



**GRAIN BAG STORAGE SYSTEMS**

## **Grain Bag Unloader**

**Owner's Manual and Parts Book  
(Originating w/Serial Number 51-1593)**



Model Number: \_\_\_\_\_  
Serial Number: \_\_\_\_\_  
Date of Purchase: \_\_\_\_\_





# LOFTNESS SPECIALIZED EQUIPMENT, INC.

## LIMITED WARRANTY POLICY

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

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

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

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

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

### WARRANTY REQUIREMENTS

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

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

### LIMITATIONS OF WARRANTY

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

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

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

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

### EXCLUSIONS OF WARRANTY

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

No agent, employee or representative of LOFTNESS has any authority to bind LOFTNESS to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth herein. (October 2020)





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## Warranty

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## Owner Information

Thank you for your decision to purchase a Grain Bag Unloader (GBU) from Loftness. To ensure maximum performance of your machine, it is mandatory that you thoroughly study the owner's manual and follow the recommendations. Proper operation and maintenance are essential to maximize machine life and prevent personal injury.

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

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

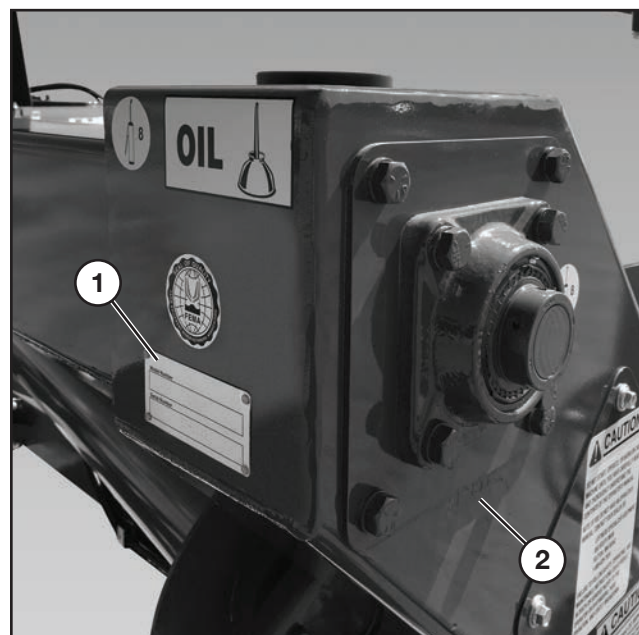
Continuous improvement and advancement of Loftness products may result in changes to your equipment that may not be reflected in this publication. Loftness reserves the right to make product improvements to the machine at any time. Although great care has been taken to ensure the accuracy of this publication,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

**Loftness Specialized Equipment, Inc. is not responsible for the condition of the grain when it is being stored in or removed from grain bags loaded or unloaded with Loftness built equipment.**

## Warranty Policy

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

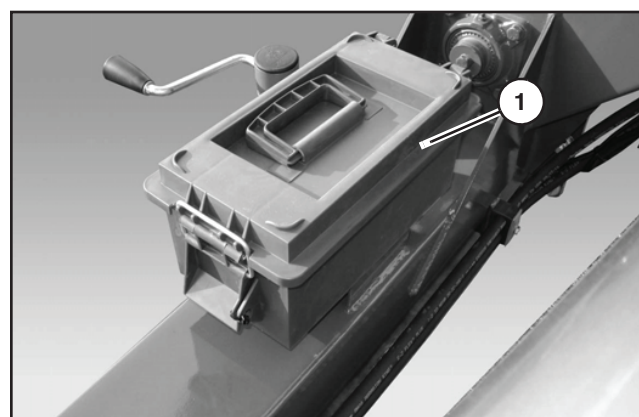
## Serial Number Location



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

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

## Manual Storage



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



## Safety First

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



### Safety Alert Symbol

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

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

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



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

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

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

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

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

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

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

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

## Owner's Responsibility

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

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

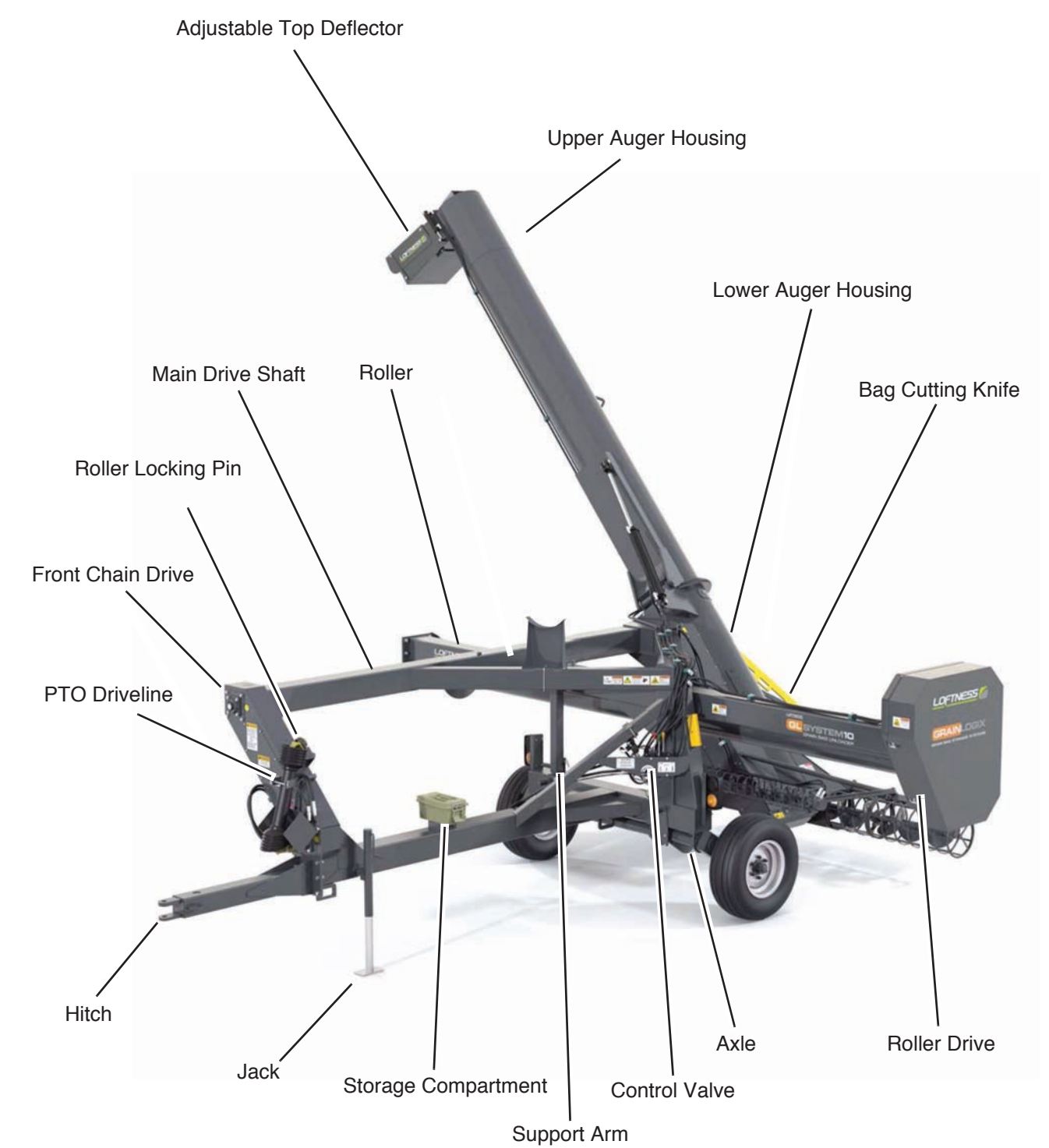
Make sure the machine is installed correctly before being placed in service. At regular intervals thereafter, the machine should be serviced in accordance with procedures outlined in this owner's manual.

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

# Safety Instructions

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## Grain Bag Unloader Identification



## Safety Rules

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

## Operating Safety

- Do not allow anyone to operate the machine until he or she has read the owner's manual and is completely familiar with all safety precautions.
- Do not allow inexperienced persons unfamiliar with the machine, or unfamiliar with safe operating and maintenance procedures, to operate or maintain the machine.
- Do not allow persons under the influence of alcohol, medications, or other drugs that can impair judgment or cause drowsiness to operate or maintain the machine.
- Keep children, bystanders and other workers away from the machine while it is operating. No riders allowed.
- The machine requires an operator at all times. Never leave the machine running and unattended.
- Do not wear loose hanging clothes, neckties or jewelry. Long hair is to be placed under a cap or hat. These precautions will help prevent you from becoming caught in any moving parts on the machine.
- Do wear safety glasses, ear protection, respirators, gloves, hard hats, safety shoes and other protective clothing when required.
- The auger should not be used to handle materials other than those which were specified as part of its design. It is the operator's responsibility to be aware of the specifications and operate the auger accordingly.
- It is the operator's responsibility to be aware of machine operation and work area hazards at all times.
- Never enter the grain bag.
- Operators are responsible to know the location and function of all guards and shields including but not limited to PTO drivelines, gearboxes, chain drives, augers and are responsible to make certain that all guards are in place when operating the machine.
- Operators are responsible to be aware of safety hazard areas and follow instructions on warning, caution, or danger decals applied to the machine.
- Know the area before operating the machine. Be aware of power lines or other equipment. Watch for adequate overhead clearance.
- Always have an operator in the tractor while the machine is in operation.
- Remove from the area of operation all foreign objects such as sticks, wire, rocks, etc., that might become tangled in the augers. These articles can damage the machine or might be thrown and strike other objects.
- Disengage PTO, clutch hydraulic valve and shift tractor into neutral or park before starting engine.
- Never operate the machine with a 1000 RPM to 540 RPM adapter.

## Transporting Safety

- Be sure the machine is in the transport position before transporting on a roadway.
- Do not exceed speed rating (20 mph) on the factory provided tires.
- Disengage PTO, clutch hydraulic valve and shift tractor into neutral or park before starting engine.
- Always have safety chains attached.
- Safety precautions for towing with a truck. Machine weight is 5760 pounds with a 222 pound hitch weight - hitch weight, mass requires adequate braking.
- Hitch pin size (1-1/8 in. to 1-1/4 in.).
- Ensure tires are in good condition and are inflated to 44 PSI.
- Make sure the hitch on the towing vehicle is rated for the gross weight of the towed machine.




# Safety Instructions

## Safety Rules (Cont'd)

### Maintenance Safety

- Do not allow inexperienced persons unfamiliar with the machine, or unfamiliar with safe operating and maintenance procedures, to operate or maintain the machine.
- Do not allow persons under the influence of alcohol, medications, or other drugs that can impair judgment or cause drowsiness to operate or maintain the machine.
- Make sure the operator's area is clear of any distracting objects. Keep work areas clean and free of grease and oil to avoid slipping or falling.
- Periodically check all guards, shields and structural members. Replace or repair anything that could cause a potential hazard.
- Do not replace components or parts with other than factory-recommended service parts. To do so may decrease the effectiveness of the machine.
- Do not lubricate parts while the machine is running.
- Do not smoke while servicing the machine.
- Never attempt to make any adjustments while the tractor engine is running or the key is in the "ON" position in the tractor. Before leaving the operator's position, disengage power to the machine and remove ignition key.

### Hydraulic Safety



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


- Always wear safety goggles or glasses when working on hydraulic system to avoid eye injury.
- 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.
- To prevent serious personal injury from escaping high pressure fluid, never attempt to inspect, service or disassemble any part of the hydraulic system until all pressure has been relieved from the system.

### PTO Safety

- Keep all guards and shields in place when operating the PTO. Replace any damaged or missing guards and shields before operating the PTO.
- Keep children, bystanders and other workers away from the machine while it is operating or while the PTO is engaged. No riders allowed.
- Do not wear loose hanging clothes, neckties or jewelry. Long hair is to be placed under a cap or hat. These precautions will help prevent you from becoming caught in any moving parts on the machine.
- Read and understand the tractor operation and maintenance manual regarding safe and proper operation for PTO driven equipment.
- Never step over or crawl around the equipment while the PTO is engaged; entanglement could occur.
- Do not exceed 540 RPM PTO speed.
- Disengage PTO driveline and place in the stored position when the machine is transported.
- Never use a steel hammer when connecting or disconnecting a PTO shaft.
- Engage and disengage the PTO slowly at idle speed to prevent unnecessary stress to the driveline.
- DO NOT USE PTO ADAPTERS OF ANY KIND.
- Use only recommended shearbolts.

### California Proposition 65 Warning



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

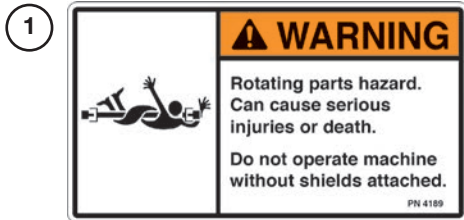
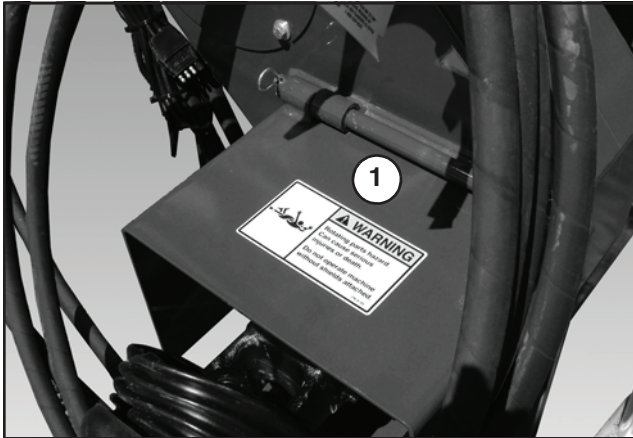
A decal with this warning statement is adhered to the machine. If the decal should become worn or missing, replace immediately.



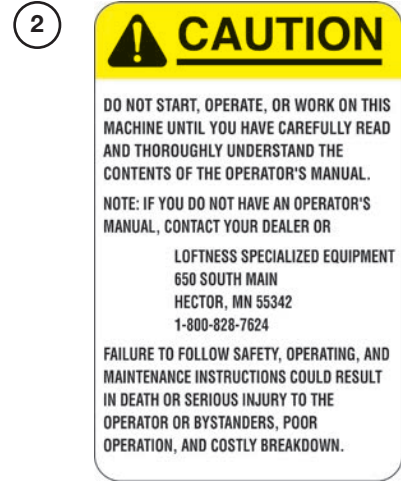
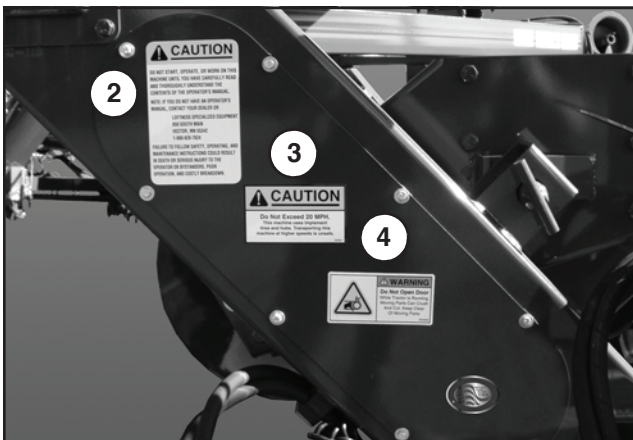
# Safety Instructions

## Safety Decal Locations

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



Part No. 4189



Part No. 4256



Part No. N23931

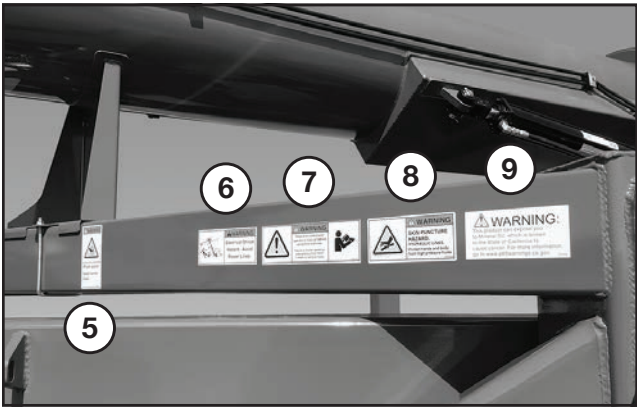


Part No. N23505



# Safety Instructions

## Safety Decal Locations (Cont'd)



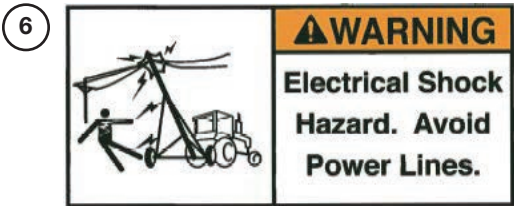
Part No. N23506



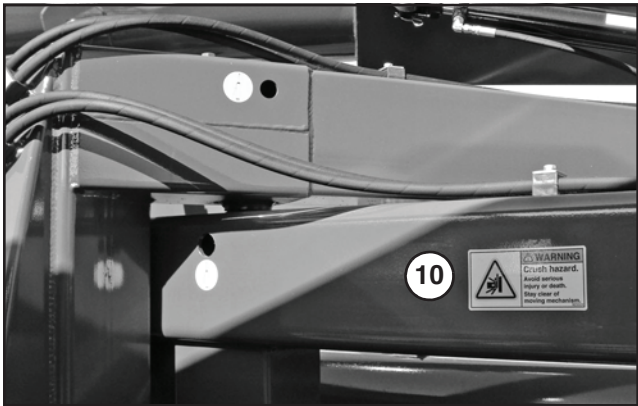
Part No. 203264



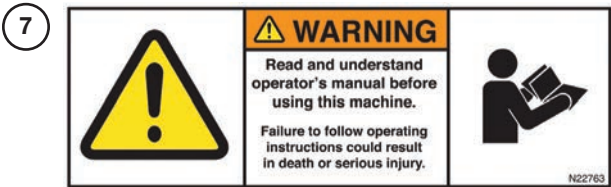
Part No. N23507



Part No. N22729

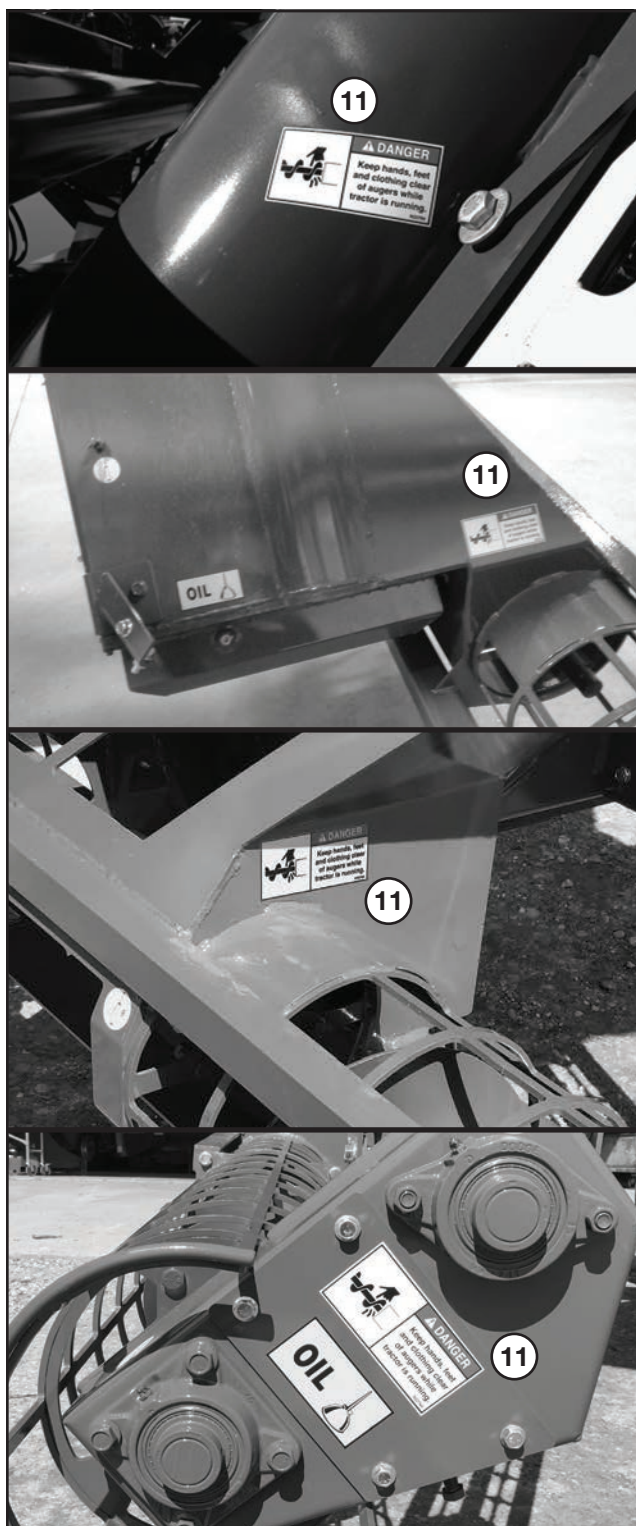


Part No. N23504



Part No. N22763

## Safety Decal Locations (Cont'd)



Part No. N22764



Part No. N22734



# Safety Instructions

## Machine Decals and Signs

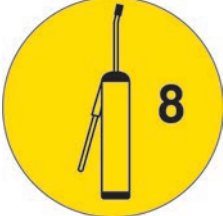
**NOTE:** All safety related decals are also shown in the Safety Instructions Section along with their location on the machine. See “Safety Decal Locations” starting on page 7.

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

Part No. 4136



Part No. N28010



Part No. 201271



Part No. 4132



Part No. 4138



Part No. N26973



Part No. N26971



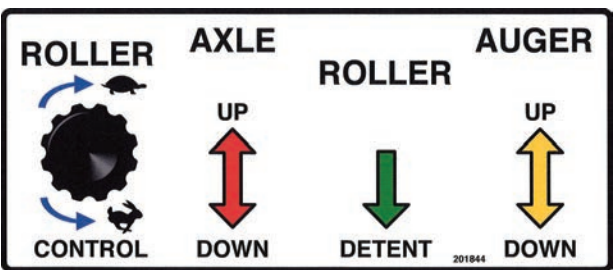
Part No. N26968



Part No. N26976

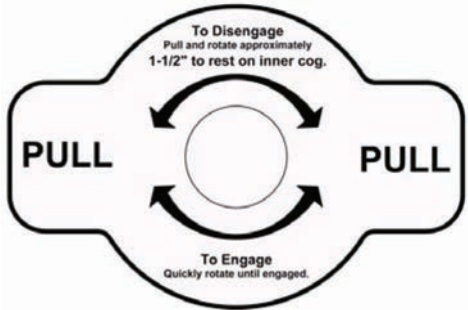


Part No. 201844



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

Part No. N22759



Part No. N13721



Part No. N13517



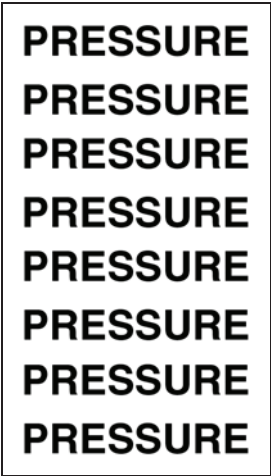
Part No. N33102



Part No. N33108



Part No. N24822



Part No. N24823





# Set-up Instructions

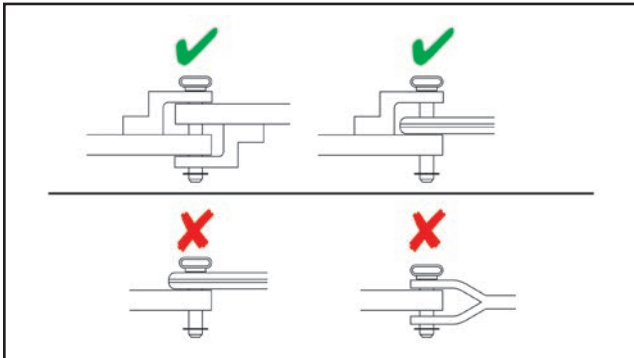
## Connecting the Grain Bag Unloader



### Safety Chain Requirements:

- Verify that the chain has a load rating equal to or greater than the Gross Vehicle weight.
- Allow no more slack in the chain than necessary for articulation.
- Attach the chain to the towing hitch assembly. Do NOT use an intermediate support as a primary method of attachment.
- Verify that the hitch of the towing vehicle is rated for the gross weight of the towed machine.
- The implement may not exceed 1.5 times the towing vehicle weight.
- Replace the safety chain if one or more links or end fittings are broken, stretched or otherwise damaged or deformed.

## Implement Set-up - Preparing the Hitch



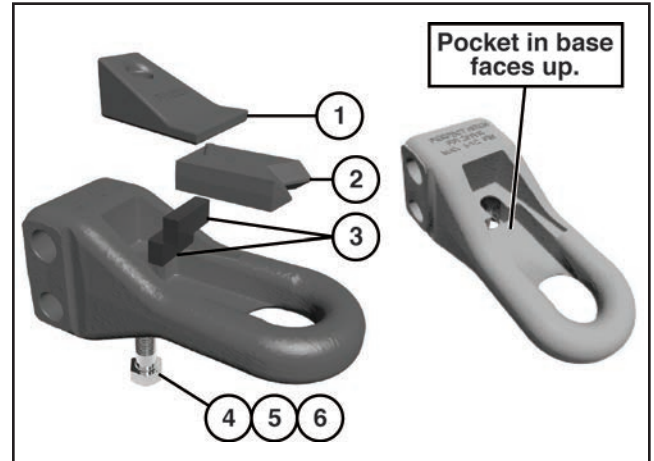
**WARNING:** Never use a clevis hitch with a drawbar hammer strap to secure the implement to the tractor. Using a clevis hitch with the drawbar hammer strap could result in machine damage and/or the machine could separate from the tractor if the clevis pin fails; serious injury and/or death may result.



**WARNING:** Never use a hitch without a clevis on a straight drawbar. Using a hitch without a clevis on a straight drawbar could result in machine separating from tow vehicle and/or damage to the machine; serious injury and/or death may result.

### For tractors with hammer strap:

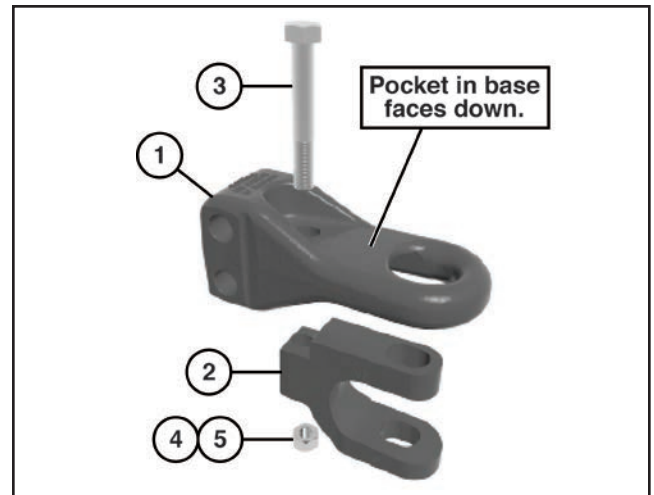
Configure the hitch to use the base and wedges to limit hitch play.



Pocket in base to be up. To reduce hitch play assemble hitch components as shown above – base top plate (1), block (2), cushions (3), and flat washer (4), lock washer (5), and bolt (6).

The maximum draw pin size is 1.5".

### For tractors without hammer strap:



**NOTE:** Clevis must be used with base.

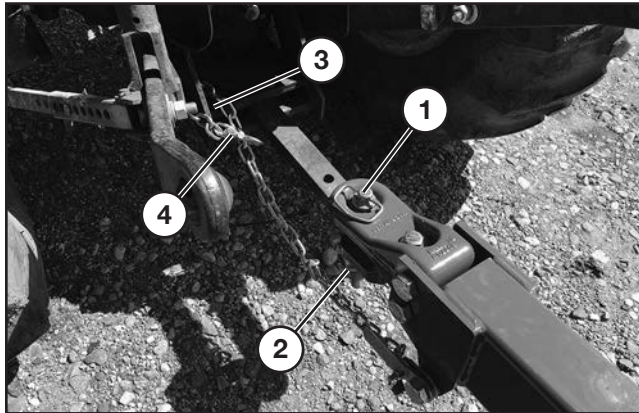
Pocket in base to be down. Assemble hitch components as shown above – base (1) clevis (2), bolt (3), lock washer (4), and nut (5)

The maximum draw pin size is 1.375".

(Procedure continued on following page.)

## Set-up Instructions

### Connecting the Grain Bag Unloader (Cont'd)

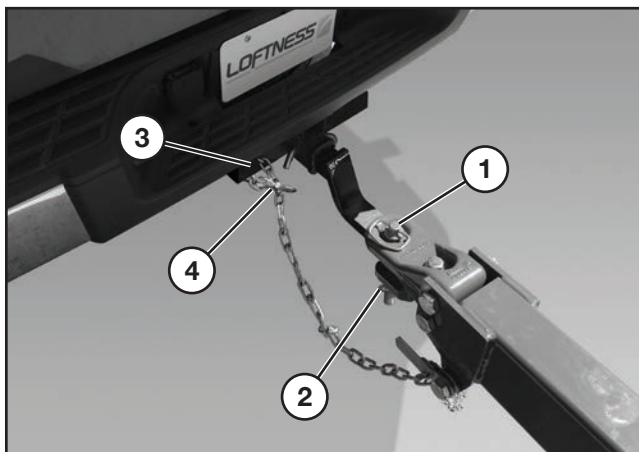


Back the tractor up to the hitch of the unloader.

Insert pin (1) (1-1/8 in. to 1-1/4 in. pin) and secure with retaining clip (2).

Install the safety chain around the tractor drawbar (3) and fasten the chain ends together (4).

### Connecting to Truck

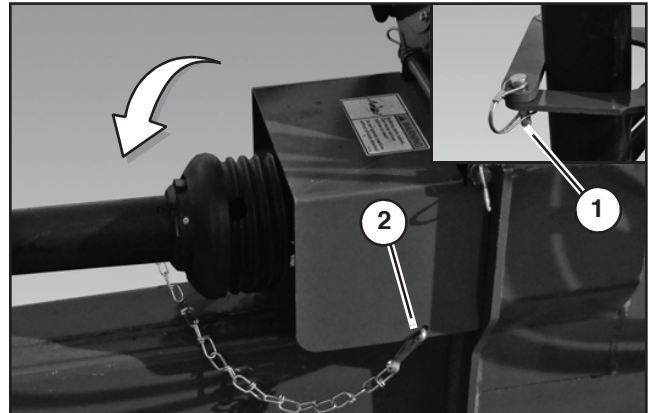


Back the truck up to the hitch of the unloader.

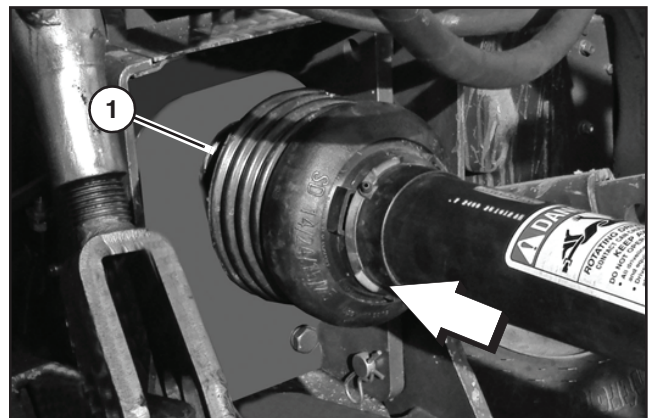
Insert pin (1) (1-1/8 in. to 1-1/4 in. pin) and secure with retaining clip (2).

Install the safety chain around the truck's hitch frame (3) and fasten the chain ends together (4).

### Installing Grain Bag Unloader to the Tractor



Remove the PTO driveline from the stored position. Remove the retaining pin (1) and lower the PTO driveline. Install the chain (2).



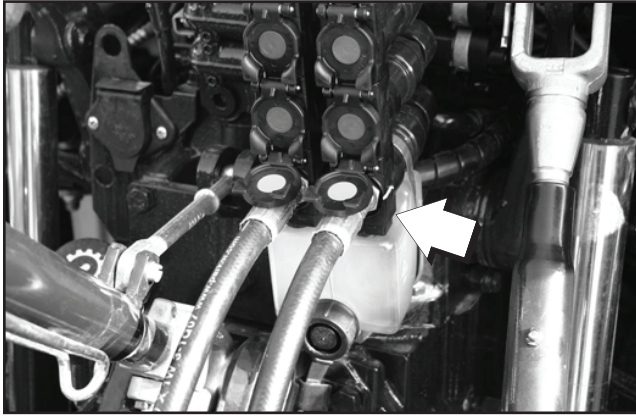
Retract sleeve (1), slide the PTO driveline onto the tractor PTO shaft until the sleeve slides forward and locks driveline to shaft. Push and pull the PTO driveline back and forth several times and make sure it is securely attached to the PTO shaft.

**NOTE:** The PTO driveline is telescopic to fit most lengths. Minimum distance between crosses is 37.8 inches (96 cm) and maximum distance between crosses is 53.5 inches (136 cm) If the distance is more or less than that, refer to the PTO driveline manufacturer's literature for procedures for adjusting the length. It may also be possible to move the draw bar location on the tractor.

(Procedure continued on following page.)



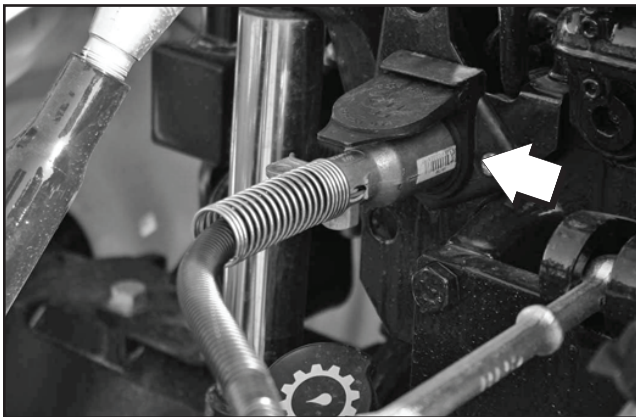
### Installing Grain Bag Unloader to the Tractor (Cont'd)



Install the pressure and the return hydraulic hoses into the tractor's hydraulic connectors at the rear of the tractor.

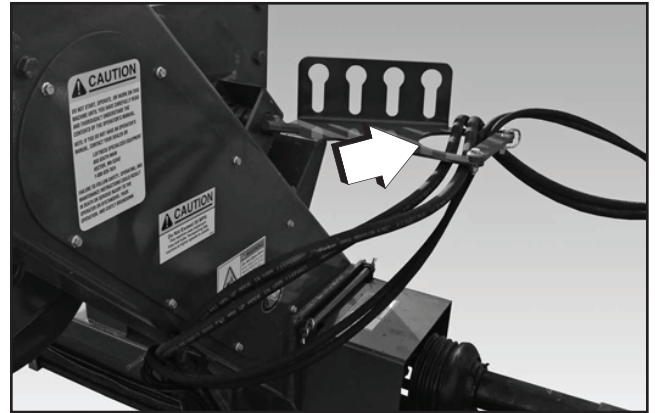
**NOTE:** *The tractor's hydraulic connectors must have the detent feature, so the tractor can be placed in detent mode to have continuous hydraulic flow to the unloader. Check the tractor operation and maintenance manual for specific hydraulic connector information.*

**NOTE:** *If your tractor is equipped with Flow Control, adjust the hydraulic flow to 6-10 GPM (23-38 Liters per min.).*



Install the 7-pin electrical harness to the tractor's electrical connector.

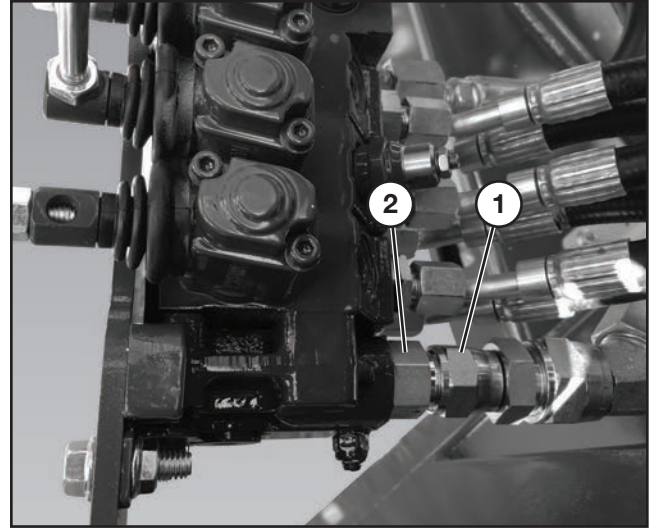
**NOTE:** *If your tractor is not equipped with a 7-Pin electrical connector, an adapter or special wiring may be needed.*



Secure the electrical harness and all hydraulic hoses up and away from the PTO driveline area.

### Converting Valve to Open-Center System

The control valve is shipped to accommodate closed-center hydraulic systems. To convert the valve to an open-center system, follow the instructions in this subsection. See your tractor operation and maintenance manual for specifications of your tractor.



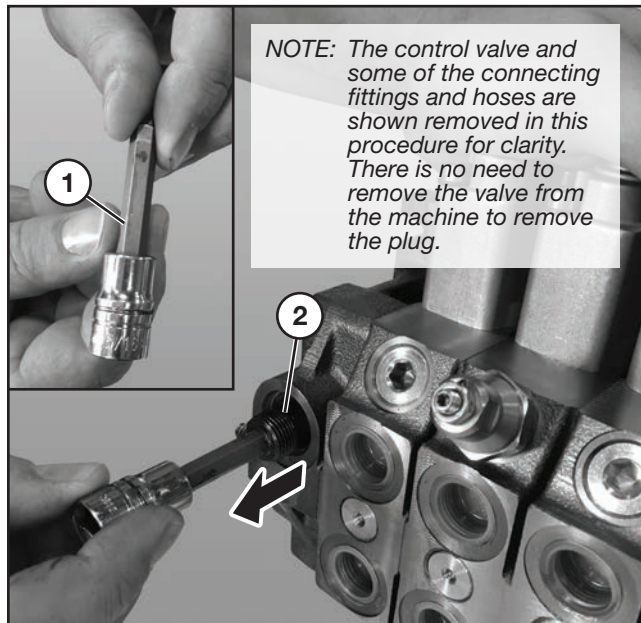
Locate and disconnect the swivel coupler (1) from the valve fitting (2). Then remove the valve fitting (2).

*(Procedure continued on following page.)*

# Set-up Instructions

## Installing Grain Bag Unloader to the Tractor (Cont'd)

### Converting Valve to Open-Center System (Cont'd)



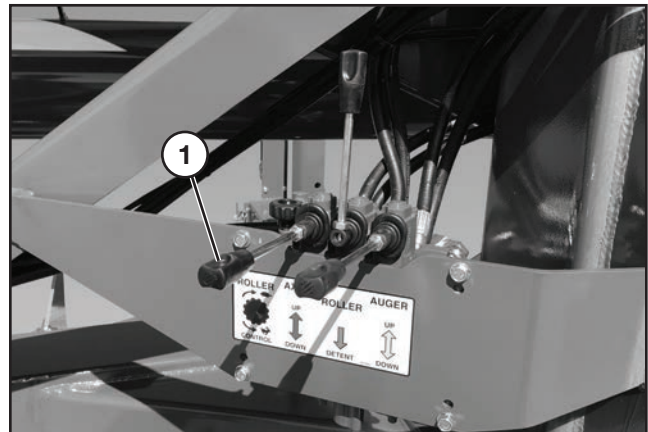
Apply a small amount of grease to the end of the 5/16 in. hex bit (1). This helps keep the plug from falling off the bit when removing.

Insert the hex bit into the tank port on the valve and remove the plug (2).

**NOTE:** Keep the plug in a safe place should the need arise to convert back to a closed-center hydraulic system.

Reinsert the fitting and reconnect the swivel coupler. Tighten all.

Start the tractor and engage the hydraulic system.

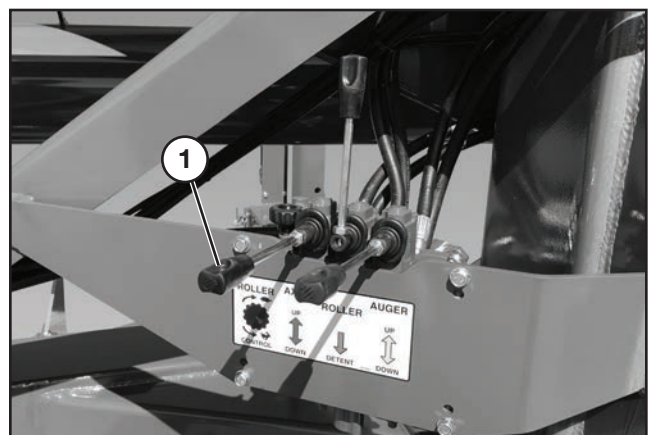


Test the unloader hydraulic system by raising the unloader with the axle lever. Move the axle lever (1) up to raise the unloader.

**NOTE:** If the unloader is not operating correctly, the hydraulic hoses may need to be reversed at the tractor for correct operation.

**NOTE:** If the unloader is not operating correctly, the tractor coupler may not be compatible with the universal couplers supplied with the Grain Bag Unloader.

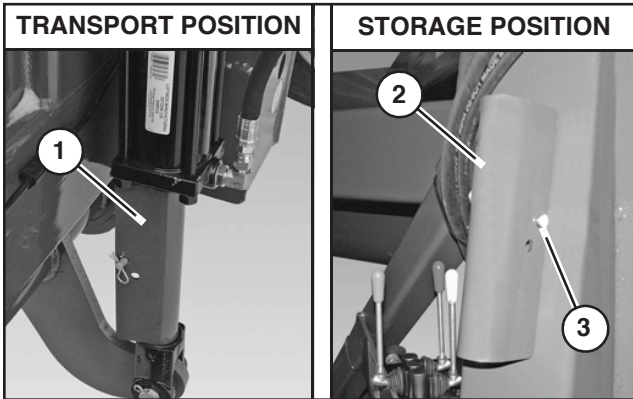
## Switch to Working Position



Move the axle lever (1) down to lower the unloader.

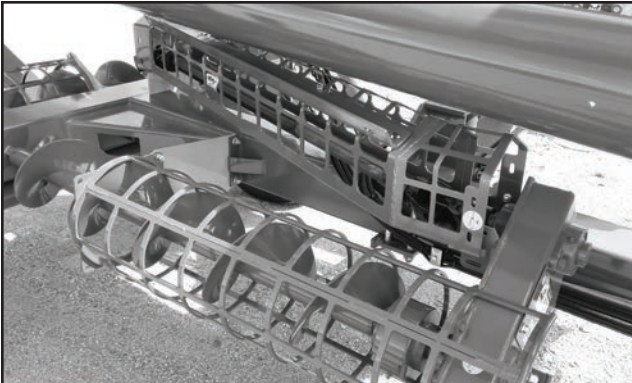
*(Procedure continued on following page.)*

## Switch to Working Position (Cont'd)

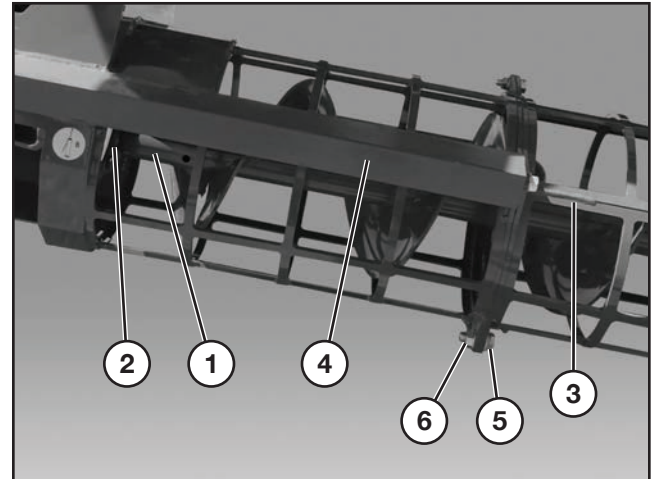


Remove the cylinder stop (1) from the axle and place in the storage position (2) and secure with the retaining pin (3) and clip.

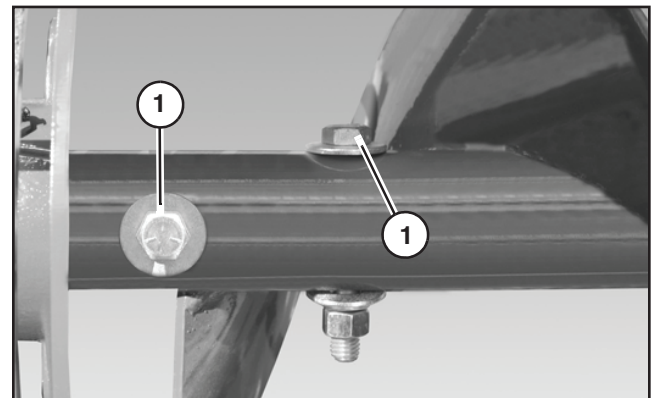
Be sure the PTO driveline, hydraulic connectors and the electrical connector are installed. See "Installing Grain Bag Unloader to the Tractor" on page 14.



Remove the right cross auger guards/extensions and the left extension brace from the stored position.



Install the cross auger extension (1) onto the center auger shaft (2). Install the extension auger cage (3) to the main unit (4) using four bolts (5) and nuts (6). Do not tighten at this time, do the next step first.



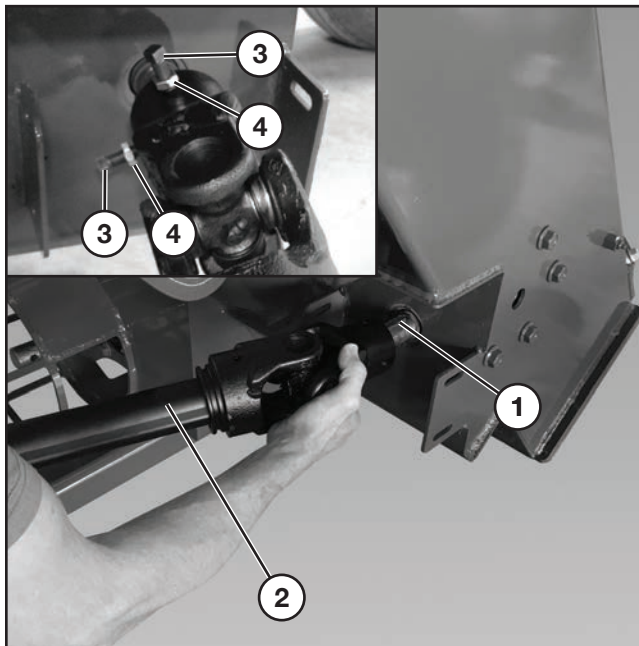
Align the holes of the auger extension with the holes of the center auger shaft. Secure with two bolts (1), nuts and washers. Tighten the nuts and bolts installed in the previous step. See "Torque Specifications" on page 95.

*(Procedure continued on following page.)*



## Set-up Instructions

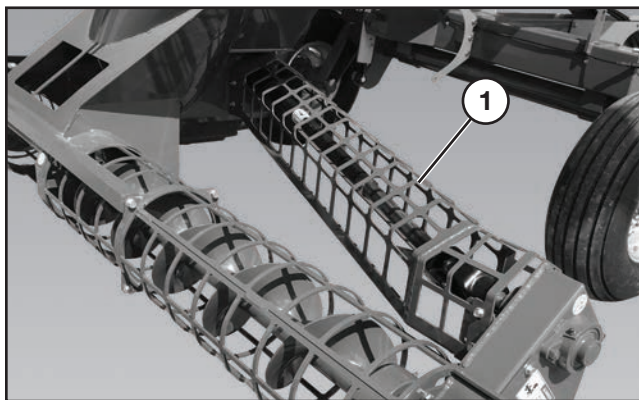
### Switch to Working Position (Cont'd)



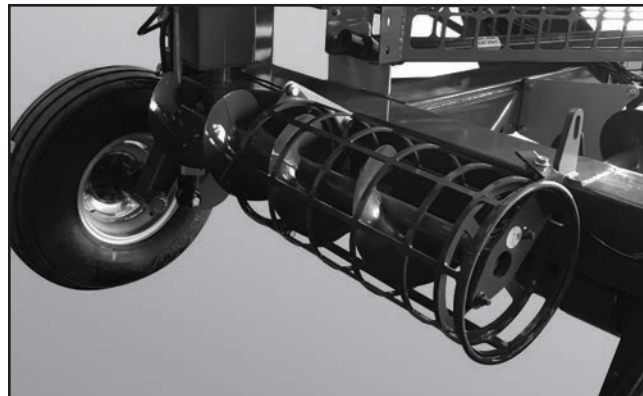
Install the key (1) onto the drive shaft, then connect the right auger drive shaft (2) onto the drive shaft.

With the right auger drive shaft completely secure, tighten shaft set screws in hole (3), then tighten jam nut (4). See "Torque Specifications" on page 95.

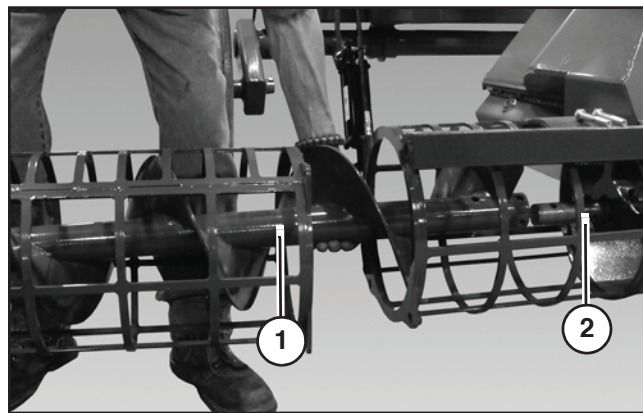
**NOTE:** Do not use a cross bolt in this location.



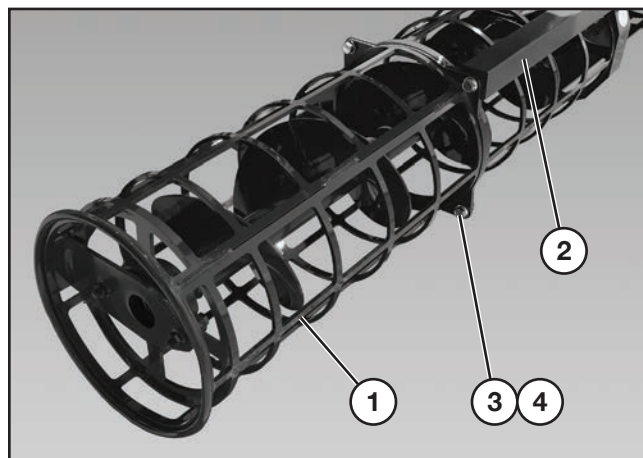
Install the cross auger drive shaft guard (1) and secure with the eight 3/8" bolts provided. See "Torque Specifications" on page 95.



Remove the left cross auger guard and extension from the stored position.



Install the left cross auger extension (1) onto the center auger shaft (2).

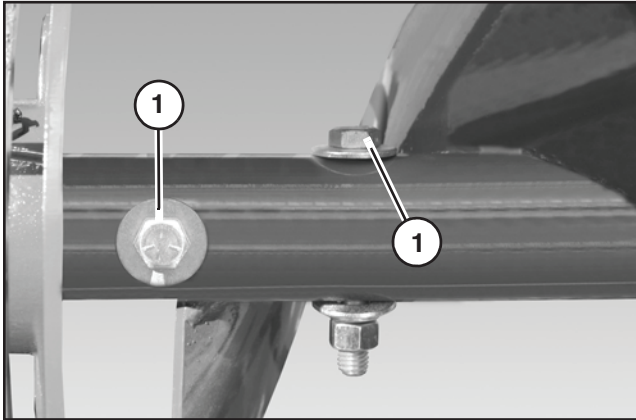


Install the left extension auger cage (1) to the main unit (2) using four bolts (3) and nuts (4). Do not tighten at this time, do the next step first.

*(Procedure continued on following page.)*

## Set-up Instructions

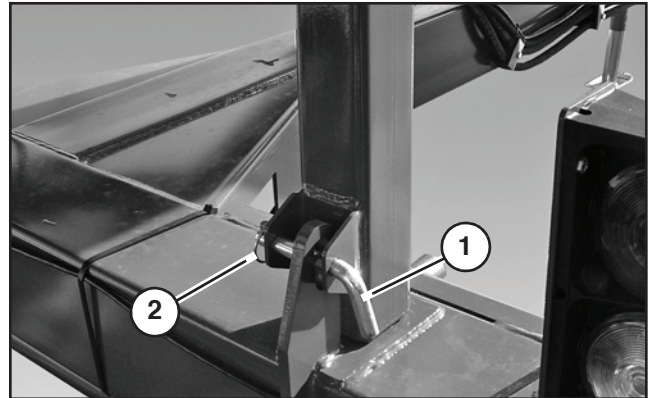
### Switch to Working Position (Cont'd)



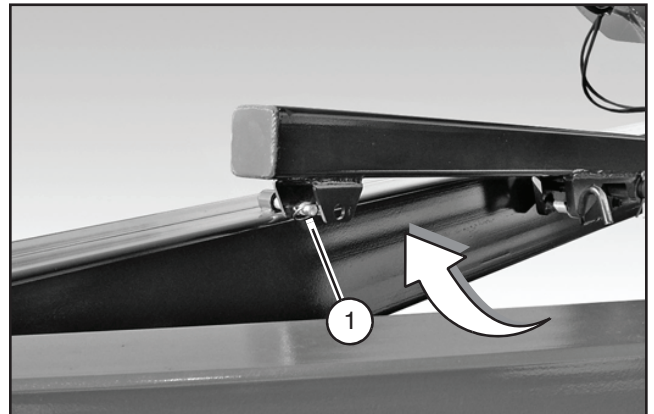
Align the holes of the auger extension with the holes of the center auger shaft. Secure with two bolts (1), nuts and washers. Tighten the nuts and bolts installed in the previous step. See "Torque Specifications" on page 95.



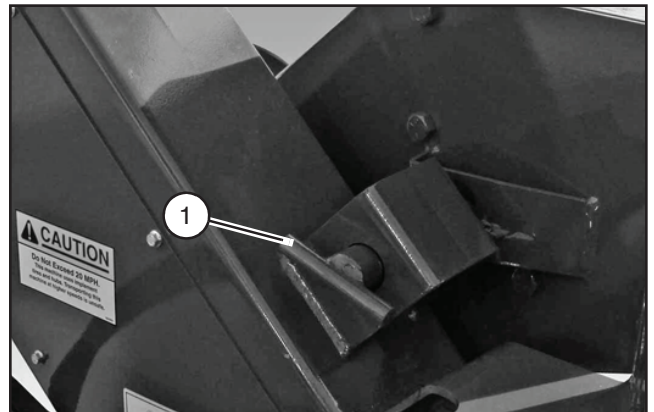
Install the left extension brace (1) using the 1/2" bolts and nuts provided.



Remove the support arm lower pin (1) and retaining clip (2) on the left side of the unloader.



Swing support arm up and insert pin (1) into temporary mounting position.



Pull out the spring-loaded locking pin (1) to release the roller.

*(Procedure continued on following page.)*

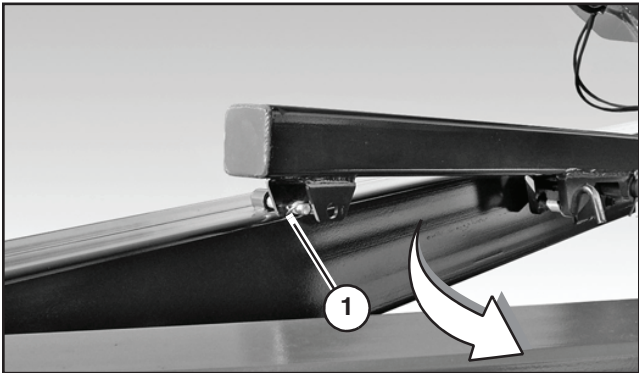


# Set-up Instructions

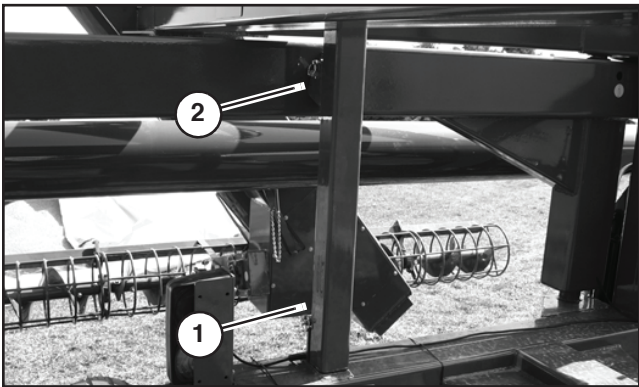
## Switch to Working Position (Cont'd)



Swing the roller into the operating position.

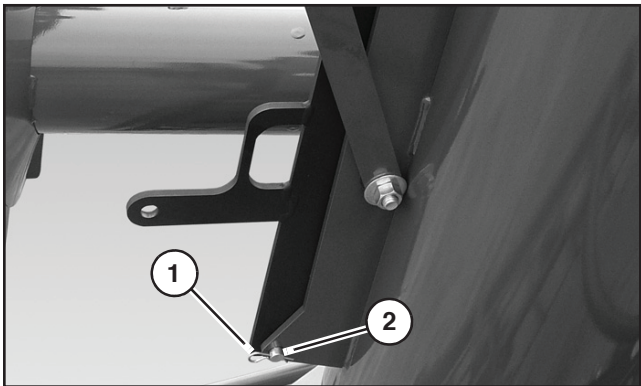


Remove pin (1) and lower the support arm into its original position.



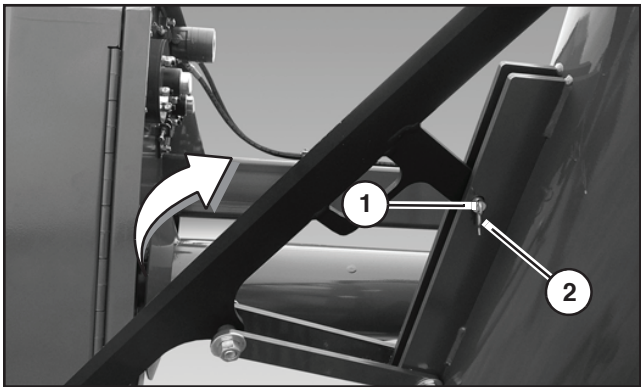
Secure support arm at the base with pin (1) and retaining clip. Insert roller locking pin (2) and retaining clip.

**WARNING:** Wear safety glasses, ear protection, respirators, gloves, hard hats, safety shoes and other protective clothing when required.

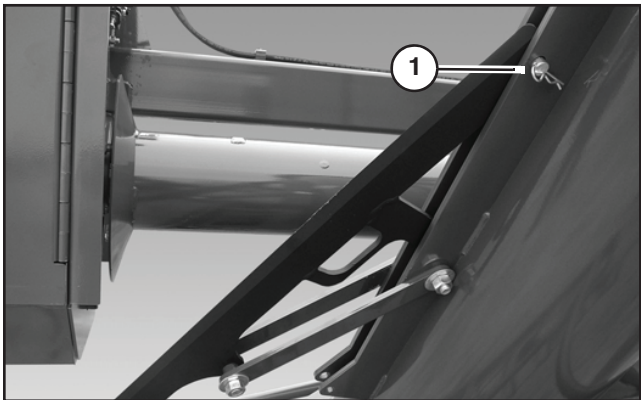


Remove the lower retaining clip (1) and pin (2) on the bag cutting knife.

**CAUTION:** The Bag Cutting Knife is SHARP! Use extreme care when placing the bag cutting knife in the work or transport position. Use of gloves is recommended.



Using the handle, pivot bag cutting knife to the operating position and insert pin and retaining clip into bottom hole (1) of bag cutting knife.



**NOTE:** Use the top hole (1) if your bag is flatter.

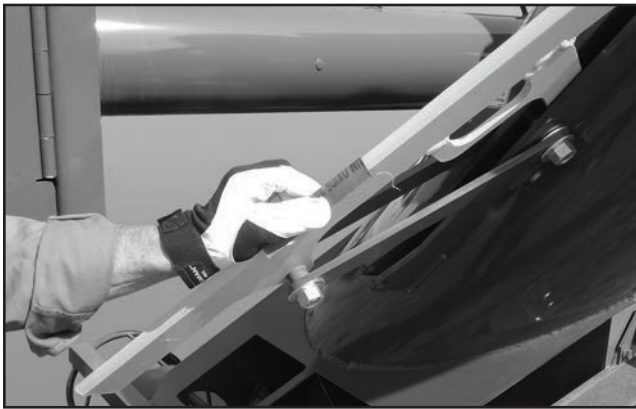
## Switch to Working Position (Cont'd)

### Knife Sharpening

**IMPORTANT:** At this point during the initial setup, the factory paint must be removed from the knife edge to obtain a sharp, clean cut.



**CAUTION:** The Bag Cutting Knife is SHARP! Use extreme care when sharpening the knife edge. Use of gloves is required.



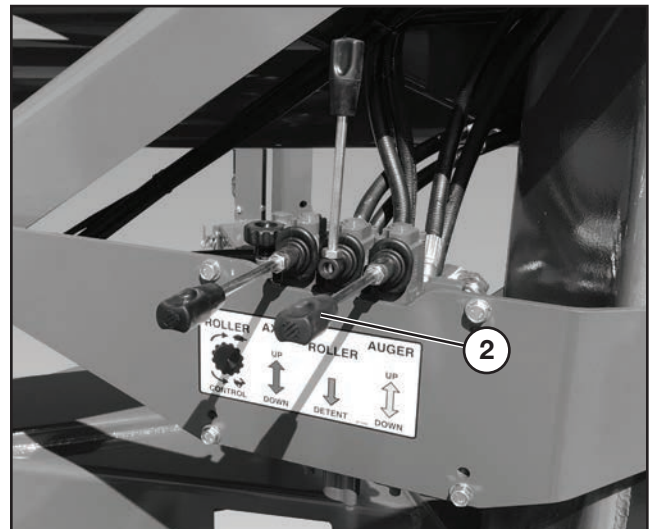
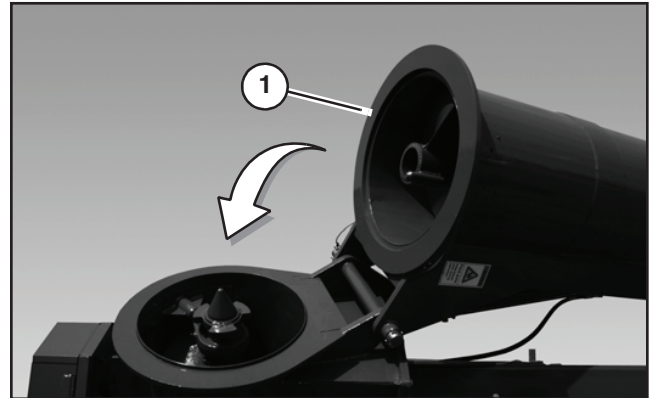
With a piece of emery cloth, slide the emery cloth slowly up and down the knife edge using light pressure to remove the paint.

Periodically check the sharpness of the bag cutting knife. Repeat this procedure to maintain a sharp edge throughout the life of the machine.

Engage the hydraulics on the tractor.



**WARNING:** Always have an operator in the tractor while the machine is in operation.



Raise the top auger (1) to the operating position.

Move the auger lever (2) up to raise the top auger.

Be sure both augers are fully connected and sealed to ensure no grain can escape.



**CAUTION:** Pinch point. Keep hands clear of folding auger.





# Operating Instructions

## Getting Started

Extracting grain from the bag requires three people. One person is needed in or on the tractor at all times to start and stop the PTO shaft and to guide the tractor on center. Another person is needed at the unloader to monitor grain intake and to pause the unloader when the grain transport vehicle is full. The third person is needed to move the grain transport vehicle and monitor when the vehicle is full.



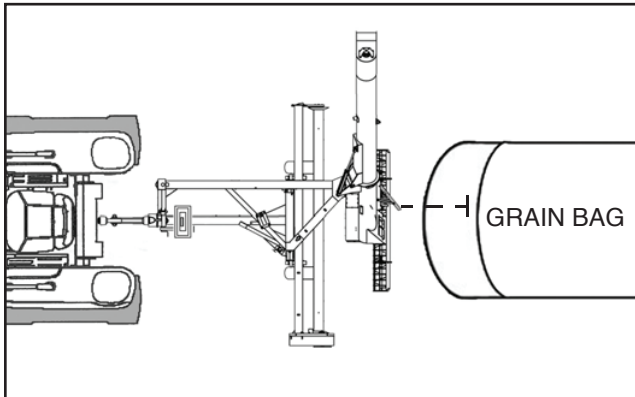
**WARNING:** Do not wear loose hanging clothes, neckties or jewelry. Long hair is to be placed under a cap or hat. These precautions will help prevent you from becoming caught in any moving parts on the machine.



**WARNING:** Always have an operator in the tractor while the machine is in operation.



**WARNING:** The machine requires an operator at all times. Never leave the machine running and unattended.



Move the tractor and unloader into position at the end of the grain bag. Center the tractor and unloader on the grain bag.

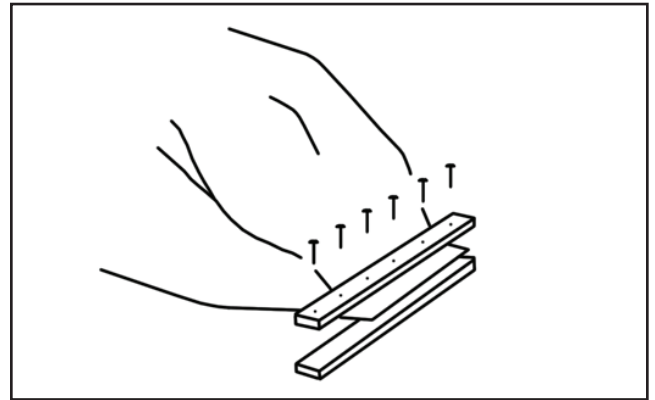
**NOTE:** Proper centering in the beginning will make the grain extraction process much easier.

**NOTE:** If the unloader is off center during set-up or

becomes off center during operation, the grain bag will roll up unevenly on the bag roller and put undo stress on the unloader. If this occurs, stop operation, roll out bag, re-align the tractor and unloader and restart operation.

Start extracting grain at the end of the grain bag where the storage process was finished. The extra length of bag that is left at the end of storage process will make it easier to wrap the bag around the unloader's roller and start the extraction process.

**NOTE:** Extraction from the opposite end of the grain bag is possible, but it will require removing some grain manually before you are able to extract grain with the unloader.



Remove the bag end from underneath the grain bag and unroll to expose the planks.

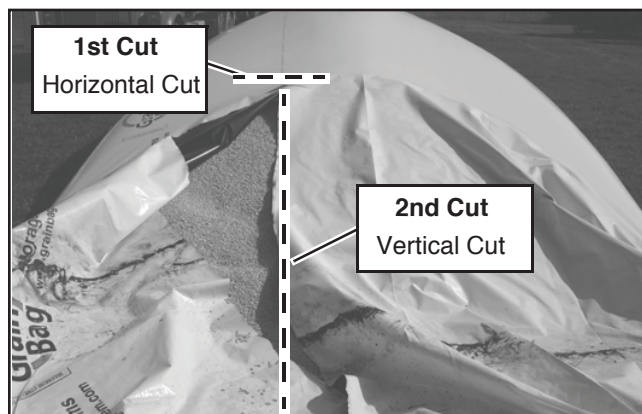
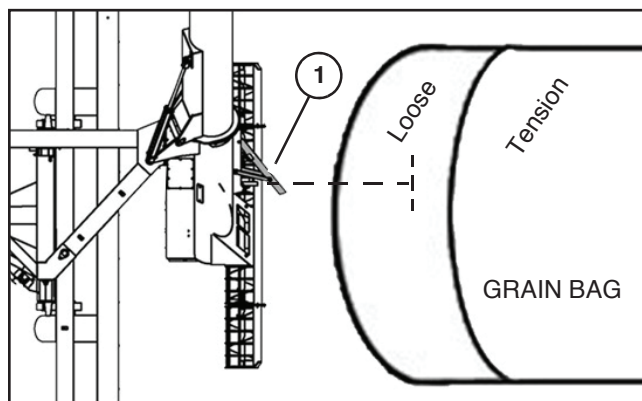
Remove the planks sealing the bag.

**NOTE:** The bag may be cut with a utility knife to remove the planks. Cut the bag at the planks, leaving as much of the bag end as possible.

(Procedure continued on following page.)

# Operating Instructions

## Getting Started (Cont'd)



First, make a horizontal cut, approximately 12 in. (305 mm) long, towards the top where the bag is more full. The cut should be slightly off center where it would line up with the unloader's cutting knife (1).



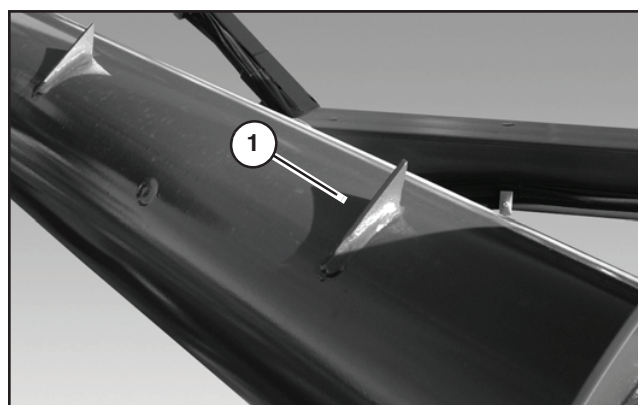
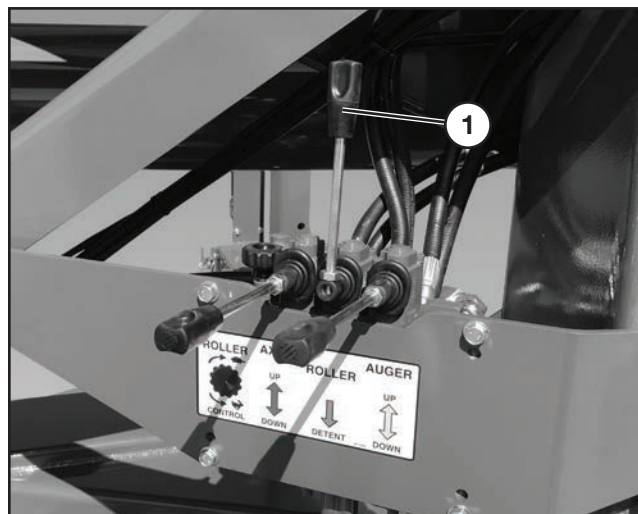
**CAUTION:** Do not enter inside the bag. Potential entrapment and suffocation are possible.

**NOTE:** It is important to make the horizontal cut first, before any vertical cuts are made, or the bag could keep opening completely from being stretched and full of grain. Do not cut into the tension portion of the bag.

Second, make a vertical cut just below the horizontal cut all the way to the end of the bag. The cut should line up with the unloader's cutting knife (1).

**NOTE:** If there is not enough grain bag to attach it to the unloader's roller, some grain will need to be extracted manually. Remove enough grain until the bag can be installed onto the roller.

Engage the hydraulics on the tractor.



Use roller hydraulic control (1) to move the roller.

Rotate the bag roller until the roller teeth (1) are in the position shown above.



**CAUTION:** The bag roller teeth are sharp! Keep clear.

(Procedure continued on following page.)

# Operating Instructions

## Getting Started (Cont'd)



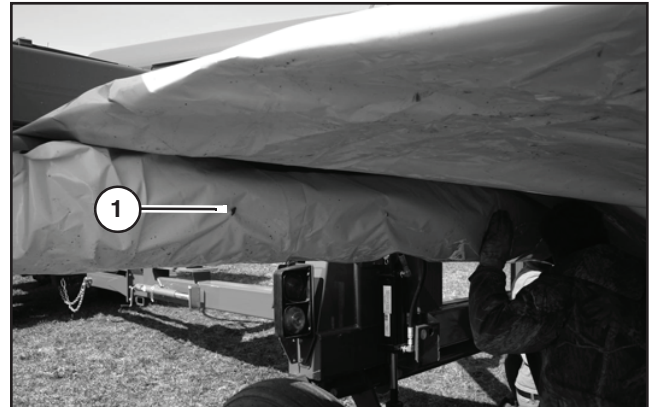
Back the tractor and unloader over the end of the bag (between the wheels) and slide the bag underneath the cross augers. Back up until the bag end reaches the bag roller.

Take the tractor out of gear, set the parking brake and engage hydraulics.

**IMPORTANT:** *Do not engage PTO shaft before bag is attached and in operational position. The bag could get entangled in the cross augers.*

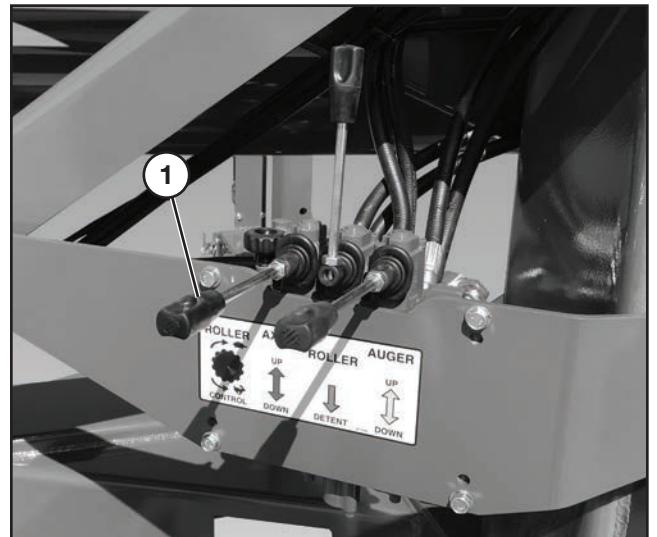


Wrap the grain bag over the top side of the roller.



Wrap the bag evenly and completely around the roller to secure the bag on the roller teeth (1).

**NOTE:** *It is very important that the bag be wrapped around the roller as evenly as possible. Make sure the bag engages the roller teeth.*



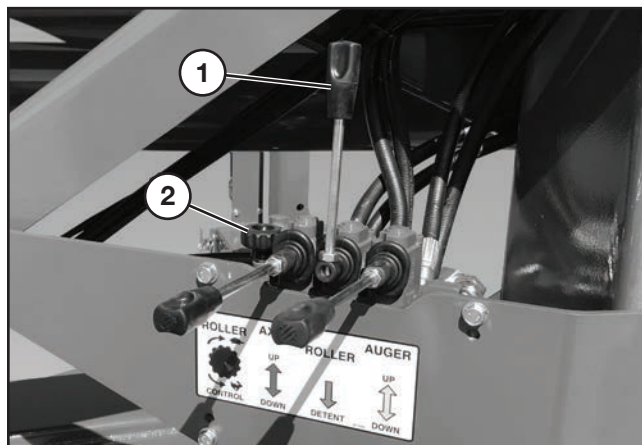
Move the axle lever (1) down to lower the unloader. Lower the axle until the cross augers are approximately 3 in. (76 mm) off the ground.

*(Procedure continued on following page.)*



# Operating Instructions

## Getting Started (Cont'd)



Move the roller lever (1) forward into the detent position. The roller will start rotating and pulling the grain bag unloader and tractor into the bag.

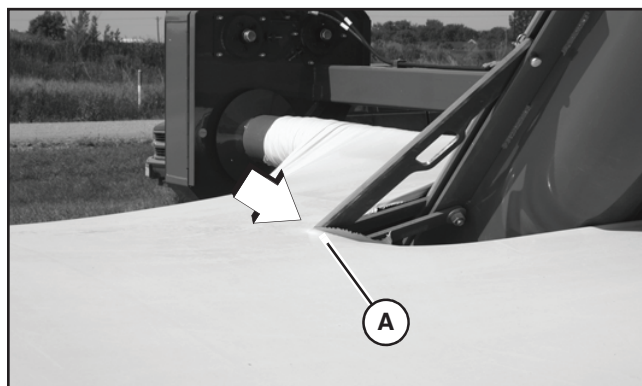
**NOTE:** Make sure the parking brake is OFF.

**NOTE:** Guide the bag as it first starts advancing onto the roller to make sure the bag is straight and even on the roller.

Adjust the speed of the roller with the roller control knob (2). Turning the knob counter-clockwise will increase roller speed and turning the knob clockwise will decrease roller speed.

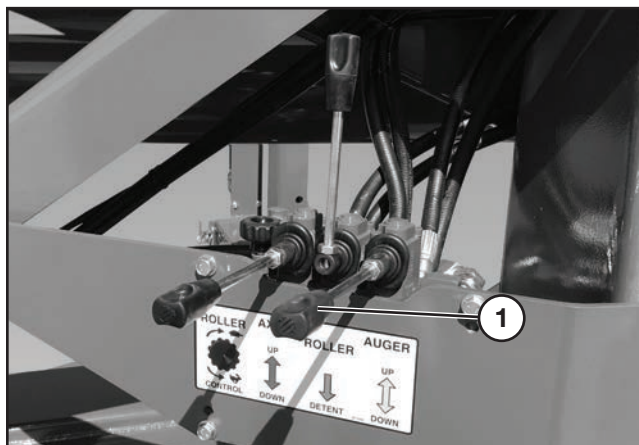
Roll up enough of the grain bag to make the bag taut and the cross augers buried in the grain.

Bag cutting knife on the grain bag unloader should be in-line with the starting cut on the grain bag.



**NOTE:** It may be necessary to use a wooden push pole to reach over the bag and help align the plastic bag with the starting cut and the cutter (A).

## Grain Extraction



Move the auger lever (1) up to raise the top auger into the operating position.

**NOTE:** Once the grain bag has been opened, it is recommended that the grain bag be emptied completely.



Move the grain truck or cart into position.

The grain transport vehicle (1) needs to maintain adequate room for maneuvering.

Engage the tractor rear-PTO at a slow speed. This will ensure grain will start flowing up the auger. Gradually increase the PTO speed until it reaches 540 RPM.



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

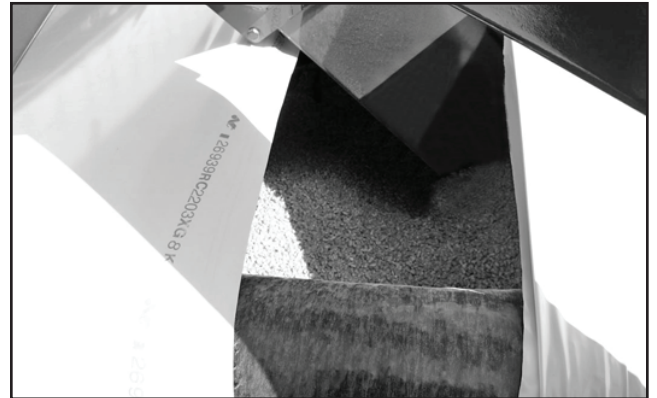
The roller should be engaged and moving at a slower speed. Adjust roller speed if necessary.

(Procedure continued on following page.)

## Grain Extraction (Cont'd)

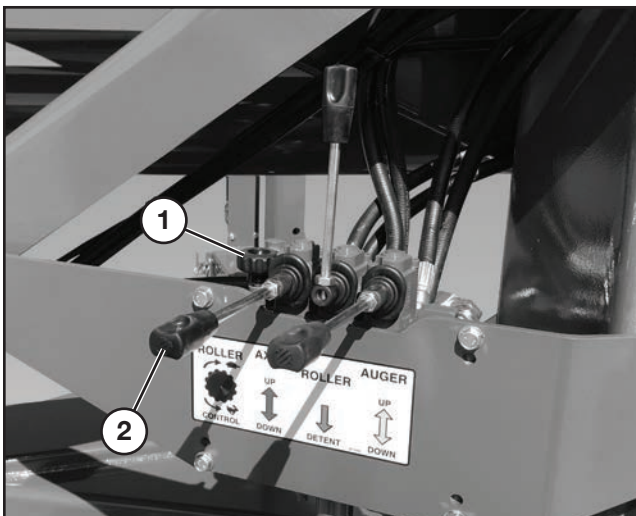


Once extraction has begun and the grain bag unloader is deeper into the bag, be sure the bag cutting knife is cutting the bag properly.



The grain should just cover the cross augers.

Cross auger height should be 3" to 4" (76 - 102 mm) above the ground.



Adjust the roller speed (1) and roller height (2) to avoid grain build-up by the roller and the lower mound at the bottom of the bag.



The mound at the bottom of the bag should be adequate distance from the tires on the grain bag unloader.

*(Procedure continued on following page.)*

# Operating Instructions

## Grain Extraction (Cont'd)

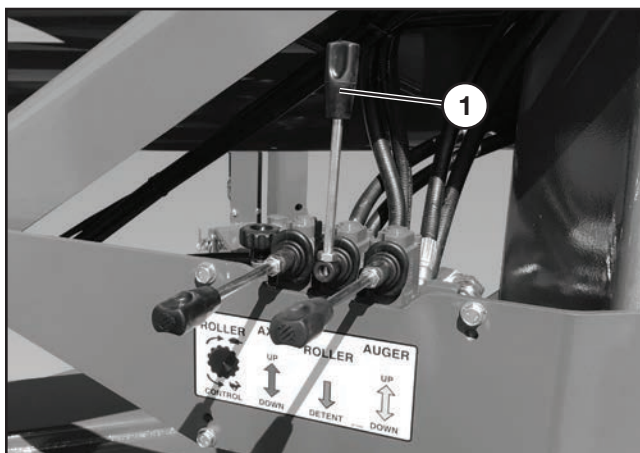


**NOTE:** If the tractor and unloader are not aligned with the bag properly or if the bag is not wrapped around the roller evenly, the cross augers may come in contact with the bag. Stop the extraction process.

Realign the tractor and unloader with the bag.

Also check to see that the bag is wrapping around the roller evenly. If not, remove the bag (see “Bag Removal” on page 29) and adjust it so it wraps around the roller evenly. See page 25 for correct bag installation procedure.

## Pause Operation



Move the roller lever (1) backward to remove it from the detent position to stop bag roller rotation.

Gradually decrease the PTO speed and disengage the tractor PTO.

To restart operation, see “Grain Extraction” on page 26.

## End of Bag Extraction

**NOTE:** Once the grain bag is opened, it is recommended that the grain bag be emptied completely.

It is important to reach the end of the grain bag with the unloader as centered as possible.

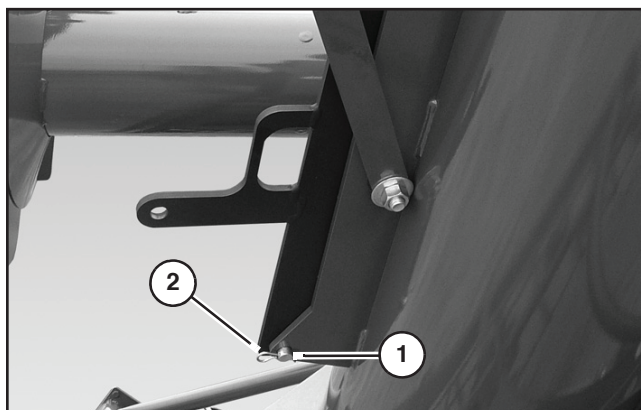
Grain can be extracted until the cross augers touch the end of the grain bag.



Remove the retaining clip (1) and pin. Using the handle, pivot bag cutting knife into the storage position.



**CAUTION:** The Bag Cutting Knife is SHARP! Use extreme care when placing the bag cutting knife in the work or transport position. Use of gloves is recommended.



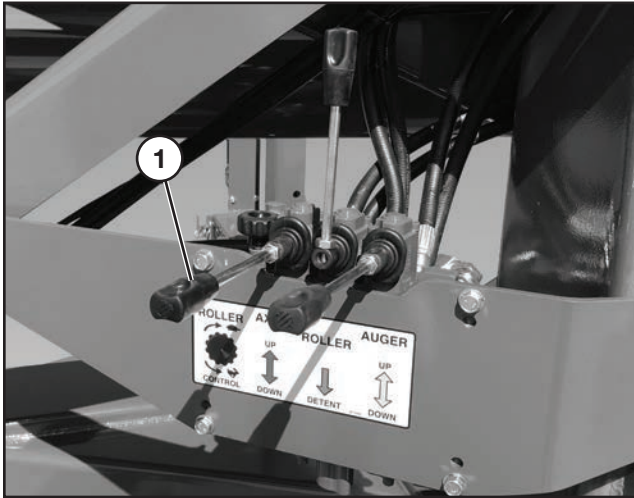
Install the pin (1) and retaining clip (2) securing the bag cutting knife in the storage position.



# Operating Instructions

## Bag Removal

Engage the hydraulics on the tractor.

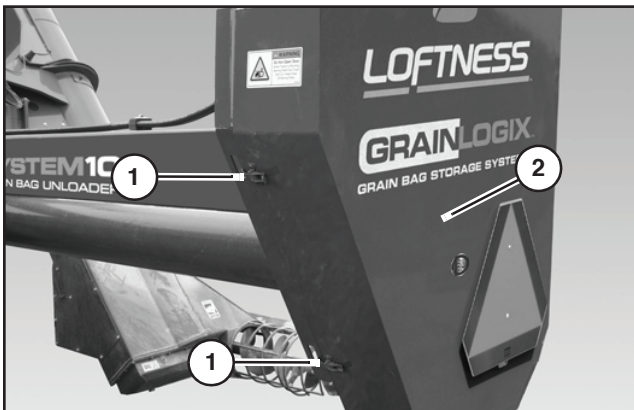


Move the axle lever (1) up to raise the axle and cross augers.

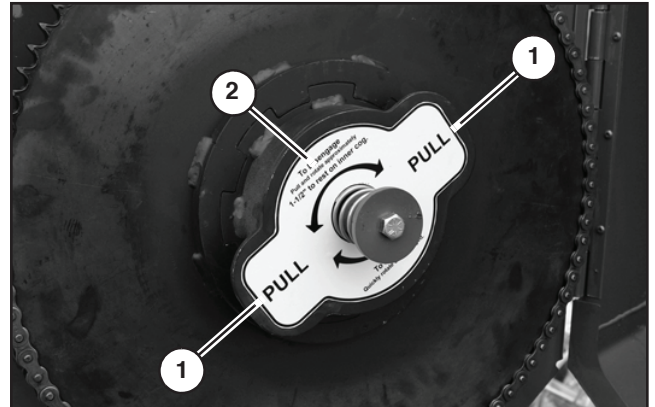
Disengage the tractor hydraulics.



**WARNING: Do Not Open Door** while tractor is running. Moving parts can crush and cut. Keep clear of moving parts.



Release the two latches (1) and open the roller drive door (2).



Pull on the handles (1) to disengage the roller clutch (2) until it locks in the open position. The roller should move freely.

**NOTE:** The cogs should rest on the inner cogs.



Drive the tractor forward slowly until the bag is fully unrolled. Watch and guide the bag as it is coming off the roller.

**NOTE:** Remaining grain will need to be cleaned up with a loader or grain vac.

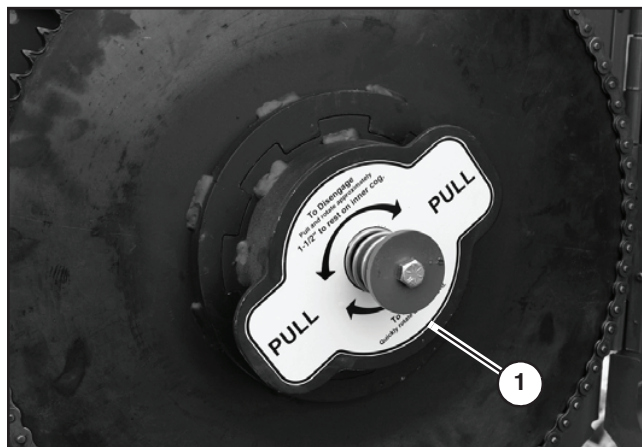
Fold or roll the used bag as small as possible.

**NOTE:** The grain bags are recyclable. Contact your local recycling center for details on disposing of the used grain bags.

*(Procedure continued on following page.)*

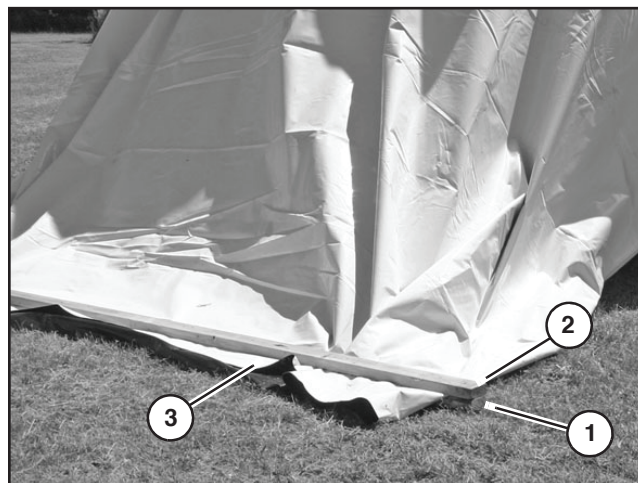
# Operating Instructions

## Bag Removal (Cont'd)



Reengage the clutch (1) by quickly rotating in either direction and snapping back into place.

## Resealing The Grain Bag



Fold each side of the grain bag towards the center. Start the fold approximately 2 ft. (.609 m) up the side of the bag, then fold to the center (on both sides).

Place one plank (1) underneath the grain bag approximately 12 in. (304.8 mm) back from the end of the bag. Place a second plank (2) on top of the grain bag (3) and first plank.



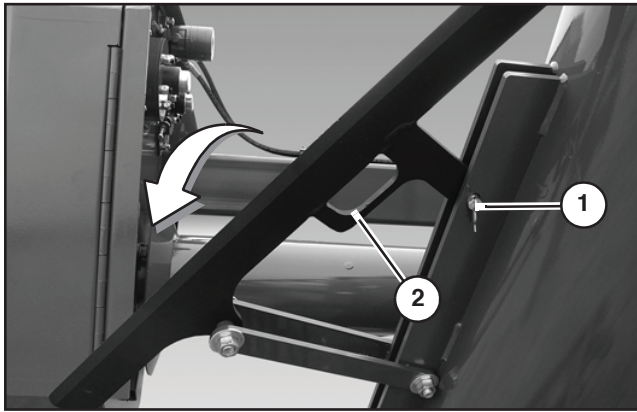
Align the top and bottom planks and fasten the two planks together.

Roll the grain bag around the planks a minimum of two times. Position the planks approximately 3 ft. (.914 m) back underneath the grain bag.

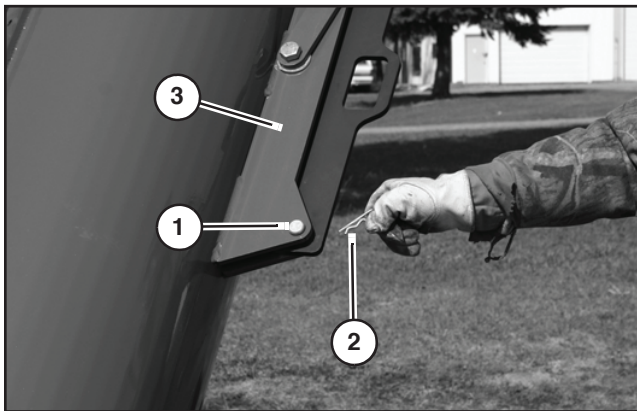
**NOTE:** Place adequate weight on the bag end and planks to hold in place.



## Switching to Transport Position



Remove the upper retaining clip (1) and pin on the bag cutting knife. Using the handle (2), rotate the bag cutting knife to the transport position.



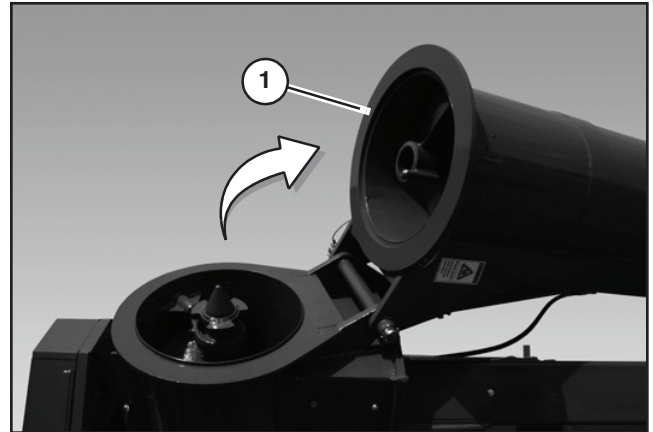
**NOTE:** The cutting edge of the bag cutting knife should be inside the guard (3) on the main auger housing when in the transport position.

Insert pin (1) and retaining clip (2) to secure bag cutting knife.

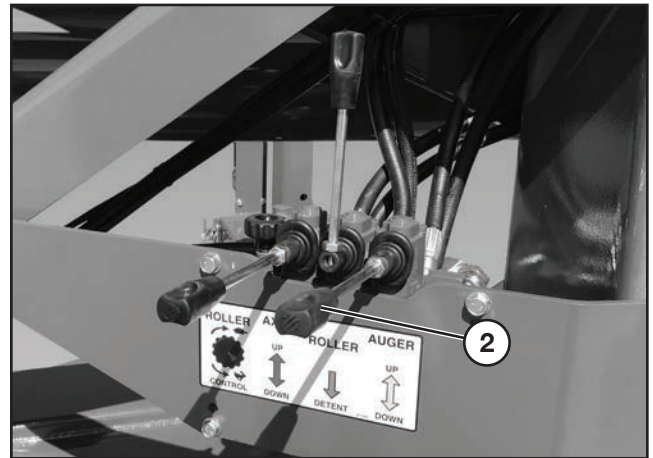


**CAUTION:** The Bag Cutting Knife is **SHARP!** Use extreme care when placing the bag cutting knife in the work or transport position. Use of gloves is recommended.

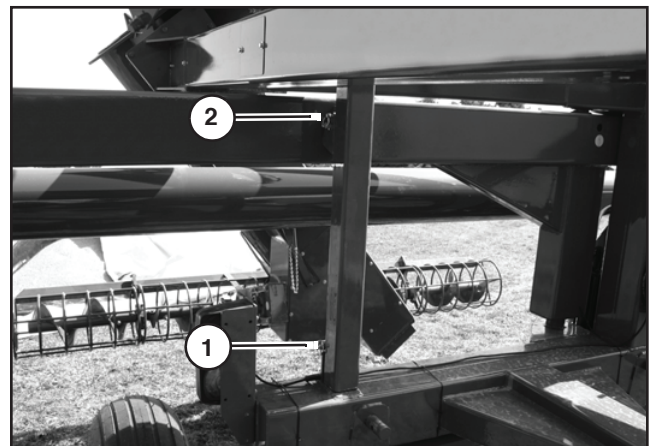
Engage the hydraulics on the tractor.



Lower the top auger (1) to the transport position.



Move the auger lever (2) down to lower the top auger.

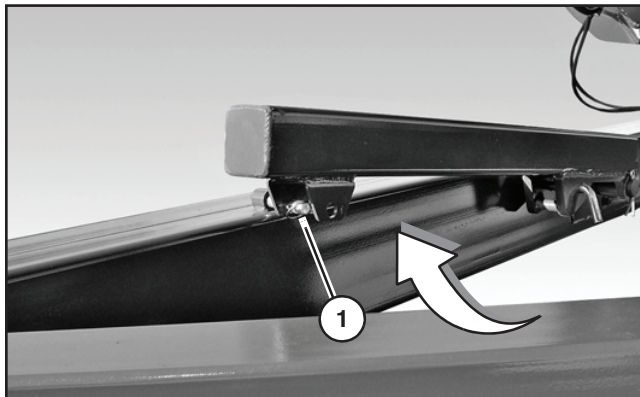


Remove support arm pin (1) and retaining clip at the base, remove roller locking pin (2) and retaining clip.

(Procedure continued on following page.)

## Operating Instructions

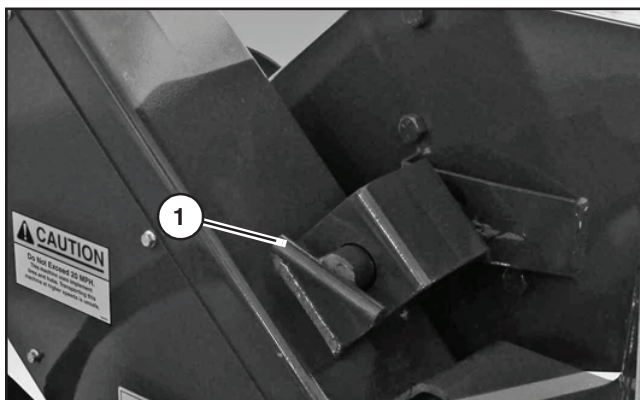
### Switching to Transport Position (Cont'd)



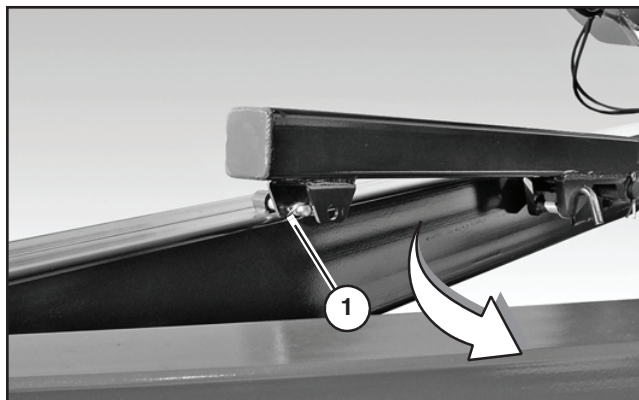
Swing support arm up and insert pin (1) into temporary mounting position.



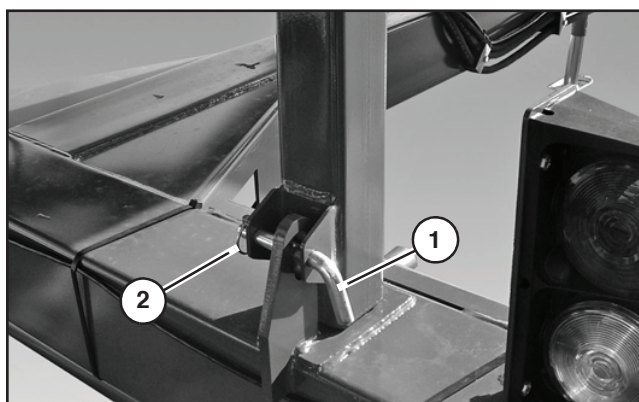
Swing the roller into the transport position.



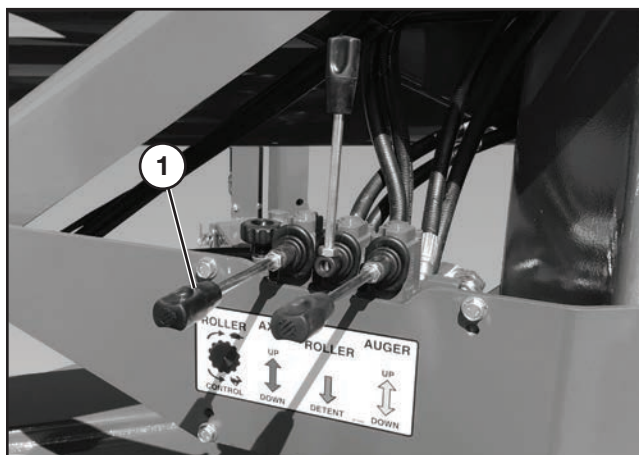
The roller will lock into place with the spring-loaded locking pin (1).



Remove pin (1) and lower the support arm into its original position.



Reinsert the support arm lower pin (1) and retaining clip (2) on the left side of the unloader.

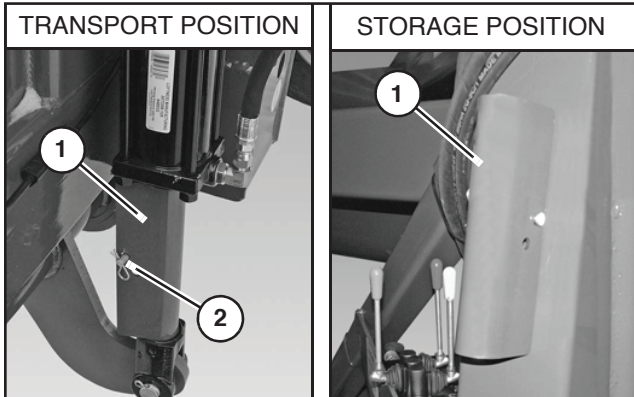


Move the axle lever (1) up to raise the unloader.

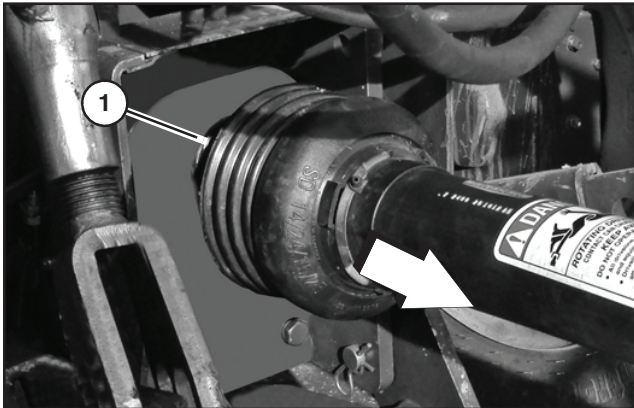
*(Procedure continued on following page.)*



## Switching to Transport Position (Cont'd)



Remove the cylinder stop (1) from the storage position and place on the cylinder rod for travel. Secure with pin (2) and retaining clip.



Remove PTO driveline safety chain.

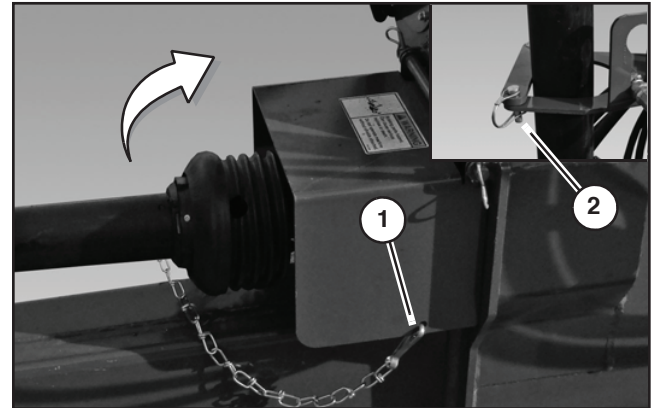
Retract the PTO driveline sleeve (1), then pull the unloader PTO driveline off the tractor PTO drive shaft.



**CAUTION:** Never use a steel hammer when connecting or disconnecting a PTO shaft.

Place the PTO driveline in the stored position.

**NOTE:** Disconnecting the PTO driveline is not required when transporting the grain bag unloader with a tractor.



Remove the chain (1) and rotate the PTO driveline up into the stored position. Reinstall the retaining pin (2).

**NOTE:** The electrical connector must stay attached for transporting on the highway with a tractor. See "Install the left cross auger guard and extension into the stored position." on page 35.

**NOTE:** Secure all hydraulic hoses and the electrical harness before transporting.

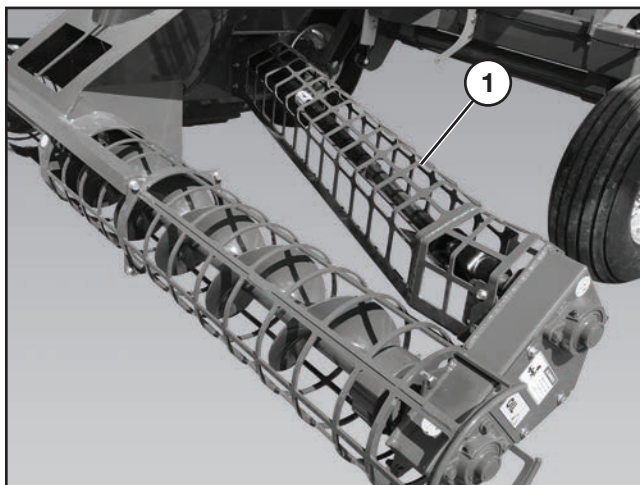
(Procedure continued on following page.)

# Operating Instructions

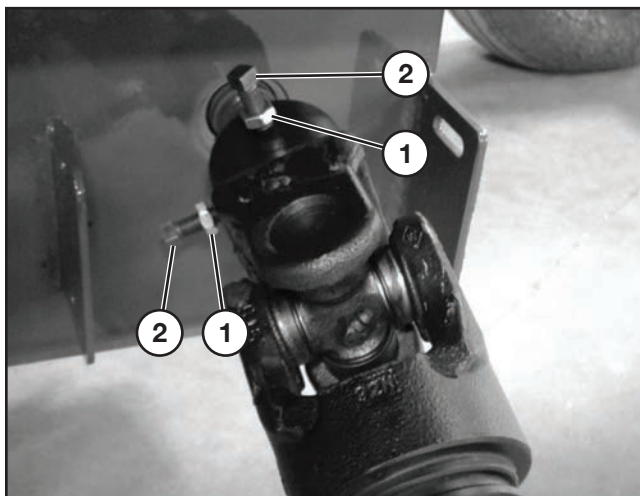
## Switching to Transport Position (Cont'd)

### Auger Extension Removal (if needed)

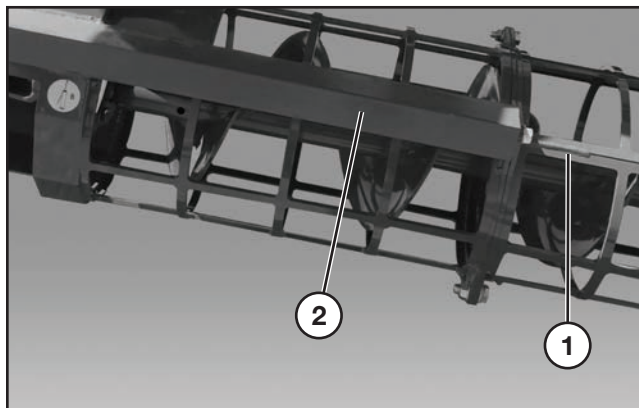
**NOTE:** Removing the auger extensions may not be necessary for transporting. Check local and state laws on width restrictions in your area for road travel.



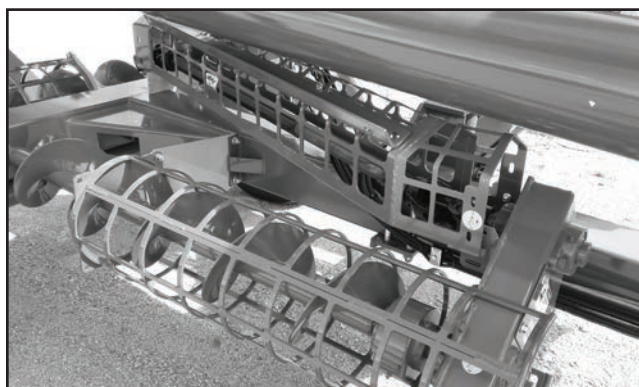
Remove the cross auger drive shaft guard (1).



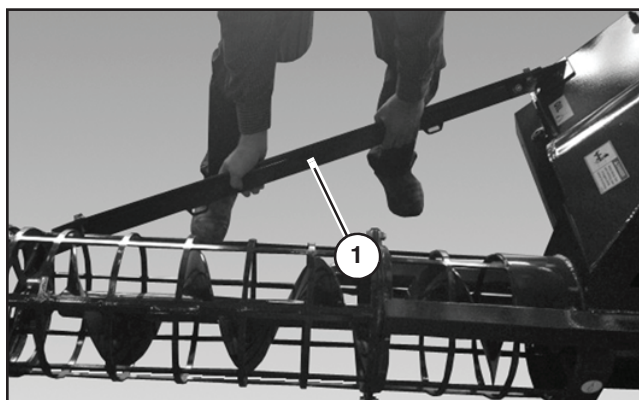
Loosen jam nuts (1), then loosen set screws (2).



Remove the right cross auger extension (1) from the center auger (2).



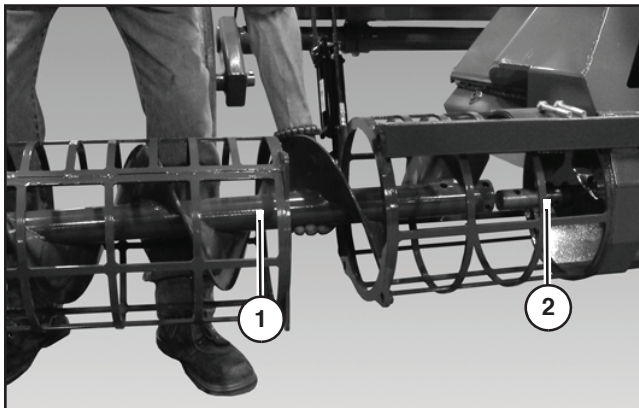
Install the cross auger guard, auger extension and the left extension brace (removed in the next step) in the stored position using the same hardware.



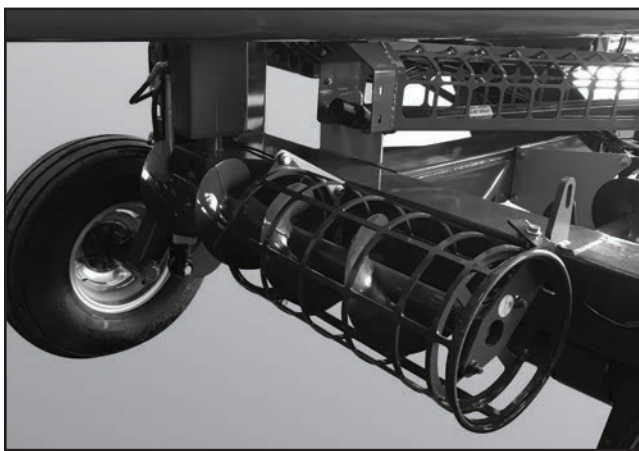
Remove the left extension brace (1).

*(Procedure continued on following page.)*

### Switching to Transport Position (Cont'd)



Remove left cross auger extension (1) from center auger (2).



Install the left cross auger guard and extension into the stored position.





## General Maintenance

See “Maintenance Safety” on page 6 before performing any service or maintenance on the grain bag unloader.



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

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

**NOTE:** Lubricate chains at the end of the day while the chains are warm from operating.

## Maintenance Schedule

HOURS	SERVICE POINTS	SERVICE REQUIRED					PAGE #
		CHECK	GREASE	LUBRICATE	CHANGE	ADJUST	
Every 8	Top Auger Bearing		X				38
	PTO Cross and Bearing		X				38
	Front Chain Housing (front and rear)		X				39
	Frame Drive Shaft Front Bearings		X				39
	Main Drive Shaft		X				39
	Bag Roller Bearing		X				39
	Auger Hinge Hanger Bearing		X				39
	Main Drive Shaft At Rear		X				40
	PTO Cross And Bearing		X				40
	Overhung Load Adapter		X				41
	Cross Auger Bearing		X				41
	Cross Auger Left End Bearing		X				41

HOURS	SERVICE POINTS	SERVICE REQUIRED					PAGE #
		CHECK	GREASE	LUBRICATE	CHANGE	ADJUST	
Every 8	Cross Auger U-Joints		X				41
	Cross Auger Bearings		X				41
	Lower Discharge Auger Bearing		X				41
	Cross Auger Driveline Inner U-Joint		X				42
	Cross Auger Driveline Front Bearing		X				42
	Cross Auger Driveline U-Joint		X				42
	Inner/Outer Bearing		X				42
Every 40	Auger Hinge		X				39
	Axle		X				40
	Lower Roller Pivot Points		X				40
	Roller Pivot Points		X				40
	Cross Auger Chain Coupler		X				41
	Center Auger Chain Coupler		X				41
	PTO Cross and Bearing		X				41
	Cross Auger Right End		X				42
	Front Chain Housing			X			42
	Cross Auger Extension Chain			X			43
	Roller Drive Chain			X			43
Every 100	Hoses and Wiring	X					6
	Oil Leaks	X					6
Annually	Wheel Hub Bearings		X				42
	Lower Unit Gearbox Lube Level			X	X	X	43
	Lower Unit 50° Gearbox Oil Level	X		X			44
	90° Gearbox Oil Level			X			44
	Bag Roller Gearbox Oil Level			X			44
	Roller Chain Inspection	X				X	45

# Maintenance

## Fluids and Lubricants



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

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

1. Grease - Use an SAE multipurpose high temperature grease with extreme-pressure (EP) rating. Also acceptable is an SAE multipurpose lithium based grease.
2. Gearbox - Use 80W-90 gear lube.  
90° Gearbox - 24 oz.  
50° Gearbox - 24 oz.
3. Storing Lubricants - Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

## Lubrication

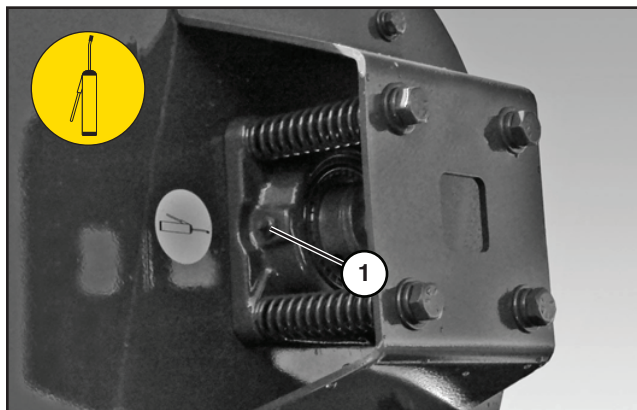
### Grease Points

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

See "Grain Bag Unloader Identification" on page 4 for component location and identification.

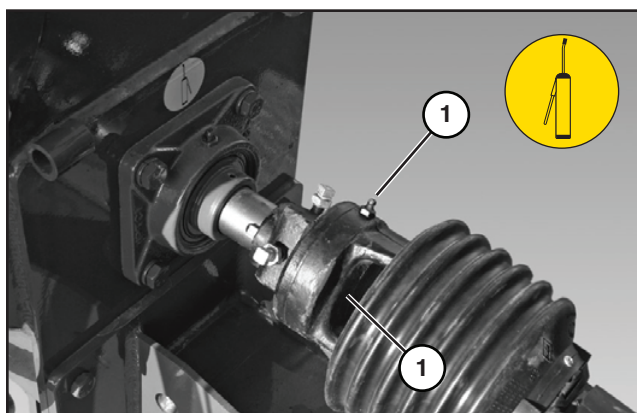


**WARNING:** Do not lubricate parts while machine is running.



**Location:** Top Auger Bearing (1) - Located at the end of the top auger.

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

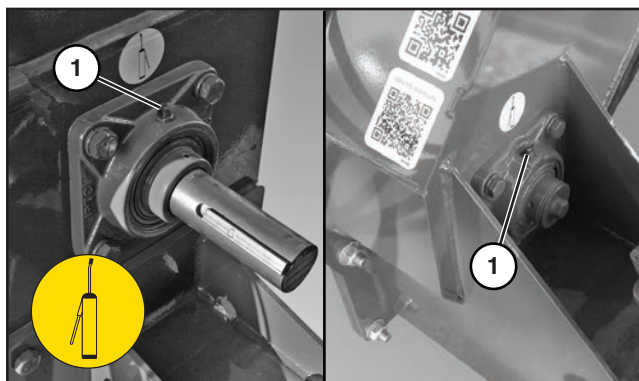


**Location:** PTO Cross and Bearing (1) - Located at the front of the unloader, both ends.

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

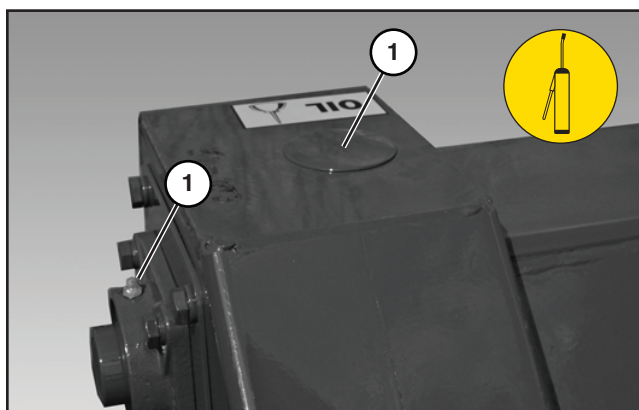
## Lubrication (Cont'd)

### Grease Points (Cont'd)



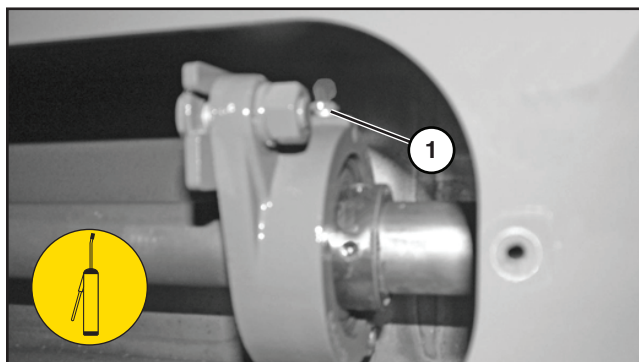
**Location:** Front Chain Housing (1) (front and rear).

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



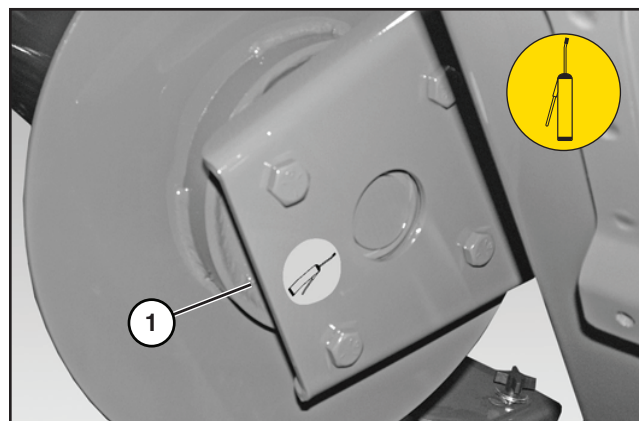
**Location:** Frame Drive Shaft Front Bearings (1).

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



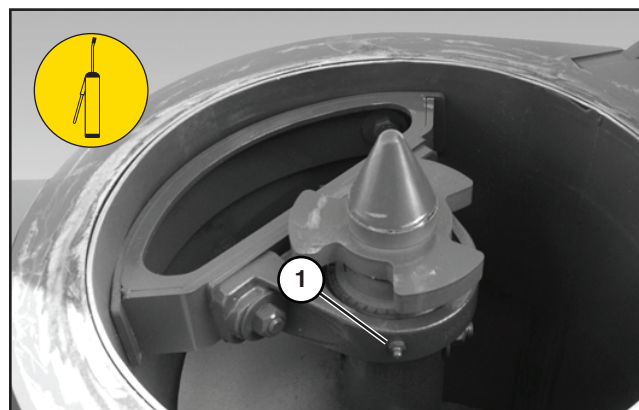
**Location:** Main Drive Shaft (1) (two locations).

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



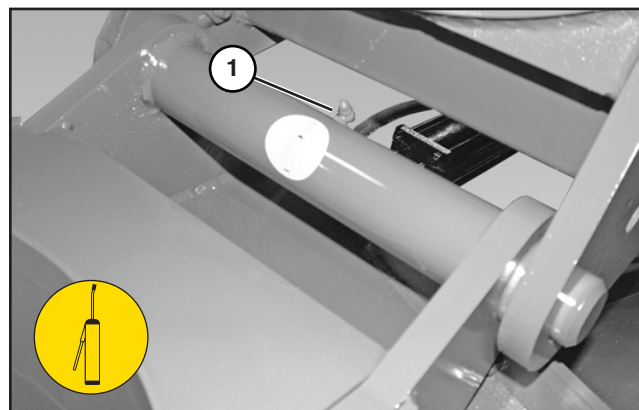
**Location:** Bag Roller Bearing (1), both ends.

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



**Location:** Auger Hinge Hanger Bearing (1).

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



**Location:** Auger Hinge (1).

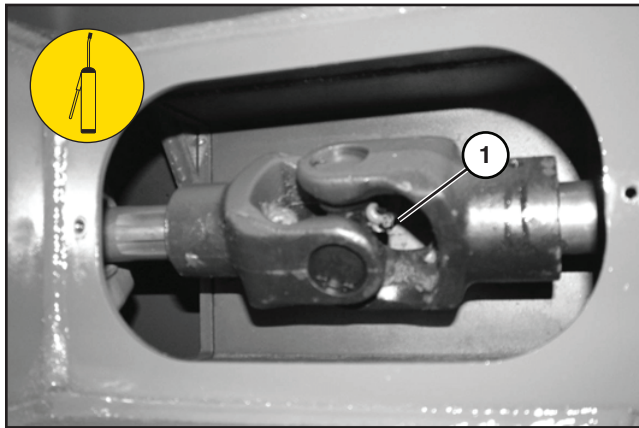
**Interval:** Every 40 hours of operation.



# Maintenance

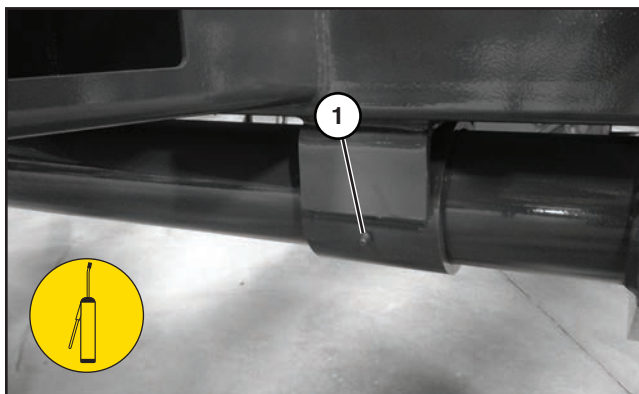
## Lubrication (Cont'd)

### Grease Points (Cont'd)



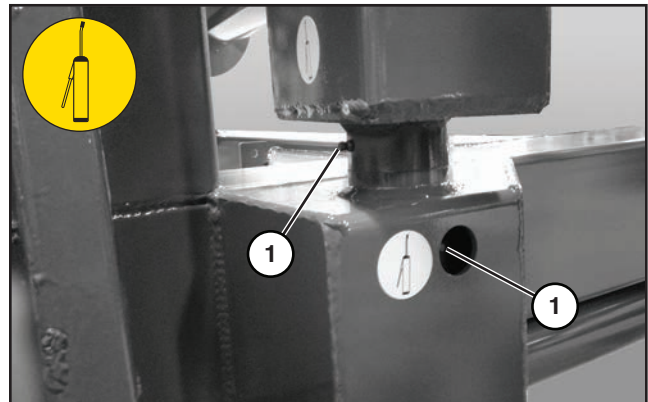
**Location:** Main Drive Shaft At Rear (1).

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



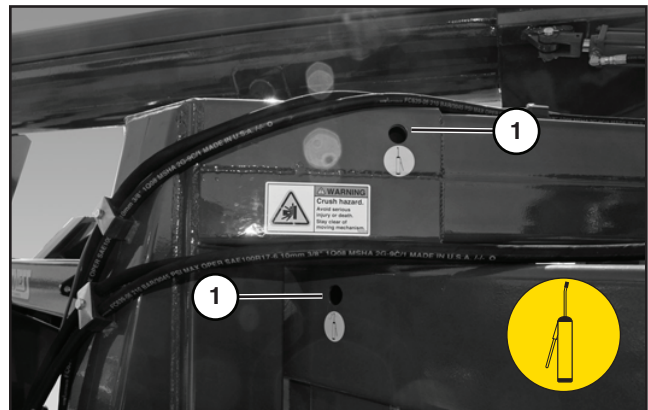
**Location:** Axle (1). Total of 3 grease points on the axle.

**Interval:** Every 40 hours of operation.



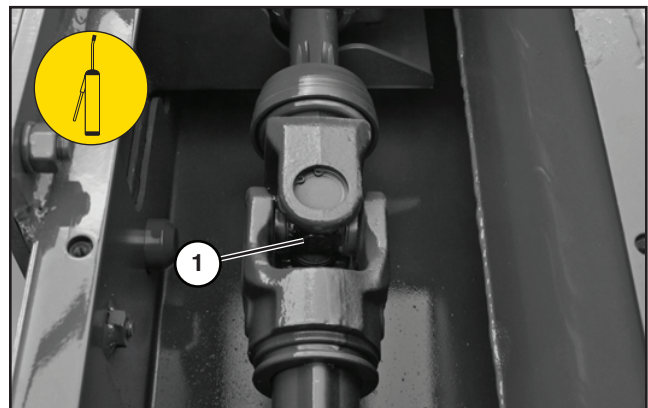
**Location:** Lower Roller Pivot Points (1).

**Interval:** Every 40 hours of operation.



**Location:** Roller Pivot Points (1) - Located where the roller and the main frame pivots.

**Interval:** Every 40 hours of operation.

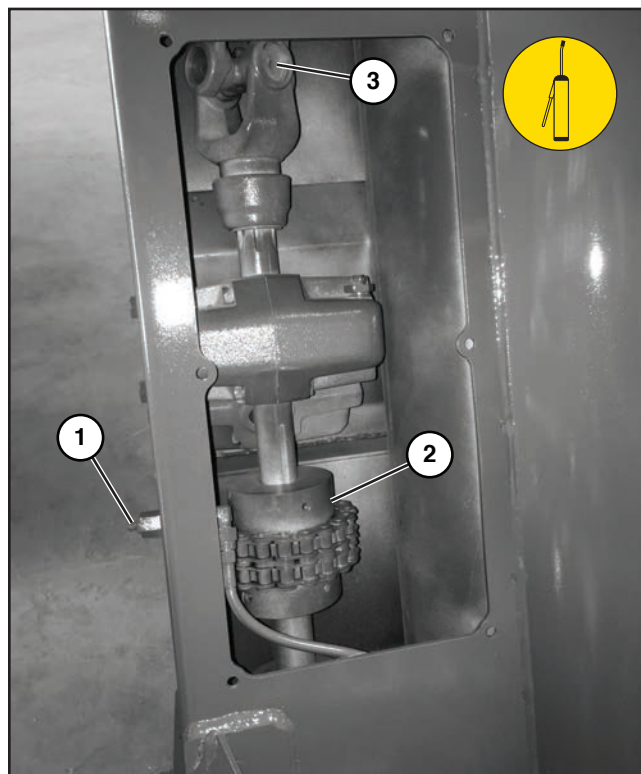


**Location:** PTO Cross and Bearing (1) - Located in the rear cross auger and chain drive housing in the top compartment.

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

## Lubrication (Cont'd)

### Grease Points (Cont'd)



**Location:** Multiple Components - Located in the rear cross auger and chain drive housing in the bottom compartment.

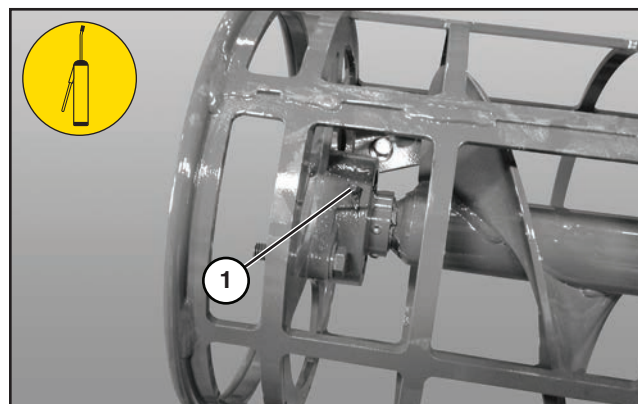
- Overhung Load Adapter (1)

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

- Center Auger Chain Coupler (2)

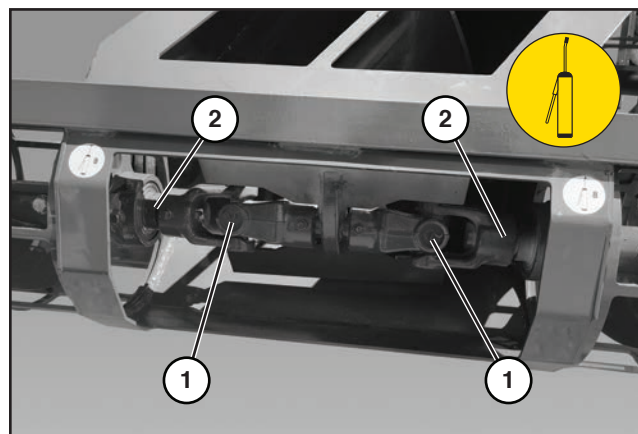
- PTO Cross and Bearing (3)

**Interval:** Every 40 hours of operation.



**Location:** Cross Auger Left End Bearing (1).

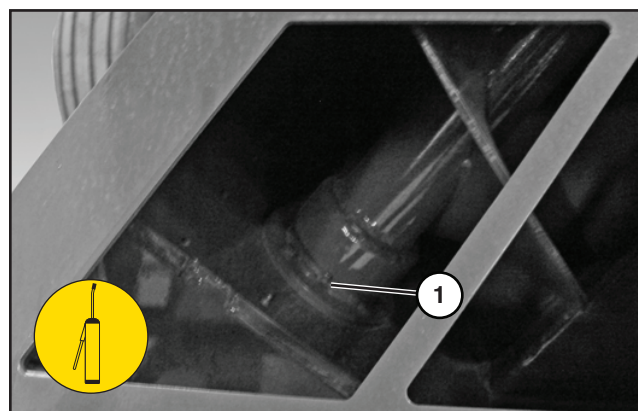
**Interval:** Every 8 hours of operation.



**Location:** Cross Auger U-Joints (1).

Cross Auger Bearings (2).

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



**Location:** Lower Discharge Auger Bearing (1).

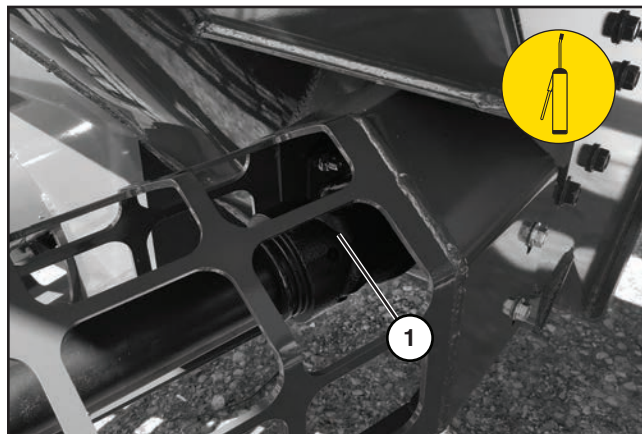
**Interval:** Every 8 hours of operation.



# Maintenance

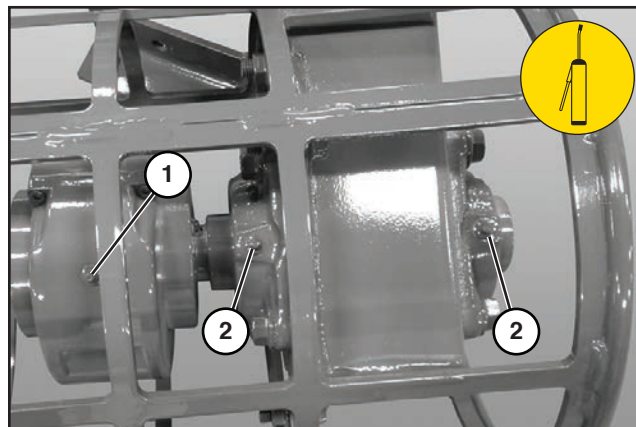
## Lubrication (Cont'd)

### Grease Points (Cont'd)



**Location:** Cross Auger Driveline Inner U-Joint (1).

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



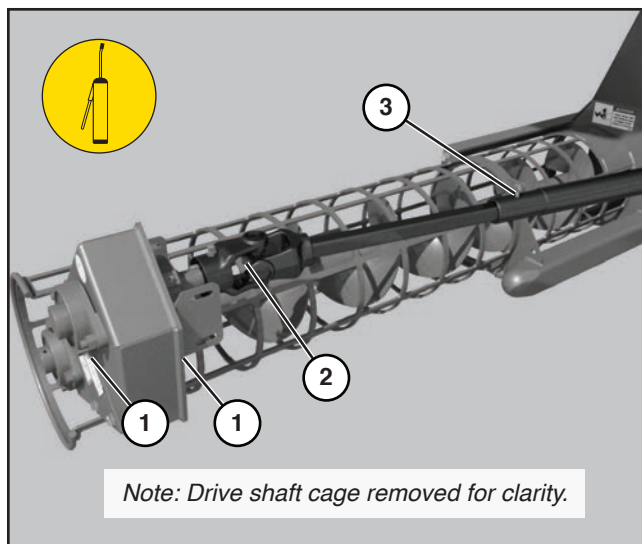
**Location:** Cross Auger Right End.

- Right Auger Extension Chain Housing (1).

**Interval:** Every 40 hours of operation.

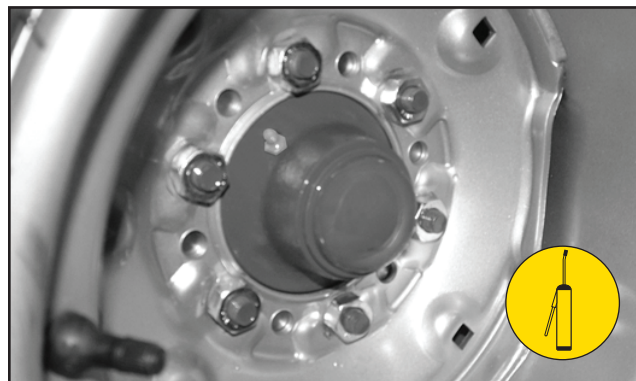
- Inner/Outer Bearing (2).

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



**Location:** Inner/Outer Bearing (1).  
Cross Auger Driveline U-Joint (2).  
Extension Driveline (3).

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



**Location:** Wheel Hub Bearings.

**Interval:** Yearly.

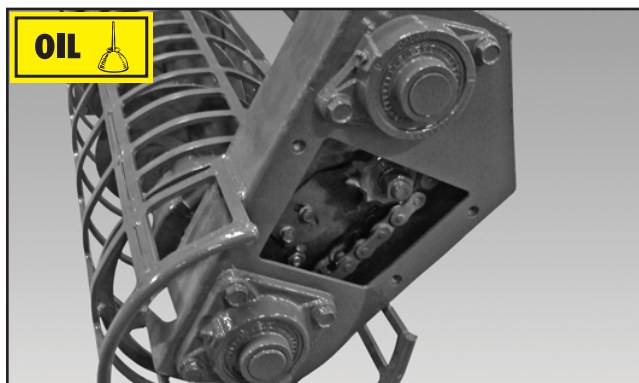


**Location:** Front Chain Housing.

**Interval:** Every 40 hours of operation.

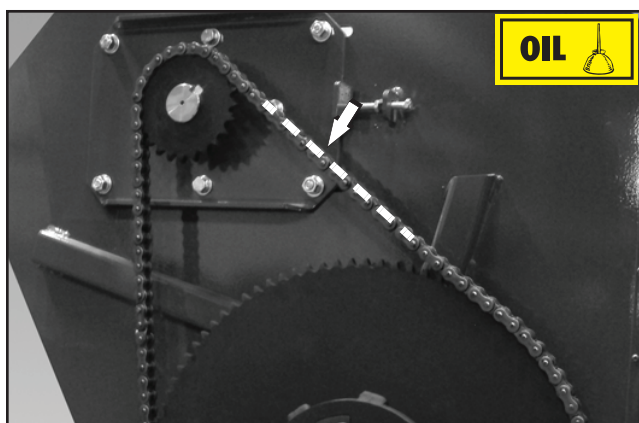
## Lubrication (Cont'd)

### Chain Lubrication



**Location:** Cross Auger Extension Chain.

**Interval:** Every 40 hours of operation.



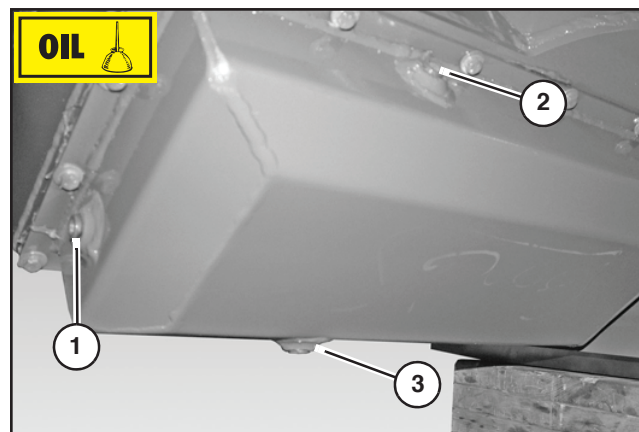
**Location:** Roller Drive Chain - Lubricate the chain of the roller drive. Lubricate the top side of the chain.

**Interval:** Every 40 hours of operation.

### Gearbox Lubrication



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



#### Checking Gear Lube Level of Lower Unit Gearbox

Remove the oil level plug (1). If gear lube flows from the hole, gear lube is at the safe operating level. Re-install oil level plug.

**Location:** Bottom of Lower Unit.

**Interval:** Annually.

#### Adding Gear Lube

Remove the oil level plug (1) and fill plug (2). Add 80W-90 gear lube through the fill hole until it flows out the oil level hole. Install oil level plug (1) and fill plug (2).

#### Draining Gear Lube

Place a drain pan underneath the drain plug of the gearbox.

Remove the drain plug (3) and fill plug (2). Drain the gear lube until the pan is empty. Reinstall the drain plug.

Remove the oil level plug (1), add 3 Qts. of 80W-90 gear lube through the fill hole (2) until it flows out the oil level hole (1). Install the oil level plug (1) and fill plug (2).

**NOTE:** Dispose of engine oil, hydraulic fluid and coolants in an environmentally safe manner. Some regulations require that certain spills on the ground be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

(Procedure continued on following page.)

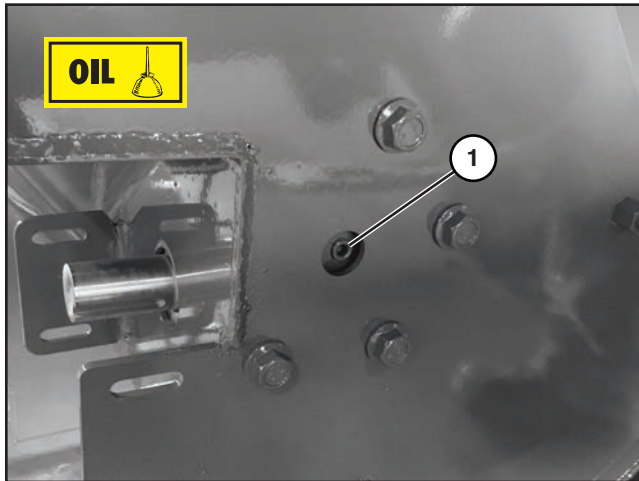


# Maintenance

## Lubrication (Cont'd)

### Gearbox Lubrication (Cont'd)

#### Checking Oil Level of 50° Gearbox



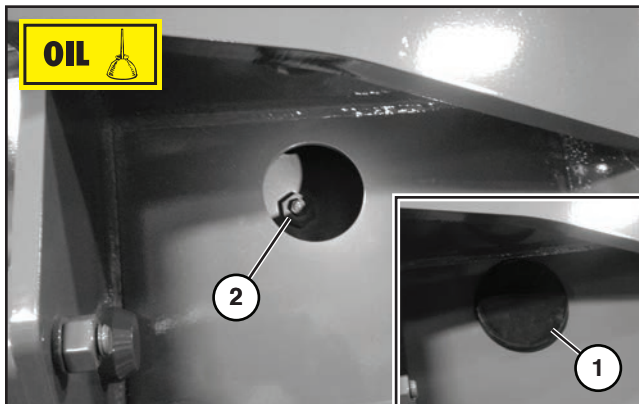
Remove plug (1) and check oil level. Oil level should be at the bottom of the plug opening.

**Location:** Inside Lower Unit Driveline Housing.

**Interval:** Annually.

**NOTE:** The gearbox holds 24 oz. of 80W-90 gear lube.

#### Checking Oil Level Of 90° Gearbox



Remove cap (1) and breather (2) to check oil level.

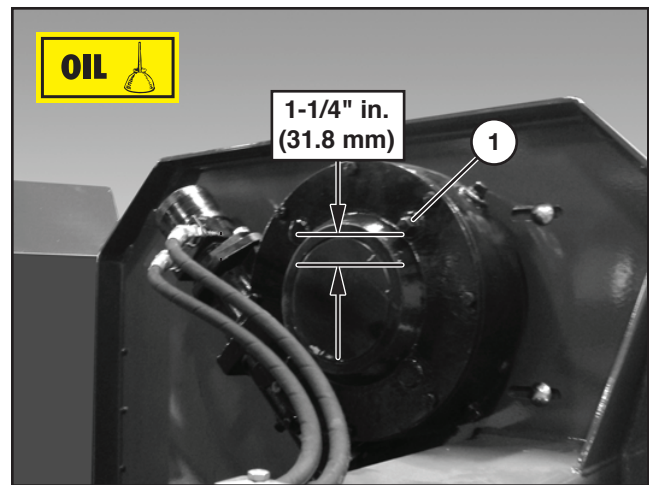
The oil level should be approximately 1 inch below the breather opening.

**Location:** Top of Lower Unit. Left side.

**Interval:** Annually.

**NOTE:** The gearbox holds 24 oz. 80W-90 gear lube.

#### Checking Oil Level of Bag Roller Gearbox

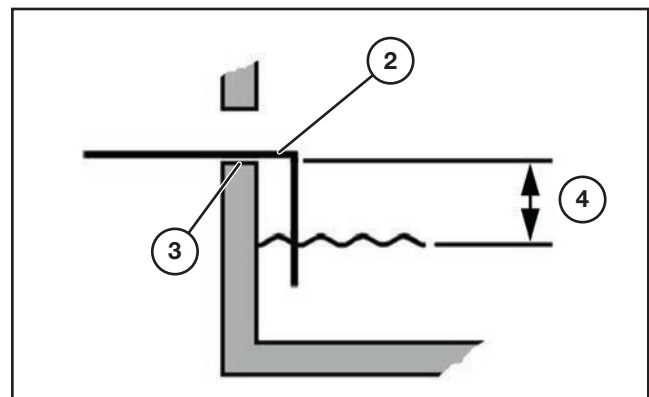


**Location:** Left End of Bag Roller.

**Interval:** Annually.

**NOTE:** The gearbox holds 88 oz. of 85W-140 gear lube.

Use the following procedure to verify the oil level:



Bend a piece of wire (2) at a 90° angle. Place a mark on the wire bend at the desired height.

- **Gearbox Oil Level** - 1-1/4" in. (31.8 mm) below the fill hole.

Insert the wire into the gearbox. Rest the wire on the bottom (3) of the fill hole and wire pointing downward.

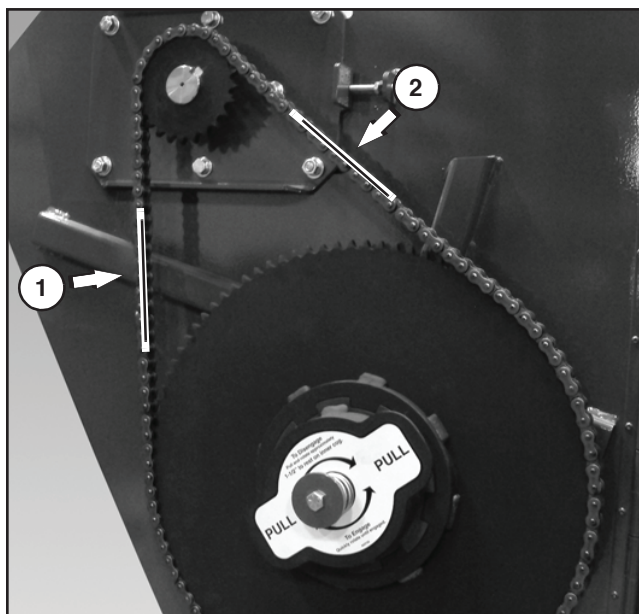
Remove the wire. If the oil level (4) is below the mark on the wire, add gear oil to the correct level.

## Roller Drive Chain Inspection and Adjustment

### Roller Chain Inspection



**WARNING:** Never attempt to make any adjustments while the tractor engine is running or the key is in the "ON" position in the tractor. Before leaving the operator's position, disengage power to the machine and remove ignition key.



Unlatch and open the roller drive door.

Check the chain deflection at both points (1) and (2). Press on each chain at the location shown; the chain should be able to be moved approximately 1/2 in. (12.7 mm).

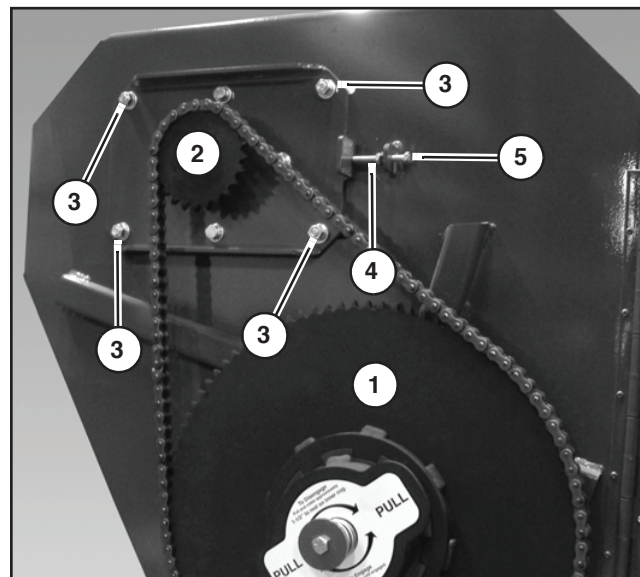
If the chain deflection is more than 1/2 in. (12.7 mm), adjust chain(s) until the deflection is approximately 1/2 in. (12.7 mm).

**NOTE:** Do not over tighten the chains. Overtightening the chains will put undue stress on the chains and other components of the roller drive.

### Roller Drive Chain Adjustment



**WARNING:** Never attempt to make any adjustments while the tractor engine is running or the key is in the "ON" position in the tractor. Before leaving the operator's position, disengage power to the machine and remove ignition key.



1. Lower Roller Drive Sprocket.
2. Upper Roller Drive Sprocket.

### Lower Sprocket Chain Adjustment

Loosen the four nuts (3) and jam nut (4). Tighten bolt (5) until the deflection of the chain is approximately 1/2 in. (12.7 mm).

Tighten jam nut securely against the stop. Tighten the four nuts securely against the mounting plate.

# Maintenance

## Troubleshooting

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

PROBLEM	POSSIBLE CAUSE	SOLUTION
PTO driveline vibration.	PTO driveline loose or worn.	Check the PTO driveline connections. Tighten or repair if necessary.
	PTO driveline u-joints dry.	Lubricate the u-joints.
	Shaft bearings inside tube are worn.	Replace shaft bearings.
Remote hydraulic controls not functioning correctly.	Hydraulic hoses not installed correctly.	Reverse hydraulic hoses at the tractor.
	Hydraulic couplers not opening.	Replace couplers.
	Open center is closed center.	Open/Close 3-bank valve.
	Rabbit/Turtle valve is contaminated.	Remove valve and clean inner spool until it moves freely.
Grain bag is not wrapping on the roller evenly.	Tractor/Unloader not aligned with the grain bag.	Adjust the Tractor/Unloader (GBU).
	Grain bag not started correctly.	Adjust grain bag.
Grain building up by the roller.	Roller wind is set too fast.	Decrease roll-up speed.
	Cross augers set too high.	Lower cross augers.
Bag cutting knife not cutting correctly.	Bag coming off knife.	Switch to lower knife setting.
	Cutting knife is not locked in the operation position.	Install pin and clip to lock the cutting knife in the operating position.
	Tractor/Unloader (GBU) not aligned with the grain bag.	Adjust the Tractor/Unloader (GBU).
Grain is not exiting the top auger housing.	Main auger not engaged at fold.	Verify top auger drive peg contacts lower auger drive.
	17 in. drive chain broken at auger bottom.	Replace drive chain.
	Drive chain broken at front chain drive.	Replace drive chain.
	PTO driveline not installed.	Install the PTO driveline.
Cross augers not rotating.	PTO driveline not installed.	Install the PTO driveline.
	Drive shaft broken on auger.	Replace the drive shaft and verify bearing alignment.
	Drive chain broken.	Replace drive chain.



## **PARTS IDENTIFICATION**



## ***Parts Identification***

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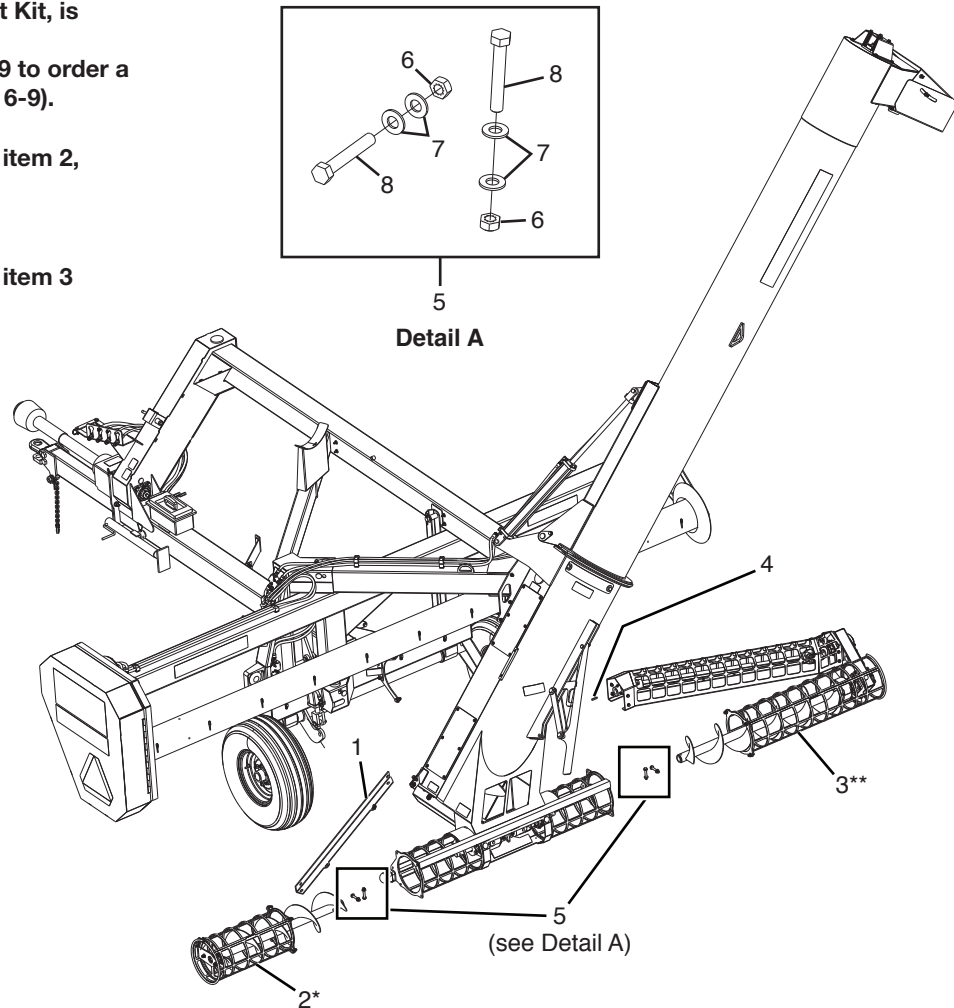
## GBU10 Cross Auger Components

### NOTE:

Item 5, Cross Auger Bolt Kit, is shipped in the toolbox.  
Use part number N37789 to order a complete bolt kit (items 6-9).

\* For parts breakdown of item 2, see page 80 for 201807. and page 81 for 202182.

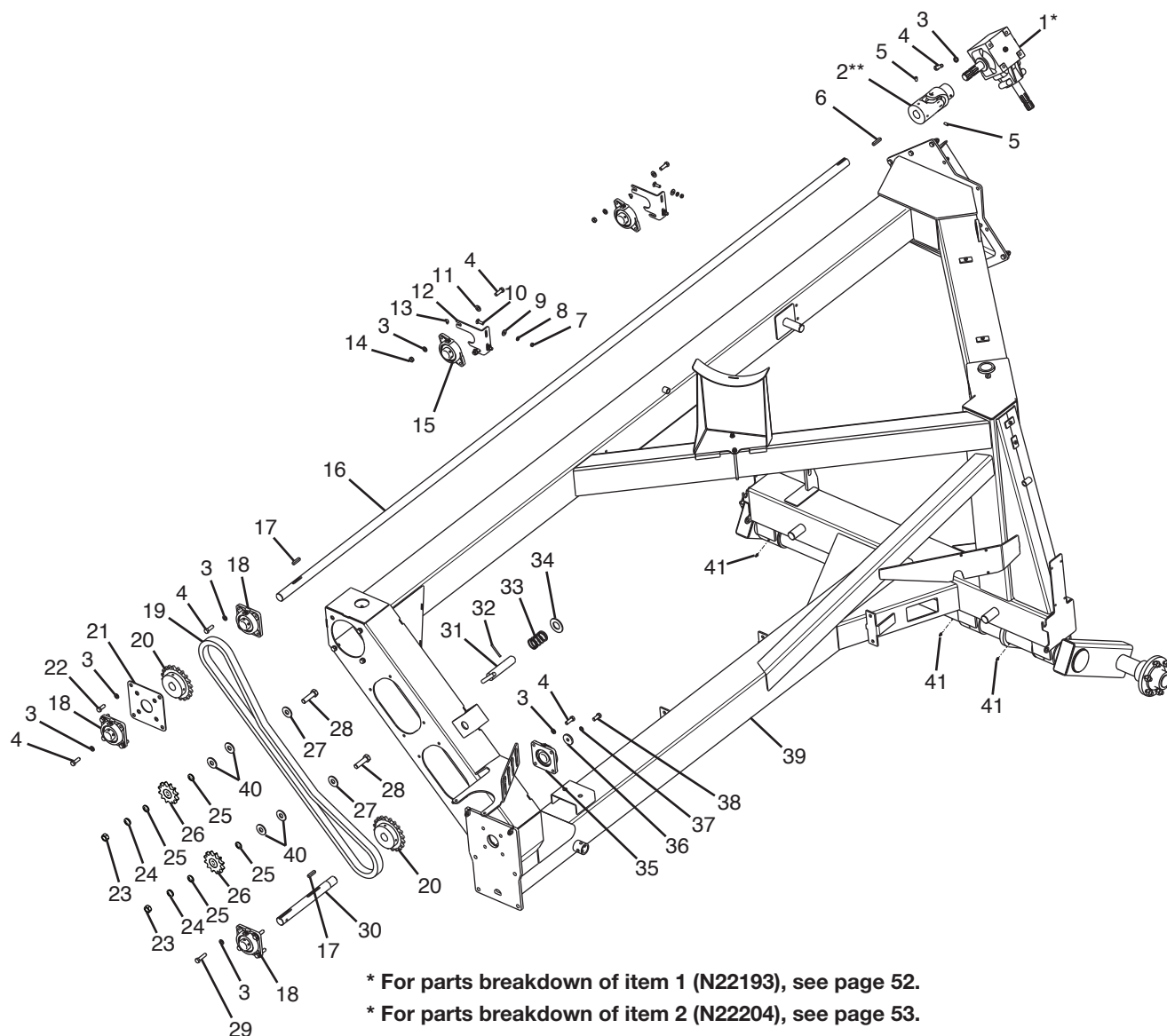
\*\* For parts breakdown of item 3 (201824), see page 78.



#	QTY.	PART #	DESCRIPTION
1	2	N37790	BRACE, GBU10 LEFT EXT ANGLE
2	1	201807	EXTENSION, GBU10 LEFT
	1	202182	EXTENSION, GBU 9' LEFT W/BRACE
3	1	201824	EXTENSION, GBU10 EDLU DRV
4	1	7189-04	KEY, 5/16" X 1-3/4"
5	2	N37789	KIT, GBU10 CROSS AUG BOLT
6	4	4054	NUT, LOCK 1/2"
7	8	4068	WASHER, 1/2" SAE FLAT
8	4	4467	BOLT, 1/2" x 3 1/4" GRADE 5

## Parts Identification

### Main Drive Subassembly



#	QTY.	PART #	DESCRIPTION
1	1	N22193	GEARBOX, SUPERIOR 500 SERIES
2	1	N22204	U-JOINT,1-3/8-6 SPLINE X1-1/2RB
3	28	4155	WASHER, LOCK 1/2"
4	24	4013	BOLT, 1/2" X 1-1/2" GRADE 5
5	2	N22210	SCREW,3/8-16 X 3/4 SCKT HD SET
6	1	7121-03	KEY, 3/8" X 2"
7	4	4233	NUT, STANDARD 3/8"
8	4	4065	WASHER, 3/8 LOCK

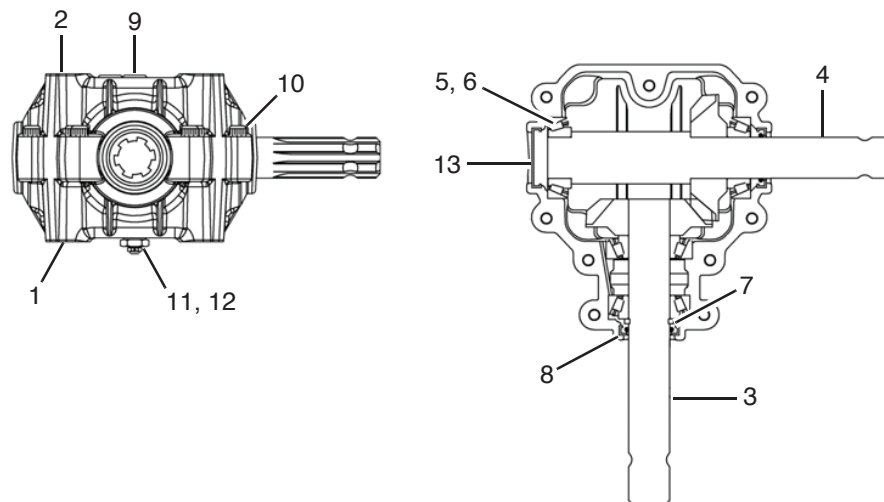
### Main Drive Subassembly

#	QTY.	PART #	DESCRIPTION
9	4	4064	WASHER, FLAT 3/8"
10	4	4390	BOLT, 3/8" X 1-1/4" CARRIAGE
11	4	4068	WASHER, 1/2" SAE FLAT
12	2	N25027	MOUNT, GBU MAIN DRV SHAFT BRG
13	2	N25062	GREASEZERK, 90 DEG 1/8" NPT
14	4	4250	NUT, STANDARD 1/2
15	2	N30230	BEARING, 1-1/2" DODGE 2BLT FLG
16	1	N22431	SHAFT, DRIVEN
17	2	7121-02	KEY, 3/8" X 1-3/4"
18	2	N30229	BEARING, 1-1/2" DODGE 4-BLT FLG
19	1	N22115	CHAIN, #80 ROLLER 108"
20	2	N22123	SPROCKET, 80B20 - 1-1/2" RB
21	1	N22250	MOUNT, GBU FRAME FRONT BEARING
22	4	4012	BOLT, 1/2" X 1-1/4" GRADE 5
23	2	4288	NUT, 3/4" STANDARD
24	2	4287	WASHER, 3/4" LOCK
25	4	4505	WASHER, 3/4ID X 1-1/4OD X 10GA
26	2	8230	SPROCKET, IDLER G1-80 CHAIN
27	2	4071	WASHER, 3/4" FLAT
28	2	4028	BOLT, 3/4" X 2-3/4" GRADE 5
29	4	4015	BOLT, 1/2" X 2" GRADE 5
30	1	N33269	SHAFT, GBU FRONT DRIVE LOCKED
31	1	N22070	PIN, GBU ROLLER TRANSPORT LOCK
32	1	N22286	PIN, ROLL 1/4" X 2-1/2"
33	1	N22253	SPRING, COMPRESSION
34	1	N22339	WASHER, 1.44ID x 2.75OD x .136TH
35	1	N30228	BEARING, 1-7/16" DODGE 4-BLT FL
36	1	4074	WASHER, 2" OD X 1/2" ID X 1/4"
37	1	N16472	WASHER, 1/2 NORDLOCK
38	1	4535	BOLT, 1/2-20 X 1-1/4 GR 8
39	1	N22419	FRAME, GBU EXTENDED WELDED
40	4	4479	WASHER, 2" OD X 3/4" ID X 1/4T
41	3	4105	GREASE-ZERK, 1/4" SCREW-IN



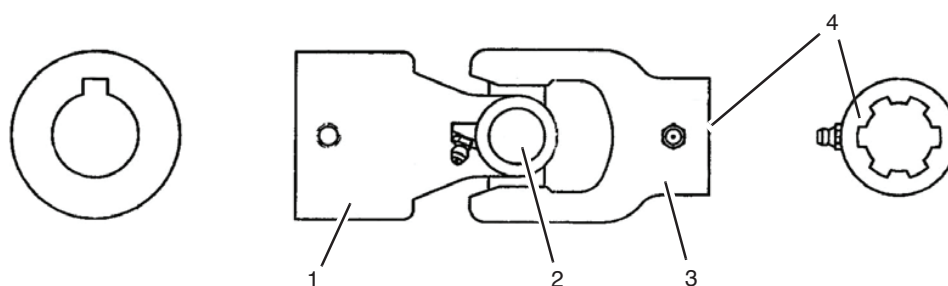
## Parts Identification

### Gearbox (N22193)



#	QTY.	PART #	DESCRIPTION
1	1	N26557	HSG, R500 MACH TAP-STD
2	1	N26558	HSG, MACH THRU R500
3	1	N26559	SUBA, STUB SHAFT/GEAR 1:1 6T
4	1	N26560	SUBA, CROSS SHAFT/GEAR R50 6T
5	4	N26549	BRG, CONE TK#14137A 1.375
6	4	N26548	BRG, CUP TK#14276 2.717
7	1	N26561	RETAINING RING, EXT 1.375 SHFT
8	2	N26550	SEAL, 1.375 - 2.00 - 0.313 (R) TC
9	3	N26554	PLUG, 1/2" - 14NPT SCHD W/3M
10	9	N26562	BOLT, 3/8" - 16 x 1.50 SHCS
11	1	N26555	PLUG, 1/8" - 27 NPT TO VENT 5 PSI
12	1	N26556	BUSHING, 1/2" NPT TO 1/8 NPT
13	1	N26551	SEAL, END CAP, 2.00 - 0.31

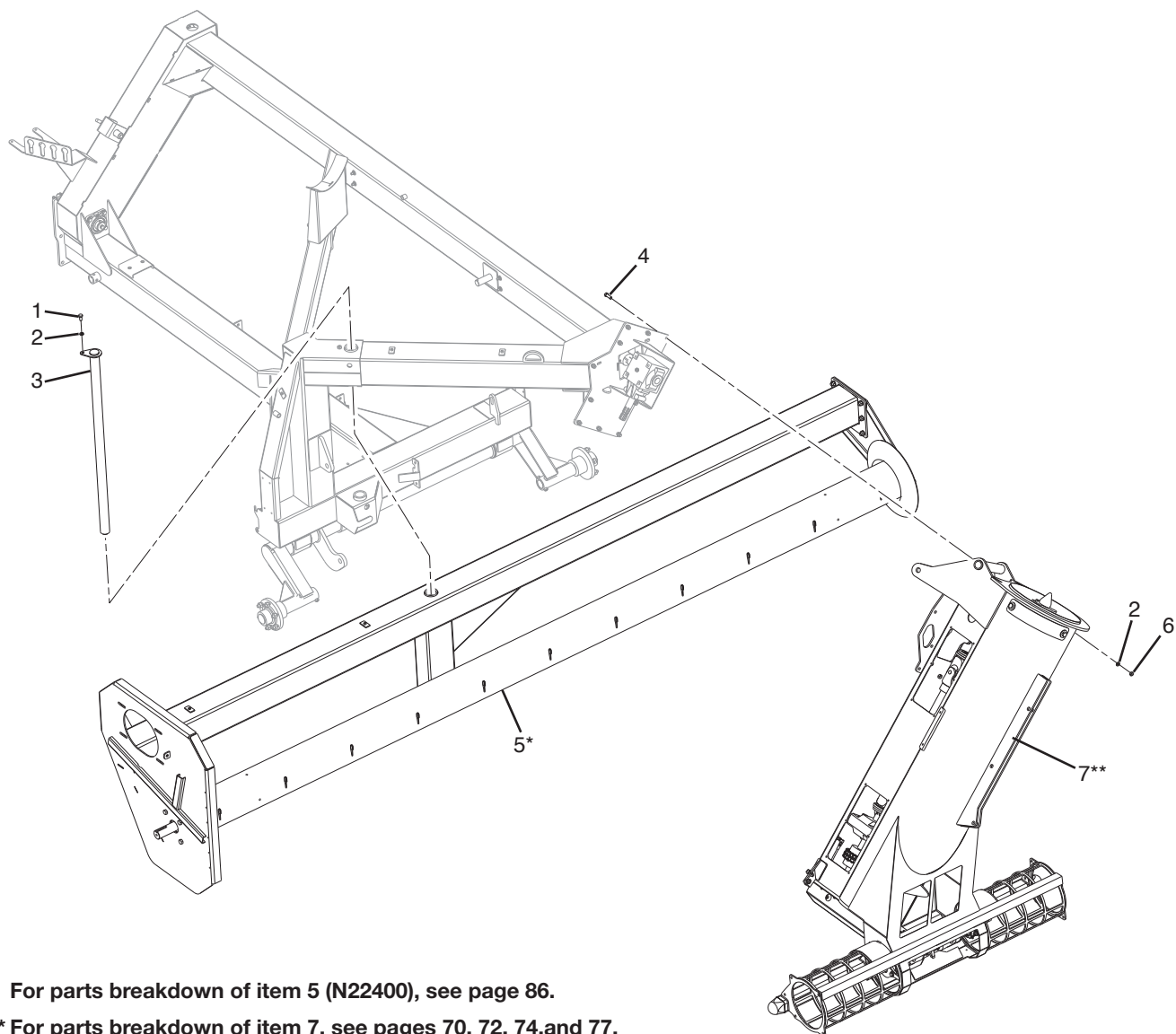
## U-Joint (N22204)



#	QTY.	PART #	DESCRIPTION
1	1	N26557	HSG, R500 MACH TAP-STD
2	1	N26558	HSG, MACH THRU R500
3	1	N26559	SUBA, STUB SHAFT/GEAR 1:1 6T
4	1	N26560	SUBA, CROSS SHAFT/GEAR R50 6T

## Parts Identification

### Main Drive Subassembly (Cont'd)

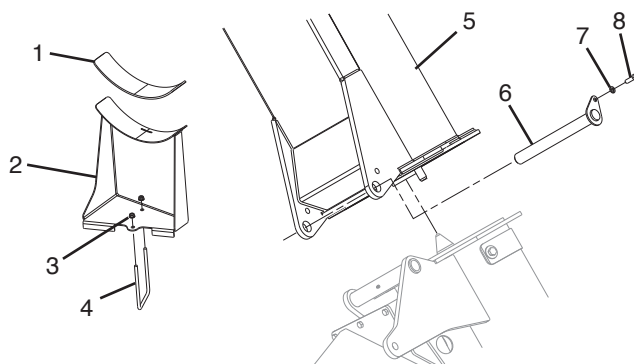


\* For parts breakdown of item 5 (N22400), see page 86.

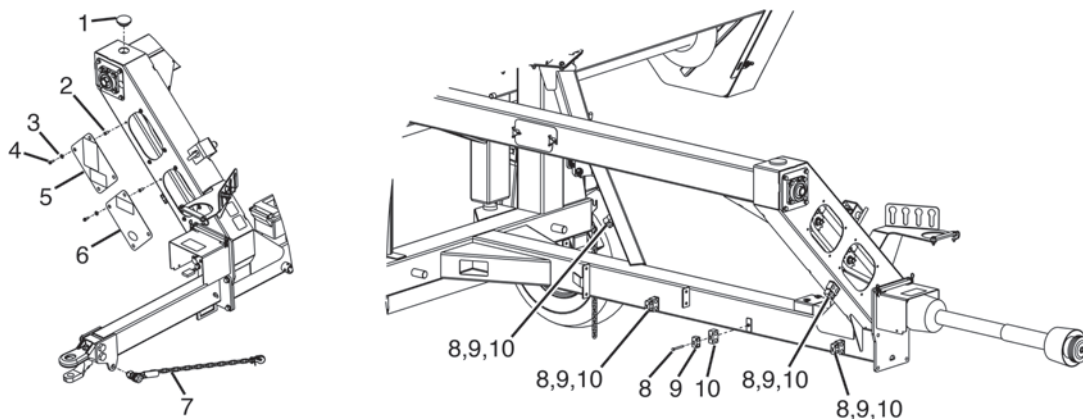
\*\* For parts breakdown of item 7, see pages 70, 72, 74, and 77.

#	QTY.	PART #	DESCRIPTION
1	1	4011	BOLT, 1/2" X 1" GRADE 5
2	12	4155	WASHER, LOCK 1/2"
3	1	N22409	PIN, ROLLER PIVOT SHAFT
4	11	4013	BOLT, 1/2" X 1 1/2" GRADE 5
5	1	N22400	ROLLER, GBU 10' ASSEMBLY
6	11	4250	NUT, STANDARD 1/2"
7	1	N41036	UNIT, GBU10 COMP LOWER 2

## Main Drive Subassembly (Cont'd)



#	QTY.	PART #	DESCRIPTION
1	1	202592	GASKET, 3.00" X 14.63" X .25"
2	1	N41124	WELDMENT, GBU10 SADDLE
3	2	4979	NUT, LOCK 3/8" SER FLG
4	1	N41127	U-BOLT, 3/8-16 X 4 X 6-5/8 SQ
5	1	N33029	AUGER, GBU10 TOP W/ADJ DEF
6	1	N22785	PIN, GBU HINGE FIXED
7	1	4155	WASHER, LOCK 1/2"
8	1	4013	BOLT, 1/2" X 1-1/2" GRADE 5

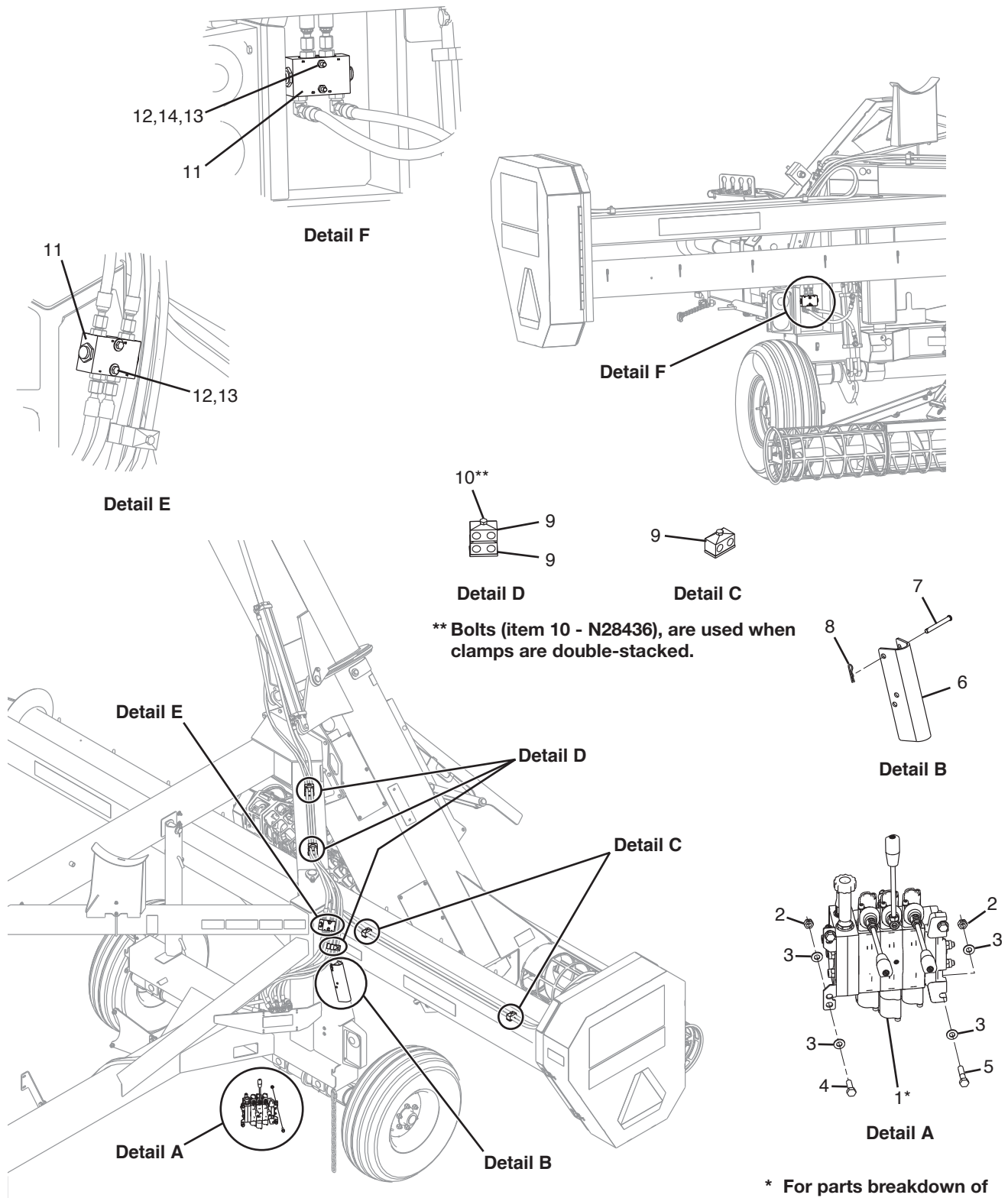


#	QTY.	PART #	DESCRIPTION
1	1	N33214	PLUG, 2 - 1/2" CUSTOM RUBBER
2	8	N33677	NUT, RIVET 5/16" FOR 3/16" MAT
3	8	4369	WASHER, FLAT 5/16"
4	8	4560	BOLT, 5/16" X 1" SER FLG
5	1	201274	COVER, GBU10 FRONT CHAIN TOP
6	1	201275	COVER, GBU10 FRONT CHAIN BOT
7	1	N24248	CHAIN, SAFETY W/MOUNT HARDWARE
8	5	4004	BOLT, 5/16" X 3" GR 5
9	5	N21365	CLAMP, 3/8" DOUBLE HOSE
10	5	N13383	CLAMP, DBL 1/2" SUPP HOSE



# Parts Identification

## Grain Bag Unloader Base



\* For parts breakdown of item 1 (200623), see page 58.

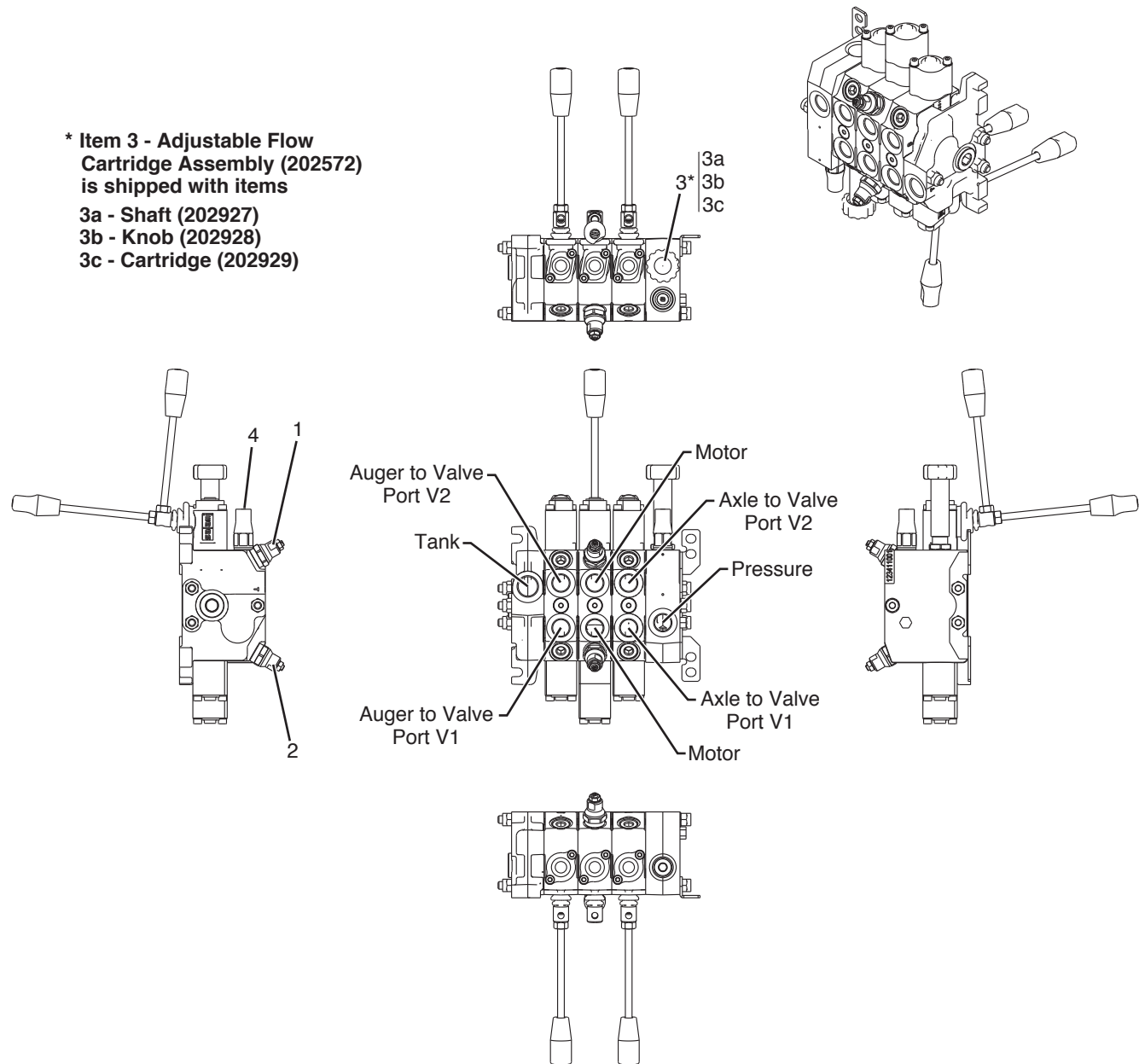
### Grain Bag Unloader Base

#	QTY.	PART #	DESCRIPTION
1	1	200623	VALVE, 3 SPOOL
2	4	4051	NUT, LOCK 5/16"
3	8	N28927	WASHER, FLAT 5/16 SAE
4	2	4203	BOLT, 5/6" X 1" GRADE 5
5	2	4241	BOLT, 5/6" X 1-1/2" GRADE 5
6	1	N19768	STOP, CYLINDER 9.5" SAFETY
7	1	4093	PIN, 3/8" X 3" (2.75" USEABLE)
8	1	4089	CLIP, HAIRPIN .093 X 1-5/8"
9	8	N21365	CLAMP, 3/8" DOUBLE HOSE
10	3	N28436	BOLT, 5/16" X 2-1/4" GR5
11	2	200624	VALVE, CHECK DUAL PILOT INLINE
12	4	4002	BOLT, 1/4" X 2-1/4" GRADE 5
13	4	3183	WASHER, FLAT 1/4"
14	2	4050	NUT, 1/4" LOCK

# Parts Identification

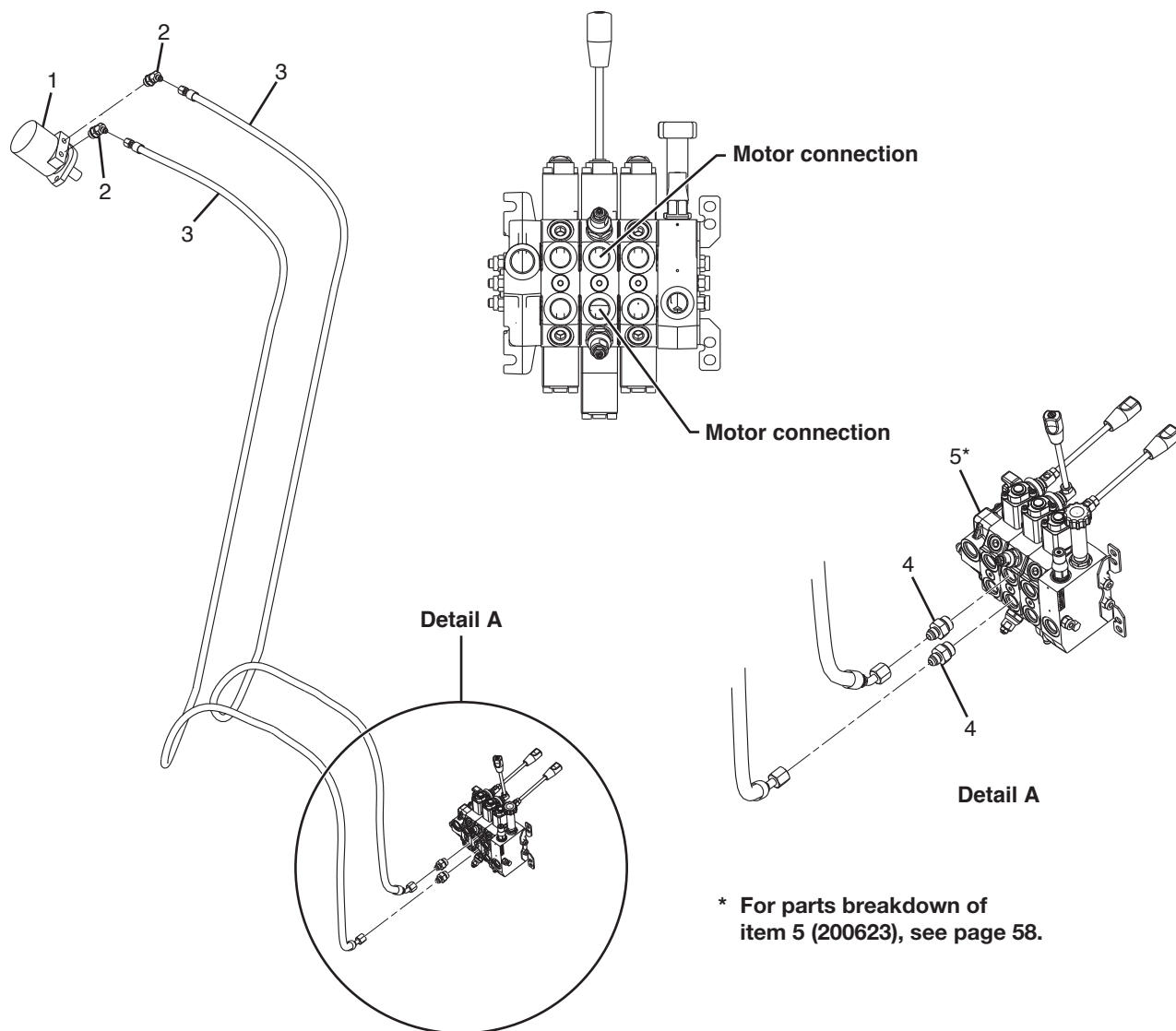
## Control Valve (200623)

\* Item 3 - Adjustable Flow Cartridge Assembly (202572) is shipped with items  
3a - Shaft (202927)  
3b - Knob (202928)  
3c - Cartridge (202929)



#	QTY.	PART #	DESCRIPTION
1	1	202570	VALVE, PORT RELIEF 50-90 BAR
2	1	202571	VALVE, PORT RELIEF 91-130 BAR
3	1	202572	CARTRIDGE, ADJUSTABLE FLOW
3a	1	202927	SHAFT, VALVE EXTENDED
3b	1	202928	KNOB, V.P.R. VALVE 200623
3c	1	202929	CARTRIDGE, ADJUSTABLE FLOW VD6A
4	1	202830	CARTRIDGE, RELIEF 3000 PSI

## Hydraulics, Motor Connections



\* For parts breakdown of item 5 (200623), see page 58.

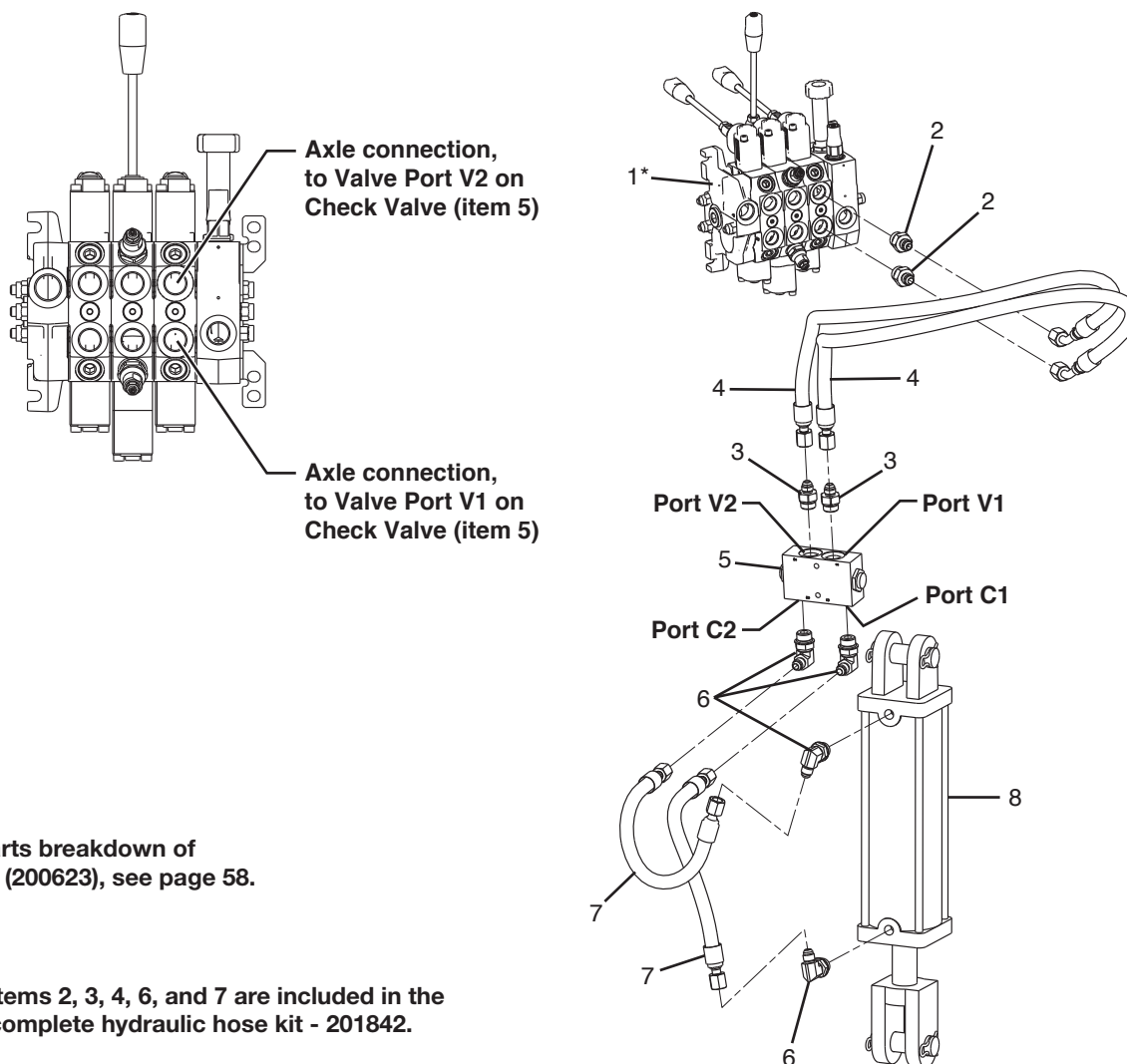
**NOTE:** Items 2, 3, and 4 are included in the complete hydraulic hose kit - 201842.

#	QTY.	PART #	DESCRIPTION
1	1	206407	MOTOR, ORBITAL DAN FOSS
		206408	KIT, DAN FOSS SEAL
2	2	N22720	ELBOW, 45 DEG - 6MJIC - 10MOR
3	2	N22725	HOSE, 3/8 X 140 -6FJX -6FJX 45°
4	2	N17022	ADAPTER, 6MJIC - 8MOR
5	1	200623	VALVE, 3 SPOOL



## Parts Identification

### Hydraulics, Axle Cylinder Connections

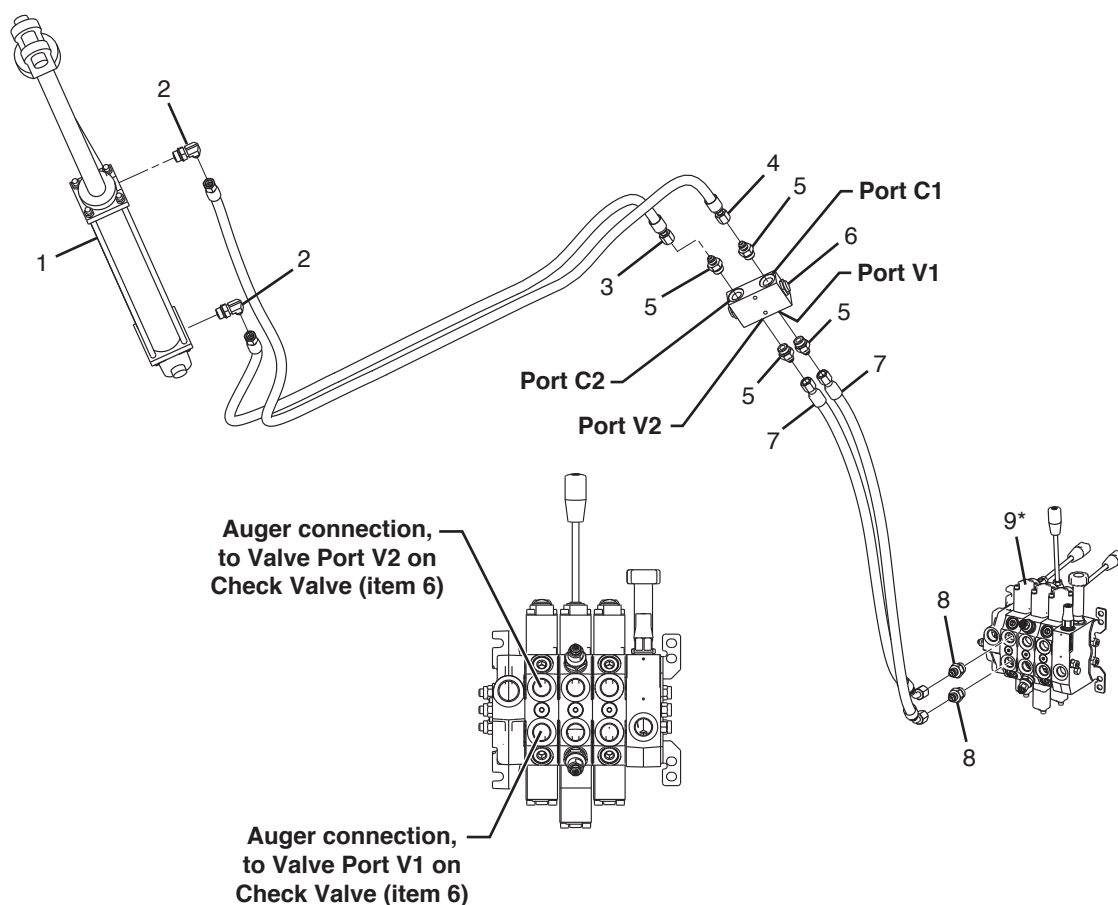


\* For parts breakdown of item 1 (200623), see page 58.

**NOTE:** Items 2, 3, 4, 6, and 7 are included in the complete hydraulic hose kit - 201842.

#	QTY.	PART #	DESCRIPTION
1	1	200623	VALVE, 3 SPOOL
2	2	N22722	RESTRICTOR, 6MJIC - 8MOR - .031
3	2	N17022	ADAPTER, 6MJIC - 8MOR
4	2	201846	HOSE, 3/8 X 42 -6FJX -6FJX 45°
5	1	200624	VALVE, CHECK DUAL PILOT INLINE
6	4	N20037	ELBOW, 90 DEG - 6MJIC - 8MOR
7	2	201848	HOSE, 3/8 X 19 -6FJX -6FJX
8	1	N21715	CYLINDER, 3" X 8" HYD 3000 PSI
	1	N26540	KIT, SEAL

## Hydraulics, Auger Cylinder Connections



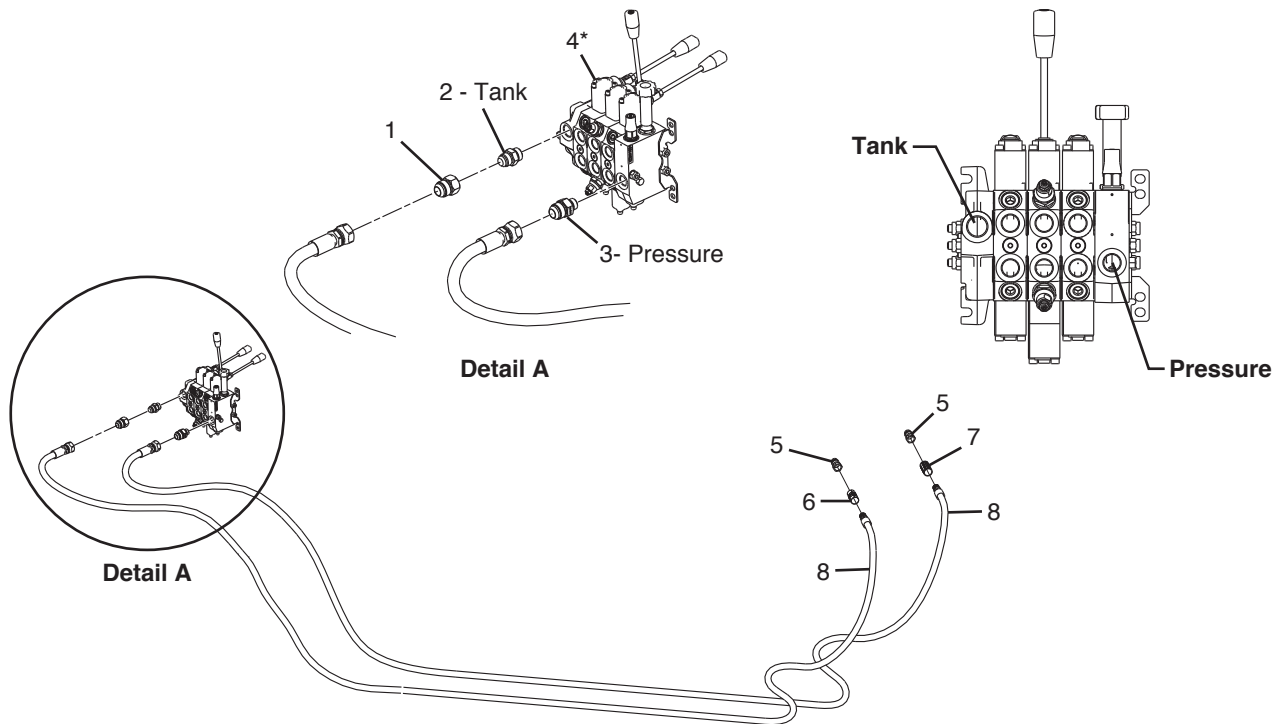
**NOTE:** Items 2, 3, 4, 5, 7, and 8 are included in the complete hydraulic hose kit - 201842.

\* For parts breakdown of item 9 (200623), see page 58.

#	QTY.	PART #	DESCRIPTION
1	1	N22713	CYLINDER, 2-1/2 X 24 3000 PSI
	1	N26541	KIT, CYLINDER SEAL
2	2	N20037	ELBOW, 90 DEG - 6MJIC - 8MOR
3	1	201852	HOSE, 3/8 X 73 -6FJX -6FJX
4	1	201854	HOSE, 3/8 X 99 -6FJX -6FJX
5	4	N17022	ADAPTER, 6MJIC - 8MOR
6	1	200624	VALVE, CHECK DUAL PILOT INLINE
7	2	201850	HOSE, 3/8 X 30 -6FJX -6FJX 45°
8	2	N22722	RESTRICTOR, 6MJIC - 8MOR - .031
9	1	200623	VALVE, 3 SPOOL

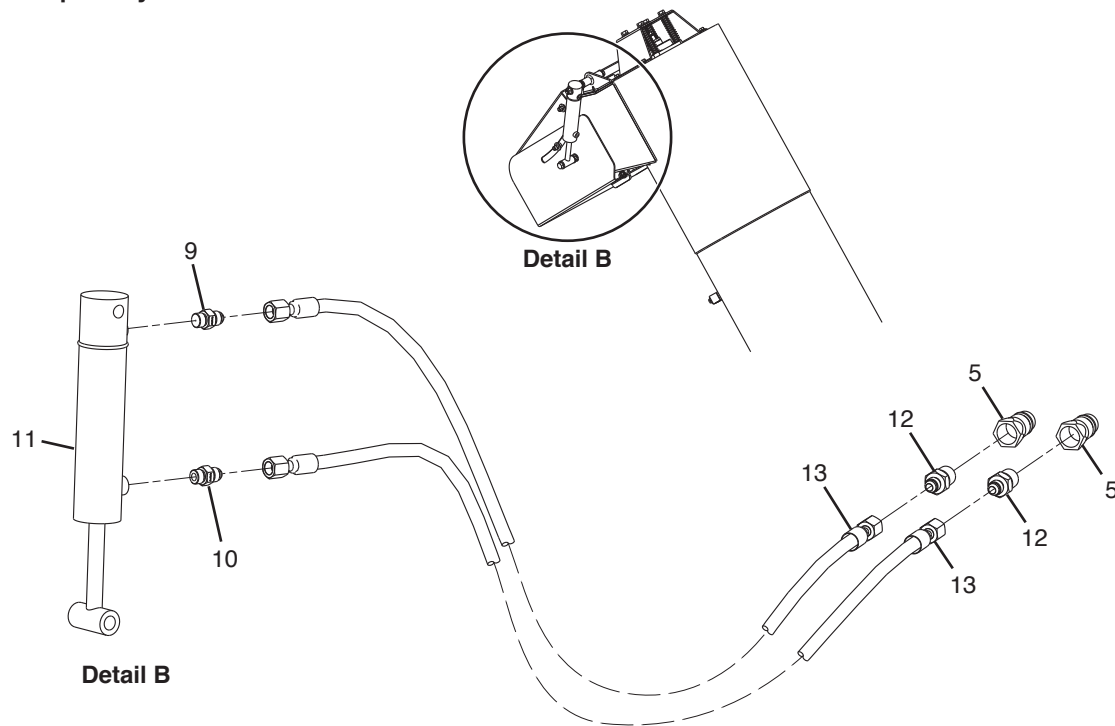
## Parts Identification

### Hydraulics, Tractor and Diverter Connections



**NOTE:** Items 1-3, 5-10 and 12-13 are included in the complete hydraulic hose kit - 201842.

\* For parts breakdown of item 4 (200623), see page 58.



### Hydraulics, Tractor and Diverter Connections

#	QTY.	PART #	DESCRIPTION
1	1	201857	ADAPTER, 10FJIC - 12MJIC
2	1	201856	VALVE, CHECK -10MOR -10MJIC
3	1	201405	ADAPTER, 12MJIC - 8MOR
4	1	200623	VALVE, 3 SPOOL
5	4	N11825	COUPLER, 1/2" MALE PIONEER
6	1	N24823	DECAL, TANK
7	1	N24822	DECAL, PRESSURE
8	2	N22719	HOSE, 1/2" X 264" -8MP -12FJX
9	1	N29846	RESTRICTOR, 6MJIC - 6MOR -.031
10	1	N24821	ADAPTER, 6MOR - 6MJIC
11	1	N30999	CYLINDER, 1"X 4" HYD 10" COMP
12	2	N23833	ADAPTER, 6MJIC - 8MP
13	2	N29845	HOSE, 1/4" X 500" - 6FJX -6FJX



## Parts Identification

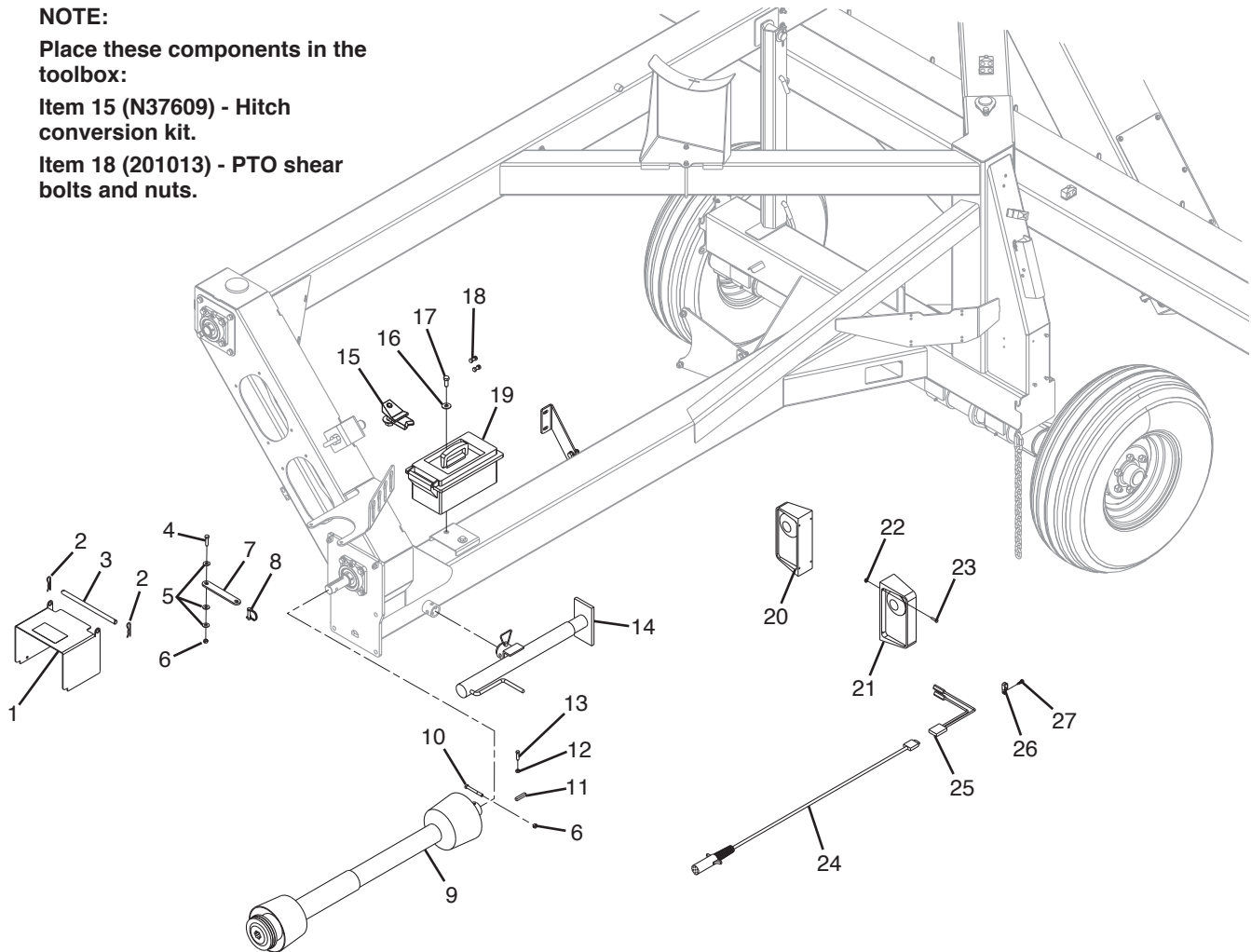
### Grain Bag Unloader Base (Cont'd)

**NOTE:**

Place these components in the toolbox:

Item 15 (N37609) - Hitch conversion kit.

Item 18 (201013) - PTO shear bolts and nuts.



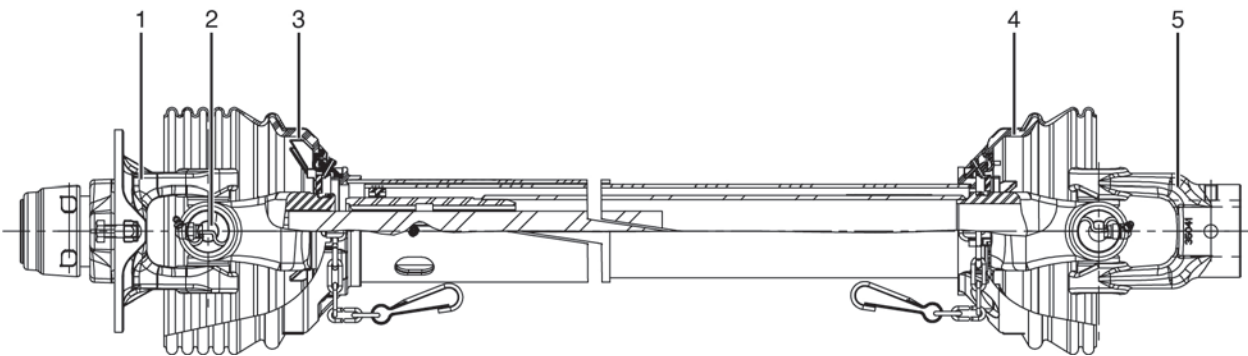
\* For parts breakdown of item 9 (N153391), see page 66.

### Grain Bag Unloader Base (Cont'd)

#	QTY.	PART #	DESCRIPTION
1	1	N68848	SHIELD, GBL10CE PTO W/DECAL
2	2	4336	CLIP, HAIRPIN 1/8" X 2-1/4"
3	1	N22553	PIN, GBU PTO SHIELD
4	1	4006	BOLT, 3/8" X 1-1/2" GRADE 5
5	3	4064	WASHER, FLAT 3/8"
6	2	4052	NUT, LOCK 3/8"
7	1	N27990	BAR, GBL SWING AUG PTO HOLDER
8	1	N27991	PIN, 3/8" X 1-3/8" RETAINER
9	1	N153391	PTO, 1-3/8-6 SPLINE 1-1/2 RB
10	1	4978	BOLT, 3/8" X 3-1/4" GRADE 5
11	1	7121-03	KEY, 3/8" X 2"
12	1	4061	NUT, 3/8" JAM
13	1	4082	SCREW, SQ HEAD SET 3/8 X 1-1/4
14	1	8047	JACK, BULLDOG SWL 158DTSF
15	1	N37609	KIT, GBU HITCH CONV PART
16	2	4486	WASHER, 1/2" FLAT
17	2	4012	BOLT, 1/2" X 1-1/4" GRADE 5
18	1	201013	GROUP, GBL/XLB PTO SHEAR BOLT
19	1	N25105	TOOLBOX, WINCH STORAGE
20	1	N16290	LIGHT, RIGHT
21	1	N16289	LIGHT, LEFT
22	8	N105230	NUT, LOCK 1/4" SER FLANGE
23	8	4000	BOLT, 1/4" X 1" GRADE 5
24	1	N22784	HARNESS, GBU 4' BRAIDED TOUNGE
25	1	N16288	HARNESS, 25' REAR WISHBONE
26	3	N25234	CLAMP, LOOP 1/2" X 1-3/4 VYNIL
27	3	N25235	SCREW, 1/4-20 X 1" SELF-TAPPING

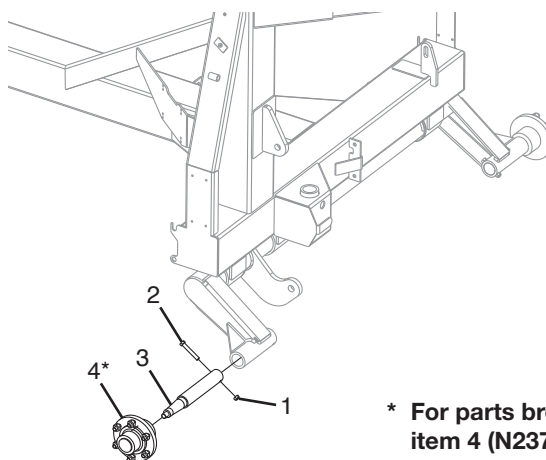
# Parts Identification

## PTO (N153391)



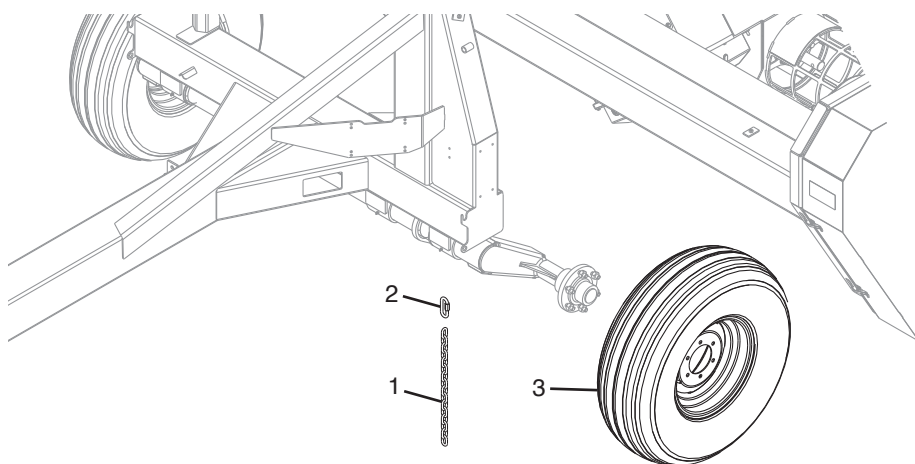
#	QTY.	PART #	DESCRIPTION
1	1	N153459	BALL SHEAR, 35
2	2	N153460	CROSS KIT, 35R
3	1	N153461	OUTER GUARD
4	1	N153462	INNER GUARD
5	1	8209-08	YOKE, 35

## Grain Bag Unloader Base (Cont'd)



\* For parts breakdown of item 4 (N23778), see page 68.

#	QTY.	PART #	DESCRIPTION
1	2	4054	NUT, LOCK 1/2" TOP
2	2	4467	BOLT, 1/2" x 3 1/4" GRADE 5
3	2	N25199	SPINDLE, GBL
4	2	N23778	HUB, 6 BOLT 6" PAT W/STUDS

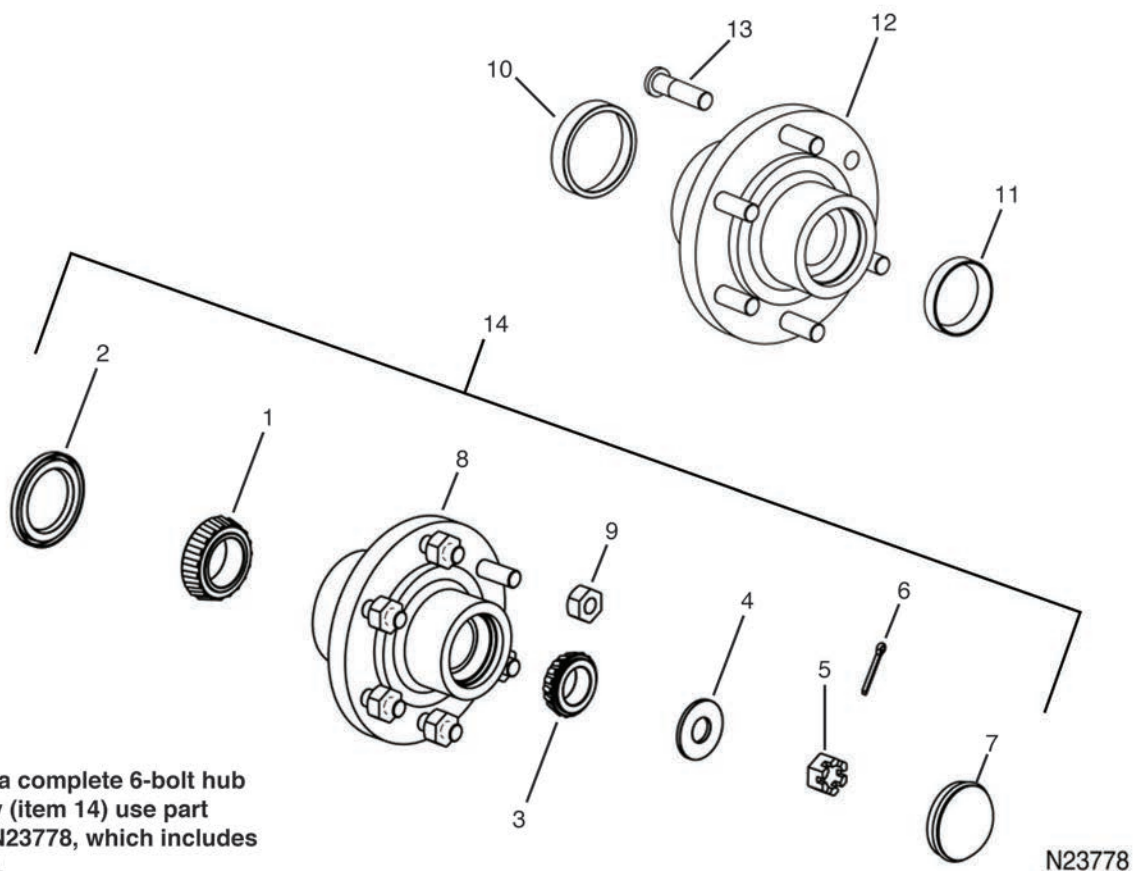


#	QTY.	PART #	DESCRIPTION
1	1	N33066	CHAIN, GBU10 HEIGHT GAUGE
2	1	N10177	LINK, 3/8" CHAIN CONNECTOR
3	2	201834	TIRE, MNTD 12.5L-15SL 10 PLY



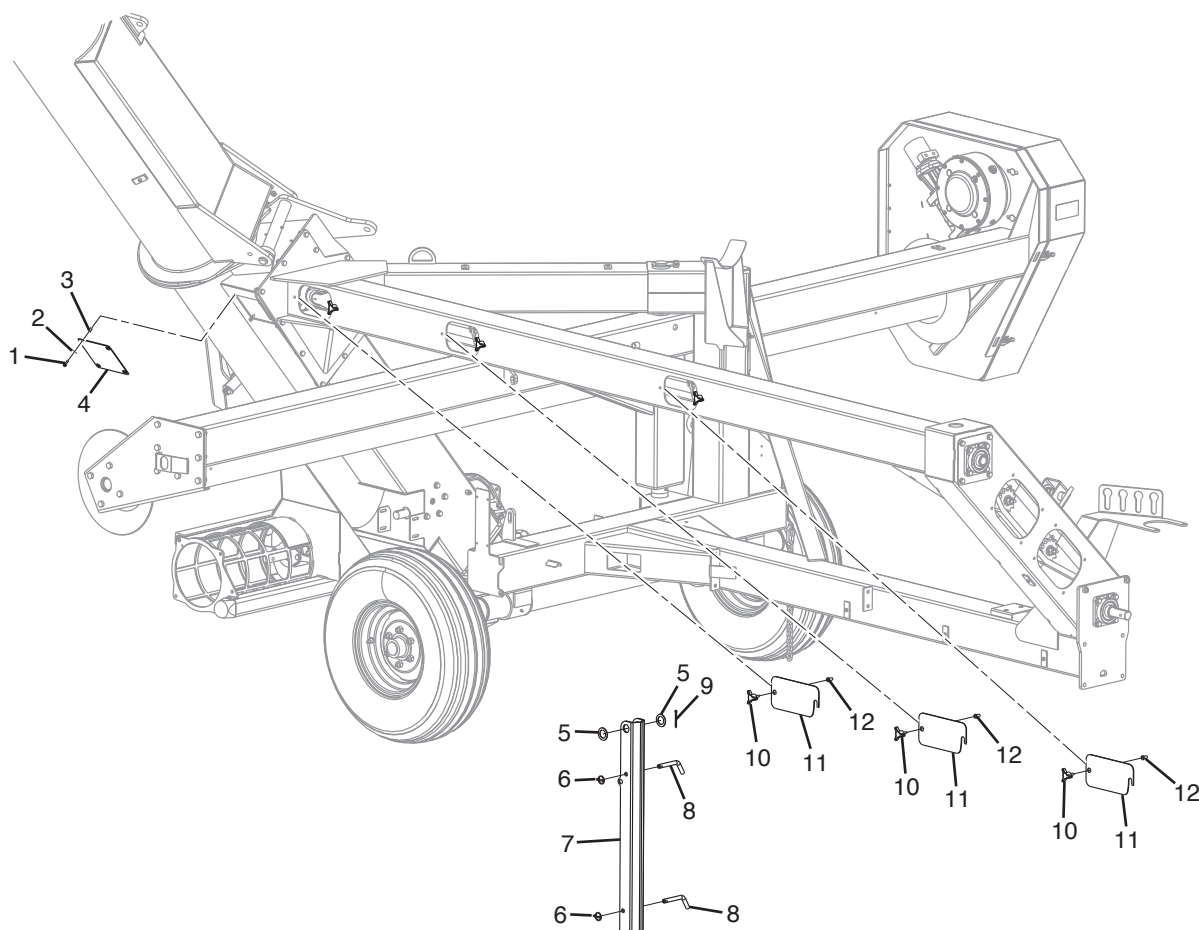
## Parts Identification

### 6-Bolt Hub



#	QTY.	PART #	DESCRIPTION
1	1	8082 - 03	CONE, BRG. (LARGE) 6 BOLT HUB LM67048
2	1	8082 - 04	SEAL, 6 BOLT HUB GREASE
3	1	8082 - 06	CONE, BRG. (SMALL) 6 BOLT HUB LM501349
4	1	8082 - 07	WASHER, 6 BOLT HUB
5	1	8082 - 08	NUT, CASTLE P251701 - SPINDLE
6	1	8082 - 09	PIN, COTTER (6 BOLT HUB)
7	1	8082 - 10	CAP, END (6 BOLT HUB)
8	NA	NA	HUB, 6 BOLT STUD (N23778 SERVC)
9	6	N23764	NUT, LUG 9/16 - 18UNF (N23778)
10	1	8082 - 02	CUP, BEARING (LARGE) 6BLT. HUB LM501310
11	1	8082 - 05	CUP, BEARING (SMALL) 6BLT. HUB LM67010
12	NA	NA	CASTING, HUB 6 BOLT (NO PARTS)
13	6	N27304	STUD, HUB 9/16 - 18UNF
14	1	N23778	HUB, 6 BOLT 6" PAT W/STUDS

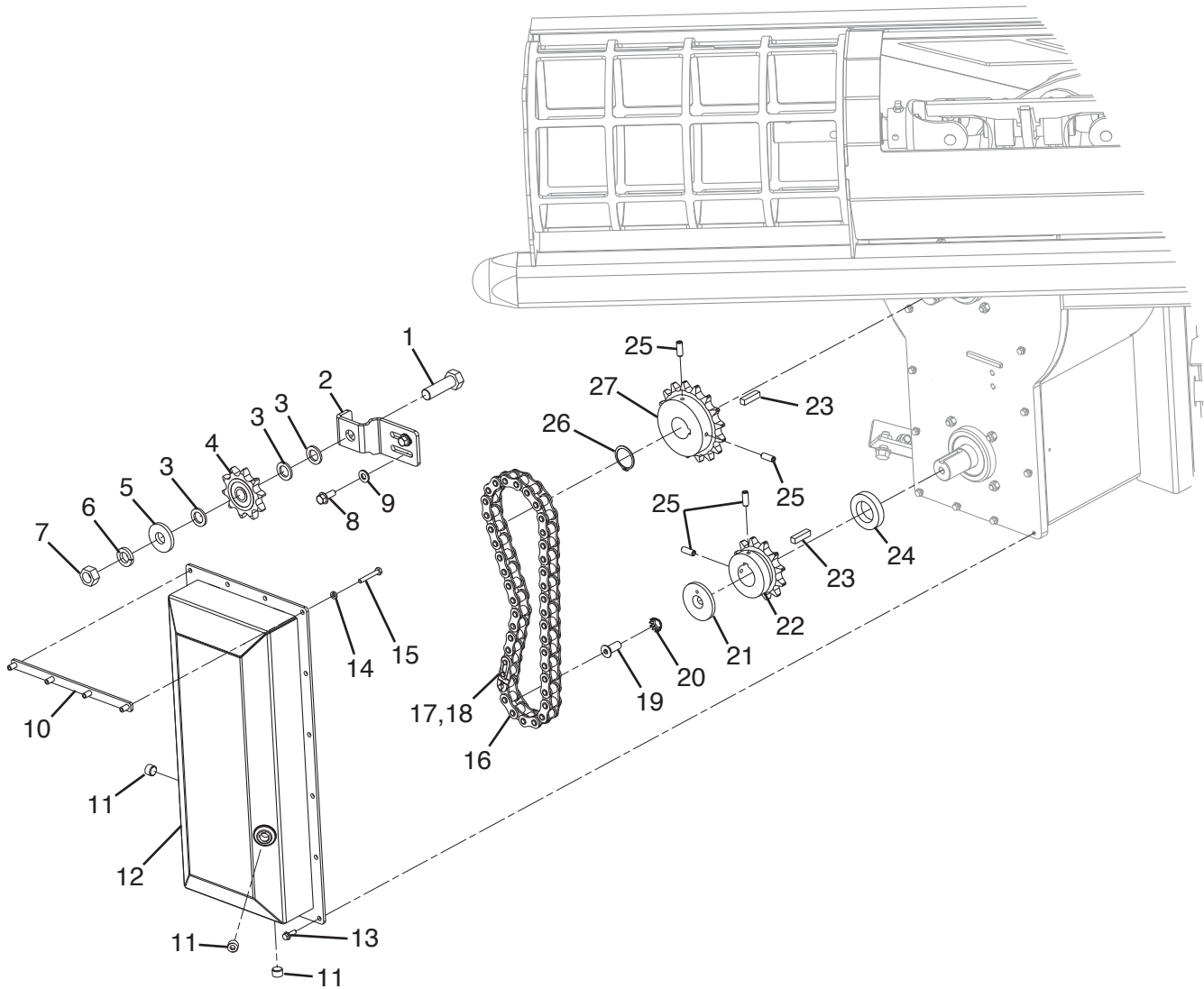
## GBU Subshields Subassembly



#	QTY.	PART #	DESCRIPTION
1	4	N30371	BOLT, 1/4" X 1" SER FLANGE
2	4	3183	WASHER, FLAT 1/4"
3	4	N33675	NUT, RIVOT 1/4" FOR 12 GA MAT
4	1	N41072	COVER, GBU10 LOWER UNIT 1
5	2	N22346	WASHER, 1.38ID X 2.13OD X 14GA
6	2	N22192	PIN, LINCH 3/16" X 1-9/16"
7	1	N37607	BRACE, GBU10 FLIP UP FRAME
8	2	N22343	PIN, 5/8" X 3" BENT HITCH
9	1	4329	PIN, COTTER 7/32" X 2-1/2"
10	6	N37128	KNOB, 5/16" X 1"
11	3	N33672	COVER, GBU10 FRAME SWINGING
12	6	N33677	NUT, RIVOT 5/16" FOR 3/16" MAT

## Parts Identification

### GBU Bottom Auger Assembly



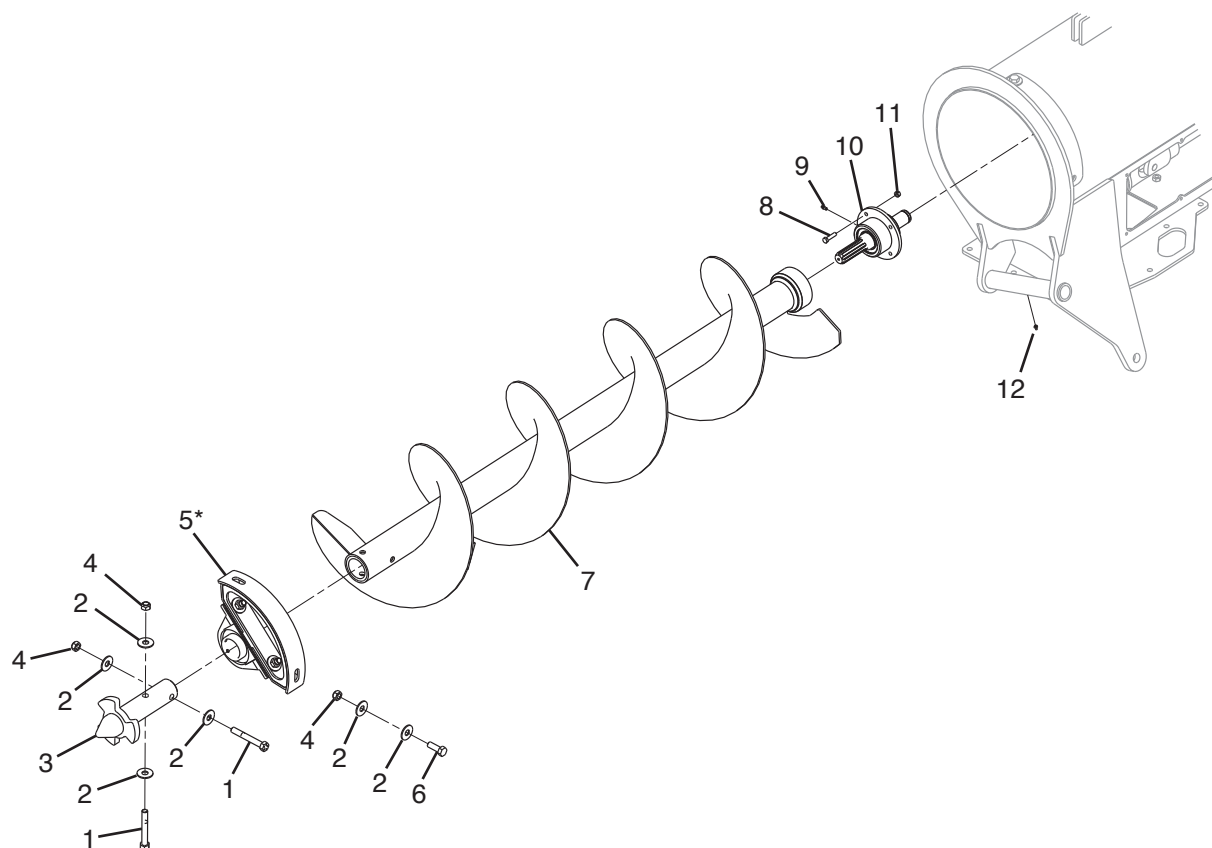
### GBU Bottom Auger Assembly

#	QTY.	PART #	DESCRIPTION
1	1	4224	BOLT, 3/4" X 2-1/2" GR 5
2	1	201269	BRACKET, GBU10 LU PAN IDLER 2
3	3	4505	WASHER, 3/4" ID x 1-1/4" OD x 10 GA
4	1	N22765	SPROCKET, IDLER 80B10
5	1	4479	WASHER, 2" OD X 3/4" ID X 1/4T
6	1	4287	WASHER, 3/4" LOCK
7	1	4288	NUT, 3/4" STANDARD
8	2	N26743	BOLT, 3/8" X 1" SER FLG
9	2	N37756	WASHER, NORD-LOCK 3/8" SP
10	1	N37158	FLANGE, GBU10 OIL PAN RIVET NUT
11	3	N22284	3/8 PT DRAIN/FILL PLUG
12	1	N22268	PAN, GBU OIL
13	12	4573	BOLT, 1/4" x 3/4" SER FLANGE
14	4	4231	WASHER, LOCK 1/4"
15	4	4001	BOLT, 1/4" x 1-3/4" GRADE 5
16	1	N30965	CHAIN, GBU10 MAIN AUG 80# ROLLER 42 P"
17	1	N29997	LINK, #80 CHAIN HALF UST
18	1	N29998	LINK, #80 CHAIN CONNECTOR UST
19	1	4468	SCREW, 1/2" - 20UNF x 1-1/4" FN TD FL HD CAP
20	1	4076	WASHER, 1/2" EXT CNTSK LOCK
21	1	4075	WASHER, 2-5/8" OD BEARING RETAINING
22	1	N33721	SPROCKET, 80B12 - 1-1/2" KEYED
23	2	7121 - 01	KEY 3/8" x 1-1/2"
24	1	N30962	SPACER, GBU10 DISC AUG SPKT
25	4	N37776	SCREW, 3/8" x 1" SET CUP POINT
26	1	N22254	RING, RETAINING SNAP
27	1	N22467	SPROCKET, 80B16 - 1-1/2" KEYED



## Parts Identification

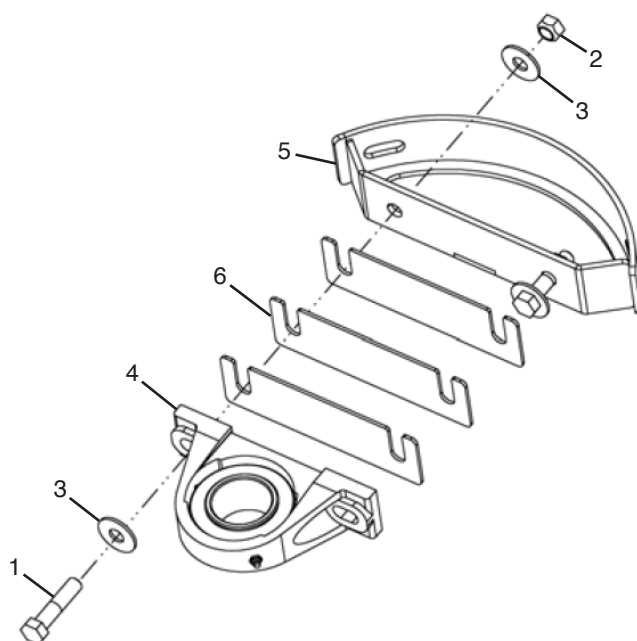
### GBU Bottom Auger Assembly (Cont'd)



\* For parts breakdown of item 5 (N29588), see page 73.

#	QTY.	PART #	DESCRIPTION
1	2	N26751	BOLT, 5/8" X 4-1/2" GR 8
2	8	4069	WASHER, FLAT 5/8"
3	1	N22673	POINT, GBU MAIN AUGER ALIGNMENT
4	4	4055	NUT, LOCK 5/8" TOP
5	1	N29588	HANGER, GBU12 AUGER
6	2	4021	BOLT, 5/8 X 1-3/4 GRADE 5
7	1	N22677	AUGER, GBU BOTTOM W/COMPONENTS
8	4	4006	BOLT, 3/8" X 1-1/2" GRADE 5
9	1	N25470	GREASE-ZERK, 1/4" SCREW-IN LONG
10	1	N37161	OHLA, GBU SPLINED RADIUS
11	4	4052	NUT, LOCK 3/8"
12	1	4105	GREASE-ZERK, 1/4" SCREW-IN

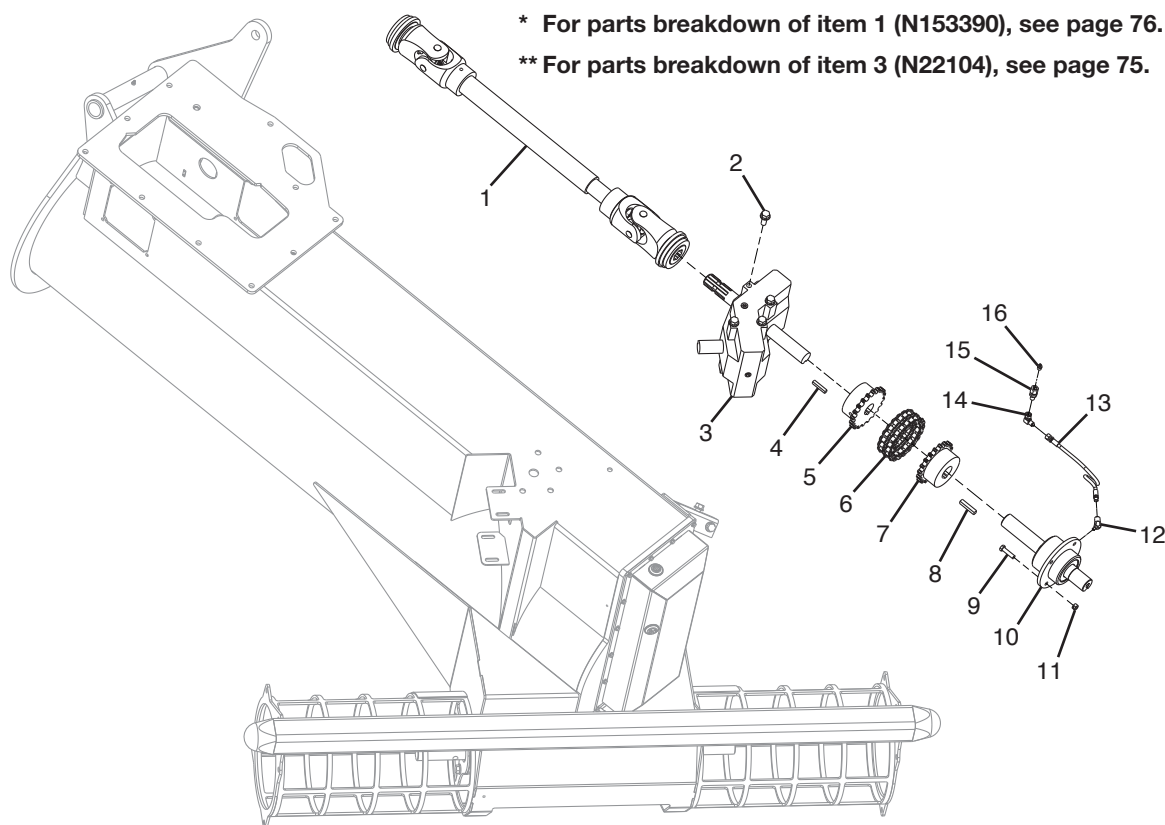
### Hanger, Auger (N29588)



#	QTY.	PART #	DESCRIPTION
1	2	4024	BOLT, 5/8" x 2 - 3/4" GRADE 5
2	2	4055	NUT, LOCK 5/8" TOP
3	4	4069	WASHER, FLAT 5/8"
4	1	N30239	BEARING, 2 - 7/16" PLW BLK 2 - BOLT
5	1	N29589	BRACKET, GBU12 AUGER HANGER
6	3	N29593	SHIM, GBU12 AUG HANGER BRK

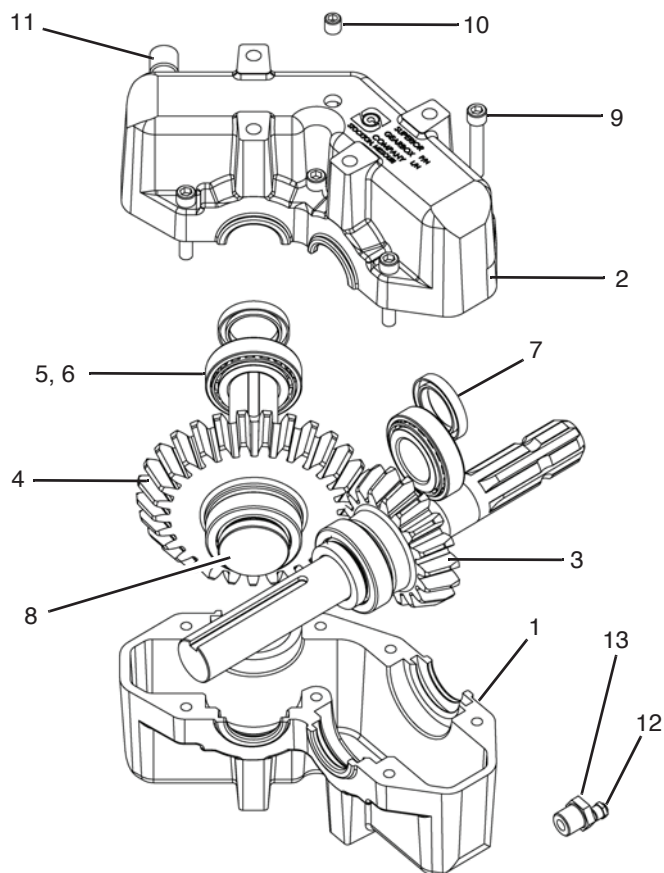
## Parts Identification

### GBU Bottom Auger Assembly (Cont'd)



#	QTY.	PART #	DESCRIPTION
1	1	N153390	DRIVELINE, 1-3/8 6 SPLINE 35E
2	4	N18360	BOLT, 1/2-13 X 1-1/4 SER FLG
3	1	N22104	GEARBOX, SUPERIOR 50 DEG H130
4	1	7189-04	KEY, 5/16" X 1-3/4"
5	1	N25116	SPROCKET, 6020 F 1-3/8" RB
6	1	N25117	CHAIN, 60 DOUBLE 20 PITCH
7	1	N25115	SPROCKET, 6020 F - 1-1/2" RB
8	1	7121-03	KEY, 3/8" X 2"
9	4	4006	BOLT, 3/8" X 1-1/2" GRADE 5
10	1	N37201	OHLA, GBU10 1-1/2" KEYED
11	4	4052	NUT, LOCK 3/8"
12	1	N25403	ELBOW, 45 DEG 1/4-28UNF - 1/8FP
13	1	4304	HOSE, GREASE 1/8" X 15"
14	1	N25125	ELBOW, 90 DEG - 4FJIC - 4MJIC
15	1	4304-10	BULKHEAD, FITTING-GREASE HOSE
16	1	N17007	GREASEZERK, 1/8" NPT

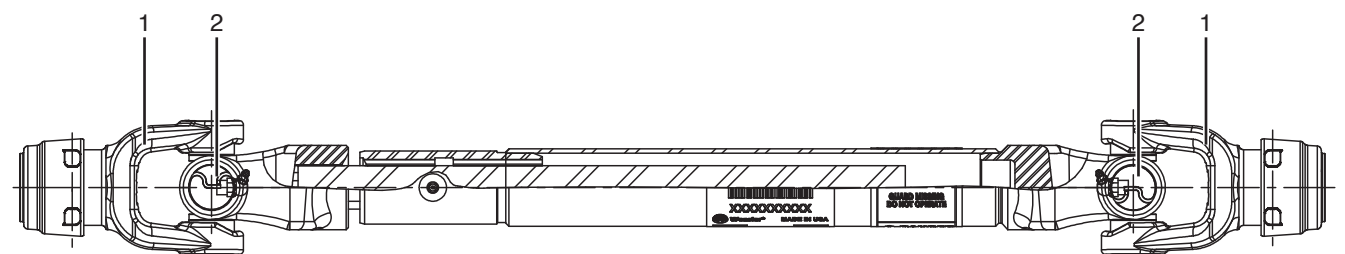
## Gearbox (N22104)



#	QTY.	PART #	DESCRIPTION
1	1	N26544	CASTING, MACH 130 DEG
2	1	N26545	CASTING, MACH 130 DEG
3	1	N26546	SUBA, SHAFT/GEAR H130
4	1	N26547	SUBA, SHAFT/GEAR H130
5	4	N26548	BRG, CUP TK#14276 2.717
6	4	N26549	BRG, CONE TK#14137A 1.375
7	3	N26550	SEAL, 1.375 - 2.00 - 0.313 (R) TC
8	1	N26551	SEAL, END CAP, 2.00 - 0.312
9	7	N26552	BOLT, 3/8" - 16 X 2.25" SHCS
10	2	N26553	PLUG, 1/4"-18 NPT SCHD W/3M
11	2	N26554	PLUG, 1/2"-14 NPT SCHD W/3M
12	1	N26555	PLUG, 1/8"-27 NPT VENT 5 PSI
13	1	N26556	BUSHING, 1/2" NPT TO 1/8" NPT

# Parts Identification

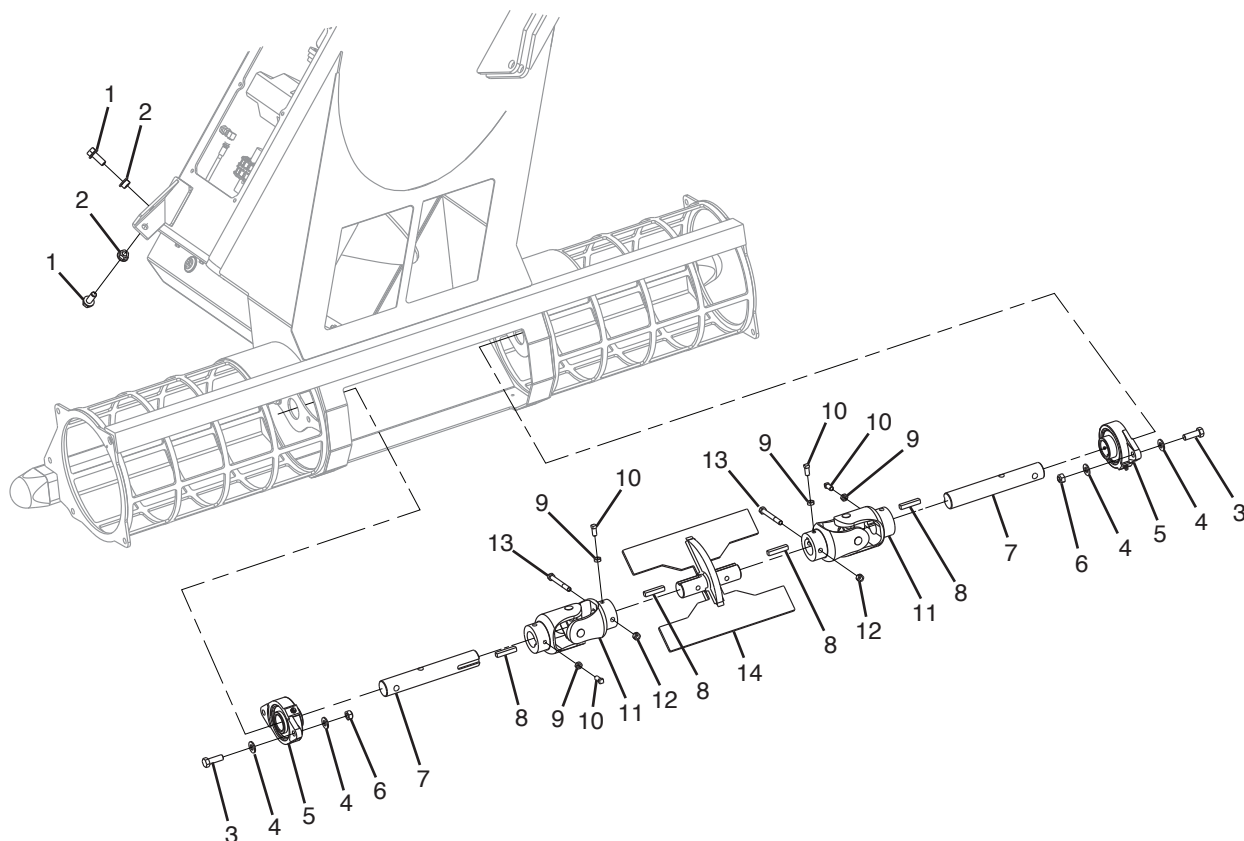
## Driveline (N153390)



#	QTY.	PART #	DESCRIPTION
1	2	N153456	YOKE, 35, SLIDE LOCK
2	2	N35479	CROSS KIT, 35E



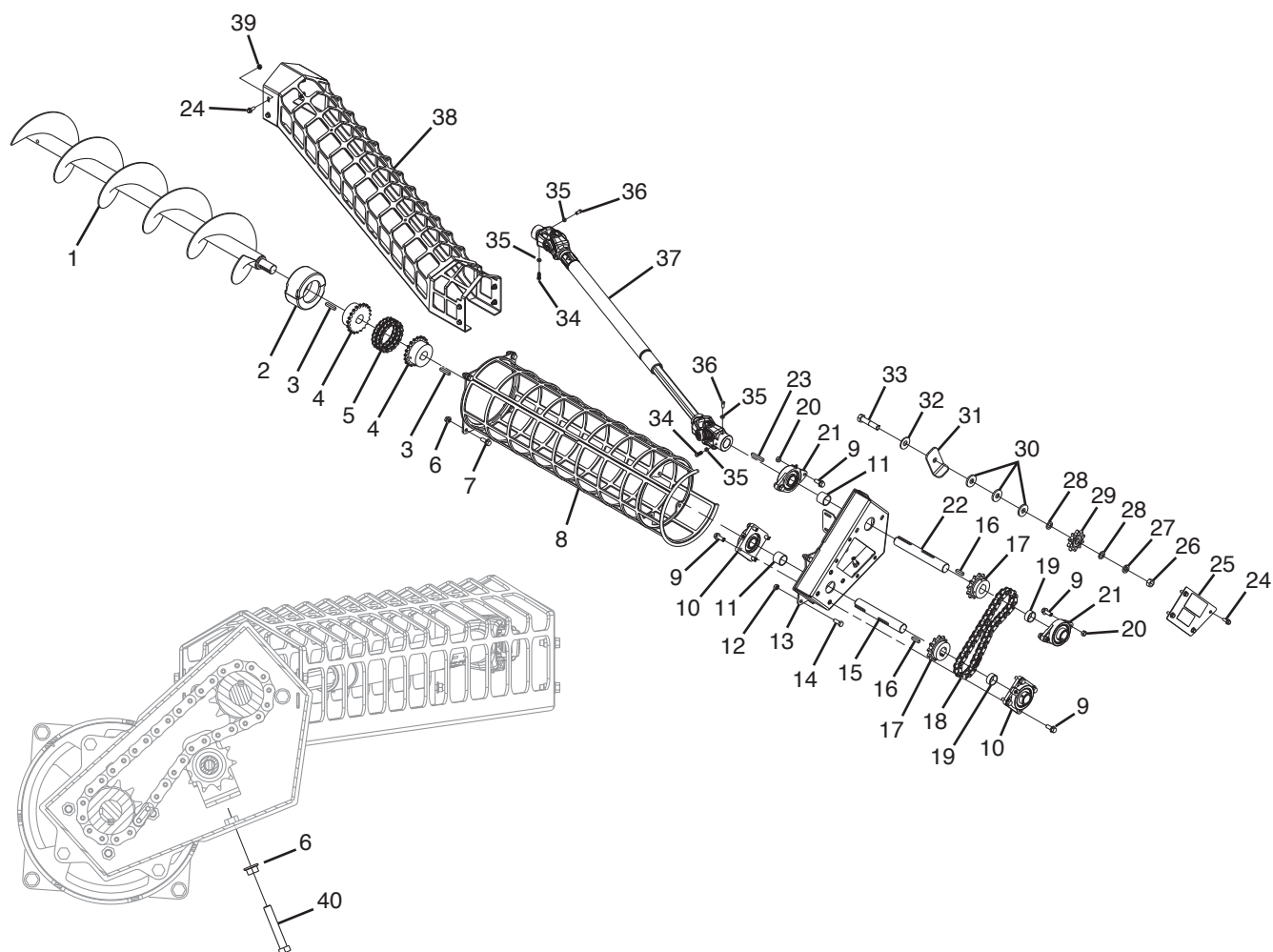
## GBU Bottom Auger Assembly (Cont'd)



#	QTY.	PART #	DESCRIPTION
1	2	N18360	BOLT, 1/2-13 X 1-1/4 SER FLG
2	2	N29075	NUT, LOCK 1/2" SERRATED FLANGE
3	4	4013	BOLT, 1/2" X 1-1/2" GRADE 5
4	8	4068	WASHER, 1/2" SAE FLAT
5	2	N30230	BEARING, 1-1/2" DODGE 2BLT FLG
6	4	4054	NUT, LOCK 1/2" TOP
7	2	N37621	SHAFT, GBU10 CTR UJT AUG WSL
8	4	7121-03	KEY, 3/8" X 2"
9	4	4061	NUT, 3/8" JAM
10	4	N26799	SCREW, SET 3/8" X 3/4" SQ HD
11	2	N37614	U-JOINT, 1-1/2 KYD 1-1/2 KYD
12	2	4052	NUT, LOCK 3/8"
13	2	4978	BOLT, 3/8" X 3-1/4" GRADE 5
14	1	N37622	DRIVE, GBU10 EDLU CRS AUG CTR

## Parts Identification

### Right Extension Auger Assembly (201824)



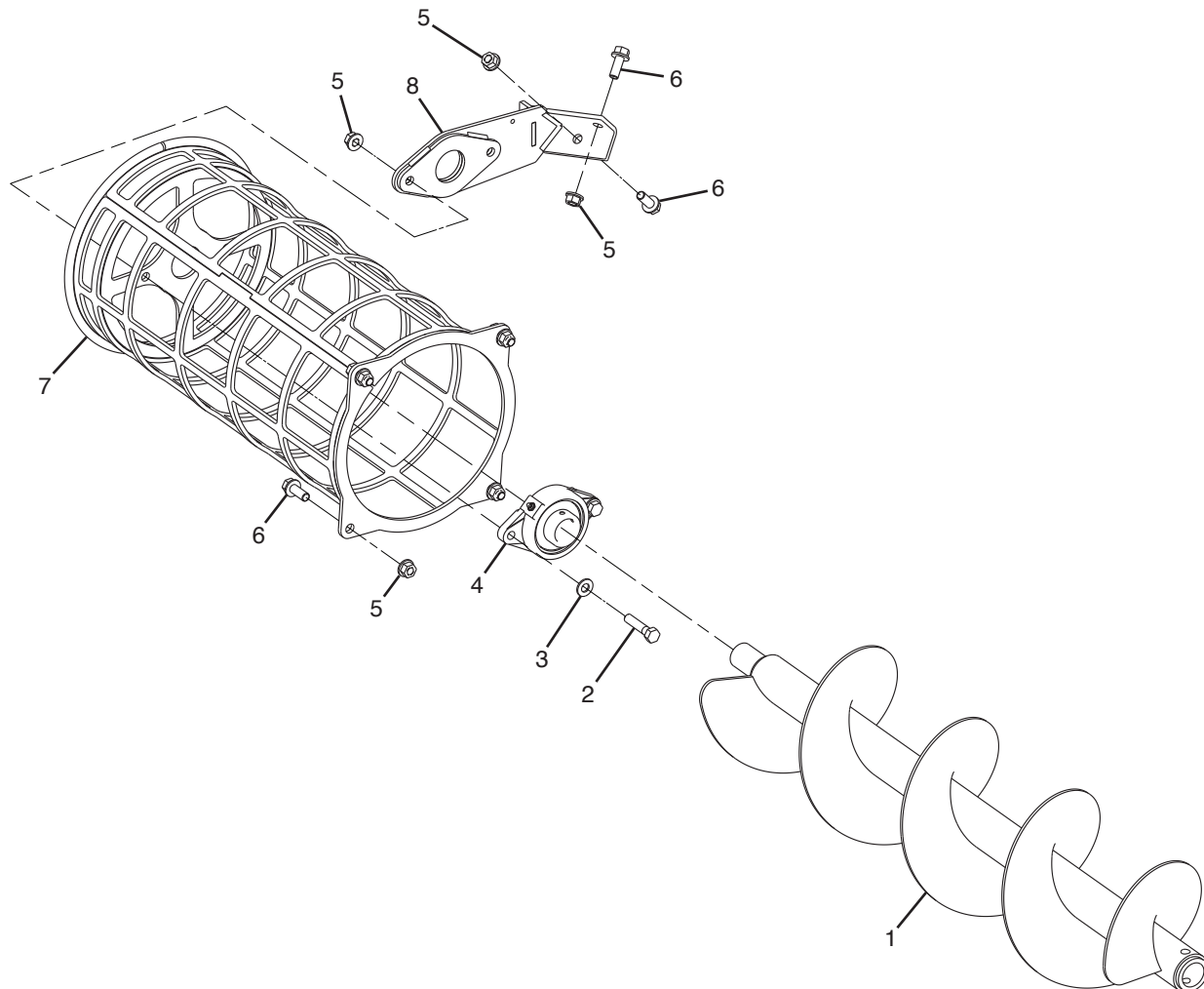
#	QTY.	PART #	DESCRIPTION
1	1	N37112	AUGER, GBU10 ED RIGHT CROSS
2	1	N25118	HOUSING, 60 CHAIN CPL COVER
3	2	7121-03	KEY, 3/8" X 2"
4	2	N25115	SPROCKET, 6020 F - 1-1/2" RB
5	1	N25117	CHAIN, 60 DOUBLE 20 PITCH
6	5	N29075	NUT, LOCK 1/2" SERRATED FLANGE

### Right Extension Auger Assembly (201824)

#	QTY.	PART #	DESCRIPTION
7	4	N18360	BOLT, 1/2-13 X 1-1/4 SER FLG
8	1	201825	CAGE, GBU10 DRV EXT
9	12	202579	BOLT, 1/2" X 1-1/2" SER FLG
10	2	N30229	BEARING, 1-1/2" DODGE 4-BLT FLG
11	2	N148505	BUSHING, GBU10 EDLU SPKT KPR
12	3	4054	NUT, LOCK 1/2" TOP
13	1	201827	BOX, GBU10 EXT SLIDE CHAIN
14	3	4012	BOLT, 1/2" X 1-1/4" GRADE 5
15	1	N33398	SHAFT, GBU10 ED LU BTM DRIVE
16	2	7121-01	KEY, 3/8" X 1-1/2"
17	2	N33721	SPROCKET, 80B12 1-1/2" KEYED
18	1	N148407	CHAIN, #80 X 36 PITCH
19	2	N148509	BUSHING, GBU10 EDLU SPKT KPR 2
20	4	4250	NUT, STANDARD 1/2
21	2	N30230	BEARING, 1-1/2" DODGE 2BLT FLG
22	1	201832	SHAFT, GBU10 TOP DRIVE
23	1	7121-07	KEY, 3/8" X 2-1/2"
24	12	N26743	BOLT, 3/8" X 1" SER FLG
25	1	201273	COVER, GBU ED LU CHAIN BOX
26	1	4288	NUT, 3/4" STANDARD
27	1	4287	WASHER, 3/4" LOCK
28	2	4505	WASHER, 3/4ID X 1-1/4OD X 10GA
29	1	N22765	SPROCKET, IDLER 80B10
30	3	4479	WASHER, 2OD X 3/4ID X 1/4TK
31	1	N148409	PLATE, GBU10 EDLU DRV CHN BOX
32	1	4071	WASHER, 3/4" FLAT
33	1	4297	BOLT, 3/4" X 3-1/2" GRADE 5
34	2	201831	SCREW, SQ HD SET 3/8" X 1"
35	4	4061	NUT, 3/8" JAM
36	2	N26799	SCREW, SET 3/8" X 3/4" SQ HD
37	1	202760	DRIVE SHAFT, 35E SERIES
38	1	N41076	BRACE, GBU10 DRIVE SHAFT CAGE
39	8	4979	NUT, LOCK 3/8" SER FLG
40	1	4151	BOLT, 1/2" X 3" FULL THREAD GR 5

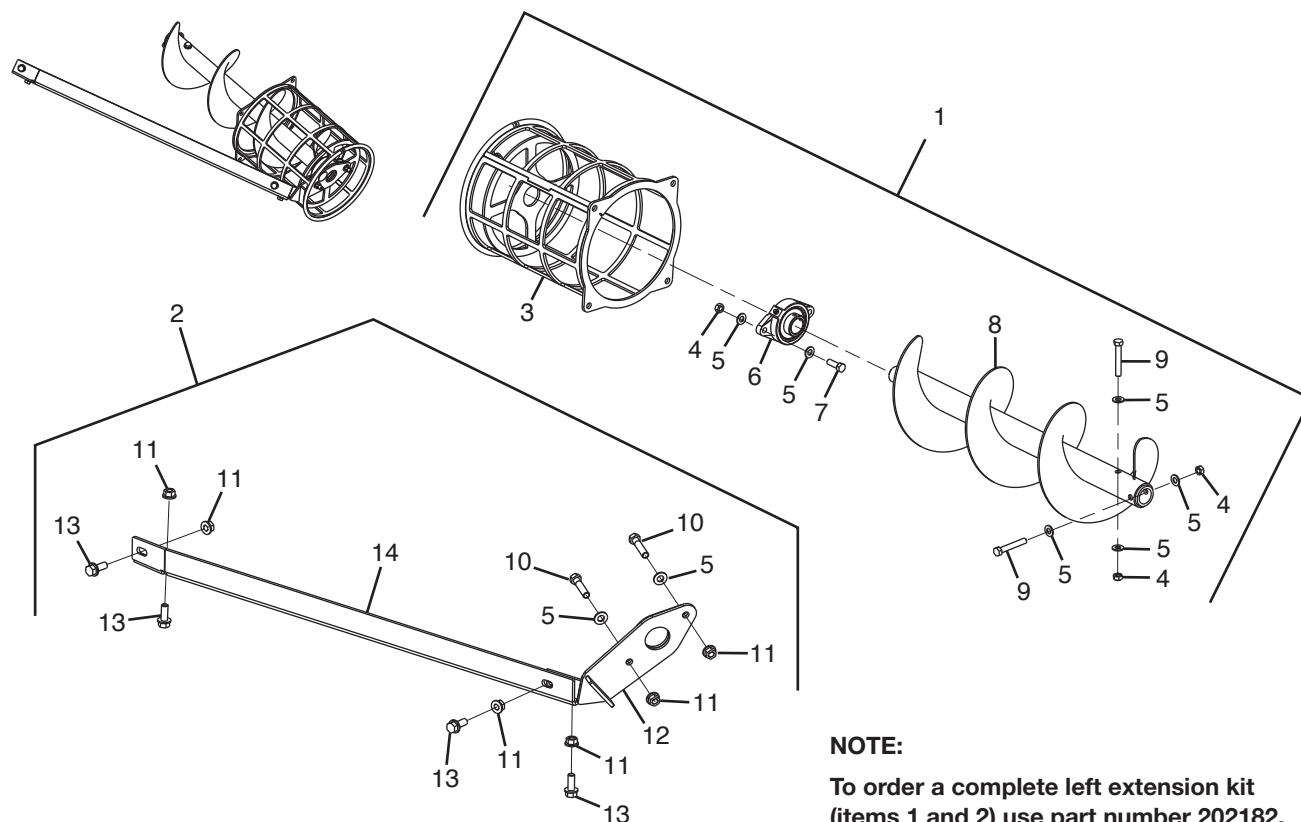
## Parts Identification

### 10' Left Extension (201807)



#	QTY.	PART #	DESCRIPTION
1	1	N33545	AUGER, GBU10 ED LEFT CROSS
2	2	N30387	BOLT, 1/2" X 2-1/4" GRADE 5
3	2	4068	WASHER, 1/2" SAE FLAT
4	1	N30230	BEARING, 1-1/2" DODGE 2BLT FLG
5	8	N29075	NUT, LOCK 1/2" SERRATED FLANGE
6	6	N18360	BOLT, 1/2-13 X 1-1/4 SER FLG
7	1	201808	HOUSING, GBU LEFT EXT
8	1	201811	BRACKET, GBU10 LEFT EXT BTM 1

## 9' Left Extension Kit (202182)



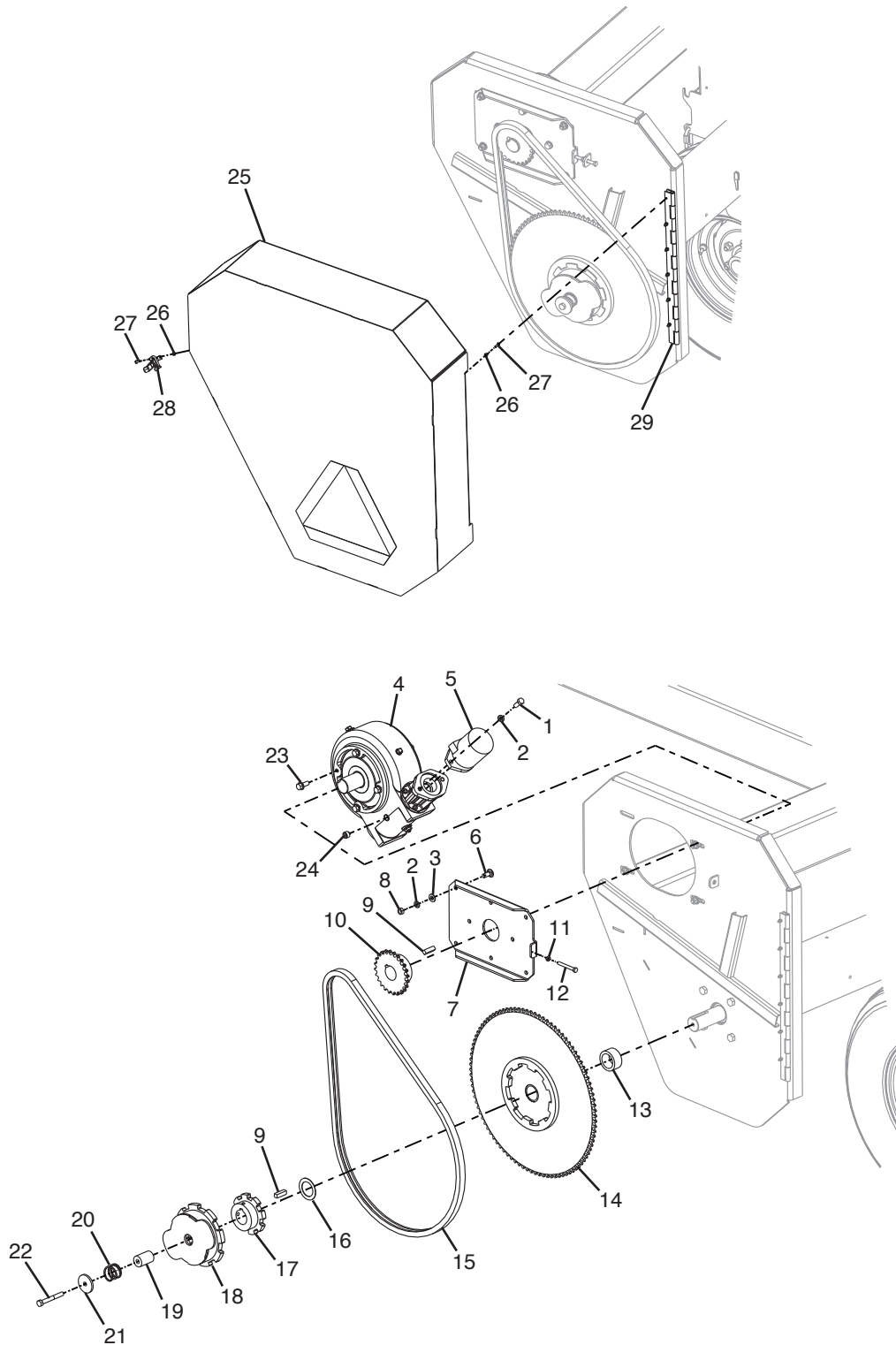
#	QTY.	PART #	DESCRIPTION
1	1	202183	EXTENSION, GBU09 ED LU LEFT 2
2	1	202190	KIT, GBU9 LEFT EXT BRACE
3	1	202188	CAGE, GBU09 ED LU LEFT AUG 2
4	4	4054	NUT, LOCK 1/2" TOP
5	10	4068	WASHER, 1/2" SAE FLAT
6	1	N30230	BEARING, 1-1/2" DODGE 2 BLT FLG
7	2	4013	BOLT, 1/2" x 1-1/2" GRADE 5
8	1	N33683	AUGER, GBU09 ED LU LEFT PUR
9	2	4467	BOLT, 1/2" x 3-1/4" GRADE 5
10	2	N30387	BOLT, 1/2" x 2-1/4" GRADE 5
11	6	N29075	NUT, LOCK 1/2" SERATED FLANGE
12	1	202191	BRACKET, GBU9 LEFT EXT BRC
13	4	N18360	BOLT, 1/2" x 1-1/4" SERATED FLANGE
14	1	202194	ANGLE, GBU9 LEFT EXT BRACE



## Parts Identification

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### GBU Roller Drive and Drive Shield

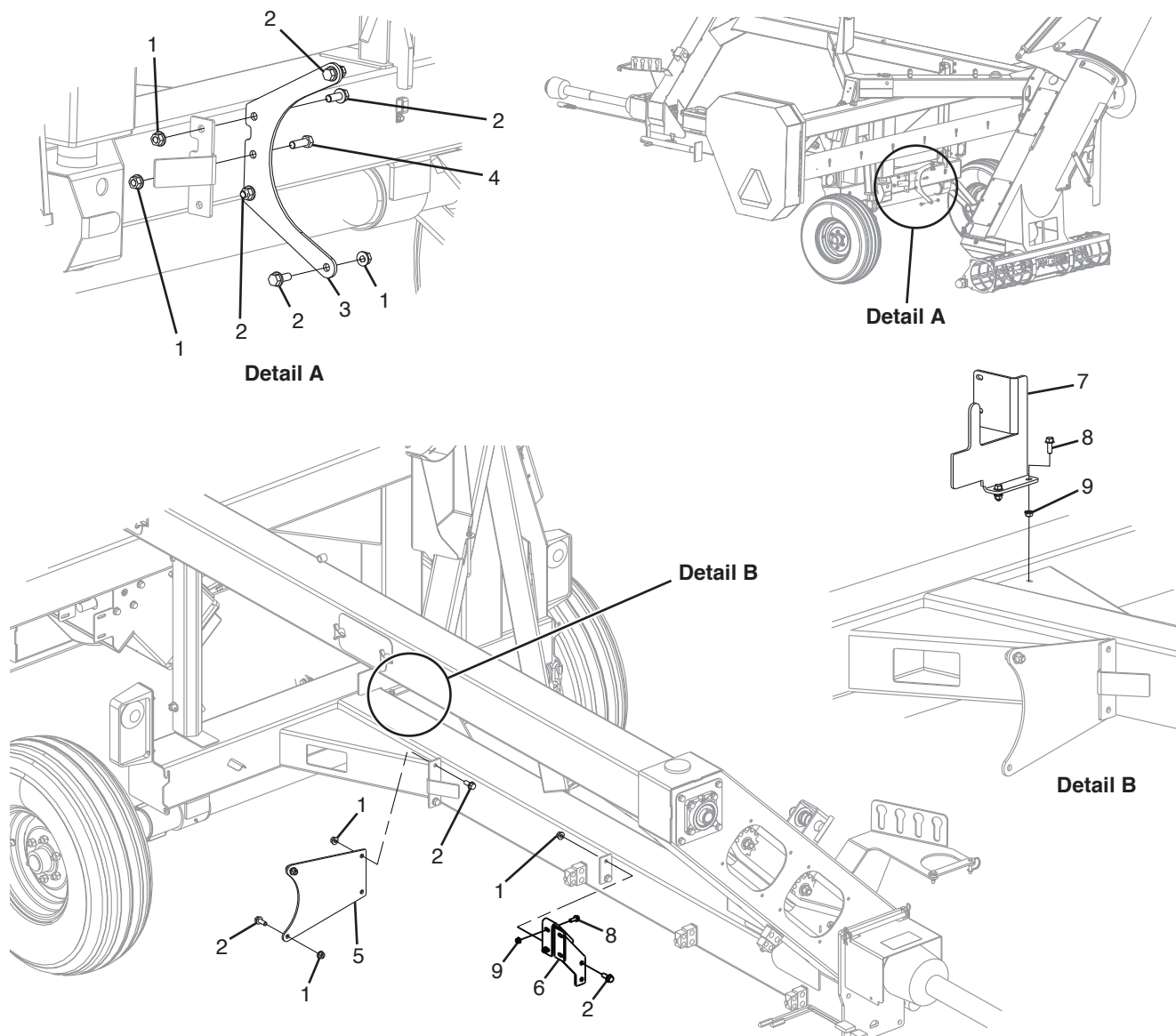


### GBU Roller Drive and Drive Shield

#	QTY.	PART #	DESCRIPTION
1	2	4012	BOLT, 1/2" x 1-1/4" GRADE 5
2	6	4155	WASHER, LOCK 1/2"
3	4	4068	WASHER, 1/2" SAE FLAT
4	1	N30925	GEARBOX, SUPERIOR 1280 RED
5	1	206407	MOTOR, ORBITAL DAN FOSS
6	4	4038	BOLT, CARRIAGE 1/2" x 1-1/4"
7	1	N30932	PLATE, GBU 4-1/2" HUB PUSHER MOUNT
8	4	4250	NUT, STANDARD 1/2"
9	2	N27290	KEY, 1/2" x 1-3/4" EXTRA HARDENED
10	1	N30926	SPROCKET, 60B24 - 2" KEYED
11	1	4061	NUT, 3/8" JAM
12	1	4478	BOLT, 3/8" x 3" GR 5 FULL THRD
13	1	N30257	SPACER, GBU10 ROLLER SPROCKET
14	1	N22505	SPROCKET, GBU ROLLER DRIVE CLUTCH
15	1	N22202	CHAIN, #60 ROLLER 92.25" LONG
16	1	N21695	WASHER, 3" OD x 2-1/32" ID 18 GA
17	1	N22510	DRIVE, GBU ROLLER INNER
18	1	N22529	CONNECTOR, GBU CLUTCH
19	1	N22531	GUIDE, GBU SPRING CLUTCH SPRING
20	1	N22253	SPRING, COMPRESSION LHC 148U 03S LEE SPRING
21	1	N22532	WASHER, GBU SPRING CLUTCH SPRING
22	1	4975	BOLT, 1/2" x 4" FN TH GR 8
23	4	N18360	BOLT, 1/2" x 1-1/4" SER FLG
24	1	4558	PLUG, 1/2" NPT ALLEN HEAD
25	1	201276	DOOR, GBU ROLLER DRIVE
26	16	N16334	NUT, NYLON INSERT #10
27	16	N22358	BOLT, #10 - 32 x 3/4" BHCS
28	2	N22325	LATCH, ROLLER DRIVES COVER
29	1	N22338	HINGE, GBU ROLLER DOOR

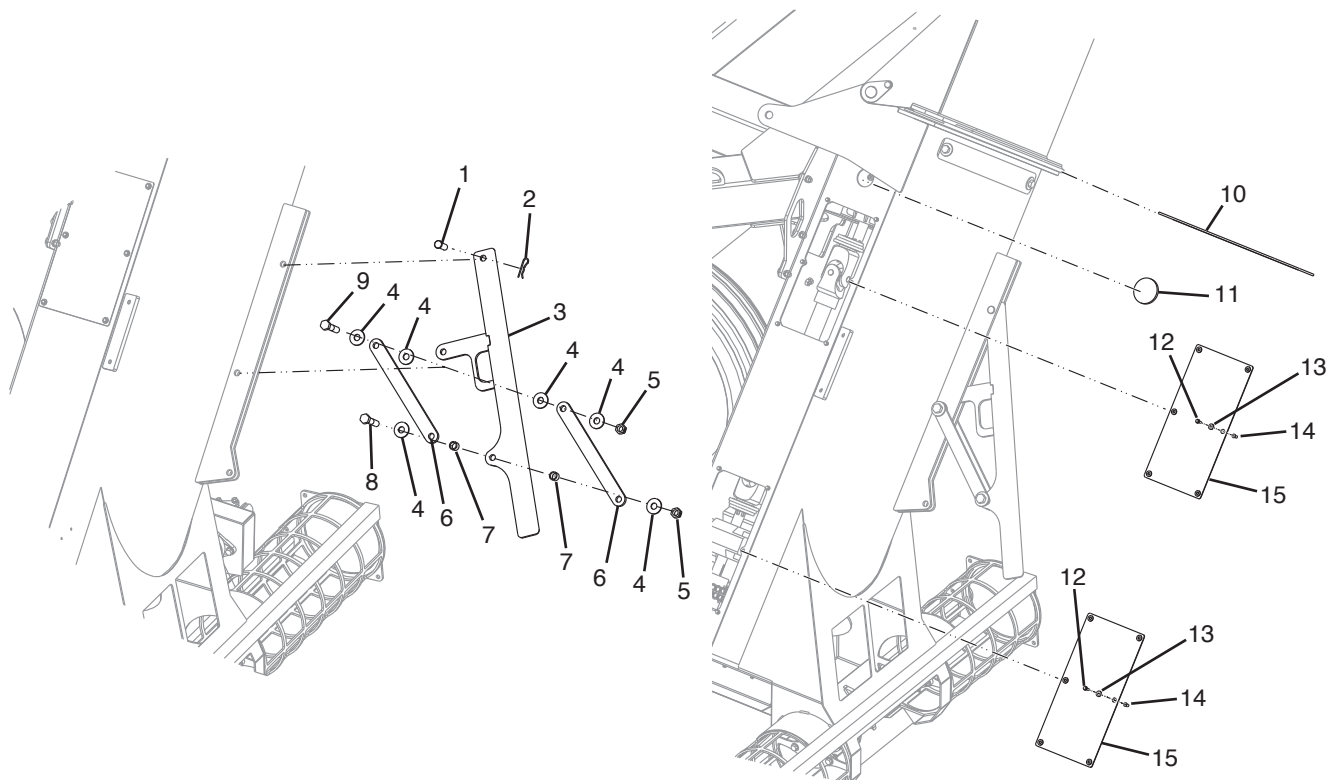
## Parts Identification

### Auger Storage Assembly



#	QTY.	PART #	DESCRIPTION
1	11	N29075	NUT, LOCK 1/2" SERRATED FLANGE
2	10	N18360	BOLT, 1/2-13 X 1-1/4 SER FLG
3	1	201707	BRACKET, GBU10 LEFT EXT SHPG
4	1	4013	BOLT, 1/2" X 1-1/2" GRADE 5
5	1	201837	BRACKET, GBU10 DRV EXT SHPG
6	1	201838	BRACKET, GBU10 DRV EXT SIDE SPG
7	1	201751	PLATE, GBU10 EXTENSION SHIPPING
8	4	N26743	BOLT, 3/8" X 1" SER FLG
9	4	4979	NUT, LOCK 3/8" SER FLG

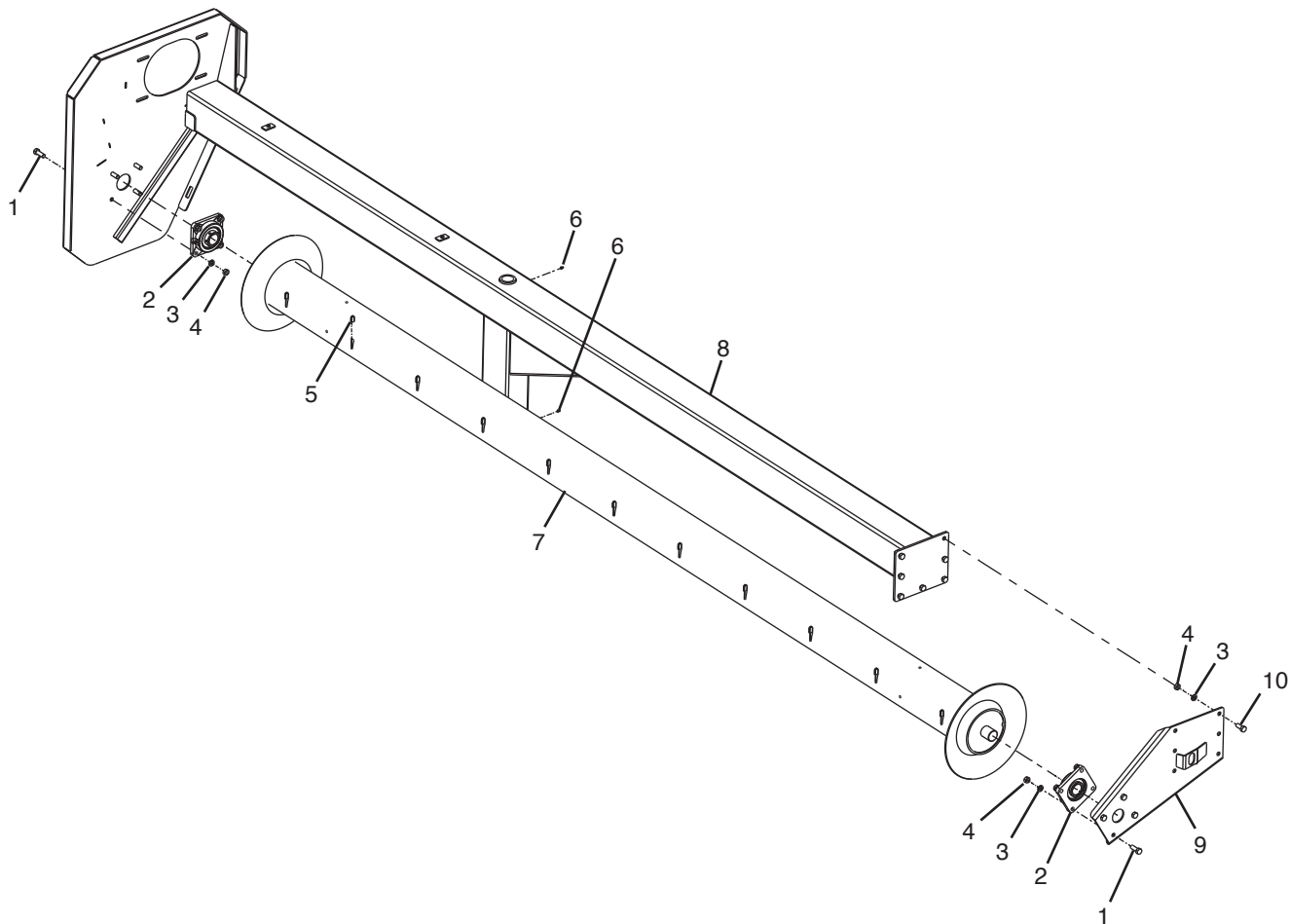
## GBU Subshields Subassembly (Cont'd)



#	QTY.	PART #	DESCRIPTION
1	1	4521	PIN 3/4" x 1-3/4"
2	1	4336	CLIP, HAIRPIN 1/8" x 2-1/4"
3	1	N27030	KNIFE, GBU LONG BAG CUTTER
4	6	4071	WASHER, 3/4" FLAT
5	2	4056	NUT LOCK 3/4"
6	2	N22688	ARM, GBU LONG KNIFE BOTTOM
7	2	N22755	SPACER, GBU KNIFE
8	1	4297	BOLT, 3/4" x 3-1/2" GRADE 5
9	1	4169	BOLT, 3/4" X 4" GR 5
10	1	N26591	GASKET, 18.25 ID x 22.50 OD
11	1	N33214	PLUG, 2-1/2" CUSTOM RUBBER
12	12	N30371	BOLT, 1/4" x 1" SER FLANGE
13	12	3183	WASHER, FLAT 1/4"
14	12	N33675	NUT, RIVET 1/4" FOR 12 GA MAT
15	2	N40171	COVER, GBU10 LOWER UNIT 2

## Parts Identification

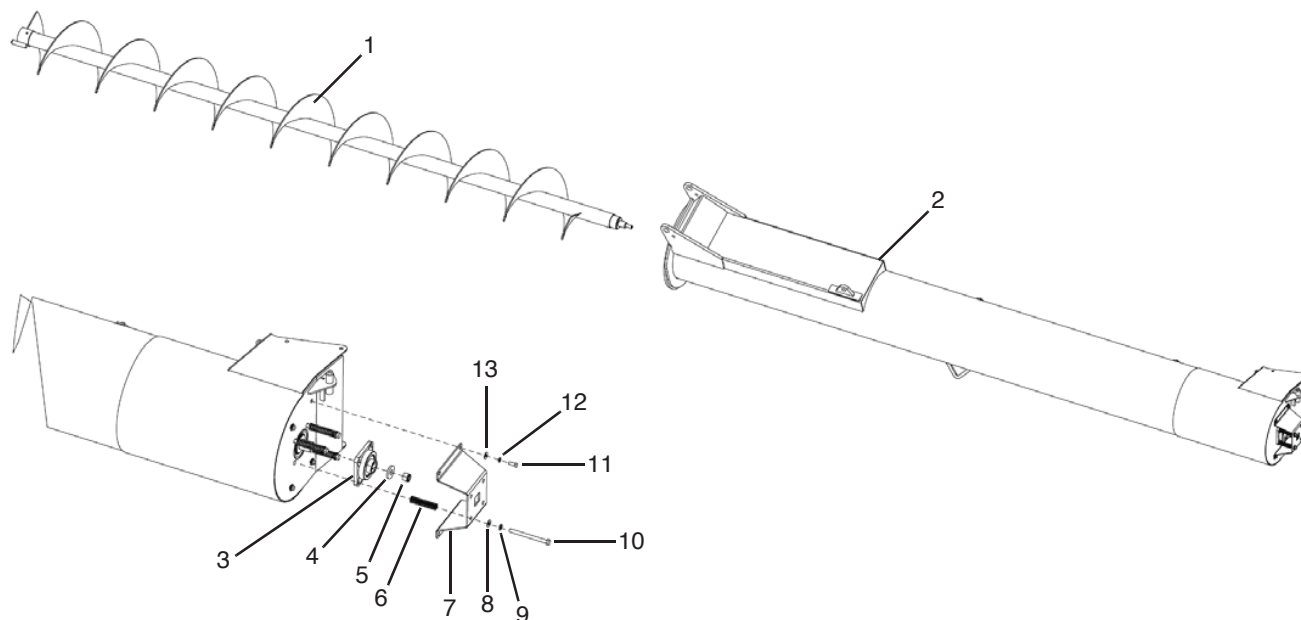
### Roller Assembly (N22400)



#	QTY.	PART #	DESCRIPTION
1	8	4021	BOLT, 5/8 X 1-3/4 GRADE 5
2	2	N30235	BEARING, 2" DODGE 4-BLT FLG
3	15	4070	WASHER, LOCK 5/8"
4	15	4058	NUT, STANDARD 5/8"
5	11	N37363	CAP, GBU10 ROLLER HOOK SMALL
6	2	4105	GREASE-ZERK, 1/4" SCREW-IN
7	1	N22403	ROLLER, GBU 10'
8	1	N22401	FRAME, GBU 10' ROLLER
9	1	N25007	MOUNT, GBU ROLLER END W/BEARING
10	7	4020	BOLT, 5/8" X 1-1/2" GRADE 5



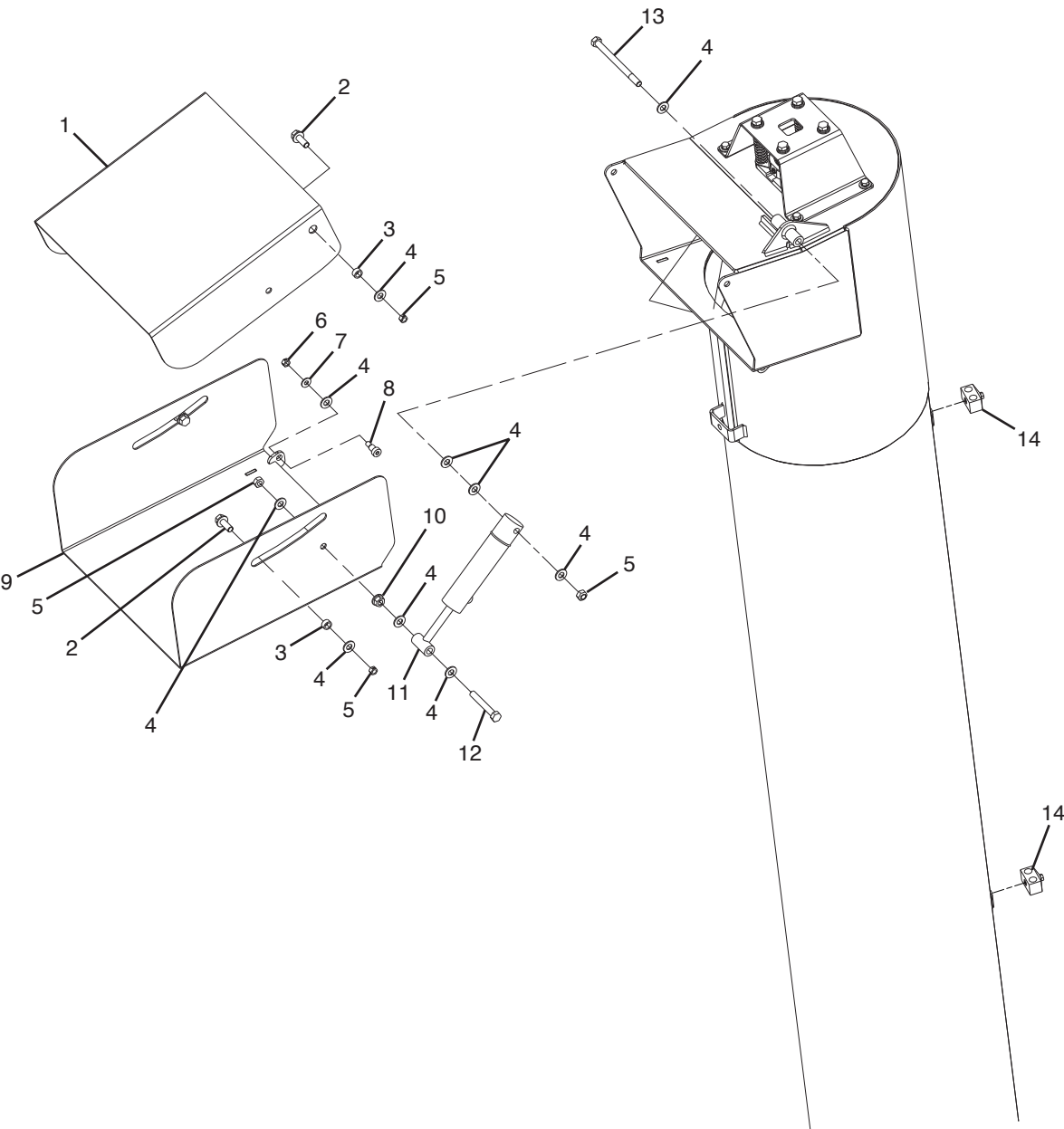
## GBU 16" Main Top Auger



#	QTY.	PART #	DESCRIPTION
1	1	N25036	AUGER, GBU 16" TOP
2	1	201709	TUBE, GBU10 TOP AUG 2
3	1	N30229	BEARING, 1 - 1/2" IN. 4-BOLT FLG DODGE
4	1	4479	WASHER, 2" OD x 3/4" ID x 1/4" TK
5	1	4985	NUT, LOCK 3/4" - 16UNF NYLOCK
6	4	N22062	SPRING, AUGER ALIGNING
7	1	N22098	SUPPORT, AUGER END PLATE
8	4	4068	WASHER, 1/2" SAE FLAT
9	4	4155	WASHER, LOCK 1/2"
10	4	4497	BOLT, 1/2" X 6" GRADE 5
11	4	4195	BOLT, 3/8" X 1" GR 5
12	4	4065	WASHER, 3/8" LOCK
13	4	4064	WASHER, FLAT 3/8"

# Parts Identification

## GBU10 Top Auger with Adjustable Deflector

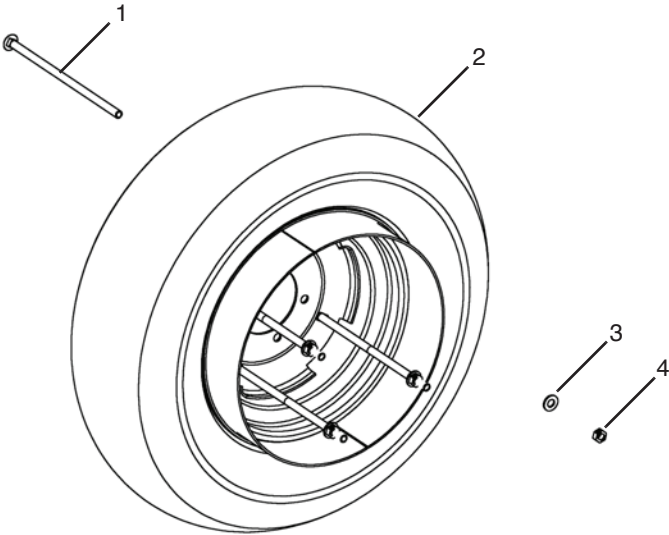


### GBU10 Top Auger with Adjustable Deflector

#	QTY.	PART #	DESCRIPTION
1	1	201598	PLATE, GBU SPOUT DIVERTER TOP
2	4	N18360	BOLT, 1/2-13 X 1-1/4 SER FLG
3	4	N28442	SPACER, .532 ID X .75OD X .37
4	13	4068	WASHER, 1/2" SAE FLAT
5	6	4054	NUT, LOCK 1/2" TOP
6	2	4052	NUT, LOCK 3/8"
7	2	4369	WASHER, 5/16" FLAT
8	2	N29837	BOLT, SHLD. 1/2" X 5/8"
9	1	201596	DIVERTER, GBU SPOUT BOTTOM
10	2	N29075	NUT, LOCK 1/2" SER FLANGE
11	1	N30999	CYLINDER, 1"X 4" HYD 10" COMP
12	1	4154	BOLT, 1/2" X 3-1/2" GRADE 5
13	1	4554	BOLT, 1/2" X 6-1/2" GR 5
14	3	N21365	CLAMP, 3/8" DOUBLE HOSE

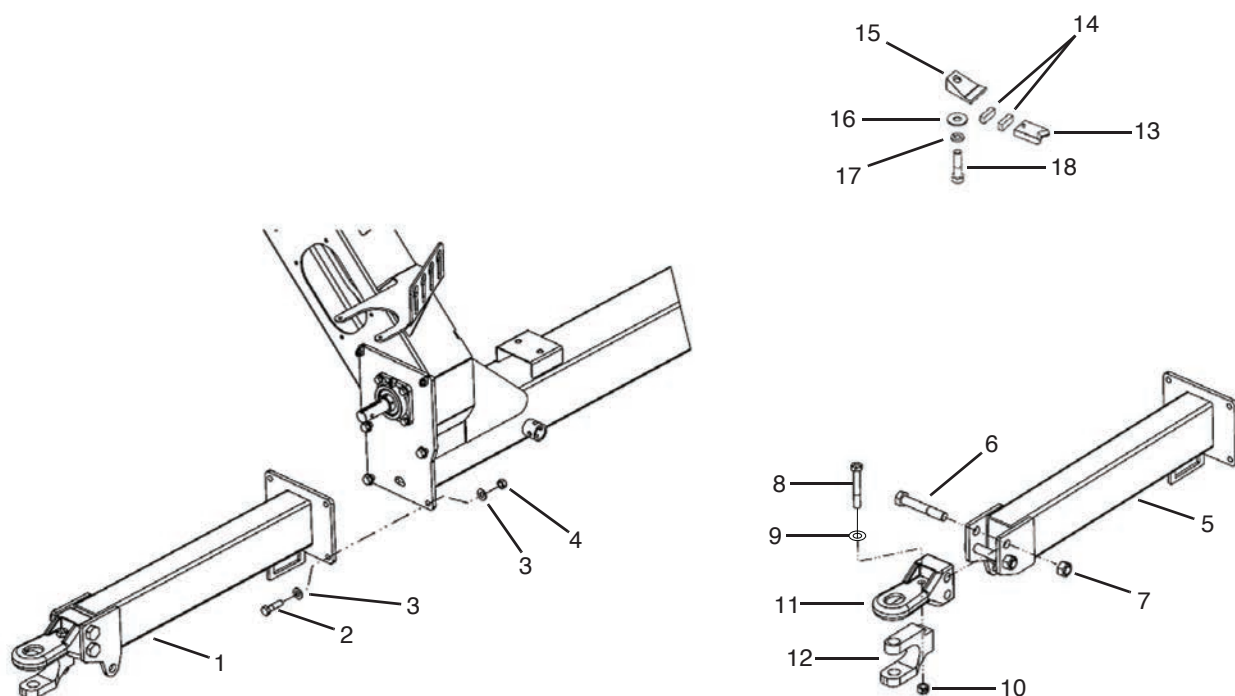
# Parts Identification

## GBU Dual Tire Kit (N22753)



#	QTY.	PART #	DESCRIPTION
1	4	4986	BOLT, CARRIAGE 1/2" x 12" GR 5
2	1	N22736	TIRE, GBU DUAL OPTION
3	4	4068	WASHER, 1/2" SAE FLAT
4	4	4054	NUT, LOCK 1/2"

## GBU Hitch



#	QTY.	PART #	DESCRIPTION
1	1	N37618	HITCH, GBU10 COMP BOLT ON REC
2	4	4494	BOLT, 5/8" x 2-1/4" GRADE 8 FINE THREAD
3	8	4997	WASHER, FLAT 5/8" SAE
4	4	4057	NUT, 5/8" FINE THREAD TOP LOCK
5	1	N37457	HITCH, GBU10 BOLT ON REC
6	2	N28583	BOLT, 1" x 6" FN TH GR 8
7	2	N16700	NUT, 1" - 14 GR 8 FINE THREAD TOP LOCK
8	1	4577	BOLT, 3/4" x 5" FN TH GR 8
9	1	N35327	WASHER, FLAT 3/4" SAE
10	1	N16352	NUT, LOCK 3/4" FN THRD
11	1	N37474	BASE, CAT 2 BOLT ON REC HITCH
12	1	N37463	CLEVIS, CAT 2 BOLT ON HITCH
13	1	N37475	BLOCK, CAT 2 BOLT - ON REC V
14	2	N37477	CUSHION, CAT 2 BOLT - ON REC
15	1	N37476	PLATE, CAT 2 BOLT - ON REC TOP
16	1	4071	WASHER, 3/4" FLAT
17	1	4287	WASHER 3/4" LOCK
18	1	4352	BOLT, 3/4" X 3" GR 5



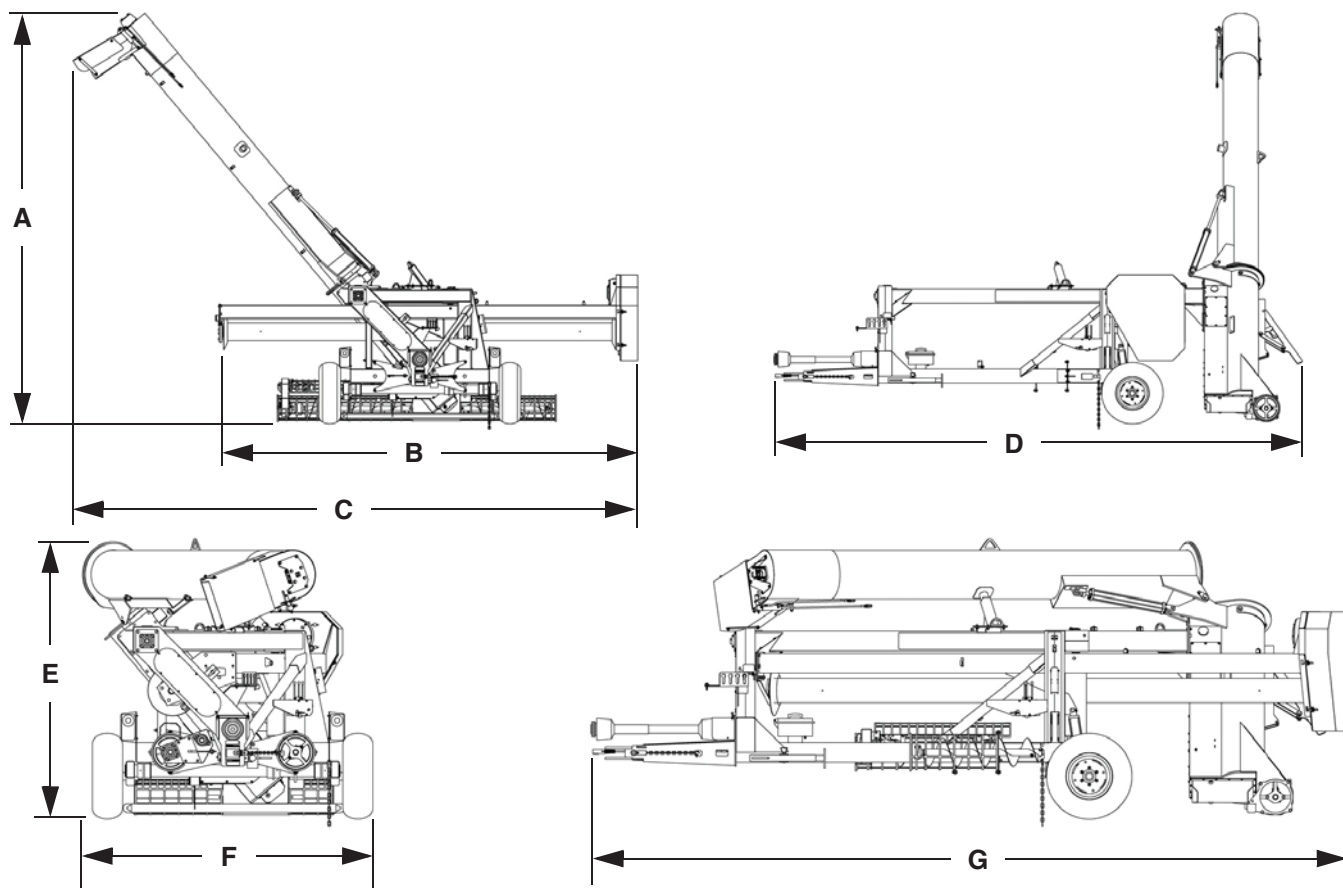


## Specifications

DESCRIPTION	GRAIN BAG UNLOADER
Operating Capacity	8,500 Bushels/Hr.
Minimum Tractor Horsepower	50 HP
Maximum Rear-Pto Rpm	540 RPM
Hydraulic Flow	6 GPM
Cross Auger Drive Chain	#80
Cross Auger Diameter	10 In. O.D. 3/16 In. Thick Flighting
Cross Auger Widths	GBU09 - 122"
	GBU10 - 132"
Main Auger	17.25 In. Tube x 16 In. Flighting
Main Auger Angle	50 Degrees
Main Auger Drive Chain	#80, Oil Bath
Gearboxes	Common, US Made
50° Gearbox Lubricant	24 oz. - SAE 80W - 90 Gear Lube
90° Gearbox Lubricant	24 oz. - SAE 80W - 90 Gear Lube
Bag Roller	Accepts 9 Ft. & 10 Ft. Bags
Bag Roller Control	Hydraulic
Bag Roller Lock	Automatic Latch
Bag Roller Shaft	2 In.
Bag Roller Spindles	Standard
Bag Roller Sprockets	Standard
Bag Roller Tube	16 Ft. with Hooks
Adjustable Bag Knife	1 Piece, Fold Away, Angled
Adjustable Axle	Hydraulic
Controls	Remote Hydraulic Valve
Tires	12.5L-15SL 10 Ply Implement
Pto Driveline	Walterscheid W2400 - 600 Series

## Appendix

### Dimensions



DESCRIPTION	GRAIN BAG UNLOADER
Operating Height (A)	202.08 in. (513,28 cm)
Roller Operating Width (B)	208.24 in. (528,92 cm)
Operating Width (C)	278.59 in. (707,62 cm)
Operating Length (D)	255.82 in. (649,78 cm)
Transport Height (E)	98.08 in. (249,12 cm)
Transport Width (F)	100.90 in. (256,29 cm)
Transport Length (G)	263.20 in. (668,53 cm)

## Torque Specifications

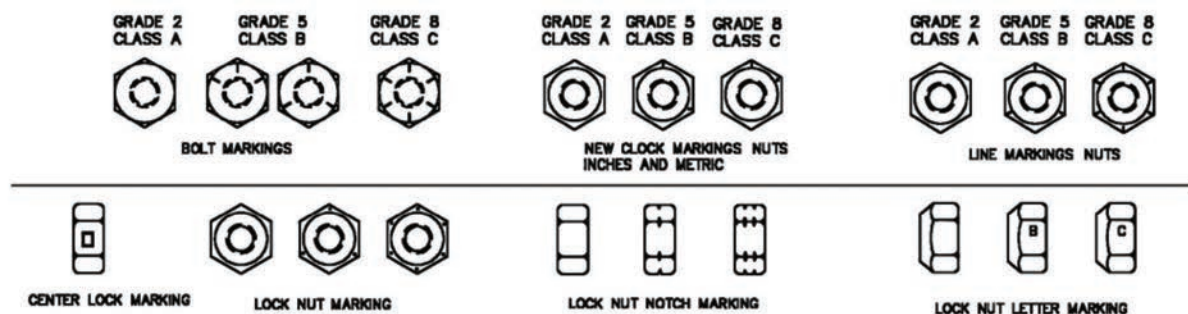
### Inches Hardware and Lock Nuts

#### TORQUE CHARTS

Minimum Hardware Tightening Torques

Normal Assembly Applications  
(Standard Hardware and Lock Nuts)

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



# Appendix

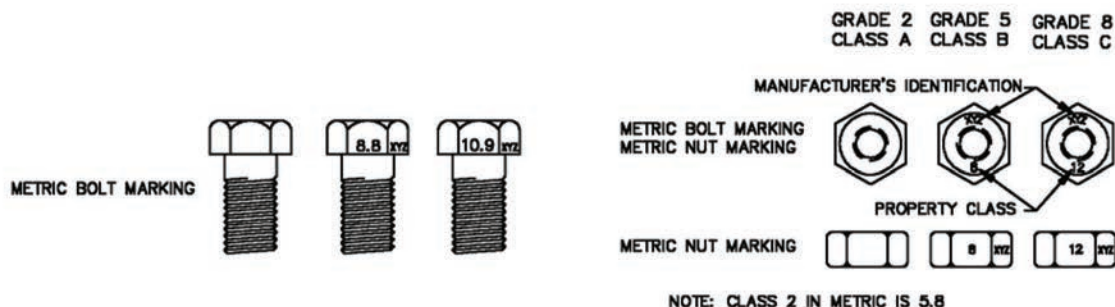
## Torque Specifications (Cont'd)

### Metric Hardware and Lock Nuts

#### TORQUE CHARTS Minimum Hardware Tightening Torques

Normal Assembly Applications  
(Metric Hardware and Lock Nuts)

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









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