



GRAIN BAG STORAGE SYSTEMS

Grain Bag Unloader

**Owner's Manual and Parts Book
(Originating w/Serial Number 70-174)**



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 customer.

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

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

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

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

Loftness Specialized Equipment, Inc. ("LOFTNESS") 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. The second year of limited warranty includes only parts, and not labor.

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

LIMITATIONS OF WARRANTY

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

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

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

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

EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, LOFTNESS makes no representation or warranty of any kind, expressed or implied. **The implied warranty of merchantability and fitness for a particular purpose are disclaimed, and excluded from this limited warranty.** The remedies set forth in this warranty are the sole and exclusive 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 2025)





To the Dealer:

In order to ensure that your customer's unit will provide many years of trouble free service, please ensure that the following Pre-Delivery Inspection has been done. Refer to manual for specifications.

PRE-DELIVERY INSPECTION

- ___ All fasteners are tight.
- ___ Grease PTO shaft (u-joints and slide tube).
- ___ Grease all grease zerks.
- ___ PTO shields in place and rotate freely.
- ___ Driveshaft key stock installed and secure.
- ___ Bearing locking collar set screws are tight.
- ___ Set screws on the drive sprockets are tight.
- ___ Drive chain tensioned correctly (1/8" to 1/4" deflection).
- ___ Gearbox oil level(s) are checked to manual specifications.
- ___ Wheel nuts are tight, 6 bolt hub (100 FT-LB), 8 bolt hub (135 FT-LB).
- ___ Axle cylinder stop is with the machine.
- ___ Clean out covers in place and secure.
- ___ All safety decals in place and legible.
- ___ All safety lights work.
- ___ Paint scratches touched up.

Model specific

- ___ Bag roller pivots freely and locks easily (GBU10, GBU12).
- ___ Hopper and swing auger u-joints greased (GBA, XBA, GBL12).
- ___ Electric / Hydraulic winch operates (all except GBU10).
- ___ Brake wheel turns freely, brakes bled, 1000 PSI maximum brake setting (GBL10, XLB10, GBL12).
- ___ Check hydraulic tank level, centered in gauge (GBU12).

Run In

- ___ Hydraulic pressure checked for leaks and operation of all functions of unit.
- ___ PTO shaft operates correctly.

Approximate set up time per unit

| | | |
|---------------------|----------------------|-------------------|
| GBU10: 3 hours | XLB10: 6 hours | GBL12: 12 hours |
| GBL10: 4 hours | XLB10, XBA: 12 hours | GBL12C: 8 hours |
| GBL10, GBA: 8 hours | GBU12: 4 hours | BB10-300: 2 hours |

To the Customer

Use this manual as your first source of information about the machine. If you follow the instructions in the manual, your Grain Bag equipment will perform at its optimum for many years.

The photos and line drawings used in this manual are of a production unit, but due to our program of continuous improvement, your machine may vary slightly from the one shown. We reserve the right to make changes and improvements at any time.



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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.

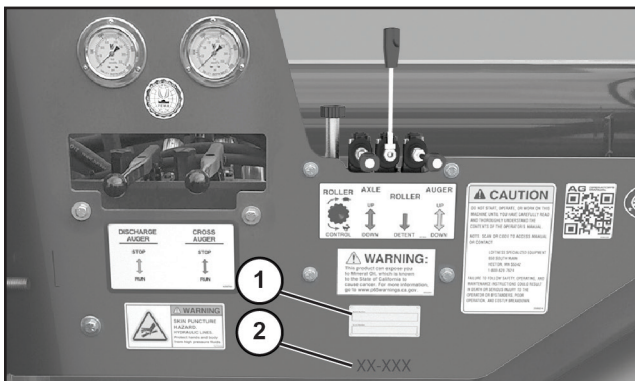
Operate and maintain this machine in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and / or laws. Follow all on-product labeling and instructions.

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.

Serial Number Location



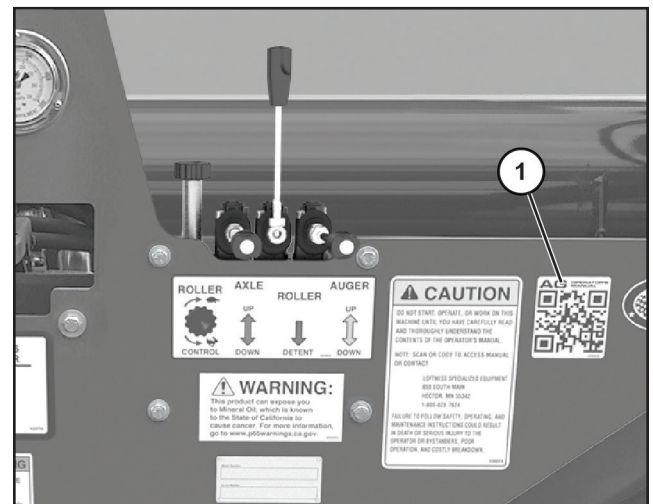
The callouts above indicate the location of the serial number tag (1) and the location of the serial number stamped into the frame (2).

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

Owner's Manual Access



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



To access a digital owner's manual, use a smart phone to scan the QR Code (1) located adjacent to the control valve. This code will link to the Grain Bag Unloader owner's manual on the Loftness website.



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

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, 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.
- 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.

Safety Instructions

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

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



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

PTO Safety

- Keep all guards and shields in place when operating the PTO. Replace any damaged or missing guards and shields before operating the PTO.
- Keep children, bystanders and other workers away from the machine while it is operating or while the PTO is engaged. No riders allowed.
- Do not wear loose hanging clothes, neckties or jewelry. Long hair is to be placed under a cap or hat. These precautions will help prevent you from becoming caught in any moving parts on the machine.
- Read and understand the tractor operation and maintenance manual regarding safe and proper operation for PTO driven equipment.
- Never step over or crawl around the equipment while the PTO is engaged; entanglement could occur.
- Do not exceed 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.

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

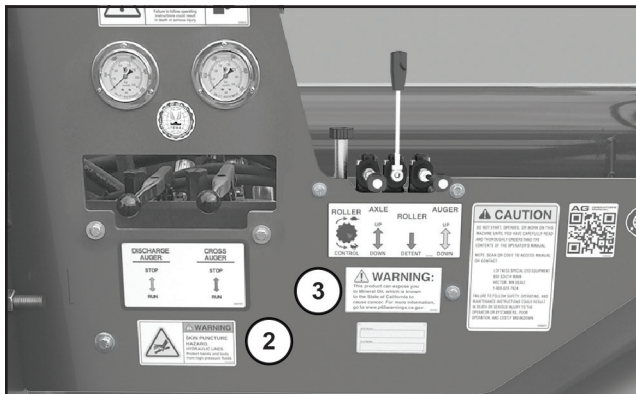
Safety Instructions

Safety Decal Locations

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



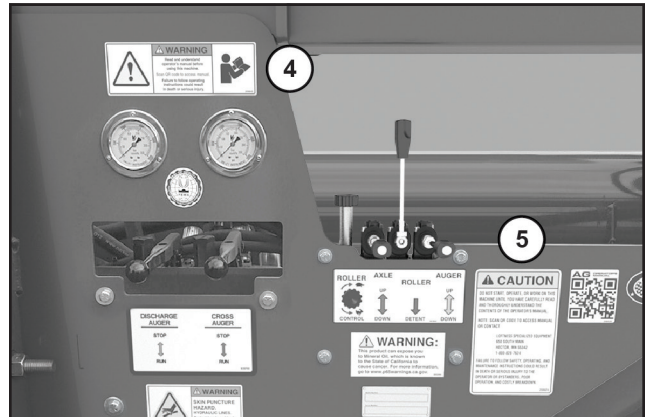
Part No. N23505



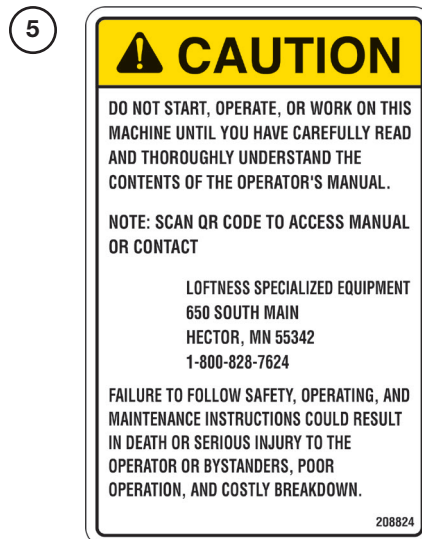
Part No. N23506



Part No. 203264

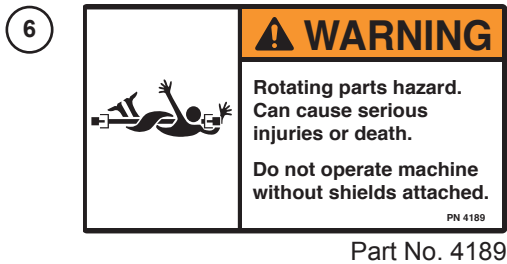
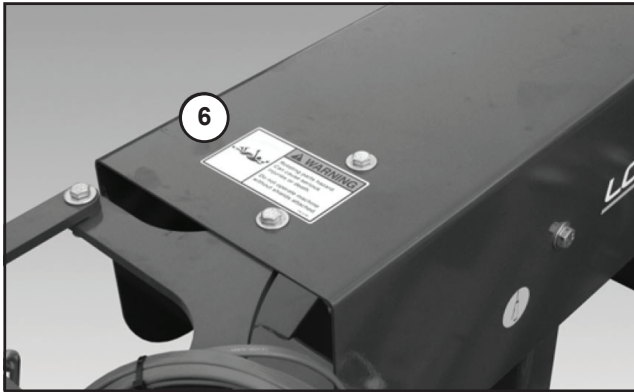


Part No. 209849



Part No. 208824

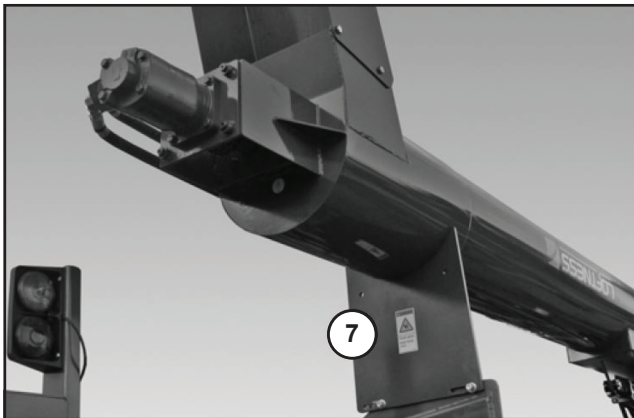
Safety Decal Locations (Cont'd)



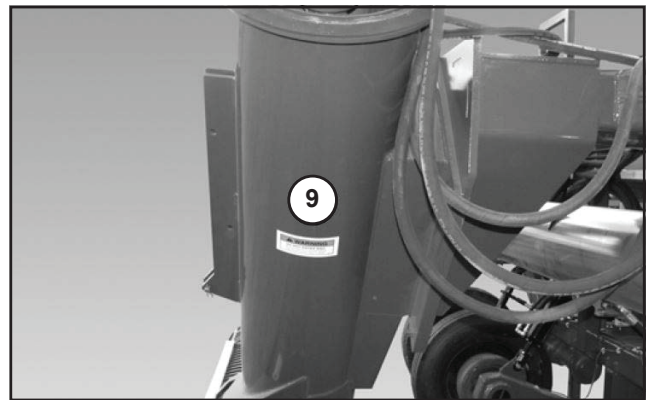
Part No. 4189



Part No. N22734



Part No. N23507



Part No. N22734

Safety Instructions

Safety Decal Locations (Cont'd)



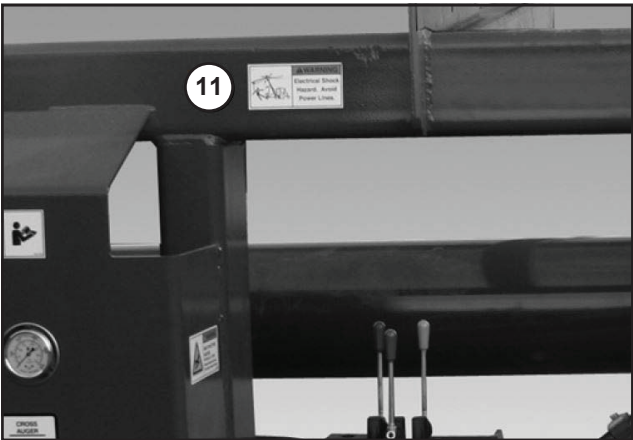
10

⚠️ WARNING

Pinch point.
Keep hands clear.

N23507

Part No. N23507

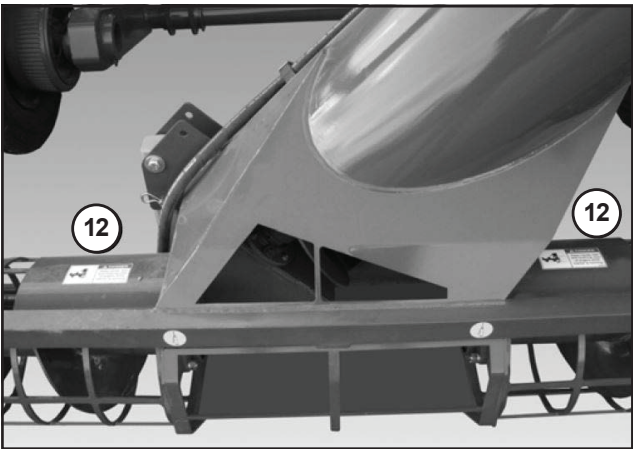


11

⚠️ WARNING

Electrical Shock
Hazard. Avoid
Power Lines.

Part No. N22729



12

⚠️ DANGER

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

N22764

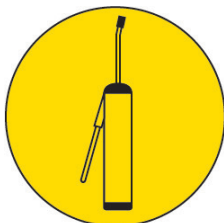
Part No. N22764

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 6.

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

Part No. 4137



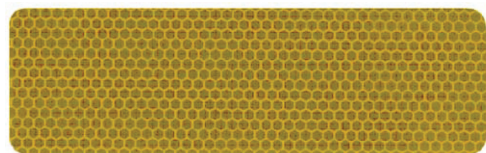
Part No. 4132



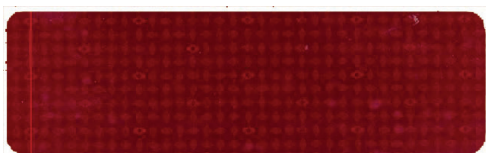
Part No. 4138



Part No. 4140 (Amber Reflector)



Part No. 4141 (Red Reflector)



Part No. N26972 (Large)



Part No. N26973 (Medium)



Part No. N26974 (Small)



Part No. N26976



Part No. N26978



Part No. N26971



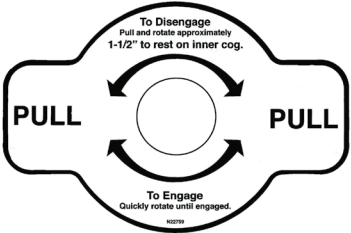
Part No. N13517



Safety Instructions

Machine Decals and Signs (Cont'd)

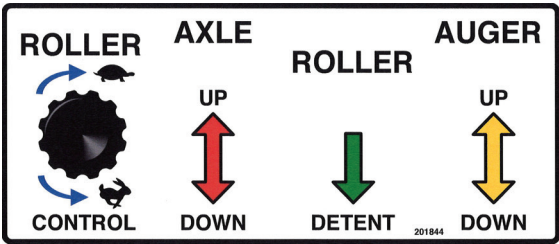
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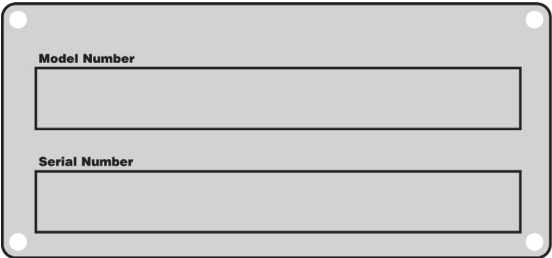
Part No. 202832



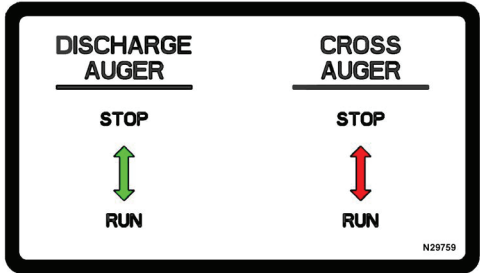
Part No. 201844



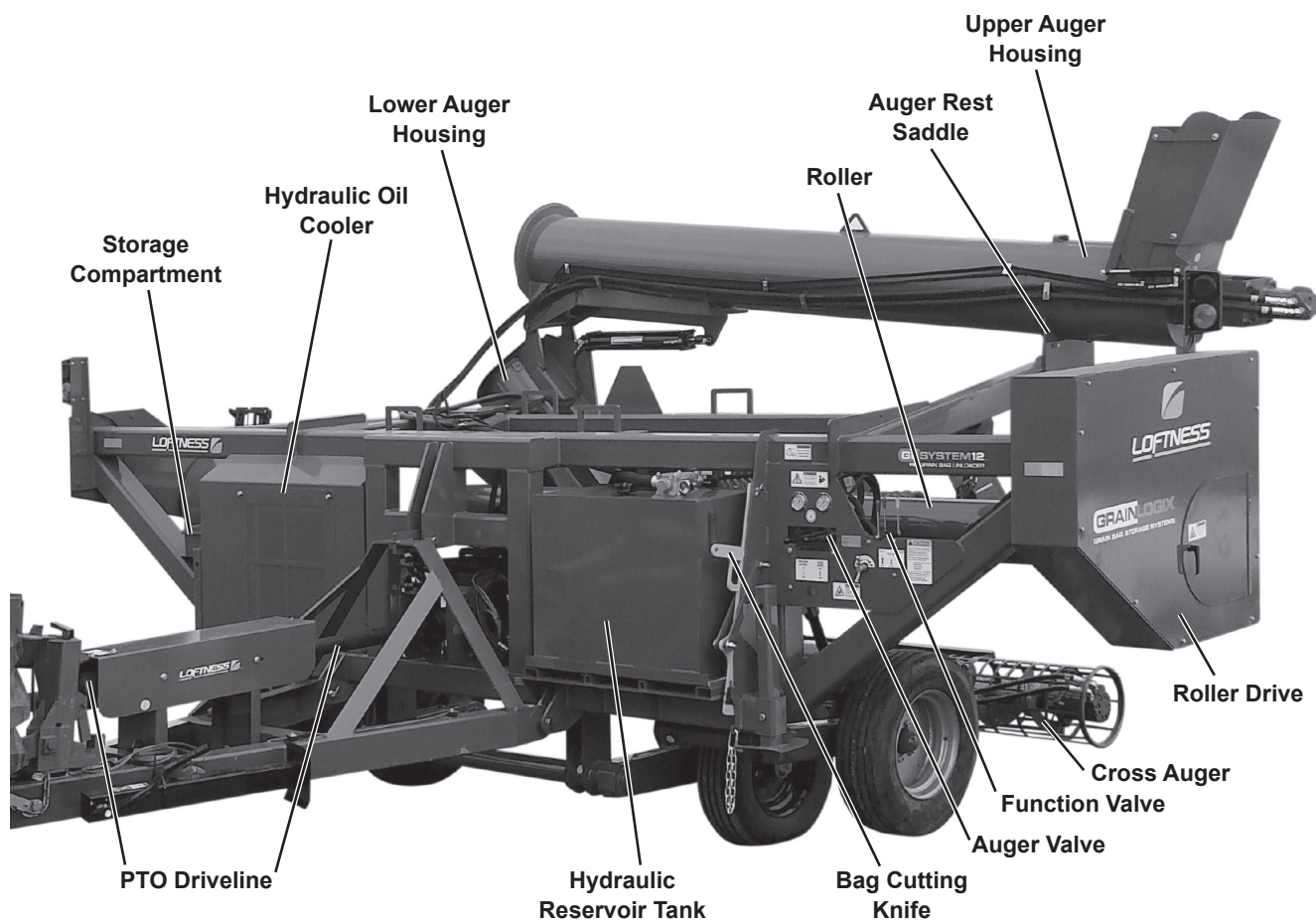
Part No. N13721



Part No. N29759



Grain Bag Loader Identification





Set-up Instructions

Initial Set-up

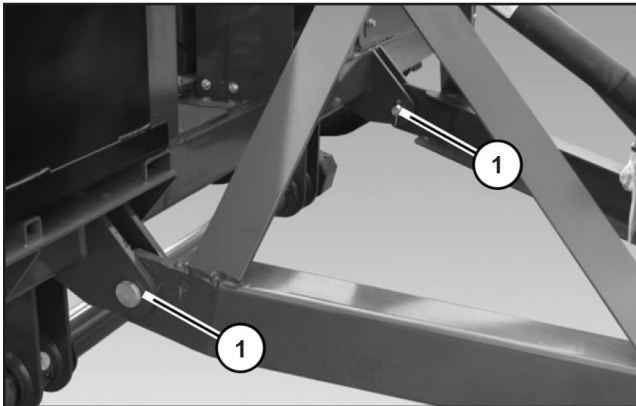
Installing The Hitch

The hitch and PTO driveline are shipped separately from the unloader.

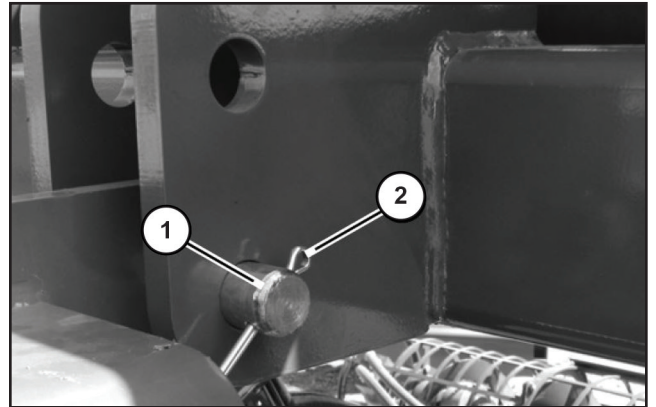


Attach the chains to the hitch and an approved fork lift.

NOTE: Always use chains that are good condition and of adequate size when lifting the hitch.



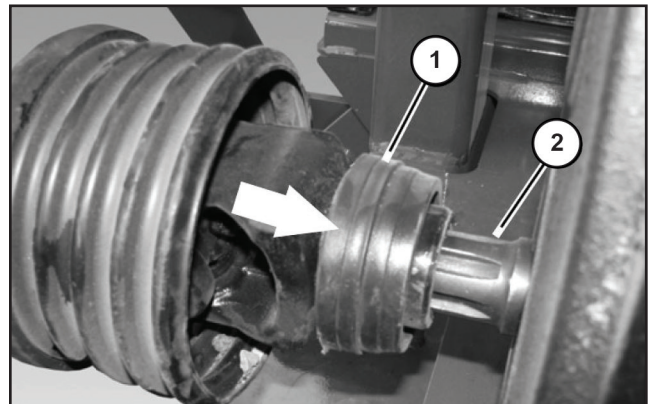
Align the lower hitch mounts with the mounting frame. Install the two pins (1) and cotter pins.



Align the upper hitch mount with the upper bracket on the mounting frame. Install the pin (1) and cotter pin (2).

Lower the jack stand and remove the chains.

Installing The PTO Driveline



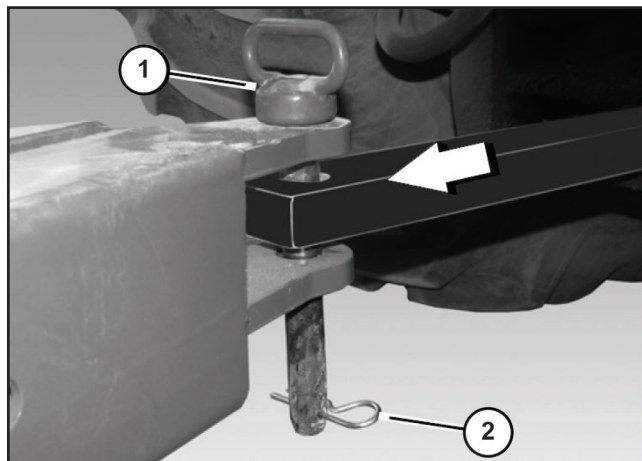
Retract the collar (1) on the PTO driveline and slide forward onto the shaft (2). Push and pull the PTO driveline back and forth several times and make sure it is securely attached to the PTO shaft.



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

Set-up Instructions

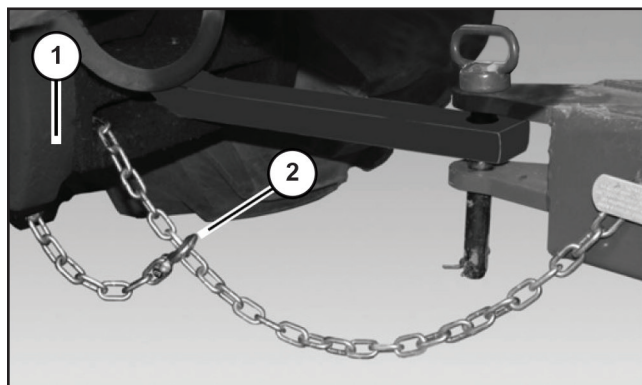
Installing Grain Bag Unloader to the Tractor



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).

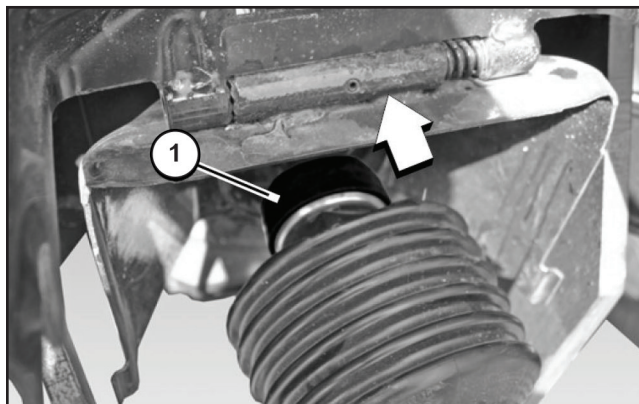


WARNING: Never use a clevis to clevis type connection to secure the implement to the tractor. The machine could separate from the tractor if a clevis pin fails.



Install the safety chain around the tractor drawbar (1) and install the hook (2) onto the chain.

Remove the PTO driveline from the stored position.



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.



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

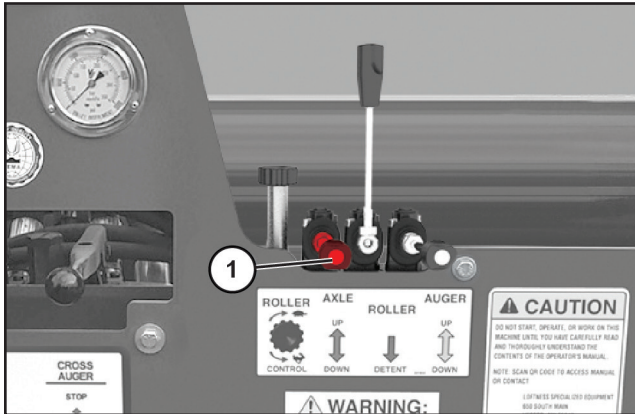
NOTE: If your tractor is not equipped with a 7-Pin electrical connector, an adapter or special wiring may be needed.

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

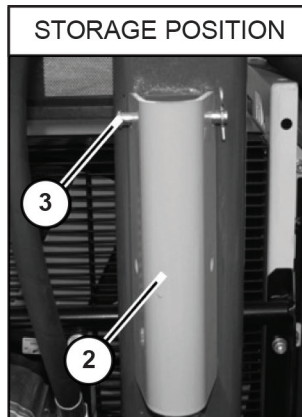
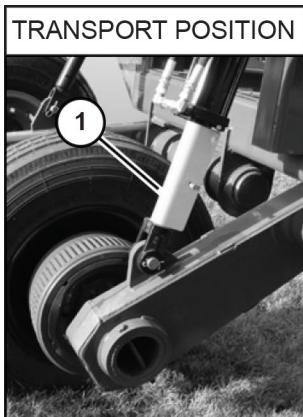
Set-up Instructions

Switch to Working Position

Start the tractor and engage the PTO to operate the unloader hydraulics.



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



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

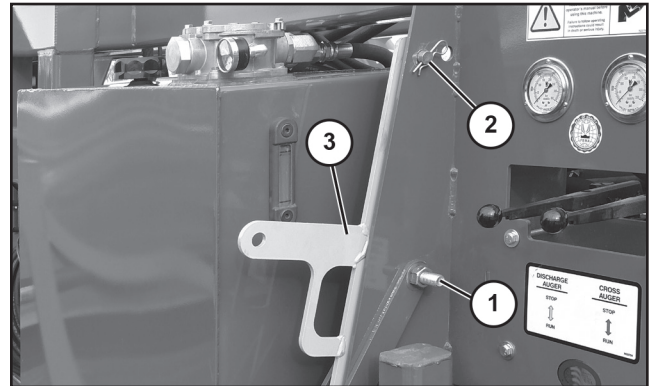
Be sure the PTO driveline, hydraulic connectors and the electrical connector are installed. See "Installing Grain Bag Unloader to the Tractor" on page 14.



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

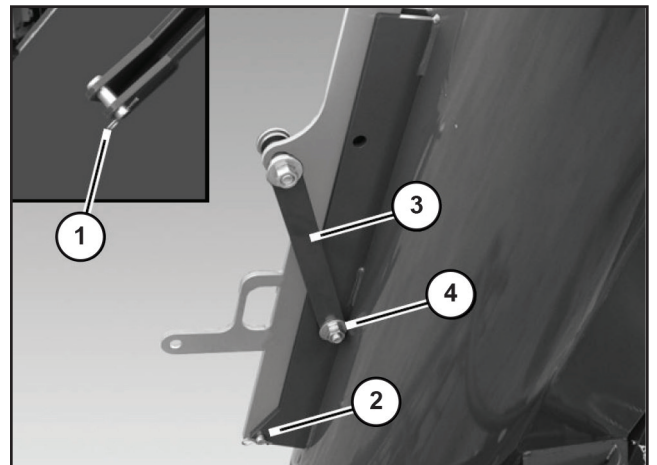


CAUTION: The Bag Cutting Knife is SHARP! Use extreme care when placing the bag cutting knife in the work or transport position. Use of gloves is recommended.



Remove the two bolts (1) & (2), nuts and washers. Retain (1) bolt, nut, spacers and washers.

Remove bag cutting knife (3).

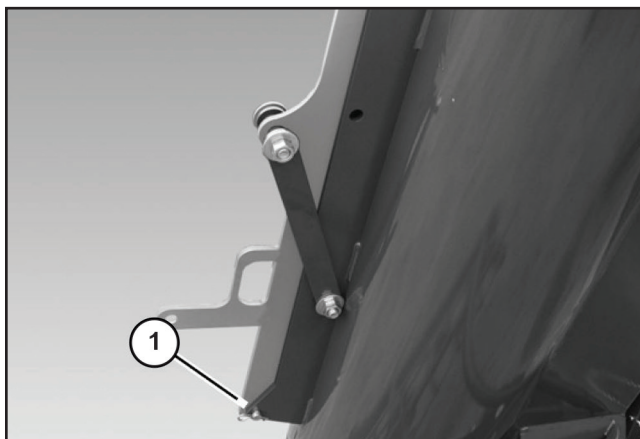


Remove the retaining clip (1) and pin. Place the bag cutting knife (cutting edge in) into the mount on the lower auger. Retain (1) bolt, nut, spacers and washers. Re-install the retaining clip (1) and pin through the bag cutting knife and lower hole of the mount (2).

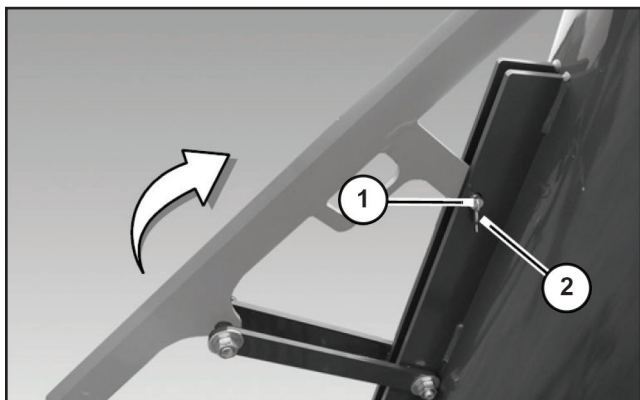
Align the bag cutting knife arm (3) with center hole of the mount. Retain (1) bolt, nut, spacers and washers. Install the bolt, nut, spacers and washers removed on page 16 through the mount and bag cutting knife arm (4) and tighten.

Set-up Instructions

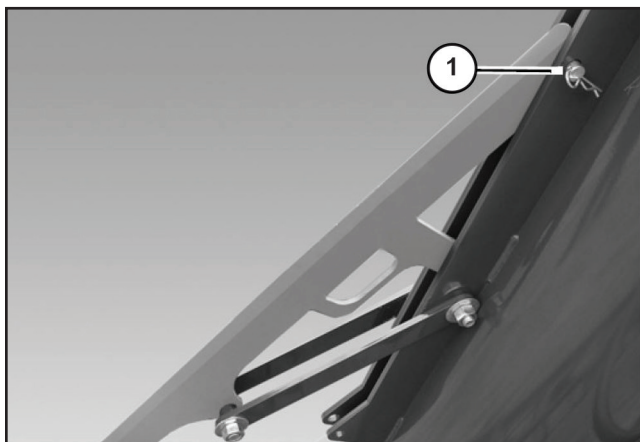
Switch to Working Position (Cont'd)



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



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 the grain bag is flatter.

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.

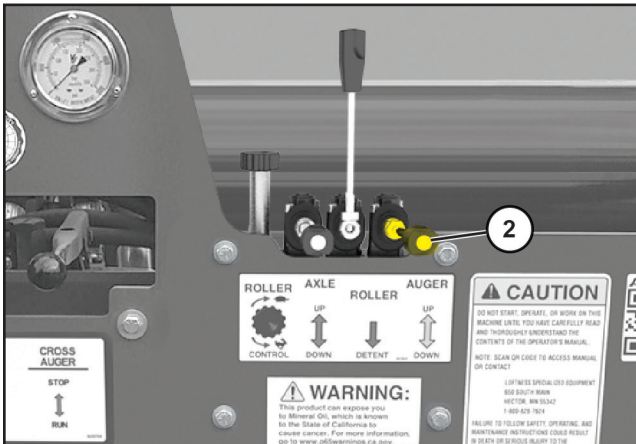
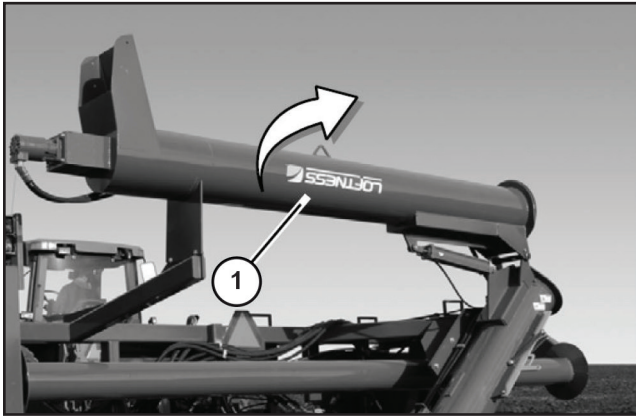
(Procedure continued on following page.)

Switch to Working Position (Cont'd)

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.

Pull up on the auger lever (2) 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.

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.

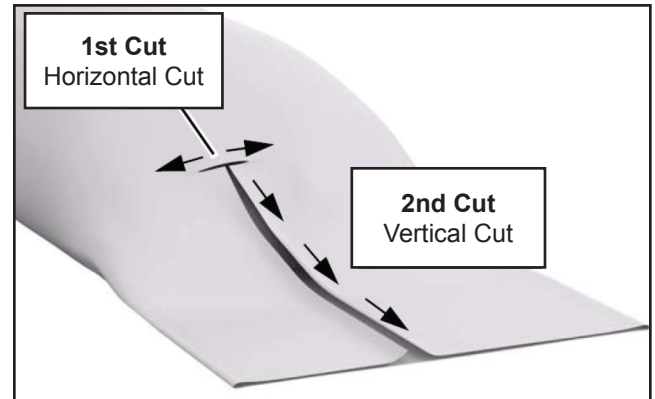
NOTE: Extraction from the opposite end of the grain bag is possible, but it will require removing some grain manually before you are able to extract grain with the unloader.



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.



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.

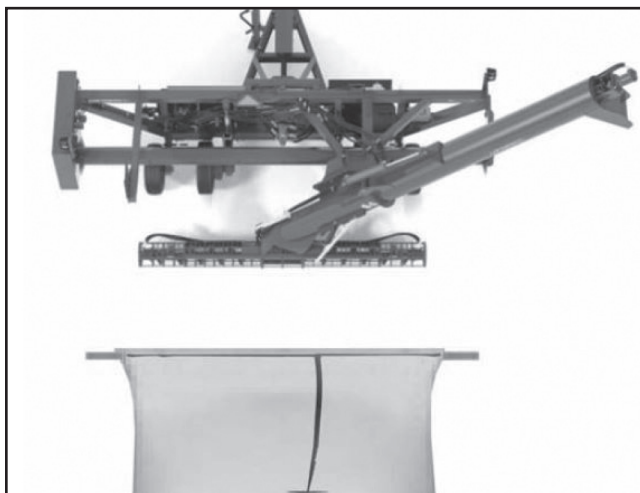
NOTE: It is important to make the horizontal cut first, before any vertical cuts are made, or the bag could keep opening completely from being stretched and full of grain. Do not cut into the tension portion of the bag.

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.

Operating Instructions

Getting Started (Cont'd)

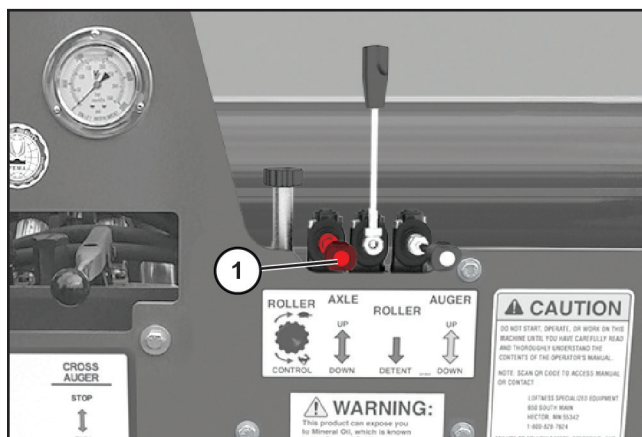


Move the tractor and unloader into position at the end of the grain bag. Center the tractor and unloader on the grain bag.

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 the tractor and engage the PTO to operate the unloader hydraulics.



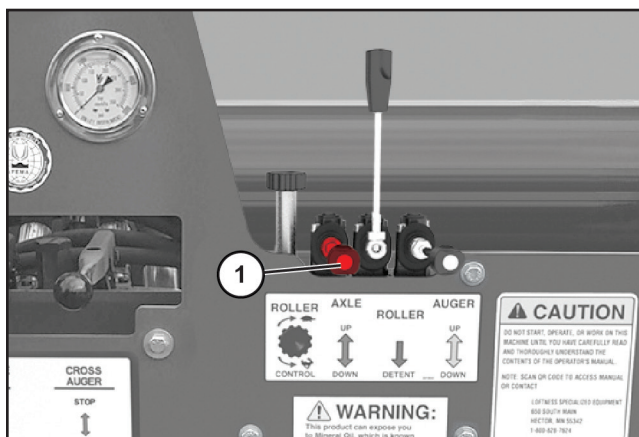
Pull up on the axle lever (1), lifting the transport wheels off the ground, putting pressure on the outside wheels (working wheels).



Use the handle (1) on the ratchet jack to raise or lower the cross augers. Repeat the procedure on the opposite side of the unloader.

NOTE: Lower/raise the axle until the cross augers are approximately 3 in. (76 mm) off the ground.

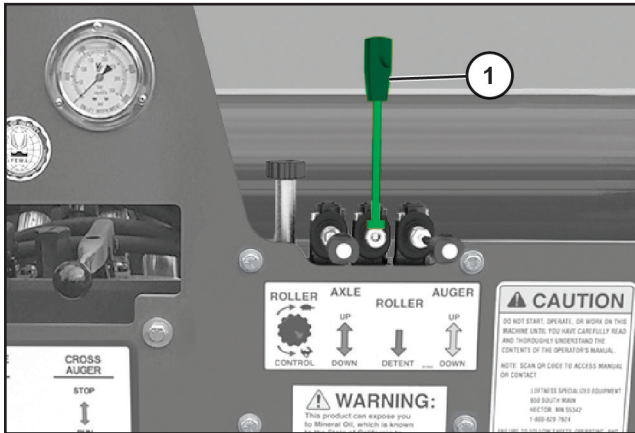
Adjust both ratchet jacks on the working wheels until the cross augers is level.



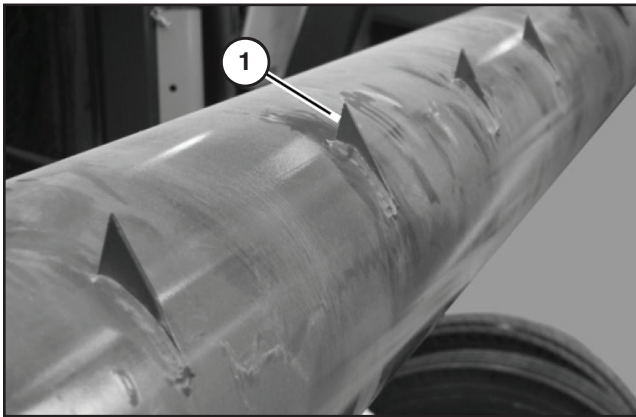
Push down on the axle lever (1), lowering the axle until the transport wheels contact the ground without raising the outside working wheels.

NOTE: Lowering the transport wheels to the ground will help stabilize and keep the cross auger level during the grain extraction process.

Getting Started (Cont'd)



Use roller lever (1) to start and stop roller rotation.



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



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



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, and engage hydraulics.

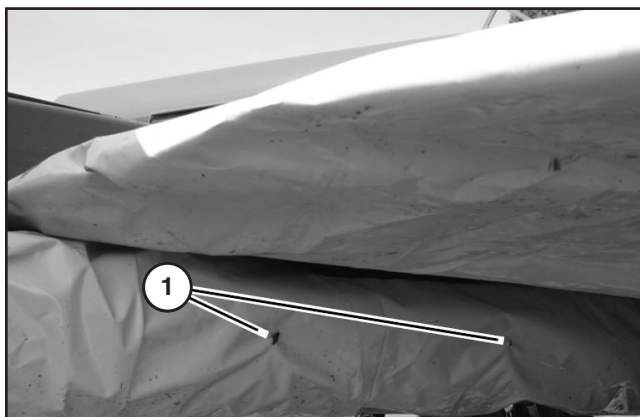
IMPORTANT: Do not engage PTO shaft before bag is attached and in operational position. The bag could get entangled in the cross augers.

Operating Instructions

Getting Started (Cont'd)

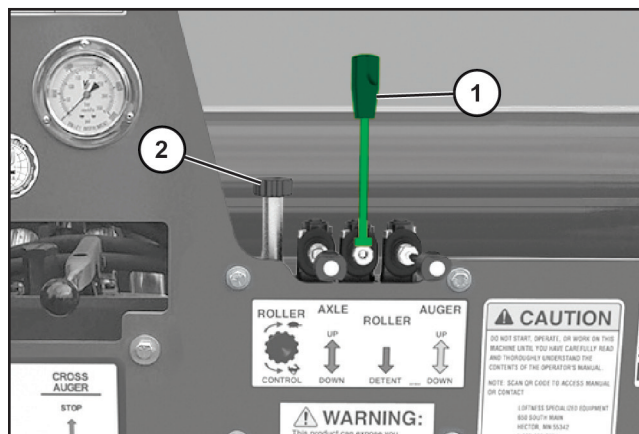


Wrap the grain bag over the top side of the roller.



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.*



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

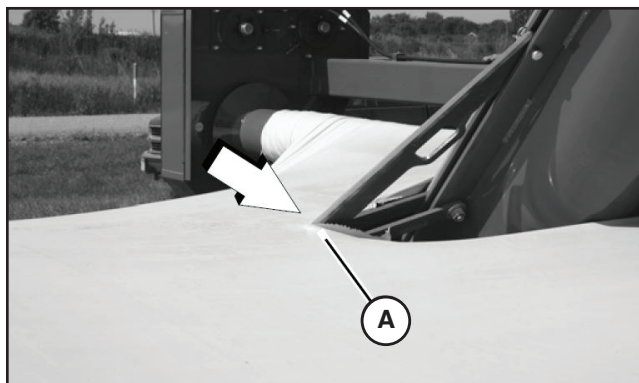
NOTE: *Make sure the parking brake is OFF.*

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

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



Move the grain transport vehicle 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 1000 RPM.

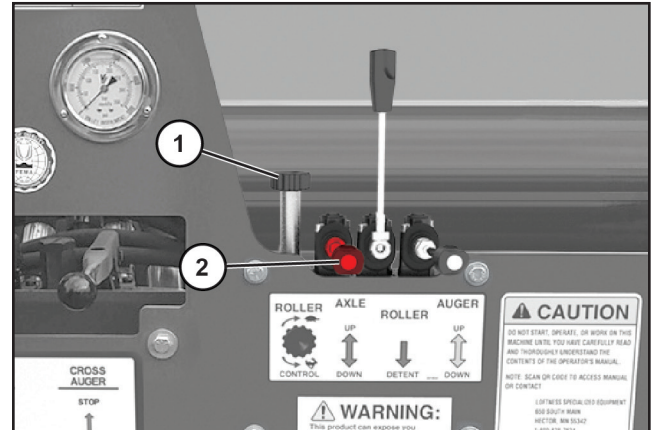


DANGER: Keep hands, feet and clothing clear of augers while tractor is running.

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



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.



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 grain should be just below roller height. Cross auger height should be 3 in. to 4 in. (76 - 102 mm) above the ground.

Operating Instructions

Grain Extraction (Cont'd)



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

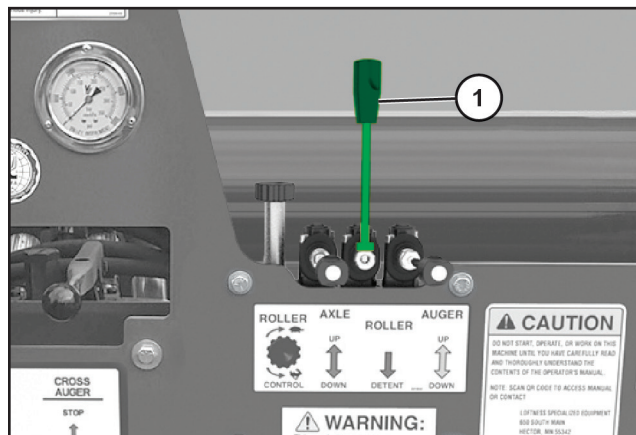


NOTE: *If the tractor and unloader are not aligned with the bag properly or if the bag is not wrapped around the roller evenly, the cross augers may come in contact with the bag. Stop the extraction process.*

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 25.) and adjust it so it wraps around the roller evenly. See page 22 for correct bag installation procedure.

Pause Operation



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

Gradually decrease the PTO speed and disengage the tractor PTO.

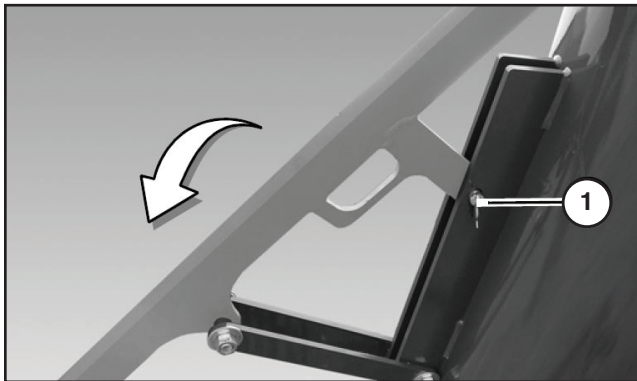
To restart operation, See “Grain Extraction” on page 23.

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.

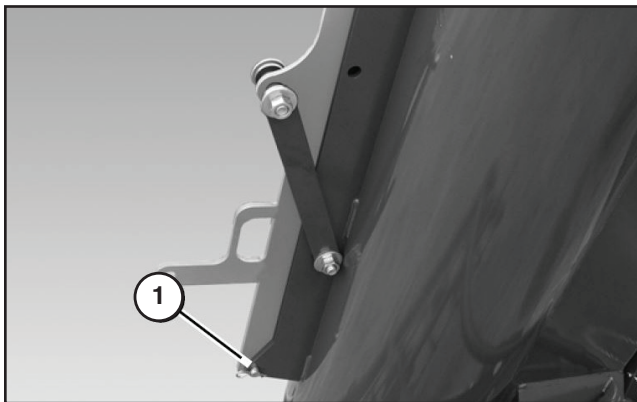
Grain can be extracted until the cross augers touch the end of the grain bag.



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

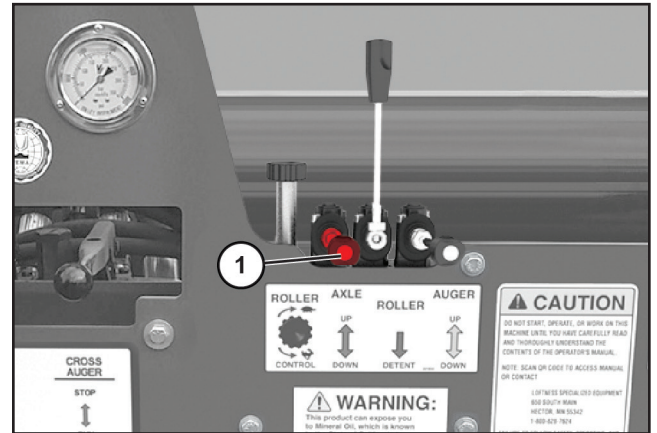


CAUTION: The Bag Cutting Knife is **SHARP!** Use extreme care when placing the bag cutting knife in the work or transport position. Use of gloves is recommended.



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

Bag Removal



Pull down on the axle lever (1) to lower the axle and raise the cross augers.



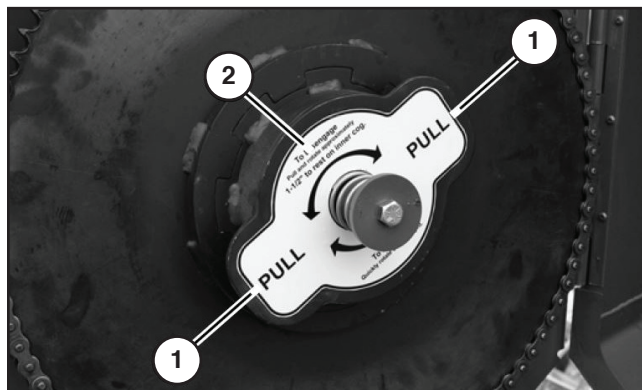
WARNING: Do Not Open Door while tractor is running. Moving parts can crush and cut. Keep clear of moving parts.



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

Operating Instructions

Bag Removal (Cont'd)



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.*

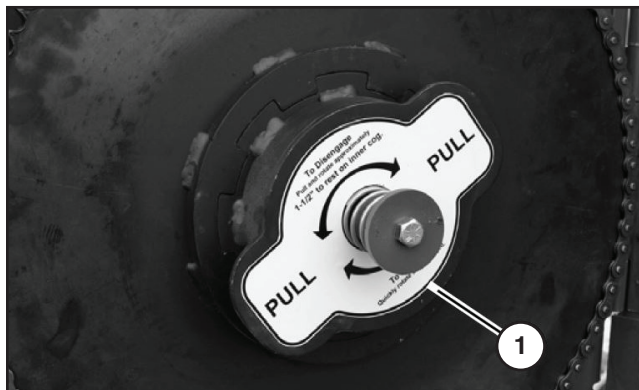


Drive the tractor forward slowly until the bag is fully unrolled. Watch and guide the bag as it is coming off the roller.

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.

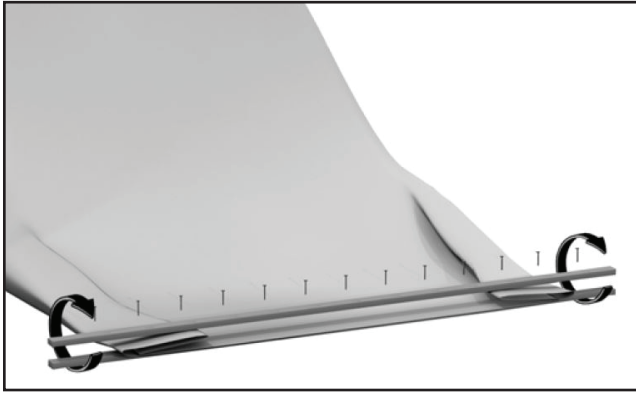
NOTE: *The grain bags are recyclable. Contact your local recycling center for details on disposing of the used grain bags.*



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

Operating Instructions

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).

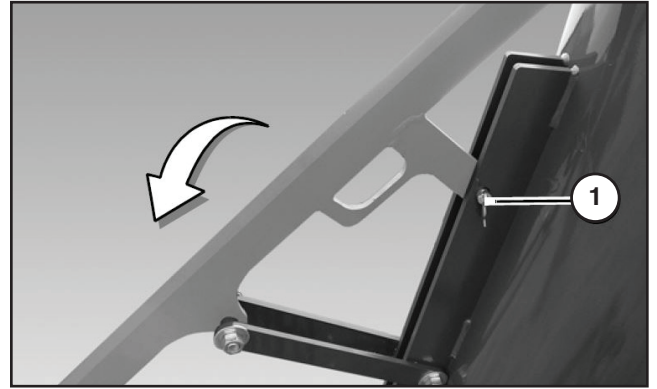
Place one plank (1) underneath the grain bag approximately 12 in. (304.8 mm) back from the end of the bag. Place a second plank (2) on top of the grain bag (3) and first plank.

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.

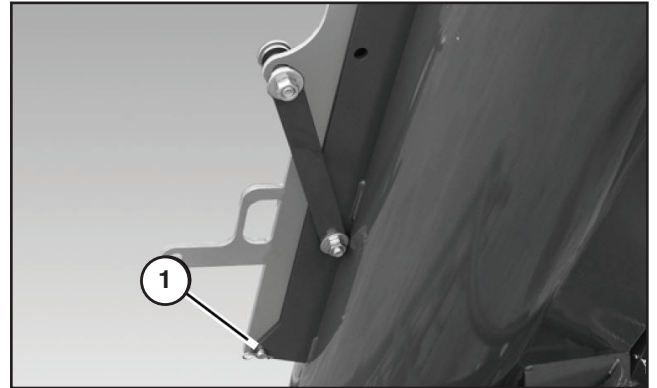
Switching to Transport Position



Remove the 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.

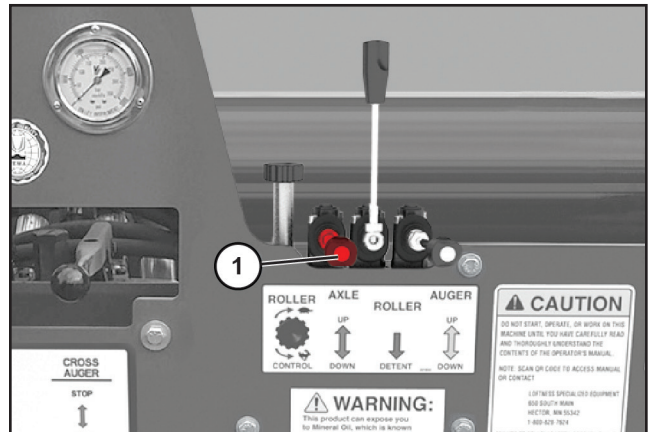
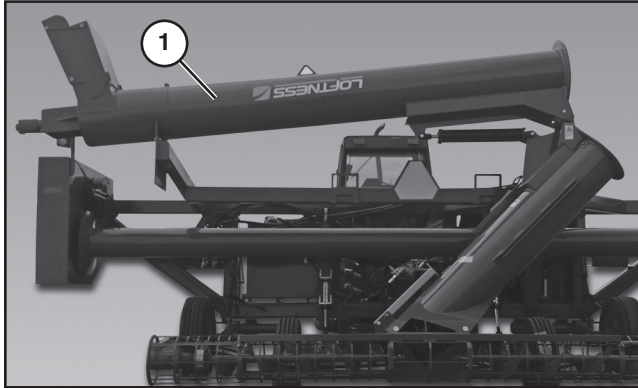


Install the pin (1) and retaining clip securing the bag cutting knife in the storage position.

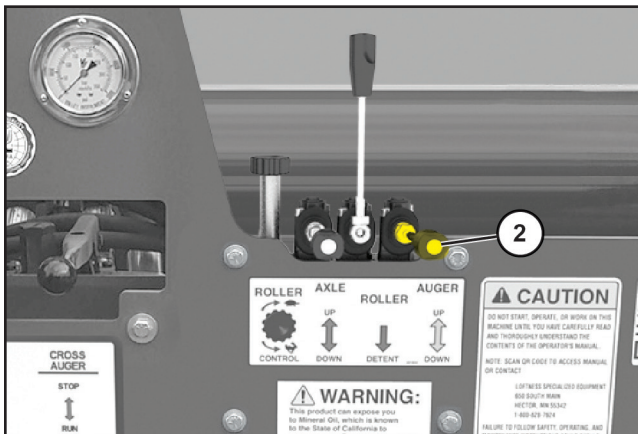
Engage the PTO on the tractor.

Operating Instructions

Switching to Transport Position (Cont'd)



Push down on the axle lever (1) to raise the unloader.

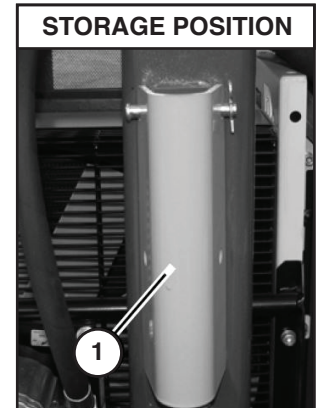
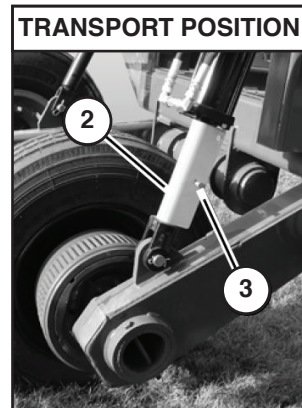


Lower the top auger (1) to the transport position.

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

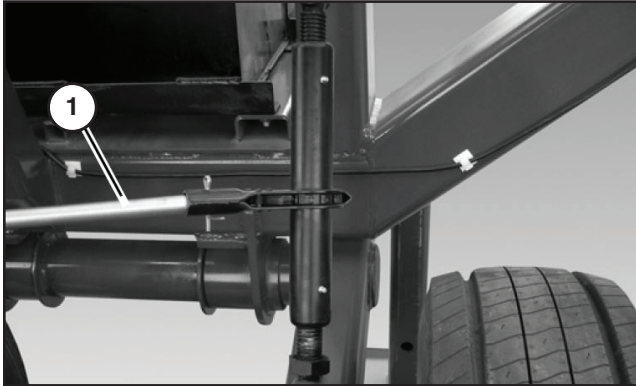


CAUTION: Pinch point. Keep hands clear of folding auger.

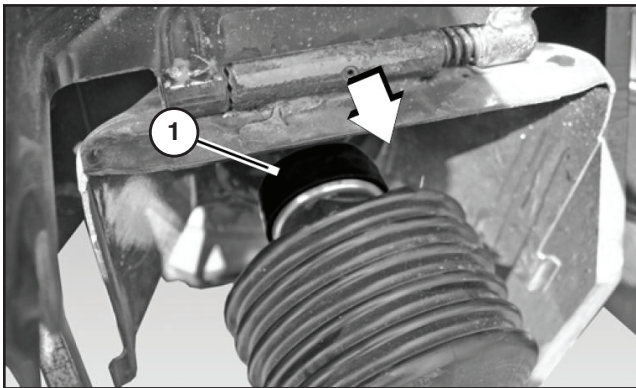


Remove the cylinder stop(s) (1) from the storage position and place on the axle cylinder(s) (2) and secure with the retaining pin (3) and clip.

Switching to Transport Position (Cont'd)



Use the handle (1) on the ratchet jack(s) to raise the working wheels off the ground (both sides).



Remove PTO driveline safety chain.

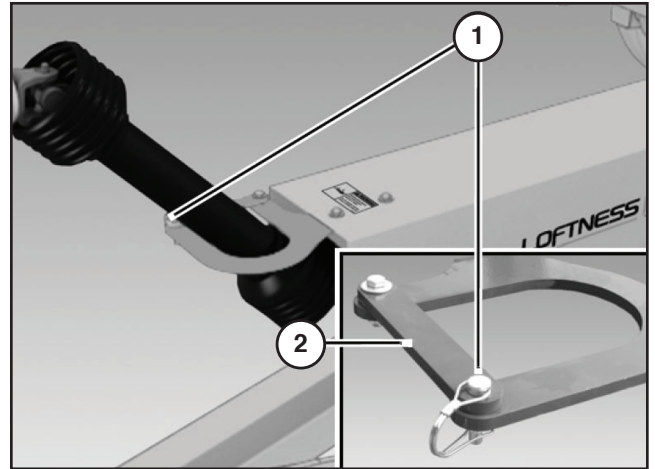
Retract the PTO driveline sleeve (1), then pull the unloader PTO driveline off the tractor PTO drive shaft.



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 retaining clip and pin (1) and rotate the PTO holder bar (2) out. Rotate the unloader PTO driveline up into the stored position.

Rotate the PTO holder bar (2) in and install the retaining clip and pin (1) securing the unloader PTO driveline in the stored position.

NOTE: The electrical connector must stay attached for transporting on the highway with a tractor. See "Transporting on a Roadway" on page 30.

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

Operating Instructions

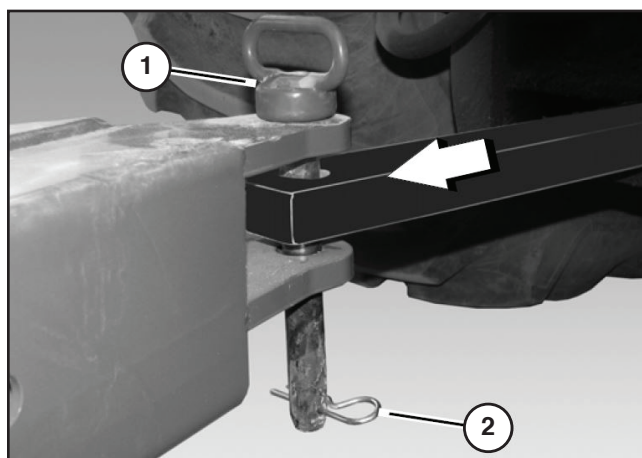
Transporting on a Roadway

The grain bag unloader must be in the transport position. See "Switching to Transport Position" on page 27.

Turn on the hazard warning lights and headlights during road travel.

Do not exceed speed rating (20 mph) on the factory-provided tires.

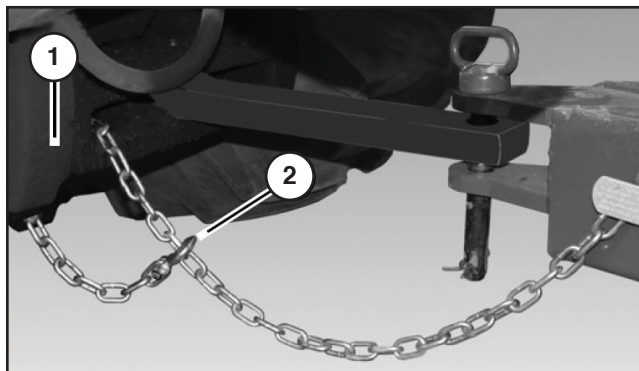
Attaching to a Tractor



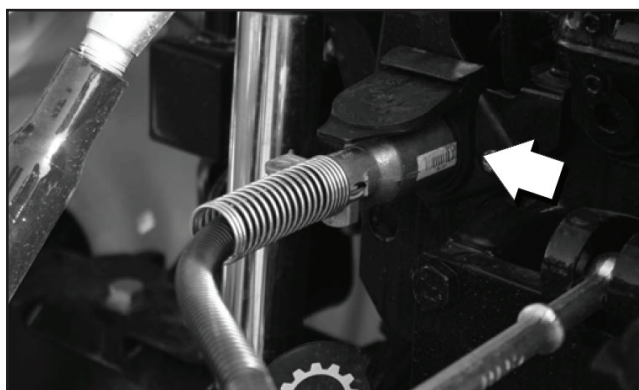
Back the tractor up to the hitch of the unloader. Insert pin (1) (1-1/8 in. to 1-1/4 in. pin) and secure with retaining clip (2).



WARNING: *Never use a clevis to clevis type connection to secure the implement to the tractor. The machine could separate from the tractor if a clevis pin fails.*



Install the safety chain around the tractor drawbar (1) and install the hook (2) onto the chain.

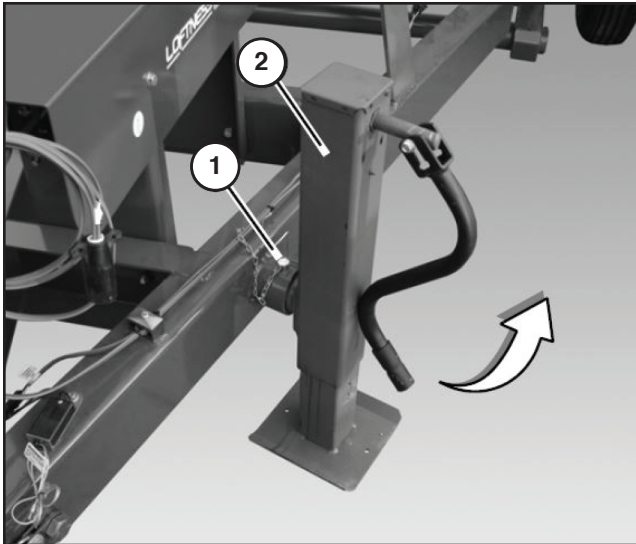


Install the 7-pin electrical harness to the tractor's electrical connector.

Transporting on a Roadway (Cont'd)

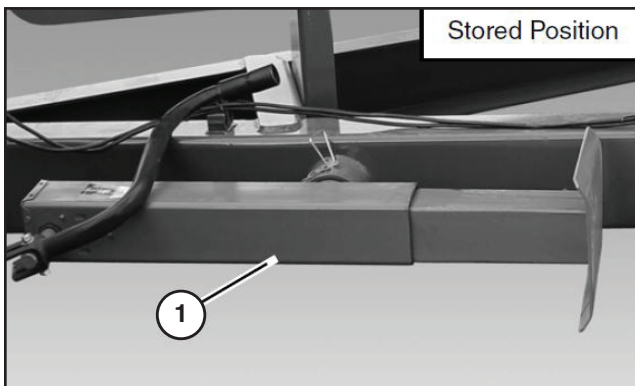
Grain Bag Unloader Transporting

Place PTO driveline in the stored position (See page 29).



NOTE: *Tongue jack must be in the stored position before transporting.*

Remove pin (1) rotate the tongue jack (2) to the stored position and reinstall pin.



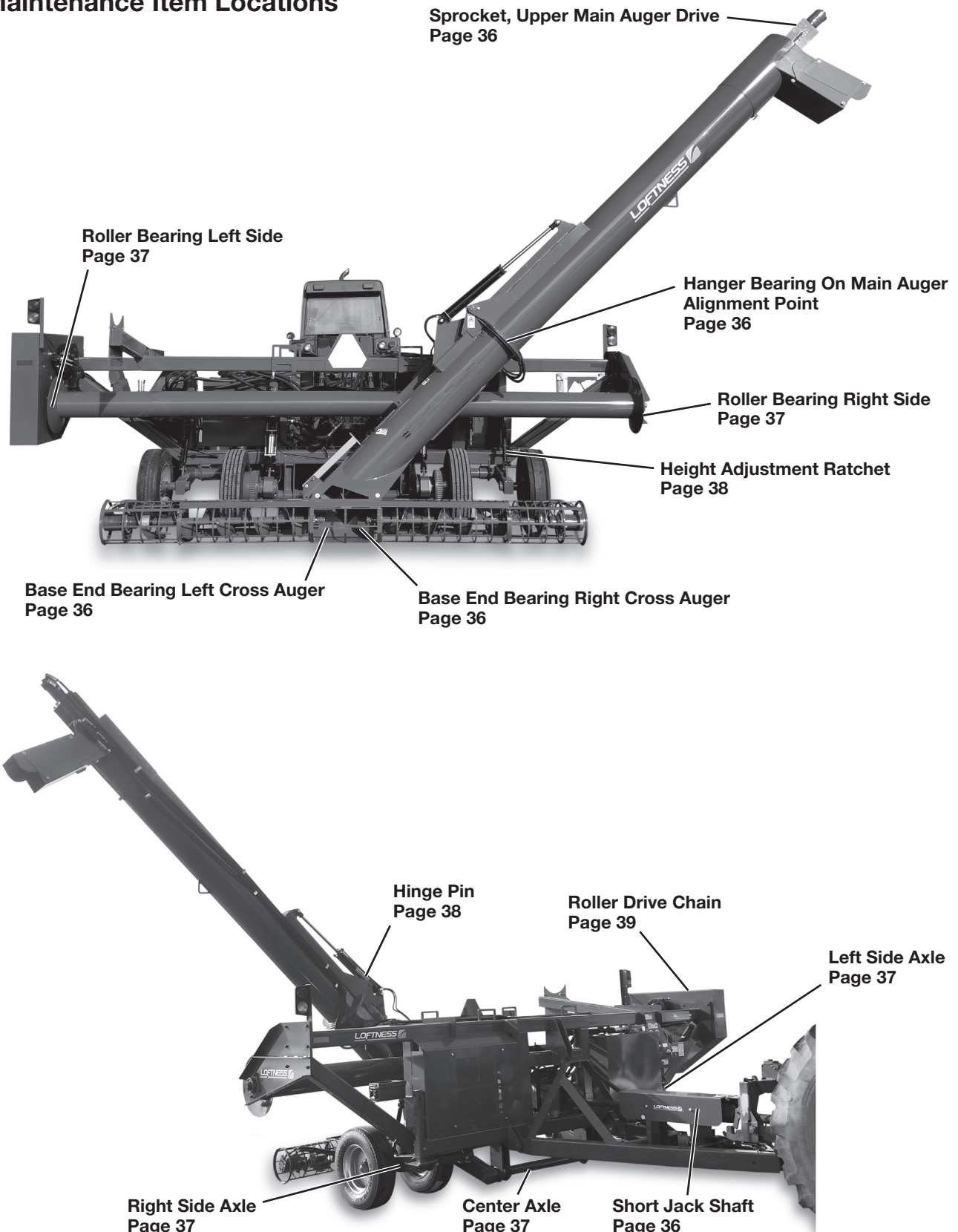
The tongue jack (1) must be in the stored position.



GBU12 shown in the transport position.




Maintenance Item Locations





General Maintenance

See “Maintenance Safety” on page 5. before performing any service or maintenance on the grain bag loader.

| | |
|---|---|
|  | 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 grain bag unloader after each use.

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.

Maintenance Schedule

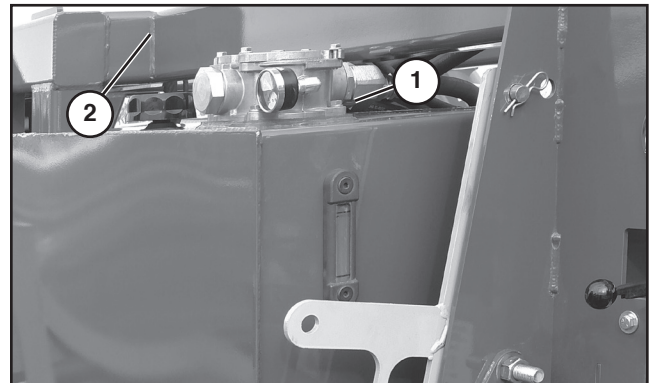
| HOURS | SERVICE POINTS | SERVICE REQUIRED |
|-----------|------------------------------|------------------|
| | | CHECK |
| Every 8 | Drive Chain Tightness | X |
| Every 50 | Bearing Set Screws | X |
| | Sprocket Set Screws | X |
| | Brake Pads | X |
| | Safety Labels | X |
| Every 100 | Hoses and Wiring | X |
| | Oil Leaks | X |
| | Wheel Bearings | X |
| Annually | PTO Driven Gearbox Oil Level | X |
| | Bag Roller Gearbox Oil Level | X |

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. |
|---|---|

- Grease - Use an SAE multipurpose high temperature grease with extreme-pressure (EP) rating. Also acceptable is an SAE multipurpose lithium based grease.
- PTO Driven Gearbox - Use 56oz of 75w-90 Synthetic Severe gear lube.
- Bag Roller Gearbox - Use 88 oz. of 85W-140 gear lube.
- 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.
- Use universal tractor fluid, approximately 70 gallons.

Hydraulic Oil Reservoir



The hydraulic oil level should be approximately centered in the sight gauge (1) on the hydraulic oil reservoir.

To add hydraulic oil, remove fill cap (2), add hydraulic oil and reinstall fill cap.

Maintenance

Lubrication

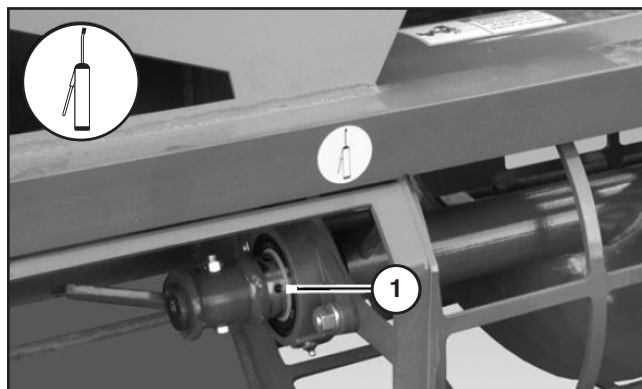
Grease Points

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

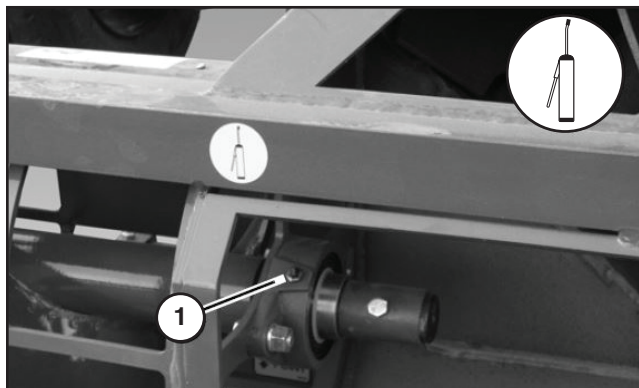
NOTE: See "Grain Bag Loader Identification" on page 11 for component location and identification.



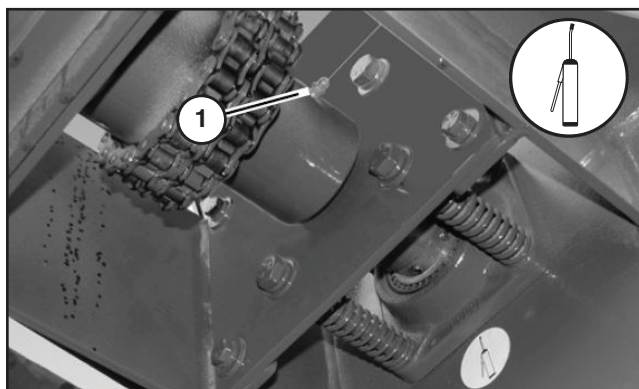
Location: Bearing each end of the short jack shaft (1)
Interval: Every 8 hours of operation.



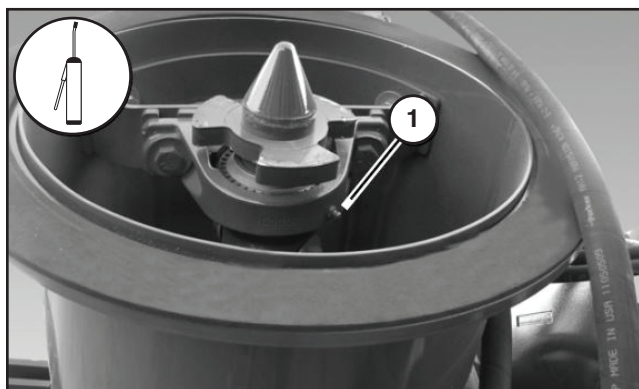
Location: Base end bearing of the right cross auger (1).
Interval: Every 8 hours of operation.



Location: Base end bearing of the left cross auger (1).
Interval: Every 8 hours of operation.



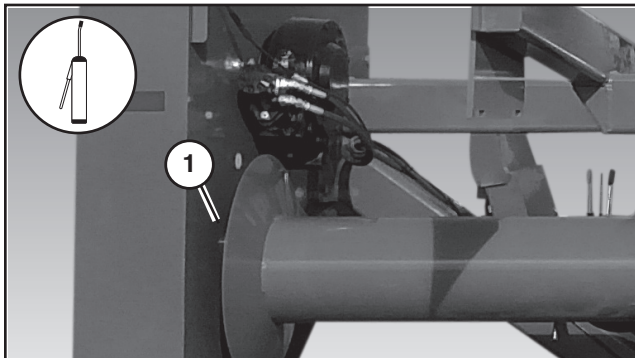
Location: Sprocket, upper main auger drive (1).
Interval: Every 8 hours of operation.



Location: Hanger bearing on the main auger alignment point (1).
Interval: Every 8 hours of operation.

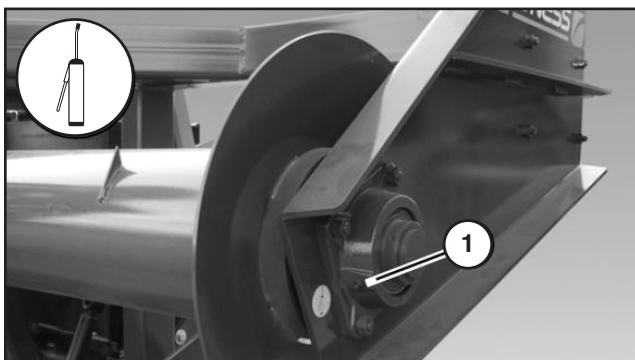
Lubrication (Cont'd)

Grease Points (Cont'd)



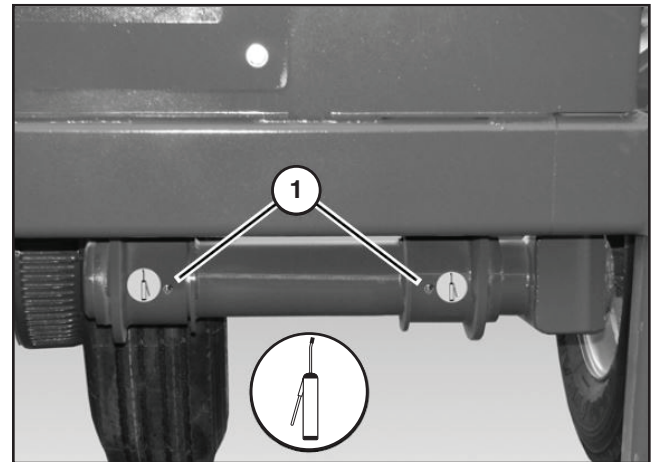
Location: Roller bearing (1) (left side).

Interval: Every 8 hours of operation.



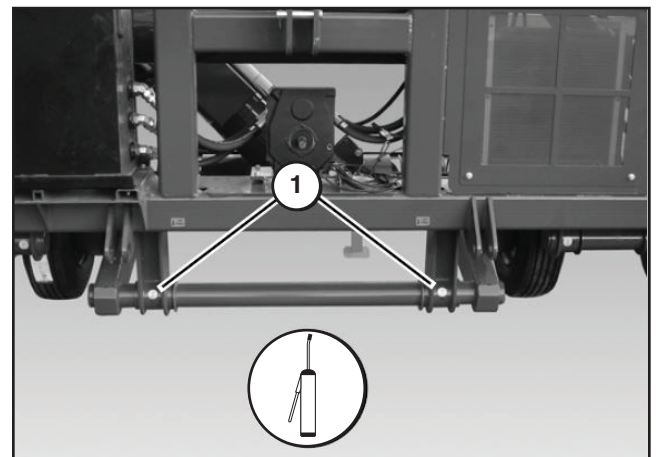
Location: Roller Bearing (1) (Right side).

Interval: Every 8 hours of operation.



Location: Right and left side of axle (1).

Interval: Every 20 hours of operation.



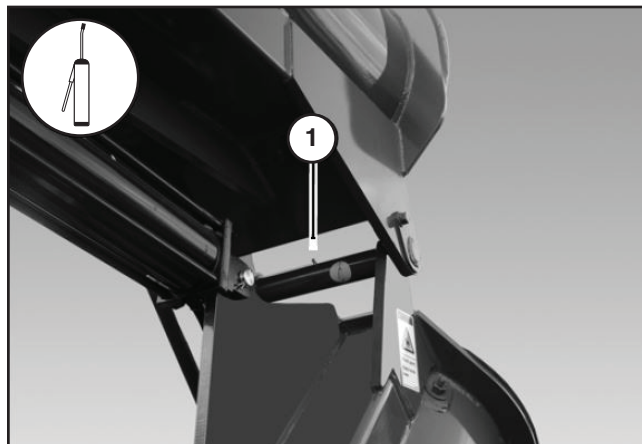
Location: Center axle (1).

Interval: Every 20 hours of operation.

Maintenance

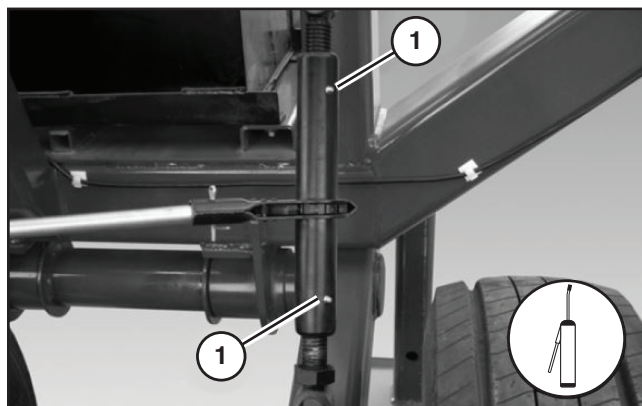
Lubrication (Cont'd)

Grease Points (Cont'd)



Location: Hinge pin on the main auger (1).

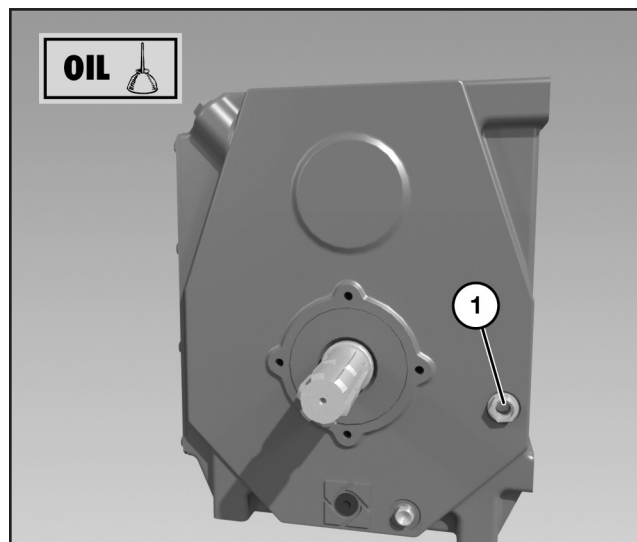
Interval: Every 8 hours of operation.



Location: Height adjustment ratchet on both working wheels (1).

Interval: Every 50 hours of operation.

Checking Oil Level of PTO Driven Gearbox



Location: PTO Driven Gearbox.

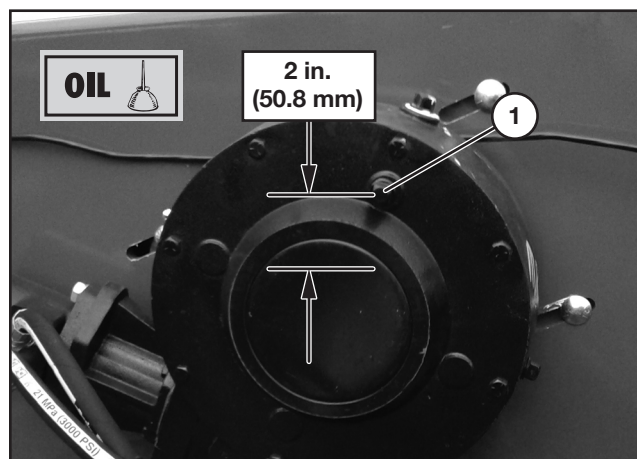
Interval: Annually.

NOTE: The gearbox holds 56 oz. of 75w-90 Synthetic Severe gear lube.

Gear lube level should be at center of sight glass (1).

If the lube level is below the center of the sight glass, add gear lube to the correct level.

Checking Oil Level of Bag Roller Gearbox



Location: Left End of Bag Roller (1).

Interval: Annually.

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

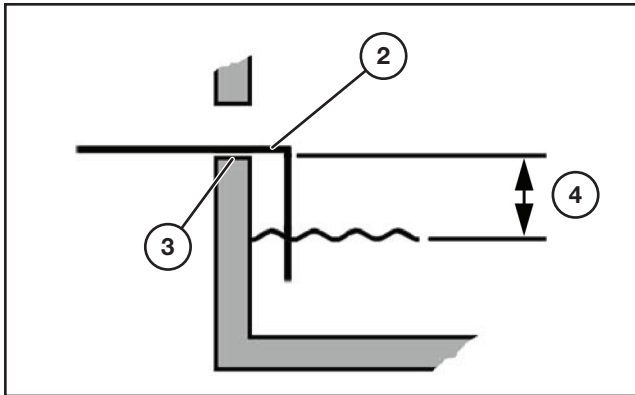
(Procedure continued on following page.)

Lubrication (Cont'd)

Grease Points (Cont'd)

Checking Oil Level of Bag Roller Gearbox (Cont'd)

Use the following procedure to verify the oil level:

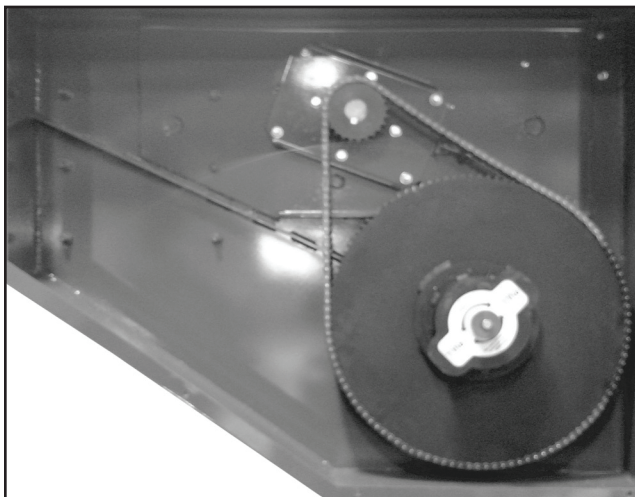


Bend a piece of wire (2) at a 90° angle. Place a mark on the wire bend at the desired height.

- **Gearbox Oil Level** - 2 in. (50.8 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.



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

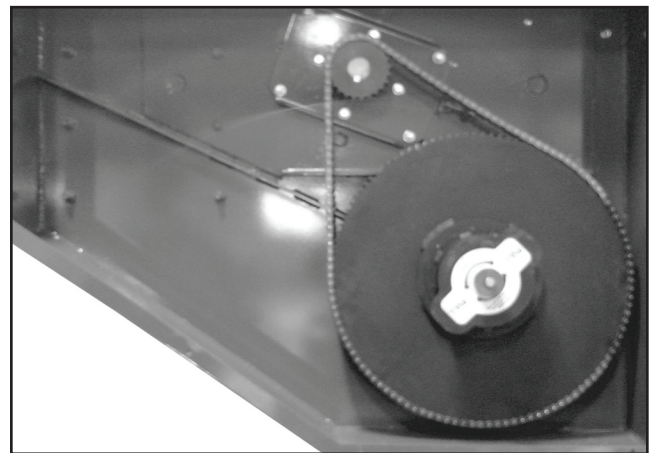
Interval: Every 40 hours of operation.

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 (1), (2) and (3). Press on 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).

Loosen the six nuts (1) and jam nut (2). Tighten bolt (3) until the deflection of the lower sprocket chain is approximately 1 in. (25.4 mm).

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

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

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 both driveline connections. Tighten and repair if necessary. |
| | PTO driveline u-joints dry. | Lubricate the u-joints. |
| | Jack shaft bearings worn. | Replace the shaft bearings. |
| | PTO slide shaft is dry. | Lubricate the PTO slide shaft. |
| Hydraulic controls for the wheels, auger fold and roller not working properly. | Relief valve at third pump defective. | Check relief valve (3000 PSI). |
| | Contamination in the fast/slow spool of the control valve. | Remove cartridge and verify inner spool moves freely. |
| Bag roller stops. | Relief setting has been reached. | Verify relief at motor is 1500 PSI. |
| | Tractor too heavy. | Use smaller tractor or assist heavier tractor by slowly backing into the bag. |
| | Field conditions too soft. | Allow field conditions to dry and firm up. |
| | Control valve not shifting. | Verify pressure at hydraulic motor. Replace spool if necessary. |
| | Hydraulic motor failed. | Replace hydraulic motor. |
| Grain bag is not wrapping on the roller evenly. | Tractor/Unloader not aligned with grain bag. | Adjust tractor/unloader. |
| | Grain bag not started correctly. | Adjust grain bag or restart. |
| 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 knife not cutting correctly. | Bag coming off knife. | Switch to lower knife setting. |
| | Cutting knife is not locked into position. | Verify pins are installed. |
| | Tractor/Unloader not aligned with grain bag. | Adjust tractor/unloader. |
| | Knife cutting edge is dull. | Sharpen knife. |
| Grain is not exiting the top auger housing. | Cross augers not rotating. | Verify operation and pressure. |
| | Discharge auger not rotating. | Verify operation and pressure. |
| | Main auger not engaged at fold. | Verify top auger drive peg contacts the lower drive auger. |

Troubleshooting (Cont'd)

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---------------------------------------|---|--|
| Cross augers slow or not rotating. | Pressure relief failure. | Check relief valve (3000 PSI). |
| | Pressure relief stuck open. | Reduce pressure to 2500 PSI or less and allow the relief valve to re-seat. |
| | Hydraulic spool not shifting. | Replace spool. |
| | Hydraulic motor failure. | Replace hydraulic motor. |
| | Hydraulic hose failure. | Replace hydraulic hose(s). |
| | Pump failure. | Replace second pump. |
| | Hydraulic tank low on fluid. | Check fluid level and add hydraulic fluid as needed. |
| | Tractor PTO RPM too low. | Increase tractor PTO (1000 RPM). |
| Discharge auger slow or not rotating. | Pressure relief failure. | Check relief valve (3000 PSI). |
| | Pressure relief stuck open. | Reduce pressure to 2500 PSI or |
| | Hydraulic spool not shifting. | Replace spool. |
| | Hydraulic motor failure. | Replace hydraulic motor. |
| | Hydraulic hose failure. | Replace hydraulic hose(s). |
| | Pump failure. | Replace first pump. |
| | Hydraulic tank low on fluid. | Check fluid level and add hydraulic fluid as needed. |
| | Top auger engaged to bottom auger. | Verify top auger peg is contacting lower drive auger. |
| | Auger shaft broken at coupler. | Replace auger. |
| | Chain coupler broken. | Replace chain. |
| | Sheared key on motor or drive couplers. | Replace key. |
| Discharge auger noisy. | Bearing at fold is damaged. | Replace bearing. |
| | Bearing at bottom is damaged. | Replace bearing. |
| | Bearing at top is damaged. | Replace bearing. |
| | Auger tube bent or damaged. | Repair auger tube. |

Maintenance

Troubleshooting (Cont'd)

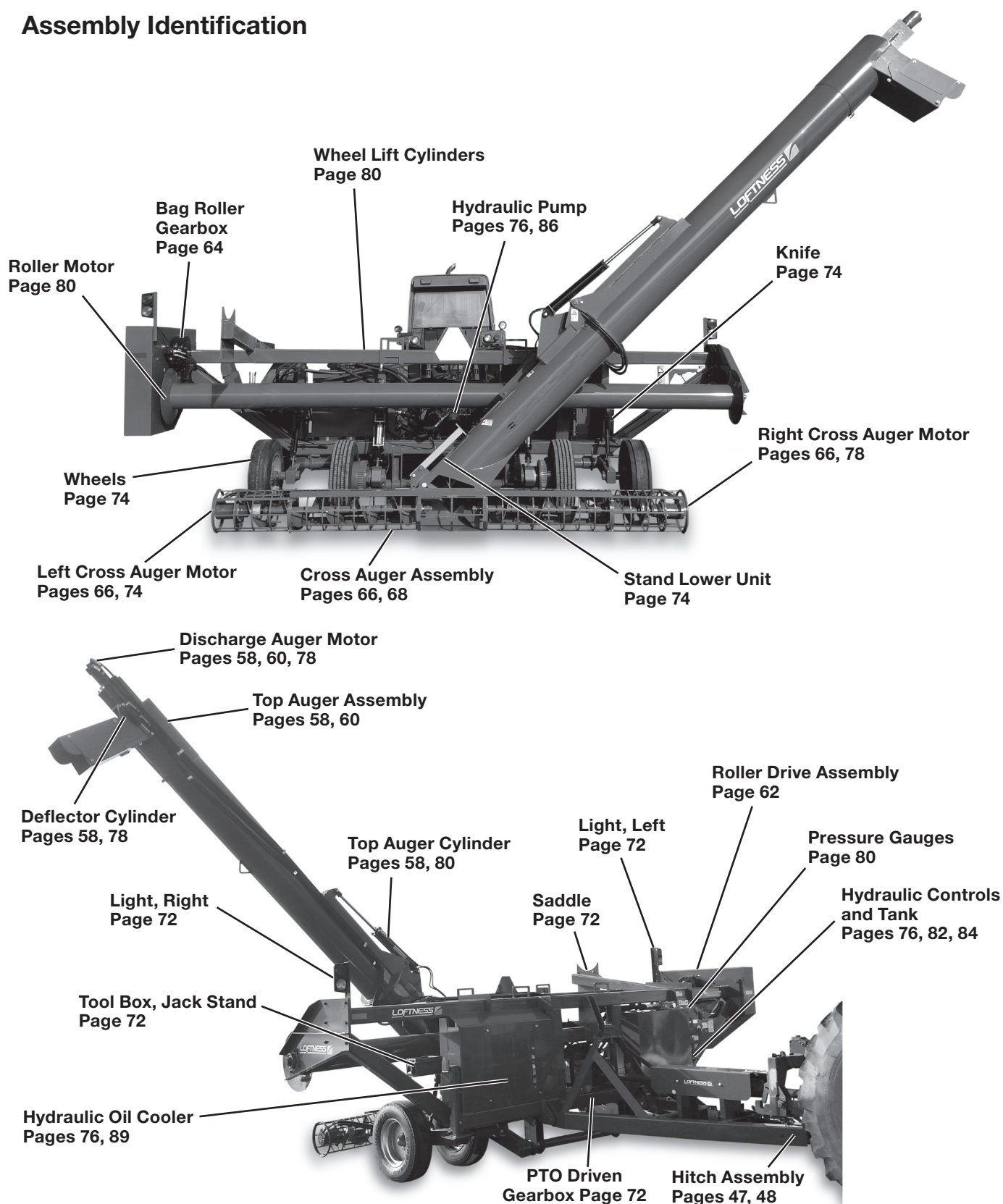
| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---------------------------------|---|--|
| Hydraulic system operating hot. | Oil cooler motor failure. | Replace motor or third pump. |
| | Oil cooler fins are plugged with debris. | Clean oil cooler. |
| | Oil cooler pump failure. | Replace third pump. |
| | Oil cooler pump relief valve failure. | Check relief valve (3000 PSI). |
| | Relief valves stuck open or partially open. | Replace relief valves. |
| | Hydraulic tank low on fluid. | Check fluid level and add hydraulic fluid as needed. |
| | Pump/motor failing. | Replace components as needed. |
| Oil filter gauge reading high. | Filter is plugged. | Replace filter. |
| Gearbox operating hot. | Hydraulic fluid level too low. | Add/change hydraulic fluid. Do not overfill. |
| | Hydraulic fluid level too high. | Lower hydraulic fluid level to sight glass. |
| | Machine operating at high loads. | Allow the gearbox to cool between loads. |
| | Bearing failure. | Replace gearbox. |
| Hydraulic pumps are noisy. | Suction hose collapsed. | Replace suction hose. |
| | Hydraulic fluid level too low. | Add hydraulic fluid. Do not overfill. |
| | Relief valve on third pump is open. | Return stack valves to neutral. |
| | Hydraulic pump mounting bolts are loose. | Tighten bolts. |
| | Hydraulic fluid is hot. | Allow hydraulic fluid to cool. |
| Electric brakes not operating. | Battery is discharged. | Charge or replace battery. |
| | Bad connection at towing vehicle. | Verify the connection is tight or repair wiring as needed. |
| | Machine wiring damaged. | Repair as needed. |
| Brakes squeak during operation. | Brakes are engaging. | Manually adjust the pads until loose. |
| Roller drive chains are noisy. | Chains are loose. | Tighten chains. |
| | Chains are stretched. | Replace chains. |
| | Chains are dry. | Lubricate chains. |
| | Overhung load adapter failure. | Replace adapters. |

Troubleshooting (Cont'd)

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|--|--|--|
| GBU12 sinking in soft ground. | Soft ground conditions. | Adjust outrigger wheels down using the ratchet jack adjuster. |
| | | Allow soil conditions to dry and firm up. |
| Grain bag tears when unloading on soft ground. | Pulling too hard on grain bag with bag roller. | Push slowly back with tractor while unloading. |
| | | Unload down the slope on soft ground. |
| | | Use proper site preparations to avoid rocks, stubble, sticks or uneven ground. |
| Steering issues. | Soft ground conditions. | Consider using a front PTO and three-point on the tractor. |
| | | Use a tractor equipped with front wheel assist. |



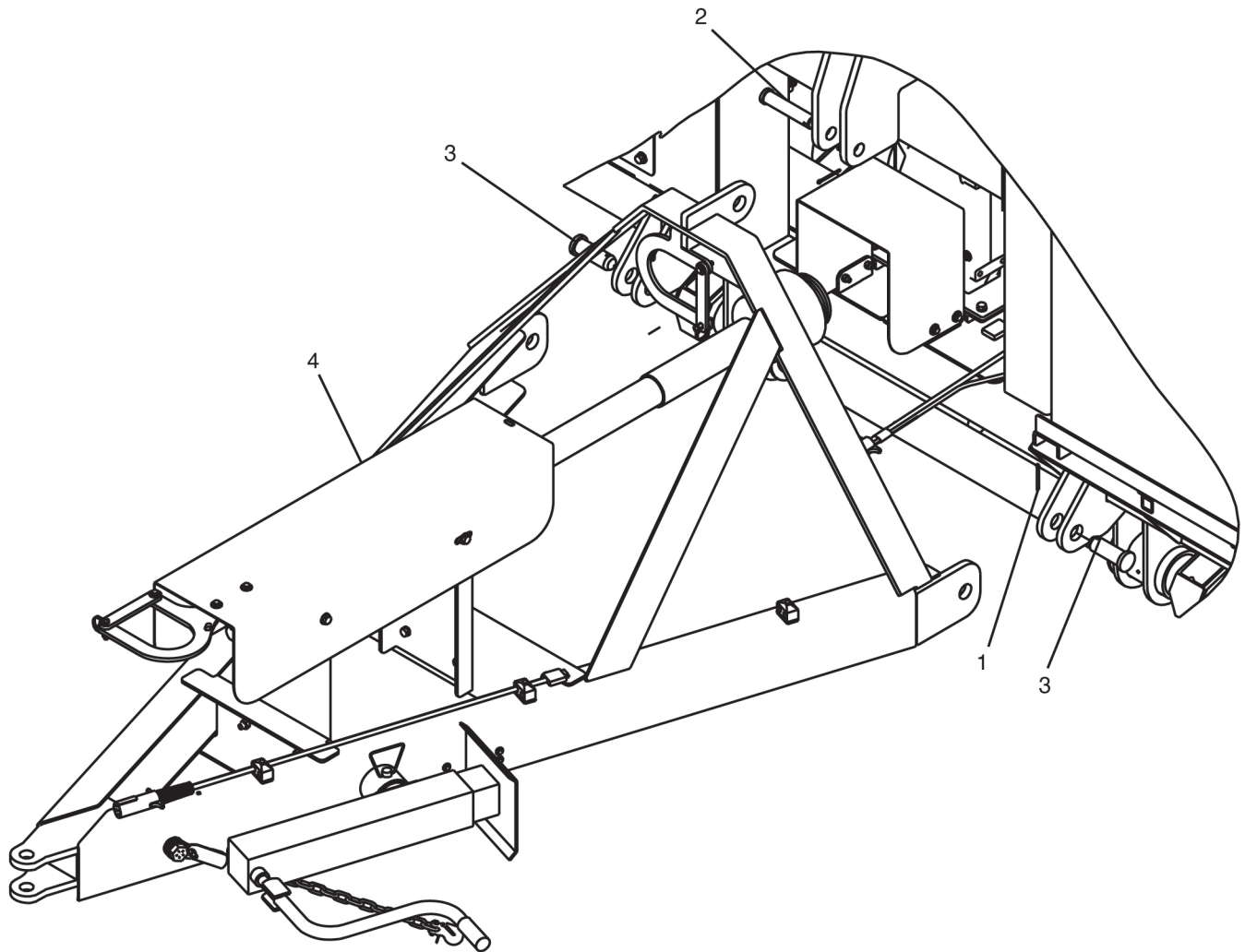
Assembly Identification



Parts Identification

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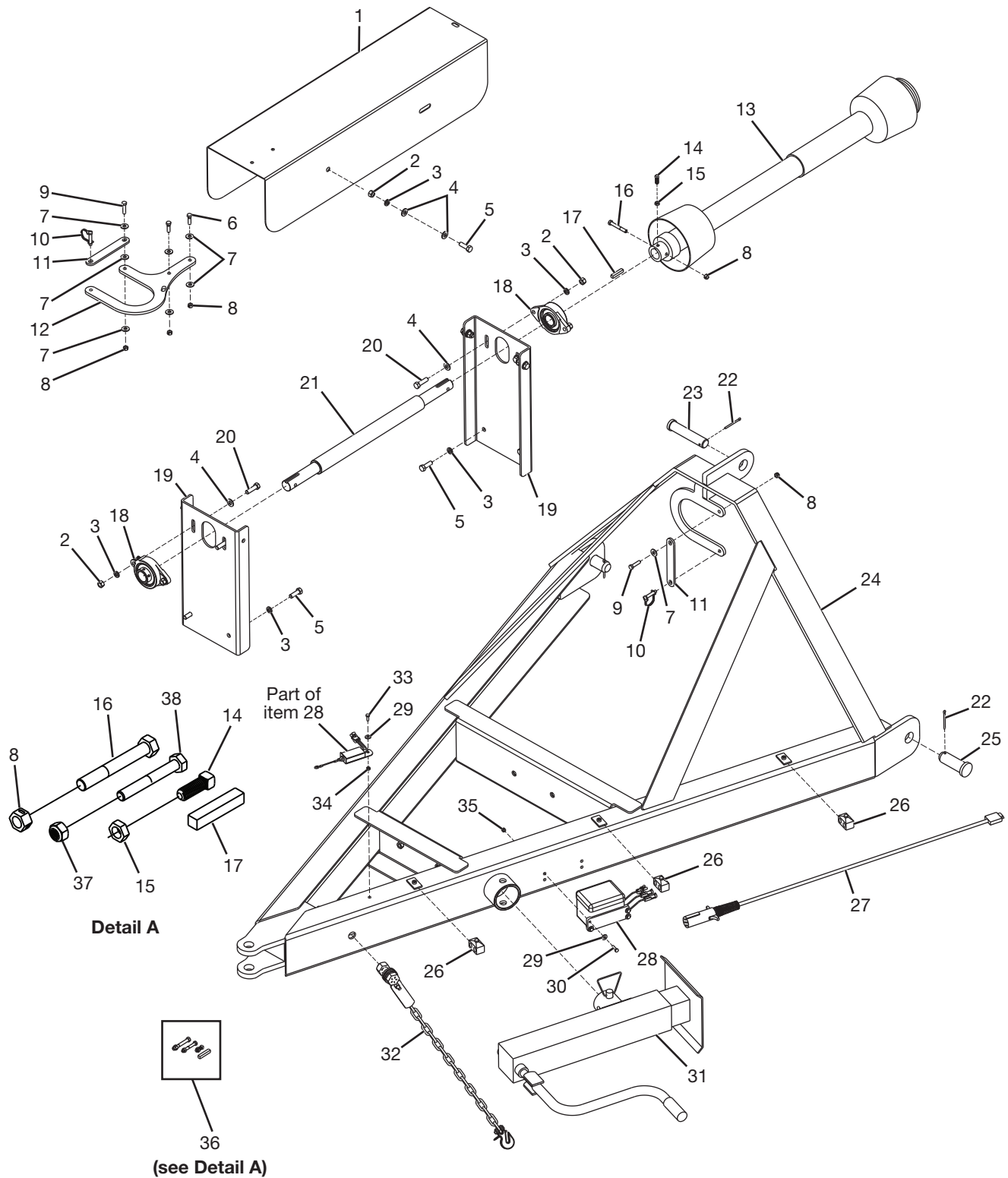
Hitch Assembly



| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|------------------------------------|
| 1 | 3 | 4329 | PIN, COTTER 7/32" X 2-1/2" |
| 2 | 1 | N25420 | PIN, 1-1/4" X 5-3/8" PLATED |
| 3 | 2 | N29197 | PIN, 1-1/2" X 3-1/5" TAPERED HITCH |
| 4 | 1 | N29436 | HITCH, GBU12 PULL-TYPE ASMBLD |

Parts Identification

Hitch Assembly (Cont'd)

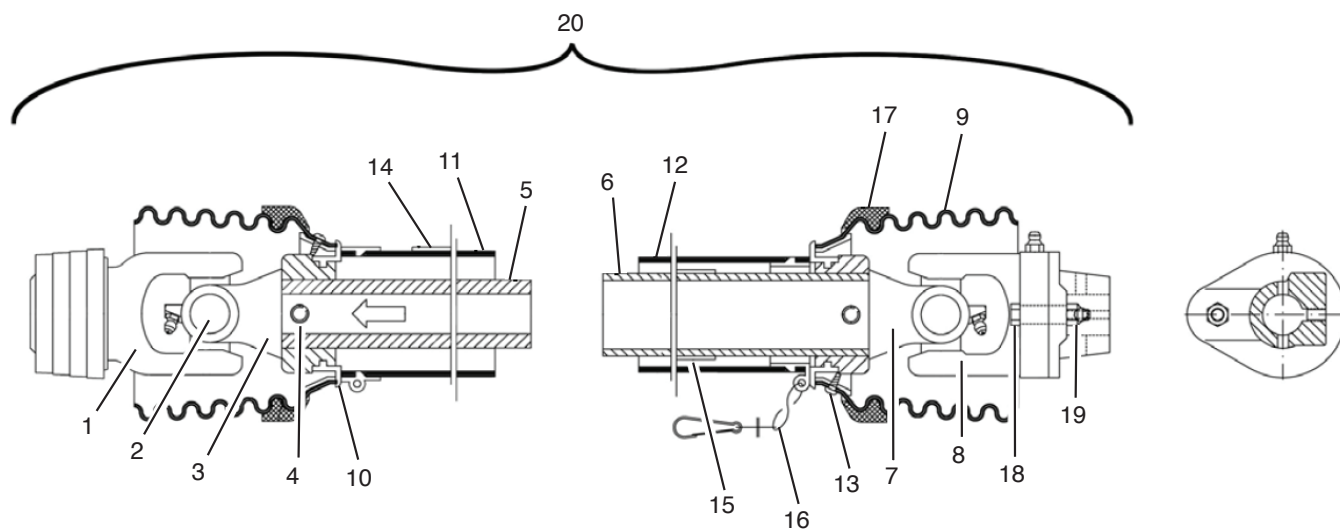


Hitch Assembly (Cont'd)

| # | QTY. | PART # | DESCRIPTION |
|----|------|---------|-------------------------------------|
| 1 | 1 | N29805 | SHIELD, GBU12 HITCH SHORT |
| 2 | 8 | 4250 | NUT, STANDARD 1/2 |
| 3 | 12 | 4155 | WASHER, LOCK 1/2" |
| 4 | 12 | 4068 | WASHER, 1/2" SAE FLAT |
| 5 | 8 | 4013 | BOLT, 1/2" X 1-1/2" GRADE 5 |
| 6 | 2 | 4005 | BOLT, 3/8" X 1-1/4" GRADE 5 |
| 7 | 9 | 4064 | WASHER, FLAT 3/8" |
| 8 | 6 | 4052 | NUT, LOCK 3/8" |
| 9 | 2 | 4006 | BOLT, 3/8" X 1-1/2" GRADE 5 |
| 10 | 2 | N27991 | PIN, 3/8" X 1-3/8" RETAINER |
| 11 | 2 | N27990 | BAR, GBL SWING AUG PTO HOLDER |
| 12 | 1 | N27994 | HOLDER, GBL TRK AUG PTO SHRT |
| 13 | 1 | N29800 | PTO, 1-3/8" 540 6B SPLN 1-1/2 RB CB |
| 14 | 2 | 201831 | SCREW, SQ HD SET 3/8" X 1" |
| 15 | 2 | 4061 | NUT, 3/8" JAM |
| 16 | 2 | 4538 | BOLT, 3/8" X 2-3/4" GRADE 5 |
| 17 | 2 | 7121-03 | KEY, 3/8" X 2" |
| 18 | 2 | N30230 | BEARING, 1-1/2" DODGE 2BLT FLG |
| 19 | 2 | N29433 | MOUNT, GBU12 PT HITCH BEARING |
| 20 | 4 | 4014 | BOLT, 1/2" X 1-3/4" GRADE 5 |
| 21 | 1 | N29804 | SHAFT, GBU12 HITCH SHORT JACK |
| 22 | 3 | 4329 | PIN, COTTER 7/32" X 2-1/2" |
| 23 | 1 | N25420 | PIN, 1-1/4" X 5-3/8" PLATED |
| 24 | 1 | N29268 | HITCH, GBU12 PULL-TYPE |
| 25 | 2 | N29197 | PIN, 1-1/2" X 3-1/5" TAPERED HITCH |
| 26 | 3 | N21365 | CLAMP, 3/8" DOUBLE HOSE |
| 27 | 1 | N22784 | HARNESS, GBU 4' BRAIDED TOUNGE |
| 28 | 1 | N30092 | WIRE, BRAKE BATTERY |
| 29 | 5 | 3183 | WASHER, FLAT 1/4" |
| 30 | 4 | 4000 | BOLT, 1/4" X 1" GRADE 5 |
| 31 | 1 | N13732 | JACK, PULL-TYPE HITCH |
| 32 | 1 | N50260 | CHAIN,SAFETY 21,000LB W/ HDWR |
| 33 | 1 | 4340 | BOLT, 1/4" X 3/4" GRADE 5 |
| 34 | 1 | 4050 | NUT, 1/4" LOCK |
| 35 | 4 | 4996 | NUT, LOCK 1/4" NYLOCK |
| 36 | 1 | 202834 | KIT, PTO HARDWARE |
| 37 | 1 | N23490 | NUT, LOCK M8 NYLOCK |
| 38 | 1 | N23489 | BOLT, M8 X 60 GR 8.8 |

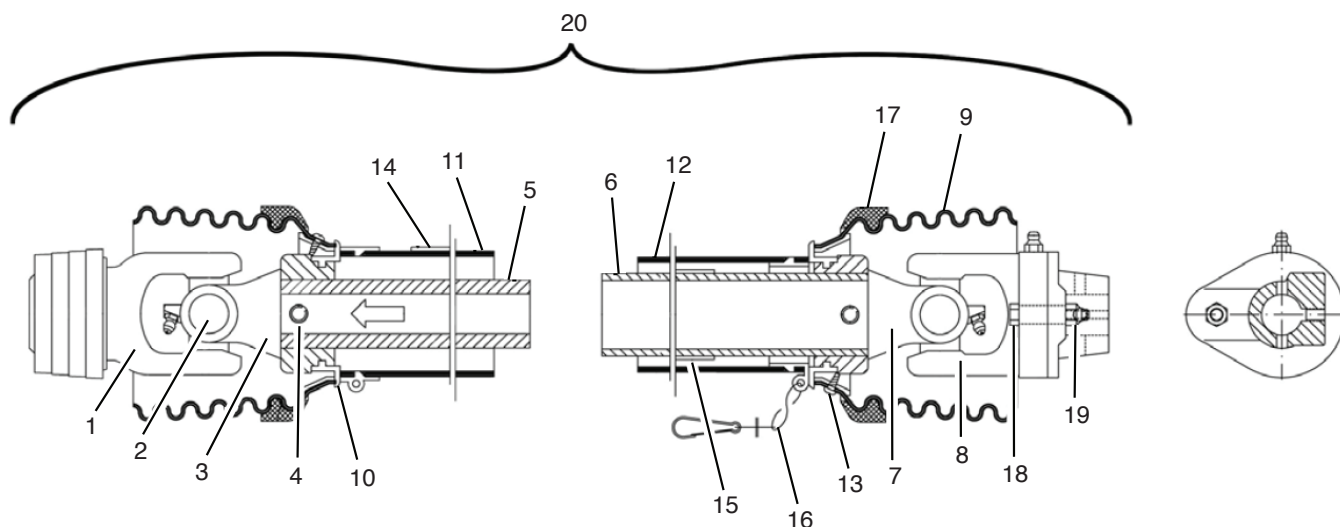
Parts Identification

PTO Driveline (N29800)



| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|-----------------------------|
| 1 | 1 | N23478 | YOKE, 1 - 3/8" - 6 SPL ASGE |
| 2 | 2 | N23479 | CROSS & BEARING KIT |
| 3 | 1 | N23711 | INBOARD YOKE, S4 |
| 4 | 2 | N23480 | SPRING PIN, 10 x 80 |
| 5 | 1 | N26773 | INNER PROFILE, S4 |
| 6 | 1 | N26774 | OUTTER PROFILE, S5 |
| 7 | 1 | N23714 | INBOARD YOKE, S5 |
| 8 | 1 | N25574 | SHEARBOLT, CLUTCH |
| 9 | 2 | N23486 | GUARD, CONE 6 RIB |
| 10 | 2 | N10348 | BEARING RING, SC25 |
| 11 | 1 | N26776 | GUARD, TUBE OUTER |
| 12 | 1 | N26777 | GUARD, TUBE INNER |
| 13 | 2 | N11750 | SCREW |
| 14 | 1 | N10357 | DECAL, OUTER - IN |
| 15 | 1 | N11761 | DECAL, INNER - IN |
| 16 | 1 | N10356 | RESTRAINT CHAIN |
| 17 | 2 | N27146 | REINFORCING COLLAR |
| 18 | 1 | N23489 | BOLT, M8 x 60 GR8 - IN |
| 19 | 1 | N23490 | NUT, M8 - IN |
| 20 | 1 | N29800 | DRIVE SHAFT, PTO |

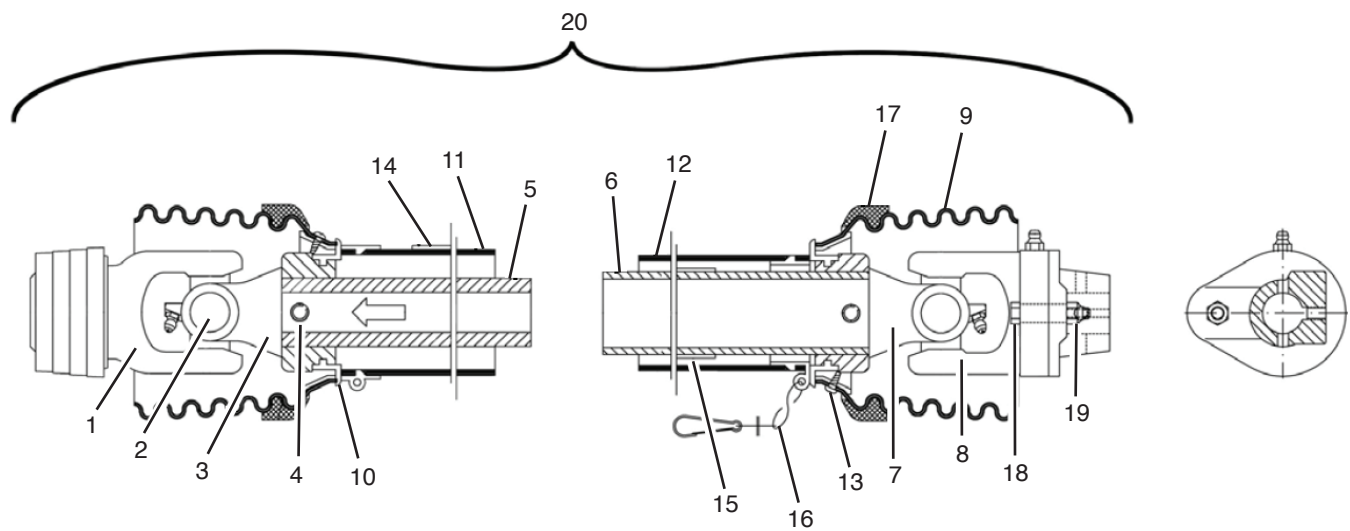
PTO Driveline (N29801)



| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|------------------------------|
| 1 | 1 | N26772 | YOKE, 1 - 3/8" - 21 SPL ASGE |
| 2 | 2 | N23479 | CROSS & BEARING KIT |
| 3 | 1 | N23711 | INBOARD YOKE, S4 |
| 4 | 2 | N23480 | SPRING PIN, 10 x 80 |
| 5 | 1 | N26773 | INNER PROFILE, S4 |
| 6 | 1 | N26774 | OUTTER PROFILE, S5 |
| 7 | 1 | N23714 | INBOARD YOKE, S5 |
| 8 | 1 | N25574 | SHEARBOLT, CLUTCH |
| 9 | 2 | N23486 | GUARD, CONE 6 RIB |
| 10 | 2 | N10348 | BEARING RING, SC25 |
| 11 | 1 | N26776 | GUARD, TUBE OUTER |
| 12 | 1 | N26777 | GUARD, TUBE INNER |
| 13 | 2 | N11750 | SCREW |
| 14 | 1 | N10357 | DECAL, OUTER - IN |
| 15 | 1 | N11761 | DECAL, INNER - IN |
| 16 | 1 | N10356 | RESTRAINT CHAIN |
| 17 | 2 | N27146 | REINFORCING COLLAR |
| 18 | 1 | N23489 | BOLT, M8 x 60 GR8 - IN |
| 19 | 1 | N23490 | NUT, M8 - IN |
| 20 | 1 | N29801 | DRIVE SHAFT, PTO |

Parts Identification

PTO Driveline (N29802)

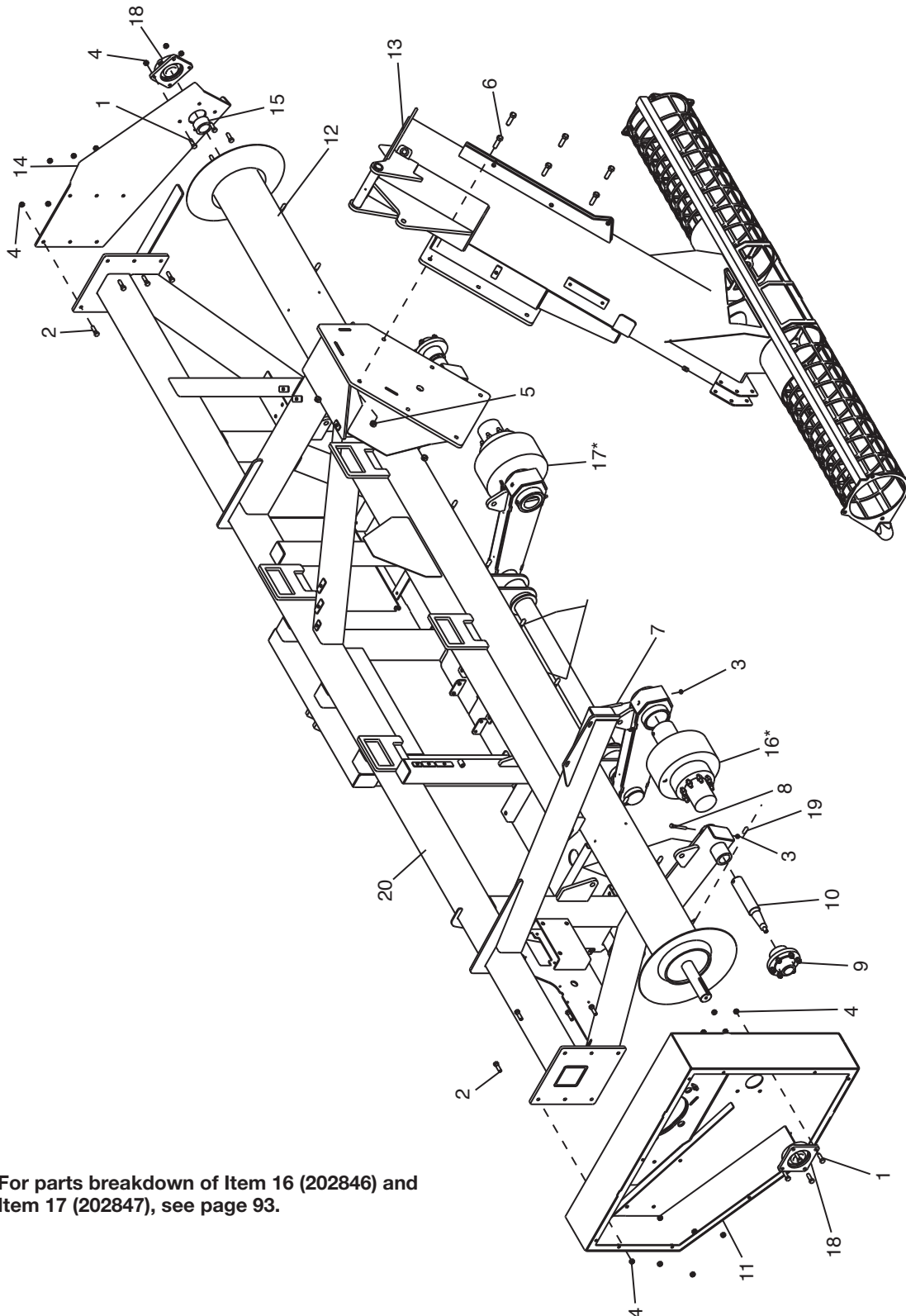


PTO Driveline (N29802)

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|------------------------------|
| 1 | 1 | N26781 | YOKE, 1 - 3/4" - 20 SPL ASGE |
| 2 | 2 | N23479 | CROSS & BEARING KIT |
| 3 | 1 | N23711 | INBOARD YOKE, S4 |
| 4 | 2 | N23480 | SPRING PIN, 10 x 80 |
| 5 | 1 | N26773 | INNER PROFILE, S4 |
| 6 | 1 | N26774 | OUTTER PROFILE, S5 |
| 7 | 1 | N23714 | INBOARD YOKE, S5 |
| 8 | 1 | N25574 | SHEARBOLT, CLUTCH |
| 9 | 2 | N23486 | GUARD, CONE 6 RIB |
| 10 | 2 | N10348 | BEARING RING, SC25 |
| 11 | 1 | N26776 | GUARD, TUBE OUTER |
| 12 | 1 | N26777 | GUARD, TUBE INNER |
| 13 | 2 | N11750 | SCREW |
| 14 | 1 | N10357 | DECAL, OUTER - IN |
| 15 | 1 | N11761 | DECAL, INNER - IN |
| 16 | 1 | N10356 | RESTRAINT CHAIN |
| 17 | 2 | N27146 | REINFORCING COLLAR |
| 18 | 1 | N23489 | BOLT, M8 x 60 GR8 - IN |
| 19 | 1 | N23490 | NUT, M8 - IN |
| 20 | 1 | N29802 | DRIVE SHAFT, PTO |

Parts Identification

Axle and Roller Assembly



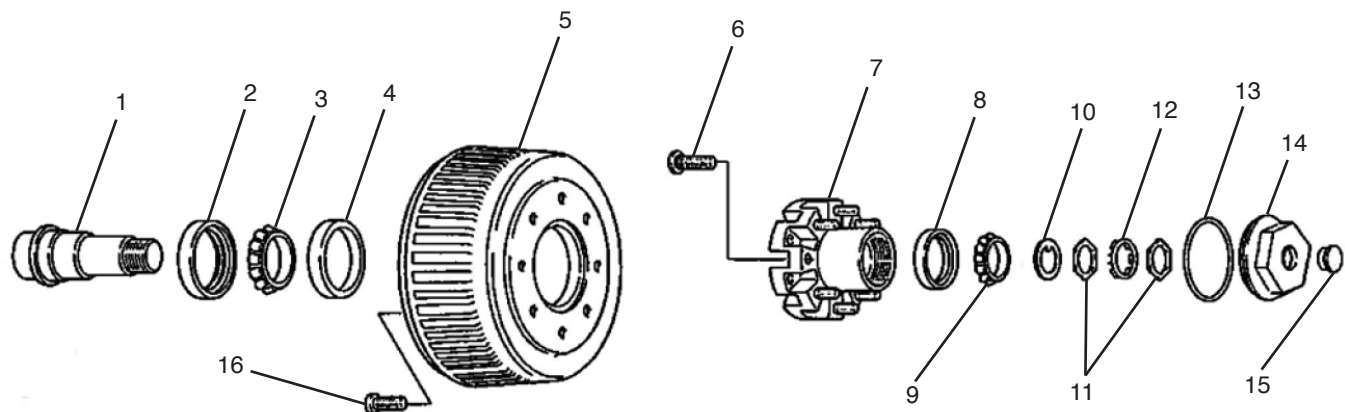
* For parts breakdown of Item 16 (202846) and Item 17 (202847), see page 93.

Axle and Roller Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|---------------------------------|
| 1 | 8 | 4021 | BOLT, 5/8" X 1-3/4" GRADE 5 |
| 2 | 12 | 4022 | BOLT, 5/8" X 2" GRADE 5 |
| 3 | 4 | 4054 | NUT, LOCK 1/2" TOP |
| 4 | 20 | 4055 | NUT, LOCK 5/8" TOP |
| 5 | 6 | 4056 | NUT LOCK 3/4" |
| 6 | 6 | 4224 | BOLT, 3/4" X 2-1/2" GRADE 5 |
| 7 | 2 | 4330 | BOLT, 1/2" X 7" GRADE 8 |
| 8 | 2 | 4357 | BOLT, 1/2" X 4" GRADE 5 |
| 9 | 2 | N29054 | HUB, 6 BOLT 6" PAT W/STUDS |
| 10 | 2 | N29060 | SPINDLE, GBL12 TRANSPORT |
| 11 | 1 | N29211 | HOUSING, GBU12 ROLLER DRIVE |
| 12 | 1 | N29220 | ROLLER, GBU12 BAG |
| 13 | 1 | N29665 | UNIT, GBU12 HYDRAULIC LOWER |
| 14 | 1 | N29945 | MOUNT, GBU12 ROLLER RIGHT |
| 15 | 1 | N29948 | SPACER, GBU12 RLR 1.865" |
| 16 | 1 | 202846 | AXLE, GBU12 LEFT WIRED |
| 17 | 1 | 202847 | AXLE, GBU12 RIGHT WIRED |
| 18 | 2 | N30240 | BEARING, 2-1/2" DODGE 4-BLT FLG |
| 19 | 13 | N33175 | CAP, GBU ROLLER HOOK |
| 20 | 1 | N40031 | WELDMENT, GBU12 FRAME MAIN |

Parts Identification

Wheel Hub Assembly



Wheel Hub Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|---|
| 1 | 1 | N29957 | SPINDLE, AXLE 6000 LB HALF |
| 2 | 1 | N29958 | SEAL, AXLE 6000 LB OIL (1056) |
| 3 | 1 | N29959 | CONE, AXLE 6000 LB INNER BRG (3984) |
| 4 | 1 | N29960 | CUP, AXLE 6000 LB INNER BRG (3920) |
| 5 | 1 | N29961 | DRUM, AXLE 6000 LB BRAKE (9271) |
| 6 | 8 | N29962 | STUD, AXLE 6000 LB WHEEL MNT (7115) |
| 7 | 1 | N29963 | HUB, AXLE 6000 LB W / CUP & STD (82148) |
| 8 | 1 | N29964 | CUP, AXLE 6000 LB OUTER BRG (28622) |
| 9 | 1 | N29965 | CONE, AXLE 6000 LB OUTER BRG (28682) |
| 10 | 1 | N29966 | WASHER, AXLE 6000 LB SPINDLE (560) |
| 11 | 2 | N29967 | NUT, AXLE 6000 LB SPINDLE (684) |
| 12 | 1 | N29968 | WASHER, AXLE 6000 LB TANG (559) |
| 13 | 1 | N29969 | O-RING, AXLE 6000 LB OIL CAP (1050) |
| 14 | 1 | N29970 | CAP, AXLE 6000 LB OIL (2136) |
| 15 | 1 | N29971 | PLUG, AXLE 6000 LB OIL CAP (4632) |
| 16 | 8 | N29973 | SCREW, AXLE 6000 LB DRUM MNT (7244) |

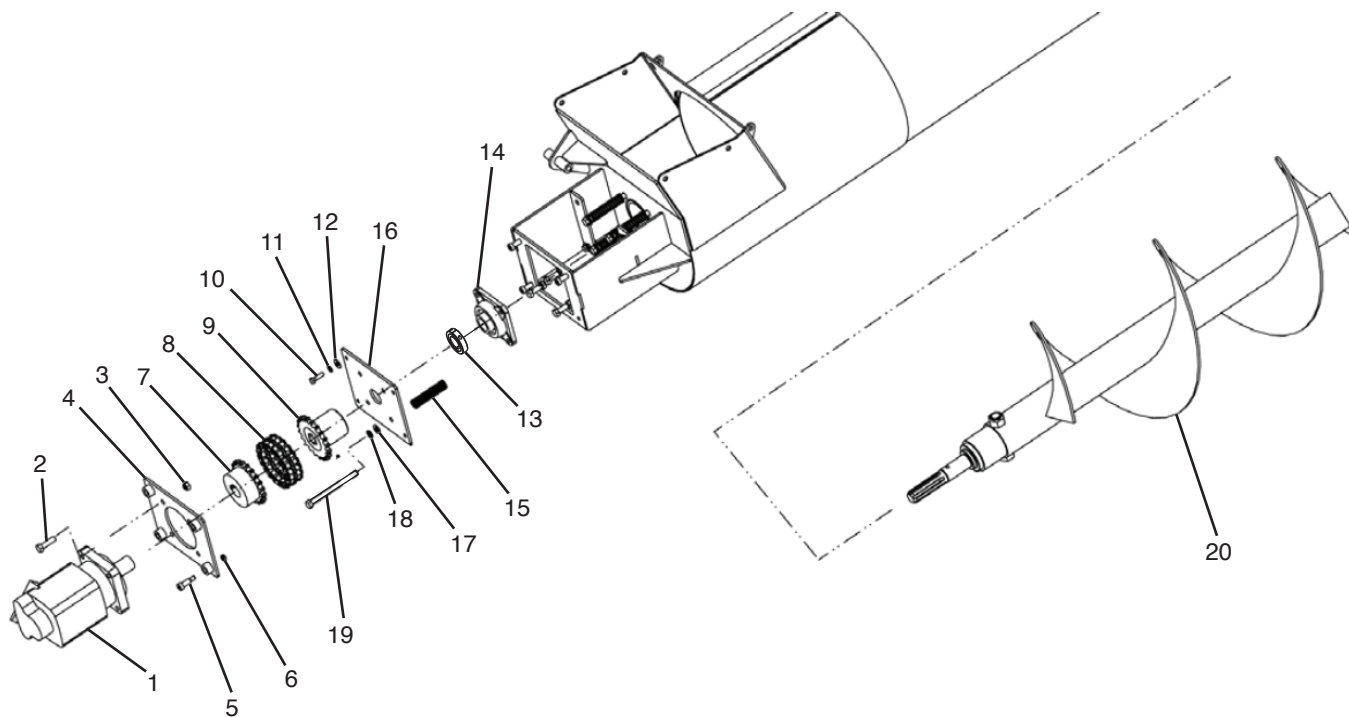


Top Auger Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|-----------------------------------|
| 1 | 1 | N29795 | DEFLECTOR, GBU12 TOP AUG TOP |
| 2 | 6 | N29837 | BOLT, SHLD. 1/2" X 5/8" |
| 3 | 23 | 4068 | WASHER, 1/2" SAE FLAT |
| 4 | 8 | 4369 | WASHER, 5/16" FLAT |
| 5 | 8 | 4052 | NUT, LOCK 3/8" |
| 6 | 1 | N29792 | CHUTE, GBU12 TOP AUG BTM DEF |
| 7 | 1 | 4990 | BOLT, CARRIAGE 1/2" X 3" |
| 8 | 2 | N36690 | BOLT, SHOULDER 1/2" X 3/4" |
| 9 | 2 | N29796 | BAR, GBU12 TO AUG DEF LINK |
| 10 | 2 | 4054 | NUT, LOCK 1/2" TOP |
| 11 | 1 | 4554 | BOLT, 1/2" X 6-1/2" GR 5 |
| 12 | 4 | 4014 | BOLT, 1/2" X 1-3/4" GRADE 5 |
| 13 | 1 | N26591 | GASKET, 18.25 ID X 22.50 OD |
| 14 | 1 | 4107 | GREASE-ZERK, 1/4" SCREW-IN 90 DEG |
| 15 | 1 | N22785 | PIN, GBU HINGE FIXED |
| 16 | 1 | 4155 | WASHER, LOCK 1/2" |
| 17 | 1 | 4013 | BOLT, 1/2" X 1-1/2" GRADE 5 |
| 18 | 3 | N29640 | CLAMP, 3/4" HYD HOSE DOUBLE |
| 19 | 3 | N21365 | CLAMP, 3/8" DOUBLE HOSE |
| 20 | 1 | N29786 | AUGER, GBU12 TOP WITH ADJ DEF |

Parts Identification

Top Auger Assembly (Cont'd)



Top Auger Assembly (Cont'd)

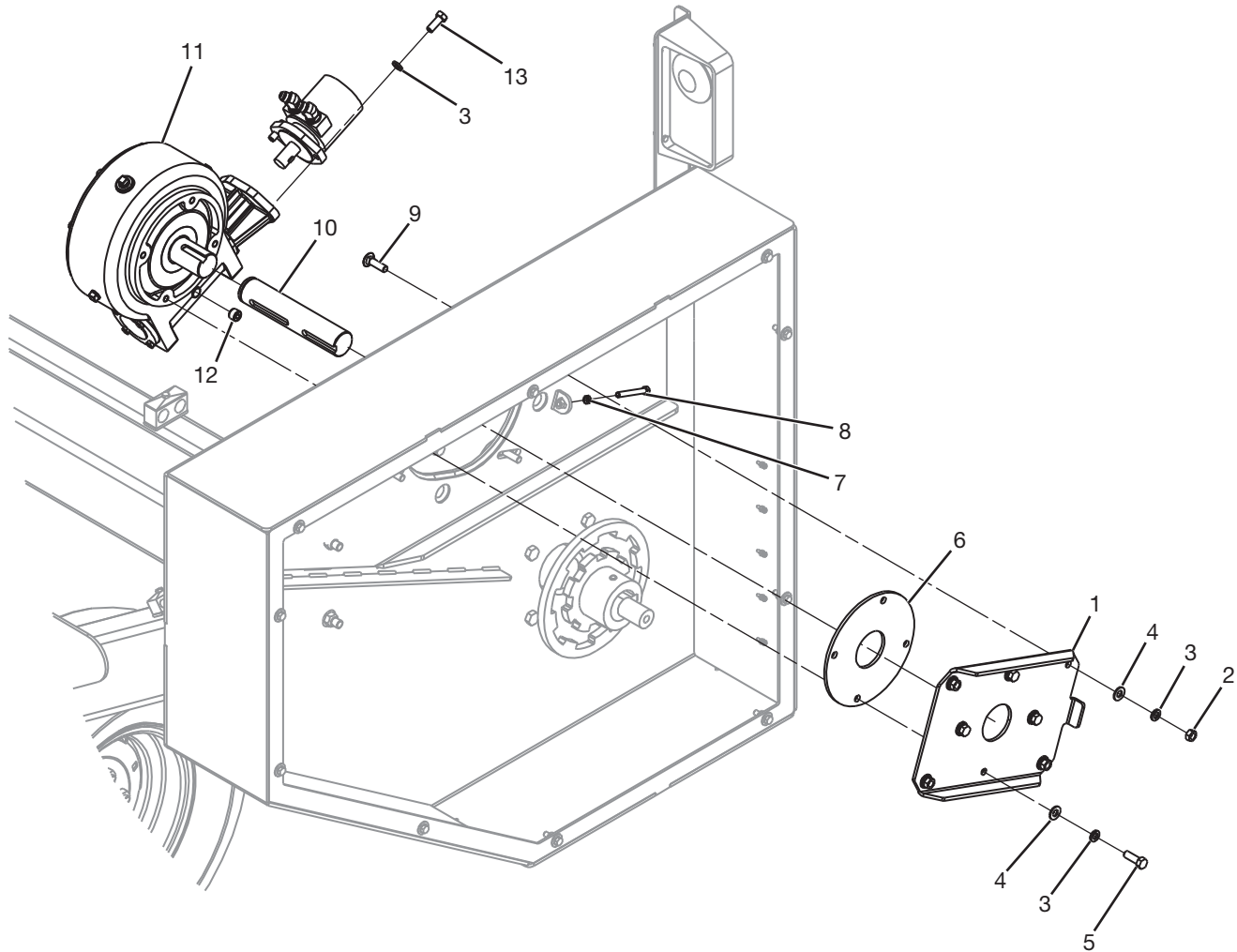
| # | QTY. | PART # | DESCRIPTION |
|----|------|---------|--------------------------------------|
| 1 | 1 | N12220 | MOTOR, HYD MAIN AUG 15 CIR |
| 2 | 4 | 4014 | BOLT, 1/2" x 1 - 3/4" GRADE 5 |
| 3 | 4 | 4054 | NUT, LOCK 1/2" |
| 4 | 1 | N29745 | MOUNT, GBU12 TOP AUG MOTOR |
| 5 | 4 | N29742 | BOLT, SHOULDER 1/2" x 1" |
| 6 | 4 | 4052 | NUT, LOCK 3/8" |
| 7 | 1 | N25115 | SPROCKET, 6020 F - 1 - 1/2" RB |
| 8 | 1 | N25117 | CHAIN, 60 DOUBLE 20 PITCH |
| 9 | 1 | N29380 | SPROCKET, SLPINED COUPLER |
| 10 | 4 | 4005 | BOLT, 3/8" x 1 - 1/4" GRADE 5 |
| 11 | 4 | 4065 | WASHER, 3/8" LOCK |
| 12 | 4 | 4064 | WASHER, FLAT 3/8" |
| 13 | 1 | N151456 | COLLAR, SHAFT 1-7/16" 2-PIECE |
| 14 | 1 | N30229 | BEARING, 1 - 1/2" 4 - BOLT FLG DODGE |
| 15 | 4 | N22062 | SPRING, AUGER ALIGNING |
| 16 | 1 | N29385 | PLATE, GBU12 TOP AUG SPRING |
| 17 | 4 | 4068 | WASHER, 1/2" SAE FLAT |
| 18 | 4 | 4155 | WASHER, LOCK 1/2" |
| 19 | 4 | 4497 | BOLT, 1/2" x 6" GRADE 5 |
| 20 | 1 | N30390 | AUGER, GBU12 17" TOP W/SHAFT |

Roller Drive Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|---|
| 1 | 10 | 4005 | BOLT, 3/8" X 1-1/4" GRADE 5 |
| 2 | 10 | 4064 | WASHER, FLAT 3/8" |
| 3 | 10 | 4065 | WASHER, 3/8" LOCK |
| 4 | 2 | 4572 | SCREW, 1/2" X 1/2" LG ALN HD SET |
| 5 | 1 | 4975 | BOLT, 1/2" X 4" FN TH GR 8 |
| 6 | 5 | N16334 | NUT, NYLON INSERT #10 |
| 7 | 1 | N22253 | SPRING, COMPRESSION LHC 148U 03S LEE SPRING |
| 8 | 5 | N22358 | BOLT, #10 - 32 x 3/4" BHCS |
| 9 | 1 | N22531 | GUIDE, GBU SPRING CLUTCH SPRING |
| 10 | 1 | N22532 | WASHER, GBU SPRING CLUTCH SPRING |
| 11 | 1 | N29335 | COVER, GBU12 ROLLER DRIVE |
| 12 | 1 | N29396 | WASHER, 3" OD x 2 - 1/2" ID x 10 GA |
| 13 | 1 | N29411 | DOOR, GBU12 ROLLER CLUTCH |
| 14 | 1 | N29840 | HANDLE, QUARTER TURN LATCH |
| 15 | 1 | N29841 | CAM, QUARTER TURN LATCH |
| 16 | 1 | N29897 | SPACER, GBU12 ROLLER DBL SPRK |
| 17 | 1 | N29898 | COG, GBU12 DBL ROLLER DRIVE |
| 18 | 1 | N29900 | KEY, 5/8" x 3 - 1/4" HARDENED |
| 19 | 1 | N29901 | COG, GBU12 DBL ROLLER CONCTR |
| 20 | 1 | N29903 | CHAIN, #60 DOUBLE 134 PITCH UST |
| 21 | 1 | N29904 | SPROCKET, GBU12 RLR DRV DBL |
| 22 | 1 | N33671 | SPROCKET, D60B15 DBL 1 - 3/4" RB |
| 23 | 1 | N33673 | KEY, 1/2" X 2-1/4" EXTRA HARDENED |

Parts Identification

Roller Drive Assembly (Cont'd)

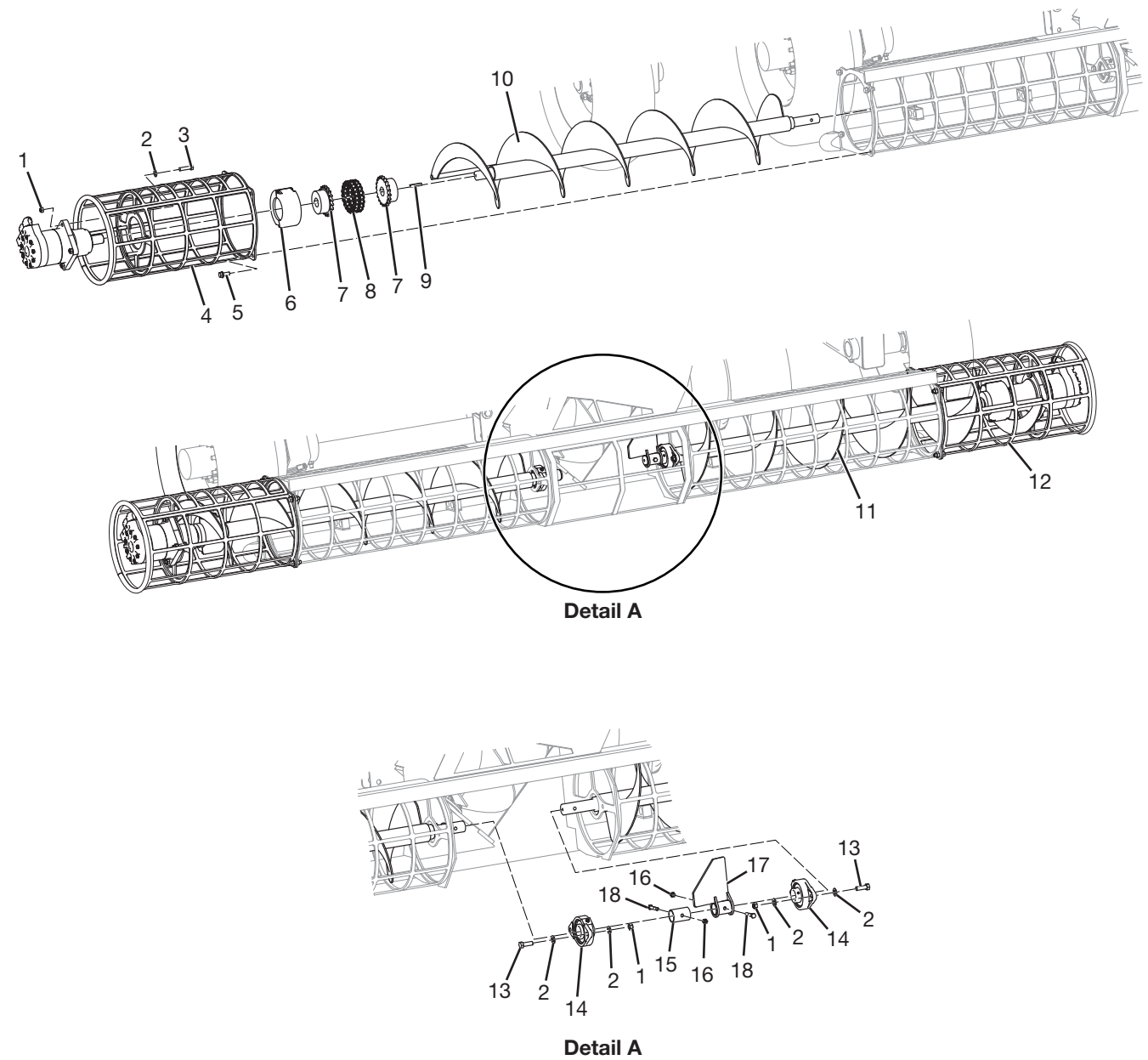


Roller Drive Assembly (Cont'd)

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|--------------------------------|
| 1 | 1 | N30932 | PLATE, 4-1/2 HUB PUSHER MOUNT |
| 2 | 4 | 4250 | NUT, STANDARD 1/2 |
| 3 | 10 | 4155 | WASHER, LOCK 1/2" |
| 4 | 8 | 4068 | WASHER, 1/2" SAE FLAT |
| 5 | 4 | 4013 | BOLT, 1/2" X 1-1/2" GRADE 5 |
| 6 | 1 | N37157 | SPACER, GBU12 RED 1280 GB |
| 7 | 1 | 4061 | NUT, 3/8" JAM |
| 8 | 1 | 4478 | BOLT, 3/8" X 3" GR 5 FULL THRD |
| 9 | 4 | 4477 | BOLT, CARRIAGE 1/2" X 1-3/4" |
| 10 | 1 | N33674 | SHAFT, GBU12 RED GB LONG |
| 11 | 1 | N30925 | GEARBOX, SUPERIOR 1280 RED |
| 12 | 1 | 4558 | PLUG, 1/2" PIPE ALLEN HEAD |
| 13 | 2 | 4012 | BOLT, 1/2" X 1-1/4" GRADE 5 |

Parts Identification

Cross Auger Assembly

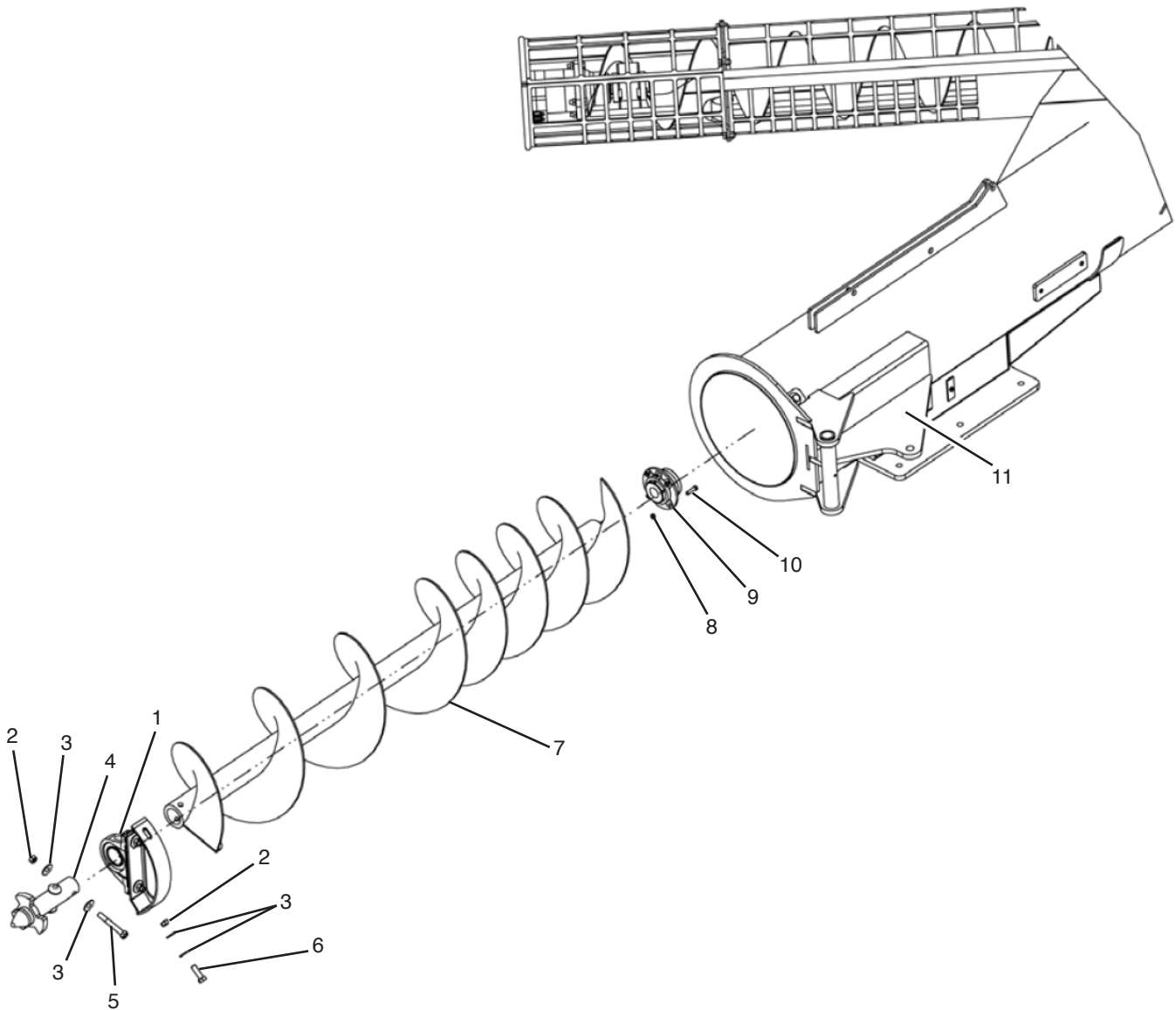


Cross Auger Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|---------|---------------------------------|
| 1 | 12 | 4054 | NUT, LOCK 1/2" TOP |
| 2 | 16 | 4068 | WASHER, 1/2" SAE FLAT |
| 3 | 8 | 4015 | BOLT, 1/2" X 2" GRADE 5 |
| 4 | 1 | N29676 | MOUNT, GBU12-10 CRS 12 AUG LEFT |
| 5 | 8 | N18360 | BOLT, 1/2-13 X 1-1/4 SER FLG |
| 6 | 2 | N25118 | HOUSING, 60 CHAIN CPL COVER |
| 7 | 4 | N25115 | SPROCKET, 6020 F - 1-1/2" RB |
| 8 | 2 | N25117 | CHAIN, 60 DOUBLE 20 PITCH |
| 9 | 2 | 7121-03 | KEY, 3/8" X 2" |
| 10 | 1 | N29281 | AUGER, GBU12 CROSS LEFT COMP |
| 11 | 1 | N29277 | AUGER, GBL12 CROSS RIGHT COMP |
| 12 | 1 | N29754 | MOUNT, GBU12-10 CRS 12 AUG RT |
| 13 | 4 | 4013 | BOLT, 1/2" X 1-1/2" GRADE 5 |
| 14 | 2 | N30230 | BEARING, 1-1/2" DODGE 2BLT FLG |
| 15 | 1 | N30890 | COLLAR, GBU12 CROSS AUG RET |
| 16 | 2 | 4052 | NUT, LOCK 3/8" |
| 17 | 1 | N30889 | PADDLE, GBU12 CROSS AUGER |
| 18 | 2 | 4537 | BOLT, 3/8" X 2-1/4" GRADE 5 |

Parts Identification

Cross Auger Assembly (Cont'd)

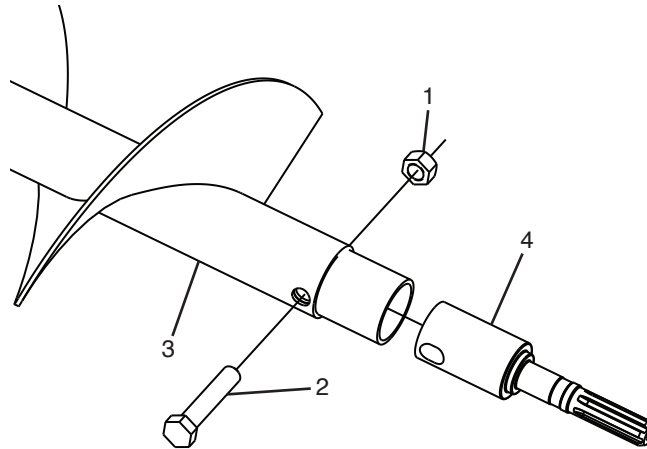


Cross Auger Assembly (Cont'd)

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|-----------------------------------|
| 1 | 1 | N29588 | HANGER, GBU12 AUGER |
| 2 | 4 | 4057 | NUT, LOCK 5/8IN FN TH GR 8 |
| 3 | 8 | 4069 | WASHER, FLAT 5/8" |
| 4 | 1 | N22673 | POINT, GBU MAIN AUGER ALIGNMENT |
| 5 | 2 | 4252 | BOLT, 5/8" x 4 - 1/2" GRADE 5 |
| 6 | 2 | 4022 | BOLT, 5/8" x 2" GRADE 5 |
| 7 | 1 | N29191 | AUGER, GBU12 BTM 17" W / SHAFTS |
| 8 | 6 | 4052 | NUT, LOCK 3/8" |
| 9 | 1 | N30231 | BEARING, 1 - 1/2" PILOTED FLANGE |
| 10 | 4 | 4006 | BOLT, 3/8" x 1 - 1/2" GRADE 5 |
| 11 | 1 | N29666 | WELDMENT, GBU12 - 10 HYD LOW UNIT |

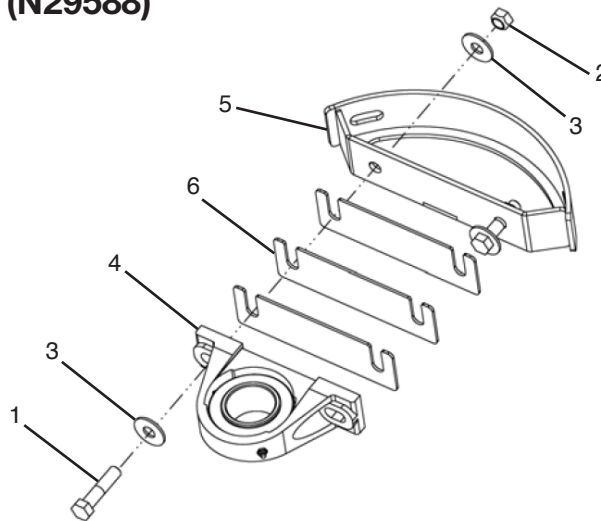
Parts Identification

Top Auger (N30390)



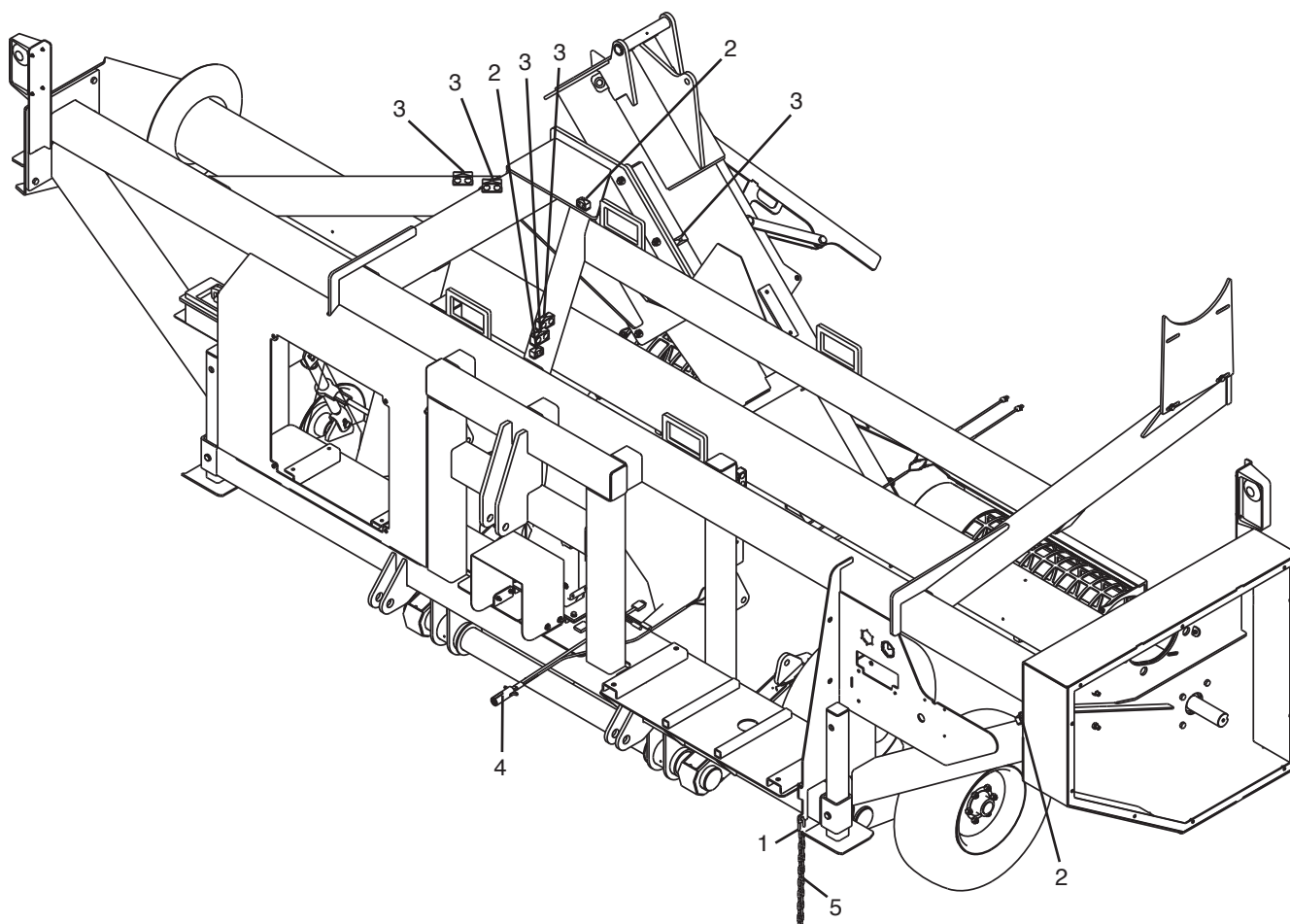
| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|---------------------------------------|
| 1 | 1 | N16700 | NUT, 1" - 14 GR 8 FINE THREAD TOPLOCK |
| 2 | 1 | N17023 | BOLT, 1" - 14 x 5" GR 8 FN THR |
| 3 | 1 | N29218 | AUGER, GBU12 TOP BASE |
| 4 | 1 | N29381 | SHAFT, GBU12 TOP AUGER TOP DRV |

GBU12 Auger Hanger (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 BRKT |

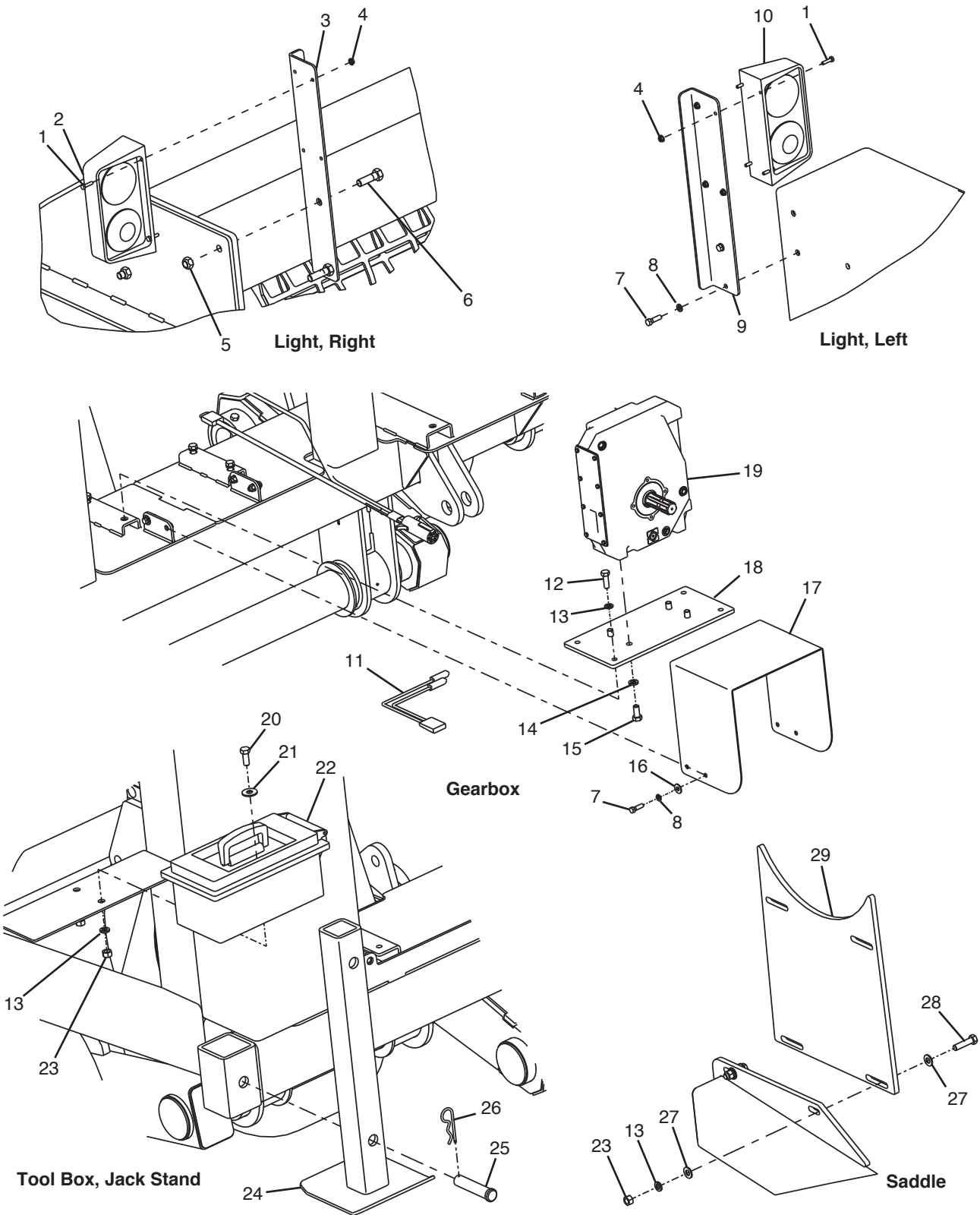
Miscellaneous



| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|-----------------------------|
| 1 | 1 | N10177 | LINK, 3/8" CHAIN CONNECTOR |
| 2 | 3 | N21365 | CLAMP, 3/8" DOUBLE HOSE |
| 3 | 5 | N29640 | CLAMP, 3/4" HYD HOSE DOUBLE |
| 4 | 1 | N30132 | GROUP, GBU12 WIRING |
| 5 | 1 | N33066 | CHAIN, GBU10 HEIGHT GAUGE |

Parts Identification

Miscellaneous (Cont'd)

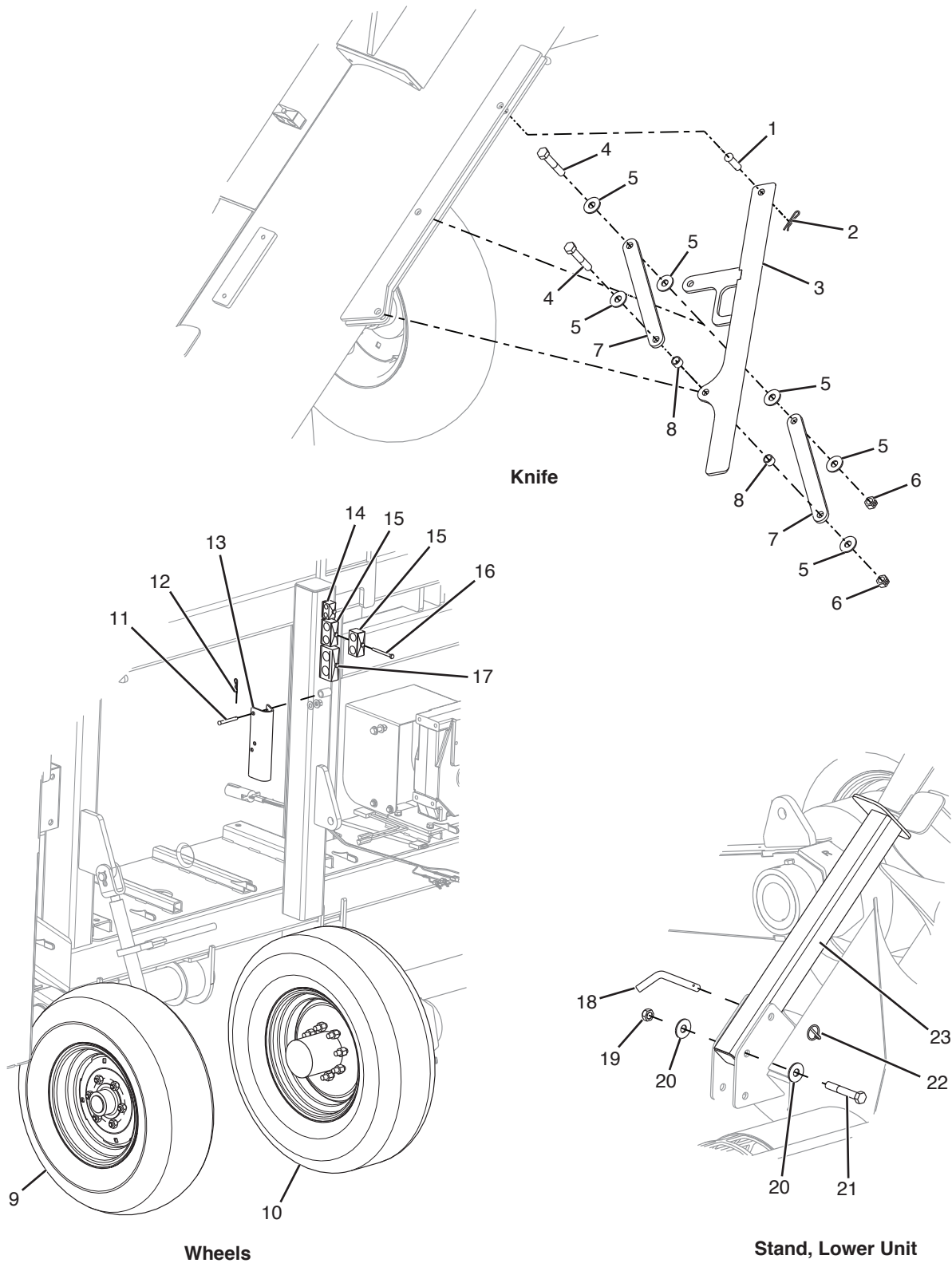


Miscellaneous (Cont'd)

| # | QTY. | PART # | DESCRIPTION |
|----|------|---------|-------------------------------|
| 1 | 8 | 4000 | BOLT, 1/4" X 1" GRADE 5 |
| 2 | 1 | N16290 | LIGHT, RIGHT |
| 3 | 1 | N29495 | BRACKET, GBU12 LIGHT RIGHT |
| 4 | 8 | N105230 | NUT, LOCK 1/4" SER FLANGE |
| 5 | 2 | 4055 | NUT, LOCK 5/8" TOP |
| 6 | 2 | 4022 | BOLT, 5/8" X 2" GRADE 5 |
| 7 | 6 | 4005 | BOLT, 3/8" X 1-1/4" GRADE 5 |
| 8 | 6 | 4065 | WASHER, 3/8 LOCK |
| 9 | 1 | N29496 | BRACKET, GBU12 LIGHT LEFT |
| 10 | 1 | N16289 | LIGHT, LEFT |
| 11 | 1 | N16288 | HARNESS, 25' REAR WISHBONE |
| 12 | 4 | 4013 | BOLT, 1/2" X 1-1/2" GRADE 5 |
| 13 | 8 | 4155 | WASHER, LOCK 1/2" |
| 14 | 4 | 4370 | WASHER, 9/16" LOCK |
| 15 | 4 | 4548 | BOLT, M14 X 30 GR 8.8 |
| 16 | 4 | 4064 | WASHER, FLAT 3/8" |
| 17 | 1 | N29513 | SHIELD, GBU12 MOUNTED PTO |
| 18 | 1 | N29457 | PLATE, GBU12 GEARBOX MOUNT |
| 19 | 1 | N29108 | GEARBOX, BONDIOLI |
| 20 | 2 | 4012 | BOLT, 1/2" X 1-1/4" GRADE 5 |
| 21 | 2 | 4486 | WASHER, 1/2" FLAT |
| 22 | 1 | N25105 | TOOLBOX, WINCH STORAGE |
| 23 | 4 | 4250 | NUT, STANDARD 1/2 |
| 24 | 2 | N29734 | STAND, GBU12 FRONT JACK |
| 25 | 2 | N11932 | PIN, 1" X 4-1/2" PLATED HITCH |
| 26 | 2 | 4389 | CLIP, HAIRPIN 3/16" X 3" |
| 27 | 4 | 4068 | WASHER, 1/2" SAE FLAT |
| 28 | 2 | 4015 | BOLT, 1/2" X 2" GRADE 5 |
| 29 | 1 | N29576 | SADDLE, GBU12 AUG REST |

Parts Identification

Miscellaneous (Cont'd)

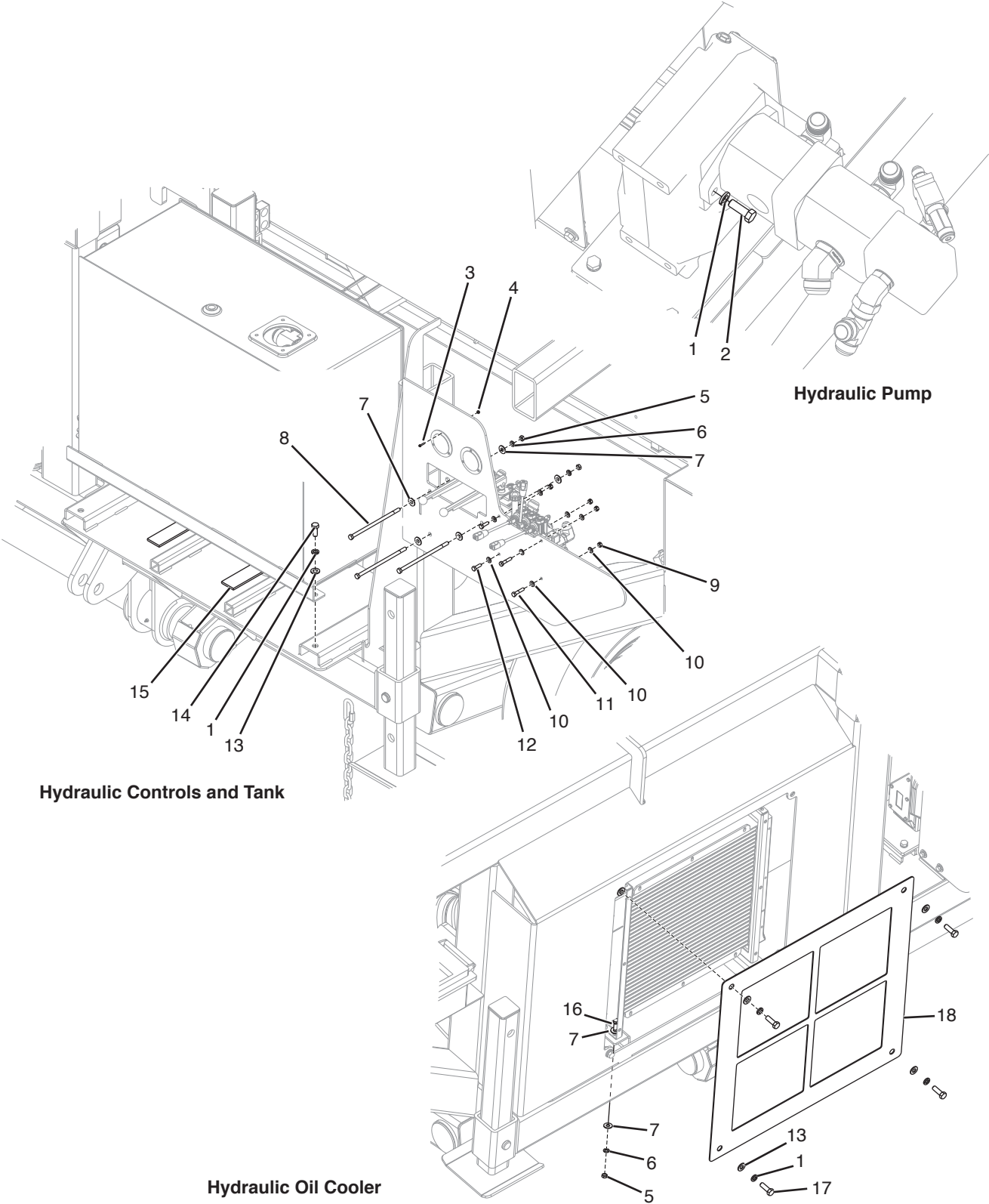


Miscellaneous (Cont'd)

| # | 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 | 2 | 4169 | BOLT, 3/4" X 4" BOLT GR 5 |
| 5 | 6 | 4071 | WASHER, 3/4" FLAT |
| 6 | 2 | 4056 | NUT, LOCK 3/4" |
| 7 | 2 | N22688 | ARM, GBU LONG KNIFE BOTTOM |
| 8 | 2 | N22755 | SPACER, GBU KNIFE |
| 9 | 2 | N29027 | WHEEL, 11L-15 HIWAY F RATING |
| 10 | 2 | N29349 | WHEEL, 235 / 75R17.5 TIRE & RIM |
| 11 | 2 | 4093 | PIN, 3/8" X 3" (2.75" USEABLE) |
| 12 | 2 | 4089 | CLIP, HAIRPIN .093 X 1-5/8" |
| 13 | 2 | N19768 | STOP, CYLINDER 9.5" SAFETY |
| 14 | 1 | N21365 | CLAMP, 3/8" DOUBLE HOSE |
| 15 | 2 | N29640 | CLAMP, 3/4" HYD HOSE DOUBLE |
| 16 | 1 | N21224 | BOLT, 5/16" X 3-1/2" GRADE 5 |
| 17 | 1 | N40095 | CLAMP, 1-1/4" HYD HOSE DOUBLE |
| 18 | 1 | N27826 | PIN, 5/8" X 4" BENT HITCH |
| 19 | 1 | 4055 | NUT, LOCK 5/8" TOP |
| 20 | 2 | 4069 | WASHER, FLAT 5/8" |
| 21 | 1 | 4027 | BOLT, 5/8" X 4" GRADE 5 |
| 22 | 1 | N22192 | PIN, LINCH 3/16" X 1-9/16" |
| 23 | 1 | N29516 | STAND, GBU12 LOWER UNIT JACK |

Parts Identification

Hydraulic Components

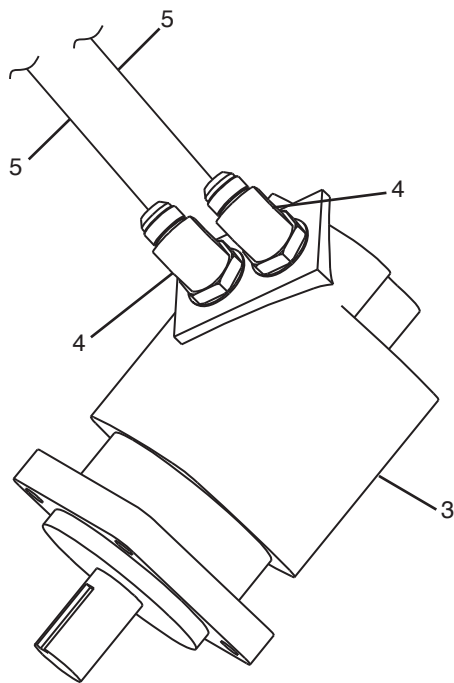


Hydraulic Components

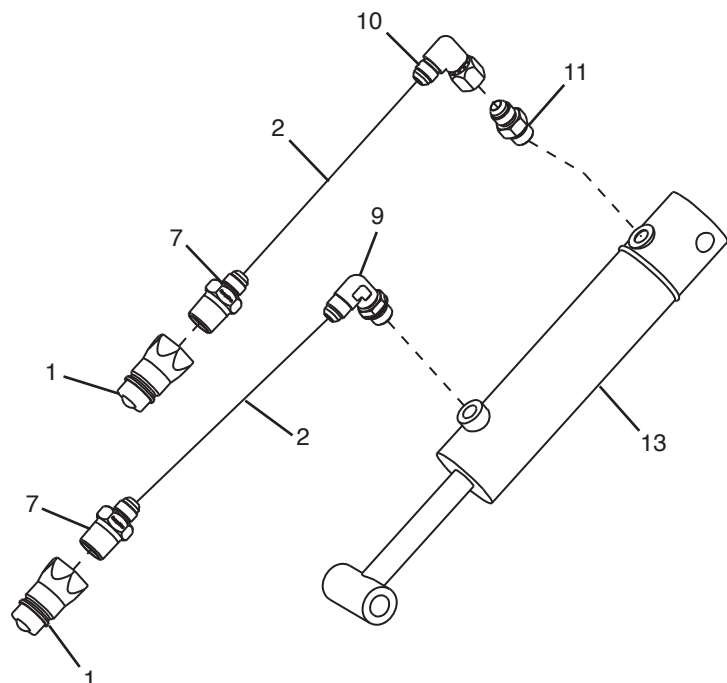
| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|------------------------------|
| 1 | 10 | 4155 | WASHER, LOCK 1/2" |
| 2 | 2 | 4376 | BOLT, M12 X 35 MM |
| 3 | 6 | 4976 | SCREW, BHCS #6-32UNC X 3/4" |
| 4 | 6 | 4977 | NUT, LOCK #6-32UNC |
| 5 | 7 | 4233 | NUT, STANDARD 3/8" |
| 6 | 7 | 4065 | WASHER, 3/8 LOCK |
| 7 | 14 | 4064 | WASHER, FLAT 3/8" |
| 8 | 3 | 4995 | BOLT, 3/8" X 8" GRADE 5 |
| 9 | 4 | 4051 | NUT, LOCK 5/16" |
| 10 | 8 | N28927 | WASHER, FLAT 5/16 SAE |
| 11 | 2 | 4241 | BOLT, 5/16" X 1-1/2" GRADE 5 |
| 12 | 2 | 4203 | BOLT, 5/16" X 1 GRADE 5 |
| 13 | 8 | 4068 | WASHER, 1/2" SAE FLAT |
| 14 | 4 | 4012 | BOLT, 1/2" X 1-1/4" GRADE 5 |
| 15 | 2 | N29851 | STRIP, 1/4" RUBBER TANK |
| 16 | 4 | 4005 | BOLT, 3/8" X 1-1/4" GRADE 5 |
| 17 | 4 | 4013 | BOLT, 1/2" X 1-1/2" GRADE 5 |
| 18 | 1 | N29447 | COVER, GBU12 COOLER |

Parts Identification

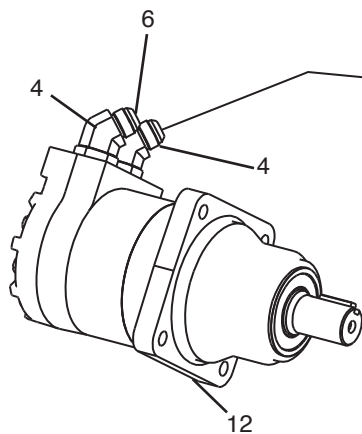
Hose Assembly



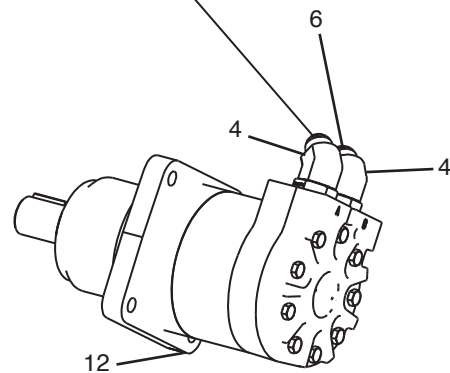
Discharge Auger Motor



Deflector Cylinder



Left Cross Auger Motor



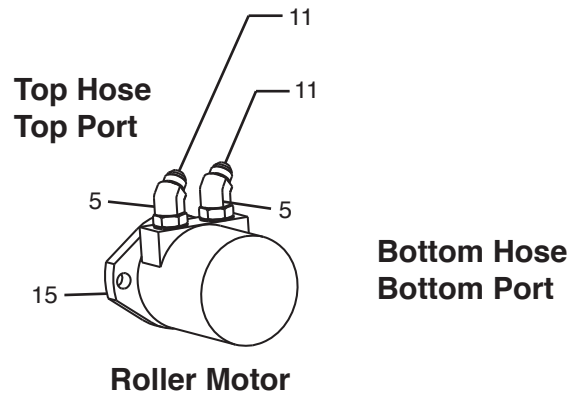
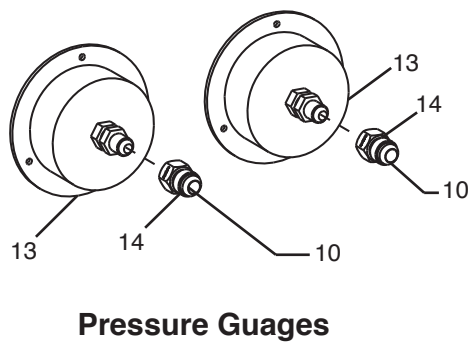
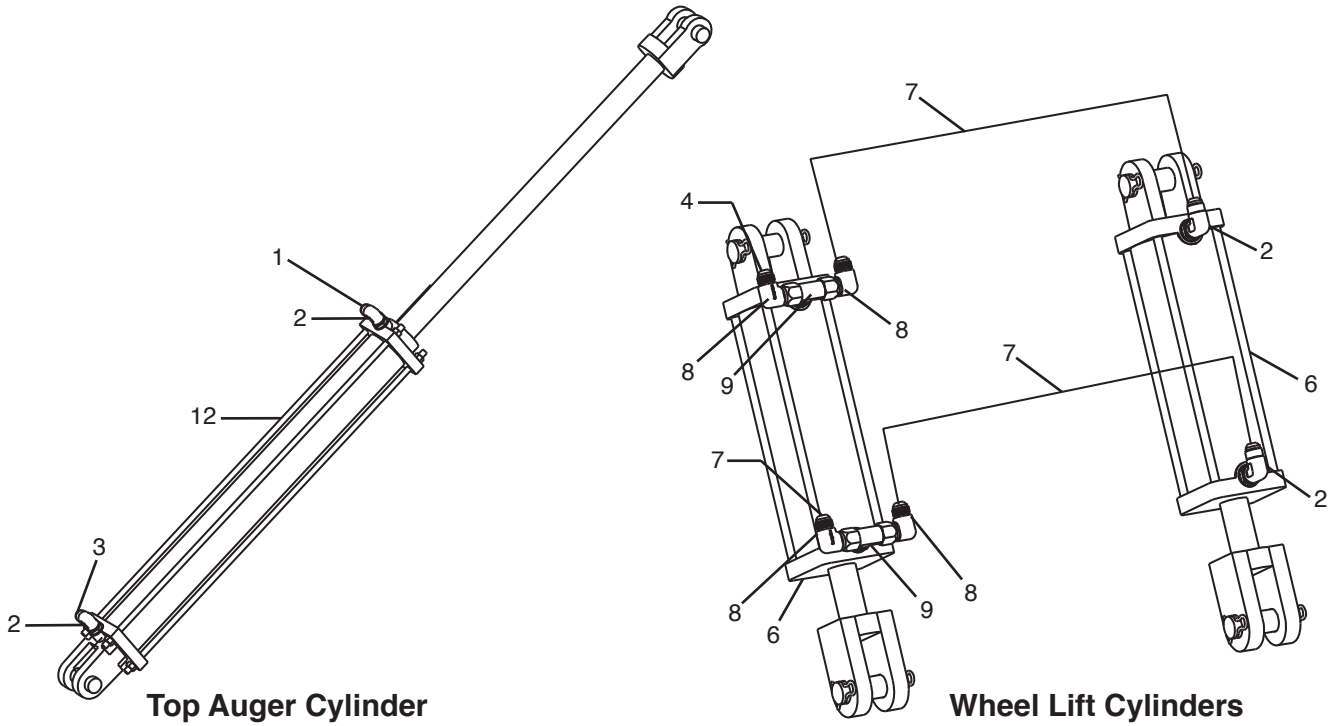
Right Cross Auger Motor

Hose Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|------------------------------------|
| 1 | 2 | N11825 | COUPLER, 1/2" MALE PIONEER |
| 2 | 2 | N29845 | HOSE 1/4" X 500" - 6FJX - 6FJX |
| 3 | 1 | N12220 | MOTOR, CHARLYNN HYDRAULIC 112-1065 |
| 4 | 6 | N16174 | ELBOW, 45 DEG 12MJIC - 16MOR |
| 5 | 2 | N40104 | HOSE 3/4" X 378" - 12FJX - 12FJX |
| 6 | 2 | N40096 | HOSE 3/4" X 354" - 12FJX - 12FJX |
| 7 | 2 | N23833 | ADAPTER, 6MJIC - 8MP |
| 8 | 1 | N29632 | HOSE 3/4" X 173" - 12FJX - 12FJX |
| 9 | 1 | N26204 | ELBOW, 90 DEG - 6MJIC - 6MOR |
| 10 | 1 | N29078 | ELBOW, 90 DEG - 6MJIC - 6FJIC |
| 11 | 1 | N29846 | RESTRICTOR, 6MJIC - 6MOR - 0.31 |
| 12 | 2 | N30112 | MOTOR, PARKER 24 CU IN WHEEL |
| 13 | 1 | N30999 | CYLINDER, 1" X 4" HYD 10" COMP |

Parts Identification

Hose Assembly (Cont'd)

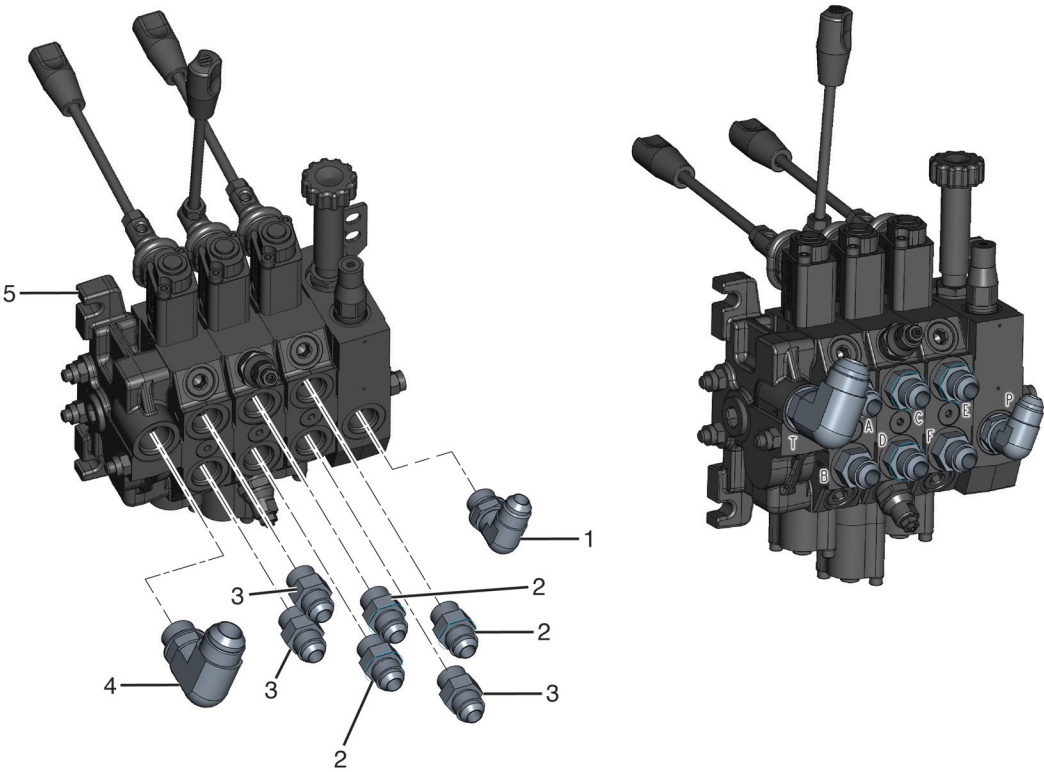


Hose Assembly (Cont'd)

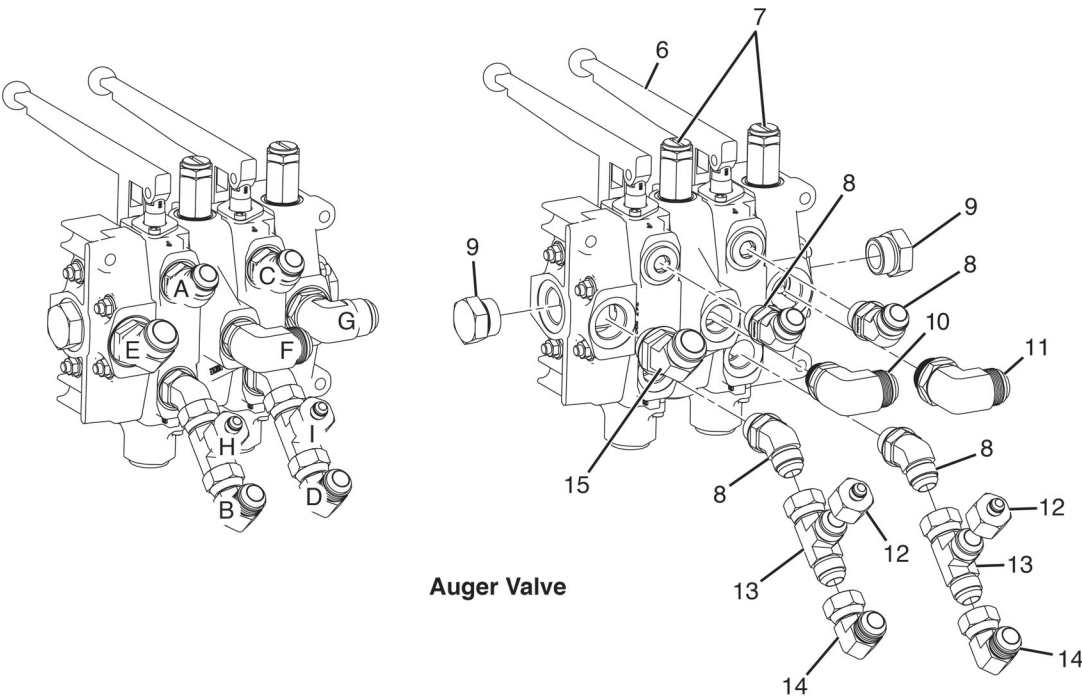
| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|-------------------------------------|
| 1 | 1 | N29725 | HOSE 3/8" X 240" - 8FJX - 8FJX |
| 2 | 4 | N11952 | ELBOW, 90 DEG - 08MJIC - 08MOR |
| 3 | 1 | N29634 | HOSE 3/8" X 212" - 8FJX - 8FJX |
| 4 | 1 | N29723 | HOSE 3/8" X 75" - 8FJIC - 8FJIC |
| 5 | 2 | N21381 | ELBOW, 45 DEG - 8MJC - 10MOR |
| 6 | 2 | N21715 | CYLINDER, 3" X 8" HYD 3000 PSI |
| 7 | 3 | N40097 | HOSE 3/8" X 87" - 8FJX - 8FJX |
| 8 | 4 | N24827 | ELBOW, 90 DEG - 8FJC - 8MJC |
| 9 | 2 | N24833 | TEE, 8MJIC-8MOR |
| 10 | 2 | N29813 | HOSE 3/8" X 36" - 6FJX - 6FJX |
| 11 | 2 | N29635 | HOSE 3/8" X 76" - 8FJX - 8FJX |
| 12 | 1 | N29743 | CYLINDER, 3-1/2" X 24" HYD 3000 PSI |
| 13 | 2 | N29798 | GUAGE 5000 PSI HYD PANNEL MNT |
| 14 | 2 | N29812 | ADAPTER, 4FJC - 6MJC |
| 15 | 1 | 206407 | MOTOR, ORBITAL DAN FOSS |
| | | 206408 | KIT, DAN FOSS SEAL |

Parts Identification

Valve Assembly



Function Valve



Auger Valve

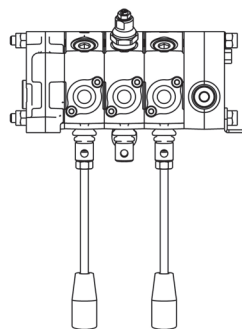
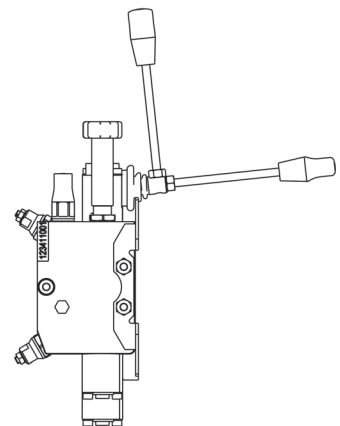
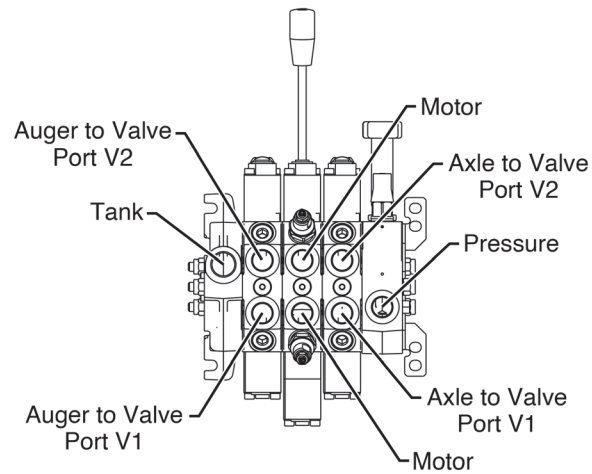
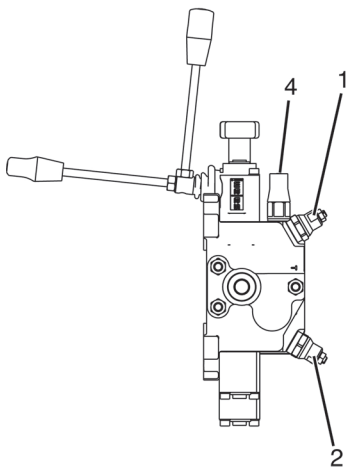
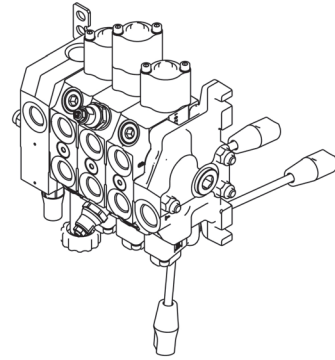
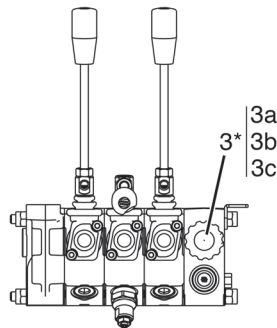
Valve Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|--------------------------------|
| 1 | 1 | N11952 | ELBOW, 90 DEG - 8MJIC - 8MOR |
| 2 | 3 | N20228 | ADAPTER, 8MJC - 8MOR |
| 3 | 3 | N29074 | RESTRICTOR, 8MJIC - 8MOR -.031 |
| 4 | 1 | N29721 | ELBOW, 90 DEG - 12MJIC - 10MOR |
| 5 | 1 | 212444 | VALVE, 3 SPOOL |
| 6 | 1 | N29102 | VALVE, HYDRAULIC CONT MOTORS |
| 7 | 2 | N30032 | VALVE, RELIEF |
| 8 | 4 | N25883 | ELBOW, 45 DEG - 12MJC - 12MOR |
| 9 | 2 | N28279 | PLUG, 16 MOR |
| 10 | 1 | N28910 | ELBOW, 90 DEG 16 MJIC - 12MOR |
| 11 | 1 | N41121 | ELBOW, 90 DEG -16MJIC-16MOR |
| 12 | 2 | N29815 | ADAPTER, 12FJC - 6MJC |
| 13 | 2 | N19306 | TEE, 12MJIC-12FJC-12MJIC SWVL |
| 14 | 2 | N21333 | ELBOW, 90 DEG - 12MJIC -12FJC |
| 15 | 1 | N19273 | ELBOW 45 DEG, 16MJIC - 16MOR, |

Parts Identification

Valve Assembly (212444)

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

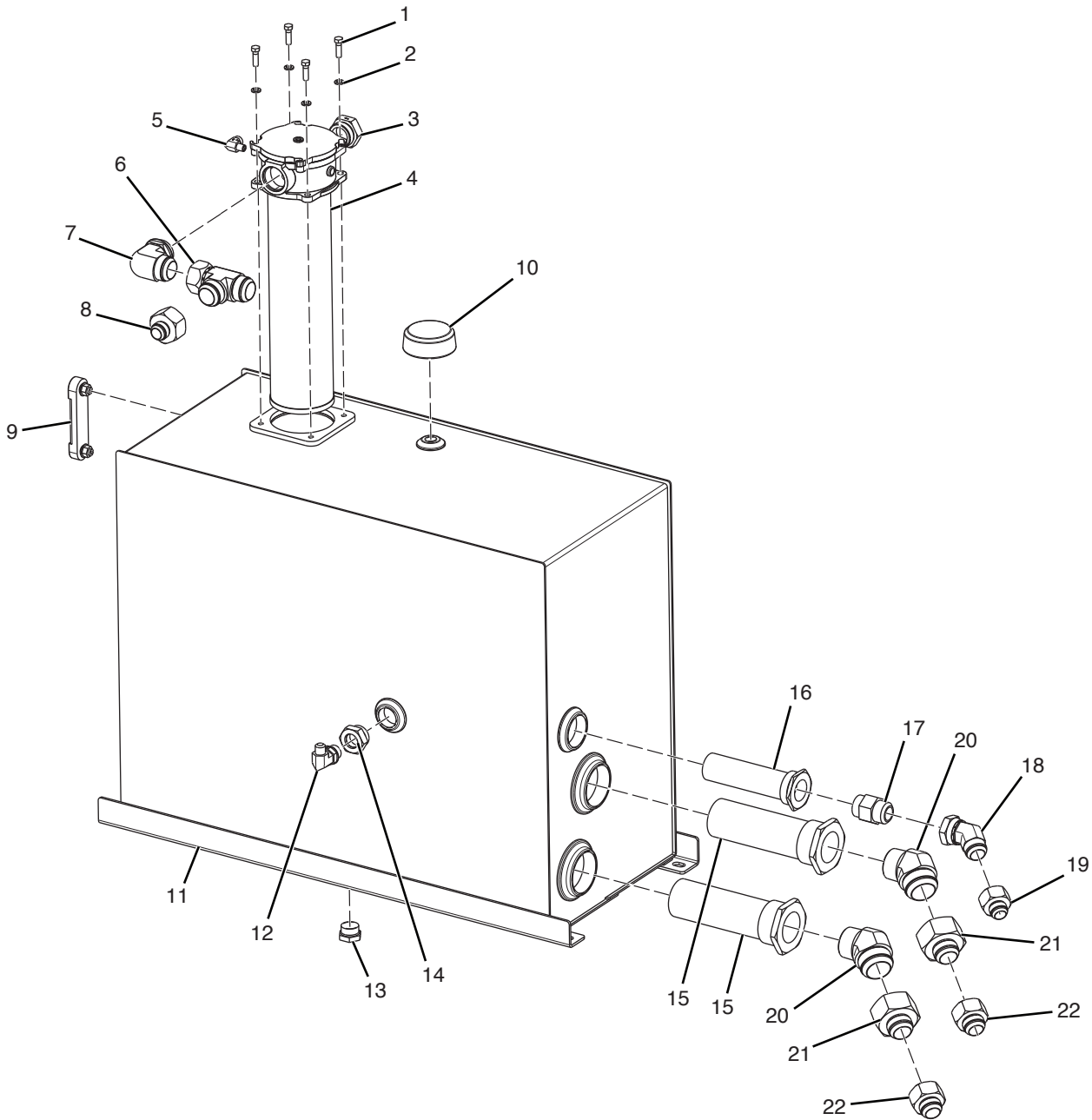


Valve Assembly (212444)

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|---------------------------------|
| 1 | 1 | 202570 | VALVE, PORT RELIEF 50-90 BAR |
| 2 | 1 | 212446 | VALVE, PORT RELIEF 131-205 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 |

Parts Identification

Hydraulic Reservoir Tank

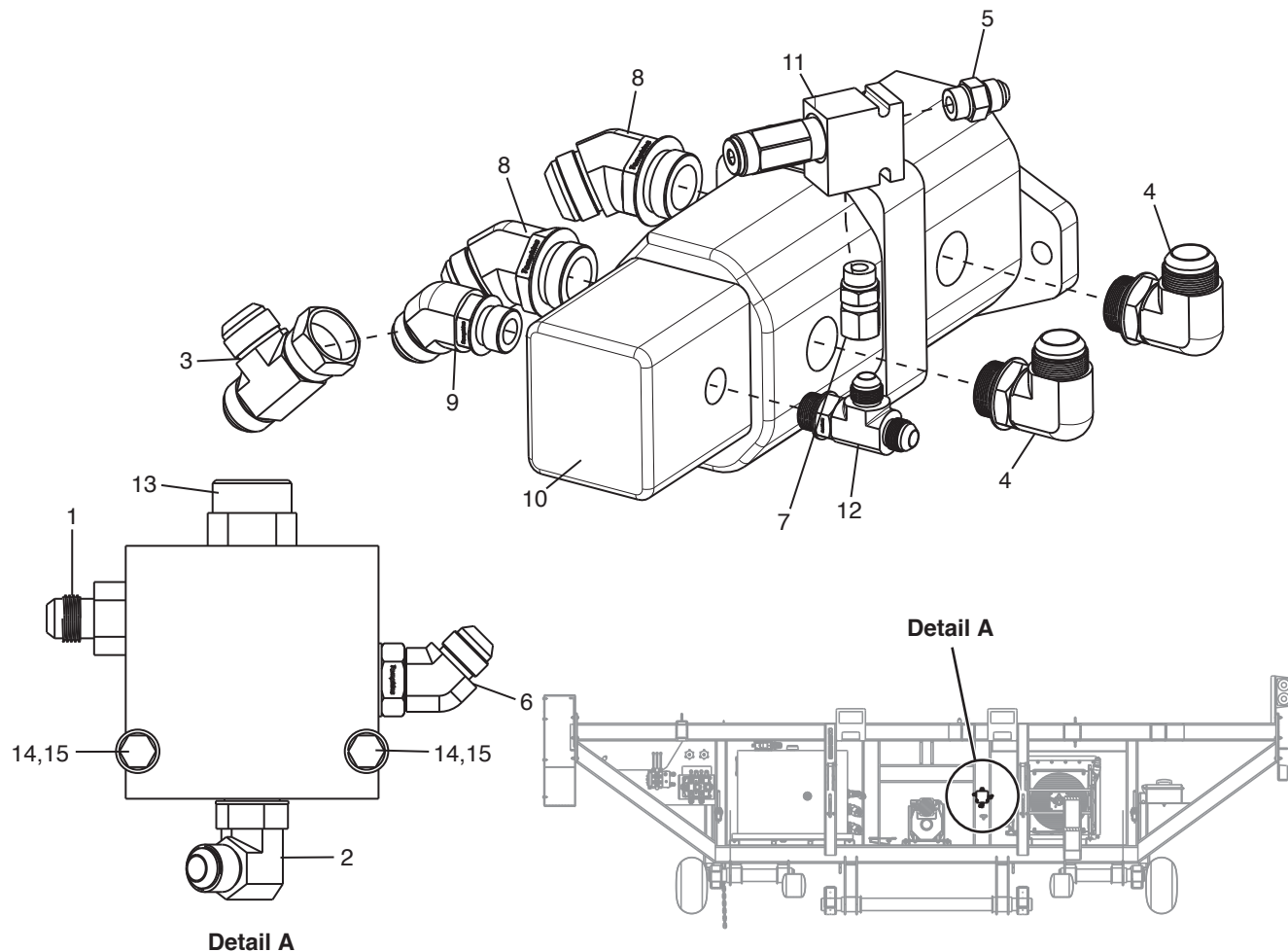


Hydraulic Reservoir Tank

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|-------------------------------|
| 1 | 4 | 4005 | BOLT, 3/8" X 1-1/4" GRADE 5 |
| 2 | 4 | 4065 | WASHER, 3/8 LOCK |
| 3 | 1 | N29612 | PLUG, 24 MOR |
| 4 | 1 | N29106 | FILTER, HYDRAULIC TANK |
| 5 | 1 | N16162 | ELBOW, 1/4" BLK 90 DEG STREET |
| 6 | 1 | N30419 | TEE, 24MJC-24FJC-24MJC SWL |
| 7 | 1 | N29727 | ELBOW, 90 DEG - 24MJC - 24MOR |
| 8 | 1 | N29615 | ADAPTER, 24FJC - 16MJC |
| 9 | 1 | N29499 | GUAGE, FLUID LEVEL SIGHT |
| 10 | 1 | N30462 | BREATHER, TANK 3/4" |
| 11 | 1 | N40038 | TANK LH, GBU 12 |
| 12 | 1 | N26333 | ELBOW, 90 DEG - 8MJC - 12MOR |
| 13 | 1 | N29547 | PLUG, 20MOR |
| 14 | 1 | N31225 | ADAPTER, 20MOR - 12FOR |
| 15 | 2 | N30454 | STRAINER, FLOW-EZY S50 |
| 16 | 1 | N29497 | STRAINER, FLOW-EZY 20 ORB |
| 17 | 1 | N37639 | VALVE, CHECK 20MOR - 20MJIC |
| 18 | 1 | N34209 | ELBOW, 45 DEG - 20MJC - 20FJC |
| 19 | 1 | N33748 | ADAPTER, 20FJC - 16MJC |
| 20 | 2 | N30457 | ELBOW, 45 DEG - 32MJC - 32MP |
| 21 | 2 | N30415 | ADAPTER, 32FJC - 24MJC |
| 22 | 2 | N30111 | ADAPTER, 24FJC - 20 MJC |

Parts Identification

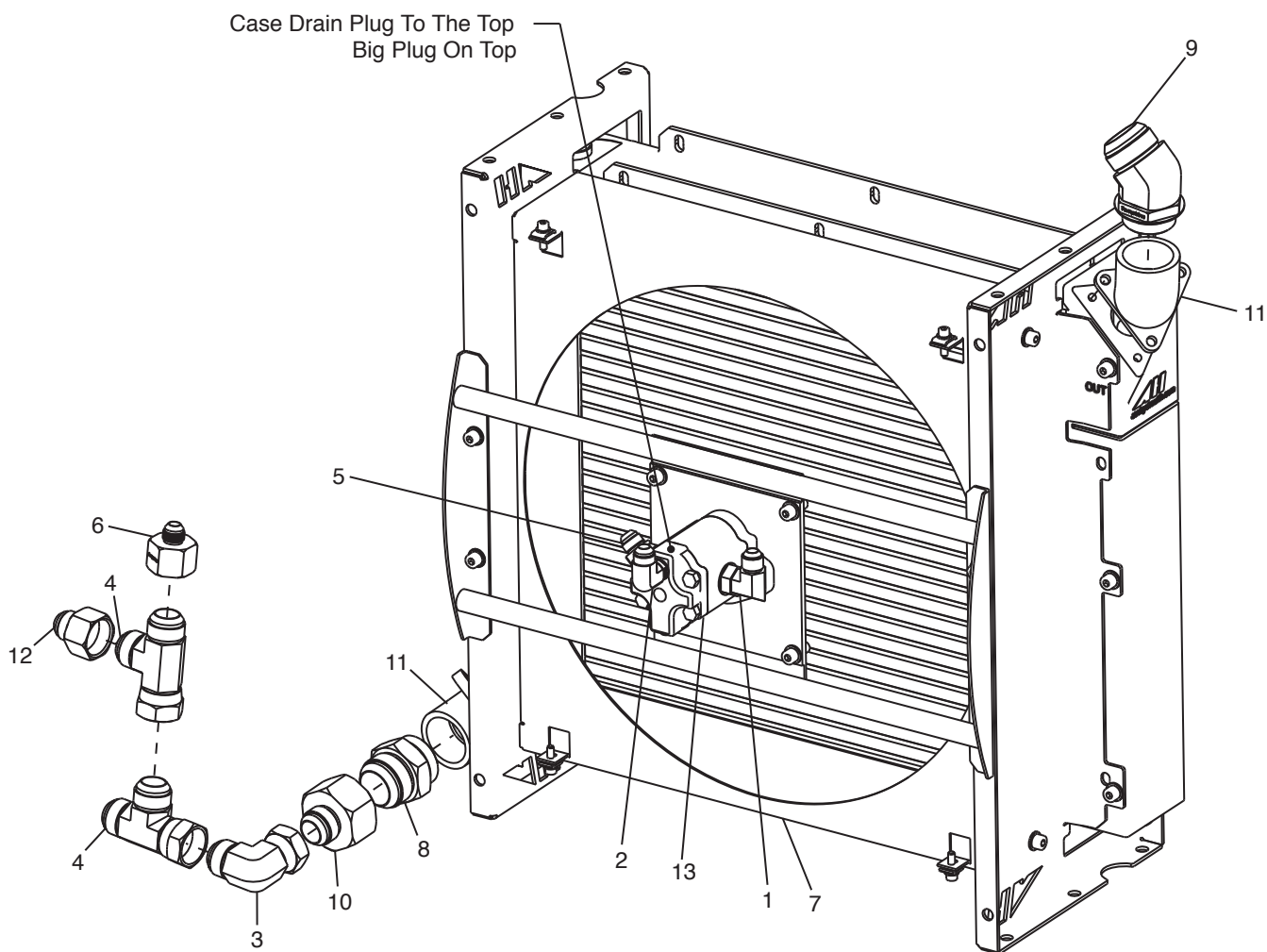
Hydraulic Pump and Regulator



Detail A

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|------------------------------------|
| 1 | 1 | N12444 | ADAPTER, 8MJIC - 10MOR |
| 2 | 1 | N16173 | ELBOW, 90 DEG - 8-MJC - 10MOR |
| 3 | 1 | N19272 | TEE, 16MJIC-16FJIC-16MJIC, 6602-16 |
| 4 | 2 | N41121 | ELBOW, 90 DEG-16MJIC-16MOR |
| 5 | 1 | N20228 | ADAPTER, 8MJC - 8MOR |
| 6 | 1 | N21381 | ELBOW, 45 DEG - 8MJC - 10MOR |
| 7 | 1 | N24835 | ADAPTER, 8MOR - 8FJIC |
| 8 | 2 | N29525 | ELBOW, 45 DEG - 20MJC - 20MOR |
| 9 | 1 | N29722 | ELBOW, 45 DEG - 16MJIC - 12MOR |
| 10 | 1 | N37628 | PUMP, HYDRAULIC STACK |
| 11 | 1 | N37629 | VALVE, RELIEF 3000 PSI |
| 12 | 1 | N38300 | TEE, 8MJIC - 10MORB - 8MJIC |
| 13 | 1 | N39096 | FR12-30F, HYDRAFORCE |
| 14 | 2 | 4204 | BOLT, 5/16" X 2-1/2" GRADE 5 |
| 15 | 2 | N28927 | WASHER, FLAT 5/16 SAE |

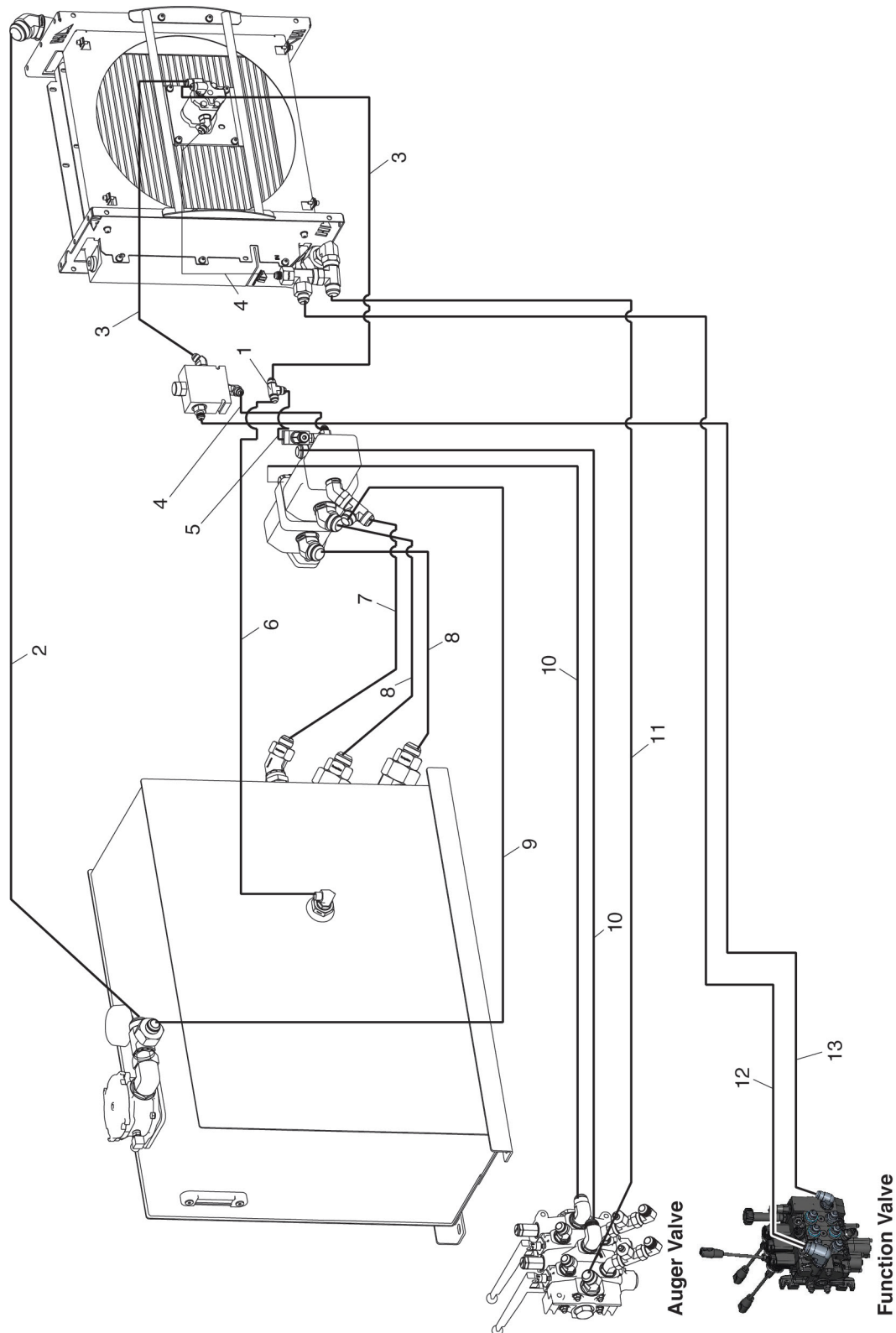
Hydraulic Oil Cooler



| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|------------------------------------|
| 1 | 1 | N16173 | ELBOW, 90 DEG - 8-MJC - 10MOR |
| 2 | 1 | N17003 | ELBOW, 90 DEG - 8MJIC - 6MOR |
| 3 | 1 | N19270 | ELBOW, 90 DEG - 16MJIC - 16FJC |
| 4 | 2 | N19272 | TEE, 16MJIC-16FJIC-16MJIC, 6602-16 |
| 5 | 1 | N21381 | ELBOW, 45 DEG - 8MJC - 10MOR |
| 6 | 1 | N28778 | ADAPTER, 16FJIC - 8MJIC |
| 7 | 1 | N29104 | COOLER, ASA HYDRAULIC OIL |
| 8 | 1 | N29611 | ADAPTER, 24MJIC - 24MOR |
| 9 | 1 | N29614 | ELBOW, 45 DEG - 24MJC - 24MOR |
| 10 | 1 | N29615 | ADAPTER, 24FJC - 16MJC |
| 11 | 2 | N29616 | ELBOW, 3-BOLT ORFS - 24FOR |
| 12 | 1 | N29617 | ADAPTER, 16FJC - 12MJC |
| 13 | 1 | N37281 | MOTOR, GBU 12 COOLER |

Parts Identification

Hydraulic Hose Assembly

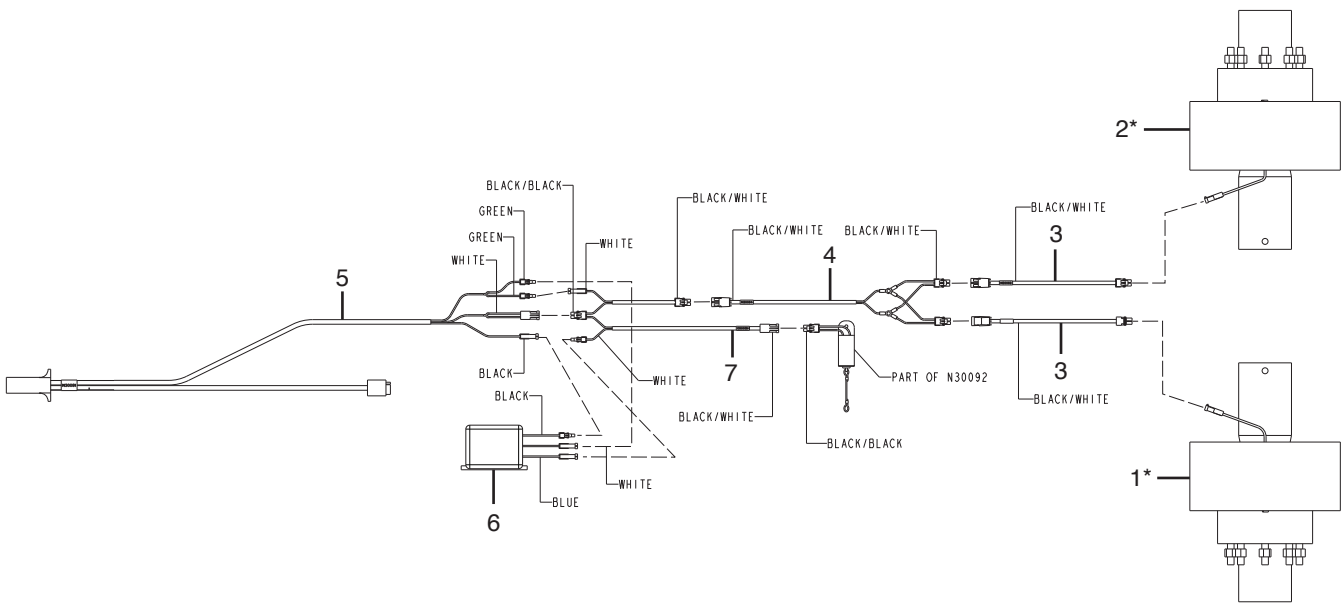


Hydraulic Hose Assembly

| # | QTY. | PART # | DESCRIPTION |
|----|------|--------|-----------------------------------|
| 1 | 1 | N17001 | TEE, 8MJIC-8MJIC-8MJIC |
| 2 | 1 | N40088 | HOSE 1.5 X 112" - 24FJX - 24FJX |
| 3 | 2 | N40101 | HOSE 1/2" X 45" - 8FJIC - 8FJIC |
| 4 | 2 | N40102 | HOSE 1/2" X 32" - 8FJIC - 8FJIC |
| 5 | 1 | N40103 | HOSE 1/2" X 14" - 8FJIC - 8FJIC |
| 6 | 1 | N40099 | HOSE 1/2" X 56" - 8FJIC - 8FJIC |
| 7 | 1 | N33749 | HOSE 1" X 29" - 16FJX - 16FJX |
| 8 | 2 | N29621 | HOSE 1.25" X 27" - 20FJX - 20FJX |
| 9 | 1 | N40100 | HOSE 3/4" X 60" - 16FJIC - 16FJIC |
| 10 | 2 | N40087 | HOSE 1" X 100" - 16FJX - 16FJX |
| 11 | 1 | N40086 | HOSE 1" X 122" - 16FJX - 16FJX |
| 12 | 1 | N40085 | HOSE 3/4" X 128" - 12FJX - 12FJX |
| 13 | 1 | N40098 | HOSE 1/2" X 114" - 8FJIC - 8FJIC |

Parts Identification

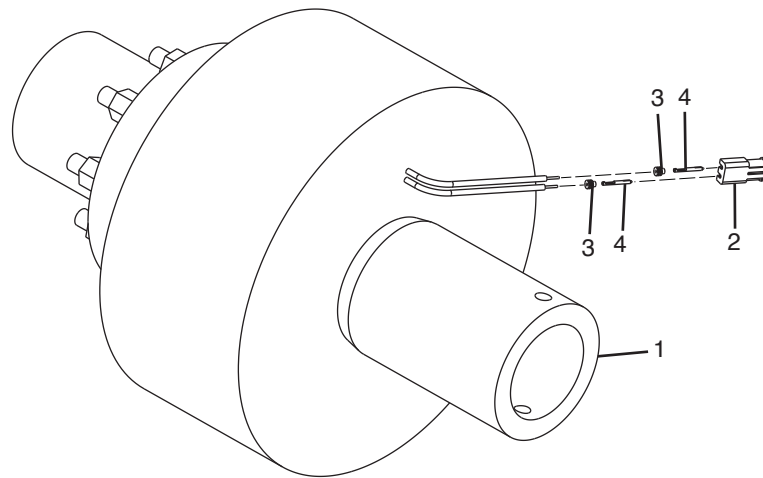
Electrical (Brake) Diagram (N30094)



* For parts breakdown of item 1 (202846) and item 2 (202847), see page 93.

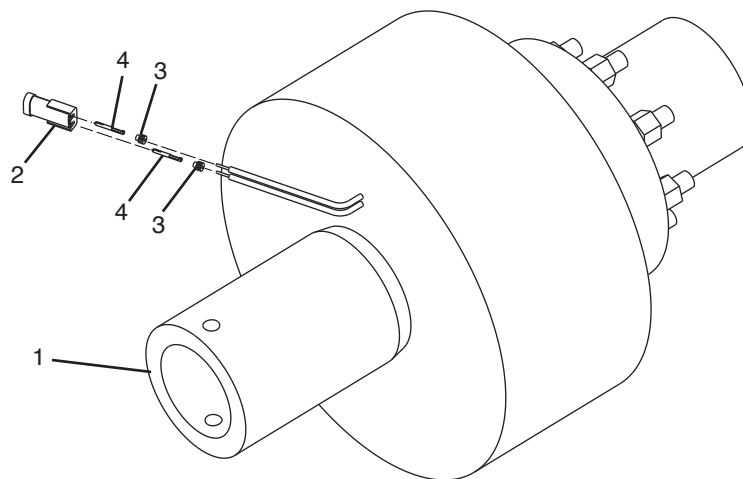
| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|------------------------------|
| 1 | 1 | 202846 | AXLE, GBU12 LEFT WIRED |
| 2 | 1 | 202847 | AXLE, GBU12 RIGHT WIRED |
| 3 | 2 | N30082 | WIRE, GBU12 BRAKE ROTOR |
| 4 | 1 | N30084 | WIRE, GBU12 BRAKE SPLITTER |
| 5 | 1 | N30091 | HARNESS, GBU12 LIGHT & BRAKE |
| 6 | 1 | N30092 | WIRE, BRAKE BATTERY |
| 7 | 1 | N30093 | WIRE, BRAKE TWO TO THREE |

Axle, GBU12 Left Wired (202846)



| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|--------------------------------|
| 1 | 1 | 202840 | 12000# 1/2 AXLE ASM SELF ADJ L |
| 2 | 1 | N19839 | SHROUD, WP CONTACT 2-WAY |
| 3 | 2 | N30066 | SEAL, WP 14-16 GA |
| 4 | 2 | N30067 | TERMINAL, WP MALE 14-16 GA |

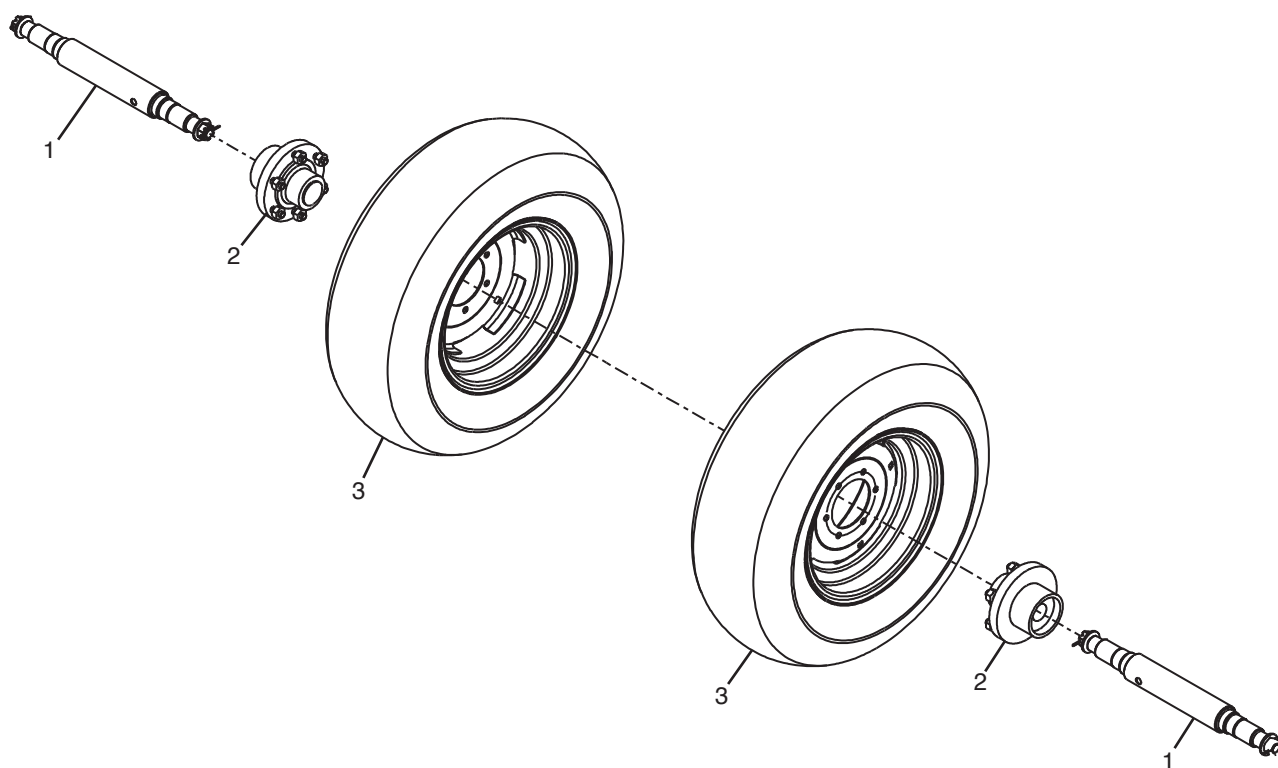
Axle, GBU12 Right Wired (202847)



| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|--------------------------------|
| 1 | 1 | 202841 | 12000# 1/2 AXLE ASM SELF ADJ R |
| 2 | 1 | N19839 | SHROUD, WP CONTACT 2-WAY |
| 3 | 2 | N30066 | SEAL, WP 14-16 GA |
| 4 | 2 | N30067 | TERMINAL, WP MALE 14-16 GA |

Parts Identification

Kit, GBU12 2-1/2" Dual Spindle (N154230)

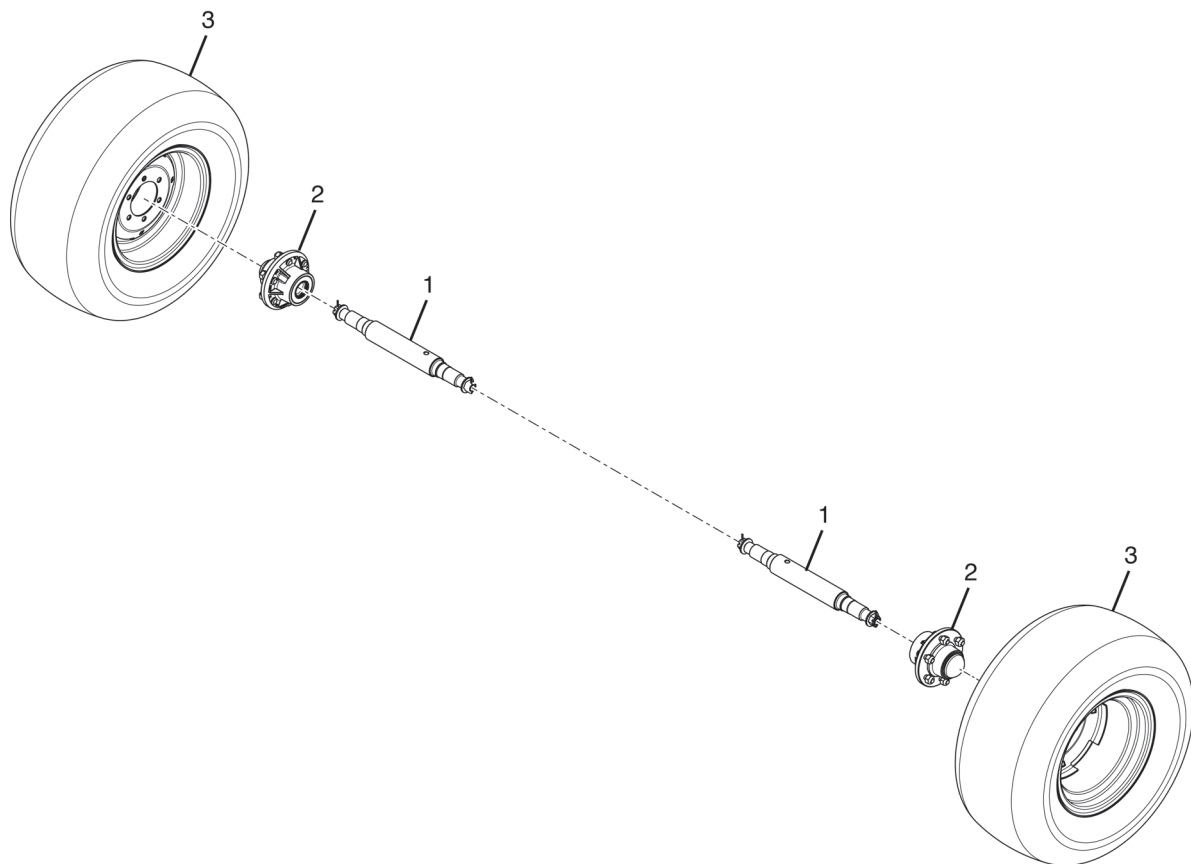


* For parts breakdown of item 1, Spindle (N123534), see page 96.

** For parts breakdown of item 2, Hub (N29054), see page 97.

| # | QTY. | PART # | DESCRIPTION |
|---|------|---------|------------------------------|
| 1 | 2 | N123534 | SPINDLE, GBU12 2-1/2" DUAL |
| 2 | 2 | N29054 | HUB, 6 BOLT 6" PAT W/STUDS |
| 3 | 2 | N29027 | WHEEL, 11L-15 HIWAY F RATING |

Kit, GBU12 Dual Tire 13.5-15NHS (209599)

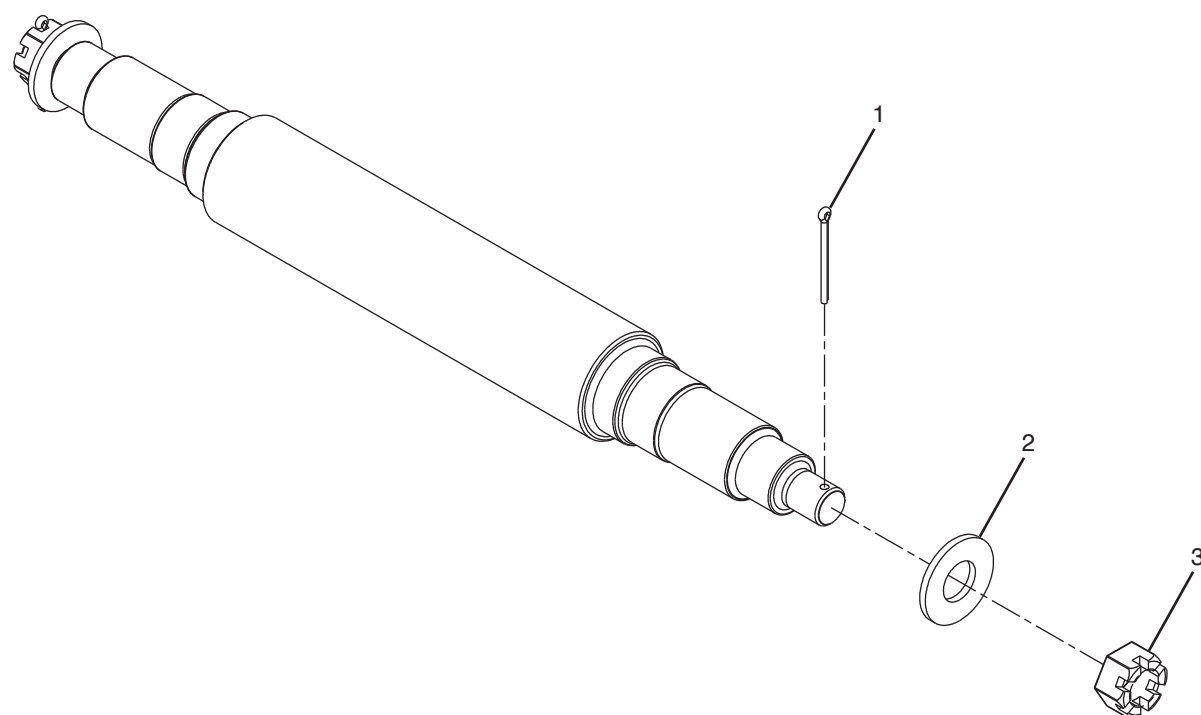


* For parts breakdown of item 1, Spindle (N123534), see page 96.

** For parts breakdown of item 2, Hub (N29054), see page 97.

| # | QTY. | PART # | DESCRIPTION |
|---|------|---------|------------------------------|
| 1 | 2 | N123534 | SPINDLE, GBU12 2-1/2" DUAL |
| 2 | 2 | N29054 | HUB, 6 BOLT 6" PAT W/STUDS |
| 3 | 2 | N36691 | WHEEL, 13.5-15NHS, 31 10 PLY |

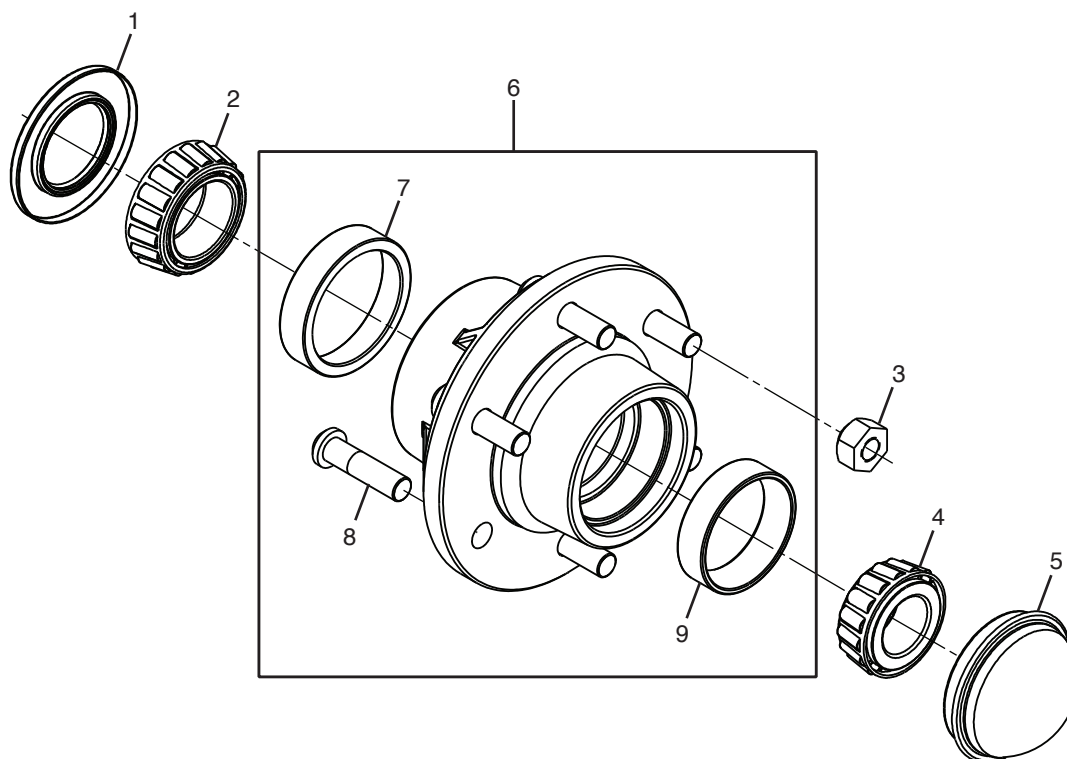
Spindle, 2-1/2" Dual (N123534)



To order a complete spindle (which includes items 1-3) use part number N123534.

| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|--------------------------------|
| 1 | 2 | 4092 | PIN COTTER 5/32" X 2" |
| 2 | 2 | N89461 | WASHER, 2 X 15/16 X .164 PLAIN |
| 3 | 2 | N89489 | NUT, CASTLE 7/8"-14 |

Hub, 6 Bolt 6" (N29054)



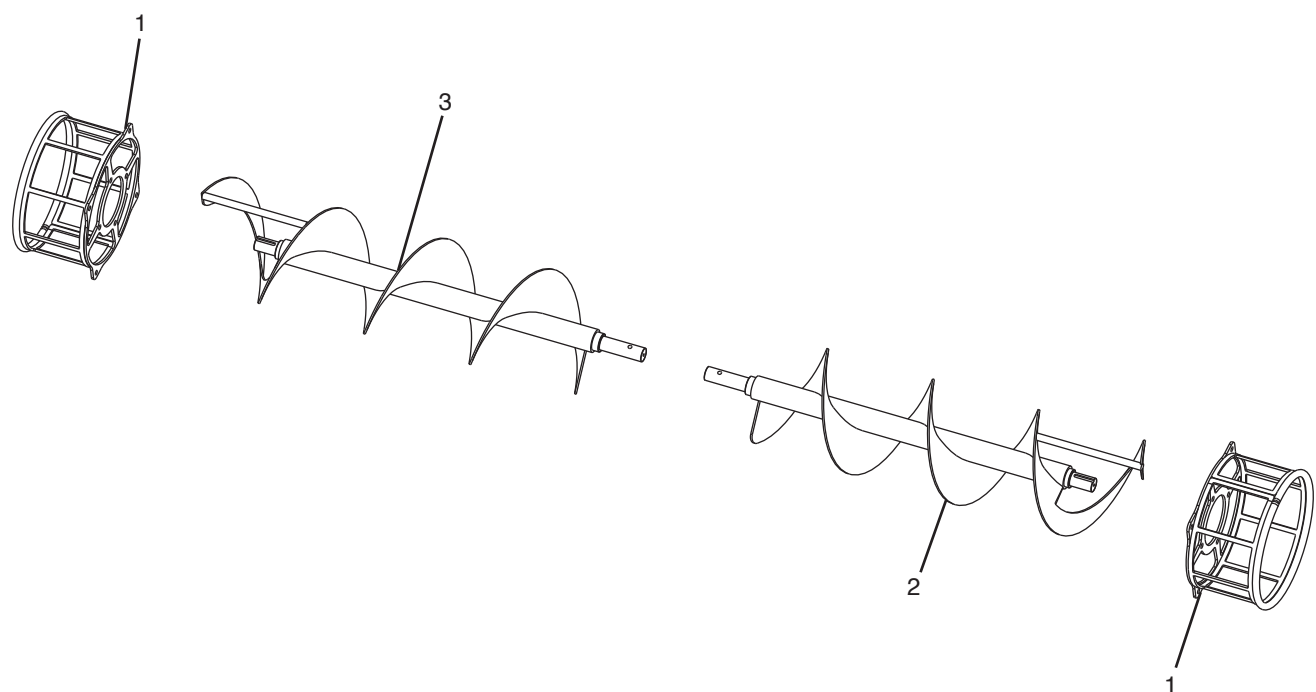
To order a complete 6-bolt hub assembly, use part number N29054.

To order a hub casting with studs and cup bearings, use part number N89170 (item 6).

| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|-------------------------------|
| 1 | 1 | N89176 | SEAL, 6-BOLT HUB N29054 |
| 2 | 1 | N89172 | BEARING, TAPERED ROLLER 1.796 |
| 3 | 6 | N23764 | NUT, LUG 9/16-18UNF (N23778) |
| 4 | 1 | N89174 | BEARING, TAPERED ROLLER 1.375 |
| 5 | 1 | N89178 | CAP, 6-BOLT HUB N29054 |
| 6 | 1 | N89170 | HUB, 6-BOLT W/STUD & CUPS |
| 7 | 1 | N89164 | CUP, BEARING INNER HUB N29054 |
| 8 | 6 | N27304 | STUD, HUB 9/16"-18UNF |
| 9 | 1 | N89166 | CUP, BEARING OUTER HUB N29054 |

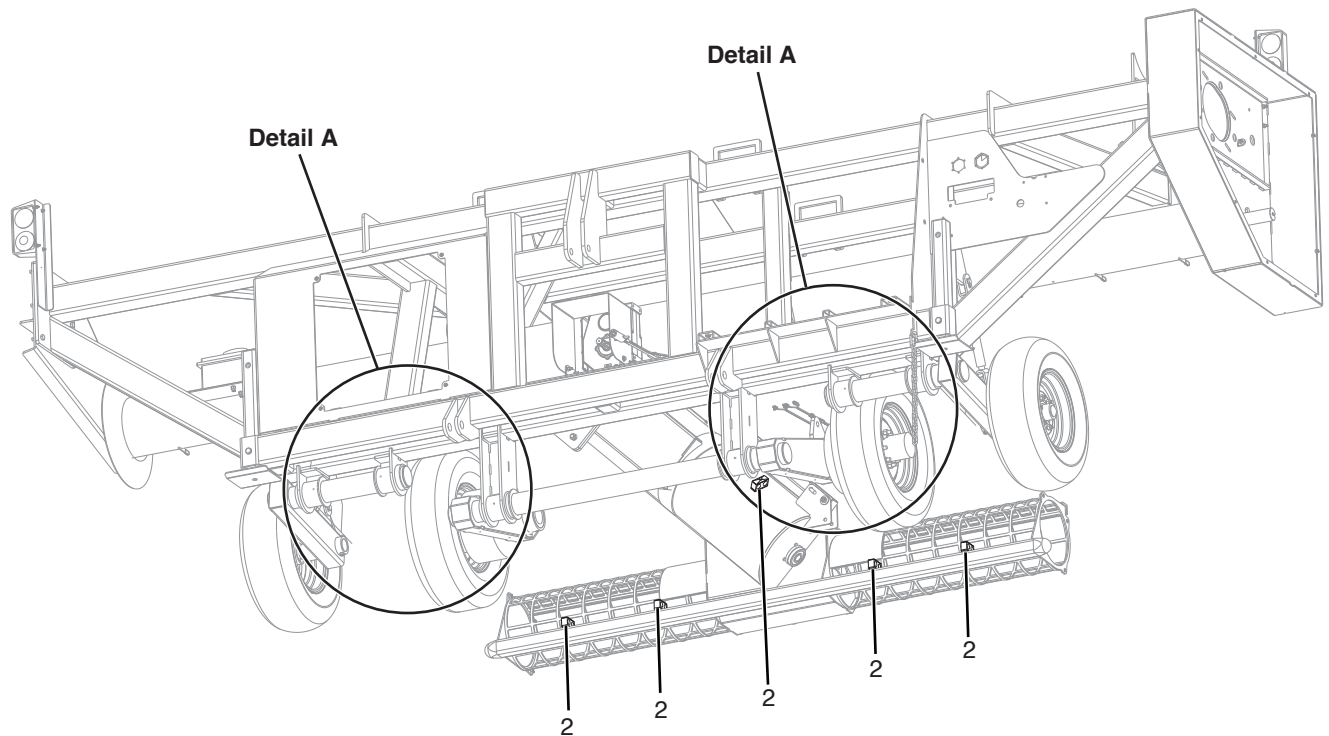
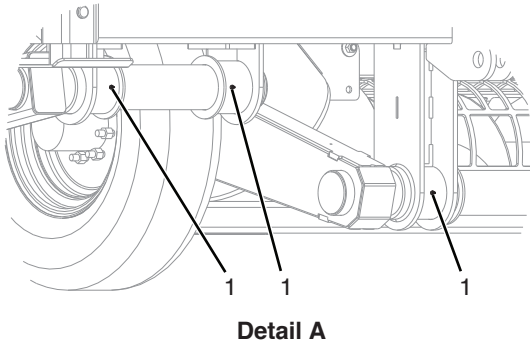
Parts Identification

Kit, GBU12 Cross Auger 10 ft. Extension (N29758)



| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|--------------------------------|
| 1 | 2 | N29672 | MOUNT, GBU12-10 CRS 10 AUG MTR |
| 2 | 1 | N29680 | AUGER, HYD GBU LEFT 10 CROSS |
| 3 | 1 | N29684 | AUGER, HYD GBU RT 10' CROSS |

Grease Zerks, Hose Clamps



| # | QTY. | PART # | DESCRIPTION |
|---|------|--------|-----------------------------|
| 1 | 6 | 4105 | GREASE-ZERK, 1/4" SCREW-IN |
| 2 | 5 | N29640 | CLAMP, 3/4" HYD HOSE DOUBLE |



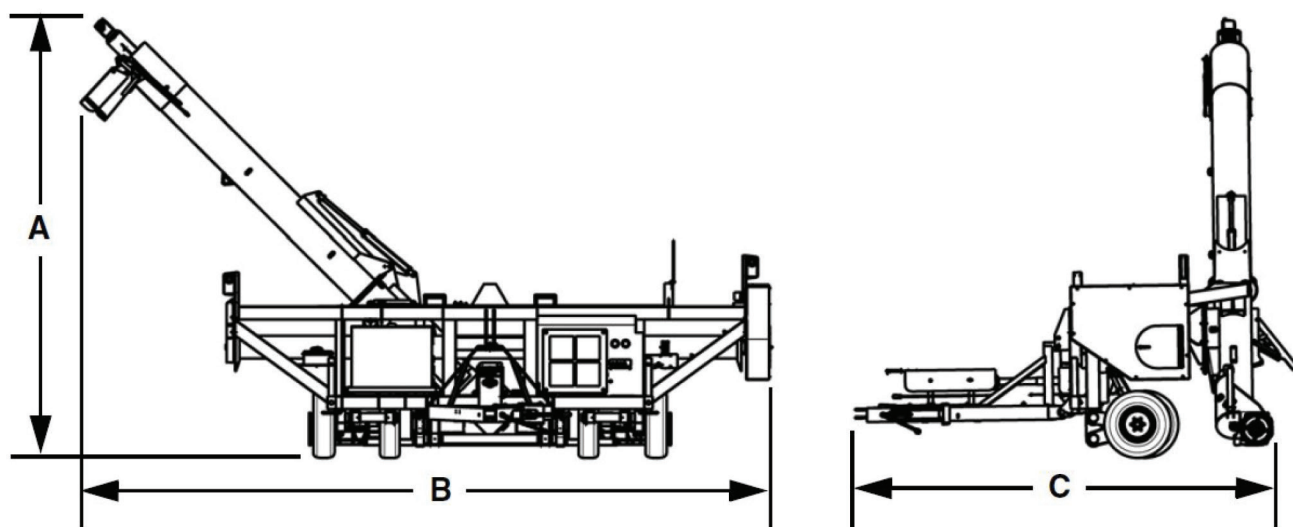
Specifications

| DESCRIPTION | 12' GRAIN BAG UNLOADER |
|----------------------------|---------------------------------|
| Operating Capacity | 12,000 Bushels/Hr |
| Operating Weight | 11,000 lbs. |
| Minimum Tractor Horsepower | 150 HP |
| Maximum Rear-PTO RPM | 1000 RPM |
| Main Discharge Auger | 17 in. (431.8 mm) |
| Main Auger Drive | Hydraulic (480 RPM) |
| Cross Auger Feed | 12" |
| Cross Auger Drive | Hydraulic (250 RPM) |
| PTO Driveline | Walterscheid W2400 - 600 Series |
| Wheels | 12.5L - 15 Suregrip Traction |
| Transport Wheels | 235 / 70 R 17.5 Hiway |
| Transport Brake System | Electric Trailer Brakes |
| Transport Wheel Cylinders | 3" x 8" |
| Operating Height | 17' 2" (206") |
| Operating Width | 27'- 1" (324") |
| Operating Length | 16' 3" (195") |

Appendix

Dimensions

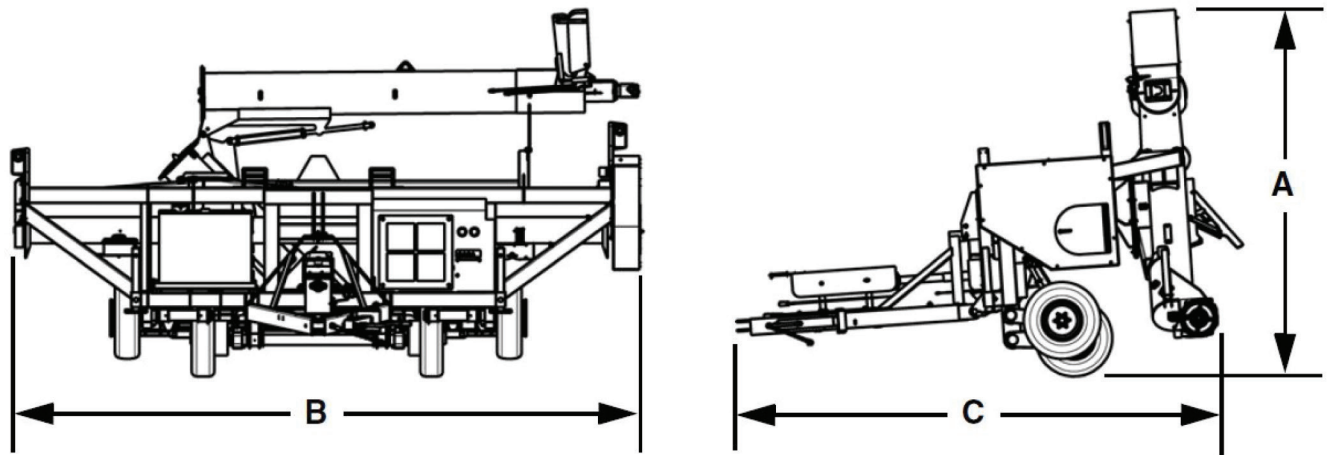
Operation



| DESCRIPTION | 12' GRAIN BAG UNLOADER |
|----------------------|--------------------------------|
| Operating Height (A) | 17' 2" |
| Operating Width (B) | 27' 1" |
| Operating Length (C) | 16' 3" |
| Transport Height | 153 in. (12' 9") - (388.6 cm) |
| Transport Width | 236 in. (19' 8") - (599.44 cm) |
| Transport Length | 390 in. (32' 6") - (990.6 cm) |

Dimensions

Transportation



| DESCRIPTION | 12' GRAIN BAG UNLOADER |
|----------------------|------------------------|
| Operating Height (A) | 12' 6" |
| Operating Width (B) | 21' 4" |
| Operating Length (C) | 16' 5" |

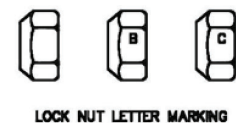
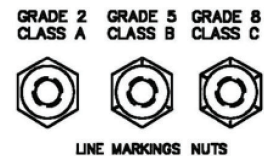
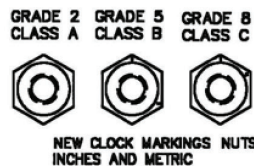
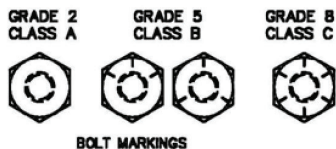
Appendix

Torque Specifications

Inches Hardware and Lock Nuts

TORQUE CHARTS
Minimum Hardware Tightening Torques
Normal Assembly Applications
(Standard Hardware and Lock Nuts)

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



Torque Specifications (Cont'd)

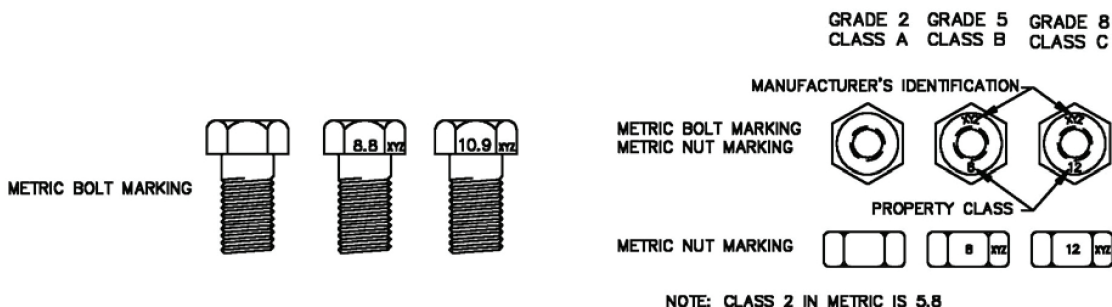
Metric Hardware and Lock Nuts

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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