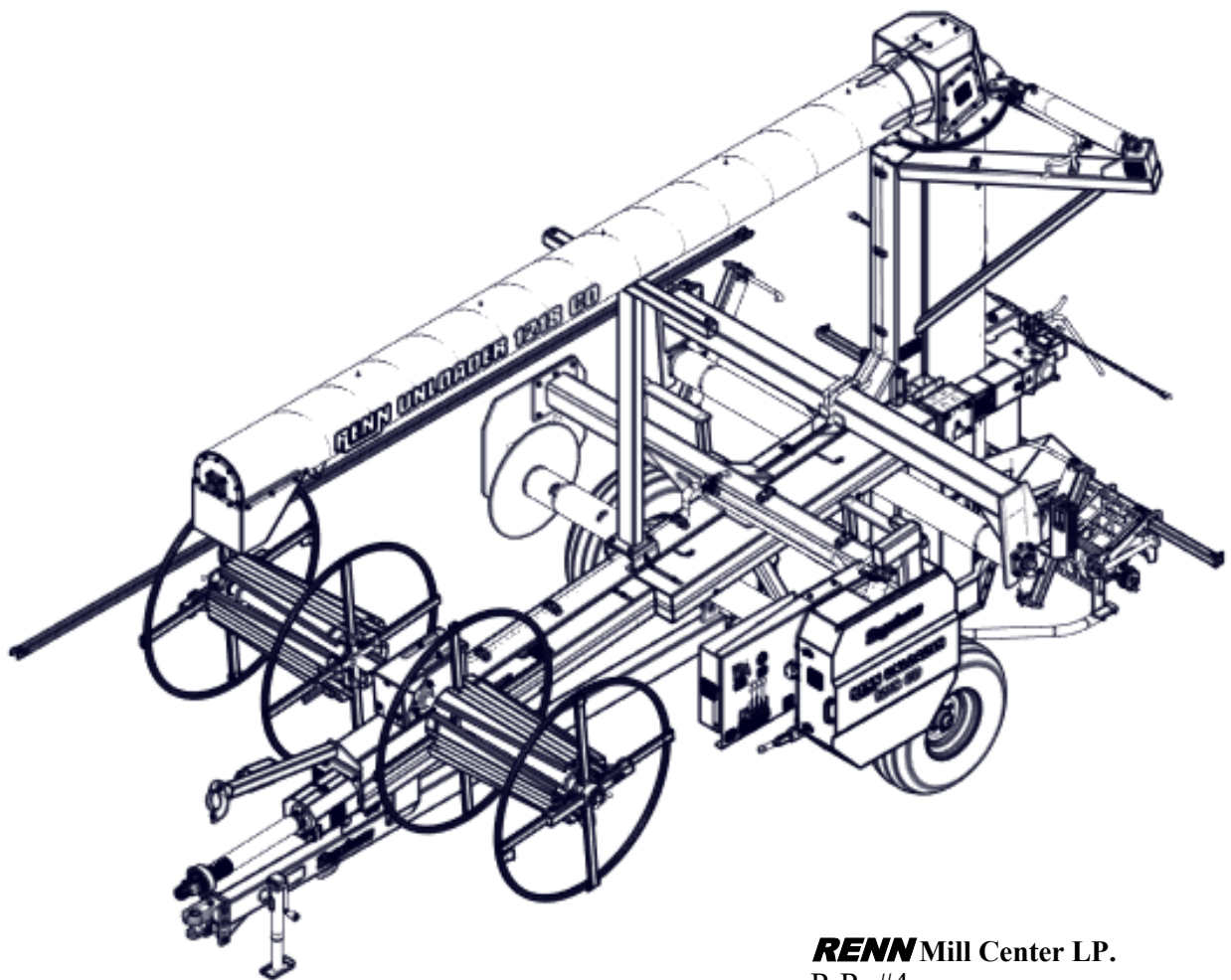




A DIVISION OF **Degelman**

1218CD GRAIN UNLOADER

Operator's & Parts Manual
Model No. 980900-0010.03



RENN Mill Center LP.

R.R. #4

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INTRODUCTION

Congratulations on your decision to purchase a Renn Bag Unloader. This machine has been designed to provide you with the highest standards of quality, reliability and durability. This manual has been prepared to familiarize you with the operation and maintenance of your Bag Unloader. We urge you to read this publication carefully and refer to it extensively for correct operating procedure.

The Renn Bag Unloader allows the operator the flexibility to unload to either side of the machine. The turret auger has the capability of swinging 90 degrees left and right, and is capable of unloading at a rate of 250 bushels per minute. The Renn Bag Unloader is also the only Unloader currently on the market to unload a 12' diameter bag.

This manual includes a Warranty Policy, a Safety Section, and a Lubrication and Maintenance Schedule. We urge you to read through this information carefully. This will help ensure the safe and trouble-free operation of your Bag Unloader. All information, illustrations and specifications in this manual are based on the latest product information available. We, the manufacturer, reserve the right to make any changes at any time without prior notice.

LIMITED WARRANTY



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• NEW EQUIPMENT WARRANTY

Subject to the limitations and exclusions set out herein, RENN Mill Center LP. ("Renn") warrants that if any component or part of a machine manufactured by Renn proves to be defective in material or workmanship within

1. (1) year from the delivery date of the original sale to a purchaser who purchases the equipment for their own farming operation use; OR
2. (90) days from the delivery date of the original sale to any other purchaser.

Renn will at Renn's option either repair or replace the defective part without charge. No payments will be made in lieu of repair to the machine. This limited warranty may be enforced by the first purchaser or first consumer user; all subsequent purchasers acquire the product "as is" without any benefit of this limited warranty.

• LIMITATIONS AND EXCLUSIONS

This limited warranty by Renn does not extend to or include:

1. New tires - installed on the equipment which are subject to a separate warranty by the tire manufacturer—see warranty sheet included with your owners manual. All warranty claims must be submitted to the tire manufacturer for approval and payment.
2. Used tires
3. Drive Belts
4. Drive Chains

This limited warranty covers defects in material and workmanship in the parts manufactured by Renn except:

1. Damage resulting from accident, misuse, abuse, neglect or from other than normal and ordinary use of the equipment.
2. Damage resulting from failure to clean or use the product in accordance with the manufacturer's instructions.
3. Renn reserves the manufacturer's right to determine the responsibility for damage as detailed in 1 and 2 above.

Renn shall, as to each defect, be released from all obligations and liabilities under this warranty if:

1. The equipment shall have been operated with any accessory, equipment, component or part not manufactured by Renn or not approved for use by Renn.
2. The equipment shall have been repaired, altered or modified without Renn's approval or if the equipment shall have been operated subsequent to its involvement in an accident or breakdown unless the purchaser furnishes reasonable evidence that such repair, modification or operation subsequent to its involvement in an accident or breakdown was not the cause of the defect;
3. If the purchaser or consumer does not, within 30 days from the date of discovery of the defect, return the defective machine, accessory, equipment component or part at the purchaser's or users expense to an authorized dealer, purchaser shall be responsible for submission of reasonable evidence or proof of date of discovery of subsequent defect.

• WARRANTY AND PARTS REPLACED BY WARRANTY

Renn further warrants that if any genuine Renn part or component utilized by authorized Renn dealers in accordance with this limited warranty proves to be defective in material or workmanship within 90 days of such utilization, Renn will, at Renn's option either repair or replace the defective part without charge. Purchaser shall be responsible for any shipping charges including freight to and from the place where the warranty work is done or performed.

• WHAT YOU MUST DO TO ENFORCE THIS WARRANTY

1. Warranty services must be performed by a dealer authorized by Renn. The purchaser must, at the purchaser's expense, deliver, mail or ship the defective part to any duly authorized dealer in the purchaser's area. If the purchaser is unable to locate a dealer in the purchaser's area, please contact Renn. Renn will either refer you to an authorized dealer or instruct you where to return the product. Do not return the product to Renn, without Renn's prior authorization
2. Purchaser must pay any postage, shipping charges, insurance costs, freight and other expenses to and from the place where the warranty work is done or performed if required to return equipment or any component or part to an authorized dealer or as directed by Renn. Purchaser shall be obligated to pay any premium payable for overtime labour if overtime is incurred as a result of a request by the purchaser.

• UNAPPROVED SERVICE OR MODIFICATION

All obligations of Renn under this warranty shall be terminated:

1. If service is performed by someone other than a dealer authorized by Renn or,
2. If equipment is altered or modified in ways not approved by Renn.

Accidents and normal maintenance

This warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper maintenance, improper protection in storage or improper use. The cost of normal maintenance and replacement of service items, oil filters, cutting parts, tires, bearings, chains, sprockets or brake parts shall be paid for by the purchaser.

• NO REPRESENTATION OR IMPLIED WARRANTY

1. Where permitted by law, neither Renn nor any company affiliated with it makes any warranties, representation or promises expressed or implied as to the quality or performance of its products other than those set forth above.
2. Renn makes no warranty of merchantability or fitness for a particular purpose.

• IMPROVEMENTS OR CHANGES

Renn reserves the right to make improvements or changes in design and specifications at any time without incurring any obligation to owners of previously sold units.

• WARRANTY CLAIM PROCEDURE

Warranty Claim Form must be delivered to Renn within 60 days after the warranty work was performed. Defective parts must be held for inspection for 90 days after the work was performed. Renn may request that parts be returned to the Renn factory for inspection. If approved, Renn will issue a credit within 60 days of receiving the warranty claim.

• ACKNOWLEDGEMENT REQUIRED

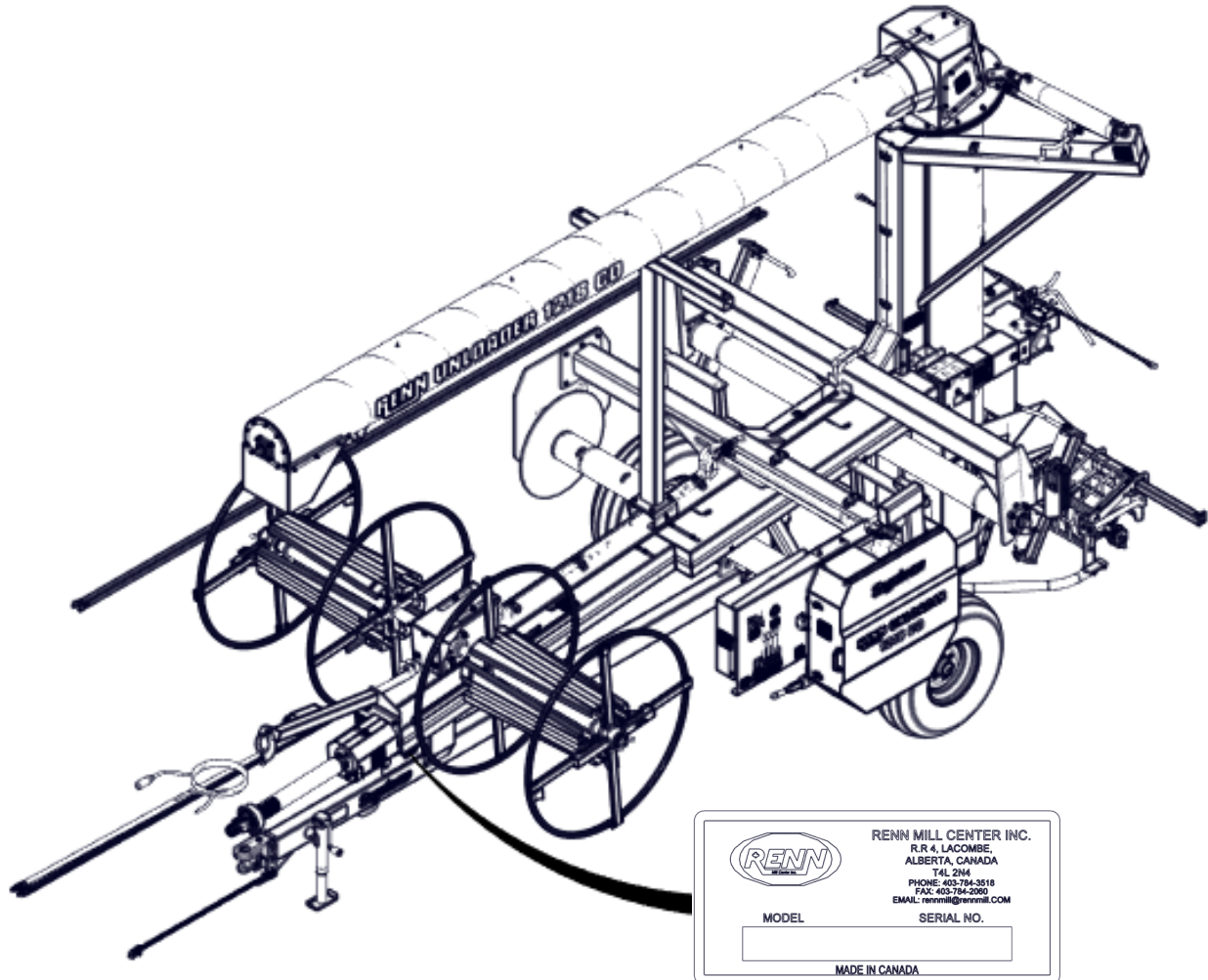
Renn shall have no obligation under this warranty unless the "Warranty Registration" included with your owners manual signed by purchaser and dealer is delivered to Renn within 30 days from the date of sale.

IMPORTANT NOTICE

To activate warranty coverage, the owner / dealer must complete the Warranty Registration form that can be found online and return to Renn Mill Center LP. R.R. 4, Lacombe, Alberta, Canada, T4L 2N4 within 30 days of retail sale.

SERIAL NUMBER LOCATION

The serial number plate is located on the driver's side of the vertical frame near the hitch of the machine.



IMPORTANT: For fast, correct service when ordering parts, supply the following information to your local Renn Dealer:

- 1) The model number
- 2) The serial number

This information is essential when ordering parts for your Renn Bag Unloader.



2 SAFETY

Safety Alert Symbol

This Safety Alert symbol means

ATTENTION!
BE ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Renn Bag Unloader and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

Accidents Disable and Kill

3 Big Reasons

Accidents Cost

Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING**, and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER -

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING -

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION -

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

2 SAFETY



You are responsible for the SAFE operation and maintenance of your Renn Bag Unloader. YOU must ensure that you and anyone else who is going to operate, maintain or work around the unloader be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and will alert you to all good safety practices that should be adhered to while operating the Unloader.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Unloader owners must give operating instructions to operators or employees before allowing them to operate the Unloader, and at least annually thereafter per OSHA regulation 1928.57.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL safety and operating instructions in the manual and to follow them. All accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 General Safety

1. Only trained, competent persons should operate the Unloader. An untrained operator is not qualified to operate the machine.
2. Have a first-aid kit available for use, should the need arise, and know how to use it.
3. Have a fire extinguisher available for use, should the need arise, and know how to use it.
4. Wear appropriate protective gear. This list includes but is not limited to:
 - A hard hat
 - Protective shoes with slip resistant soles
 - Protective goggles
 - Hearing protection
5. Review safety related items with all personnel annually.
6. Place all controls in neutral, stop the engine, set the parking brake, remove the ignition key, wait for all moving parts to stop and disengage the PTO before servicing, adjusting, repairing or unplugging.

2 SAFETY



2.2 Operating Safety

1. Read and understand the Operator's Manual and all safety signs before using the machine.
2. Place all controls in neutral, stop the engine, set the parking brake, remove the key from the ignition, wait for all moving parts to stop and disengage the PTO before servicing, adjusting, repairing or unplugging.
3. Install and secure all guards and shields before starting or operating.
4. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
5. Do not allow riders on the unloader or tractor during operation or transportation.
6. Clear the area of all bystanders, especially children, before starting.
7. Be aware of overhead power lines at all times.
8. Attach any necessary flags and signs to unloader before transporting.
9. Attach securely to the towing unit using a hardened pin with a retainer and a safety chain. The pin should be the maximum allowable size possible.
10. The unloader is designed to unload GRAIN. DO NOT use the unloader to unload other materials such as silage or fertilizers.
11. Do not exceed a safe travelling speed during transportation.
12. Use a light kit on the unloader to transport.
13. Ensure that adequate lighting is available when operating at night.
14. Use caution when using the machine on uneven terrain.
15. Always check behind you when backing up. The unloader may block parts of your view.
16. Never unhook the unloader while it is in use or with the discharge auger in the unload position, as the hitch may rise unexpectedly.
17. Open the disconnect between the discharge auger and the sweep augers when doing final grain clean-up.
18. If applicable, make sure that all components are tight and that hoses, fittings and couplings are in good condition before pressurizing the hydraulic system.
19. Review safety instructions annually.

2.3 Maintenance Safety

1. Place all controls in neutral, stop the engine, set the parking brake, remove the ignition key, wait for all moving parts to stop and disengage the PTO before servicing, adjusting, repairing or unplugging.
2. Perform a lock out tag out (LOTO) procedure if required.
3. Relieve the pressure from the hydraulic system before servicing or disconnecting from the tractor.
4. Place stands or blocks under the frame before working beneath the machine or when changing tires.
5. Only use tools, jacks and hoists appropriate for the job.
6. Install and secure all guards and shields before resuming operation.

2 SAFETY



2.4 Hydraulic Safety

1. Always place all tractor hydraulic controls in neutral before dismounting.
2. Make sure that all components in the hydraulic system are kept in good condition and replace any worn, cut, abraded, flattened or crimped hoses.
3. Wear proper hand and eye protection when searching for a high pressure hydraulic leak. Use a piece of wood or cardboard as a shield, rather than your hands, to isolate and identify a leak.
4. If injured, seek medical attention immediately. Serious infection or reaction can develop from hydraulic fluid piercing the skin.
5. Before pressurizing the system, make sure that all components are tight and that hoses, fittings and couplings are in good condition.

2.5 Storage Safety

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored unloader.

2.6 Safety Decals

1. Keep safety decals clean and legible at all times.
2. Replace safety decals that are missing or have become illegible.
3. Replaced parts that previously displayed a safety decal should display the same decal.
4. Safety decals are available through your authorized Renn Dealer.

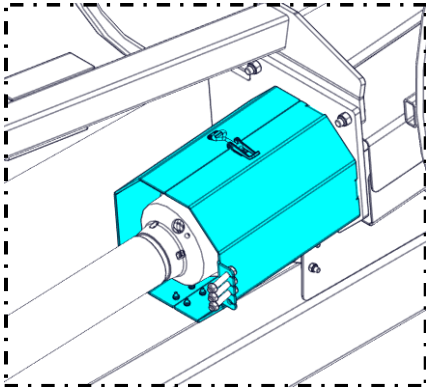
2 SAFETY



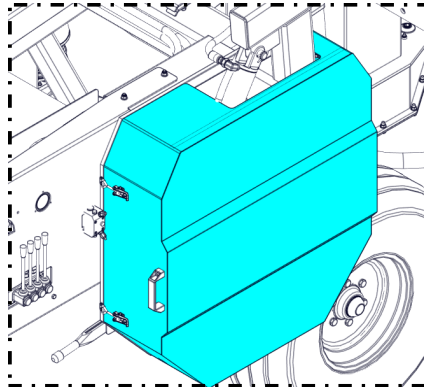
2.7 Safety Shield Placement

After servicing or maintenance, these shields should be back in place.

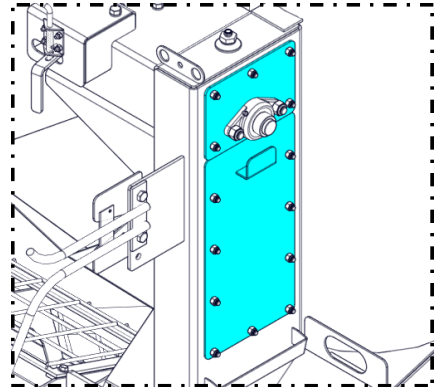
Main / PTO Shield



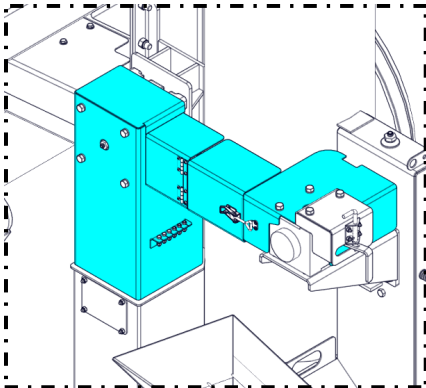
Ratchet Drive Shield



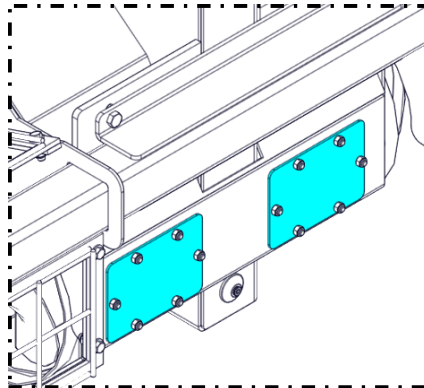
Sweep Drive Belt Cover



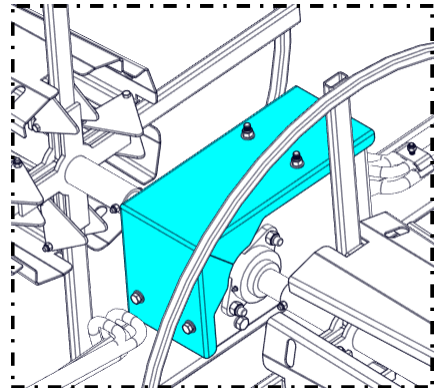
Sweep Drive Universal Joint Shield



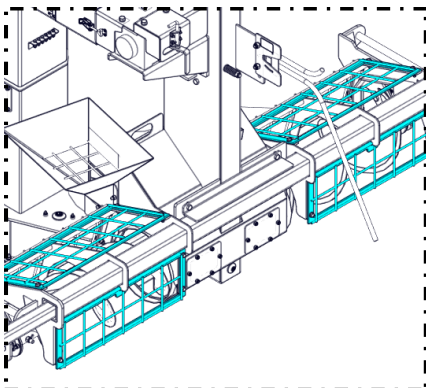
Grain Box Covers



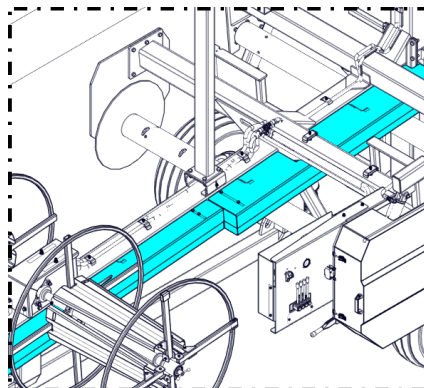
Collapsible Rewind Drive Cover



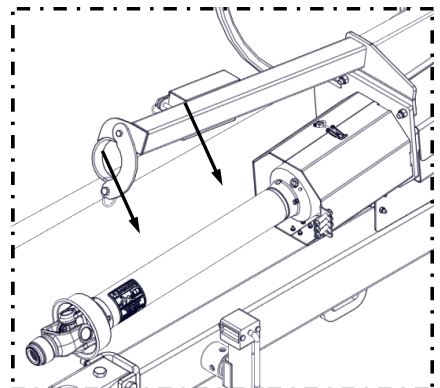
Sweep Auger Safety Cage



Driveline Cover



PTO: Front and Rear Covers



2 SAFETY



2.8 Sign-off Form

Anyone operating and/or maintaining the unloader must read and clearly understand ALL Safety, Operating, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Review this information annually, before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine. A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understood the information in the Operator's Manual and have been instructed in the operation of the equipment.

Sign-off Form

<i>DATE</i>	<i>EMPLOYEE SIGNATURE</i>	<i>EMPLOYER SIGNATURE</i>

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3 DECAL LOCATIONS

3.1 Safety Decal Locations

The types of safety decals and locations on the equipment are shown in the following illustrations. Good safety requires that you familiarize yourself with the various safety decals, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

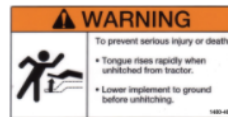
- THINK SAFETY!!, WORK SAFELY!!



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148000-0105



148000-0401



148000-0700



148000-0406



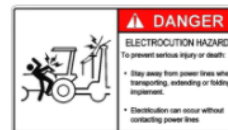
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148800-0065



148800-0063



148000-0102



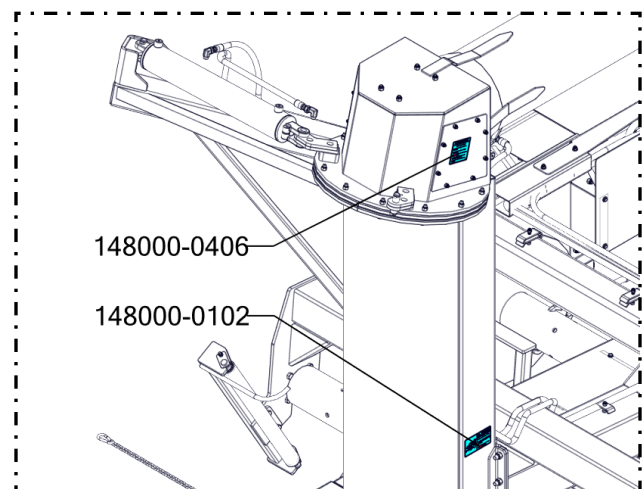
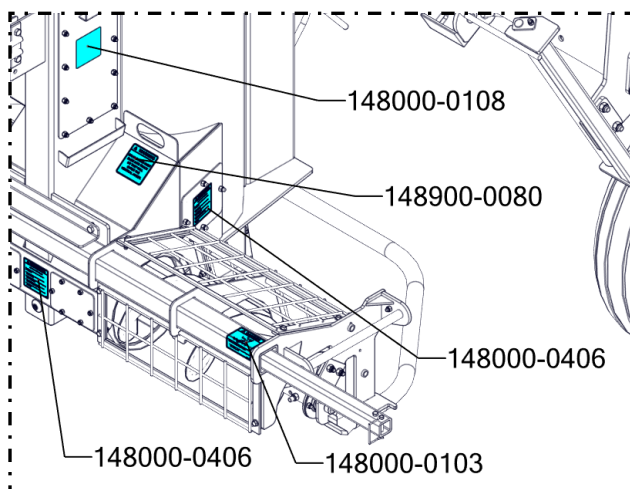
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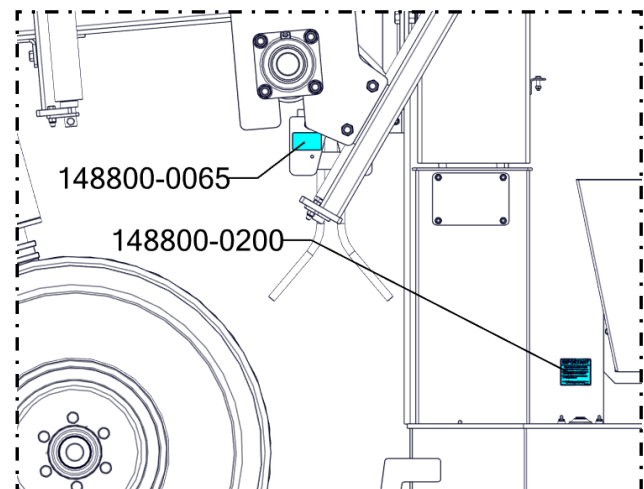
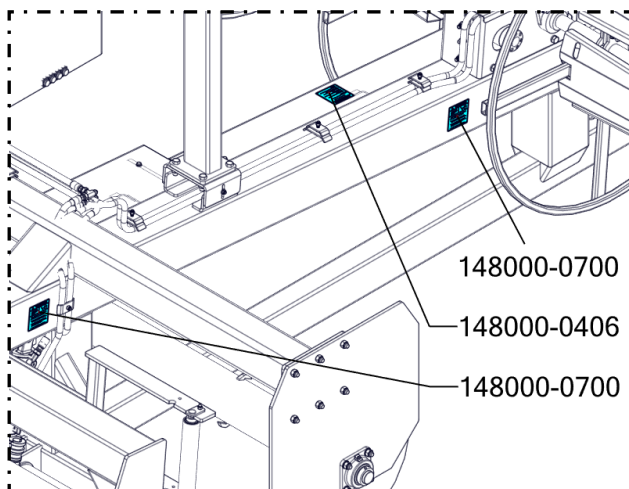
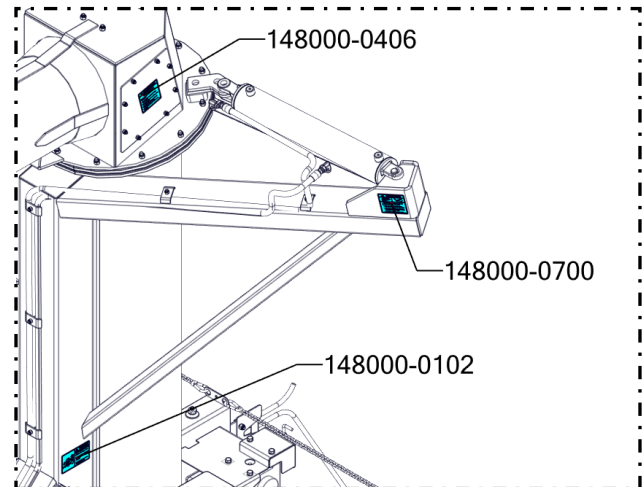
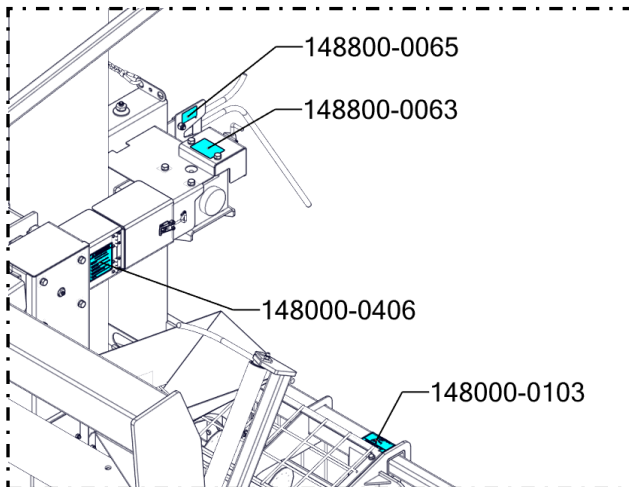
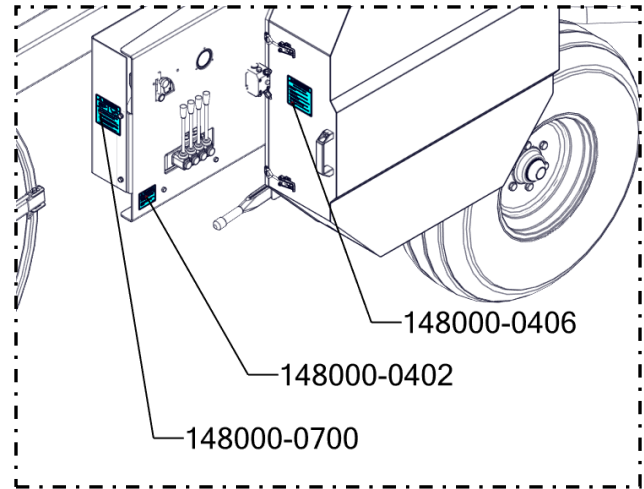
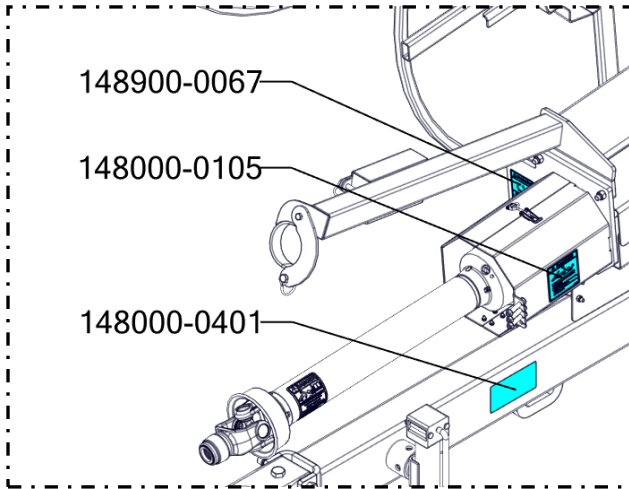


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3 DECAL LOCATIONS

3.1 Safety Decal Locations



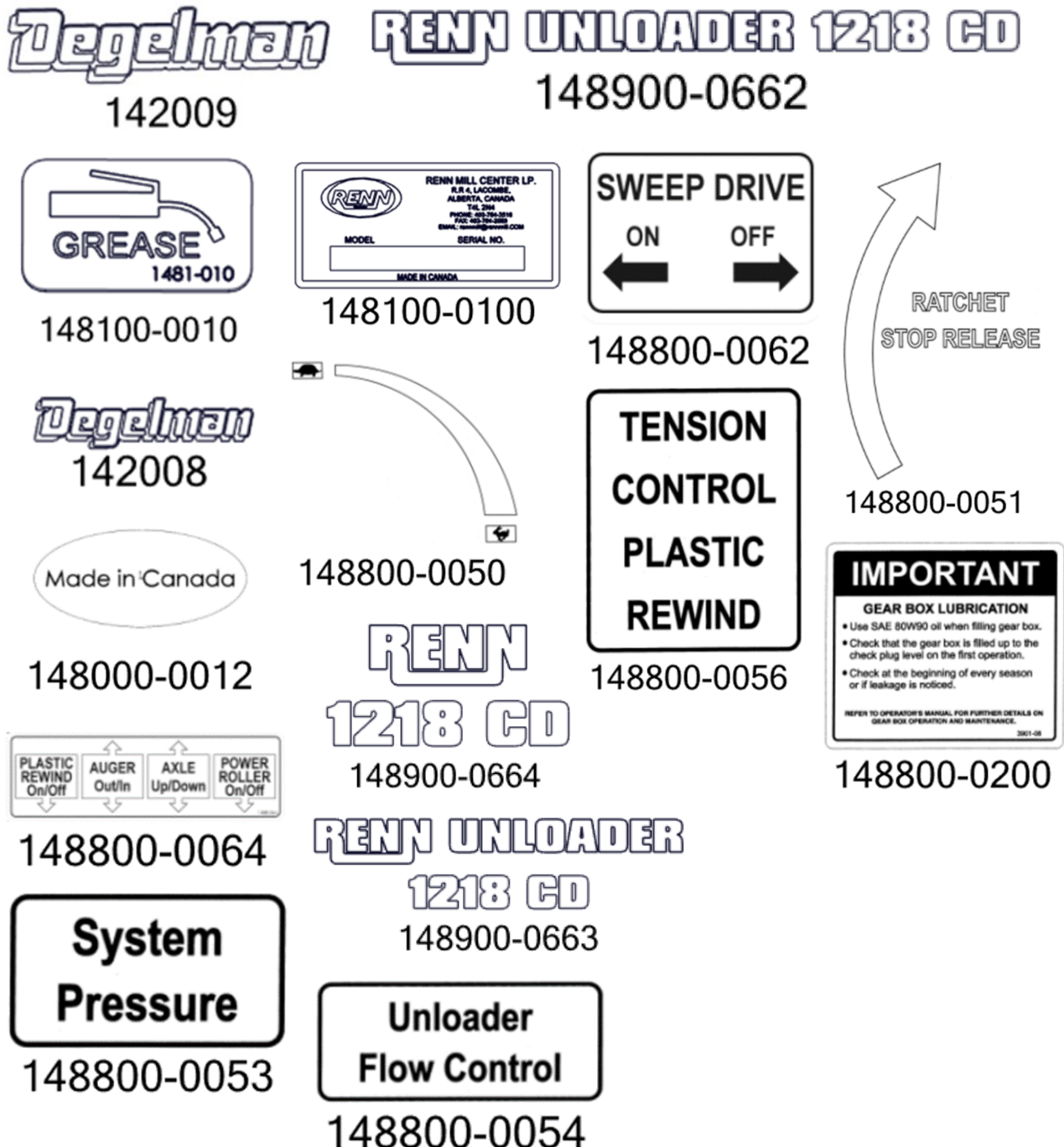
REMEMBER - If safety decals have been damaged, removed, or become illegible, or if parts have been replaced and do not contain safety decals where there were some previously, new decals must be applied. New safety decals are available from your authorized dealer.

3 DECAL LOCATIONS

3.2 Information Decal Locations

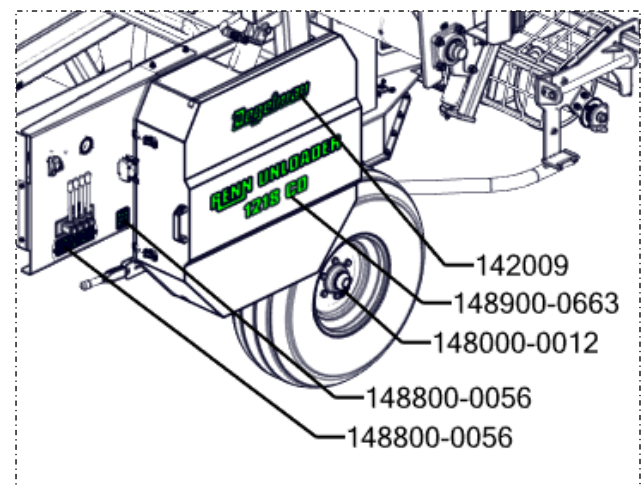
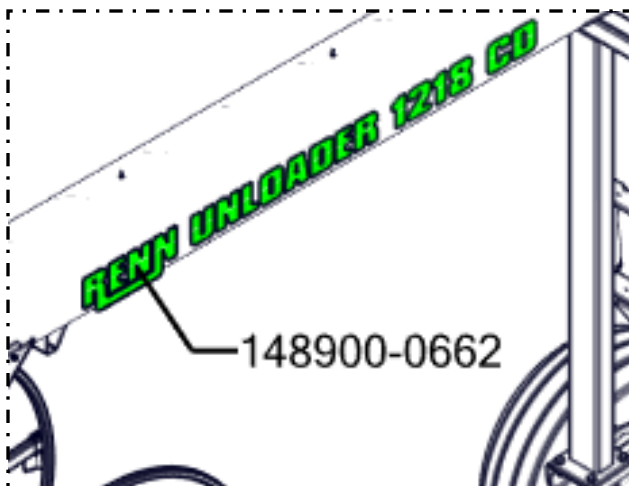
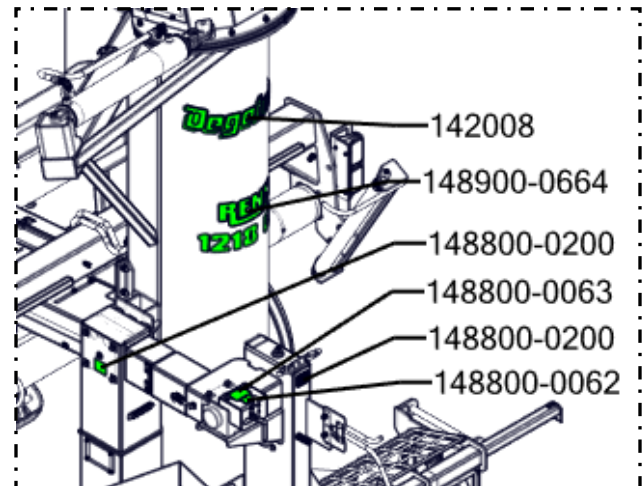
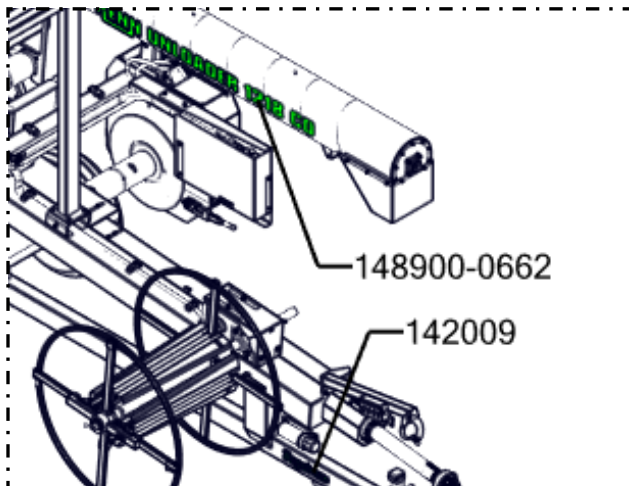
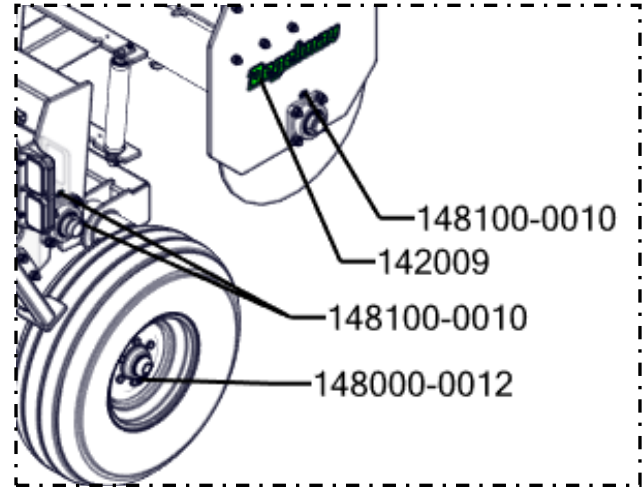
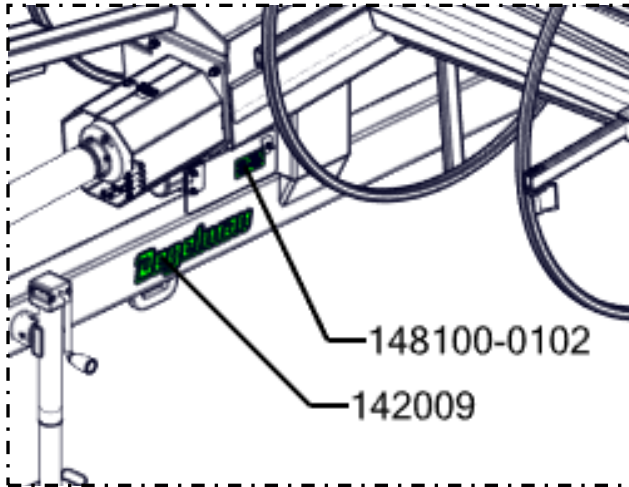
The types of informational and operational decals and locations on the equipment are shown in the following illustrations. Good operation requires that you familiarize yourself with the various operational decals, the type of warning and the area, or particular function related to that area, that requires your AWARENESS.

- WORK SAFELY!!



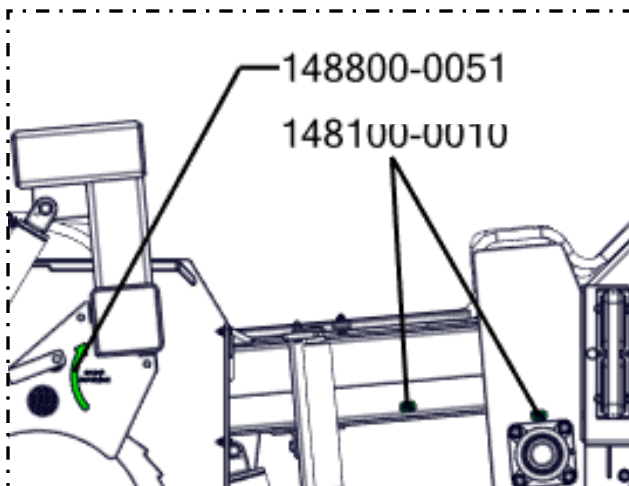
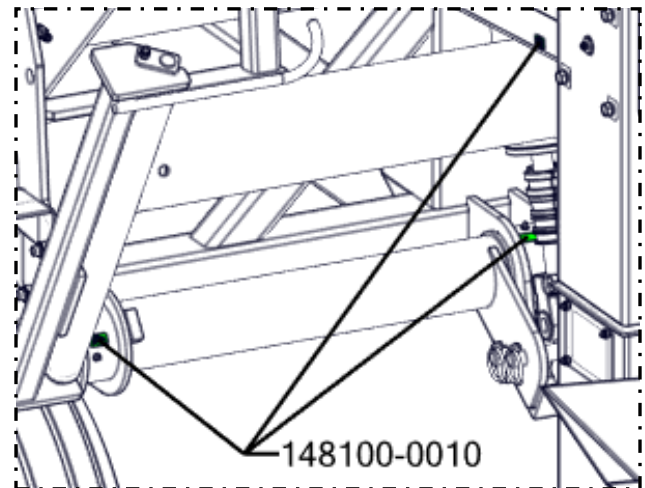
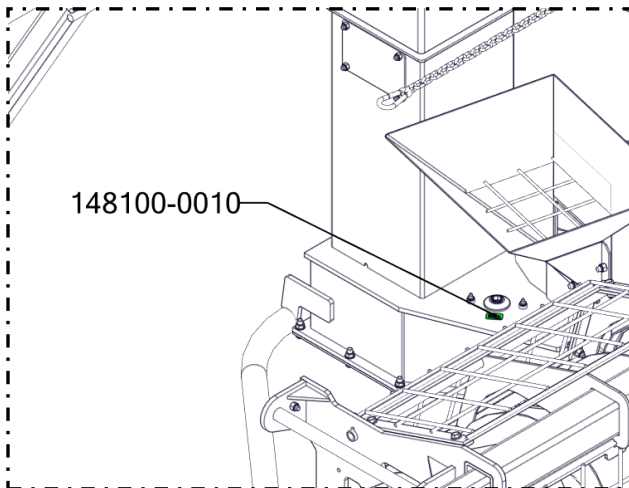
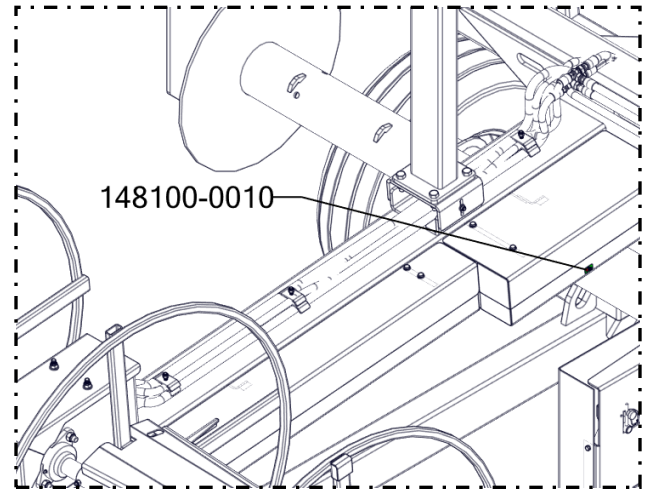
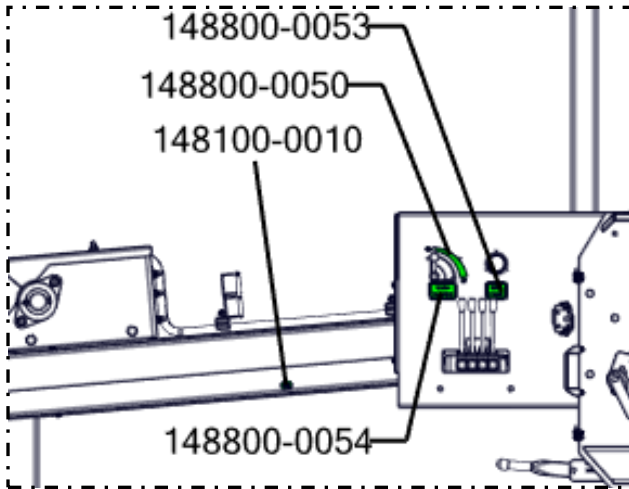
3 DECAL LOCATIONS

3.2 Information Decal Locations



3 DECAL LOCATIONS

3.2 Information Decal Locations



4 OPERATION

4.1 To the New Operator or Owner

The Renn Unloader is designed to unload grain from your grain bag and deposit it into a transport trailer. Be familiar with the machine before starting.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, transportation, maintenance and storage of equipment or in the use and maintenance of facilities.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Untrained operators are not qualified to operate this machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and efficiently. By following the operating instructions in conjunction with a good maintenance program, your unloader will provide you with many years of trouble-free service.

For more information, please refer to Section 2.3 & Section 5 for further maintenance directions.

4.2 Before You Begin

Unloading a bag using the Renn Bag Unloader can be a better experience if a number of things are kept in mind before beginning and while operating.

The first consideration is something to be taken into account when beginning to bag. Sealing the end of the bag by tying a knot before you begin to fill it may seem like a good idea, but it can cause problems later on in the process. What could potentially happen is that when nearing the end of unloading the bag (the last 20 feet or so), the knot may be picked up with the grain due to being buried amongst it, thus causing damage to your unloader and ripping the bag, dumping your grain onto the ground. Although you may be able to avoid this occurrence by being extremely careful, a better solution would be to seal the bag with a strip of polyfastener (or a similar tool) or by nailing lumber together to seal off the end. It is best if the seal is wide enough to be seen at the edges of the bag, or to mark its location so that you know when it is approaching. With some practice you can unload all but a few bushels of grain out of the bag.

A second consideration while bagging is the amount of plastic to leave at the end of the bagging process. This will be the amount of plastic you will have available when you begin the unloading process. Generally, the idea is to minimize waste and therefore leave as little plastic as possible. This makes the start-up challenging, but not impossible. It is suggested to leave a minimum of 10-12 feet past the last grain in the bag. This allows for ample plastic to hook onto the power windup roll.

A further consideration while emptying the bag is the necessity to steer the tractor and Unloader down the middle of the bag. Although there is some room for error, best results occur when the balance is well kept.

4 OPERATION

4.2 Before You Begin (Cont.)

Another consideration is the size of the tractor to use in conjunction with the unloader. The unloader requires approximately 50 HP to operate at 540 RPM, but can be operated with tractors with higher speed ranges and with larger tractors, keeping some basic limitations in mind. Note that the larger the tractor, the more weight there is for the unloader and the bag to pull during operation. A tractor exceeding 90 HP is discouraged for this reason. When using a tractor running in the 1000 RPM range, throttle back to 50% of rated RPM. For most tractors, this still leaves enough hydraulic capacity to operate the bag pulling components. Excessive speed is actually a disadvantage during operation because it does not add to the capacity of the machine and causes unneeded wear. Note also that running the unloader at low RPM (400 or less) under load also has a down side, namely adding strain on the driveline components. This, coupled with excessive ground speed, can result in the premature failure of components.

Keep in mind that a significant amount of plastic can be wound onto the power windup roll, but the roll is not necessarily intended to roll up an entire bag length, and should be emptied so that the amount of plastic being removed is manageable in size and weight. Also keep in mind that a power windup roll with a lot of plastic on it reduces the pulling power of the machine, and changes the trajectory of the plastic being wound up on the roll.

When cutting into the plastic bag for any reason, keep in mind that considerable forces are at work where the plastic is under load. When necessary, cut the bag in line with the force, never across the force. In other words, never cut a full bag along its length, and never cut a bag that is being pulled across the direction of pull.

4.3 Pre-Operational Checklist

The efficient and safe operation of the Renn Unloader requires that each operator read and understand the operating procedures and all related safety precautions outlined in this section. A pre-operational checklist is provided for the operator. It is important for both personal safety and maintaining the good mechanical condition of the unloader that this checklist be followed. Before operating the unloader, and each time thereafter, the following areas should be checked:

1. Inspect the machine if it is the start of the season.
2. Lubricate the machine per the schedule outlined in the Maintenance Section (section 5).
3. Be sure that the machine is properly attached to the tractor. Be sure that a mechanical retainer is installed through the drawbar pin and the safety chain is installed.
4. Inspect all hydraulic lines, fittings and couplers.
5. Check all bearing locking collars to ensure that they are tight on the shafts and in good condition. Check that all set screws on the bearing collars are tight. Check that all bearing mounting hardware is secure.
6. Slowly raise the discharge auger to the unloading position to ensure that the auger has a clear path. Rotate the driveline by hand or slowly engage the PTO with the tractor until the discharge auger falls into drive. **Important!!** Make sure that the auger is engaged prior to fully engaging the PTO.
7. Check the fluid levels in all gearboxes. There is a fluid level plug on the side of the gearbox. When the plug is removed, the fluid should trickle a little out of the hole. This will indicate that there is enough fluid in the gearbox.
8. Make sure all safety shields are properly installed.

4 OPERATION

4.4 Attaching/Unhooking Tractor/Unloader

Follow this procedure when attaching the unloader to the tractor:

1. Make sure that all bystanders, especially small children, are clear of the working area.
2. Make sure there is enough room and clearance to safely back up to the machine.
3. Attaching the unloader:
 - A) Slowly back the tractor until the holes on the hitch and drawbar are aligned. The hitch tongue can be moved vertically to give a wider range of connection heights.
 - B) Lift the hitch with the hitch jack and install the drawbar pin and the retainer.
 - C) Attach the safety chain securely around the tractor drawbar cage to prevent separation.
 - D) Retract the hitch jack, remove the connecting cross pin, turn the jack 90 degrees so that it falls in line with the hitch pole, and replace the cross pin to fix the jack into transport position.
 - E) Connect the hydraulics:
 1. Use a clean rag or paper towel to clean the dirt from the couplers on the hose ends and the tractor.
 2. Connect the hoses to the tractor couplers. Be sure the couplers are securely seated.
 3. Set hoses so that the hoses do not rub PTO shield.
 - F) Reverse the above procedure when unhooking tractor, making sure the discharge auger is in transport position. Place the hoses in the hose holder provided.

4.5 Equipment Matching

To ensure the safe and reliable operation of the unloader, it is necessary to use a tractor with appropriate specifications. As a guideline, ensure that these specifications are met:

1. **Tractor Horsepower**: Power requirements for the unloader are a minimum of 100 PTO HP. Tractor size beyond this should be as minimal as possible due to the nature of the operation. **At no time should the tractor size exceed 180 HP. Doing so may exceed the pulling capabilities of the machine and result in failure of machine components.**
2. **Hydraulic System**: Ensure that the quick couplers are completely coupled, and that 2 outlet is available to operate the various cylinders on the unloader, and that the outlet is fitted for a continuous flow of 5 gallons per minute with minimal return to tank backpressure. The flow control on the tractor's directional control valve **MUST** be set to the lowest flow position.
3. **Components**: A hardened pin with a retainer and a safety chain must be used when connecting the unloader to the tractor.

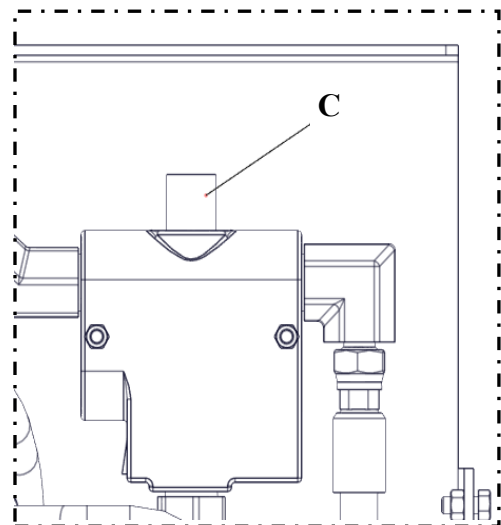
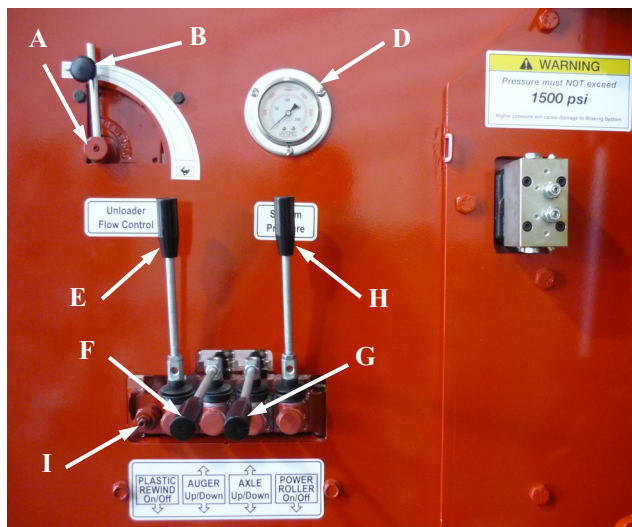
4 OPERATION

4.6 Controls

It is recommended that all operators review this section of the manual to familiarize themselves with the location and function of all machine controls before starting.

4.6.1 Hydraulics

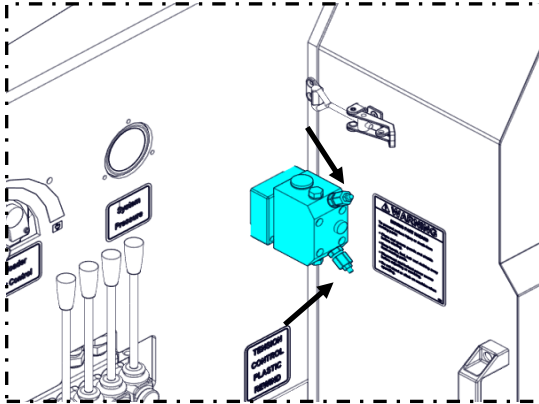
1. The flow control valve (A) allows the operator to meter the amount of flow to the cylinders and rewind motor. It is recommended to closely match the hydraulic flow from the tractor to the required flow of the cylinder to maintain adequate ground speed (i.e. the valve should normally operate in the '3' to '5' range on the indicator (B).).
2. The acorn nut (C) at the top of the valve (A) is a relief setting. Removal of the nut will reveal a threaded plug which can be adjusted in or out, which correlates to higher or lower pressure settings. The relief setting should not be set beyond 2200psi on the pressure gauge (D). Oil escaping over the relief will make the valve 'squeal'. The main relief on the mono block control valve (I) is preset at 2600psi. This valve **MUST NEVER** be adjusted higher than the preset.
3. Control H is used to rotate the power wind-up roll. Control G is used to move the axle up-ward or downward. Control F is used to move the folding auger to either the working or transport position. Control E is used to rotate the bag rewind.



BACK SIDE OF CONTROL THE PANEL

4 OPERATION

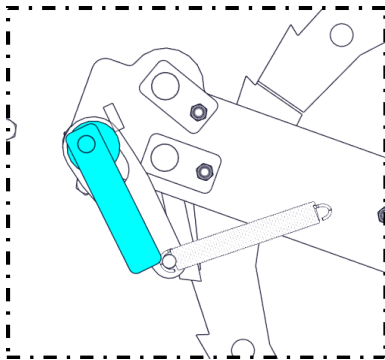
4.6.2 Ratchet Drive Control



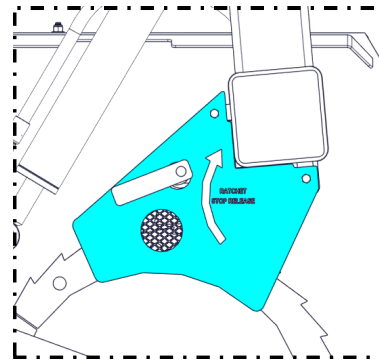
Switching Valve - This valve is factory set. ***Do not adjust unless necessary.***

If system cycles then stops, refer to section 9.4 (Trouble Shooting Ratchet System). *See note below.*

If the ratchet cylinder does not cycle when the cylinder is fully retracted, then turn out the top hex screw until it cycles. If the ratchet cylinder does not cycle when the cylinder is fully extended, then turn out the bottom hex screw until it cycles.



Ratchet Cog Release - Rotate the handle to disengage or engage the cog from the ratchet wheel.

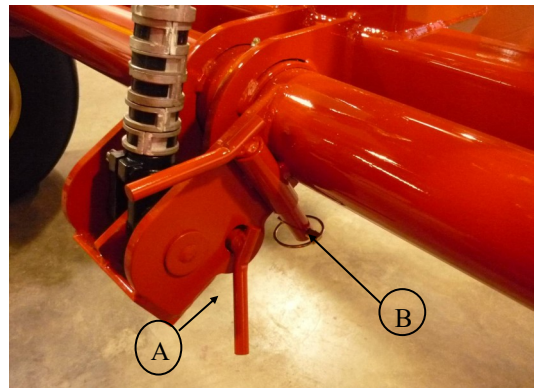


Ratchet Stop Release - Rotate the handle to disengage or engage the cog from the ratchet wheel.

4.6.3 Axle Lift Cylinder



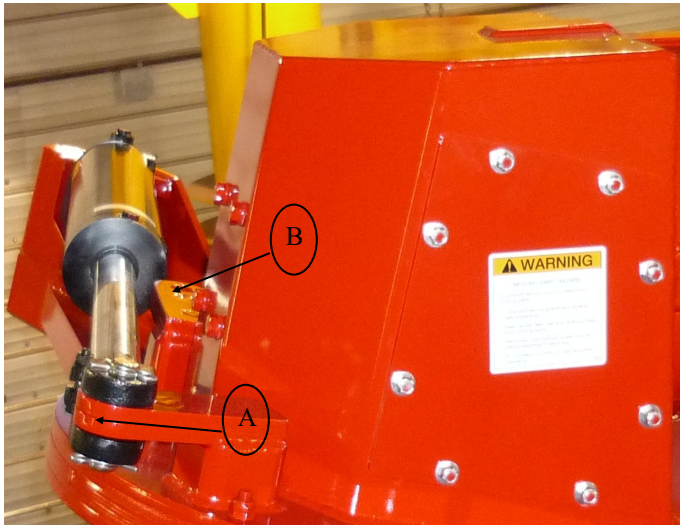
Shown with cylinder stops to set and hold machine height at desired level.



Shown with axle lock pin in both the working position (A) and the storage position (B) (*Note that the machine comes with but 1 pin, the illustration is for your benefit only*).

4 OPERATION

4.6.4 Turret Auger Cylinder



Shown in transport position.
Use lug (A) for passenger side discharge
Use lug (B) for driver side discharge

4.6.5 Gearbox Disconnect



Sweep drive shown in ON position.
CAUTION: DO NOT shift during operation
to prevent gearbox failure.



Sweep drive shown in OFF position.
To turn the sweep drive off, move the lever
and lock it using the latch.

4 OPERATION

4.6.6 Bag Knives

The bag knives can be rotated to an angled position. This may aid in better plastic cutting.



4.7 Break-in

It is recommended that the augers be run at moderate to full operational speeds and at 1/2 to 2/3 capacity during the first few hours of operation. This allows the frictional forces to diminish significantly within the auger tube, and allows the free flow of grain to approach acceptable levels in the system. Keep this in mind after the unloader has been stored for extended periods of time as well.

It is also recommended that the following mechanical items be checked:

- 1. Read the tractor and unloader equipment manuals before starting.**
- 2. After operating for a 1/2 hour:**
 - Re-torque all wheel bolts, fasteners and hardware.
 - Check that all hydraulic connections are tight.
 - Check that no hydraulic hoses are being pinched or crimped. Reroute as required.
 - Lubricate all grease fittings.
- 3. After 5 hours and 10 hours of operation:**
 - Re-torque all wheel bolts, fasteners and hardware.
 - Check that all hydraulic connections are tight.
 - Check that no hydraulic hoses are being pinched or crimped. Reroute as required.
 - Lubricate all grease fittings—do not over-grease.
 - Go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

COLD WEATHER OPERATION

Colder weather will raise the viscosity of hydraulic oil in tractors. The result is thicker oil and an increase in hydraulic pressure. The unloader will perform at its best when the tractor is supplying 4~5 GPM of warm oil. To warm-up the oil, first make sure your directional valve flow control on the tractor is turned all the way down. This may be indicated by a turtle icon on some tractors. Run the rewind system to cycle oil through the valve on the unloader for 15~20 minutes or until the hoses feel warm to the touch.

4 OPERATION

4.8 Running The Bag Unloader

When ready to empty a grain bag, follow these instructions.

1. Open up grain bag. Cut the top of the bag down the center, approximately 4' past the point where grain begins. Open the resulting flaps outward.
2. Back up the unloader to the bag, stopping the machine when the sweeps are over the first grains in the bag (Be sure not to drive the tires onto the bag. If necessary, fold the open bag onto itself to keep this from happening). Bring the bag flaps over the sweep section. Lower the machine down so bar clearance to bag floor is approximately 2". Use the cylinder stops to maintain machine height.
3. Engage both cogs into ratchet wheel (Fig 1 & 2). If the amount of plastic from the end of the bag to the first grain is less than 10', you may have to consider alternative measures (See section 4.9).
4. Pull the bottom of the bag up through the lower knife (Fig 3). Route the bottom plastic through the knife and over the rear idler roller (Fig 4). Run the plastic through the mid roller (Fig 5). Hook the bag on the power roll teeth (Fig 6). Pull the upper portion of bag through the rear knife, over the rear roll, through the mid roller and hook onto the power roll teeth (Fig 7 & 8). Pull the upper portion of the bag tight prior to hooking onto the teeth. Rotate the power roll by hand to take up slack in the bag (Fig 9). The hydraulic power roll control may also be used to take up bag slack (Fig 10 & 11).
5. Check the hydraulic controls on the ratchet system, ensuring that the flow control is set at or about the "3" position (Fig 12).

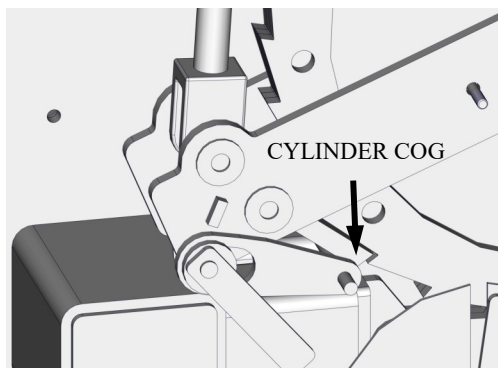


Fig 1

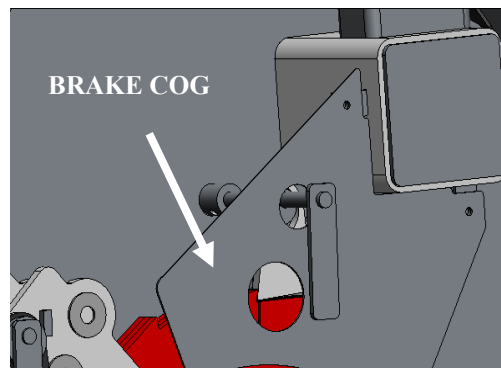


Fig 2



Fig 3

4 OPERATION

4.8 Running The Bag Unloader (Cont.)

6. Turn the turret auger out to the 90 degree position and bring the truck into position underneath the auger (Fig 5).
7. Provide continuous hydraulic flow to the ratchet system (1/2" hoses). Note that this system develops pressure as it operates, so a secondary locking device may be required on the tractor control. Also note that this system controls the ground speed of the unloader. Set the tractor flow at a setting to maintain adequate ground speed (approx. 5 GPM required).
8. The system will not operate in forward motion until the power roll control (Fig 10) is pulled on. If after opening the flow control to position 3 (Fig 9) nothing happens, try reversing the flow/hoses from the tractor.

NOTE: TAKE YOUR TIME. GET TO KNOW THE MACHINE. Once rearward movement begins, keep movement SLOW until you are used to the flow of the bag through the system. The first strokes of the cylinder will take up the slack in the bag. Watch the side-in rollers to make sure that the bag is not caught under or behind them. Also keep an eye on the plastic, making sure the power roller keeps hold of the bag. The knife on the rear of the machine will require the plastic to be fed into it; the lower, more forward knife should feed itself. Watch that the plastic is feeding through all knives.



Fig 4



Fig 5



Fig 6



Fig 7

4 OPERATION

4.8 Running The Bag Unloader (Cont.)

9. Start the PTO, and bring up to $\frac{1}{2}$ speed until a load is sensed on the auger system. ***Do not run the system at idle speed***, especially when breaking the machine in. Higher than normal friction forces will put significant and unnecessary stress on the drive components.
10. Bring the machine to full operating speed as a load is being applied. Place the tractor in neutral to allow the machine to pull it freely. Once a load is sensed and grain flows in the augers, move the machine to full operating speed (1000 RPM). It is suggested to not exceed this operating speed.
11. Engage the ratcheting system, setting the flow control to '2' to begin with. Check that plastic is flowing across the knives and over the power rolls. Increase the speed of the flow control so that ground speed is adequate to unloading requirements. A suggested switching pressure of 1500psi will achieve approximately 250 bu/min. Overall maximum system pressure of 2200 psi is required. This will be dependent on the amount of flow being delivered by the tractor. Again set the tractor directional control valve to its lowest flow setting. Realize that the controlled flow is relative to the flow (approximately 5 GPM required) into the system from the tractor. If ground speed is not adequate and the flow control is fully open, then the flow from the tractor is not adequate. Note that ground speed should not exceed the ability of the augers to remove the material, and the ability to properly spread the load in the truck.



Fig 8



Fig 9



Fig 10



Fig 11

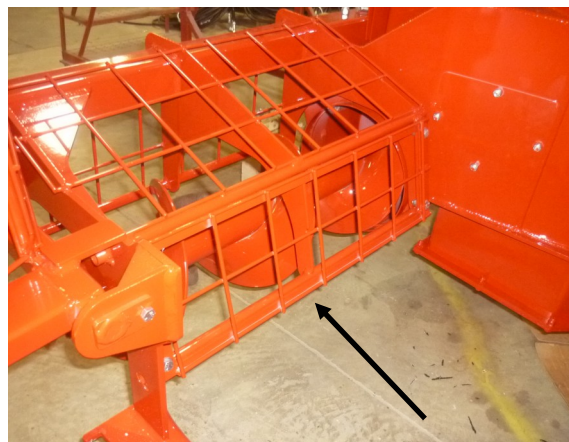
4 OPERATION

4.8 Running The Bag Unloader (Cont.)

12. When plastic is to be removed from the power roll, follow steps 15 through 20 to release the plastic. When the plastic is relaxed, cut the bag laterally at the power roll so that enough plastic remains for restart. 1.5 to 2 turns should be adequate.
13. If one wishes to stop midway through a bag and cease unloading, follow steps 14 through 21 to release the bag from the machine. Grain will remain on uncut plastic on the bottom of the bag. The top of the bag will be cut beyond this point, and will require other measures to seal the grain from the elements.
14. Stop the ratchet system using the control valve. Allow the PTO to keep running and empty the augers. Shut the PTO off, set the tractor brake, keep the ratchet hydraulics flowing.
15. Release the bag from the power roll. Do this by manipulating the cogs (Fig 1 & 2) using the handles located on the ratchet drive wheel. (Follow step 16) Note that the flow control valve can be used to slow down the cylinder.
16. Note that the purpose of the following directions is to 'de-ratchet' the wind-up roll and release the pulling pressure on the bag. Turn the flow control to '2' (slow downward movement of the ratchet cylinder) (Fig 6). As the ratchet drive cylinder reaches a contracted position release the ratchet cylinder cog. Allow the ratchet cylinder to extend and engage the ratchet cylinder cog just before the ratchet cylinder reaches full extension. As the ratchet cylinder removes the pressure from the ratchet stop cog, release the stop cog, allowing the ratchet cylinder to retract.
17. Repeat this process 2-3 times or until there is adequate slack in the grain bag. Make sure to leave 10 feet of plastic on the grain side of the bag to allow re-attachment of the bag to the unloader.
18. An alternative method would be to shut off the power roller and back up the unloader in 6" increments to create slack in the bag. Release the stop cog and the ratchet cylinder cog and pull the unloader away from the bag to create adequate slack in the grain bag.



Fig 12



Removable mesh guard for harsh unloading conditions

4 OPERATION

4.9 Starting Without Enough Plastic

Cut the bottom of the bag down the center to 12" short of the grain. Gather one side of the bag laterally together into a bunch, sliding the sling 'noose' over the bundle (see Fig 1 & 2) at least 18" from the end of the bag. Choke the sling fully on the bottom side of the bag. Thread the sling over the idler roll, through the mid roller assembly/horizontal bag control, and onto the center of the powered wind-up roll. Loop the sling noose under one of the hooks.

Follow the same instructions for the second side of the machine: bunch the bag, use the sling to noose the plastic into a tight bundle, and thread the free end of the sling to the power roll where it loops onto a hook (see Fig 3).

Rotate the power roll by hand using the large disc on the end to propel it, until the slack is taken out of both slings. Recheck the noose around the plastic, ensure that the noose is tight, and once again take out any slack in the sling by hand.

Assuming there is hydraulic flow from the tractor to the valve on the unloader, engage the hydraulic power roll lever and turn the speed handle to 2 or 3 on the indicator. The ratchet will begin to move the power roll and take any further slack out of the sling/plastic connection (see Fig 4).

Stop the power roller at this point. See the note on the next page before turning to #5 on pg. 4.9. Continue to follow the operational directions provided for a normal startup.



Fig 1



Fig 2

4 OPERATION

4.9 Starting Without Enough Plastic (Cont.)

NOTE: Once the machine starts to unload the bag, do not expect the sling connection to pull the tractor and unloader into the bag. The tractor must back the unloader into the bag, approximately 6" at a time, until the sling is completely wound onto the power roller and the connection is covered by at least one layer of plastic. At this time you may remove the sling, but it is not necessary to do so. The sling may be left under the plastic and be removed in the rewind process at a later time.



Fig 3



Fig 4

4 OPERATION

4.10 Using The Bag Rewind System

The rewind is used to wind up plastic off the main drive roll when it reaches capacity as shown in figure 1.

At this point the tension will need to be relieved from the plastic using the method outlined in section 5.6. Make sure to allow enough plastic to restart on the empty roll without having to use straps. Once plastic is loose the cam handles must be in the vertical position to allow the main roll to freewheel (As shown in figure 2).



Fig 1



Fig 2 - Cam handles

The cut plastic end is then pulled up to the center of the rewind reels and placed into the jam cleat as shown in figure 3.

Tension is set with the brake handle. It can be adjusted by turning the knob on the handle and, if needed, adjusting the turn buckle. See figures 4 and 5.



Fig 3



Fig 4

4 OPERATION

4.10 Using The Bag Rewind System (Cont.)

A flow setting of 2 is a nice slow speed. A pressure of around 1000 psi keeps a nice tension on the plastic. This can be set by the brake handle knob adjustment shown in figure 4 (on previous page).



Fig 5 Flow and Pressure



Fig 6 Rolling on Plastic



Fig 7 A full Reel

The outside guide ring can be removed by loosening the handle slightly and removing the pins. The ring can then be removed, along with the cross bar, by unthreading the tightening handle. Parts are shown in figure 8.

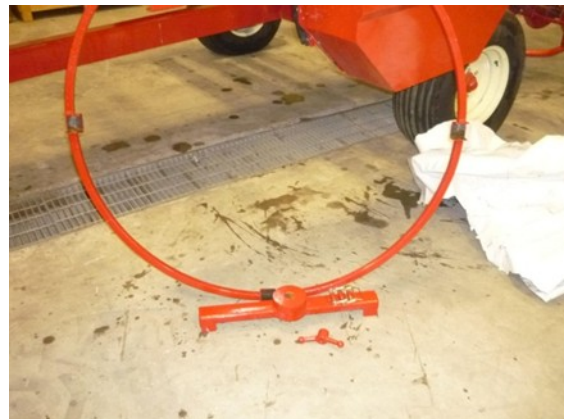


Fig 8

4 OPERATION

4.10 Using The Bag Rewind System (Cont.)

The reel center is collapsed by pulling bars outward and in. This allows the plastic to come off reel (See figure 9).



Fig 9

To pull plastic off the reel the end must be pulled out of the jam cleat as shown in figure 10.



Fig 10

Push the arms back up, put on the guide ring with pins and tighten on the lock bar (See figure 11).

Warning: Rolls of plastic can be extremely heavy. Take care when removing large rolls of plastic.



Fig 11

4 OPERATION

4.11 Sweep Drive Cleanout (Grain Slide Doors)

At the end of the bag, the last few bushels of grain can be cleaned up using the procedure outlined with pictures below.

A) Disengage the sweep drive.



Fig 1

B) Remove grain slide doors from storage position (fig 2) and slide into transition box (fig 3).

Note: When properly positioned in the transition box the slide door stopper should rest on top of the transition box.

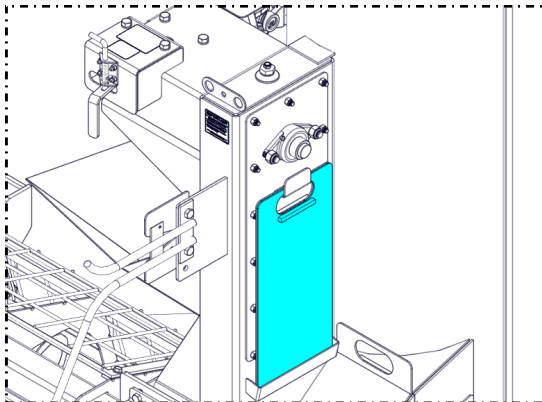


Fig 2 - Grain Slide door in storage position

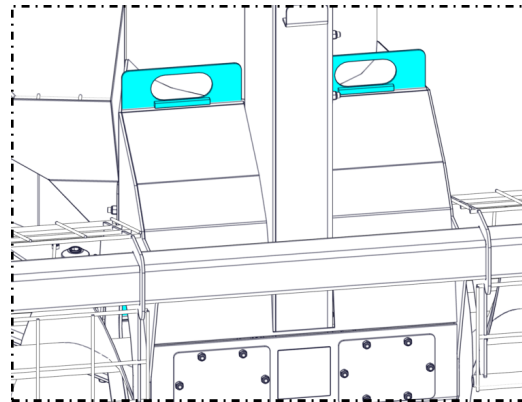


Fig 3 - Door in transition box

C) Shovel grain into the clean-up hopper (fig 4).

Note: After all of the grain is emptied, and all equipment has been disconnected from the power source, return the doors back to the storage position (fig 2).

Prior to machine start-up engage the sweep drive gearbox by moving the sweep drive to “ON” (fig 1) - turning the sweeps by hand until gearbox engages as necessary.



Fig 4 - Clean-up hopper

5 SERVICE AND MAINTENANCE

5.1 Servicing Record

See the Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: CL.....CLEAN T.....TIGHTEN
 L.....LUBRICATE CH.....CHECK

MAINTENANCE Hours Served By																				
	10 Hours of Driveline Use																			
L U-Joints - PTO Shaft																				
L U-Joint - Sweep Drive																				
L Vertical Auger - CV PTO																				
L Vertical Auger Drive Gear Case - Auger Bearing																				
L Auger Drive Gear Case - Driveline																				
30 Hours of Driveline Use																				
L Drive Line Bearing - Primary - Front																				
L Drive Line Bearing - Primary - Mid																				
L Drive Line Bearing - Primary - Rear																				
L Drive Line Bearing - Discharge Auger - End																				
50 Hours of Driveline Use																				
CH Gear Box Oil Level (x 2)																				
CH Auger Drive Gear Case Oil Level																				
L Wheel Hubs																				
CH Side-in Roller Bearing (x 4)																				
CH Sweep Drive Chain Tension - Spring Adjustment																				
CH Auger Drive Chain Tension - Spring Adjustment																				
CH Sweep Drive Chain Case Oil Level																				
Once per Season, as Necessary																				
L Wind-up Roll Bearing (x 2)																				
L Axle Pivot Points (x 3)																				
L Rewind Bearing (x 2)																				
Annually																				
T All Fasteners																				
CH Gear Box Oil Level and Quality (Capacity - 15 liters)																				
CL Machine																				

5 SERVICE AND MAINTENANCE

5.2 Maintenance

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free service.

Grease - Use an S.A.E. multi-purpose high temperature grease with extreme pressure (EP) performance or an S.A.E. multi-purpose lithium based grease.

1. Only use a hand-held grease gun for all greasing.
2. Wipe grease fittings with a clean cloth before greasing to avoid injecting dirt and debris.
3. Replace or repair any grease fittings immediately.
4. If a fitting will not take grease, remove and clean thoroughly. Clean the lubricant passage-way.

5.2.1 Turret Gearbox

1. Check the fluid level of the gearbox. If a new gearbox is installed, ensure that it is filled with 80W90 oil. The gearbox should be filled so that the oil slowly trickles out of the fill hole. Replace the fill plug after checking or filling with oil.
2. Check that the 3/8" bolts used to mount the gearbox are torqued to 30ft-lbs to properly fasten the casting.

Replacing the Turret Auger Gearbox

1. Remove the inspection plate covers (2) on the turret auger base.
2. Detach the end cap plate and down spout from the turret auger housing; you do not have to loosen the bearing or locking collar.
3. Pull the turret auger flighting away from the shaft of the gearbox. The flighting does not need to be completely removed from the auger housing.
4. Remove the 8 bolts and lock washers that hold the gearbox to the mounts.
5. Slide the drive coupler from the gearbox shaft. Be careful to keep track of the key between the coupler and the shaft.
6. To remove the gearbox from the housing, place the gearbox up into the turret auger housing. Turn the turret auger flighting until the gearbox is emptied from the housing through the down spout area.
7. Insert the new gearbox into the down spout area of the turret auger and turn the flighting to move the gearbox to the elbow area.
8. Slide the gearbox into the end of the CV-Joint at the end of the vertical auger. Replace the cross bolt and key into the gearbox/CV-Joint connection as you do so.
9. Place the square coupler and key onto the gearbox shaft.
10. Loosely mount the gearbox with the six bolts and lock washers.
11. Ensure that the coupler is completely engaged into the flighting as you slide the flighting assembly onto the gearbox shaft. Once the cap plate on the down spout end of the auger assembly is attached, a gap of approx. 1/4" should exist between the gearbox housing and the auger flighting.
12. Mount the new gearbox onto the mount plates with the 8 bolts and lock washers that were removed in step 4. Make sure the bolts are torqued to 30 ft-lbs.
13. Replace the turret end cap and downspout.

IMPORTANT: Use 80W90 oil to fill the gearbox with oil to the level of the fill plug. The oil should trickle out of the fill plug hole when there is sufficient oil in it.

5 SERVICE AND MAINTENANCE

5.2.2 CV-Joint

To remove and replace a CV-joint that has failed, the turret auger end-cap and gearbox must be removed or the auger assembly must be disconnected at the turret auger base. Either option will allow the CV-joint to be removed. For gearbox removal instructions, see section 5.2.1.

1. Remove the inspection cover plates from the turret/vertical auger elbow area.
2. After the flighting and gearbox are removed, slide the CV-joint off of the vertical auger splines.
3. Remove and replace the CV-joint.
4. Replace the gearbox and turret auger components as directed in Section 5.2.1.
5. Replace the inspection cover plates.

5.2.3 Gear Case - Sweep Section

To inspect the tension of the drive chain or to remove and replace gear case components, remove the side cover plate from the box to gain access. Be careful not to over-tighten the chain.

To remove the upper sprocket:

1. Remove the side cover plate.
2. Back off the chain tension.
3. Remove the drive chain by removing the connector link from the chain.
4. Loosen the lock collar set screws on sprocket and slide off the gearbox shaft.

To remove the lower shaft or sprocket:

1. Remove the side cover plate and relieve the chain tension.
2. Disconnect the drive chain by removing connector link.
3. Remove both sweep extensions on the ends of the sweep assembly by removing the four 3/8" bolts on the frame and the two 1/2" bolts on the pipe bag hold down.
4. Take off the access covers on the sweep box and remove the sweep auger 1/2" drive bolts on both sides of box.
5. Pull off both right and left sweep augers.
6. Take note of the shaft position for re-assembly.
7. Loosen the lock collar set screws on the driver's side of the unloader, and turn the lock collar in the opposite direction of the shaft rotation and remove.
8. Reaching through the passenger side gearbox sweep auger hole, remove the lower side plate bolts.
9. Pull the assembly out of the passenger side of the gearbox.
10. Loosen the lower sprocket set screws and slide off the shaft.
11. Re-assemble by following these steps in reverse.

5 SERVICE AND MAINTENANCE

5.2.4 Gear Case - Vertical Auger Drive

To inspect the tension of the drive chain or to remove and replace gear case components:

To remove the sprocket:

1. Remove the 4 nuts holding the slide plate onto the bottom of the vertical auger.
2. Drain the oil from the gear case.
3. Remove the cover plate from the bottom of the gear case.
4. Relieve the spring tension from the drive chain.
5. Remove the drive chain by removing the connector link from the chain.
6. Remove the sprockets as necessary. Note that these are bushings with a taper.
7. Reassemble by following these steps in reverse. Note that the spring should have a 1/16" minimum gap between coils when properly tensioned. Reseal cover plates as necessary.

5.2.5 Gear Boxes - Main Driveline

To inspect the quality and/or quantity of oil in any of the gearboxes:

1. Remove the drain plug (or vent as appropriate).
2. Oil should trickle from the opening when oil is at the appropriate level.
3. Oil should be clear and see-through when new. If oil becomes cloudy or dark in color, replace oil. Also check oil seals for any signs of leakage.
4. Drain the oil from the gear case. This will require removal of the gearbox.
5. With the gearbox sitting on the floor with one shaft horizontal, one vertical, fill the gearbox until oil seeps out of the side plug.
6. Replace the drain/vent plug.

IMPORTANT NOTE: When replacing the 'T' gearbox, ensure that rotation of the horizontal shaft is in the correct direction (ie. The top of the horizontal shaft should move towards the tractor).

5.2.6 Turret Auger Pivot Assembly

To remove and replace the turret auger, place the auger into transport position as shown on the front cover. Ensure proper elevating and lifting devices are used in this process.

1. Secure the turret auger to the vertical 'T' post.
2. Remove the pin connecting the cylinder to the auger.
3. Remove the bolts holding the lower plates and the sandwiched parts. Keep in mind that there are two halves of every part.
4. Lift the turret auger vertically to release the CV-joint from the vertical auger splines.
5. Carefully move the auger to ground level for further work or to remove components required in the new auger.
6. Replace the auger by following these steps in reverse.

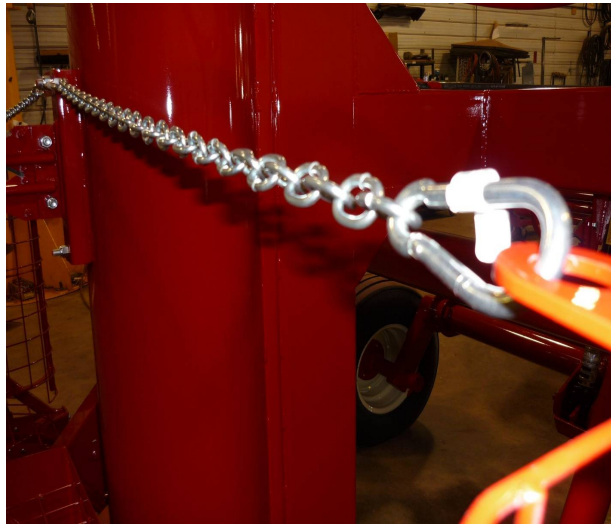
5 SERVICE AND MAINTENANCE

5.3 Servicing Intervals

5.3.1 Daily Check

Removable fasteners - ensure the existence, placement, and tightness of the fasteners prior to using the equipment.

Sweep Extensions 12' - Chain Lock (x 2)

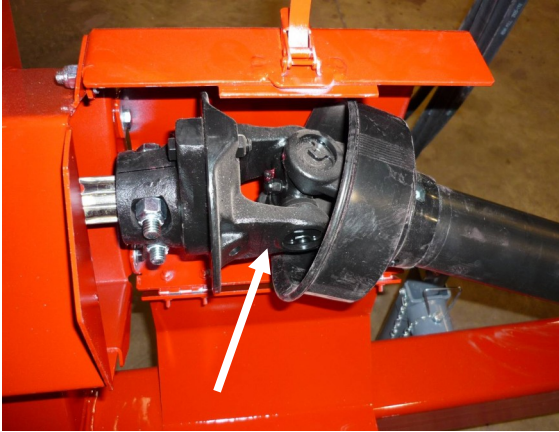


5.3.2 30 Hours of Driveline Use

Grease the u-joints and discharge auger bushing with 2 shots of grease and lubricate the sweep drive chain.



5 SERVICE AND MAINTENANCE

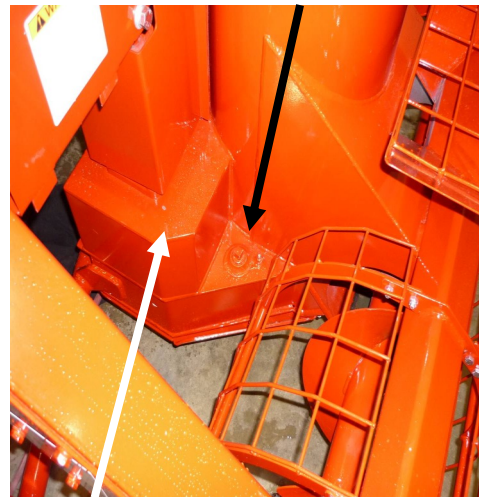


5.3.3 50 Hours of Driveline Use

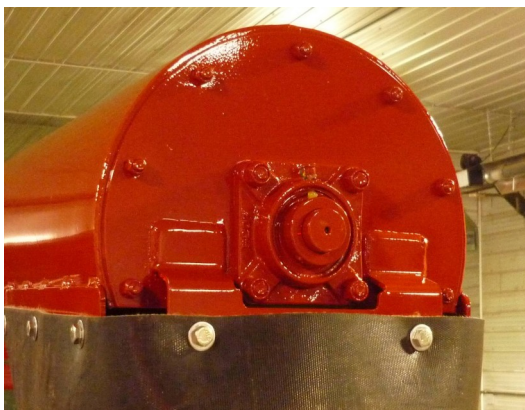
Grease the driveline bearings with 2 shots of grease.

Grease line to Flange Bearing -
Vertical Auger. **Grease every 10 hrs**

Primary Driveline Support Bearings



Vertical Drive Flange Bearing



Turret Auger - End Support Bearing

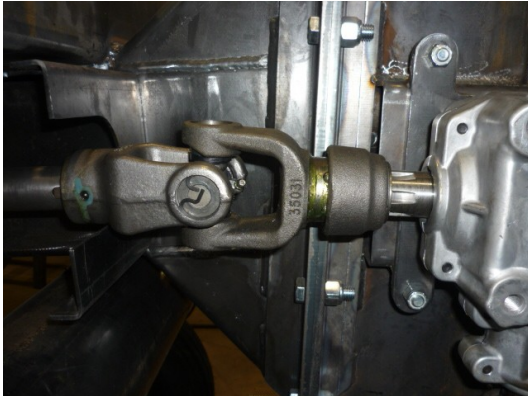


Sweep Drive - Universal Joint

5 SERVICE AND MAINTENANCE

5.3.3 50 Hours of Driveline Use (Cont'd)

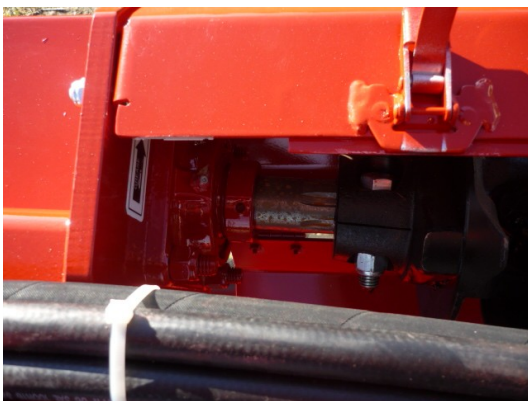
Grease the driveline bearings with 2 shots of grease.



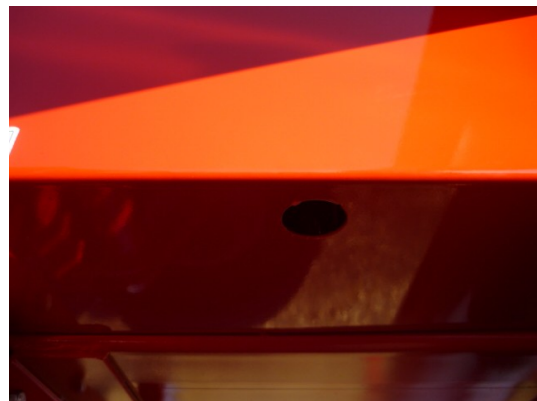
Driveline Rear U-Joint



Front Driveline Support Bearing



Front Driveline Support Bearing



Rear Driveline Support Bearing

Sweep Drive Gear Case

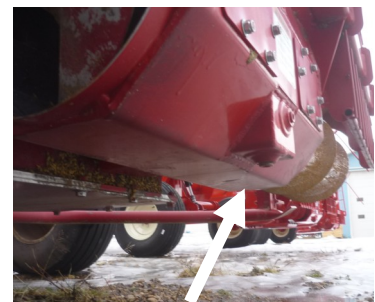
Grease the driveline bearings with 2 shots of grease.



Level Check



Fill Access - 0.5 liters when
Empty or runs out level
check



Drain Location

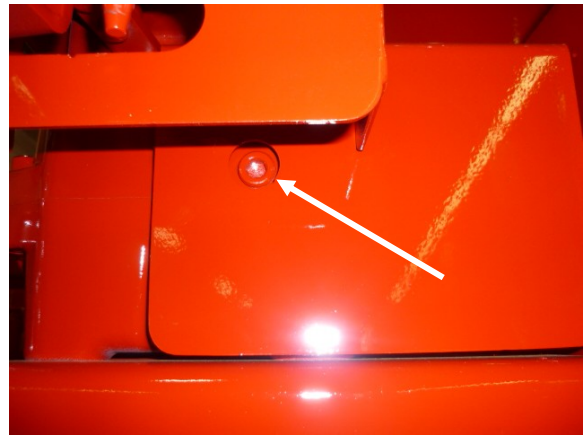
5 SERVICE AND MAINTENANCE

5.3.3 50 Hours of Driveline Use (Cont'd)

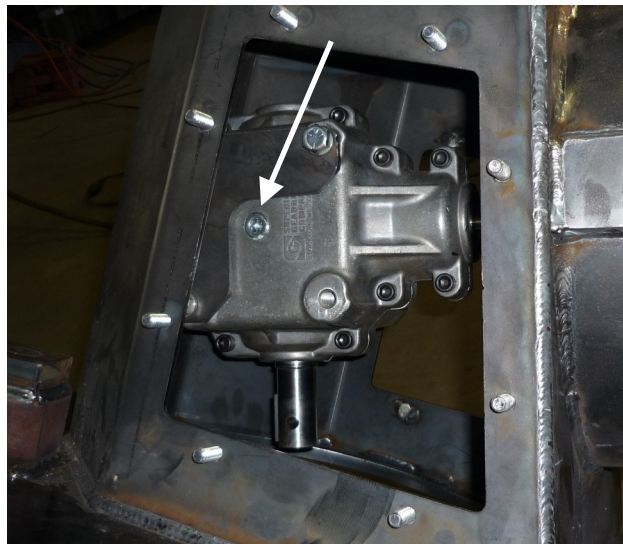
Check Oil Levels and oil seals for any leaks, top up as necessary.

1. Check the gearbox oil level. Remove plug in the side of the gearbox. The oil should trickle out slightly from the fill plug hole in the side of the gearbox when it is filled to the correct level.

Check Gearbox oil levels and oil seal condition - 90° Box



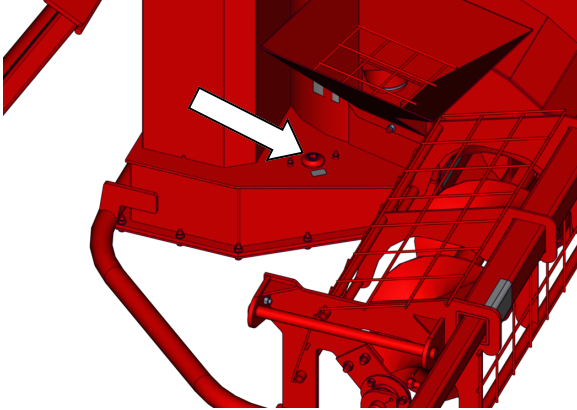
Check Gearbox oil levels and oil seal condition - 400 Series Turret Auger



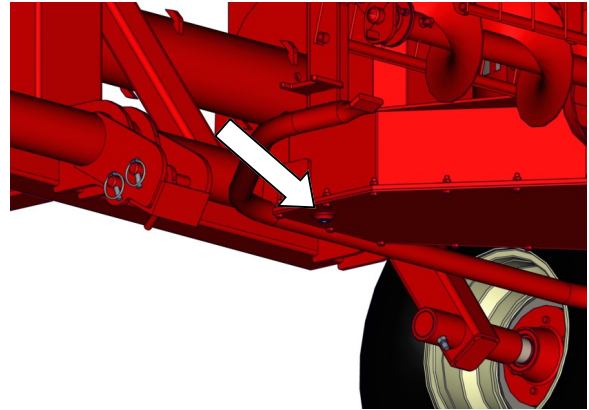
5 SERVICE AND MAINTENANCE

5.3.3 50 Hours of Driveline Use (Cont'd)

Vertical Discharge Drive Gear Case



Dip Level Check / Fill Access
15 liters when empty, or 2-3/4" from
bottom



Drain Location

5.3.3 50 Hours of Use

1. Grease the wheel hubs (2 locations) (Beginning with '09 models; repack '08 models before each season or as necessary). Apply a generous amount of grease.
NOTE: Over-greasing may lead to seal damage.



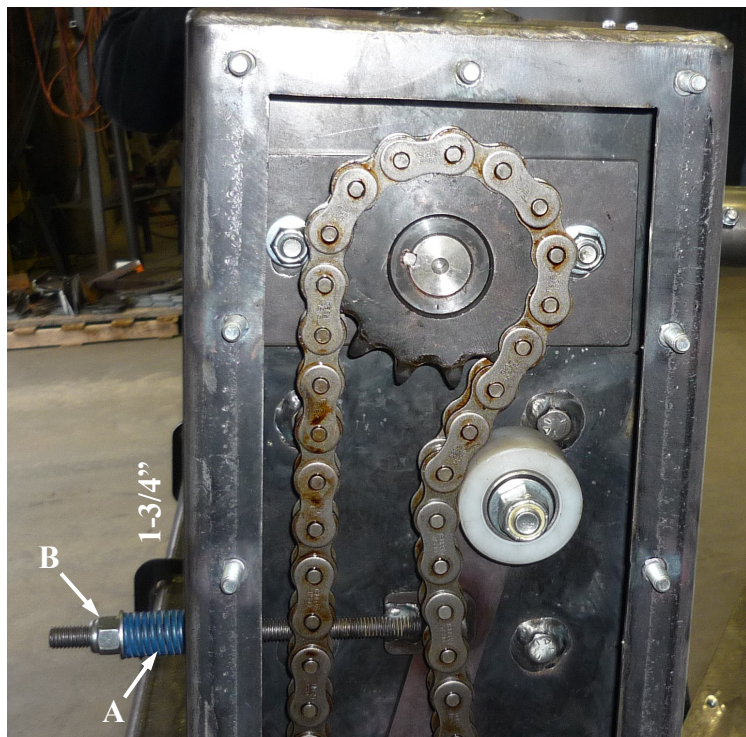
Re-torque wheel bolts after first use
to 120 ft-lbs

5 SERVICE AND MAINTENANCE

2. Check rotation of side-in rollers. If rough or difficult in rotating, replace friction fit bearings.

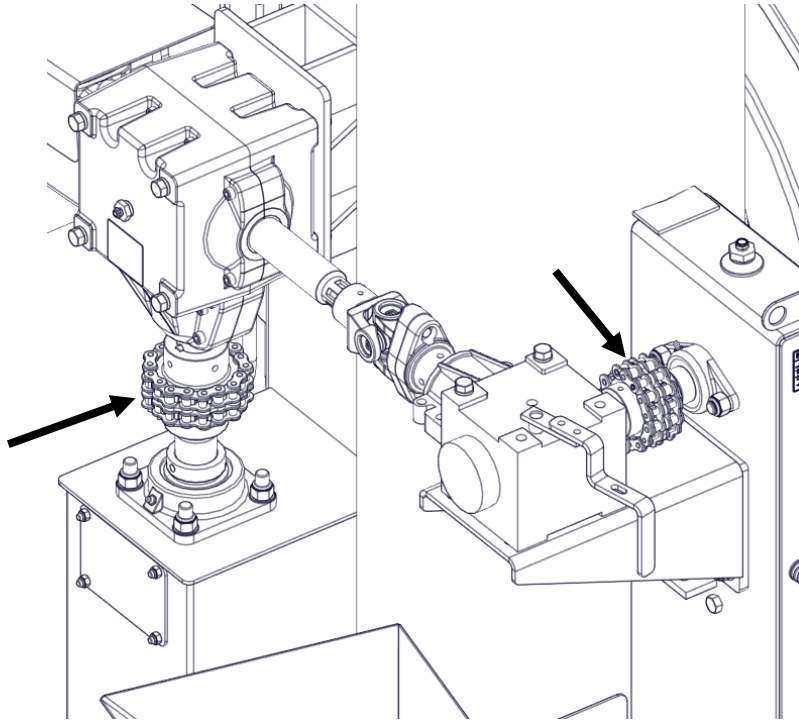


3. Check the sweep drive chain tension. Adjust when necessary. The chain tension is kept constant by a compression spring (A). Set spring length to 1-3/4" to maintain adequate chain tension. This is accomplished by turning the Nyloc nut (B) in or out on threads.



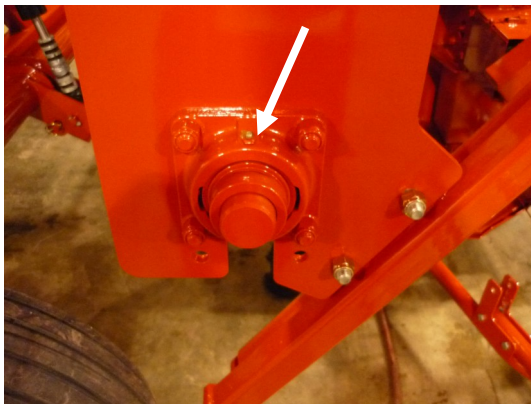
5 SERVICE AND MAINTENANCE

4. Brush chain couplings with light engine oil once per month.

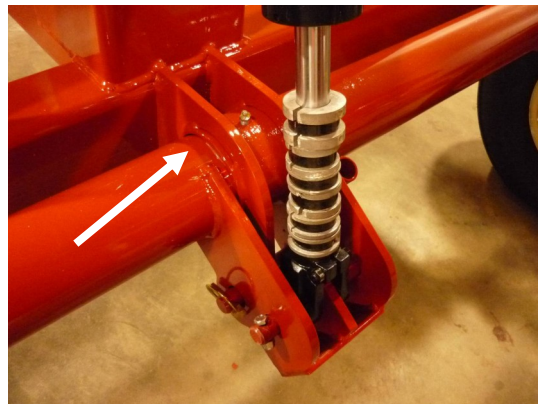


5.3.4 Per Season

Grease once per season, as necessary.

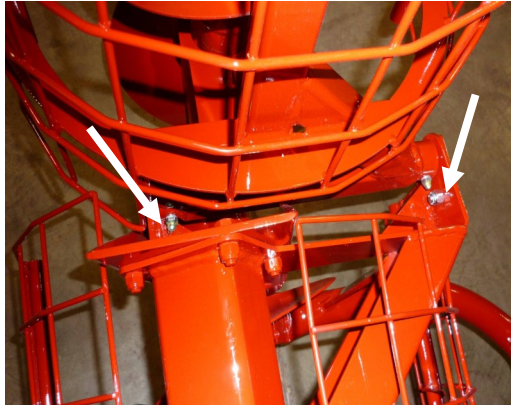


Idler Roll End Support Bearing (x 2)



Axle Pivot Points (x 3)

5 SERVICE AND MAINTENANCE



12' Sweep Extension - Pivot Shaft (x 2)

5.3.5 Annually

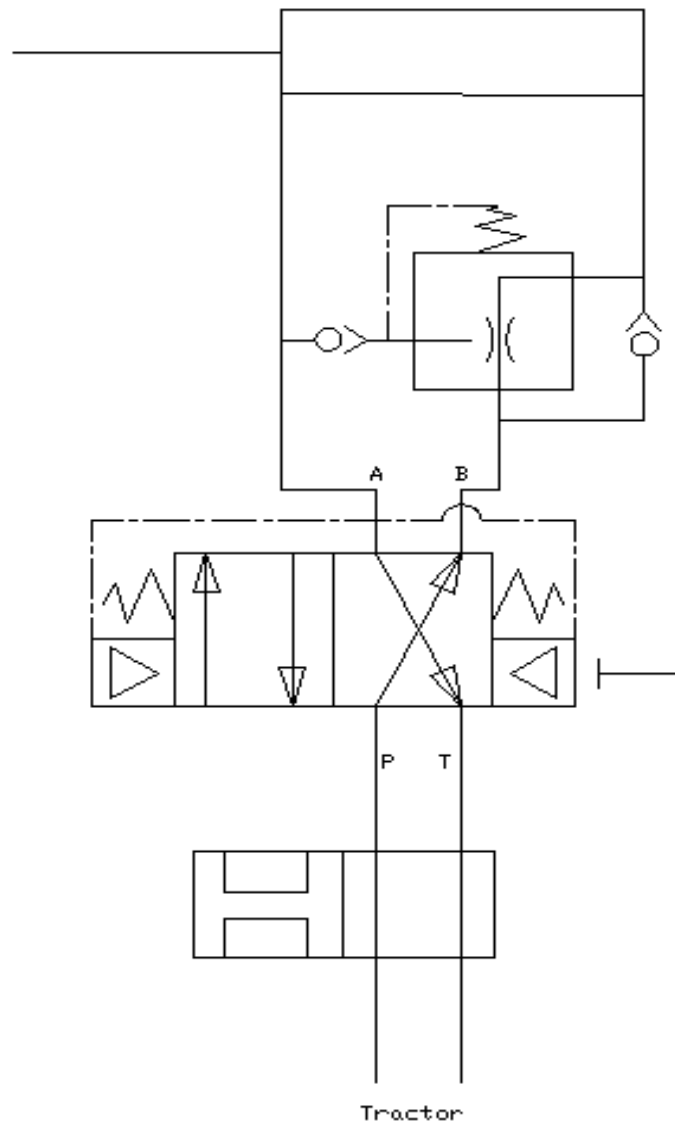
1. Tighten all fasteners, refer to Section 10 for torque specifications.
2. Check gear box/gear case oil quality.
3. Turret Auger - Check for excessive sag in turret auger horizontal positioning. Replace wear plates as necessary.



5 SERVICE AND MAINTENANCE

5.4 Hydraulic Schematics

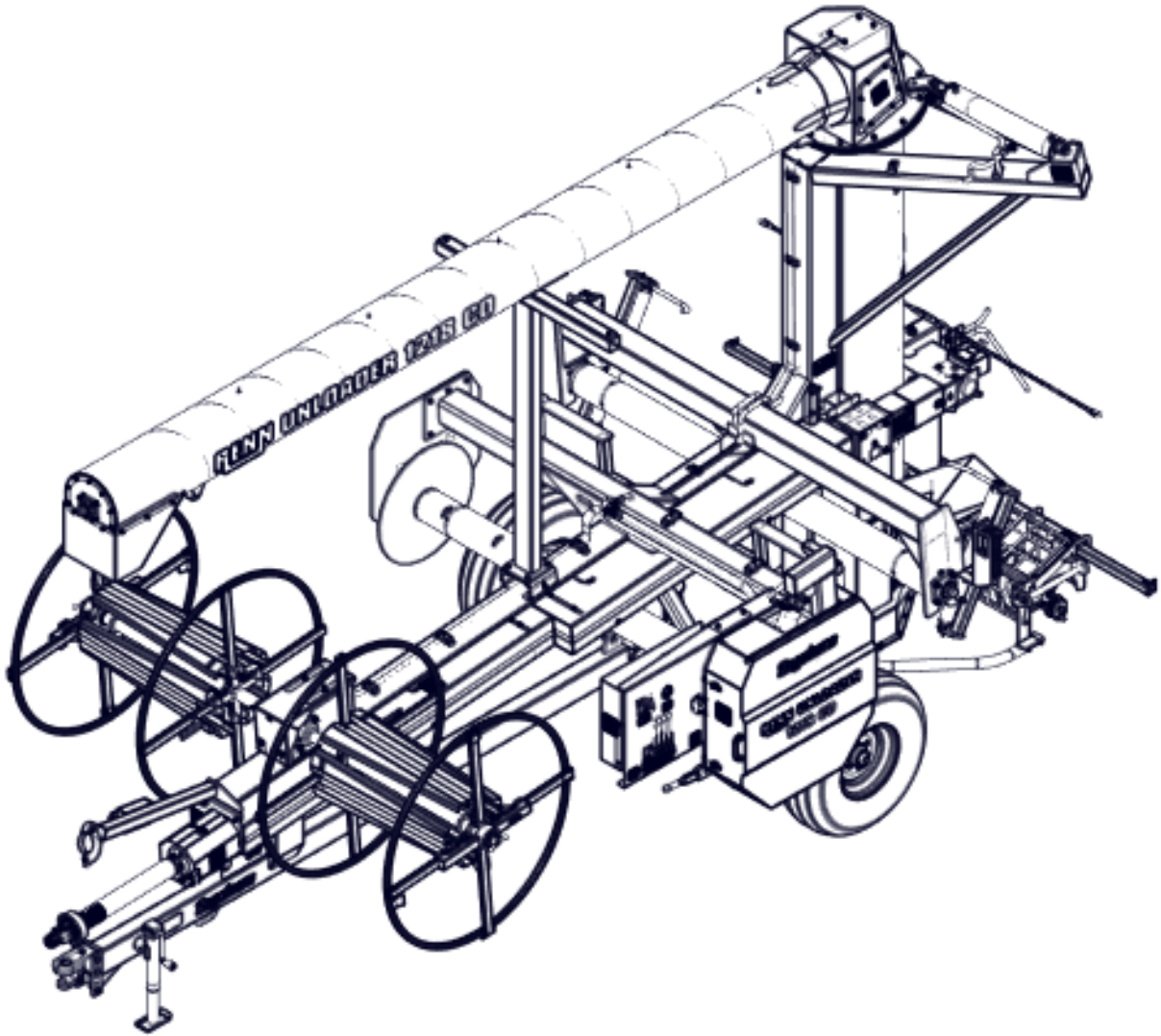
Hydraulic schematic for ratchet cycling mechanism.



6 PDI SETUP

Your Renn Unloader is shipped fully assembled. Take all necessary precautions when moving and operating the equipment.

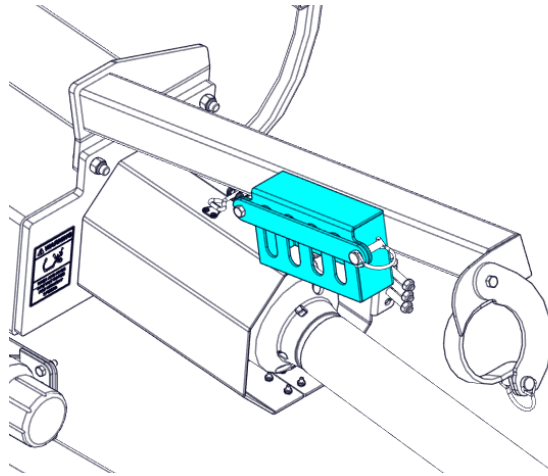
Note: All hoses should be on the hose hanger when not in use.



IMPORTANT: Use proper safety procedures while lifting heavy objects.

6 PDI SETUP

How to use the hose hanger



Hose Hanger

- A) Open the quick pin that is holding the lock plate and the front panel of the hose hanger (Figure 6.1).
- B) Rotate the lock plate counter clockwise (Figure 6.2). If the lock plate is too tight, loosen the bolt at the bottom of the lock plate.

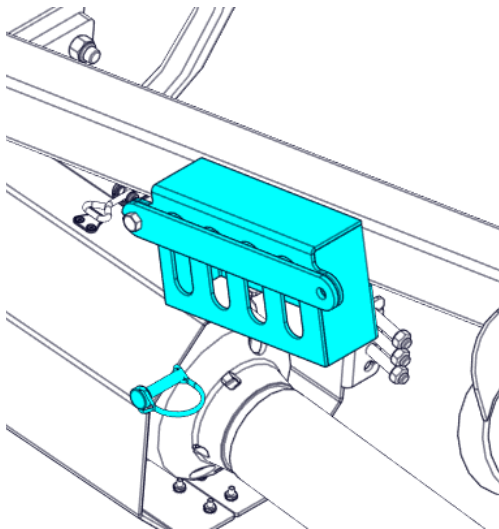


Figure 6.1

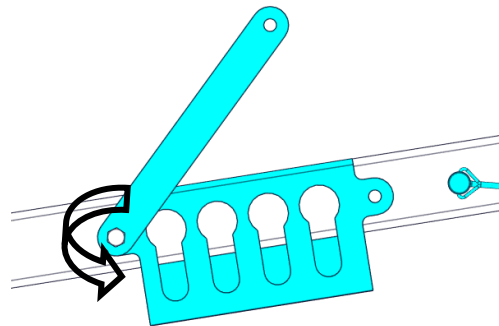


Figure 6.2

7 TRANSPORTATION



1. Check with local authorities regarding unloader transportation on public roads. Obey all applicable laws and regulations.
2. Always travel at a safe speed. Use caution when going around corners or meeting traffic.
3. Make sure an SMV (Slow Moving Vehicle) sign and all of the lights and reflectors that are required by local highway and transportation authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
4. If possible use a light kit when transporting. Be sure all lights attached to the rear of the unloader are working to safeguard against rear end collisions. Daybreak and dusk are particularly dangerous and pilot vehicles are recommended.
5. Be sure that the unloader is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Always use a safety chain between the machine and the towing unit.
6. Keep to the side and yield the right-of-way to allow faster traffic to pass. Drive on the shoulder of the road if safe to do so and permitted by law.
7. Do not exceed a 25mph (40kph) travelling speed. Reduce speed on rough roads and surfaces. Reduce speed when going around tight bends and corners in the road. Be especially careful when traveling on roads with a significant center crown, or when moving to the shoulder of the road with one wheel.
8. Always use the hazard warning flashers on the tractor when transporting unless prohibited by law.
9. Ensure that the transport pin is inserted into the cylinder bracket in the fully raised position before taking the machine onto any roadway.



Pin Storage Location when not in use

Pin Location for Transport

IMPORTANT: Remove the pin before putting the Unloader into service.

10. Ensure that the turret auger is in transport position prior to moving the unloader any distance.
11. Remove, tie down, or disengage the tractor half of the PTO shaft before transporting the unloader any distance.
12. Fold up or remove the sweep auger extensions before transporting the unloader over roadways.
13. Remove or properly secure any plastic left on the unloader before transporting the machine over roadways.
14. Securely fasten all hydraulic hoses (beyond placing them in the provided holder) for road transport.

Do not transport the unloader without all of the transport pins and clamps installed and fastened.

8 STORAGE

8.1 Placing in Storage

At the end of the operating season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season. Follow this procedure:

1. Empty the augers of any residual material.
2. Thoroughly wash the machine to remove all dirt, mud, debris or residue.
3. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any excess water left over from washing.
4. Inspect all hydraulic hoses, couplers and fittings. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded or is separating from the crimped end of a fitting.
5. Touch up all paint nicks and scratches to prevent rusting.
6. Retract cylinder rods to protect them from rusting whenever possible.
7. Move the machine to storage position.
8. Select an area that is dry, level and free of debris.
9. Chock the front and rear tires to prevent the machine from rolling.
10. Place planks under the jack for added support if required.
11. Unhook the machine from the tractor.
12. If storing the machine outside, turn the windup rolls so the large holes are facing the ground, angle the unloader so that the vertical auger can drain, cover the tires from direct sunlight to prolong life expectancy.

8.2 Removing from Storage & Pre-Season Preparation

When removing from storage and preparing to use, follow this procedure:

1. Clear the area of bystanders, especially small children, and remove foreign objects from the machine and the working area.
2. Remove any storage covers used to protect the machine.
3. Attach the unloader to the tractor using the procedure
4. **INSPECTION:**
 - a) Check that all hydraulic lines are seated and completely coupled.
 - b) Check that all of the bearing locking collars on the shafts are tight and in good condition. Check that all set screws on the bearing collars are tight.
 - c) Check that all bearing mounting bolts are tight.
 - d) Check that all of the tires are inflated per the recommended pressures.
 - e) Re-torque all wheel bolts and gearbox mounting bolts.
 - f) Slowly raise the discharge auger to the unloading positions to ensure that the auger has a clear path and that the upper auger bearing is moving freely.
 - g) Check all sweep hardware to ensure tightness.
5. Lubricate all grease fittings.
6. Replace any defective parts.
7. Rotate the driveline by hand, checking to make sure the discharge auger falls into drive.
8. Go through the **pre-operational checklist** (Section 4.3).

9 TROUBLESHOOTING GUIDE

9.1 Auger Systems

PROBLEM	PROBABLE CAUSE	REMEDY
Vertical and Turret auger flighting will not turn.	Broken shear bolt	Determine if augers are plugged. If neither auger is plugged, replace the shear bolt and try to run the augers again. Refer to Section 5.2 for replacement.
		Turret (top) gearbox has failed. Check the gearbox and replace if necessary. Replace the shear bolt. Refer to Section 5.2 for replacement.
	Plugged turret or vertical auger	If the vertical auger is plugged, clean the auger out. Replace the shear bolt and try to run the auger again.
		If the turret auger is plugged, remove the end cap and downspout from the turret auger. Turn and pull on the turret flighting to loosen the lodged material. Replace the shear bolt and try to run the auger again.
	Gear case failure	The gear case on the bottom of the vertical auger has failed. Remove and replace the chain/sprockets/key as necessary. Refer to Section 8.2 as necessary.
	Coupler failure	Remove and replace the coupler.
Turret auger flighting will not turn, but vertical flighting is turning.	Gear box failure	The gear box between the vertical and turret augers has failed. Refer to Section 5.2 for procedure.
	Drive coupling failure	Remove and replace the coupler or the key as necessary. Refer to Section 5.2 for procedure.
	CV-Joint failure	The bearing in the CV-joint may have failed or the CV-joint may be faulty. Remove and replace the CV-joint. Refer to Section 5.2 for procedure.
Vertical and Turret auger flightings turn, sweep system does not turn.	Shear bolt failure	Shear bolt on the sweep system has failed. Test turn the sweep system by hand. Replace the shear bolt and try to run the augers again under no load.
	Gear box failure	The 'T' gear box has failed, remove and replace the gear box noting the proper orientation.
	Drive coupling failure	Remove and replace the coupler or the key as necessary. Refer to Section 5.2 for procedure.
	Gear case failure	Input shaft turns, output shaft does not. Refer to Section 5.2 for procedure.

9 TROUBLESHOOTING GUIDE

9.2 Turret Auger Positioning

PROBLEM	PROBABLE CAUSE	REMEDY
Turret auger will not rotate into unloading position.	Base ring bolts too tight	Reset bolt positions on the turret base ring so that auger is just supported off the transport 'T' frame.
	Faulty hydraulic cylinder	Remove and replace hydraulic cylinder.
	Loose hydraulic fittings to the hydraulic cylinder	Check all hydraulic connections to the hydraulic cylinder.
	Turret bearing plates have failed.	Replace bearing plates.

9.3 Machine Raise and Lower

PROBLEM	PROBABLE CAUSE	REMEDY
Machine raised and will not lower	Transport cylinder lock	Remove transport cylinder lock. Lower machine.
Machine will not lower into position	Working cylinder stops in place	Remove cylinder stops until desired level is reached.

9.4 Ratchet System

PROBLEM	PROBABLE CAUSE	REMEDY
System will not cycle.	Flow control valve set to '0'	Set flow control valve to '3' or more.
	Tractor lever in wrong position	Pull on rewind to indicate oil flow through valve.
System cycles and then stops, valve squeals.	Flow control valve pressure relief is set too low, oil is going over the relief.	If ratchet cylinder stops fully retracted remove acorn nut from top of valve, turn allen head nut in a half turn at a time until the system cycles. See section 4.6.2.
System cycles and then stops.	Tractor return to tank contains significant back pressure.	Use another set of tractor outlets, some tractors vary.
		Use another tractor.
		Set tractor DCV flow to lowest setting.
System cycles and then stops.	Switching valve requires adjustment.	Pull out lever to cycle cylinder. Turn out screw on switching valve until cylinder cycles. Will have to set top and bottom screw. If unable to cycle under load turn screws in to increase pressure. See Section 4.6.2.

9 TROUBLESHOOTING GUIDE

9.5 General

PROBLEM	PROBABLE CAUSE	REMEDY
Grain building up in front of lower knife or above knife.	Movement into the bag too fast	Slow down movement into the bag, allow the machine to clean up grain as it moves.
	Sweep auger height set too high	Lower sweep auger height.
	Tough/wet grain in bottom of bag	Slow movement into bag and allow augers to break up tough grain. DO NOT attempt to push augers through grain, damage to components will result.
Holes made in bottom of bag by unloader.	Sweep auger level too low	Raise height of sweep augers appropriately.
	Uneven ground or rocks pushing bag into auger	
Plastic bag is stretching to the point of breaking.	Pulling force on bag excessive	Movement of machine into bag is beyond auger capacity, slow down movement and/or speed up augers to rated speed.
		Raise sweep system off of ground if dragging.
	Bag quality may be questionable	Handle with care, take your time, follow directions above.

10 SPECIFICATIONS

10.1 General Specifications

Weight	7625lbs
Minimum Tractor Horsepower	100 hp
Maximum Tractor Horsepower	180 hp
Auger Discharge Size	18"
Auger Discharge Height	168"
Auger Discharge Reach	195"
Auger Discharge Capacity	250 Bu/min

Capacity will change with moisture content, roll configuration and particle size desired.

10.2 Tire Specifications

Tire/Rim Size	12.5Lx16IMP 16x10x6BL
---------------------	-----------------------

10.3 Bolt Torque Specifications

Gearbox Bolt Tension

1/2" x 1" long, UNC, Gr5, Plated Bolt, used on each of the driveline gearboxes - 75 ftlbs

3/8" x 1" long, UNC, Gr5 (6), Plated Bolt, used on turret auger gearbox - 30 ftlbs

All 1/2" bolts used in sweep system driveline - 75 ftlbs

Shear Bolts

Main PTO Shear Bolt..... 3/8 x 2 GR 5 UNC

Sweep Drive Shear Bolt..... 1/4 x 1 GR 5 UNC

- For Tough Conditions..... 1/4 x 1 GR 8 UNC

Wheel Nuts/Bolts 90-120 ft.lbs.

..... *All Other Bolts—Refer to Bolt Torque Chart On Following Page*

10 SPECIFICATIONS

BOLT TORQUE CHART

SIZE	 SAE GRADE 2		 SAE GRADE 5		 SAE GRADE 8		 L9
	ASSEMBLY TORQUE DRY	LUBRICATED	ASSEMBLY TORQUE DRY	LUBRICATED	ASSEMBLY TORQUE DRY	LUBRICATED	ASSEMBLY TORQUE LUBRICATED
1/4-20	66*	49*	8	75*	12	9	11
1/4-28	76*	56*	10	86*	14	10	13
5/16-18	11	8	17	13	20	18	21
5/16-24	12	9	19	14	25	20	23
3/8-16	20	15	30	23	45	30	33
3/8-24	23	17	35	25	50	35	38
7/16-14	30	24	50	35	70	55	60
7/16-20	35	25	55	40	80	60	65
1/2-13	50	35	75	55	110	80	95
1/2-20	55	40	90	65	120	90	105
9/16-12	65	50	110	80	150	110	140
9/16-18	75	55	120	90	170	130	150
5/8-11	90	70	150	110	220	170	185
5/8-18	100	80	180	130	240	180	205
3/4-10	160	120	260	200	380	280	290
3/4-16	180	140	300	220	420	320	355
7/8-9	190	140	400	300	600	460	505
7/8-14	210	155	440	320	660	500	585
1-8	220	160	580	440	900	680	775
1-14	240	170	640	480	1000	740	900
1 1/8-7	300	220	800	600	1280	960	1150
1 1/8-12	340	260	880	660	1440	1080	1325
1 1/4-7	420	320	1120	840	1820	1360	1600
1 1/4-12	460	360	1240	920	2000	1500	1750
1 3/8-6	560	420	1460	1100	2380	1780	—
1 3/8-12	640	460	1680	1260	2720	2040	—
1 1/2-6	740	560	1940	1460	3160	2360	3250
1 1/2-12	840	620	2200	1640	3560	2660	3650

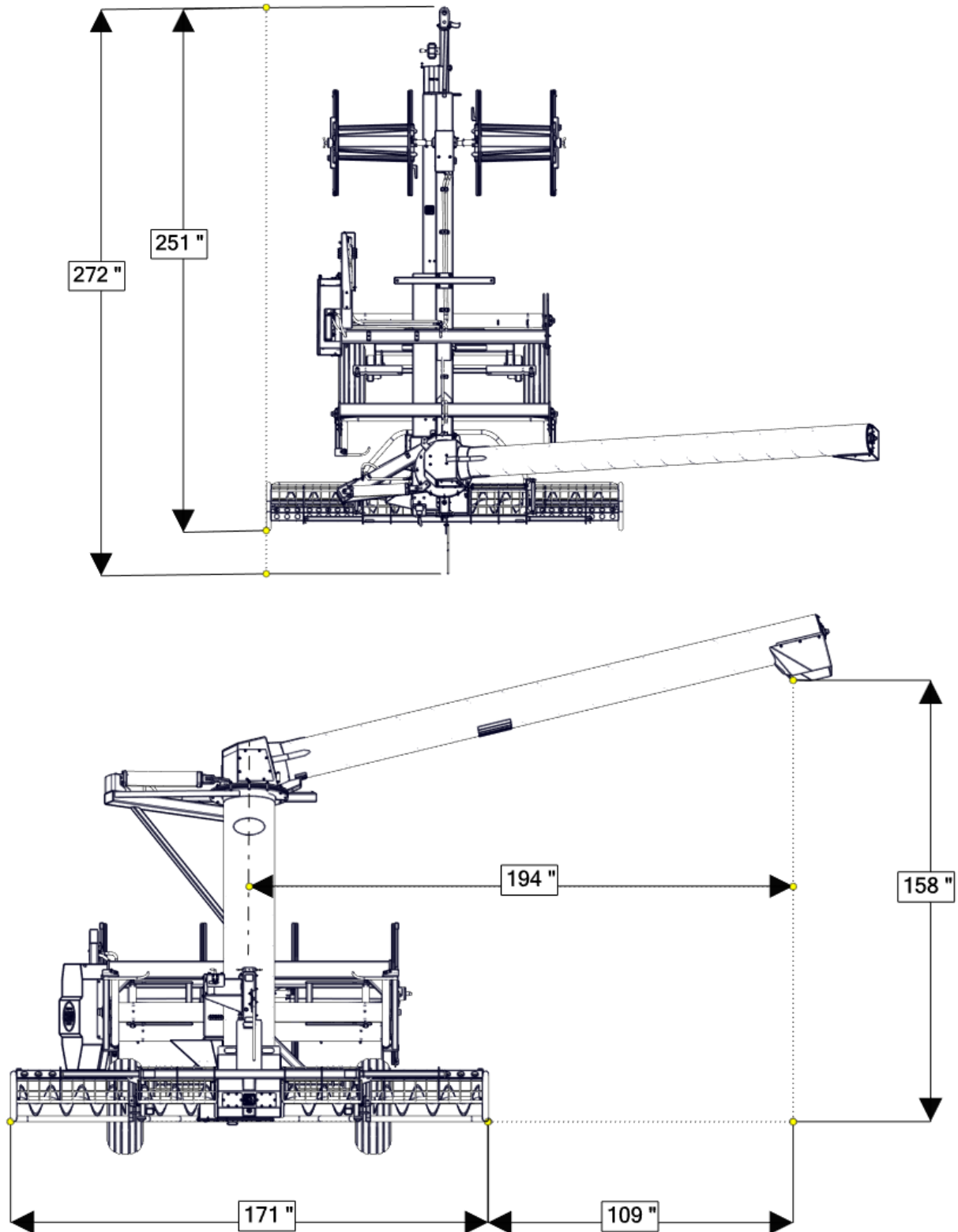
ITEMS WITH * = INCH POUNDS
ALL OTHERS = FOOT POUNDS

"LUBRICATED"
INCLUDES LUBRICANTS, LUBRIZING, PLATING, AND HARDENED WASHERS

10 SPECIFICATIONS

10.4 Overall Dimensions

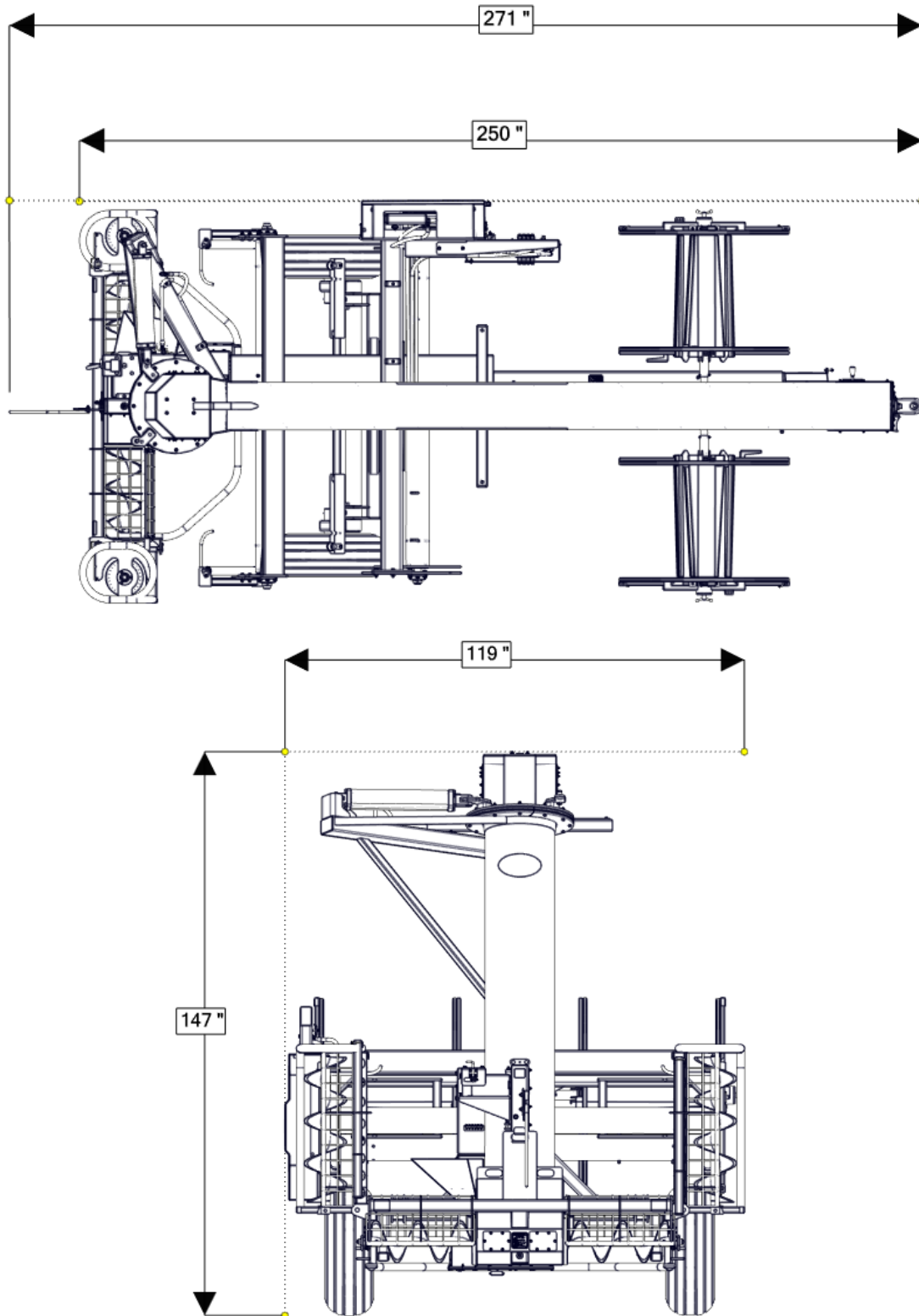
10.4.1 Working Mode



10 SPECIFICATIONS

10.4 Overall Dimensions (Cont.)

10.4.2 Transport Mode

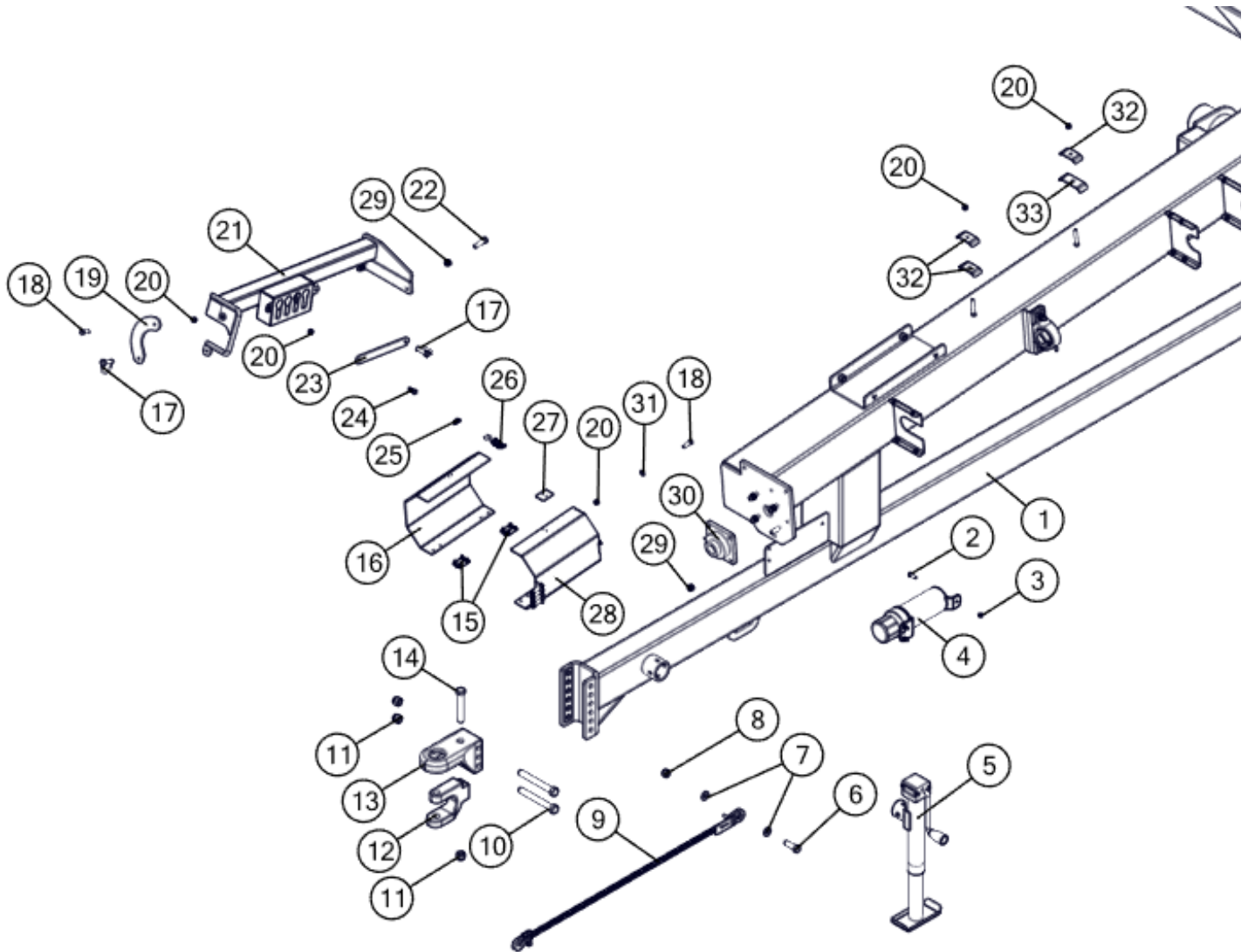


11 PARTS

11.1 Hitch Assembly

REF #	PART #	DESCRIPTION	QTY
1	6809000164	Main Frame & Cross Beams with Ratchet Drive Plate 2020	1
2	118110	Bolt, Hex 5/16 X 1 UNC GR5 PL	3
3	118703	Nut, Lock 5/16 UNC GR5 PL - Nylock	3
4	1470000010	Manual Canister	1
5	3411000050	Jack - 7000lb x 10" - Side Wind	1
6	118026	Bolt, Hex 5/8 X 2 UNC GR5 PL	1
7	117811	Washer, Flat 5/8 SAE PL	2
8	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	1
9	1400000490	Safety Chain	1
10	117710	Bolt, Hex 3/4 X 6-1/2 UNC GR5 PL	2
11	117273	Nut, Lock 3/4 UNC GR5 - Nylock	3
12	3430000206	Clevis	1
13	3430000237	Base Hitch	1
14	118061	Bolt, Hex 3/4 X 5 UNC GR5 PL	1
15	1530000800	Butt Hinge - 2" x 1-1/2"	2
**	117680	Screw, Pan #10-24 X 5/8 PL	8
**	117767	Nut, Lock #10-24 UNC PL - Nylock	8
16	4809000305	PTO Shield	1
17	1615000498	Quick Pin, 3/8" x 1-5/8"	1
18	118129	Bolt, Hex 3/8 X 1-1/4 UNC GR5 PL	4
19	4810001578	Clamp Plate - Driveline Cradle 2023	1
20	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	14
21	6809000176	PTO Holder - Weldment	1
22	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	6
23	118292	Bolt, Hex 1/2 X 1-3/4 UNC GR5 PL	2
24	4810001200	Clamp Plate - 4 Hose Hanger	1
25	118005	Bolt, Hex 3/8 X 1 UNC GR5 PL	1
26	1540000143	Catch - Overcenter Latch - 3.5"	1
**	117682	Screw, Machine #8-32 X 1/2 PL	2
**	117766	Nut, Lock #8-32 UNC PL - Nylock	2
27	1540000142	Overcenter Latch - 3.5"	1

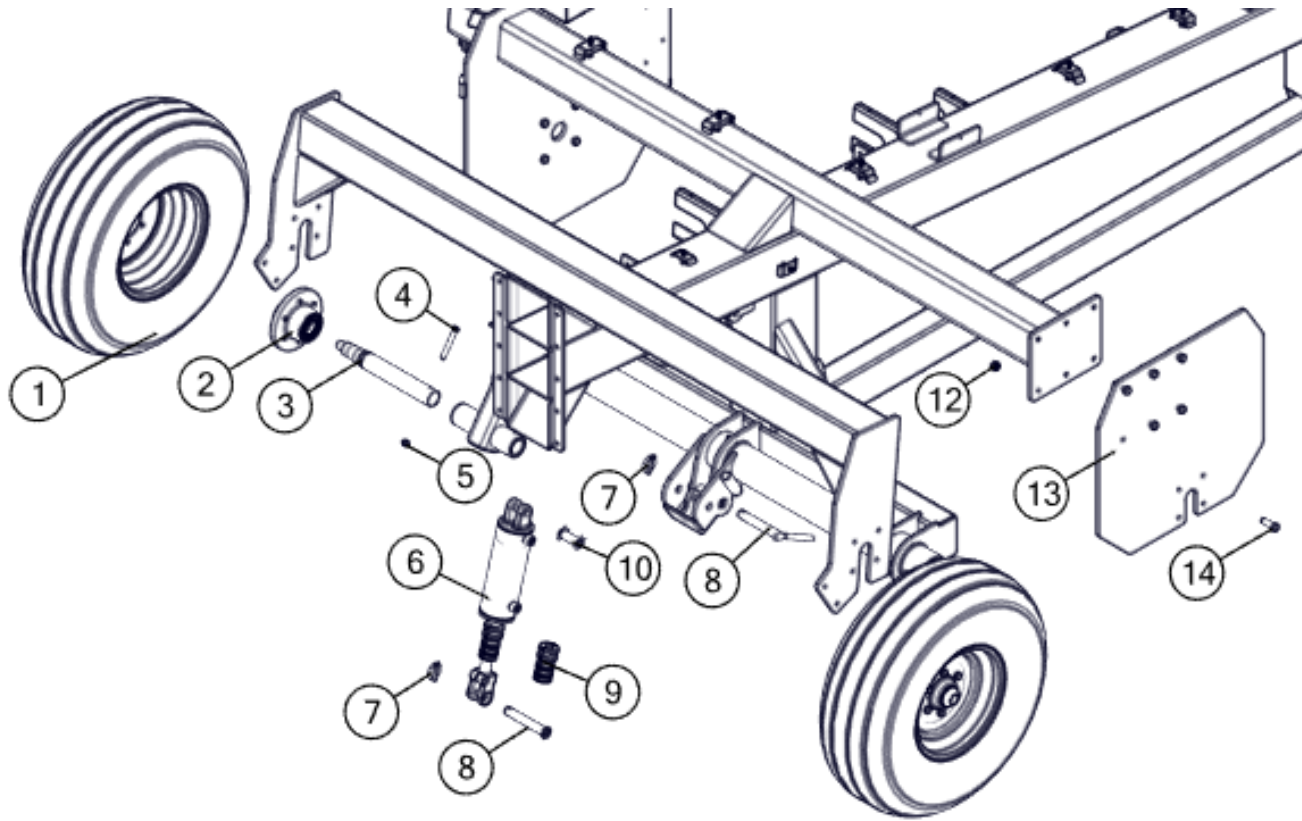
11.1 Hitch Assembly



**	117682	Screw, Machine #8-32 X 1/2 PL	2
**	117766	Nut, Lock #8-32 UNC PL - Nylock	2
28	4140000906	Lap Flat	1
29	4809000304	PTO Shield	1
**	118087	Bolt, Hex 3/8 X 2 UNC GR5 PL	4
**	118417	Nut, Lock 3/8 UNC GR5 PL - Unitorque	4
30	1140000326	4 Bolt Flange Bearing 1-1/2	1
31	117809	Washer, Flat 3/8 SAE PL	3
32	4801000722	Hose Clamp	9
33	4801000710	Hose Clamp	6

11 PARTS

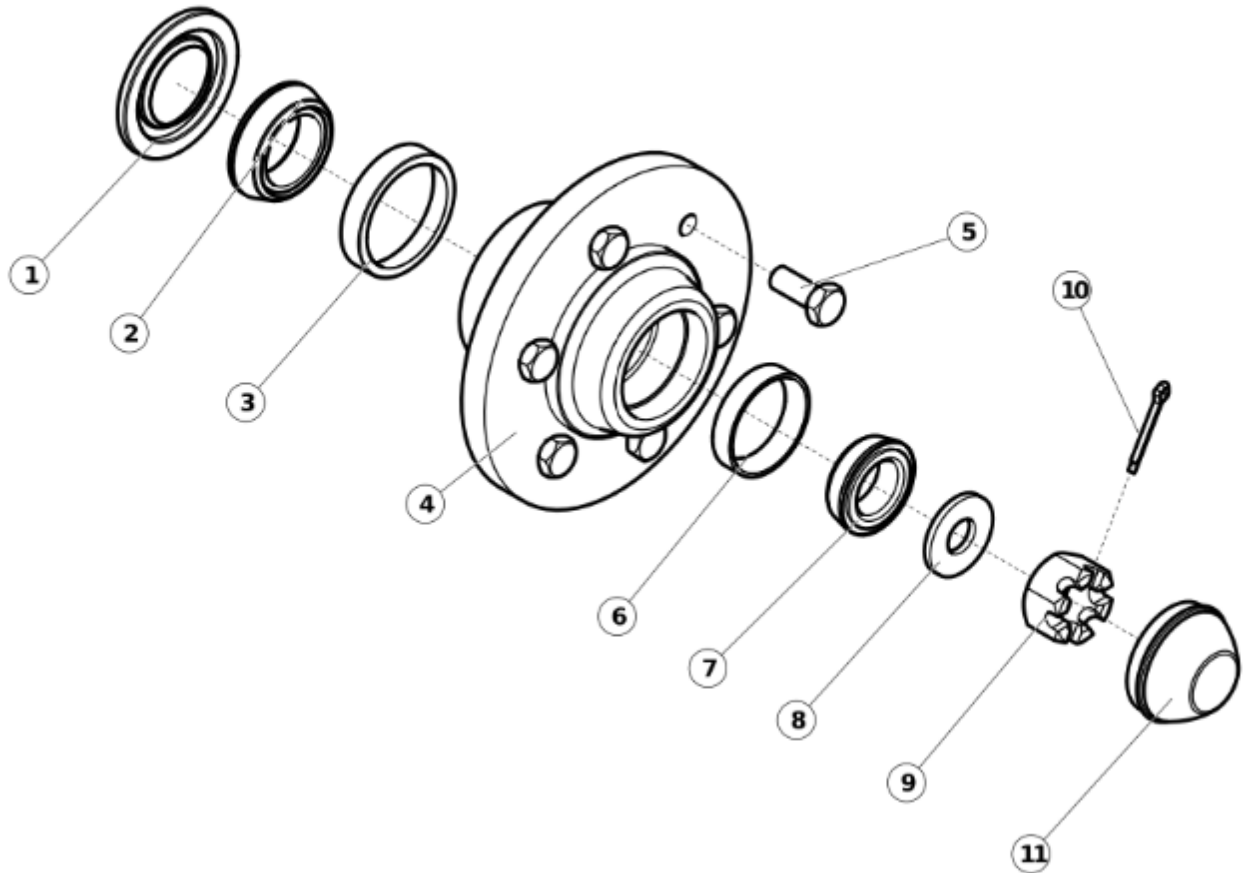
11.2 Axle Assembly



REF #	PART #	DESCRIPTION	QTY
1	1001000600	Tire & Rim - 12.5L x 16IMP 16 x 10 x 6BL	2
2	3408000615	Hub Assembly - 614	2
3	4800000593	614 Spindle	2
4	118126	Bolt, Hex 1/2 X 4 UNC GR5 PL	2
5	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	2
6	1077000003	4" Bore x 8" Stroke Hyd Cylinder	1
7	1615000455	Lynch Pin - 7/16" x 1-3/4"	2
8	6800000664	Cross Pin Assembly - Axle	1
9	1072000900	Aluminum Cylinder Stop Kit	2
10	1070000103	Cylinder Pin - 1" Dia x 3"	1
11	6800000644	Cross Pin Assembly - Axle Lock	1
12	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	6
13	4805000026	Roller Endplate	1
14	117703	Bolt, Hex 5/8 X 2-1/4 UNC GR5 PL	6

11 PARTS

11.3 Hub Assembly (340800-0615)



REF #	PART #	DESCRIPTION	QTY
1	3401000016	Grease Seal - SE-16	1
2	1145000135	Inner Cone - LM-603049	1
3	1150000026	Inner Cup - LM-603011	1
4	3400000614	614 Hub	1
5	3403000012	Wheel Bolt - 9/16" - 18 NF x 1-1/4"	6
6	1150000027	Outer Cup - LM-48510	1
7	1145000022	Outer Cone - LM-48548	1
8	3407000517	Spindle Washer 7/8" I.D., 2" O.D., 0.187" Thick	1
9	3407000033	Spindle Nut - 1" x 14 UNF	1
10	1700000190	Cotter Pin - 3/16" x 1.5"	1
11	3402000015	Dust Cap - 2.72" x 1.45"	1

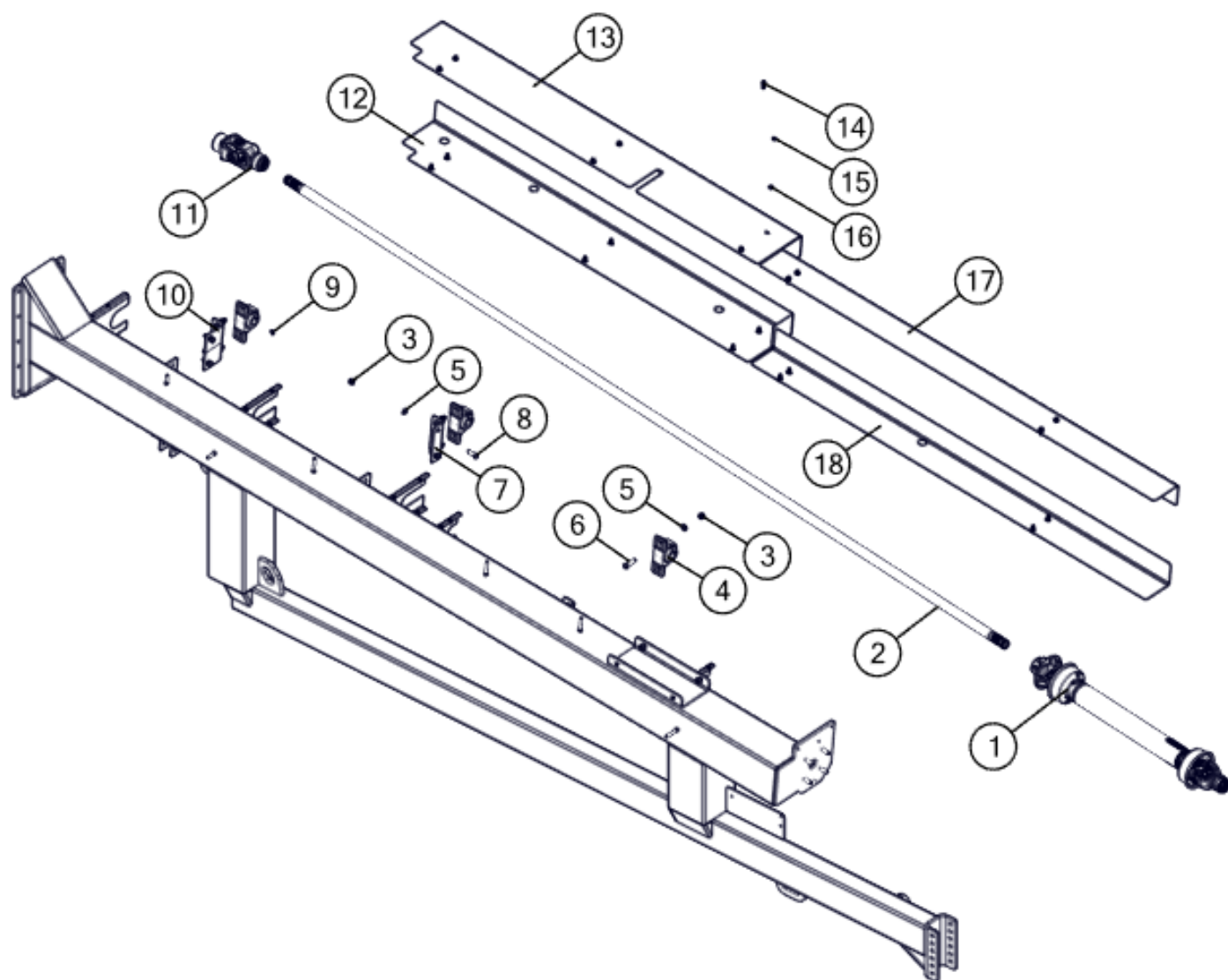
11 PARTS

11.4 Driveline Assembly

REF #	PART #	DESCRIPTION	QTY
1	3750000446	PTO 44 Series 1-3/8" 21 Spline to 1-3/8" 21 Spline Clamp	1
2	4809000223	Driveline Shaft	1
3	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	10
4	1140000260	Bearing - Pillow Block 1-1/2" ID NTN (UELP-1 1/2M)	3
5	117810	Washer, Flat 1/2 SAE PL	10
6	118014	Bolt, Hex 1/2 X 2 UNC GR5 PL	10
7	4809000410	Bracket - BRG Support	1
8	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	4
9	1332000045	Grease Fitting - 1/8 NPT THR - 45deg	3
10	6809000170	Bracket - BRG Support Weldment	1
11	3755000445	44R U-Joint, 1.375-21spline, 1.75 keyed yoke	1
12	6809000039	Mid Driveline Cover - Lower Shield Weldment	1
13	6809000038	Driveline Cover Weldment	1
14	118005	Bolt, Hex 3/8 X 1 UNC GR5 PL	20
15	118503	Washer, Lock 3/8 PL	20
16	117809	Washer, Flat 3/8 SAE PL	20
17	4809000221	Forward Driveline Cover - Upper	1
18	4809000222	Forward Driveline Cover - Lower	1

11 PARTS

11.4 Driveline Assembly



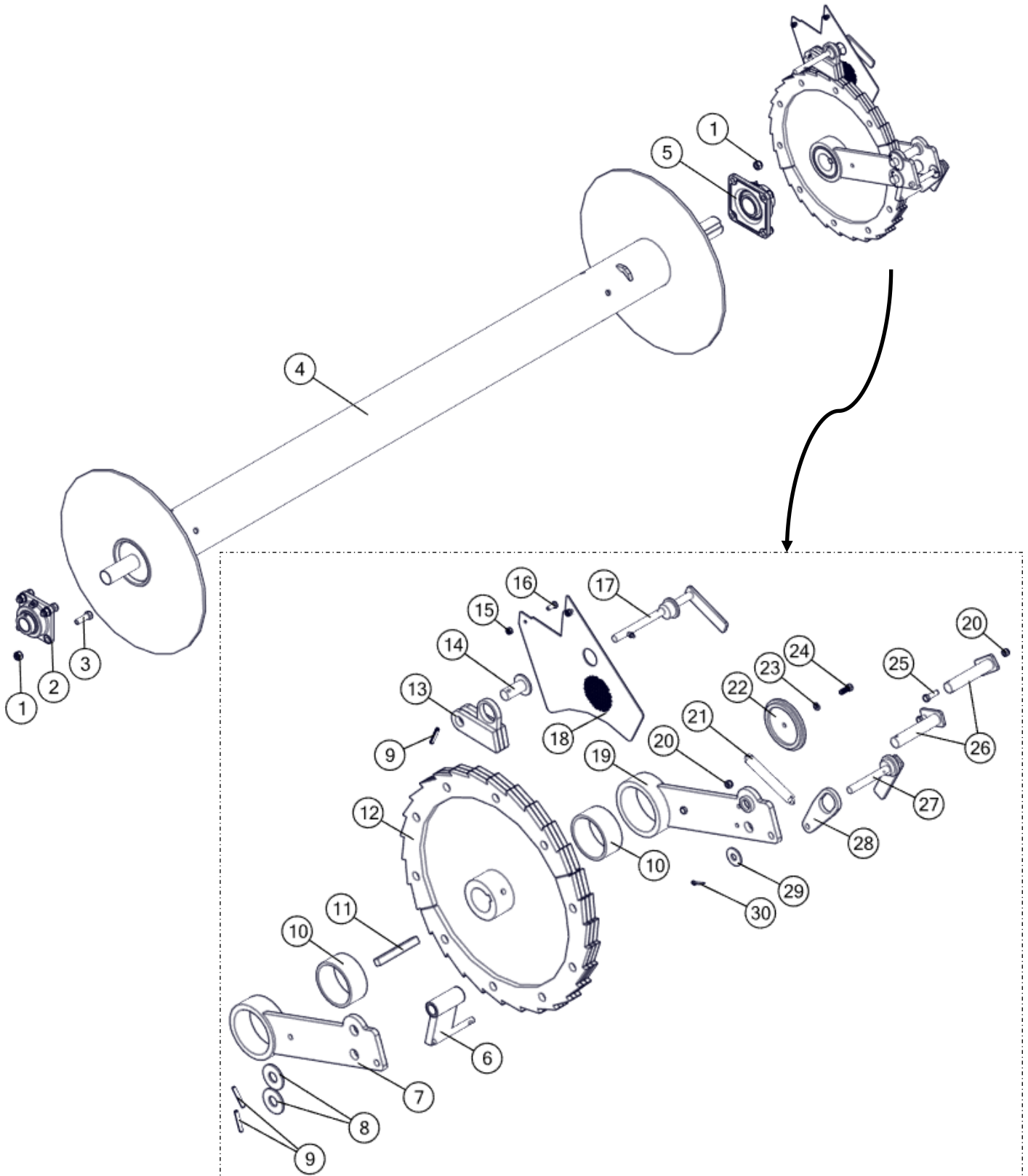
11 PARTS

11.6 Power Roll Assembly

REF #	PART #	DESCRIPTION	QTY
1	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	8
2	1140000250	Bearing - 4-Bolt Flange 1-15/16" ID NTN (UELFU-1.15/16M)	1
3	117703	Bolt, Hex 5/8 X 2-1/4 UNC GR5 PL	4
4	6809000050	Power Roll	1
5	1140000253	NTN 2-7/16" 4 BOLT Flange Bearing	1
6	6802000021	Cycling Cog - Bag Pull	1
7	6802000020	Right Arm Weldment	1
8	118520	Washer, Flat 1 PL	2
9	1722000793	Spring Pin - 5/16" x 2"	3
10	4802000166	Oilite Bushing - Ratchet Wheel	2
11	4802000482	5/8" Keystock x 5"	1
12	6802000017	Ratchet Wheel	1
13	6800000871	Ratchet Wheel Stop	1
14	6802000080	Cross Pin Assembly - 1" x 2-1/4"	1
15	118703	Nut, Lock 5/16 UNC GR5 PL - Nylock	2
16	118177	Bolt, Hex 5/16 X 3/4 UNC GR5 PL	2
17	6800000874	Ratchet Stop Release Cam	1
18	6800000924	Ratchet Stop Release Cover	1
19	6809000087	Left Arm Weldment	1
20	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	3
21	3033000433	Extension Spring - 0.75" OD x 6.5" Long	1
22	6802000122	Shaft End Cap	1
23	118503	Washer, Lock 3/8 PL	1
24	118005	Bolt, Hex 3/8 X 1 UNC GR5 PL	1
25	118129	Bolt, Hex 3/8 X 1-1/4 UNC GR5 PL	2
26	6809000086	Cylinder Pin - Ratchet Arm	2
27	6800000901	Ratchet Cog Release Arm	1
28	4802000168	Arm Lug Attachment	1
29	118514	Washer, Flat 5/8 PL	1
30	1700000180	Cotter Pin - 3/16" x 1"	1

11 PARTS

11.6 Power Roll Assembly



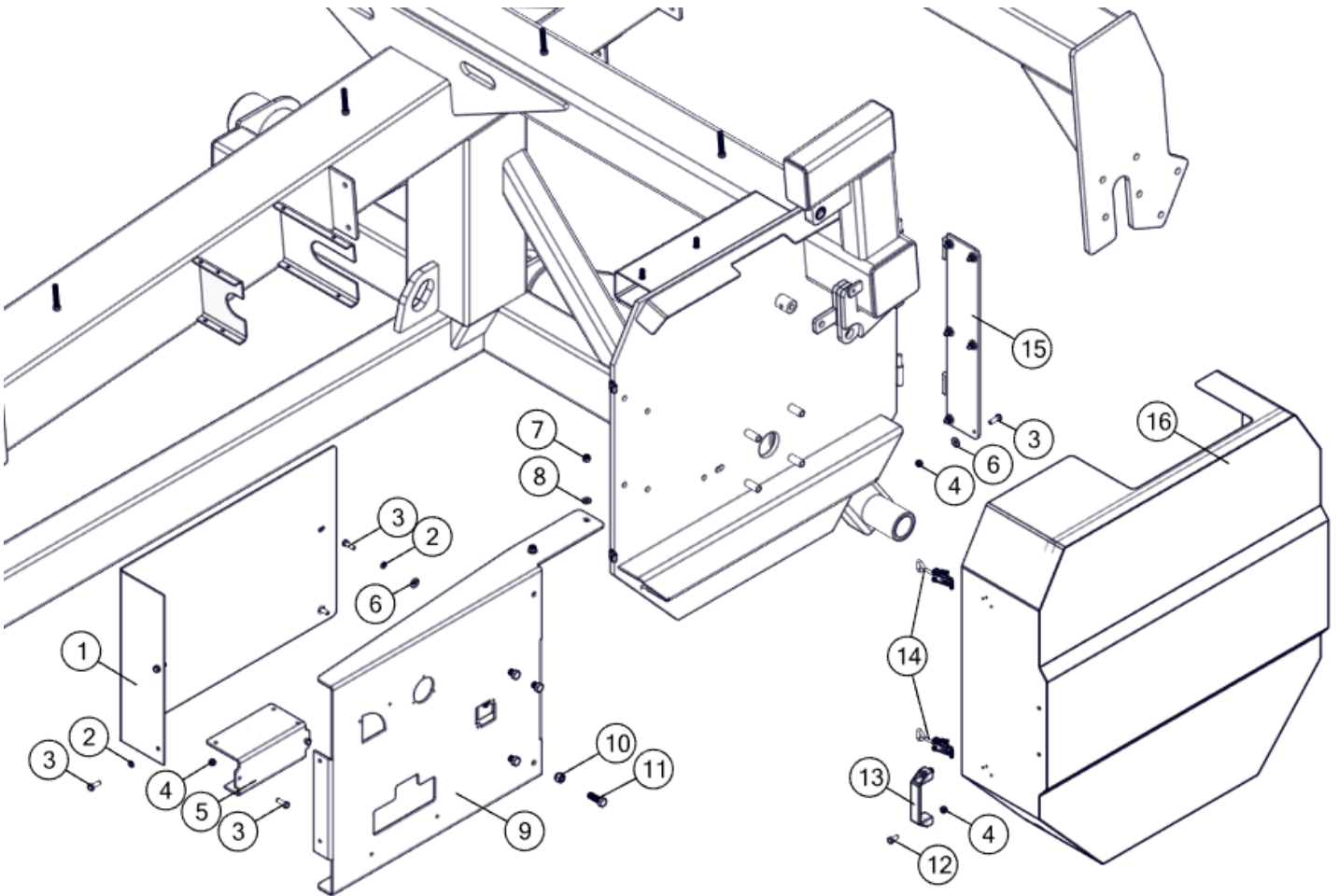
11 PARTS

11.5 Control Panel and Ratchet Drive Cover

REF #	PART #	DESCRIPTION	QTY
1	4805000040	Hydraulic Valve Guide Panel	1
2	118530	Washer, Lock 5/16 PL	4
3	118110	Bolt, Hex 5/16 X 1 UNC GR5 PL	12
4	118703	Nut, Lock 5/16 UNC GR5 PL - Nylock	10
5	6802000125	Hydraulic Valve Mount	1
6	118538	Washer, Flat 5/16 PL	8
7	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	2
8	117809	Washer, Flat 3/8 SAE PL	2
9	6809000051	Hyd Control Panel Weldment	1
10	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	4
11	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	4
12	118177	Bolt, Hex 5/16 X 3/4 UNC GR5 PL	2
13	1400000220	Pull Handle	1
14	1540000140	Overcenter Latch - 4.7"	2
**	117684	Screw, Machine #10-24 X 1/2 PL	6
**	117767	Nut, Lock #10-24 UNC PL - Nylock	6
**	1613000771	3/32" x 1-11/16" Hair Pin - #3	2
15	6800000873	Hinge Plate Weldment	1
16	6800000962	Ratchet Drive Cover	1

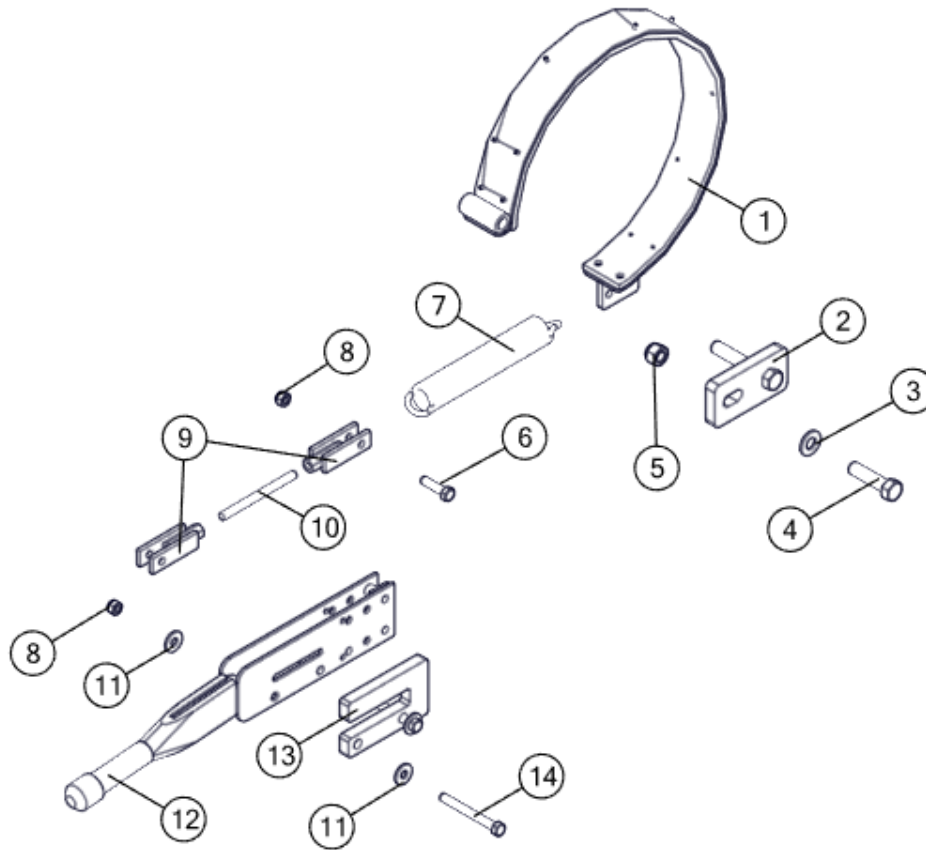
11 PARTS

11.5 Control Panel and Ratchet Drive Cover



11 PARTS

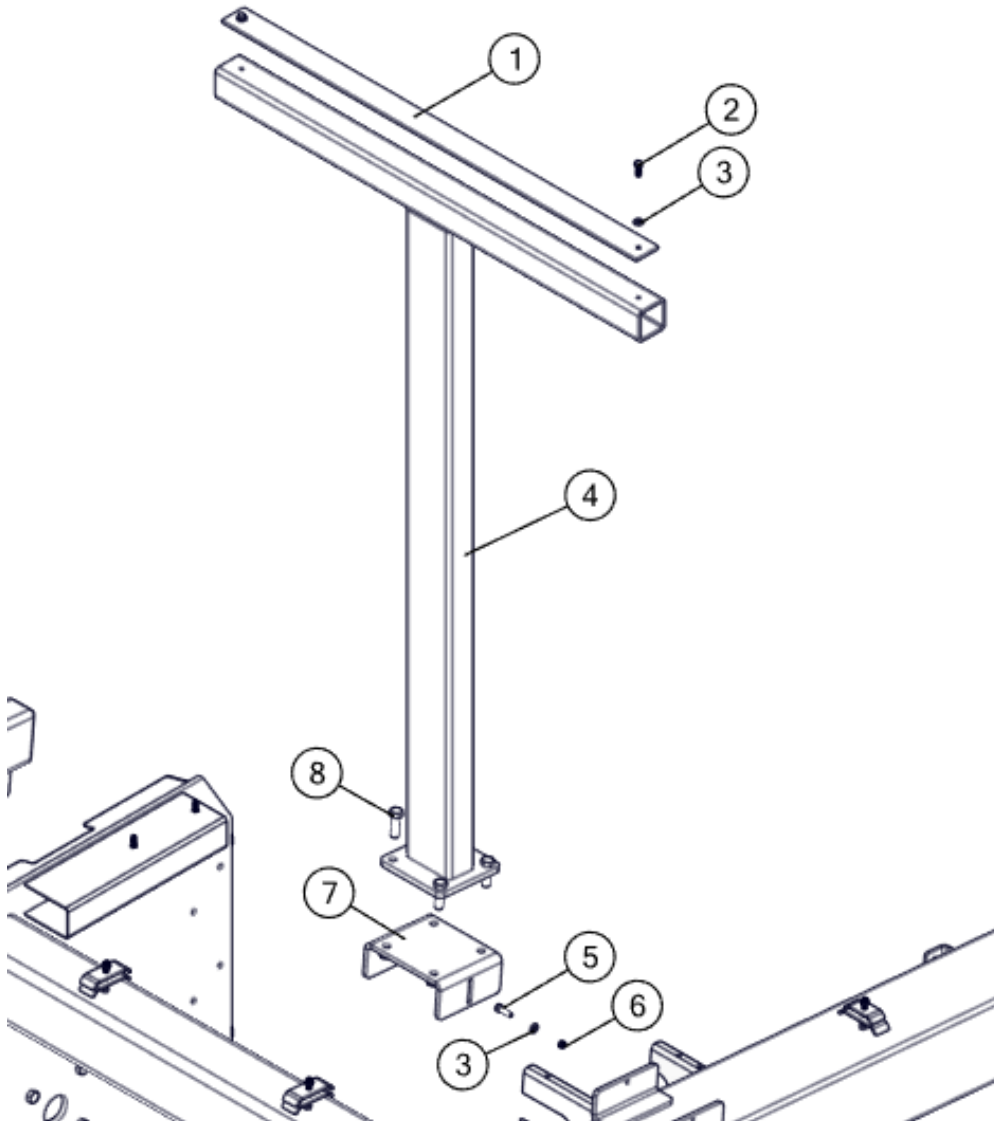
11.7 Rewind Brakes



REF #	PART #	DESCRIPTION	QTY
1	1478000012	Brake Band Assembly	1
2	6809000054	Brake Adjuster Assembly	1
3	117810	Washer, Flat 1/2 SAE PL	1
4	118014	Bolt, Hex 1/2 X 2 UNC GR5 PL	1
5	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	1
6	118145	Bolt, Hex 5/16 X 1-1/4 UNC GR5 PL	1
7	3032000050	Extension Spring - 1-1/4" x 7"	1
8	118703	Nut, Lock 5/16 UNC GR5 PL - Nylock	3
9	6809000055	Turnbuckle	2
10	4809000169	Brake Rod	1
11	118538	Washer, Flat 5/16 PL	4
12	1478000009	E - Brake	1
13	4809000165	Brake Spacer	1
14	118111	Bolt, Hex 5/16 X 3 UNC GR5 PL	2

11 PARTS

11.8 Discharge Auger Support



REF #	PART #	DESCRIPTION	QTY
1	4800000662	Auger Rest - Turret	1
2	118005	Bolt, Hex 3/8 X 1 UNC GR5 PL	2
3	117809	Washer, Flat 3/8 SAE PL	4
4	6809000158	Support Post - Turret Auger - 2019	1
5	118136	Bolt, Hex 3/8 X 1-1/2 UNC GR5 PL	2
6	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	2
7	6809000159	Top Bracket Weldment - Adjustable Base	1
8	118026	Bolt, Hex 5/8 X 2 UNC GR5 PL	4

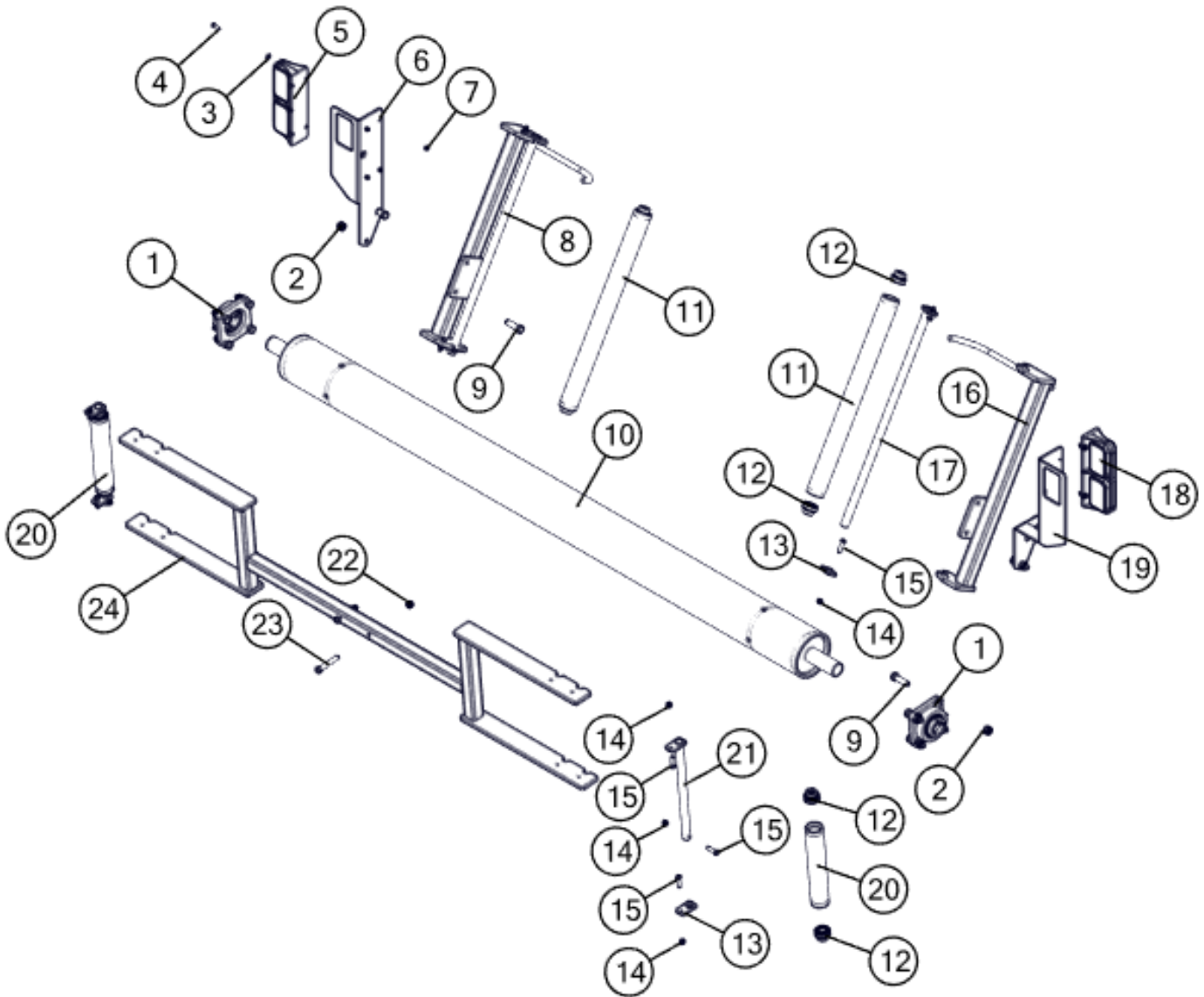
11 PARTS

11.9 Idle Roll Weldment & Roll Arm Assembly

REF #	PART #	DECRPTION	QTY
1	1140000250	Bearing - 4-Bolt Flange 1-15/16" ID NTN (UELFU-1.15/16M)	2
2	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	12
3	118555	Washer, Flat 1/4 PL	8
4	118756	Bolt, Hex 1/4 X 1-1/4 UNC GR5 PL	8
5	1470000601	LED Dual Tail Light Kit - Right	1
6	4809000402	P.S Light Mount Plate	1
7	117800	Nut, Lock 1/4 UNC GR5 PL - Nylock	8
8	6800000868	Side-in Roller Frame - Pass Side	1
9	117703	Bolt, Hex 5/8 X 2-1/4 UNC GR5 PL	12
10	6809000088	Idler Roll Weldment - Bag Pull	1
11	4800000632	Roller Pipe - Side-in Roller	2
12	1141000016	1" Bearing - 52mm Cylindrical OD	8
13	4800000639	Shaft End Plate - Side In Roller	4
14	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	10
15	118136	Bolt, Hex 3/8 X 1-1/2 UNC GR5 PL	10
16	6800000869	Side-in Roller Frame - Driver Side	1
17	6800000959	1" X 32" Pin Assy - Side Roller - Bag Pull - 2013	2
18	1470000600	LED Dual Tail Light Kit - Left	1
19	6809000169	DS Light Mount	1
20	4805000087	Roller Pipe - Side-in Roller - Short	2
21	6800000879	Roller Pin Weldment	2
22	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	2
23	118082	Bolt, Hex 1/2 X 3-1/2 UNC GR5 PL	2
24	6800000884	Mid Roller Arm	1

11 PARTS

11.9 Idle Roll Weldment & Roll Arm Assembly



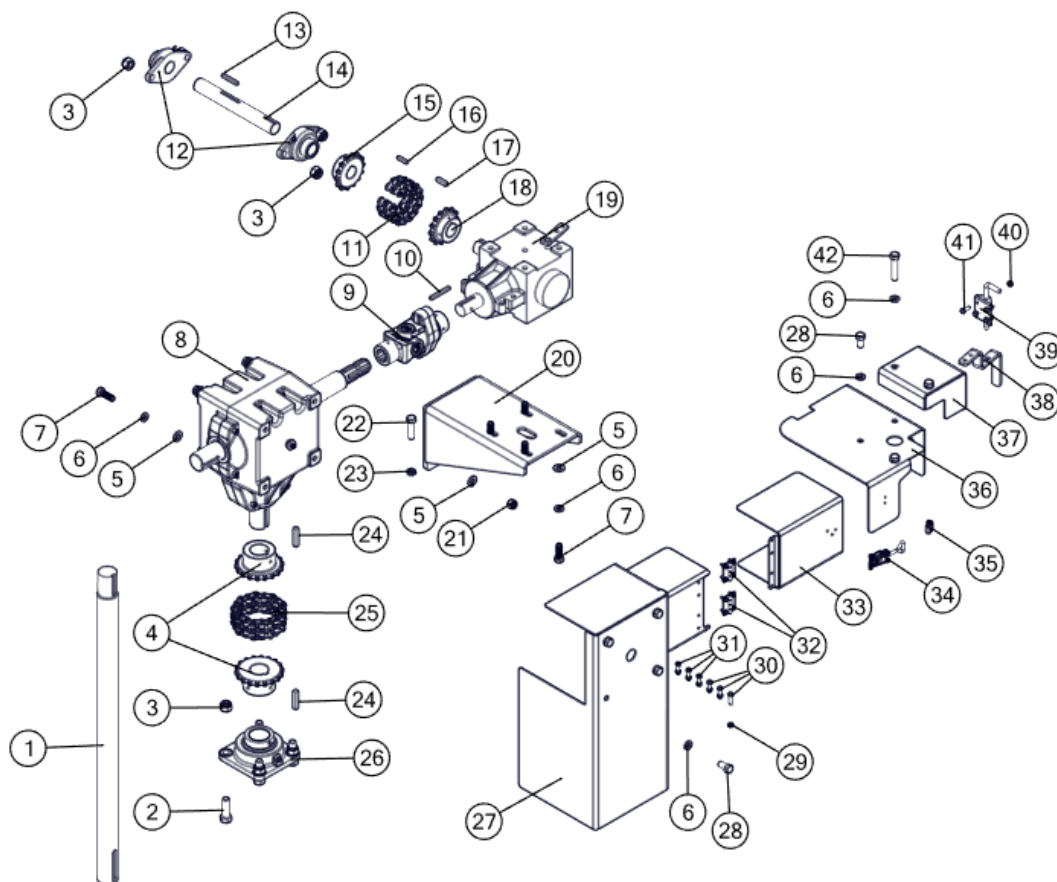
11 PARTS

11.10 Discharge Auger Gearbox and Sweep Auger Gearbox

REF #	PART #	DESCRIPTION	QTY
1	4809000075	Vertical Drive Shaft - Auger Drive	1
2	118026	Bolt, Hex 5/8 X 2 UNC GR5 PL	4
3	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	8
4	4809000077	Sprocket #60B-18t, 1-3/4" Bore	2
5	117810	Washer, Flat 1/2 SAE PL	12
6	118504	Washer, Lock 1/2 PL	16
7	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	8
8	3421000600	600 Series Superior T- Gearbox	1
9	3755000116	Universal Joint- 1-3/8 6 Spline to 1-1/4RB Ball Shear	1
10	4809000359	KS 1/4" x 2 1/2" - Cross Shaft - Sweep Drive	1
11	1401000059	Chain - Double #60 - 14 pins, 14rollers, w/ connector	1
12	1140000138	1-1/4" - 2 bolt Cast Flange Bearing	2
13	4809000083	KS 1/4" x 2" - Cross Shaft - Sweep Drive	1
14	4809000331	Drive Shaft - Sweep Drive Box	1
15	4809000333	14 Tooth #60 Sprocket x 1-1/4" Bore	1
16	4809000335	KS 1/4" x 1-1/4" - Cross Shaft - Sweep Drive	1
17	4809000334	KS 5/16" x 1.375" - Cross Shaft - Sweep Drive	1
18	1290000512	14 tooth #60 sprocket x 1-3/8 dia	1
19	4809000330	Shifter Gearbox/ R500 G-box - 1-3/8" Shafts, 90deg	1
20	6809000006	Gear Box Support Bracket	1
21	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	4
22	117725	Bolt, Hex 1/2 X 2 Tap UNC GR5 Full THD PL	1
23	117768	Nut, Jam 1/2 UNC PL	1
24	4809000080	KS 3/8" x 2" - T-Box Drive	2
25	1401000062	Chain Coupler - #60D x 18T	1
26	1140000250	Bearing - 4-Bolt Flange 1-15/16" ID NTN (UELFU-1.15/16M)	1
27	6809000041	Gearbox Cover Weldment	1
28	118008	Bolt, Hex 1/2 X 1 UNC GR5 PL	6
29	118483	Nut, Lock 1/4 UNC GR5 PL - Unitorque	6
30	118123	Bolt, Hex 1/4 X 1 UNC GR5 PL	3
31	1595000200	Hex Bolt 1/4" NC x 1" Gr.8	3
32	1530000800	Butt Hinge - 2" x 1-1/2"	2
**	117680	Screw, Pan #10-24 X 5/8 PL	8

11 PARTS

11.10 Discharge Auger Gearbox and Sweep Auger Gearbox



**	117767	Nut, Lock #10-24 UNC PL - Nylock	8
33	6800000963	Disconnect Shield	1
34	1540000140	Overcenter Latch - 4.7"	1
**	117684	Screw, Machine #10-24 X 1/2 PL	3
**	117767	Nut, Lock #10-24 UNC PL - Nylock	3
**	1613000771	3/32" x 1-11/16" Hair Pin - #3	1
35	1540000141	Catch - Overcenter Latch - 4.7"	1
**	117684	Screw, Machine #10-24 X 1/2 PL	2
**	117767	Nut, Lock #10-24 UNC PL - Nylock	2
36	4809000124	Gearbox Cover - Sweep Drive	1
37	6800000885	Lever Lock Weldment	1
38	4805000091	Gearbox Lever	1
39	1540000175	Spring Latch - 3/8"	1
40	117800	Nut, Lock 1/4 UNC GR5 PL - Nylock	4
41	118983	Bolt, Hex 1/4 X 3/4 UNC GR5 PL	4
42	118017	Bolt, Hex 1/2 X 2-1/2 UNC GR5 PL	2

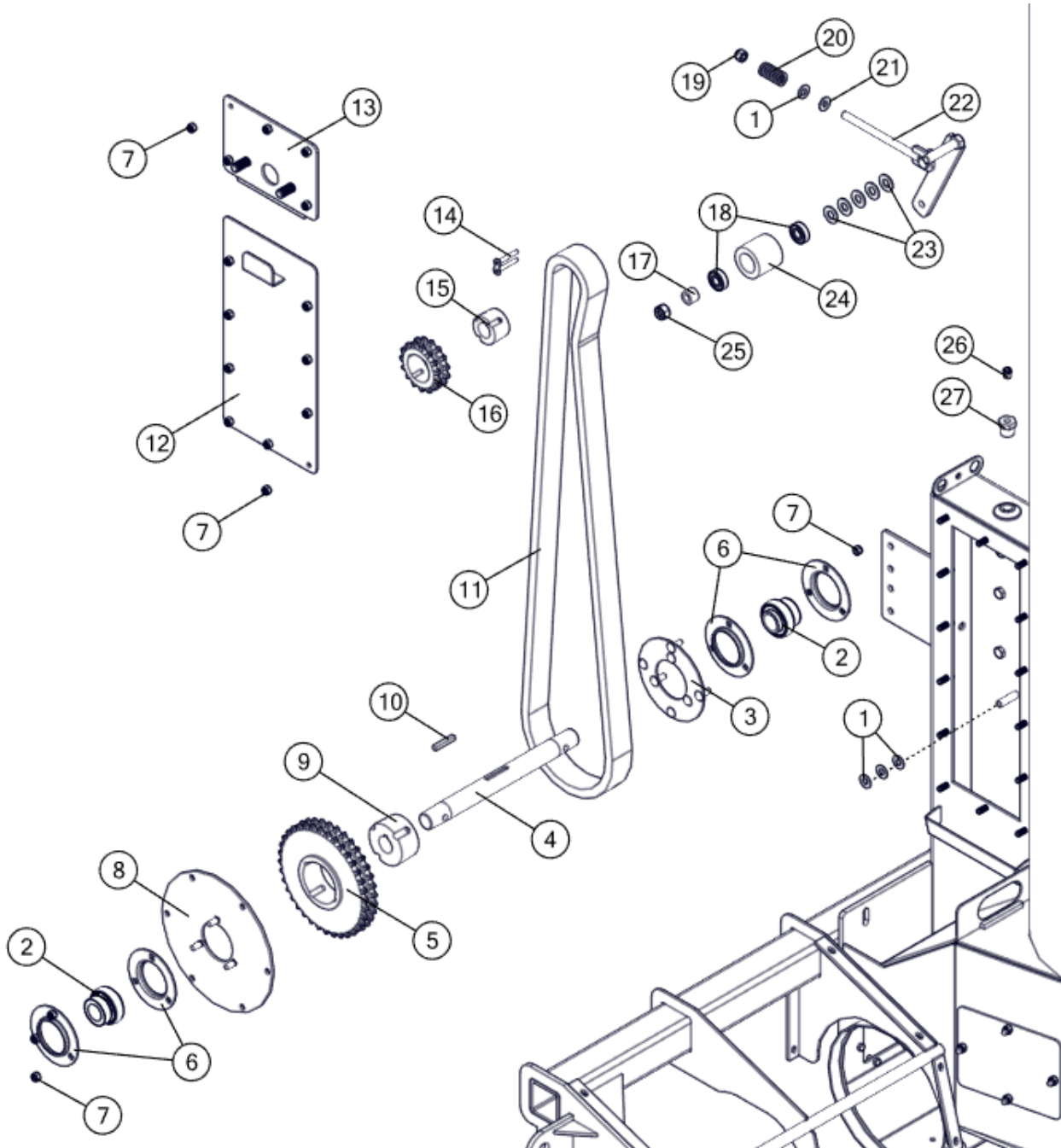
11 PARTS

11.11 Sweep Auger Drive

REF #	PART #	DESCRIPTION	QTY
1	117810	Washer, Flat 1/2 SAE PL	4
2	1140000130	Bearing 1-3/8" I/D, 72mm Cyl. O/D. Ecc. Lock	2
3	6809000024	Bolt Plate Assy - Lesser - Sweep Drive Gearbox	1
4	4809000053	Cross Shaft - Sweep Drive	1
5	1274000036	D60C - 36T - Taper Lock Sprocket	1
6	1140000172	Flangette 72MS	4
7	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	20
8	6809000023	Bolt Palte Weldment - Sweep Drive	1
9	1416000020	1-3/8" Taper Lock Bushing	1
10	4809000061	5/16" KS - Sweep Drive Sprocket	1
11	4809000064	D60 x 133 pitches Chain - Sweep Drive	1
12	6809000156	Cover panel - Upper - Lower - Sweep Drive Box	1
13	6809000155	Cover panel - Upper - Sweep Drive Box	1
14	1402000260	Connector Link - D60	1
15	1416000015	1-1/4" Taper Lock Bushing	1
16	1274000015	D60B - 15T - Taper Lock Sprocket	1
17	4809000067	Chain Tensioner Idler Spacer	1
18	1141000062	5/8" Bearing - 40mm OD	2
19	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	1
20	4802000123	Compression Spring 1" OD x 9/16" ID x 2" Long	1
21	1680000053	1/2" Rubber Washer	1
22	6802000014	Sweep Drive Chain Tensioner	1
23	117811	Washer, Flat 5/8 SAE PL	5
24	4809000068	Idler Roll - Sweep Gear Drive	1
25	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	1
26	1103000027	Filler Breather - 3/8" NPT	1
27	0854000906	Reducer 3/4" MPT x 3/8" FPT	1

11 PARTS

11.11 Sweep Auger Drive



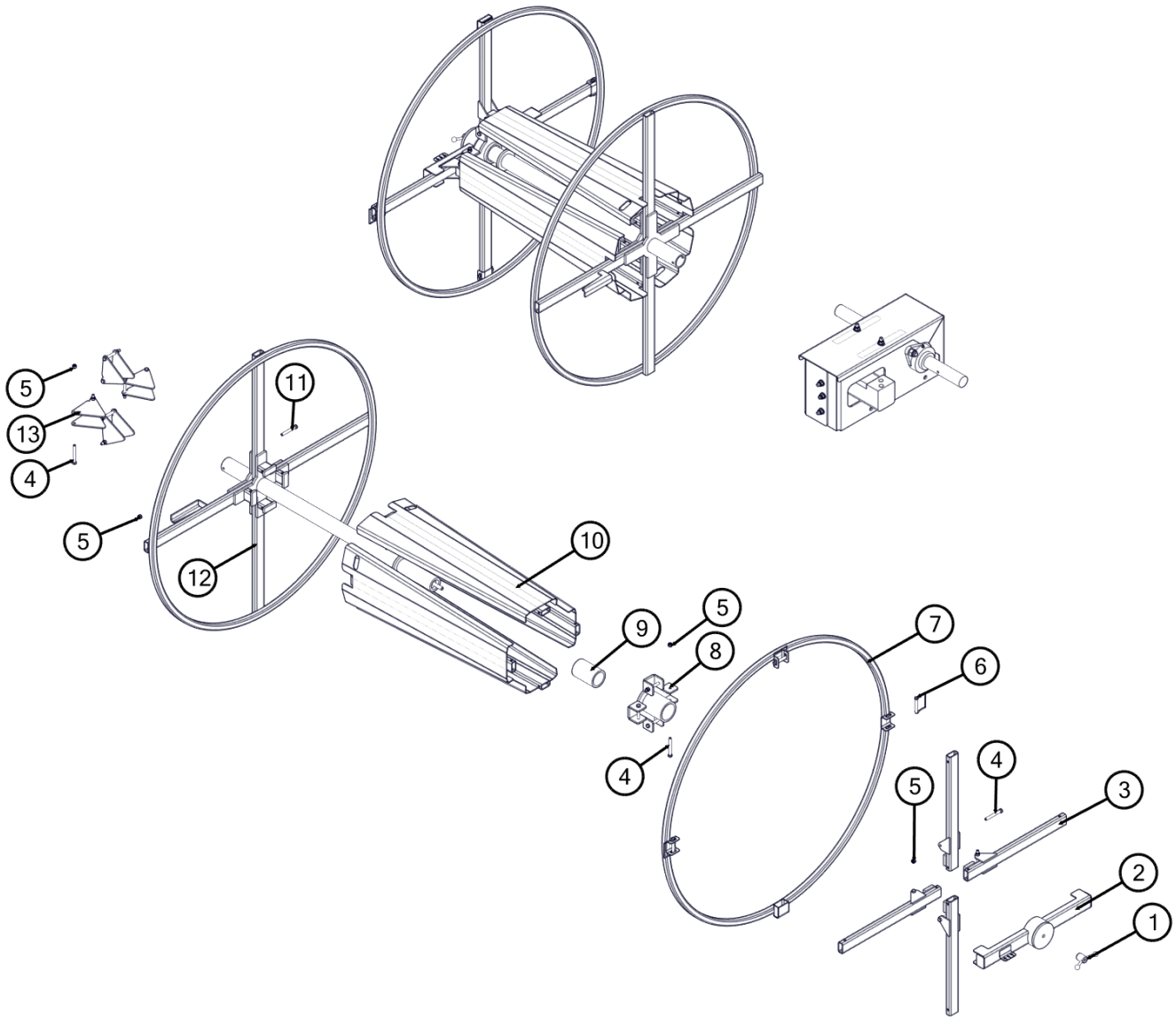
11 PARTS

11.12 Collapsible Rewind Wheel

REF #	PART #	DESCRIPTION	QTY
1	1400000219	Swing Knob	2
2	6804000048	Reel Lock	2
3	6804000052	Collapsing spoke weldment	8
4	117693	Bolt, Hex 3/8 X 3-1/4 UNC GR5 PL	32
5	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	36
6	1615000500	Quick Pin - 3/8 x 2-1/2" PLT wire lock	6
7	6804000050	Floating Guide Ring	2
8	6804000042	Sliding Hub	2
9	4804000183	UHMW Hub Bushing	2
10	6804000046	Reel plate	8
11	118644	Bolt, Hex 3/8 X 3 UNC GR5 PL	2
12	6804000053	Drive Wheel	2
13	4804000162	Pivot plates	16

11 PARTS

11.12 Collapsible Rewind Wheel



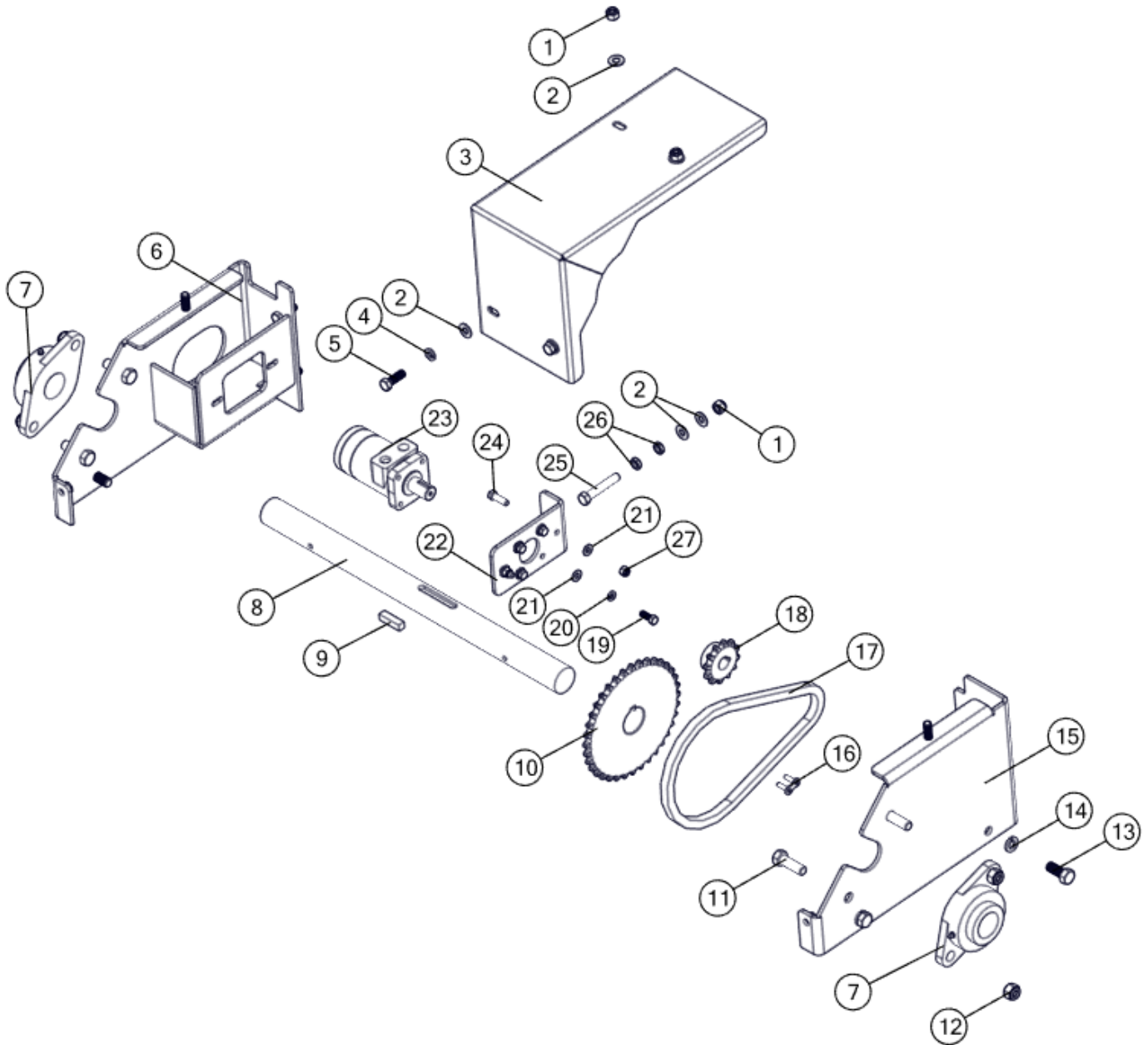
11 PARTS

11.13 Collapsible Rewind Box Assembly

REF #	PART #	DESCRIPTION	QTY
1	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	5
2	117810	Washer, Flat 1/2 SAE PL	8
3	4804000182	Cover Plate - Rewind Body	1
4	118504	Washer, Lock 1/2 PL	2
5	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	2
6	6809000099	Side Panel RH - Bag Rewind	1
7	1140000143	1-15/16" - 2-Bolt Flange Bearing	2
8	4804000169	Driveline Shaft - Rewind	1
9	4805000122	KS 1/2" x 1-7/8" - Driveline Shaft - Bag Rewind	1
10	1290000636	Sprocket - 36 Tooth #60 x 1-15/16"	1
11	118026	Bolt, Hex 5/8 X 2 UNC GR5 PL	4
12	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	4
13	118024	Bolt, Hex 5/8 X 1-1/2 UNC GR5 PL	4
14	118508	Washer, Lock 5/8 PL	4
15	6809000098	Side Panel LH - Bag Rewind	1
16	1402000065	Connector Link - #60	1
17	4809000238	Single #60H Chain - 47 links - Rewind	1
18	1290000612	Sprocket - 12 Tooth #60 x 1"	1
19	118005	Bolt, Hex 3/8 X 1 UNC GR5 PL	4
20	118503	Washer, Lock 3/8 PL	4
21	117809	Washer, Flat 3/8 SAE PL	6
22	4809000265	Motor Mount Plate - Bag Rewind	1
23	1111000005	Hydraulic Motor - 11.3 cu.in.	1
24	118129	Bolt, Hex 3/8 X 1-1/4 UNC GR5 PL	2
25	117726	Bolt, Hex 1/2 X 3 Tap UNC GR5 Full THD PL	1
26	117768	Nut, Jam 1/2 UNC PL	2
27	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	2

11 PARTS

11.13 Collapsible Rewind Box Assembly



11 PARTS

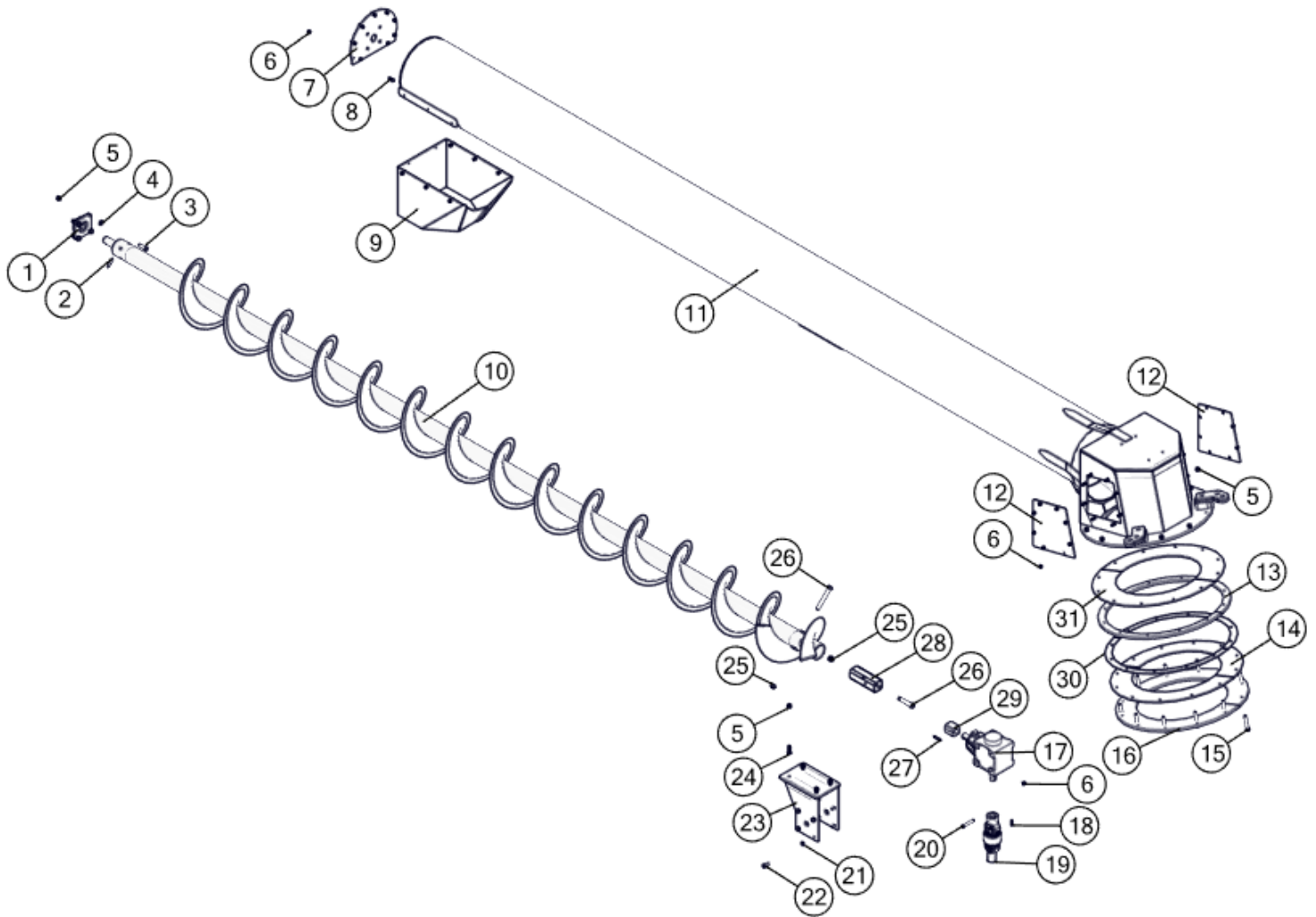
11.14 Discharge Auger

11.14.1 Discharge Auger – Upper Section

REF #	PART #	DESCRIPTION	QTY
1	1140000322	1-3/8" - 4-Bolt Flange Bearing	1
2	1722000793	Spring Pin - 5/16" x 2"	1
3	118292	Bolt, Hex 1/2 X 1-3/4 UNC GR5 PL	4
4	117810	Washer, Flat 1/2 SAE PL	4
5	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	20
6	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	32
7	4800000521	14" Endplate - Turret Auger	1
8	118005	Bolt, Hex 3/8 X 1 UNC GR5 PL	15
9	4800000647	Drop Chute - Turret	1
10	6809000139	Turret Auger Weldment - 500 Series	1
11	6809000157	Turret Auger Tube Weldment	1
12	4809000043	Cover Plate - Turret Auger	2
13	4809000041	1/2" Positional Ring - Turret	2
14	1471000271	Bottom Section - Turret Pivot	2
15	118112	Bolt, Hex 1/2 X 3 UNC GR5 PL	12
16	4809000038	Sandwich Plate - Turret Pivot	2
17	3421000500	500 Series Superior Gearbox	1
18	4800000622	Keystock - Sweep Drive Gear Box	1
19	3755000114	Series 14 CV Yoke Assemble	1
20	118644	Bolt, Hex 3/8 X 3 UNC GR5 PL	1
21	118504	Washer, Lock 1/2 PL	8
22	118008	Bolt, Hex 1/2 X 1 UNC GR5 PL	8
23	6809000097	Gearbox Bracket - Turret Auger	1
24	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	4
25	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	2
26	118117	Bolt, Hex 5/8 X 5 UNC GR5 PL	2
27	4800000827	Key Stock - 1/4 x 2	1
28	6713000409	Auger Square Drive 12" & 14"	1
29	6809000143	Square Drive Weldment - 1.25" Bore	1
30	4809000042	10ga Positional Ring - Turret	2
31	1471000270	Top Plate - Turret Pivot	2

11 PARTS

11.14.1 Discharge Auger – Upper Section



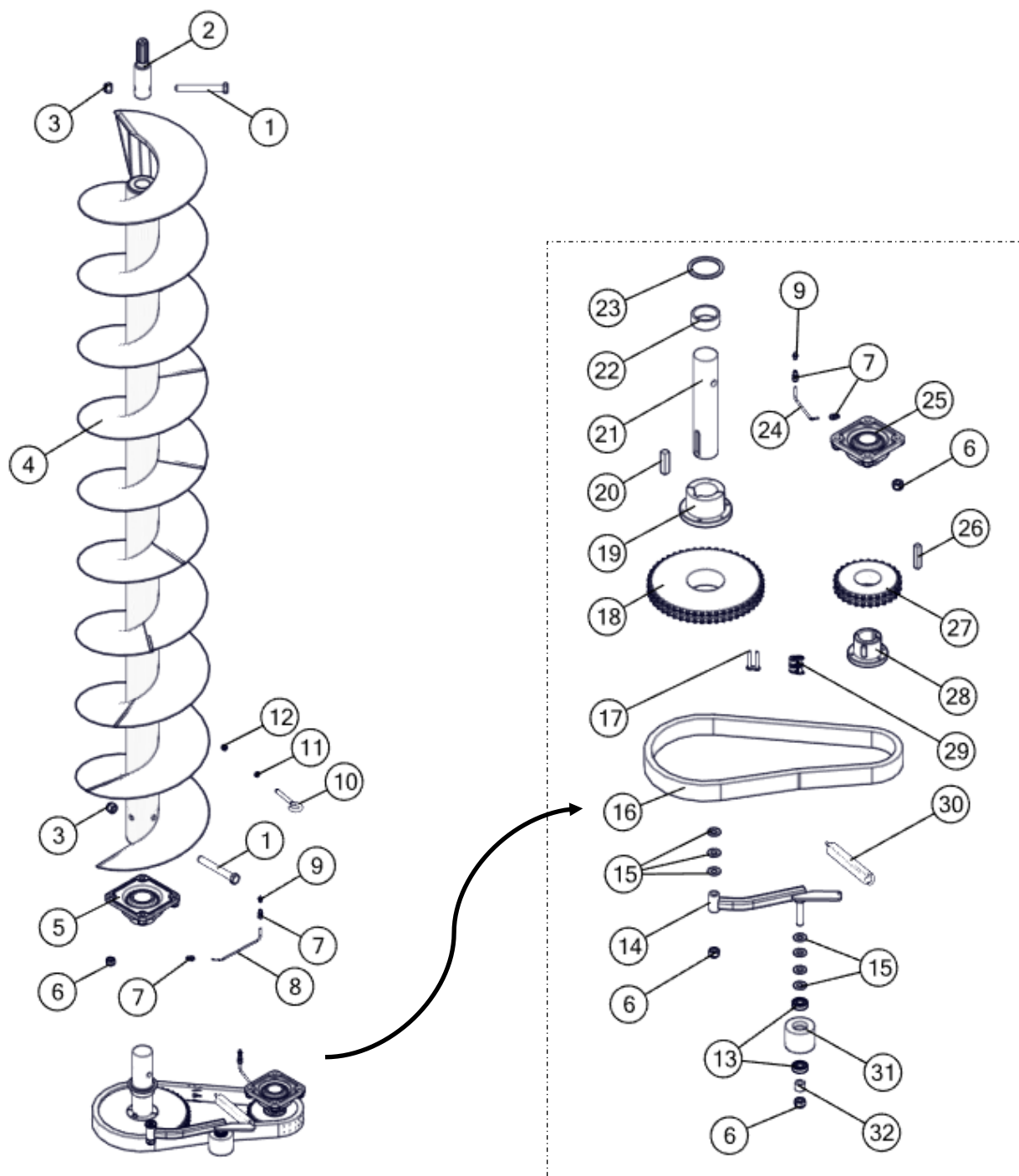
11 PARTS

11.14.2 Discharge Auger – Drive

REF #	PART #	DECRPTION	QTY
1	117721	Bolt, Hex 3/4 X 6 UNC GR8 PL	2
2	4809000051	Upper Stub Shaft - Vertical Auger	1
3	117273	Nut, Lock 3/4 UNC GR5 - Nylock	2
4	6809000003	Vertical Auger - Discharge - Sectional 11" Pitch	1
5	1140000253	NTN 2-7/16" 4 Bolt Flange Bearing	1
6	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	10
7	1078000203	Fitting - Brake Line to 1/8" NPT	4
8	4809000242	3/16" Steel Grease Line - Lower Bearing - Vert. Auger	1
9	1332000040	Grease Nipple - 1/8" NPT	2
10	1590000385	Eye Bolt - 3/8" NC x 5"	1
11	118415	Nut, Jam 3/8 UNC PL	1
12	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	1
13	1141000062	5/8" Bearing - 40mm OD	2
14	6800000813	Tensioning Arm - Primary Gear Case	1
15	117811	Washer, Flat 5/8 SAE PL	7
16	4809000065	D60 x 81 pitches Chain - Vertical Auger Drive	1
17	1402000260	Connector Link - D60	1
18	1274000648	D60B - 48T - Split Taper Sprocket	1
19	1415000145	B 2-7/16" Split Taper Bushing R1	1
20	4809000072	Key 5/8" x 2 9/16"	1
21	4809000050	Lower Stub Shaft - Vertical Auger	1
22	4809000312	Shaft Bushing - Packing Auger	1
23	4809000136	Auger Sealing Washer	1
24	4809000241	3/16" Steel Grease Line - Lower Bearing - Vert. Shaft	1
25	1140000250	Bearing - 4-Bolt Flange 1-15/16" ID NTN (UELFU-1.15/16M)	1
26	4809000071	Key 1/2" x 2 3/4"	1
27	1274000627	D60B - 27T - Split Taper Sprocket	1
28	1415000131	1-15/16" Split Taper Bushing Q1	1
29	1402000261	Offset Link - D60	1
30	3032000050	Extension Spring - 1-1/4" x 7"	1
31	4809000066	Tensioner - UHMW - Auger Drive	1
32	4809000067	Chain tensioner Idler Spacer	1

11 PARTS

11.14.2 Discharge Auger – Drive



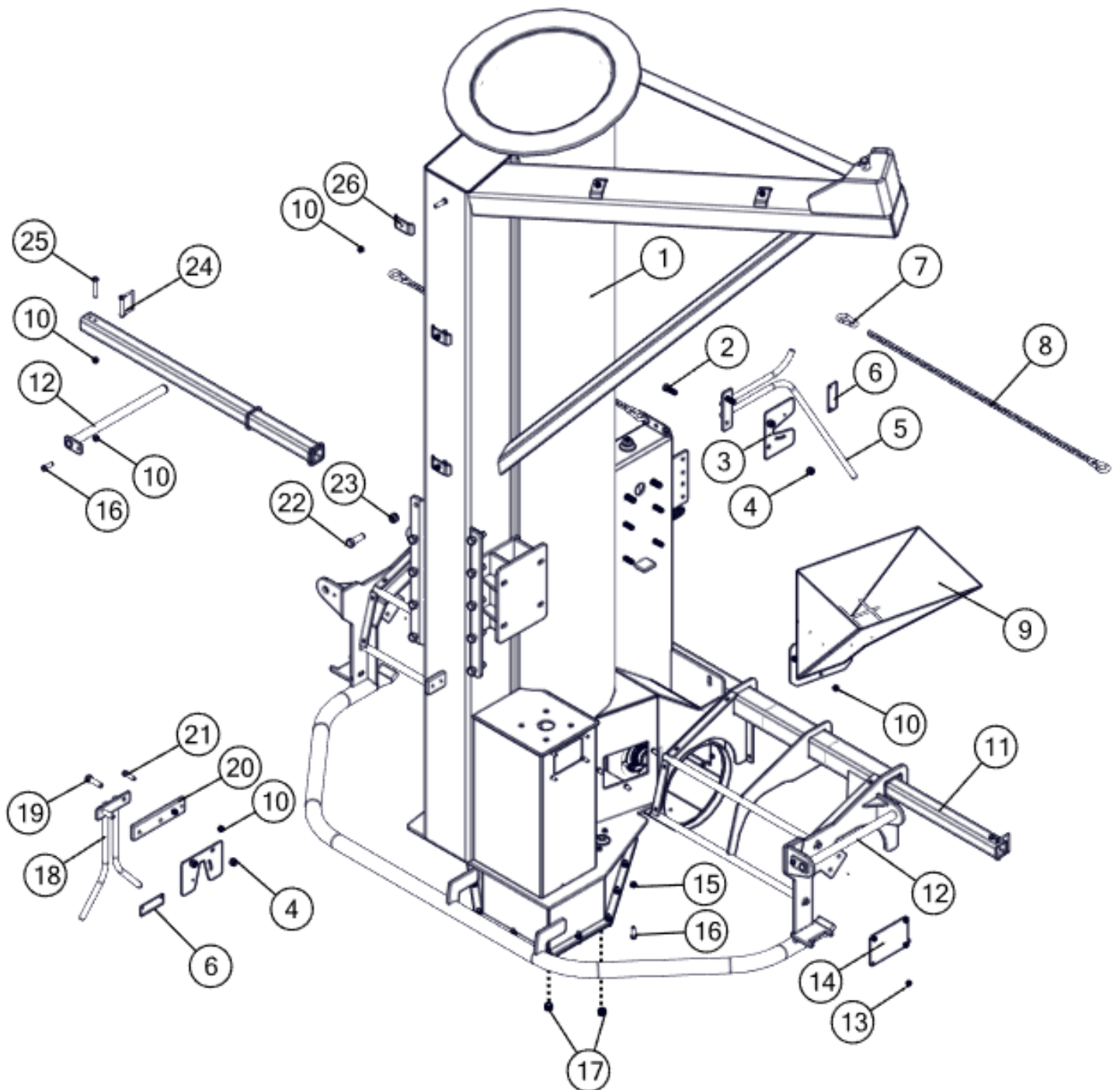
11 PARTS

11.14.3 Discharge Auger – Base

REF #	PART #	DESCRIPTION	QTY
1	6809000121	Vertical Auger Weldment	1
2	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	2
3	4802000670	Knife Guard	2
4	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	4
5	6800000568	Guide Bar Section - Knife	1
6	1619000106	Unloader Knife Blade	2
7	1400000150	Snap Latch	4
8	4801000766	Sweep Support Chain - 46 Links	2
9	6809000057	Clean-up Hopper	1
10	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	14
11	6800000835	Arm - Secondary Sweep Support	2
12	6809000069	Cross Pin Assembly - Sweep Ext. Assy	2
13	118703	Nut, Lock 5/16 UNC GR5 PL - Nylock	4
14	4809000295	Cover - Access Panel - Vertical Auger	1
15	118129	Bolt, Hex 3/8 X 1-1/4 UNC GR5 PL	17
16	117798	Nut, Flange 3/8 UNC - PL	15
17	1050000671	Pipe Plug - 3/4" Hex Key	2
18	6802000160	Guide Bar Section - Lower Knife	1
19	118014	Bolt, Hex 1/2 X 2 UNC GR5 PL	2
20	4801000901	Lower Knife Bracket	1
21	118136	Bolt, Hex 3/8 X 1-1/2 UNC GR5 PL	2
22	118026	Bolt, Hex 5/8 X 2 UNC GR5 PL	10
23	117804	Nut, Lock 5/8 UNC GR5 PL - Nylock	10
24	1615000500	Quick Pin - 3/8 x 2-1/2" PLT Wire Lock	2
25	118086	Bolt, Hex 3/8 X 2-1/2 UNC GR5 PL	2
26	4801000722	Hose Clamp	5

11 PARTS

11.14.3 Discharge Auger – Base



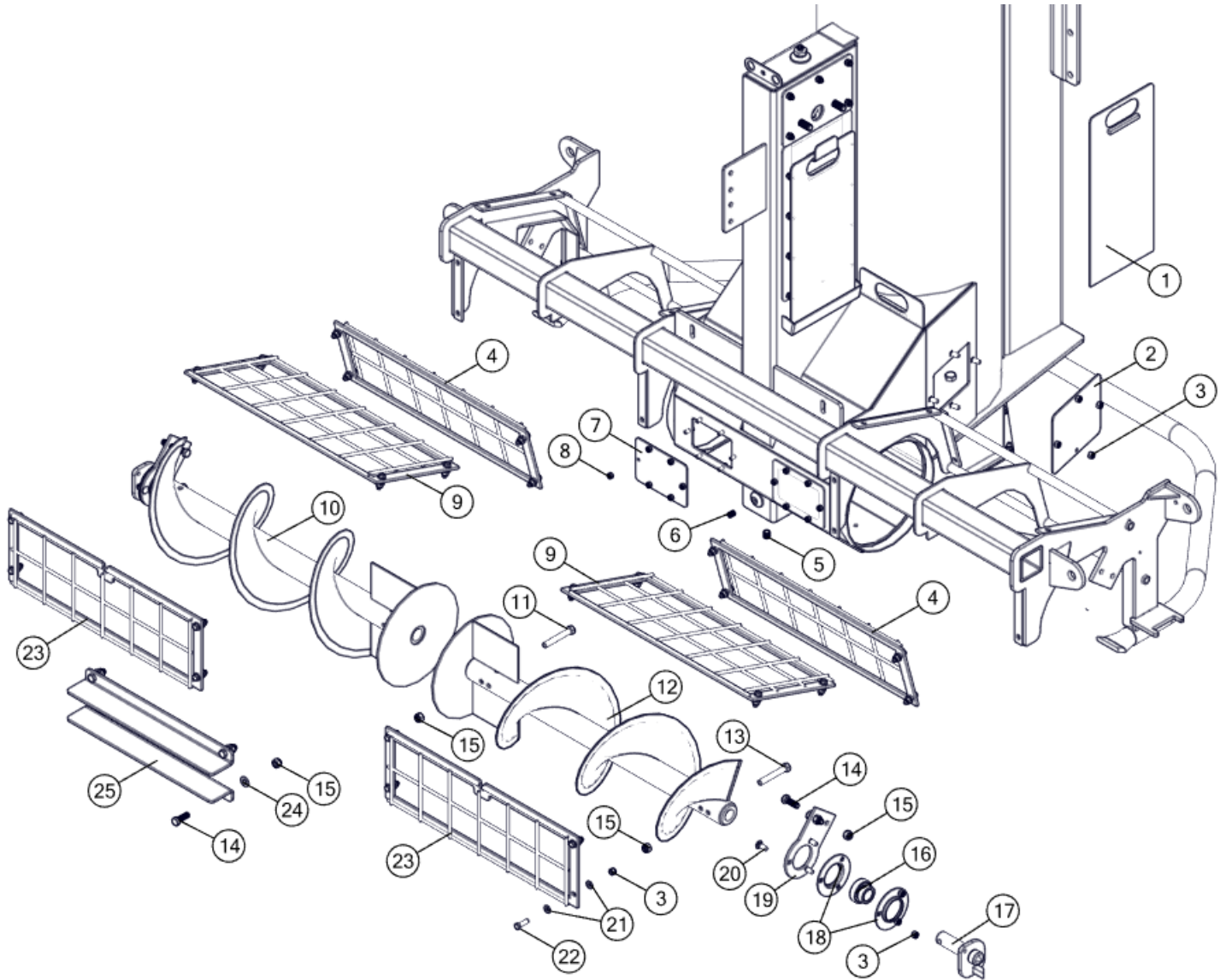
11 PARTS

11.14.4 Discharge Auger – Sweep Assembly

REF #	PART #	DESCRIPTION	QTY
1	6809000082	Grain Door	4
2	4809000217	Cover Plate - Side Panel	1
3	117801	Nut, Lock 3/8 UNC GR5 PL - Nylock	34
4	6809000106	Bolt-up Mesh Guard - Front Section - Main Sweep	2
5	1050000667	Pipe Plug 1/2" NPT Hex Key Head	1
6	1050000665	Pipe Plug 3/8" NPT Hex Key Head	1
7	4809000073	Cover Plate - Transition Box	2
8	118703	Nut, Lock 5/16 UNC GR5 PL - Nylock	8
9	6809000122	Bolt-up Mesh Guard - Top Section - Main Sweep	2
10	6809000028	Sweep Auger Wldmt - Driver Sider	1
11	1595000238	Hex Bolt 1/2" NC x 3-1/2" Gr.8 PL	2
12	6809000027	Sweep Auger - Pass. Side	1
13	118082	Bolt, Hex 1/2 X 3-1/2 UNC GR5 PL	2
14	118011	Bolt, Hex 1/2 X 1-1/2 UNC GR5 PL	8
15	117802	Nut, Lock 1/2 UNC GR5 PL - Nylock	12
16	1140000001	1-1/4" Bearing - 62mm OD, Eccentric Lock	2
17	6800000892	Sweep Axle - Passenger Side	2
18	1140000162	Flangette - 62mm	4
19	4809000118	Bearing Holder - Sweep	2
20	118226	Bolt, CRG 3/8 X 1 UNC GR5 PL	6
21	117809	Washer, Flat 3/8 SAE PL	48
22	118129	Bolt, Hex 3/8 X 1-1/4 UNC GR5 PL	24
23	6809000123	Bolt-up Mesh Guard - Rear Section - Main Sweep	2
24	117810	Washer, Flat 1/2 SAE PL	4
25	4809000384	Auger Guard - Fixing Bracket	2

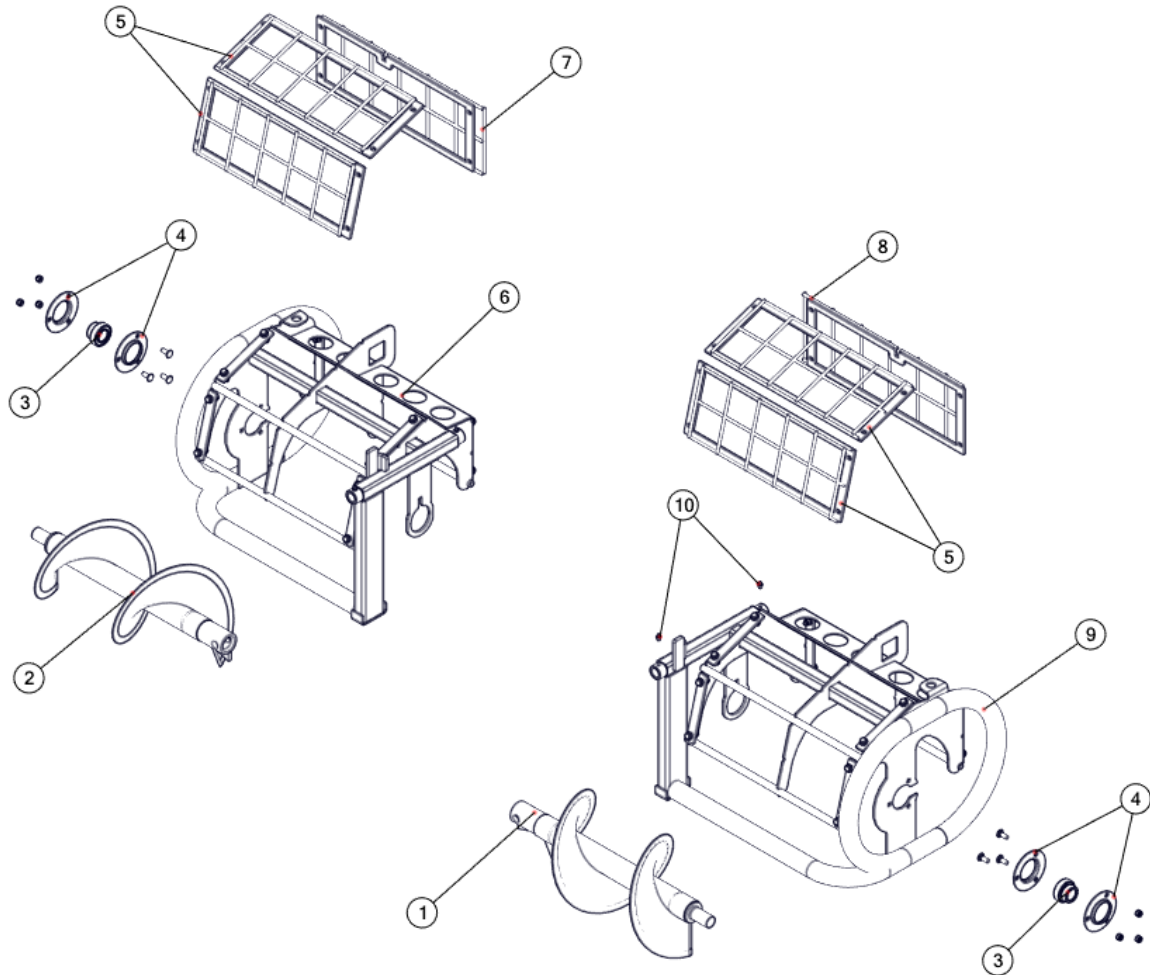
11 PARTS

11.14.4 Discharge Auger – Sweep Assembly



11 PARTS

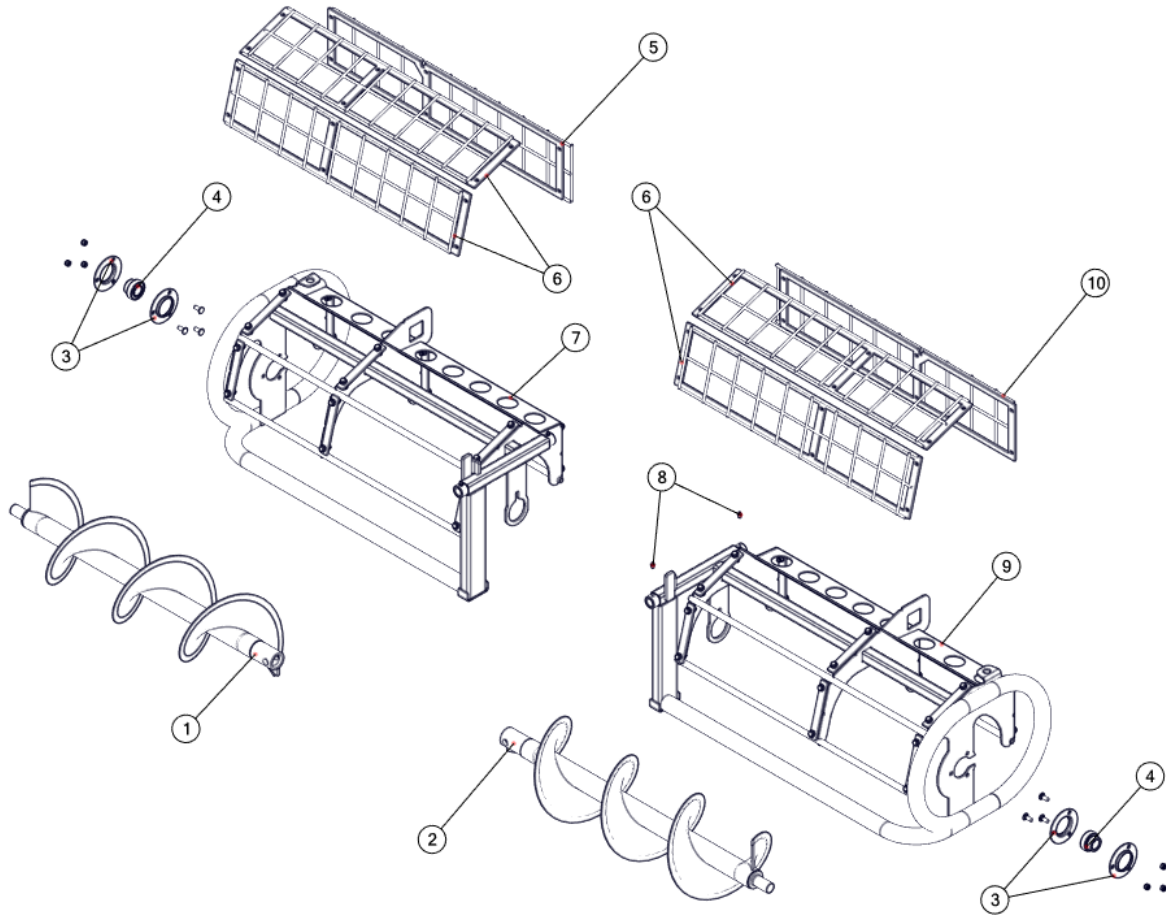
11.15 10FT Sweep Auger Extension (Optional)



REF #	PART #	DESCRIPTION	QTY
1	6809000093	Sweep Extension - 10ft Bag - Driver Side	1
2	6809000092	Sweep Extension - 10ft Bag - Passenger Side	1
3	1140000001	Insert 1-1/4" ECC. 62mm OD SA - Grease	2
4	1140000162	Flangette 62mm OD Bearing - 62MS	4
5	6809000134	Bolt-up Mesh Guard - Front/Top Section - 10' Sweep Ext.	4
6	6809000133	Auger Sweep Guard - 10' Sweep Extension - Passenger Side	1
7	6809000136	Bolt-up Mesh Guard - P.S. Rear Section - 10' Sweep Ext.	1
8	6809000135	Bolt-up Mesh Guard - D.S. Rear Section - 10' Sweep Ext.	1
9	6809000132	Auger Sweep Guard - 10' Extension - Driver Side	1
10	1332000040	Fitting Grease 1/8 NPT THR STR	4

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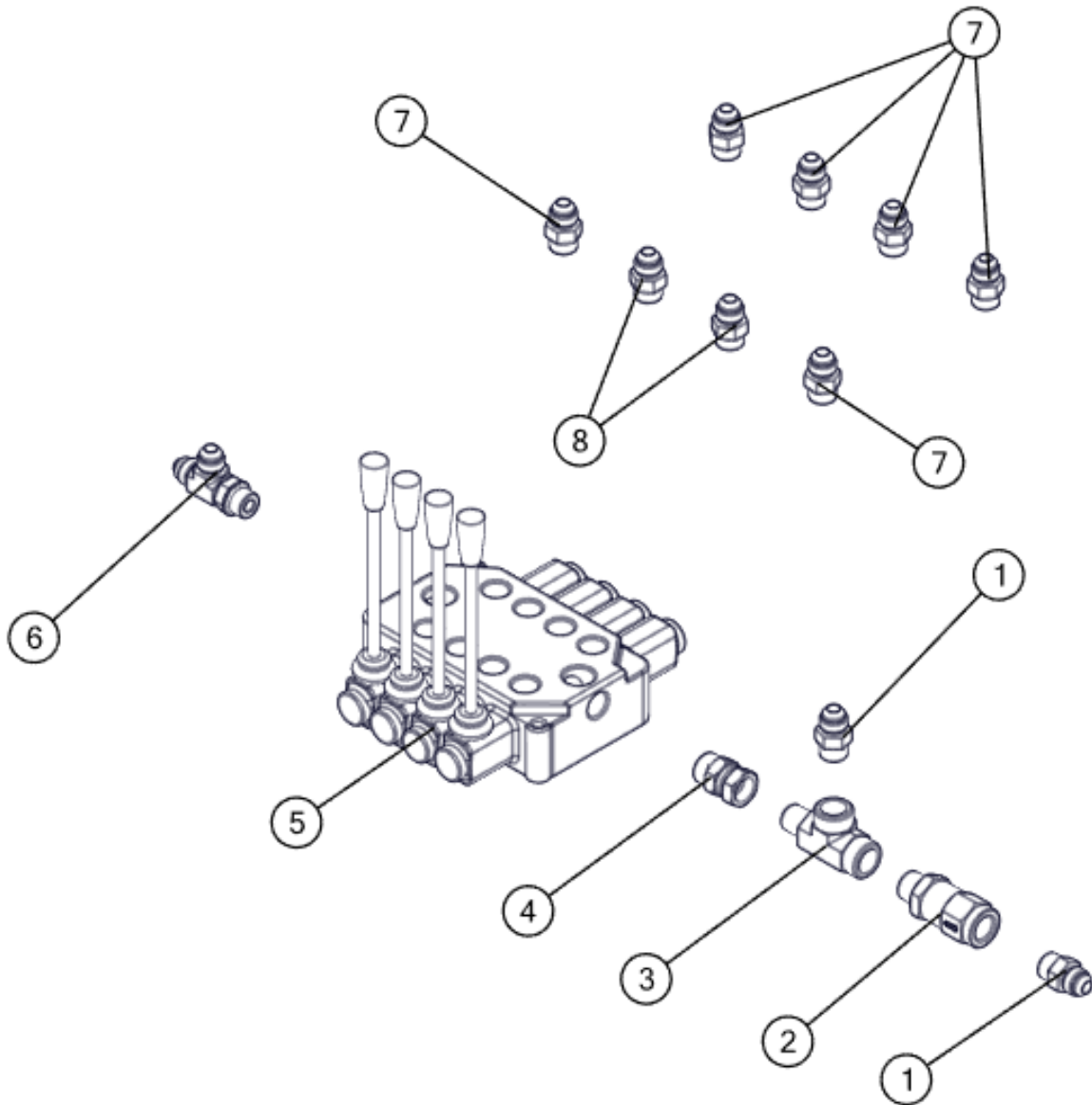
11.16 12FT Sweep Auger Extension (Optional)



REF #	PART #	DESCRIPTION	QTY
1	6809000034	Auger - 12' Sweep Extension - Passenger Side	1
2	6809000035	Auger - 12' Sweep Extension - Driver Side	1
3	1140000162	Flangette 62mm OD Bearing - 62MS	4
4	1140000001	Insert 1-1/4" ECC. 62mm OD SA - Grease	2
5	6809000131	Bolt-up Mesh Guard - P.S. Rear Section - 12' Sweep Ext	1
6	6809000129	Bolt-up Mesh Guard - Front/Top Section - 12' Sweep Ext.	4
7	6809000128	12ft Sweep Auger Extension - Passenger Side	1
8	1332000040	Fitting - Grease 1/8 NPT THR STR	4
9	6809000127	12' Sweep Ext Frame - Driver Side	1
10	6809000130	Bolt-up Mesh Guard - D.S. Rear Section - 12' Sweep Ext	1

11 PARTS

11.17 Hydraulic Control Valve

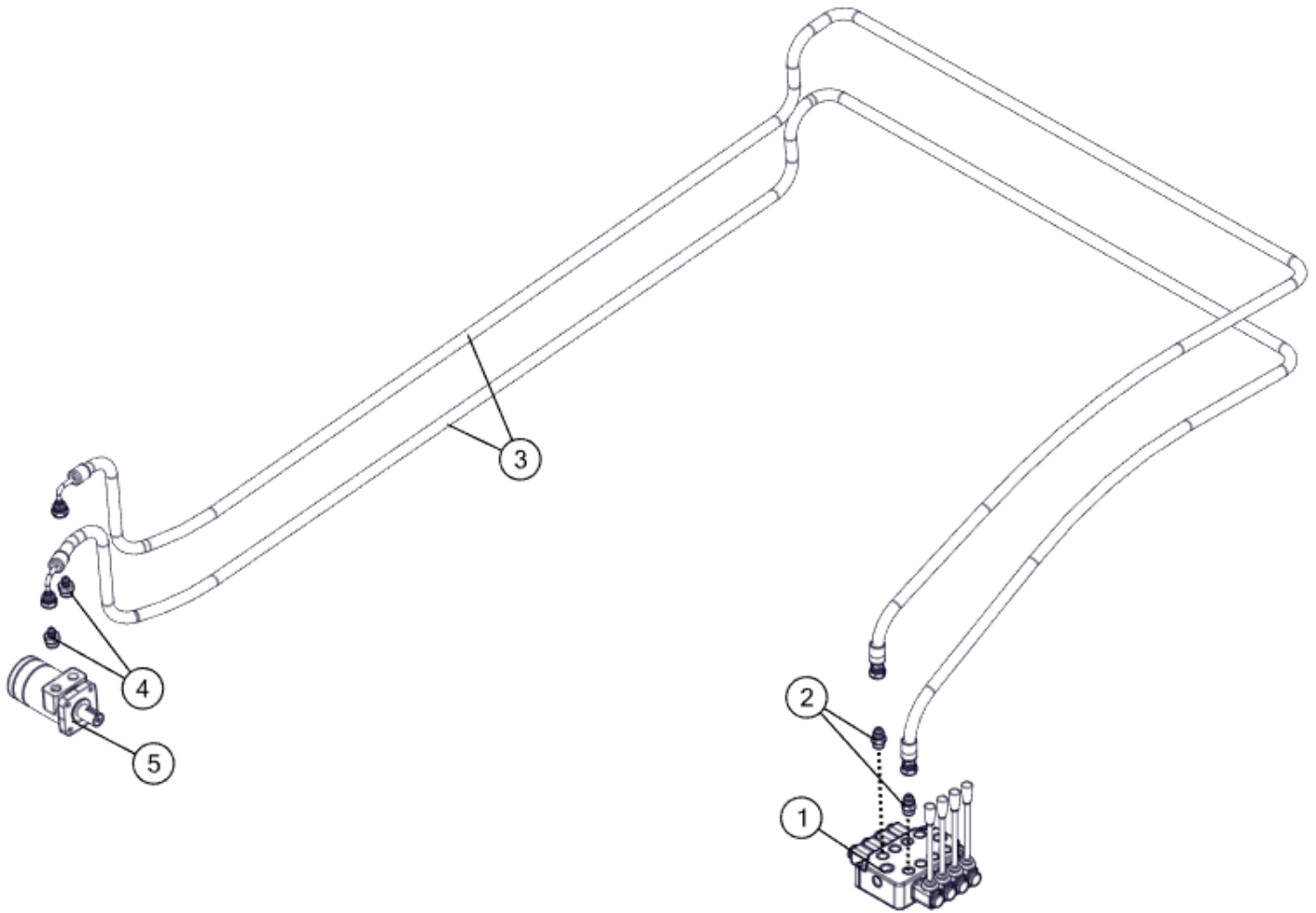


REF #	PART #	DESCRIPTION	QTY
1	0824000808	Hex Nipple - 1/2" MNPT x #8 JICM	2
2	1110000204	Check Valve 1/2" MPT x 1/2" FPT	1
3	0856000808	Tee - 1/2" MNPT x 1/2" FNPT x 1/2" FNPT	1
4	0869000810	Swivel Adapter - #10 ORB x 1/2" FNPT-sw	1
5	1101000415	Directional Control Valve - 1&4 Detent - FB Unloader	1
6	0851000908	Tee - #8 ORBM x #8 JICM x #8 JICM	1
7	0864000808	Hex Nipple - #8 JICM x #8 ORBM	6
8	0810000108	Orifice Adapter - #8 ORBM x #8 JICM x .062"	2

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11 PARTS

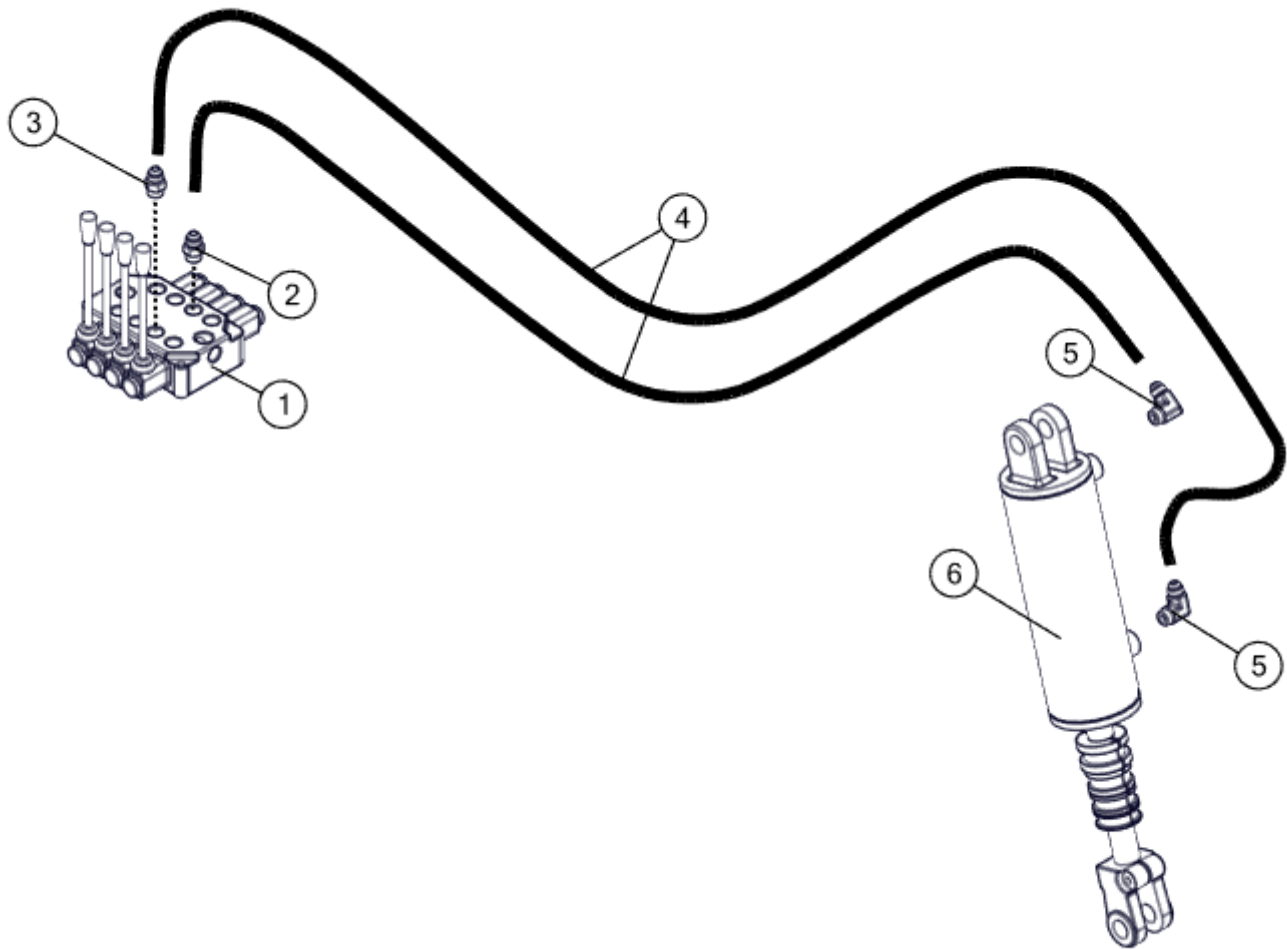
11.18 Plastic Rewind Hydraulics



REF #	PART #	DESCRIPTION	QTY
1	1101000415	Directional Control Valve - 1&4 Detent - FB Unloader	1
2	0864000808	Hex Nipple - #8 JICM x #8 ORBM	2
3	3926000188	Hyd Hose 188" Long 3/8 Hose x #8 JICF x #6 JICF 90deg Short	2
4	0864000810	Hex Nipple #6 JICM x #10 ORBM	2
5	1111000005	Hydraulic Motor - 11.3 cu.in.	1

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11.19 Axle Hydraulics



REF #	PART #	DESCRIPTION	QTY
1	1101000415	Directional Control Valve - 1&4 Detent - FB Unloader	1
2	0864000808	Hex Nipple - #8 JICM x #8 ORBM	1
3	0810000108	Orifice Adapter - #8 ORBM x #8 JICM x .062"	1
4	3926000136	Hydraulic Hose 136" Long 3/8 Hose x #8 JICF Both	2
5	0868000808	Elbow 90deg sw #8 JICM x #8 ORB	2
6	1077000003	4" Bore x 8" Stroke Hyd Cylinder	1

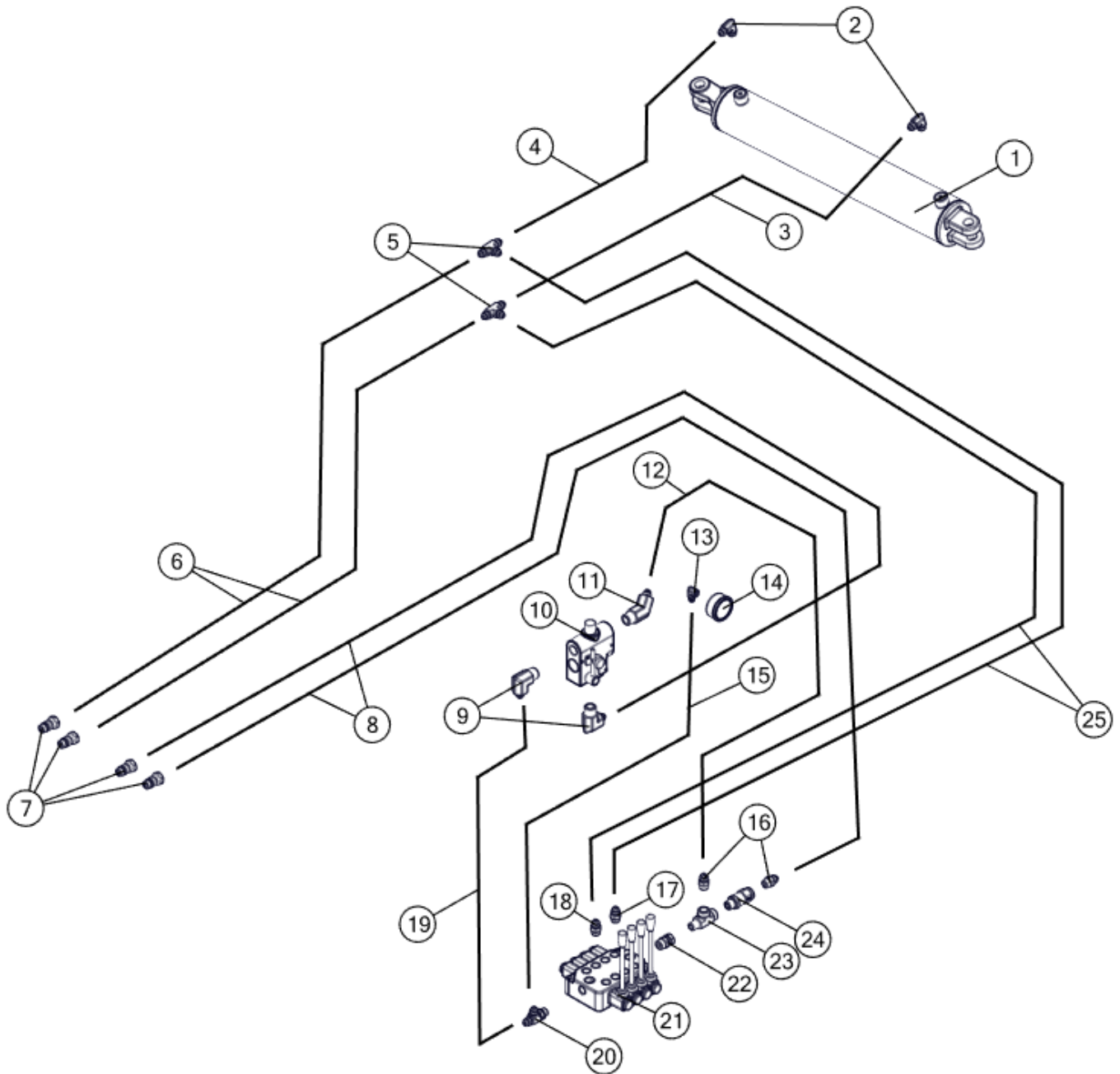
11 PARTS

11.20 Auger Hydraulics

REF #	PART #	DESCRIPTION	QTY
1	1077000005	4" Bore x 24" Stroke Hyd Cylinder	1
2	0868000808	Elbow 90deg sw #8 JICM x #8 ORB	2
3	3926000160	Hydraulic Hose 160" Long 3/8 Hose x #8 JICF Both	1
4	3926000179	Hydraulic Hose 179" Long 3/8 Hose x #8 JICF Both	1
5	0850000308	Tee - #8 JICM x #8 JICM x #8 JICM	2
6	3926000197	Hydraulic Hose 197" Long 3/8 Hose x #8 JICF x 1/2" MPT	2
7	1040000610	Hydraulic - Q/C Male Poppet 1/2" FNPT	4
8	3930000289	Hydraulic Hose 289" Long 1/2 Hose x #8 JICF x 1/2" MPT	2
9	0825000812	90° Elbow - 3/4" MNPT x #8 JICM	2
10	1101000402	Flow Control Valve - 3/4" Ports	1
11	0867000910	45deg Elbow 3/4" MPT x #8 JICM	1
12	3930000020	1/2" 2w x 19"- #8 JICF x #8 JICF	1
13	0825000603	90° Elbow - #6 JICM x 1/4" FNPT	1
14	1103000023	Pressure Gauge - Less Flange	1
15	3926000019	3/8" 2w x 19"- #8 JICF x 90de short #6 JICF	1
16	0824000808	Hex Nipple - 1/2" MNPT x #8 JICM	2
17	0810000108	Orifice Adapter - #8 ORBM x #8 JICM x .062"	1
18	0864000808	Hex Nipple - #8 JICM x #8 ORBM	1
19	3926000010	3/8" 2w x 10"- #8 JICF x 90de short #8 JICF	1
20	0851000908	Tee - #8 ORBM x #8 JICM x #8 JICM	1
21	1101000415	Directional Control Valve - 1&4 Detent - FB Unloader	1
22	0869000810	Swivel Adapter - #10 ORB x 1/2" FNPT-sw	1
23	0856000808	Tee - 1/2" MNPT x 1/2" FNPT x 1/2" FNPT	1
24	1110000204	Check Valve 1/2" MPT x 1/2" FPT	1
25	3926000092	Hydraulic Hose 92" Long 3/8 Hose x #8 JICF Both	2

11 PARTS

11.20 Auger Hydraulics



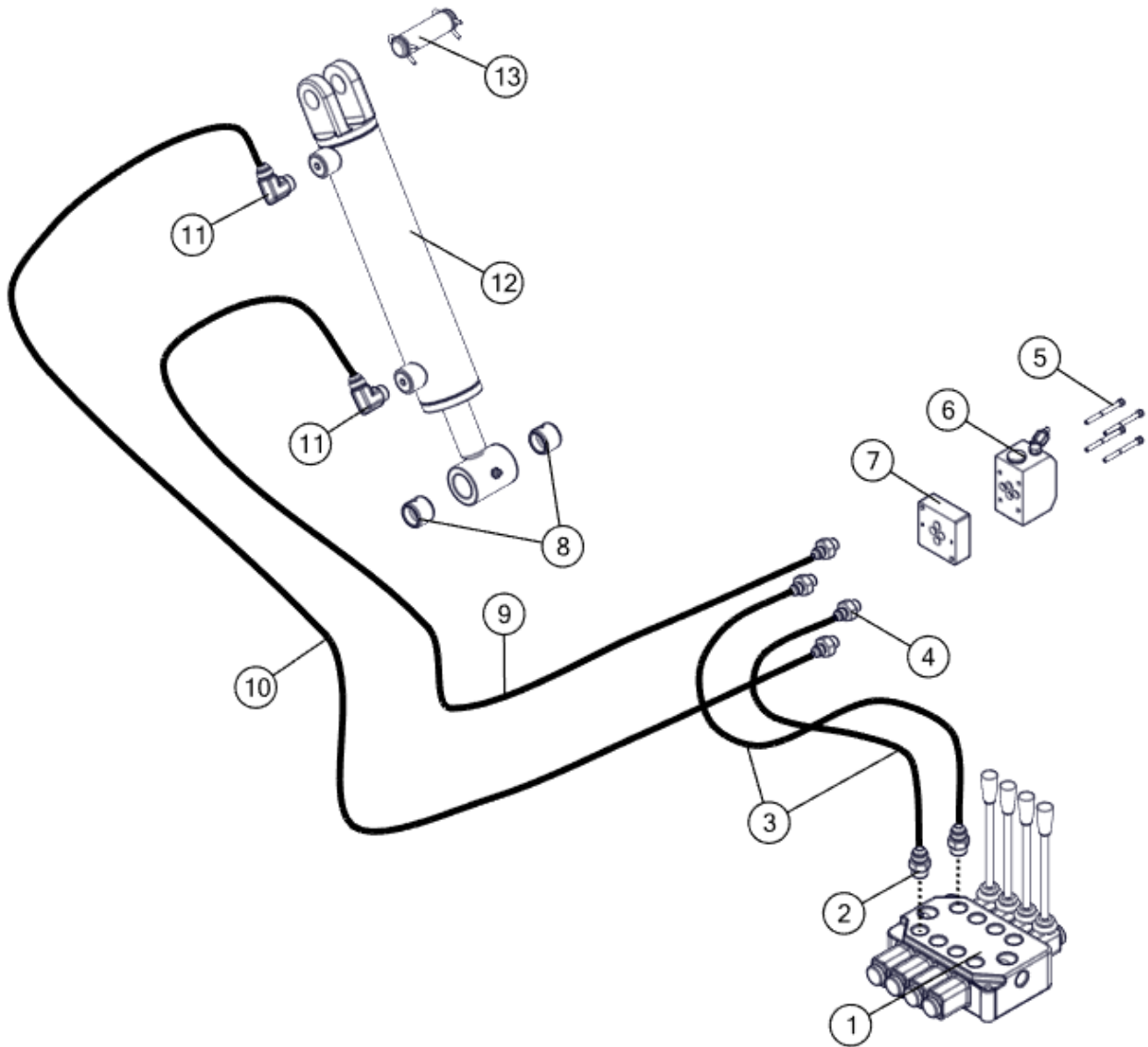
11 PARTS

11.21 Power Roll Hydraulics

REF #	PART #	DECRPTION	QTY
1	1101000415	Directional Control Valve - 1&4 Detent - FB Unloader	1
2	0864000808	Hex Nipple - #8 JICM x #8 ORBM	2
3	3926000019	3/8" 2w x 19"- #8 JICF x 90de short #6 JICF	2
4	0864000606	Hex Nipple - #6 JICM x #6 ORBM	4
5	1101000302	Socket Head Cap Screw 10-24 x 2-1/4"	4
6	1101000310	Inversion Valve	1
7	1101000311	Sub Plate - Inversion Valve	1
8	1132000030	Split Spring Bushing - 1" x 1"	2
9	3926000067	Hyd Hose 67" Long 3/8 Hose x #8 JICF x #6 JICF 90deg Short	1
10	3926000054	Hyd Hose 54" Long 3/8 Hose x #8 JICF x #6 JICF 90deg Long	1
11	0868000808	Elbow 90deg sw #8 JICM x #8 ORB	2
12	1077000001	Hydraulic Cylinder - 2-1/2" x 10" Stroke	1
13	1070000103	Cylinder Pin 1" Dia x 3"	1

11 PARTS

11.21 Power Roll Hydraulics



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