MOR
21	1	N29849	MOTOR, CHAR-LYNN 11.9 CID
*22	1	N32536	VALVE, CHECK -8MJ/8MJ/5 PSI
*23	10	N11952	ELBOW, 90 DEG - 8MJIC - 8MOR
24	2	8044	CYLINDER, 3-1/2" X 8" REPHASNG
25	2	8043	CYLINDER, 3-1/4" X 8" REPHASNG
26	1	8045	CYLINDER, 3-3/4" X 8" REPHASNG
*27	1	N32821	HOSE, 3/8 X 146 - 8FJIC - 8FJIC
*28	1	N32822	HOSE, 3/8 X 162 - 8FJIC - 8FJIC
*29	1	N32823	HOSE, 3/8 X 285 - 8FJIC - 8FJIC

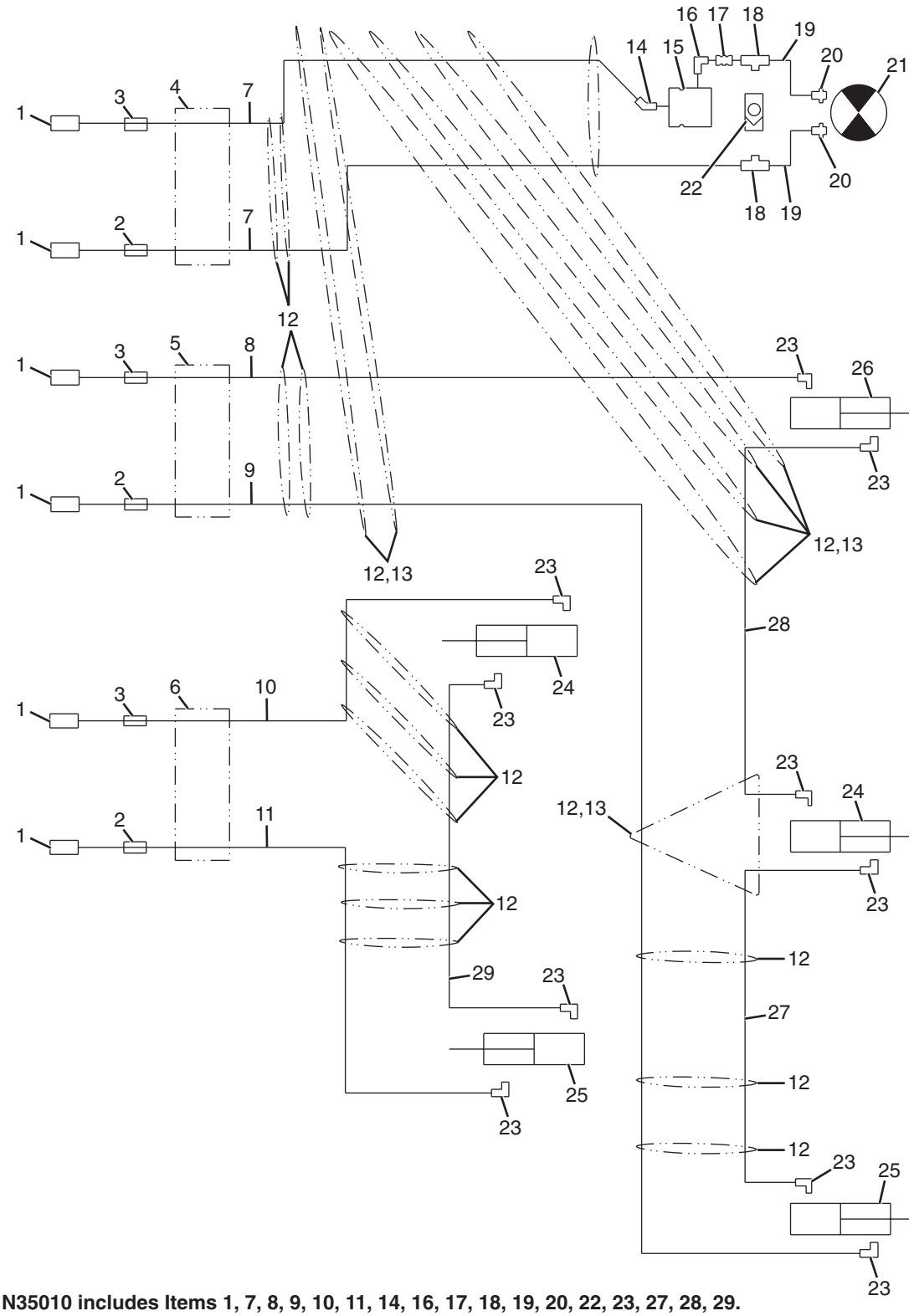
*** Included in Hose Kit N35010.**

**** Included in Decal Kit N32993.**

See page 68 and page 69 for schematic of Main Hydraulics.

NOTE: When clamps are doubled up at a mounting location, discard the 5/16" x 1-3/8" bolt that comes with Kit N21365 (Item 12) and use N28436 bolt (Item 13).

Schematic, Main Hydraulics



Hose Kit N35010 includes Items 1, 7, 8, 9, 10, 11, 14, 16, 17, 18, 19, 20, 22, 23, 27, 28, 29.

Schematic, Main Hydraulics

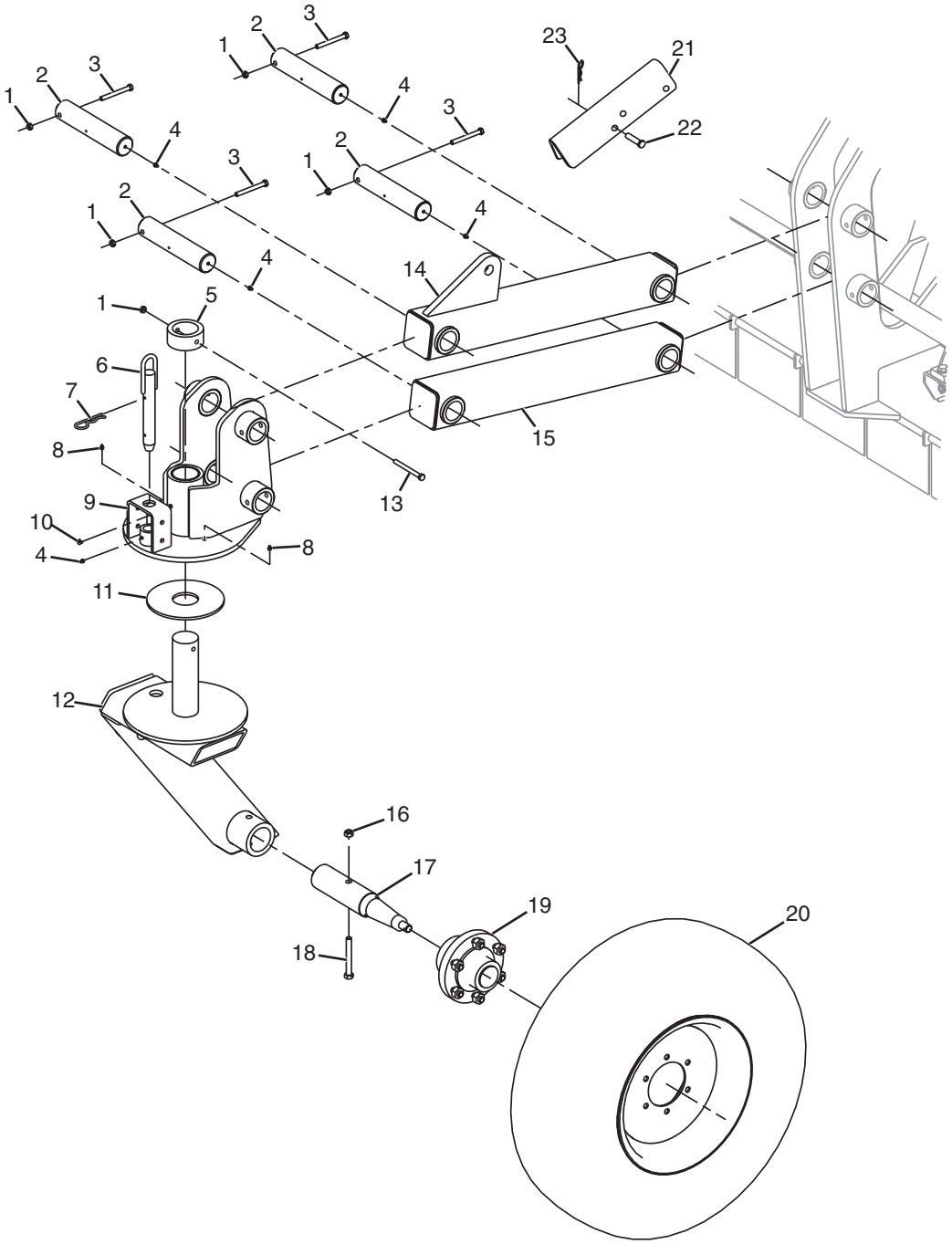
#	QTY.	PART #	DESCRIPTION
*1	6	N11825	COUPLER, 1/2" MALE PIONEER
**2	3	N24823	DECAL, TANK
**3	3	N24822	DECAL, PRESSURE
4	1	N32884	HOSE WRAP, RED, LNGTH 1 FOOT
5	1	N32882	HOSE WRAP, BLACK, LNGTH 1 FOOT
6	1	N32883	HOSE WRAP, YELLOW, LNG 1 FOOT
*7	2	N32824	HOSE, 3/8 X 376 - 8FJIC - 8MP
*8	1	N32825	HOSE, 3/8 X 347 - 8FJIC - 8MP
*9	1	N32826	HOSE, 3/8 X 351 - 8FJIC - 8MP
*10	1	N32827	HOSE, 3/8 X 268 - 8FJIC - 8MP
*11	1	N32828	HOSE, 3/8 X 270 - 8FJIC - 8MP
12	27	N21365	CLAMP, 3/8" HYD HOSE DOUBLE
13	7	N28436	BOLT, 5/16" X 2-1/4" GR5
*14	1	N26332	ELBOW, 45 DEG - 8MJIC - 12MOR
15	1	N36628	VALVE, FLOW CONTROL, 14 GPM
*16	1	N26333	ELBOW, 90 DEG - 8MJIC - 12MOR
*17	1	N30040	ADAPTER, 8FJC - 8 FJC
*18	2	N28895	TEE, -8MJIC -8MJIC -8FJIC
*19	2	N25197	HOSE, 3/8" X 12" -8FJIC -8FJIC
*20	2	N12444	ADAPTER, 8MJIC - 10MOR
21	1	N29849	MOTOR, CHAR-LYNN 11.9 CID
*22	1	N32536	VALVE, CHECK -8MJ/8MJ/5 PSI
*23	10	N11952	ELBOW, 90 DEG - 8MJIC - 8MOR
24	2	8044	CYLINDER, 3-1/2" X 8" REPHASNG
25	2	8043	CYLINDER, 3-1/4" X 8" REPHASNG
26	1	8045	CYLINDER, 3-3/4" X 8" REPHASNG
*27	1	N32821	HOSE, 3/8 X 146 - 8FJIC - 8FJIC
*28	1	N32822	HOSE, 3/8 X 162 - 8FJIC - 8FJIC
*29	1	N32823	HOSE, 3/8 X 285 - 8FJIC - 8FJIC

*** Included in Hose Kit N35010.**

**** Included in Decal Kit N32993.**

NOTE: When clamps are doubled up at a mounting location, discard the 5/16" x 1-3/8" bolt that comes with Kit N21365 (Item 12) and use N28436 bolt (Item 13).

Wheel Assembly, Front

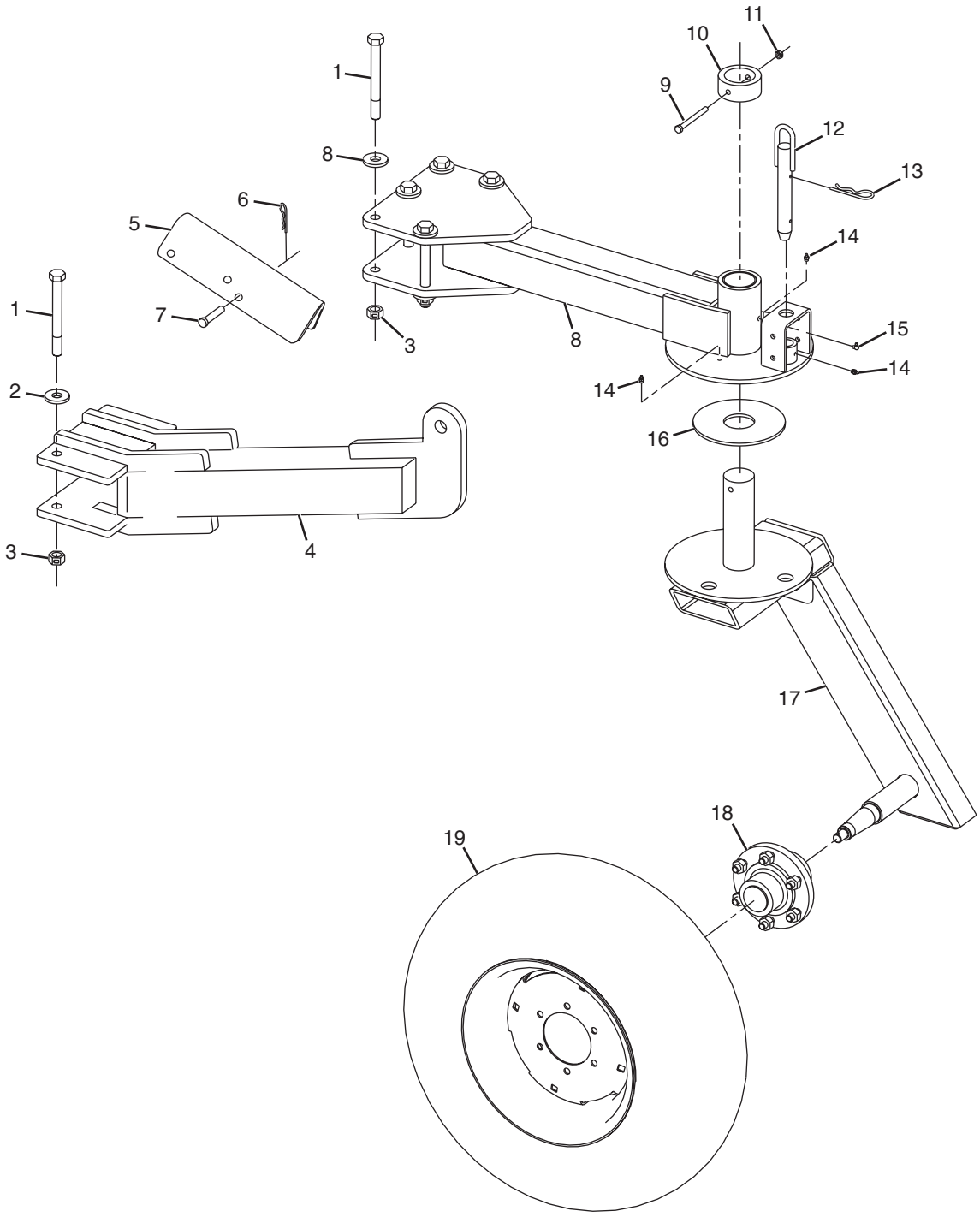


Wheel Assembly, Front

NOTE: Quantities shown are for one front wheel assembly.

#	QTY.	PART #	DESCRIPTION
1	5	4052	NUT, LOCK 3/8"
2	4	N33491	PIN, SHRD PARALLEL ARM
3	4	4255	BOLT, 3/8" X 3-1/2" GRADE 5
4	5	4105	GREASE-ZERK
5	1	N13335	COLLAR, UNV SHRD AST WHL
6	1	N10806	PIN, UNV SHRD ASSIST WHEEL LOCKING
7	1	4389	CLIP, HAIRPIN 3/16" X 3"
8	2	4104	GREASEZERK, DRIVE-IN
9	1	N33475	PIVOT, SHRD PRLL WHEEL
10	1	4107	GREASE-ZERK, 1/4" SCREW-IN 90 DEG
11	1	N10214	INSERT, UNV SHRD AST WHL PLASTIC
12	1	N32797	CASTER, SHWD 30' FRONT ASSIST WHL
13	1	4456	BOLT, 3/8" X 4" GRADE 5
14	1	N33482	ARM, SHRD FRT PARALLEL TOP
15	1	N33479	ARM, SHRD FRT PARALLEL BTM
16	1	4054	NUT, LOCK 1/2" TOP
17	1	N32555	SPINDLE, SHWD TRANSPORT
18	1	4357	BOLT, 1/2" X 4" GRADE 5
19	1	N29054	HUB, 6 BOLT 6" PAT W/STUDS
20	1	N29267	WHEEL, 245 / 70R17.5 - 6000 LB
21	1	N19768	CYLINDER STOP 9" - UNIVERSAL
22	1	4093	PIN, 3/8" X 3" (2.75" USEABLE)
23	1	4089	CLIP, HAIRPIN .093 X 1-5/8"

Wheel Assembly, Rear

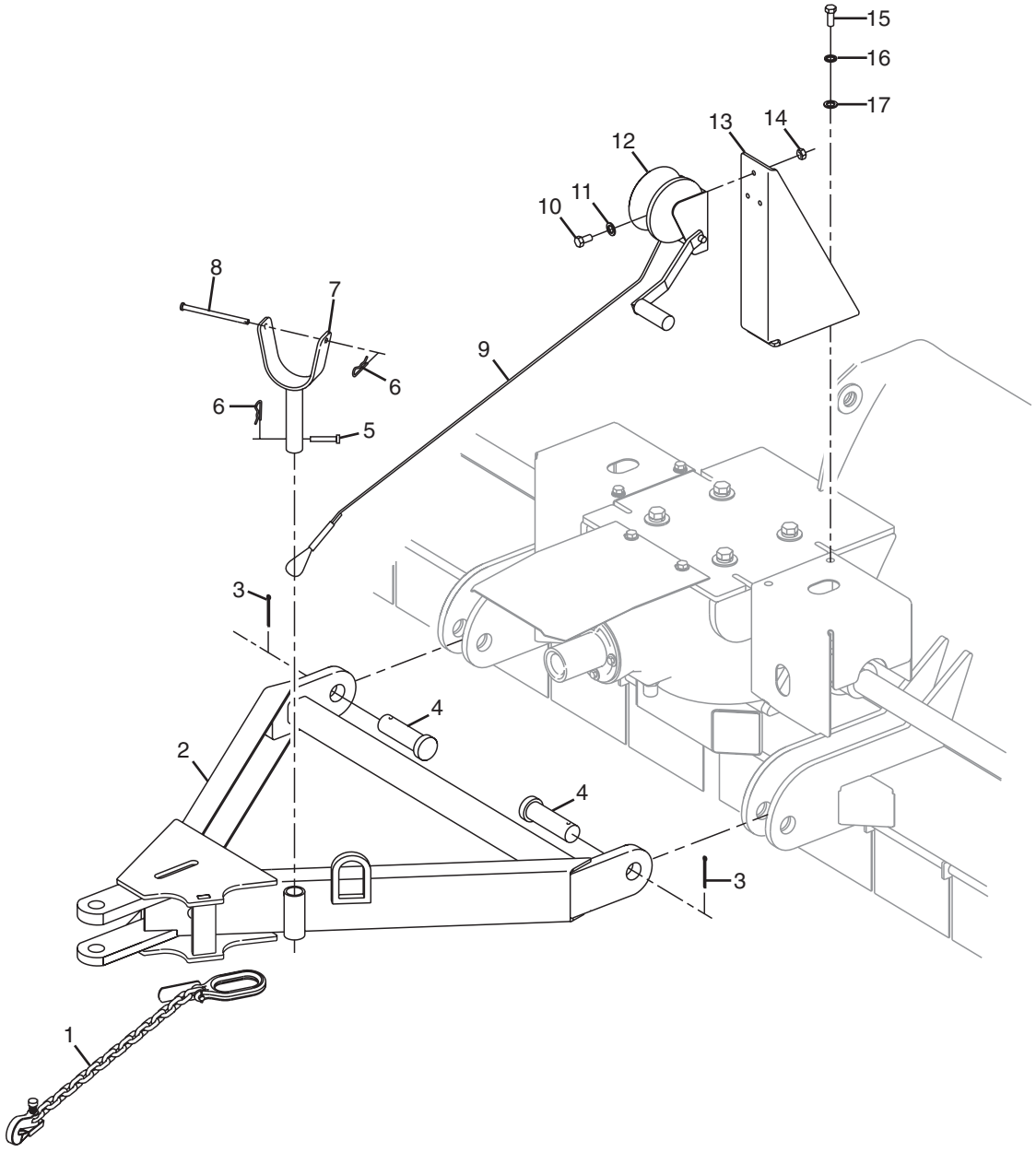


Wheel Assembly, Rear

NOTE: Quantities shown are for one rear wheel assembly.

#	QTY.	PART #	DESCRIPTION
1	7	4458	BOLT, 3/4" X 6-1/2" GR 5
2	7	4071	WASHER, 3/4" FLAT
3	7	4056	NUT LOCK 3/4
4	1	N33501	ARM, DRAPER SW LIFT WELDED
5	1	N19768	CYLINDER STOP 9" - UNIVERSAL
6	1	4089	CLIP, HAIRPIN .093 X 1-5/8"
7	1	4093	PIN, 3/8" X 3" (2.75" USEABLE)
8	1	N33457	ARM, SHRD REAR SHORT WHEEL
9	1	4456	BOLT, 3/8" X 4" GRADE 5
10	1	N13335	COLLAR, UNV SHRD AST WHL
11	1	4052	NUT, LOCK 3/8"
12	1	N10806	PIN, UNV SHRD ASSIST WHEEL LOCKING
13	1	4389	CLIP, HAIRPIN 3/16" X 3"
14	3	4105	GREASE-ZERK, 1/4" SCREW-IN
15	1	4107	GREASE-ZERK, 1/4" SCREW-IN 90 DEG
16	1	N10214	INSERT, UNV SHRD AST WHL PLASTIC
17	1	N13333	CASTER, UNIV. SHREDDER (REAR)
18	1	N23778	HUB, 6 BOLT 6" PAT W/STUDS
19	1	N22459	WHEEL, 11L15 - 8" RIM - 10 PLY

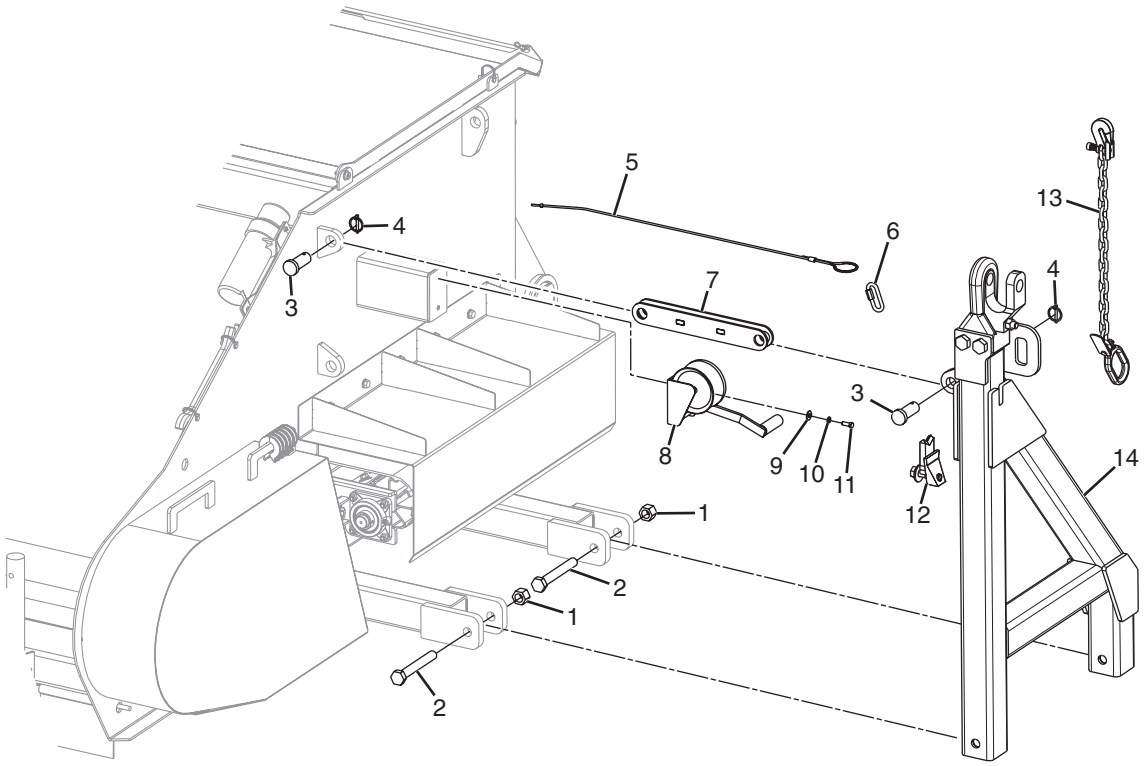
Operation Hitch



Operation Hitch

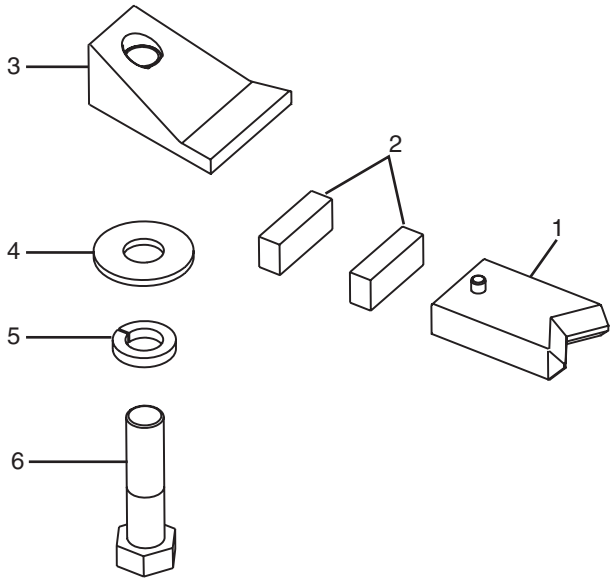
#	QTY.	PART #	DESCRIPTION
1	1	N37077	CHAIN, 52" SAFETY 21,000 LB
2	1	N36508	HITCH, SHWD PT FLOATING
3	2	4355	PIN, COTTER 3/16" X 2-1/2"
4	2	N13095	PIN, HITCH 1-1/2" X 4"
5	1	4096	PIN, 3/8" X 1-3/4" PLATED
6	2	4336	CLIP, HAIRPIN 1/8" X 2-1/4"
7	1	9138	CRADLE, SHREDDER PTO
8	1	N13237	PIN, 3/8" X 5-47/64"
9	1	N13272	CABLE, WINCH ASSY
10	3	4195	BOLT, 3/8" X 1" GR 5
11	3	4064	WASHER, FLAT 3/8"
12	1	8098	WINCH, CABLE 1500# 1297-C131
13	1	N32763	MOUNTING WINCH BRACKET
14	3	4052	NUT, LOCK 3/8"
15	2	4014	BOLT, 1/2" X 1-3/4" GRADE 5
16	2	4155	WASHER, LOCK 1/2"
17	2	4068	WASHER, 1/2" SAE FLAT

Transport Hitch



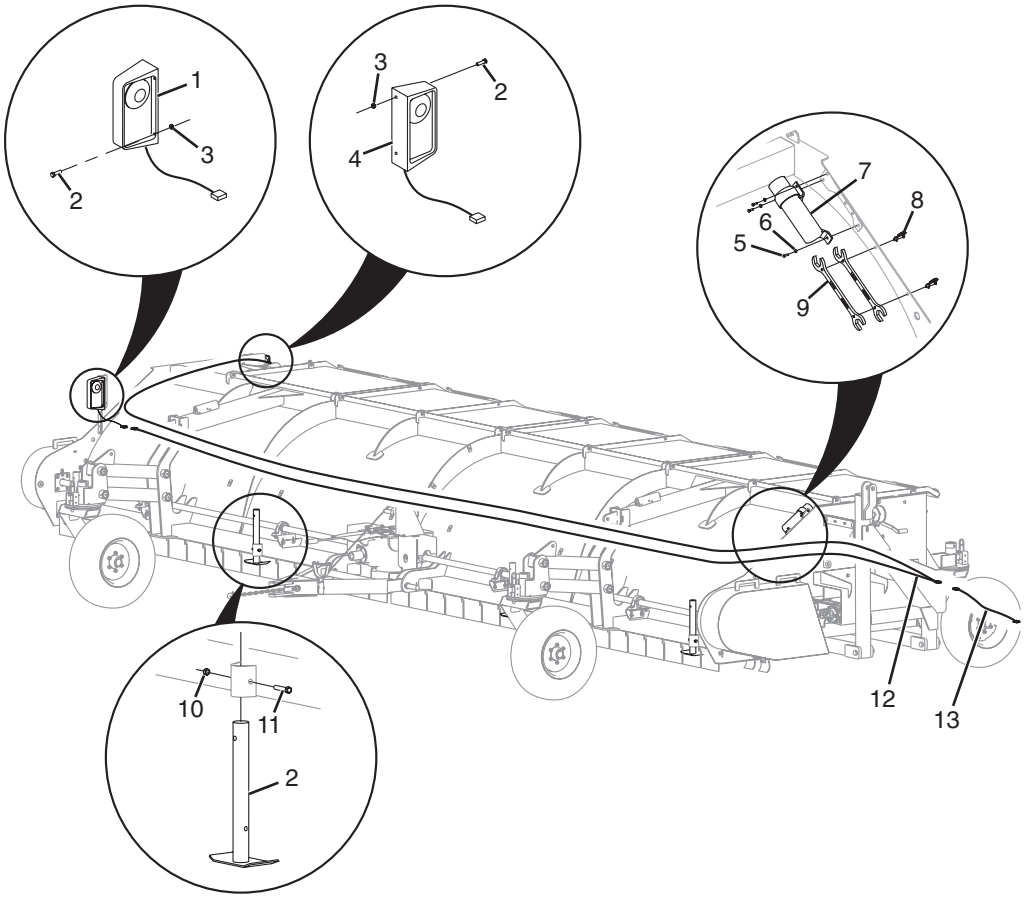
#	QTY.	PART #	DESCRIPTION
1	2	4249	NUT, 1" GR. 8 TOPLOCK
2	2	N13410	BOLT, TRANSPORT SHORTENED
3	2	4290	PIN, 1-1/4 X 2-1/2 MOUNTED HITCH
4	2	4095	CLIP, LINCHPIN
5	1	N13272	CABLE, WINCH ASSY
6	1	N10177	LINK, 3/8" CHAIN CONNECTOR
7	1	N32774	LINK, BAR HITCH MOUNT
8	1	8098	WINCH, CABLE 1500# 1297-C131
9	2	4064	WASHER, FLAT 3/8"
10	2	4065	WASHER, 3/8 LOCK
11	2	4195	BOLT, 3/8" X 1" GR 5
12	1	N37609	KIT, GBU10 HITCH CONV
13	1	N37077	CHAIN, 52" SAFETY 21,000 LB
14	1	N36792	HITCH, SHWD TRANS COMPLETE 30'

Hitch Conversion Kit (N37609)



#	QTY.	PART #	DESCRIPTION
1	1	N37475	BLOCK, CAT 2 BOLT-ON REC V
2	2	N37477	CUSHION, CAT 2 BOLT-ON REC
3	1	N37476	PLATE, CAT 2 BOLT-ON REC TOP
4	1	4071	WASHER, 3/4" FLAT
5	1	4287	WASHER, 3/4" LOCK
6	1	4352	BOLT, 3/4" X 3" GRADE 5

Lights, Manual Holder, Jack Stands



#	QTY.	PART #	DESCRIPTION
1	1	N16290	LIGHT, RIGHT
2	8	4000	BOLT, 1/4" X 1" GRADE 5
3	8	4050	NUT, LOCK 1/4"
4	1	N16289	LIGHT, LEFT
5	3	4340	BOLT, 1/4" X 3/4" GRADE 5
6	3	4231	WASHER, LOCK 1/4"
7	1	N19600	HOLDER, 01-315A STND.MANUAL
8	2	N27991	PIN, 3/8" X 1-3/8" RETAINER
9	2	N29884	WRENCH, 1-5/8"LASER CUT
10	4	4054	NUT, LOCK 1/2" TOP
11	4	4154	BOLT, 1/2" X 3-1/2" GRADE 5
12	4	N32552	JACK, STORAGE STAND (SHREDDER)
11	1	N16288	HARNESS, 25' REAR WISHBONE
12	1	N16287	HARNESS, 30' BRAIDED TOUNGE

Machine Decals and Signs

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

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

NOTE: *To order a complete Draper Windrower Shredder Decal Kit use part number N32993.*

Part No. N17013

⚠ WARNING

Due to the possible danger of flying debris, it is absolutely MANDATORY that impact-resistant shielding be provided on the power unit to protect the operator.

The owner is responsible for providing the operator protection devices on the power unit.

Part No. 4256

⚠ 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.

NOTE: IF YOU DO NOT HAVE AN OPERATOR'S MANUAL, CONTACT YOUR DEALER OR

LOFTNESS SPECIALIZED EQUIPMENT
650 SOUTH MAIN
HECTOR, MN 55342
1-800-828-7624

FAILURE TO FOLLOW SAFETY, OPERATING, AND MAINTENANCE INSTRUCTIONS COULD RESULT IN DEATH OR SERIOUS INJURY TO THE OPERATOR OR BYSTANDERS, POOR OPERATION, AND COSTLY BREAKDOWN.

Part No. 4334

⚠ DANGER ⚠
STAY BACK

Part No. 4189

Part No. N22763

Part No. 4135

⚠ DANGER

STAY BACK

KEEP HANDS AND FEET AWAY FROM ROTATING KNIVES UNDER MACHINE. DO NOT LEAVE OPERATOR'S POSITION WHILE PTO IS ENGAGED AND TRACTOR IS RUNNING.

Part No. N23931

⚠ CAUTION

Do Not Exceed 20 MPH.
This machine uses implement tires and hubs. Transporting this machine at higher speeds is unsafe.

N23931

Machine Decals and Signs (Cont'd)

Part No. 4335

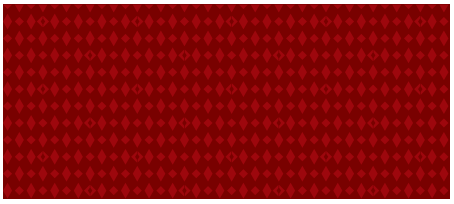
CAUTION

EXTREMELY IMPORTANT!

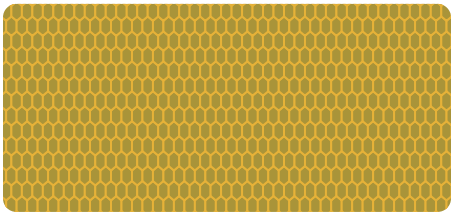
- BE SURE THE PTO SHAFT DOES NOT BOTTOM OUT OR TELESCOPE TOO FAR APART BEFORE USING THIS SHREDDER.
- PERIODICALLY CHECK ALL BOLTS INCLUDING GEARBOX FOR TIGHTNESS.
- GREASE ALL BEARINGS (AND ROTOR COUPLERS ON 24 & 30 FT.) EVERY 8 HOURS.
- DO NOT CONTINUE TO OPERATE THIS SHREDDER IF IT BECOMES "OUT OF BALANCE." STOP IMMEDIATELY, DETERMINE AND FIX THE PROBLEM OR CONTACT YOUR DEALER OR LOFTNESS BEFORE CONTINUING OPERATION.
- READ AND FOLLOW ALL INFORMATION PROVIDED IN THE OPERATOR'S MANUAL. IF YOU DO NOT HAVE AN OPERATOR'S MANUAL, ONE WILL BE PROVIDED TO YOU AT NO CHARGE. CALL OR WRITE TO:
  LOFTNESS SPECIALIZED FARM EQUIPMENT
  S. HIGHWAY 4 - BOX 337
  HECTOR, MN 55342-0337
  320-848-6273

4335

Part No. 4141



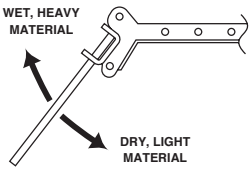
Part No. 4140



Part No. 4132

Part No. N19782

DIFFUSER ANGLE ADJUSTMENT

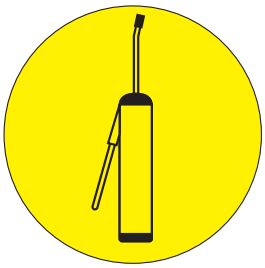


ADJUST DIFFUSER ANGLE AS INDICATED TO AID IN WINDROW FORMING AND REDUCE PLUGGING.

(REFER TO MANUAL)

Part No. 4136

Part No. 4137



Part No. N32851

IMPORTANT

SET TRACTOR HYDRAULICS TO OBTAIN 225 - 250 BELT SHAFT RPM

N32851

Part No. N23931

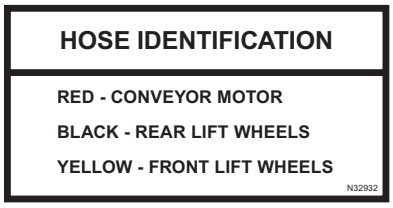
CAUTION

Do Not Exceed 20 MPH.
This machine uses implement tires and hubs. Transporting this machine at higher speeds is unsafe.

N23931

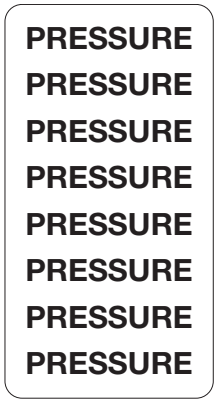
Machine Decals and Signs (Cont'd)

Part No. N32932



Part No. N13721

Part No. N24822



Part No. N24823

Part No. N26973

LOFTNESS™

Part No. N26972

LOFTNESS™

Part No. N32275

LOFTNESS™
CROPLOGIX™
RESIDUE MANAGEMENT EQUIPMENT

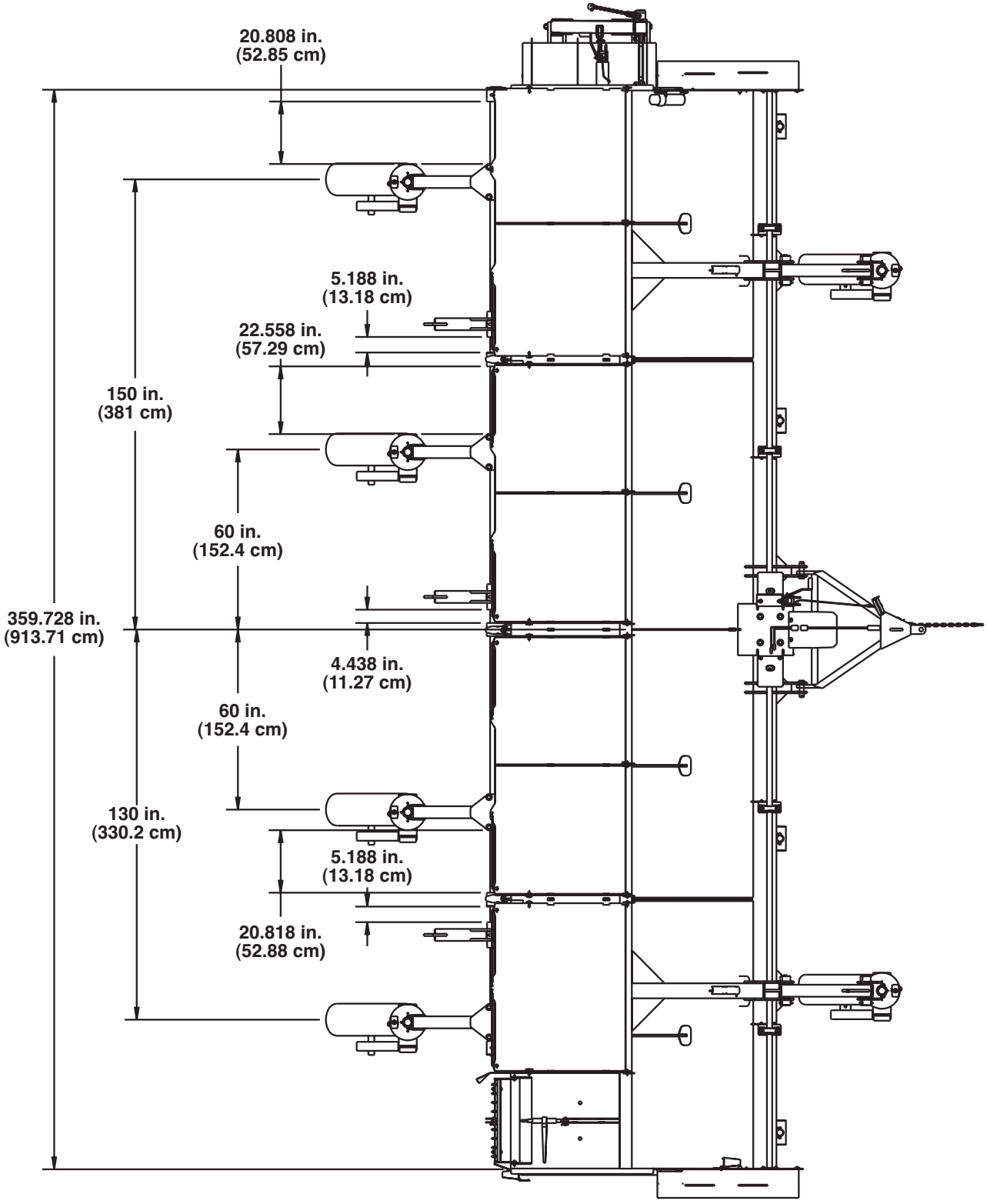
Part No. N33104

Part No. N13517

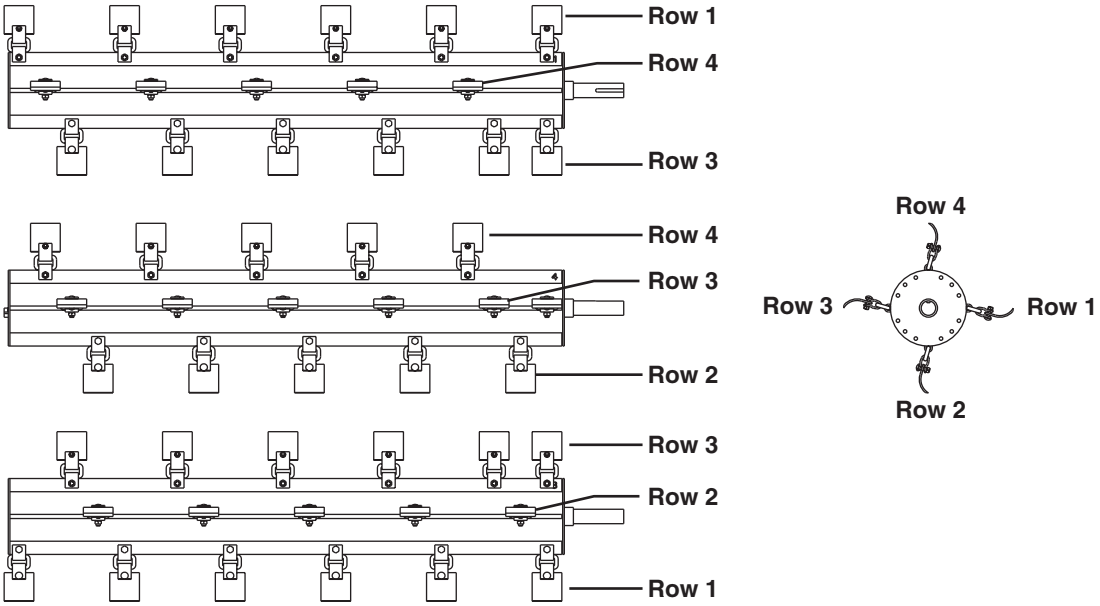
Part No. 4138


LOFTNESS

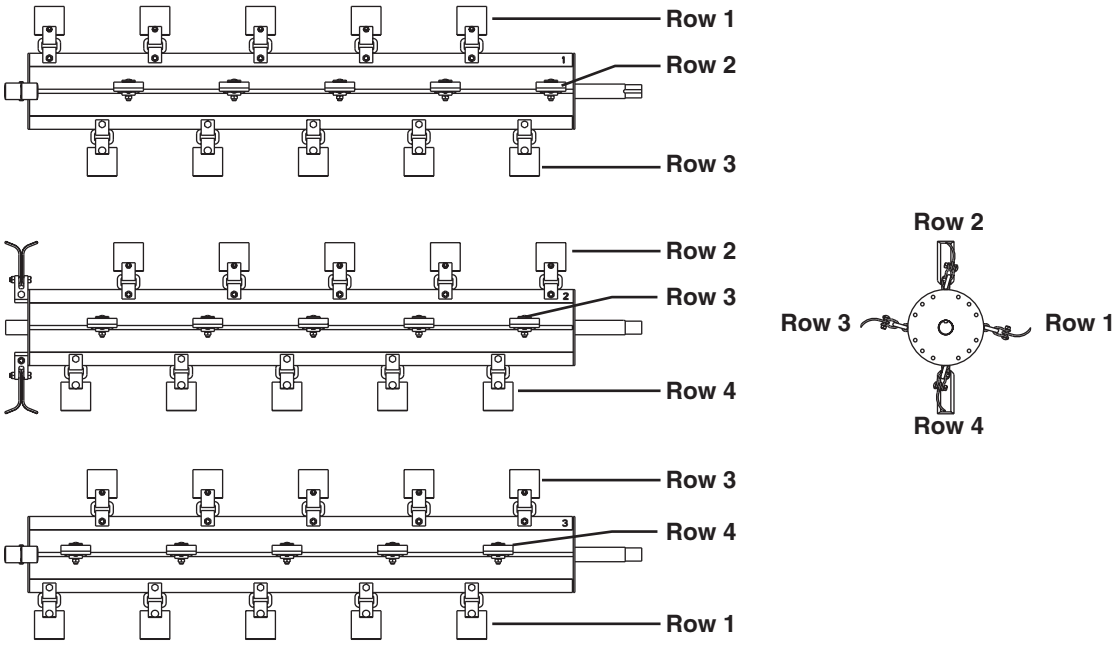
Rear Wheel and Lift Arm Installation and Spacing



Right Side Rotor Knife Pattern

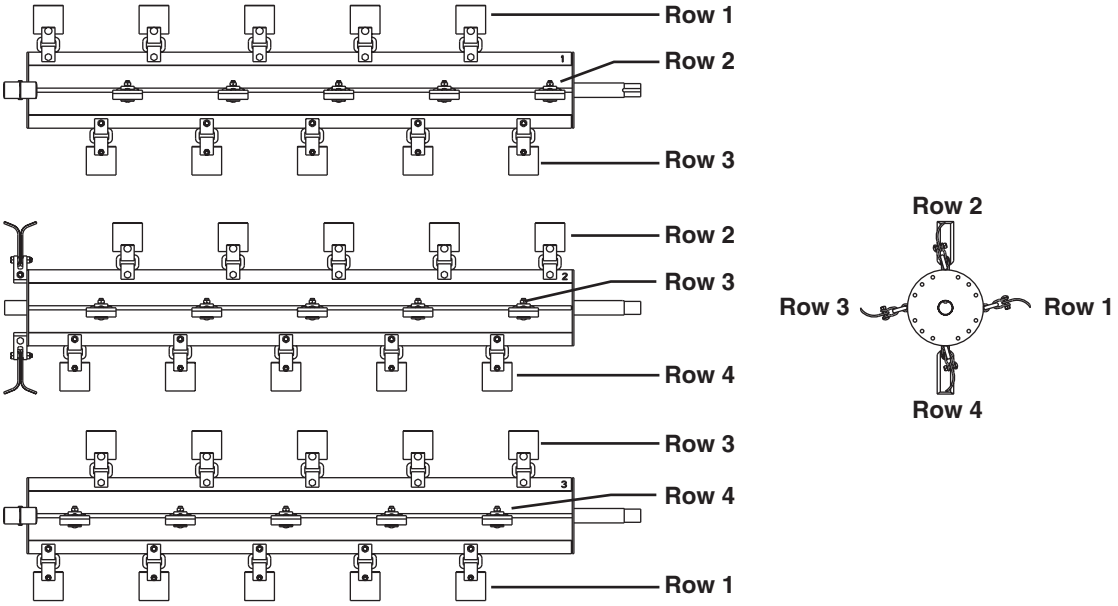


Right Outer Rotor (N34201) Knife Pattern

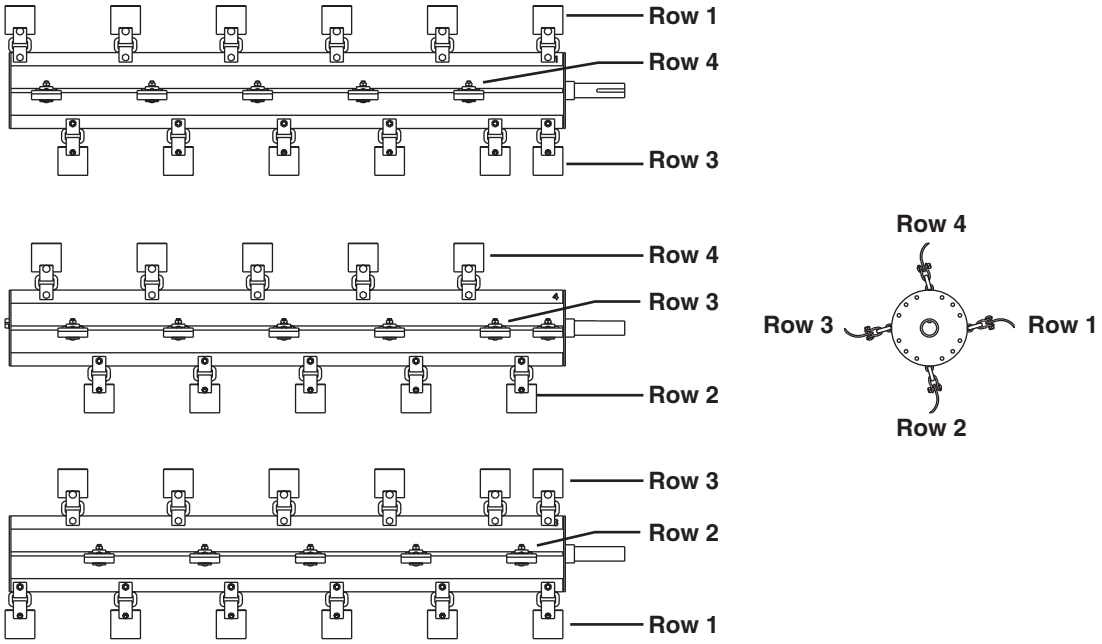


Right Inner Rotor (N34200) Knife Pattern

Left Side Rotor Knife Pattern



Left Inner Rotor (N34192) Knife Pattern



Left Outer Rotor (N34193) Knife Pattern

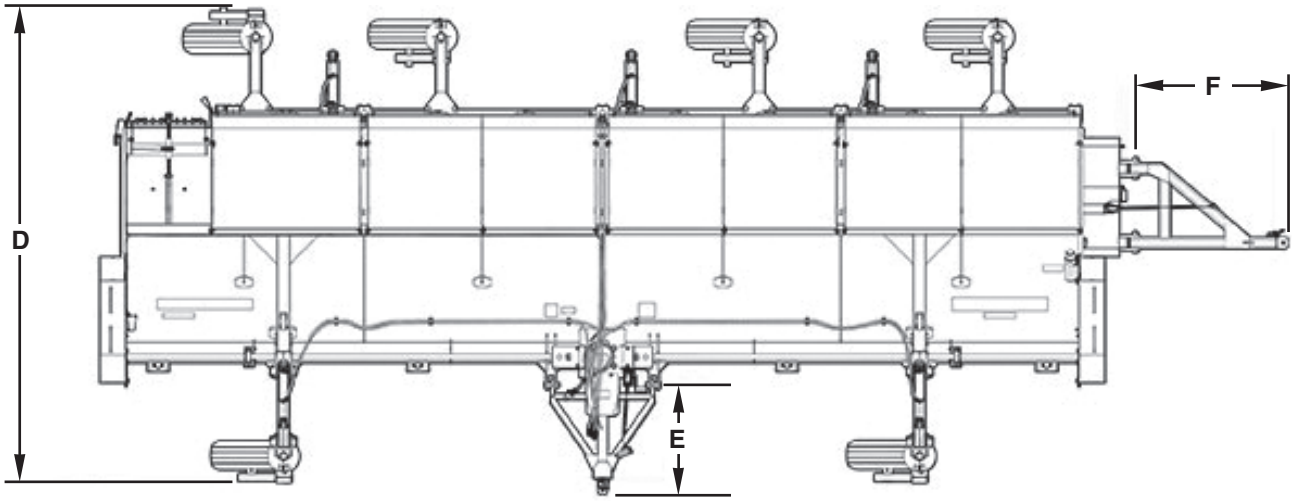
Appendix

Specifications

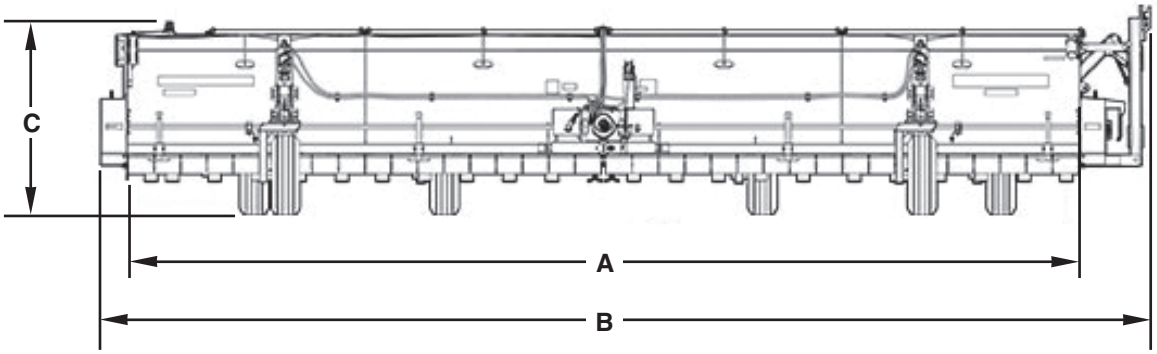
DESCRIPTION	Draper Windrower Shredder
Cutting Width	360 in. (914.4 cm)
Knives	84 Cupped and 4 High Residue
Weight	approx. 17,000 lbs. (7,711 kg)
Field Tongue Weight	0 lbs. (0 kg)
Rotor	1450 RPM Computer Balanced
	7 1/2 in. (19.05 cm) Tube Diameter
	2 3/16 in. (5.55 cm) Shaft Diameter
Draper Belt	33 in. (83.82 cm) Wide; 679 in. (1,724.66 cm) Long, Hydraulic Driven
Drive	1,000 RPM PTO
	Bondioli 460 HP

Dimensions

TOP



FRONT



DESCRIPTION	Draper Windrower Shredder
Cutting Width (A)	354 in. (899.16 cm)
Overall Width (B)	Working - 396 in. (1,005.84 cm); Transport - 448 in. (1,137.92 cm)
Standard Height (C)	Working - 78 in. (198.12 cm); Transport - 71 in. (180.34 cm)
Total Depth (D)	Working - 200 in. (508 cm); Transport - 175 in. (444.5 cm)
Operation Hitch Length (E)	41.5 in. (105.41 cm)
Transport Hitch Length (F)	58 in. (147.32 cm)

Appendix

Torque Specifications

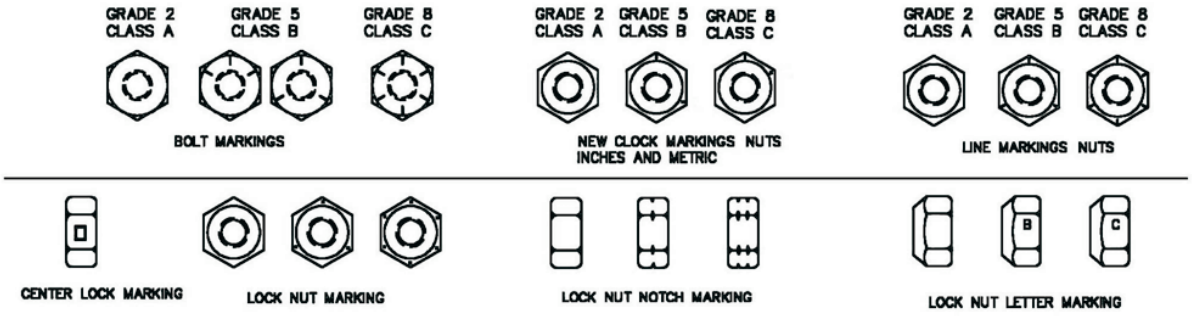
Inches Hardware and Lock Nuts

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



Appendix

Torque Specifications (Cont'd)

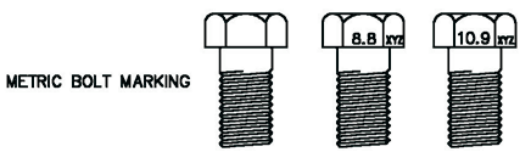
Metric Hardware and Lock Nuts

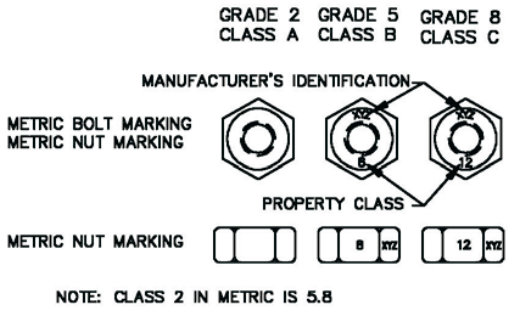
TORQUE CHARTS

Minimum Hardware Tightening Torques

Normal Assembly Applications
(Metric Hardware and Lock Nuts)

	Class 5,8		Class 8,8		Class 10,9		Lock nuts
Nominal Size	**Unplated or Plated Silver**	**Plated W / ZnCr Gold**	**Unplated or Plated Silver**	**Plated W / ZnCr Gold**	**Unplated or Plated Silver**	**Plated W / ZnCr Gold**	**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.)	131N•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.)






LOFTNESS

www.loftness.com

Loftness Specialized Equipment, Inc.
650 So. Main Street • PO Box 337 • Hector, MN 55342
Tel: 320.848.6266 • Fax: 320.848.6269 • Toll Free: 1.800.828.7624

Printed in USA