



Grain Carts
Dual-Auger Model 1950

Beginning With Serial Number D43840100

Part No. 25141

Foreword



This symbol identifies important safety messages. When you see it, read the message that follows and be alert to the possibility of personal injury.

Remember, safety instructions stated in this manual are for your protection. Read them carefully and follow them closely when working around or using this machine.

Read and study this manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.

When referenced, “Right-Hand” (RH) and “Left-Hand” (LH) side of the machine are determined by standing behind the machine and facing in the direction of travel.

IMPORTANT

- *The information, specifications, and illustrations in the manual are based on information available at the time it was written. Due to continuing improvements in the design and manufacture of Unverferth products, all specifications and information contained herein are subject to change without notice.*

Product Information

Please fill out and retain this portion for your records. All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

The serial number plate is located as shown below.

Product _____

Serial Number _____

Date of Purchase _____

Dealer _____

City _____ State _____ Zip _____

Please supply this information when you have questions or when ordering repair or replacement parts. Your dealer needs this information to give you prompt, efficient service.



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FOR TARP INFORMATION, PLEASE REFER TO YOUR TARP MANUAL.
FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.

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General Hazard Information

No accident-prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the field, or in the industrial plant, can be safer than the person who is at the controls. If accidents are to be prevented--and they can be prevented--it will be done by the operators who accept the full measure of their responsibility.

It is true that the designer, the manufacturer, and the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that, "the best kind of a safety device is a careful operator." We, at Unverferth Mfg. Co., Inc. ask that you be that kind of operator.



REMEMBER:
THINK SAFETY
A CAREFUL OPERATOR IS THE
BEST INSURANCE AGAINST AN
ACCIDENT!

SIGNAL WORDS

 **DANGER**

INDICATES AN EXTREMELY HAZARDOUS SITUATION OR ACTION THAT WILL RESULT IN SERIOUS INJURY OR DEATH.

 **WARNING**

INDICATES A HAZARDOUS SITUATION OR ACTION THAT COULD RESULT IN SERIOUS INJURY OR DEATH.

 **CAUTION**

INDICATES AN UNSAFE SITUATION OR ACTION THAT MAY RESULT IN PERSONAL INJURY.

IMPORTANT

Is used for instruction on operating, adjusting, or servicing a machine.

Safety Decals

WARNING

- REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.



Part No. 98279



Part No. 9003474



Part No. 9003478



Part No. 93552



Part No. 95046



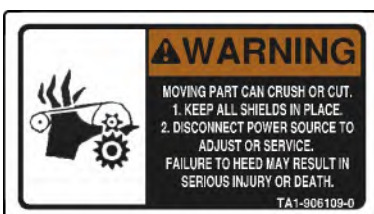
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Part No. 98229



Part No. 9003476



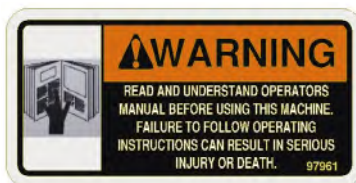
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Part No. 95839



Part No. 94094



Part No. 97961

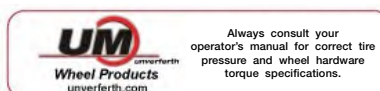


Part No. 97575

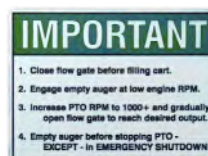


Part No. 95008

Amber Reflector - Part No. 9003127
 Red Reflector - Part No. 9003126
 Fluorescent Decal - Part No. 9003125



Part No. 94754







Part No. 9003477




Part No. 9008151



Follow Safety Instructions

- Read and understand this operator's manual before operating. 
- All machinery should be operated only by trained and authorized personnel.
- To prevent machine damage, use only attachments and service parts approved by the manufacturer.
- Always shut the tractor engine off and remove the key before servicing. 
- Avoid personal attire such as loose fitting clothing, shoestrings, drawstrings, pants cuffs, long hair, etc. that may become entangled in moving parts.
- Do not allow anyone to ride on the implement. Make sure everyone is clear before operating machine or towing vehicle. 
- Never attempt to operate the implement unless you are in the driver's seat.
- Never enter a cart containing grain. Flowing grain traps and suffocates victims in seconds. 

Before Servicing

- Avoid working under an implement; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked. 
- Ensure that all applicable safety decals are installed and legible.
- To prevent personal injury or death, always ensure that there are people who remain outside the cart to assist the person working inside, and that all safe workplace practices are followed. There is restricted mobility and limited exit paths when working inside the implement.
- Secure drawbar pin with safety lock and lock tractor drawbar in fixed position.
- Explosive separation of a tire and rim can cause serious injury or death. Only properly trained personnel should attempt to service a tire and wheel assembly.

Before Operating

- Do not stand between towing vehicle and implement during hitching. 
- Always make certain everyone and everything is clear of the machine before beginning operation.
- Verify that all safety shields are in place and properly secured. 
- Ensure that all applicable safety decals are installed and legible.
- Secure drawbar pin with safety lock and lock tractor drawbar in fixed position.

During Operation

- Regulate speed to field conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Keep away from overhead power lines. Electrical shock can cause serious injury or death.
- Use extreme care when operating close to ditches, fences or on hillsides.
- Do not leave equipment unattended with engine running.



Before Transporting

- Secure transport chains to towing vehicle before transporting. DO NOT transport without the chains.
- Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on machine. Make sure that the SMV emblem and SIS decal are visible to approaching traffic.
- This implement may not be equipped with brakes. Ensure that the towing vehicle has adequate weight and braking capacity to tow this unit.


During Transport

- Comply with all laws governing highway safety when moving machinery.
- Use transport lights as required by all laws to adequately warn operators of other vehicles.
- Use good judgement when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.
- Maximum transport speed of this implement should never exceed 20 mph as indicated on the machine. Maximum transport speed of any combination of implements must not exceed the lowest specified speed of the implements in combination. Do not exceed 10 mph during off-highway travel.
- Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.
- Do not transport the grain cart on roads while loaded.
- It is probable that this implement is taller, wider and longer than the towing vehicle. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.

Driveline Safety

- Do not allow children near equipment that is running or engaged.
- Do not exceed 1000 rpm PTO speed.
- Disengage the PTO, stop the tractor engine, and remove key from ignition before making inspections, or performing maintenance and repairs.
- Inspect the driveline, quick disconnect, overload shear-bolt limiter or clutch, and shielding often. Repair immediately. Use replacement parts and attaching hardware equivalent to the original equipment. Only alterations described in this manual for overall length adjustment are allowed. Any other alteration is prohibited.
- Avoid excessively long hardware or exposed and protruding parts which can snag and cause entanglement.
- Lubricate the driveline as recommended in the MAINTENANCE section.
- Keep hoses, wiring, ropes, etc. from dangling too close to the driveline.
- Install driveline and shields according to recommended lengths and attaching methods with recommended hardware. The driveline shield should rotate independently a full rotation and telescope freely. The retaining chain must be secured to the implement safety shield.
- Adjust drawbar to height recommended in tractor set up section.
- Be careful not to hit the driveline with tractor tires when turning.
- Check the length of the telescoping members to insure the driveline will not bottom out or separate when turning and/or going over rough terrain.
- Proper extended and collapsed lengths of the telescoping PTO shaft must be verified before first operation with each and every tractor. If the extended length of the PTO shaft is insufficient, it may become uncoupled during operation and cause serious injury or death from contact with uncontrolled flailing of PTO shaft assembly components.

Pressurized Oil

- Relieve the hydraulic system of all pressure before adjusting or servicing. See hydraulic power unit manual for procedure to relieve pressure.
- High-pressure fluids can penetrate the skin and cause serious injury or death. Use cardboard or wood to detect leaks in the hydraulic system. Seek medical treatment immediately if injured by high-pressure fluids. 
- Hydraulic system must be purged of air before operating to prevent serious injury or death.
- Do not bend or strike high-pressure lines. Do not install bent or damaged tubes or hoses.
- Repair all oil leaks. Leaks can cause fires, personal injury, and environmental damage.
- Route hoses and lines carefully to prevent premature failure due to kinking and rubbing against other parts. Make sure that all clamps, guards and shields are installed correctly.
- Check hydraulic hoses and tubes carefully. Replace components as necessary if any of the following conditions are found:
 - End fittings damaged, displaced, or leaking.
 - Outer covering chafed/cut or wire reinforcing exposed.
 - Outer covering ballooning locally.
 - Evidence of kinking or crushing of the flexible part of a hose.

Preparing for Emergencies

- Keep a first aid kit and properly rated fire extinguisher nearby.



- Keep emergency numbers for fire, rescue, and poison control personnel near the phone.



Wearing Protective Equipment

- Wear clothing and personal protective equipment appropriate for the job.



- Wear steel-toed shoes when operating.



- Wear hearing protection when exposed to loud noises.



- Do not wear additional hearing impairing devices such as radio headphones, etc



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Pre-Delivery Checklist

After the cart has been completely assembled, use the following checklist and inspect the cart. Check off each item as it is found satisfactory or after proper adjustment is made.

- Torque wheel nuts as specified in MAINTENANCE section.
- Axles are adjusted from shipping position to desired operating position. (If Applicable)
- Tires are inflated to specified air pressure. (If Applicable)
- All grease fittings have been lubricated and gearbox oil level checked.
- Check to be sure all safety decals are correctly located and legible. Replace if damaged.
- Check to be sure all reflective decals are correctly located.
- Check to be sure SMV decal is in place and shipping cover removed.
- Check to be sure transport lights are working properly.
- Check PTO. See “Verify Telescoping PTO Shaft Length” in MAINTENANCE section.
- Belts/Chains are aligned and properly tensioned.
- Check to be sure screens over auger are in place and properly secured.
- Transport chains are properly installed and hardware is torqued to specification. See “Transport Chain Connection” in OPERATION section.
- Paint all parts scratched in shipment.
- Test run the augers. See “Auger Operation” in OPERATION section.
- Check cleanout door assembly play or movement. See MAINTENANCE section for adjustment procedure.

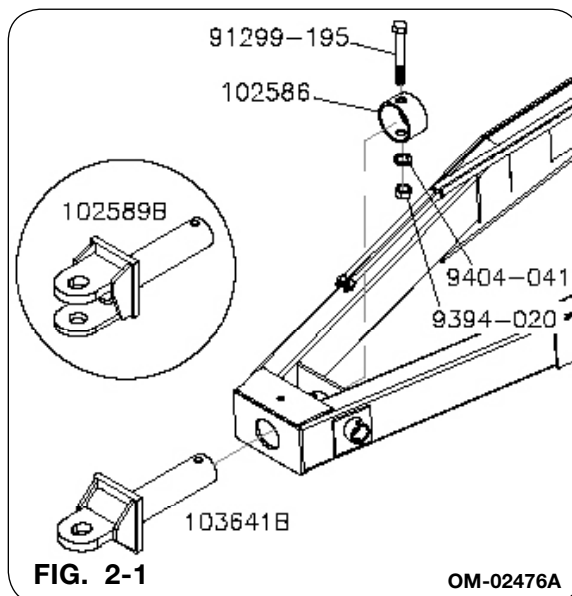
General Set Up Information

WARNING

- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 10,000 LBS. SPECIFIC LOAD RATING FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**
- **TO PREVENT PERSONAL INJURY OR DEATH, ALWAYS ENSURE THAT THERE ARE PEOPLE WHO REMAIN OUTSIDE THE CART TO ASSIST THE PERSON WORKING INSIDE THE CART, AND THAT ALL SAFE WORKPLACE PRACTICES ARE FOLLOWED. THERE IS RESTRICTED MOBILITY AND LIMITED EXIT PATHS WHEN WORKING INSIDE THE CART.**
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

Hitch Installation

1. Insert hitch into frame weldment and secure using coupler (102586) and 1"-8 x 6" capscrew (91299-195), 1" lock washer (9404-041), and 1"-8 hex nut (9394-020).



Wheel/Tire Set Up

Tire Pressure

Tire pressure must be verified before first use and adjusted as necessary. Refer to maintenance section of this manual for information on tire pressure.

Wheel Nuts

CAUTION

- IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE "MAINTENANCE" SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.

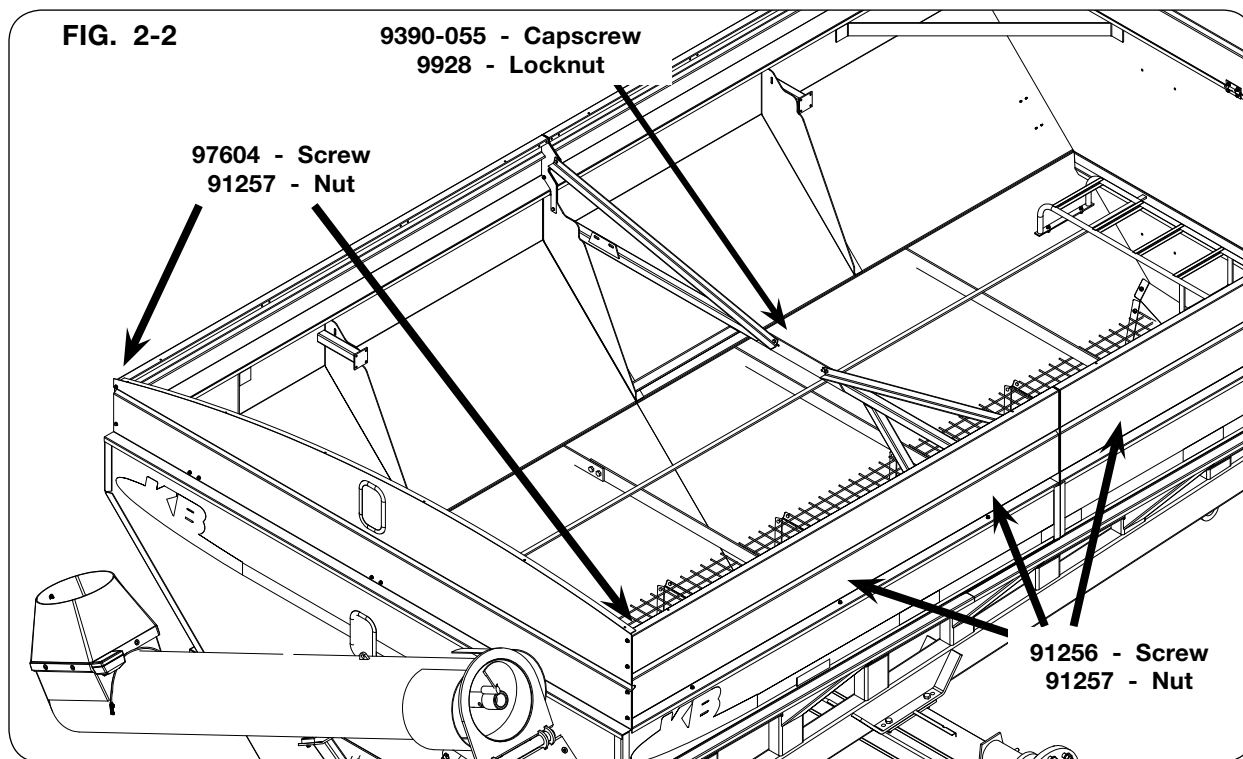
IMPORTANT

- *Installing wheels without the proper inset could result in hub or spindle failure. This will cause substantial damage to cart.*

Sideboards

Sideboards are shipped either completely assembled or folded down. If your cart was shipped with the sideboards folded down proceed as follows:

1. Unfold the front and rear sideboards after removing and discarding shipping straps. Raise the right-hand sideboard and secure it to the front and rear sideboards using screws/large flange 5/16"-18UNC x 1" (97604) and hex nuts/large flange 5/16"-18UNC (91257). Repeat this process for the left-hand sideboard.
2. Attach the sideboard angles (25039W) to the cart using capscrews 3/8"-16UNC x 1" (9390-055) and locknuts 3/8"-16UNC (9928) as shown in Fig. 2-2.
3. Secure the left-hand and right-hand sideboards to the cart using screws/large flange 5/16"-18UNC x 3/4" (91256) and hex nuts/large flange 5/16"-18UNC (91257) as shown in Fig. 2-2.



Transport Lighting and Markings

NOTE: Unverferth Manufacturing has designed the transport lighting and marking kit to meet United States federal law and ASABE standards at the time of manufacture. Machine modifications, including additional features or changes to the intended configurations, may require updates to the lighting and marking as well.

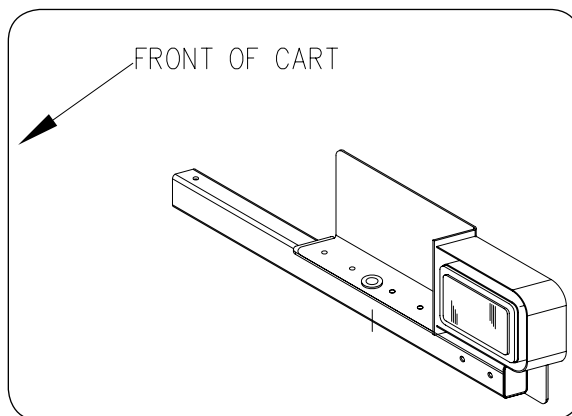
Compliance with all lighting and marking laws is the responsibility of the operator at the time of travel.

See federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Killbros dealer for additional brackets, reflectors, or lights to meet your requirements.

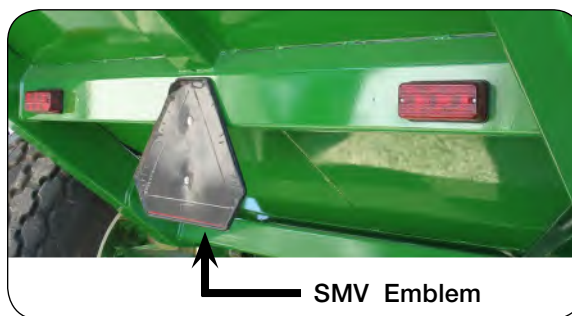
Lamp Set-Up

Pivot lamp extension arms into position at sides of cart. If necessary, adjust lamp mount position to achieve dimension shown. Be sure that amber reflector is facing the front of the cart (some lights on certain cart models will be flipped down for shipping).



SMV Emblem

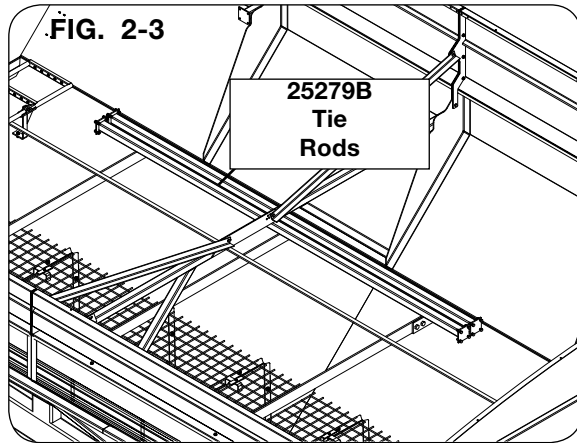
Before the cart is used the reflective surface of the SMV must face rearward. This may require removal of film protecting the reflective surface or removing and reinstallation of the SMV. When reinstalling the SMV make sure that it is mounted with the wide part of the SMV at the bottom.



Tank Tie Rods

IMPORTANT

- Tie rods are located inside the cart for shipping.
1. Secure tie rods (25279B) as shown to inside of cart with hardware provided. See Fig. 2-3 & 2-4.



Coupling PTO Driveshaft

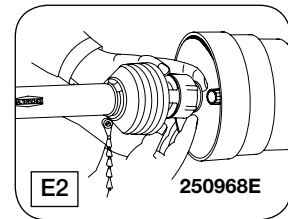
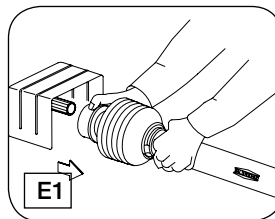
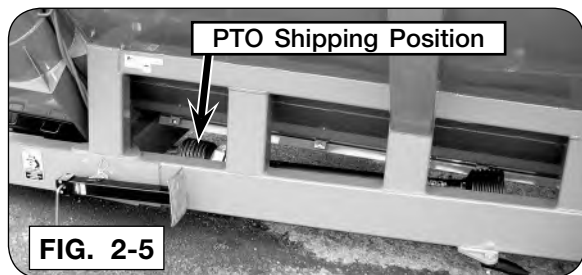
PTO is shipped under the grain cart on the left-hand side.

Clean and grease the PTO and implement input connection (IIC)

1. Pull locking collar and simultaneously push PTO driveshaft onto PTO shaft until the locking device engages.

IMPORTANT

- Check to insure all the locks are securely engaged before starting work with the PTO driveshaft.



Ladder Installation

WARNING

- TO PREVENT PERSONAL INJURY OR DEATH ALWAYS ENSURE THAT THERE ARE PEOPLE WHO REMAIN OUTSIDE THE CART TO ASSIST THE PERSON WORKING INSIDE THE CART, AND THAT ALL SAFE WORK PLACE PRACTICES ARE FOLLOWED. THERE IS RESTRICTED MOBILITY AND LIMITED EXIT PATHS WHEN WORKING INSIDE THE CART.

IMPORTANT

- *Ladder is located inside the cart for shipping.*

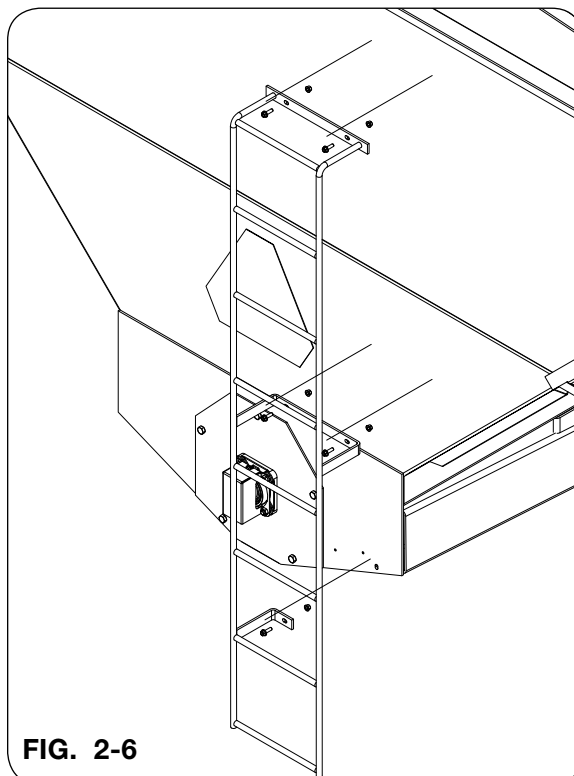
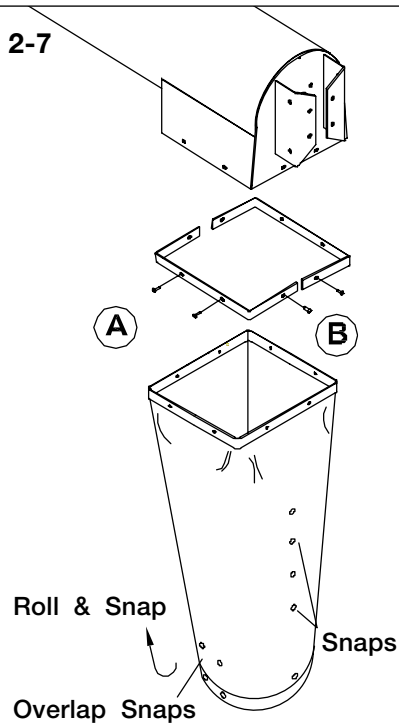


FIG. 2-6

Optional Adjustable Canvas Spout Installation

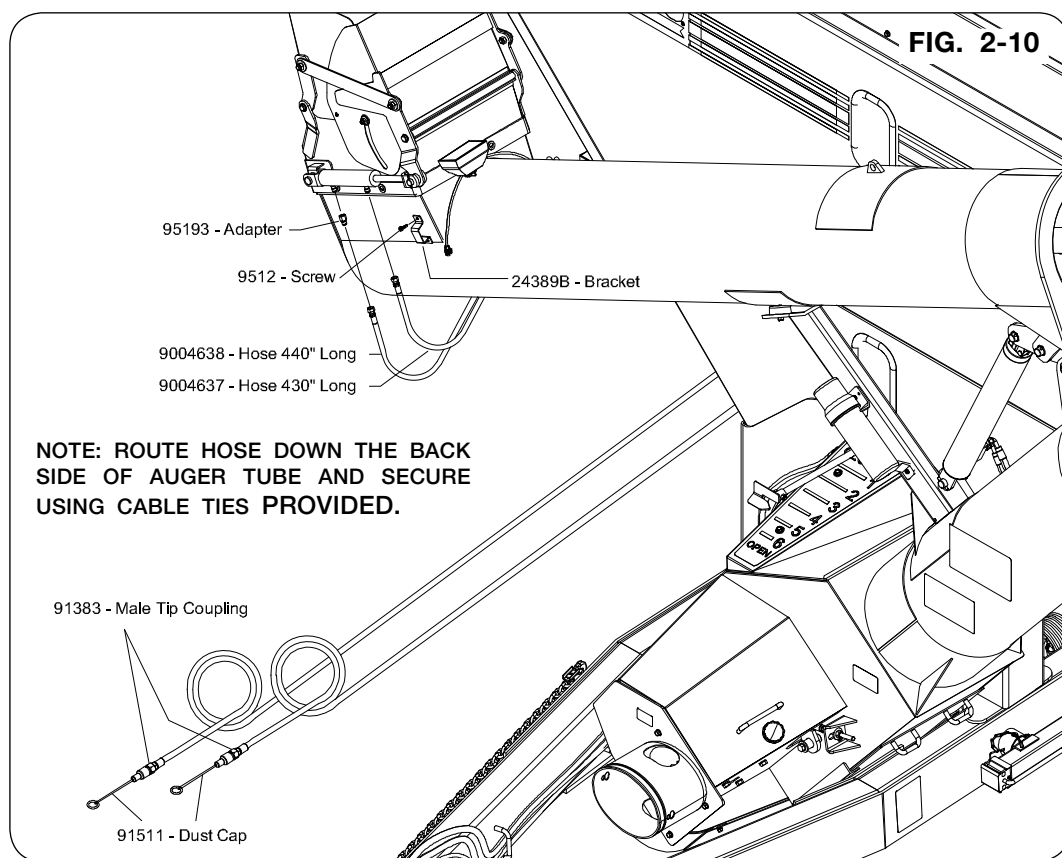
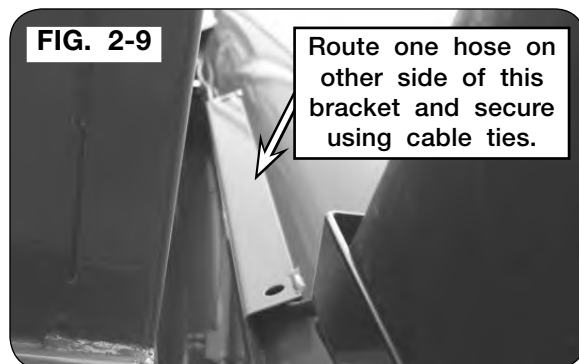
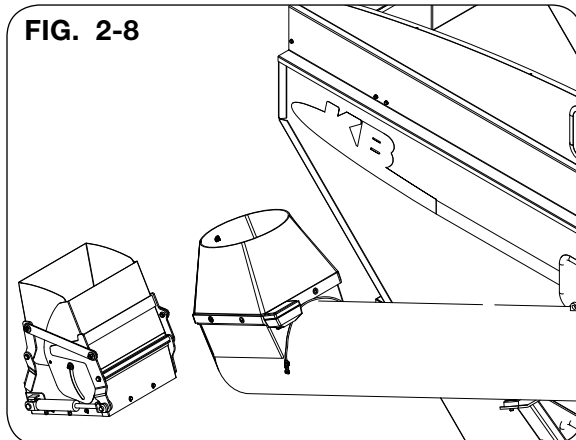
1. For ease of installation, auger should be in transport position.
2. Remove the rubber chute. Save the steel straps and enough hardware to reassemble them. (See Fig. 2-7)
3. Slide canvas over auger spout, turned so that the seam is on the bottom side of the spout.
4. Reinstall straps. Place the side nuts and bolts first. (A) Then place the top and bottom nuts and bolts. (B)
5. Snap the four overlap snaps. Be sure to roll the bottom of the canvas evenly as the overlap snaps are snapped. This will provide the lower portion of the chute support and keep its shape.
6. To adjust to desired length, unsnap overlap, roll chute on outside and snap in place.

FIG. 2-7



Optional Directional Downspout #24391 Installation

1. Remove the standard chute shown in Fig. 2-8 and attach the new directional downspout with the hardware provided.
2. Attach the adapter (95193) to the cylinder on the directional downspout (Fig. 2-8).
3. Connect the hydraulic hoses (9004637 & 9004638) to the directional downspout as shown in Fig. 2-8.
4. Connect the male tip coupling (91383) and dust cap (91511) to the ends of the hydraulic hoses (Fig. 2-8).
5. Secure bracket (24389B) using screws (9512) as shown in Fig. 2-8.
6. Route the hoses through the bracket (24389B) and along the back side of the auger secure using cable ties (Fig. 2-9).
7. Cycle the cylinder multiple times to purge air from cylinder and lines.



Chain Oiler #23250 Installation

⚠ WARNING

- EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING THE IMPLEMENT.

1. Park the empty cart on a firm, level surface. Block the tires on the machine to keep it from moving. Set the tractor's parking brake, shut off the engine, remove the ignition key and disconnect the PTO shaft and hydraulics from the tractor and cart.
2. Remove the 5/16"-18UNC x 1" capscrews (9390-030) and lock washers (9404-021) so the guard weldment (27395B) can be removed as shown in Fig. 2-18.
3. Insert the brush (96863) into the bracket (23112) and secure with 3/8" flat washer (9405-076) and elbow (98134). The elbow must face the left-side (Fig. 2-19).

The brushes must be mounted with a slight flex as shown in Fig. 2-23.

4. Use the brush and bracket assembly as a template and mark at the center of the slot for mounting location (Fig. 2-21).
5. Drill a 7/32" hole in the marked location.
6. Attach mounting bracket (23112) using a flat washer (9405-064) and self-drilling screw (97420) (Fig. 2-20).
7. Attach the hose barb (96869) to the elbow (Fig. 2-19).
8. Attach the plastic tubing 32" long (23287) (Fig. 2-21).
9. Insert the grommet (98136) in the pre-drilled hole in the shield (Fig. 2-21).
10. Slide the plastic tubing 32" long (23287) through the grommet (98136) (Fig. 2-21). Lubrication maybe required to allow the plastic tubing to slide through the grommet. Do not over-tighten tubing to eliminate kinks.

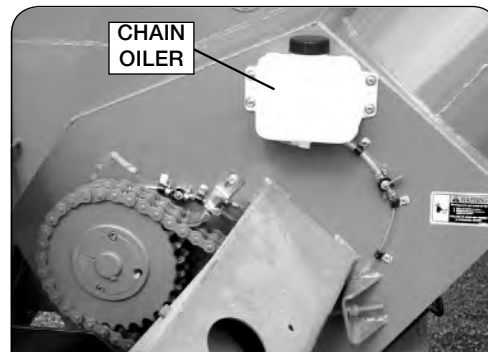


FIG. 2-17

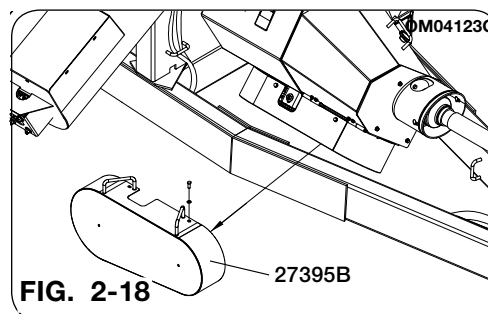


FIG. 2-18

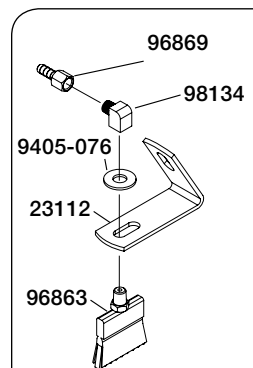


FIG. 2-19

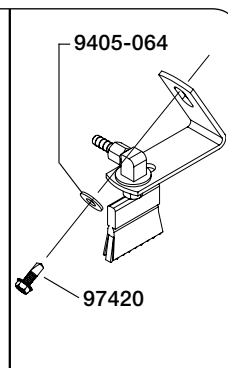


FIG. 2-20 OM23651-1

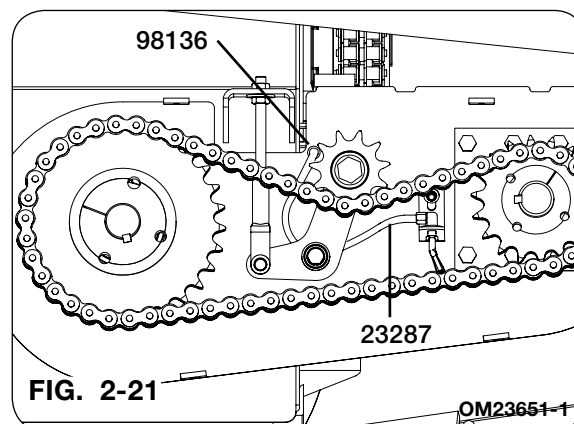


FIG. 2-21

OM23651-1

Chain Oiler #23250 Installation (Continued)

11. Insert the brush (96863) into the bracket (23111) and secure with 3/8" flat washer (9405-076) and elbow (98134) as shown in Fig. 2-23.

The brushes must be mounted with a slight flex as shown in Fig. 2-23.

12. Use the brush and bracket assembly as a template and mark at the center of the slot for mounting location (Fig. 2-22 & 2-23).
13. Drill a 7/32" hole in the marked location.
14. Attach the hose barb (96869) to the elbow (Fig. 2-23).
15. Attach 10" long the plastic tubing (23161) (Fig. 2-23).

IMPORTANT

- All plastic tubing must be mounted to avoid wear and destruction.

16. Attach the 32" long bottom plastic tube (23287) near the mounting bracket (23111) with hose clip (97063) as shown in Fig. 2-25.
17. A ball valve (9002794) will be attached to the plastic tubing (23287) approximately 2" away from the frame. Trim the excess plastic tubing (23287) length allowing enough slack to mount the ball valve (9002794) and secure with clamp (9000389) (Fig. 2-25). See OPERATING section for adjustment.
18. Attach a 10" long plastic tube (23161) to the other end of the ball valve (9002794) and secure with clamp (9000389) (Fig. 2-25).

FIG. 2-22

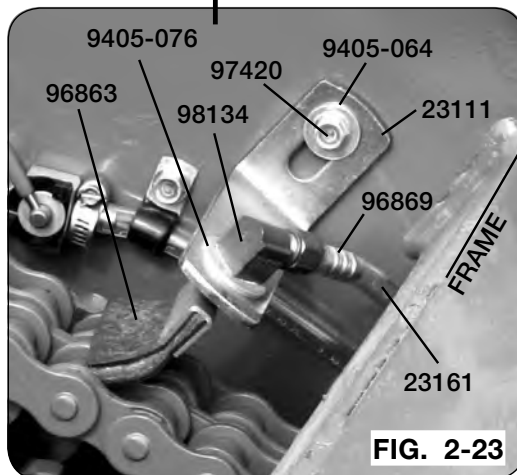
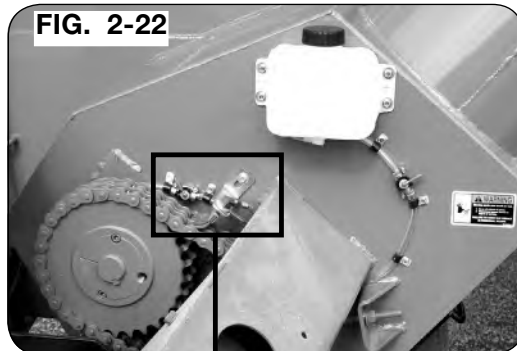


FIG. 2-23

FIG. 2-24

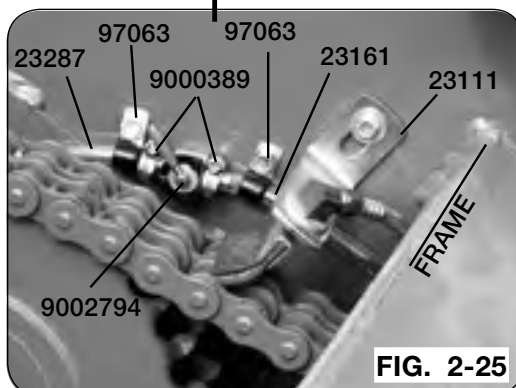
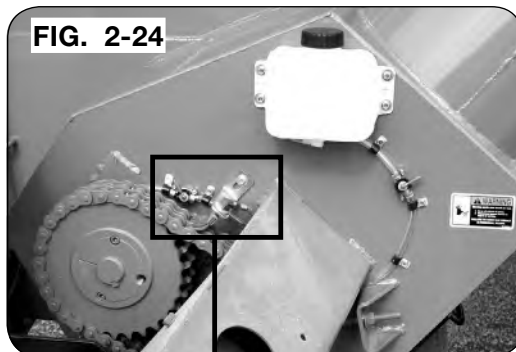
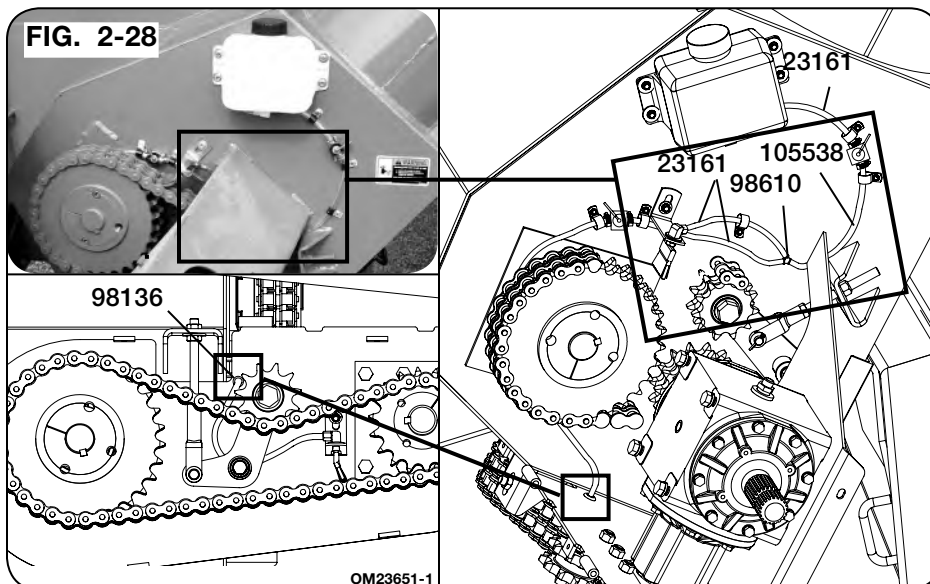
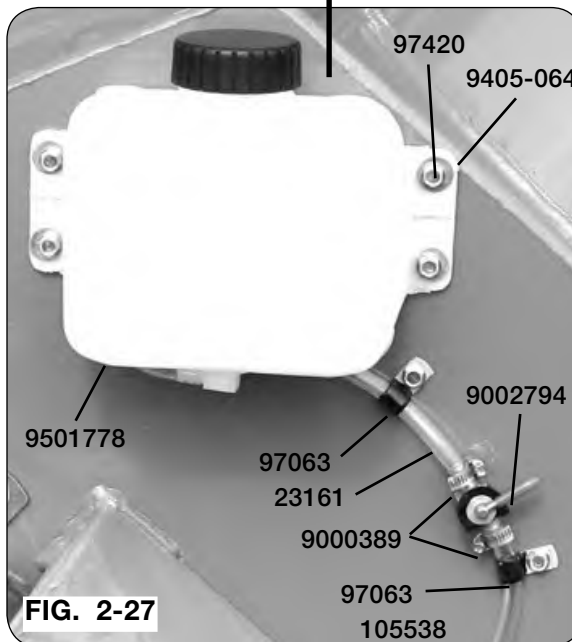
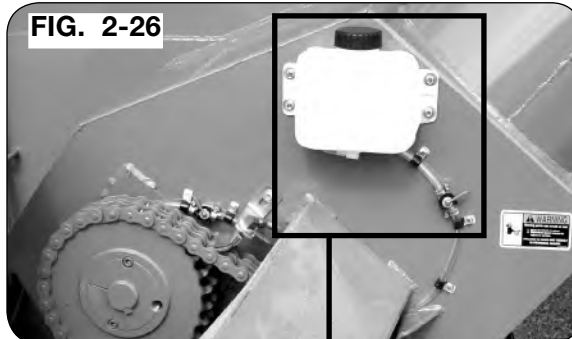


FIG. 2-25

Chain Oiler #23250 Installation (Continued)

19. Attach the 10" long plastic tube (23161) ends to the "Y" fitting (98610) (Fig. 2-26).
20. Attach the 18" long plastic tube (105538) to the bottom of the "Y" fitting (98610) as shown in Fig. 2-26.
21. Attach ball valve (9002794) to the plastic tubing (105538) and secure with clamp (9000389) (Fig. 2-26 & 2-27). See OPERATING section for adjustment.
22. Attach a 10" long plastic tube (23161) to the other end of the ball valve (9002794) and secure with clamp (9000389) (Fig. 2-27).
23. Attach the other end of the plastic tubing to the oil tank (9501778) (Fig. 2-27).
24. Attach the oil tank (9501778) to the frame as high and level as possible with 1/4" flat washers (9405-064) and 1/4"-20 x 3/4" self-drilling screws (97420) (Fig. 2-27).
25. Attach the 10" long plastic tube (23161) near the oil tank with hose clip (97063) as shown in Fig. 2-27.



SECTION III

Operation

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FOR TARP INFORMATION, PLEASE REFER TO YOUR TARP MANUAL.
FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.

Operating Checklist

- Read and understand all safety precautions before operating cart.
- Check axle spacing to be sure axle is adjusted from shipping position to desired operating width. (If Applicable)
- Check to be sure all the reflective decals and the SMV sign are clearly visible with the cart attached to the tractor. Check to be sure the transport lights are in working condition. Check and follow federal, state/provincial and local regulations before towing on a road or highway.
- Check to be sure the hitch height when attached to the tractor is sufficient to prevent severe bends in PTO U-joint angles.
- Check to be sure PTO is correct length for making turns and operating on uneven terrain. See “Verify Telescoping PTO Shaft Length” in MAINTENANCE section.
- Torque wheel nuts according to “Wheel Torque Chart” in MAINTENANCE section.
- Transport chains are properly installed and hardware is torqued to specification. See “Transport Chain Connection” in OPERATION section.
- Check to be sure all screens and safety shields are in place.
- Check to be sure recommended lubrication procedures are being followed.
- Check operation and functionality of flow door, flow door indicator, auger fold, and auger pivot.
- Set tractor PTO control engagement setting to a minimum, refer to tractor operators manual for setting information.
- Test run the augers. See “Auger Operation” in OPERATION section.

Preparing Tractor

Before operating cart, read the tractor Operator's Manual and gain an understanding of its safe methods of operation.

Check the tractor brakes and transport lights. Make sure they are in proper working order.

Check if the tractor has multiple PTO engagement modulation settings and has the latest PTO engagement software from the OEM. If unsure, contact your local dealer for tractor capabilities and recommended setting for grain cart operation.

Check the tractor hydraulic oil reservoir and add oil if needed.

Verify that the tractor is adequately ballasted for drawbar operation at the anticipated draft load. See tractor manual for ballasting instructions.

If possible, adjust the tractor drawbar vertically so the topside of the drawbar is approximately 17-22 inches from the ground. Ensure that the drawbar is locked in the center position.

On tractors equipped with a 3-point hitch, raise and secure the linkage to prevent interference with the cart tongue, hydraulic hoses and the hydraulic drive option during turning. It may be necessary to remove tractor 3-point quick attach to avoid damage during turning.

Preparing Cart

Perform the service checks as outlined below. Repair or replace any damaged or worn parts before operating.

Hardware

Check for loose bolts and nuts, and tighten as needed. Check again after the first half-day of operation.

Pivot Pins

Check that all pins are in place and in good condition. Replace any worn, damaged or missing pins.

Hitch

Check hitch wear plates for damage and wear. Be aware of the size of hitch adapter bushing that is being used. Select correct size for the hitch pin/draw bar you are using.

Auger

Inspect auger for damage and wear.

Preparing Cart (continued)

Hydraulic System

Check all hoses and cylinders for signs of leakage. Hoses should not be kinked, twisted or rubbing against sharp edges. Re-route or repair hoses as necessary. Refer to SAFETY section for additional information on safe repair and inspection of hydraulic components.

Tires/Wheels

Check tire pressures and maintain at recommended values listed in the MAINTENANCE section of this manual.



CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE “MAINTENANCE” SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

IMPORTANT

- *Installing wheels without the proper inset could result in hub or spindle failure. This will cause substantial damage to cart.*

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Tire manufacturers' phone numbers and web sites are listed in the “MAINTENANCE” section of this manual for your convenience.

Lubrication

Lubricate the cart as outlined in the MAINTENANCE section of this manual.

Hitching to Tractor

Drawbar Connection

This cart is intended to be hitched to a tractor drawbar. Do not attempt to hitch to any other location on the tractor other than the drawbar.

Make sure sufficient counterweight is used on the tractor's front-end.

The cart is equipped standard with a single tang hitch. A hitch pin between 1 1/2" or 2" diameters must only be used with a clevis-type tractor drawbar.

NOTE: The use of a smaller diameter hitch pin will result in additional clearance between the hitch and pin. This additional clearance may cause accelerated pin wear, tractor and cart hitch wear, along with more pronounced jolting from the cart during transport operation.

⚠ WARNING

- **DO NOT STAND BETWEEN THE MACHINE AND TRACTOR WHEN HITCHING. ALWAYS ENGAGE PARKING BRAKE AND STOP ENGINE BEFORE INSERTING HITCH PIN.**

After inserting drawbar pin, secure drawbar pin with a locking device to help prevent uncoupling during use.

The hitch has four different height settings that can be obtained. See the Maintenance section for information on this procedure.

Jack Usage

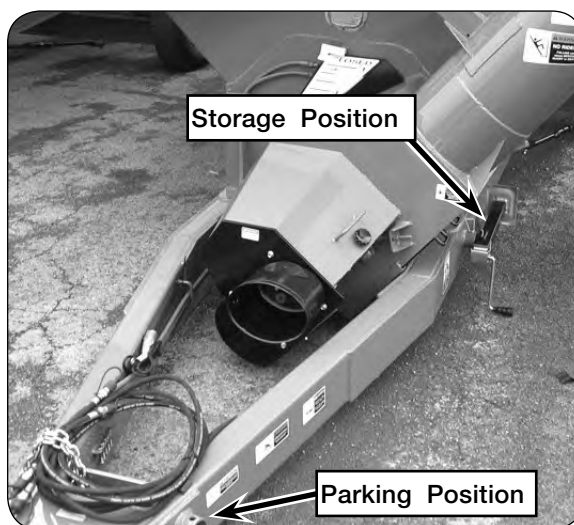
⚠ WARNING

- **UNHITCHING A LOADED CART CAN CAUSE SERIOUS INJURY OR DEATH DUE TO THE TONGUE RISING OR FALLING. ALWAYS HAVE A LOADED CART ATTACHED TO A TRACTOR. THE JACK IS INTENDED TO SUPPORT AN EMPTY CART ONLY.**

Use the jack to support an empty grain cart, never a loaded grain cart. Remove jack from storage on inside of left frame and install on mounting spud behind hitch.

IMPORTANT

- *Mount jack in storage location indicated after cart is hitched to tractor.*



Hitching to Tractor (continued)

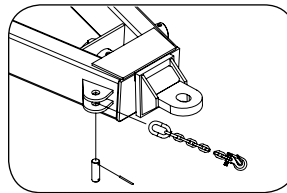
Transport Chain Connection

CAUTION

- ALWAYS USE TRANSPORT CHAIN WHEN TRANSPORTING IMPLEMENTS. FAILURE TO USE A TRANSPORT CHAIN COULD CAUSE PERSONAL INJURY IF CART BECOMES DISENGAGED.

Always use intermediate chain support when connecting the grain cart directly to a tractor. DO NOT use the intermediate chain support as the chain attaching point. Fig. 2 shows how the transport chain must be installed between the tractor and grain cart.

Transport chain should have a minimum rating equal to the gross weight of the implement and all attachments. Use only ASABE approved chains. Allow no more slack in the chain than necessary to permit turning.



CAUTION

- REPLACE TRANSPORT CHAIN IF ANY LINK OR END FITTING IS BROKEN, STRETCHED OR DAMAGED. DO NOT WELD TRANSPORT CHAIN.

Hydraulic Connections

IMPORTANT

- When coupling hydraulic hoses to ports on the tractor, be sure that the coupler ends are clean or dust, dirt and debris. Failure to do so could contaminate hydraulic system resulting in excessive wear and possible failure.



Hitching to Tractor (continued)

Clean hydraulic hose couplers before connecting to the tractor. For convenience, it is recommended to connect the flow door hoses to tractor implement coupler #1, and attach auger fold hoses to coupler #2.

This unit is equipped with color bands attached to the hydraulic hoses. This will help in identifying the hose function and correct hook up.

Green: Raise and Lower Auger

Red: Flow Door Open and Close

After initial set-up or replacement of any hydraulic component on the cart, air must be removed from the cart's hydraulic system.

Route hoses away from areas that may cause abrasion or kinking of hoses during operation.

Before disconnecting hoses from the tractor, relieve pressure in the system. See the tractor's Operator's Manual for the proper procedure. Shut off engine and apply parking brake before disconnecting hoses. Install couplers into storage slots provided.

Hitching to Tractor (continued)

Electrical Connections

NOTE: Unverferth Manufacturing has designed the transport lighting and marking kit to meet United States federal law and ASABE standards at the time of manufacture. Machine modifications, including additional features or changes to the intended configurations, may require updates to the lighting and marking as well.

Compliance with all lighting and marking laws is the responsibility of the operator at the time of travel.

See federal regulation 49 CFR 562; available at www.govinfo.gov for US federal law requirements.

See your Killbros dealer for additional brackets, reflectors, or lights to meet your requirements.

This cart is equipped with a seven-pin SAE connector plug which will connect with the receptacle found on most newer tractors. If your tractor does not have this type of receptacle, an SAE J-560 seven-point socket can be purchased from your Killbros dealer (Part number 92824).

The wiring schematic for this cart, shown in the MAINTENANCE section, complies with ASABE Standards. Always verify correct electrical function before using this cart.

Seven-pin SAE Connector Plug

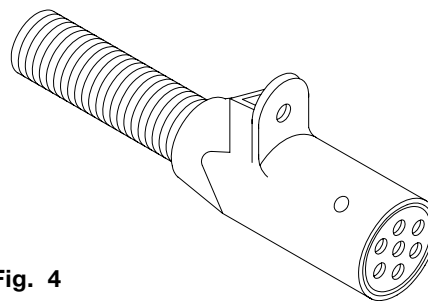


Fig. 4

Lamp Bracket Adjustment

The lamp bracket width is adjustable. Ensure that the brackets are adjusted such that the reflectors are no more than 16" from outer edge of the tires. Insure amber reflector is facing the front of the cart.

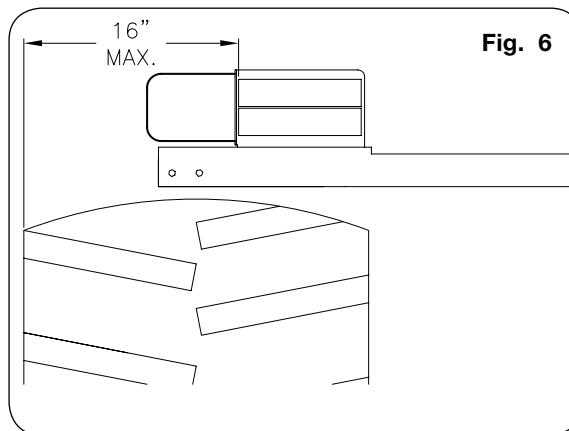


Fig. 6

Towing

This cart is not equipped with brakes. Ensure that the towing vehicle has adequate weight and braking capacity to tow this implement. See towing vehicle manual for towing capacity. Never tow a loaded grain cart over public roads.

Do not exceed 10 mph during off-highway travel. Do not exceed 8 mph when cart is fully loaded.

Secure drawbar pin with a locking device and lock tractor drawbar in centered position. Connect the PTO driveshaft to the tractor.

Secure transport chain to tractor chain support before towing.

CAUTION

- **THE STANDARD TRANSPORT CHAIN IS DESIGNED TO SUPPORT AN EMPTY GRAIN CART DURING ROAD TRAVEL.**

It is probable that this cart is taller, wider and longer than the towing tractor. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.

Always have auger folded back into storage position when auger is not in use.

To prevent damage during turning when using non-PTO equipped towing vehicles, store the PTO driveshaft in the brackets provided on the inside right frame rail.

Auger Operation

PTO Driven Auger

DANGER

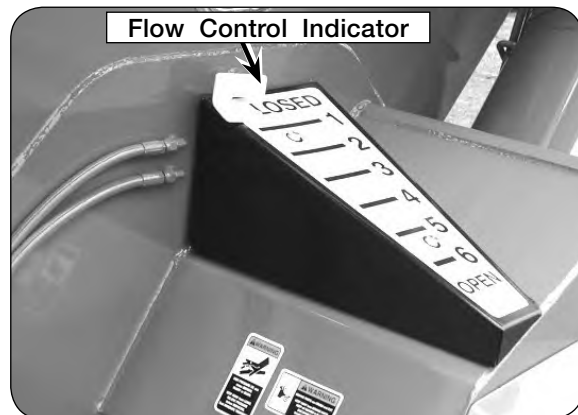
- **ELECTROCUTION WILL CAUSE SERIOUS INJURY OR DEATH. THE GRAIN CART IS NOT INSULATED. KEEP AWAY FROM ALL ELECTRICAL LINES AND DEVICES. ELECTROCUTION CAN OCCUR WITHOUT DIRECT CONTACT.**



WARNING

- **NEVER ENTER CART WITH AUGER OR TRACTOR RUNNING. SERIOUS OR FATAL INJURY CAN OCCUR DUE TO ENTANGLEMENT WITH ROTATING COMPONENTS. ALWAYS STOP ENGINE AND REMOVE KEY BEFORE ENTERING CART.**
- **TO PREVENT PERSONAL INJURY OR DEATH ALWAYS ENSURE THAT THERE ARE PEOPLE WHO REMAIN OUTSIDE THE CART TO ASSIST THE PERSON WORKING INSIDE THE CART, AND THAT ALL SAFE WORKPLACE PRACTICES ARE FOLLOWED. THERE IS RESTRICTED MOBILITY AND LIMITED EXIT PATHS WHEN WORKING INSIDE THE CART.**

1. Make sure the flow control door is in the closed position before loading grain into the cart.
2. Engage PTO at a low RPM; and open flow control gate.
3. Use the flow control opening to slow the rate of the flow rather than the tractor's RPM.
4. Do not disengage the auger with the flow control open. Excessive start-up torque may result, putting stress on cart driveline and tractor.
5. Properly identify tractor remote for proper hook-up of the flow control and auger fold. A mix-up can damage the auger drive system.
6. Never enter a loaded grain cart. Flowing grain traps and suffocates victims in seconds.
7. It is strongly advised that the unloaded auger always be returned to the transport position when not in use.
8. The transmission components of the augers are designed with 50% cycle time. This means that for proper life of components, cart should be run for a maximum of five minutes at a time, and then left idle for five minutes.



Operating The Chain Oiler #23250

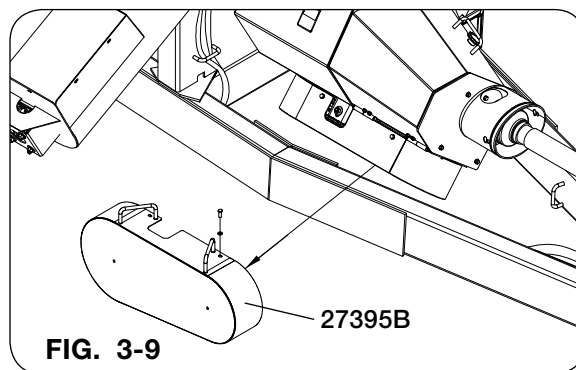
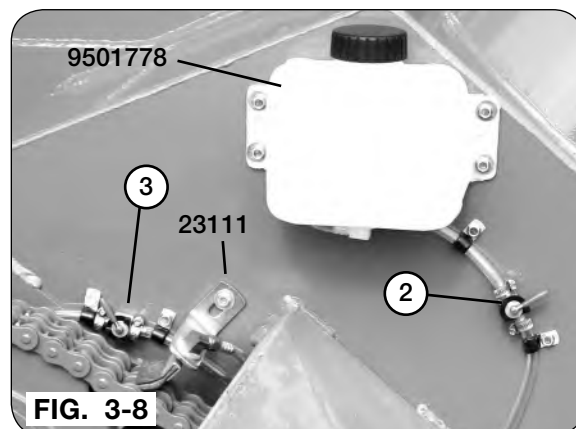
⚠ WARNING

- **MOVING OR ROTATING COMPONENTS CAN CAUSE SERIOUS INJURY OR DEATH. ALWAYS DISCONNECT THE POWER SOURCE BEFORE SERVICING. ENSURE THE SERVICE COVERS, CHAIN/BELT COVERS AND CLEAN-OUT DOOR(S) ARE IN PLACE AND SECURELY FASTENED BEFORE OPERATING THE MACHINE.**

1. Park the empty cart on a firm, level surface. Block the tires on the machine to keep it from moving. Set the tractor's parking brake, shut off the engine, remove the ignition key and disconnect the PTO shaft and hydraulics from the tractor and cart.
2. Fill oil reservoir tank (9501778) with 30W oil.

IMPORTANT

- *Grain Carts that do not have a chain oiler must use SAE 80-90W oil.*
3. Turn the ball valve (9002794) nearest the oil reservoir tank (9501778) all the way on (Fig. 3-8).
 4. Turn the ball valve (9002794) nearest the bracket (23111) only half-way on (Fig. 3-8).
 5. Remove the 5/16"-18UNC x 1" capscrews (9390-030) and lock washers (9404-021) so the guard weldment (27395B) can be removed as shown in Fig. 3-9.
 6. Examine the oil flow and adjust the ball valve nearest the bracket (23111) so an even amount of oil is being distributed between both brushes.
 7. Turn the ball valve (9002794) nearest the oil reservoir tank (9501778) off when operations are completed (Fig. 3-8).
 8. Reattach the guard weldment using the previously removed hardware.



Notes

SECTION IV

Maintenance

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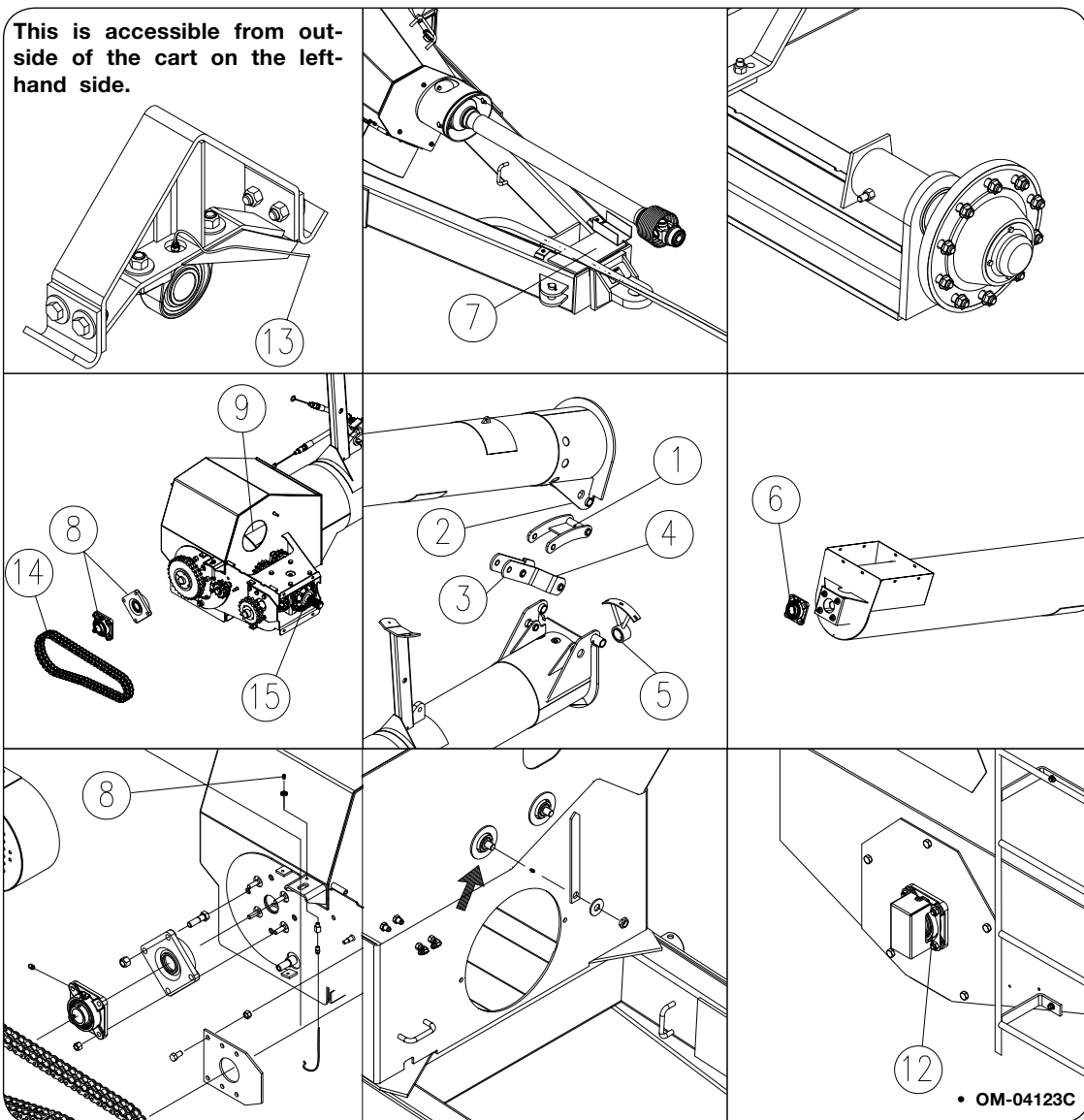
**FOR TARP INFORMATION, PLEASE REFER TO YOUR TARP MANUAL.
FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**

Lubrication

To keep your grain cart in top operating condition and to assure its proper performance and reliability for a long period of time, a periodic inspection and lubrication is a must.

ITEM	DESCRIPTION
1	Linkage Pivot
2	Hinge Tube
3	Linkage Pivot
4	Linkage Pivot
5	Vertical Auger Hanger Bearing (1 Shot Daily)
6	Vertical Auger Top End Bearing (1 Shot Daily)
7	Hitch Point (5 Shots/Seasonal)
8	Vertical Auger Lower Bearing (Inside/Outside - 1 Shot Daily)
9	Horizontal Auger Front Bearing (1 Shot Season)
10	Front Cart Pivot (1 Shot Daily)

ITEM	DESCRIPTION
11	Rear Cart Pivot (1 Shot Daily)
12	Horizontal Auger Rear Bearing (1 Shot Season)
13	Horizontal Auger Center Bearing (1 Shot Season)
14	Chain - without chain oiler (Twice Daily SAE 80W90); - with chain oiler (30W)
15	Gearbox (Check each week, replace once a year 2-2 1/2 Pints 80W90 EP)
16	Hubs (2) (Repack every 2 years)
17	PTO Universal Joint (2) (Refer to PTO Section)
18	PTO Safety Shield (2) (Refer to PTO Section)



Seasonal Storage

Selecting Proper Tractor

Approx. loaded cart weight -> 68,400 Lbs.

Approx. loaded cart hitch weight -> 5,000 Lbs.

Always open flow door and auger cleanout doors to remove any remaining grain and to allow moisture to dry.

Wash machine inside and out before storing to remove dirt and debris that can draw and collect moisture. When using pressure washers maintain an adequate distance so not to force water into bearings.

Lubricate machine at all points outlined.

Repaint all areas where paint has been removed to keep from rust developing. Rust will affect grain flow.

Coat exposed cylinder piston rods with rust preventative material if applicable.

Inspect machine for parts that may need to be replaced so they may be ordered in the off season.

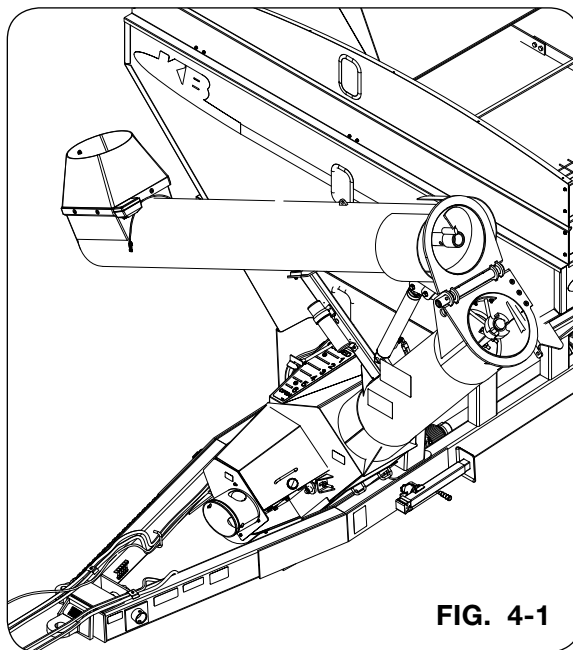
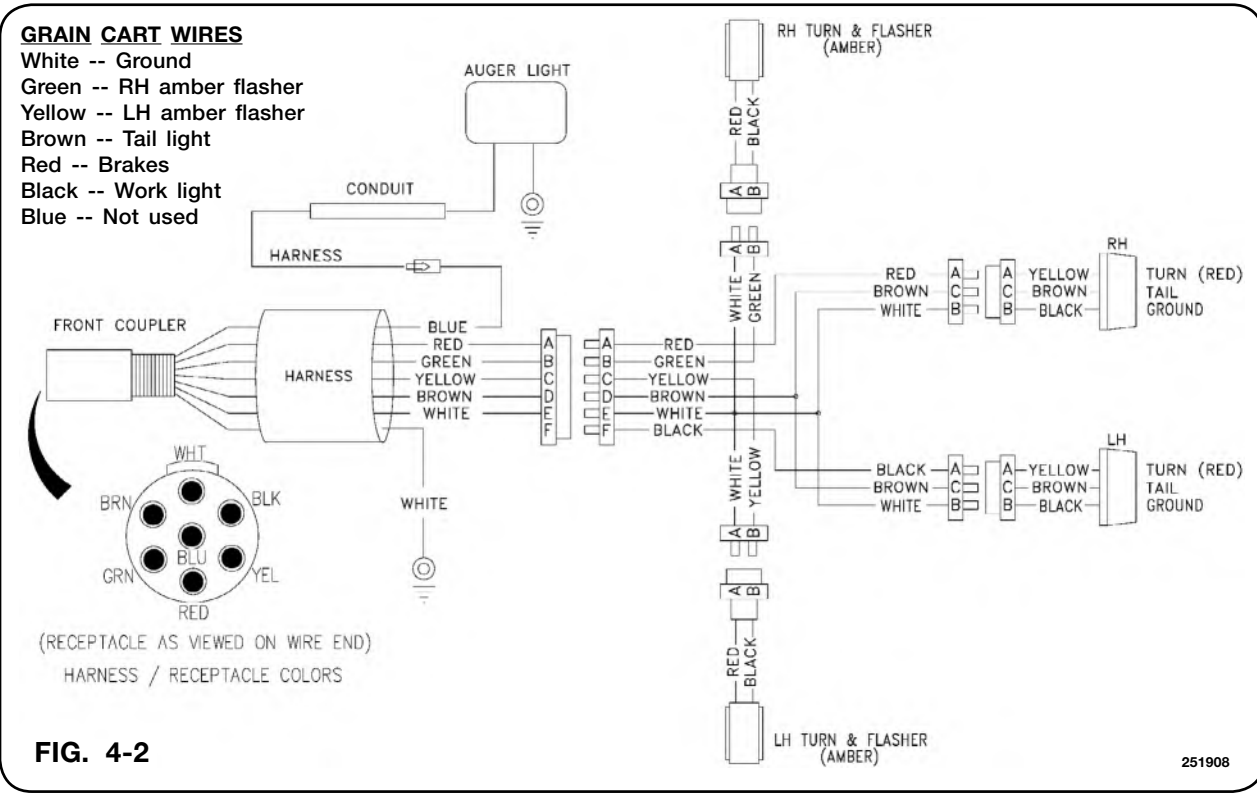


FIG. 4-1

Electrical 7-Way Plug Schematic

The following schematic complies with ANSI/ASABE Standards for new production tractors.

Wiring specifications may be different for older tractor models. Consult your tractor operator's manual or dealer for proper wiring and installation (Fig. 4-2).



U-Joints & Gearbox

The U-joint will give you many years of service if grease is applied to each joint and spline weekly.

For maximum gearbox life:

- Check oil level every week
- Replace oil every season, fill to fluid level or 2 pints 90 weight oil

Tires/Wheels

Check tire pressures and maintain at recommended values listed in the MAINTENANCE section of this manual.

The wheels which are required for proper longevity of hubs and spindles should have an inset of 1 1/2". Meaning that the center of the wheels are 1 1/2" to the middle of the cart.

CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE "SERVICE/MAINTENANCE" SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

IMPORTANT

- *INSTALLING WHEELS WITHOUT THE PROPER INSET COULD RESULT IN HUB OR SPINDLE FAILURE. THIS WILL CAUSE SUBSTANTIAL DAMAGE TO CART.*

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Tire manufacturers' phone numbers and web sites are listed in the "SERVICE/MAINTENANCE" Section of this manual for your convenience.

Drivetrain Inspection

To insure long life and dependable service from your grain cart, the drivetrain should be inspected after the first 5 loads, at the beginning of each season and after every 25 loads or annually thereafter, whichever comes first.

Remove inspection cover and proceed as follows:

- Make a general inspection of drivetrain looking for loose hardware.
- Inspect chain tension.
- Inspect for wear on the side of the sprockets which may indicate poor chain alignment.
- Inspect chain connectors making sure they are properly secured.
- Inspect the three setscrews in each sprocket bushing and tighten evenly to torque specifications.
- Inspect sprocket drive keys making sure they are properly located and tight.
- Inspect all grease hoses for damage and proper routing.
- Lubricate all grease fittings.
- Inspect bearings and seals in gearbox.
- Inspect PTO attaching hardware and safety shields.
- Repair or replace worn or damaged parts.

Drive Sprockets

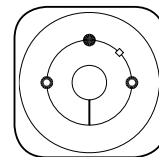
The drivetrain components should be checked periodically for tightness. Loose sprockets or chains could result in excessive wear or damage to the drivetrain.

Use the following chart for reference during servicing.

Auger	Bushing	Torque	# of Teeth
Horizontal	102246	23	15
Vertical	102247	36	18
Both	102248	67	30

Drive Sprockets (Continued)

Hole Configuration of Drive Sprocket



OM02512

REMOVAL

1. Remove all set or cap screws.
2. Insert set or cap screw in hole indicated by on diagram. Loosen bushing by tightening set or cap screw.

INSTALLATION

1. Clean shaft, bore of bushing, outside of bushing and hub bore of all oil, paint and dirt. File away burrs.
2. Insert bushing in hub. Match the hole pattern, not the threaded holes, (each hole will be threaded on one side only.)
3. Lightly oil setscrews and thread into those half-threaded holes indicated by on above diagram. **DO NOT** lubricate the bushing taper, bushing bore, hub taper or the shaft. Doing so could result in breakage of the product.
4. Alternately torque setscrews or capscrews to recommended torque setting, see chart.
5. To increase gripping force, hammer face of bushing using block, or sleeve. (Do not hit bushing directly with hammer.)
6. Re-torque screws after hammering.
7. Recheck screw torques after initial run-in, and periodically thereafter. Repeat steps 4, 5 and 6 if loose.

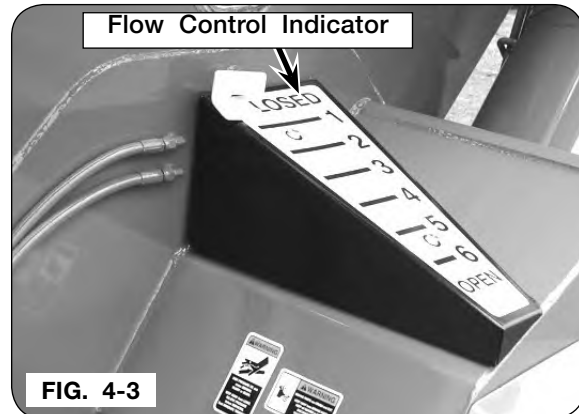
Indicator Arm

The Indicator Arm lets the operator know the position of the flow control gates, open or closed. This arm is connected to the flow control gate. If the indicator arm is not working properly see that the hardware is securely connecting the indicator arm to the gate. See flow control gates for further adjustments.

Flow Control Gates

The Flow Control Gates are designed to prevent grain from putting an excess load on the horizontal auger during initial start-up. If gates are not working properly check:

- each pivot, on each end of gate, for wear or tightness.
- the hydraulic cylinder, making sure hoses are attached properly, clevis pins are secure, and fluid level in hydraulic oil reservoir is at its recommended level.
- for any debris that may have wedged between gates.
- hardware connecting gates are secure.



Chain Tightener Bracket

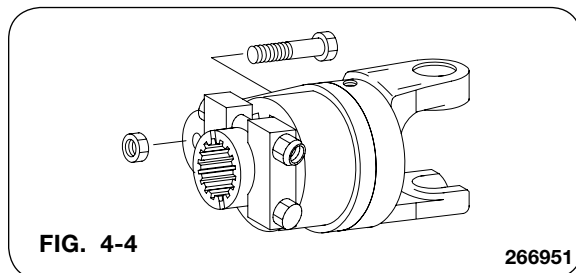
Due to prolonged use, gear wear may be evident causing slack in chains. To correct this, follow these steps.

1. Adjust tightener to measurement of slack in chain shown.
2. Clear work area and test run drivetrain for 3 minutes at no greater than 1000 R.P.M.
3. Disengage P.T.O. and turn tractor off. Check slack in chain. If more adjustment is needed repeat steps 1-3.

PTO Shear Bolt

IMPORTANT

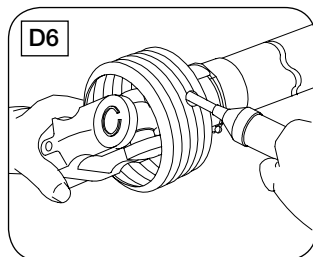
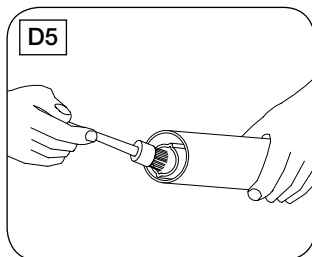
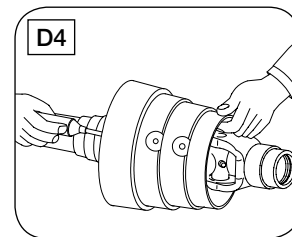
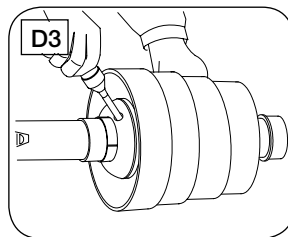
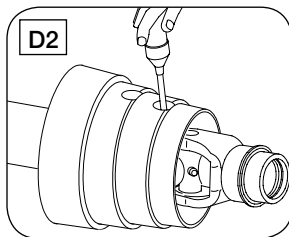
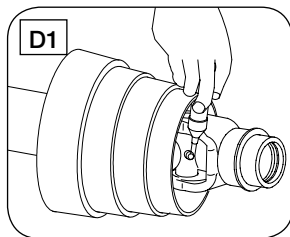
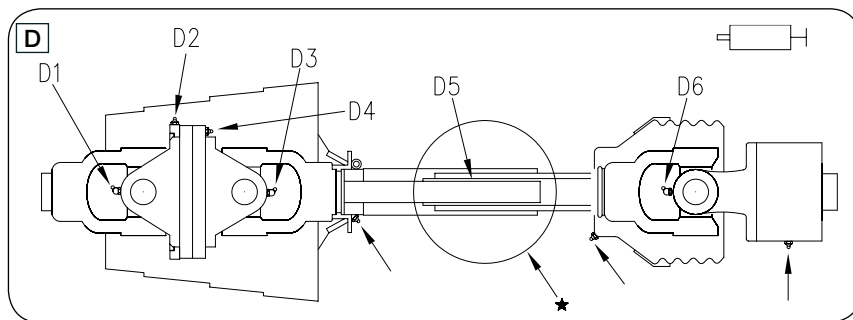
- Use a genuine OEM replacement shear bolt to ensure that the shear function does not occur too soon causing inconvenience or too late resulting in damage to driveline and auger components, see "Driveline Components".



PTO Shaft & Clutch

Lubrication (Figs. D1-D6)

Lubricate with quality grease before starting work and every 8 operating hours. Clean and grease PTO driveshaft before each prolonged period of non-use. Molded nipples on the shield near each shield bearing are intended as grease fittings and should be lubricated every 8 hours of operation! Telescoping members must have lubrication to operate successfully regardless of whether a grease fitting is provided for that purpose! Telescoping members without fittings should be pulled apart and grease should be added manually. Check and grease the guard tubes in winter to prevent freezing.



PTO Shaft & Clutch (Continued)

Coupling The PTO Driveshaft (Figs. E1-E2)

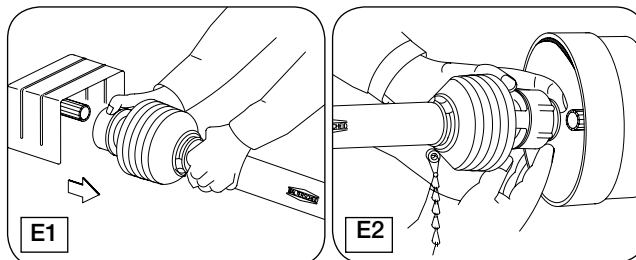
Clean and grease the PTO and implement input connection (IIC)

AS-Lock

1. Pull locking collar and simultaneously push PTO driveshaft onto PTO shaft until the locking device engages.

Push-Pull Lock

2. Pull locking collar and simultaneously push PTO driveshaft onto PTO shaft until the locking device engages.



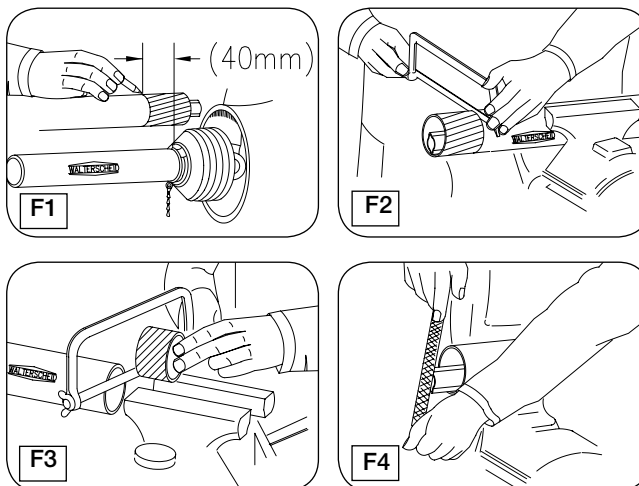
⚠ WARNING

- CHECK TO INSURE ALL THE LOCKS ARE SECURELY ENGAGED BEFORE STARTING WORK WITH THE PTO DRIVESHAFT.

Length Adjustment (Figs. F1-F4)

NOTE: Maximum operating length LB.

1. To adjust length, hold the half-shafts next to each other in the shortest working position and mark them.
2. Shorten inner and outer guard tubes equally.
3. Shorten inner and outer sliding profiles by the same length as the guard tubes.
4. Round off all sharp edges and remove burrs. Grease sliding profiles.



⚠ WARNING

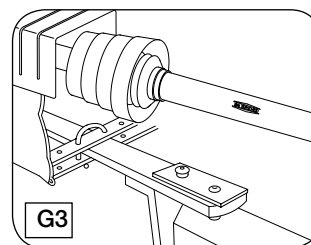
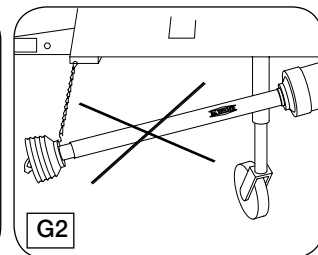
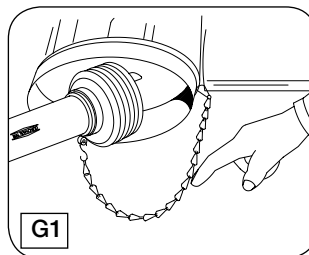
- CHECK THE LENGTH OF THE TELESCOPING MEMBERS TO INSURE THE DRIVELINE WILL NOT BOTTOM OUT OR SEPARATE WHEN TURNING AND/OR GOING OVER ROUGH TERRAIN.

PTO Shaft & Clutch (Continued)

Chains (Figs. G1-G3)

NOTE: The chain is intended to prevent the shield from rotating against non-moving parts and thereby preventing shield damage. A properly installed chain will increase the service life of the shield.

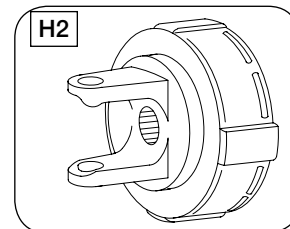
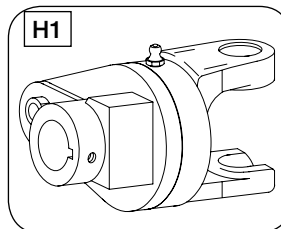
1. Chains must be fitted so as to allow sufficient articulation of the shaft in all working positions. Care must be taken to be sure that chain does not become entangled with drawbar hitch or other restrictions during operation or transport of machine.
2. The PTO driveshaft must not be suspended from the chain.



Shear Bolt & Friction Clutches (Figs. H1-H2)

1. Shear bolt clutches:

When the torque is exceeded, power flow is interrupted due to the bolt shearing. The torque is re-established by replacing the broken shear bolt. Use only the bolt specified in the Operator's Manual for replacement. Remove locking screw.

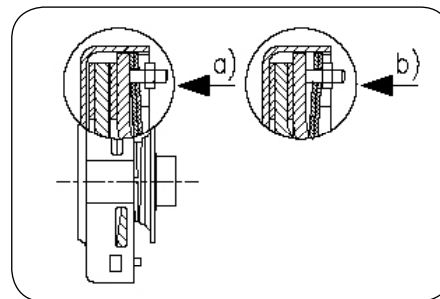


2. Friction clutches:

When overload occurs, the torque is limited and transmitted constantly during the period of slipping. Short-duration torque peaks are limited.

Prior to first utilization and after long periods out of use, check working of disk clutch.

- a. Tighten nuts until friction disks are released. Rotate clutch fully.
- b. Turn nuts fully back. Now the clutch is ready for use.



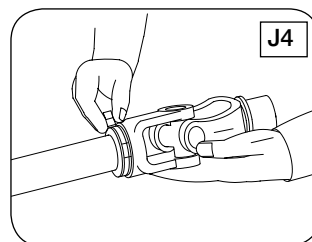
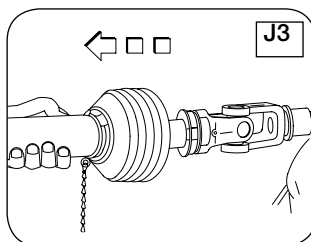
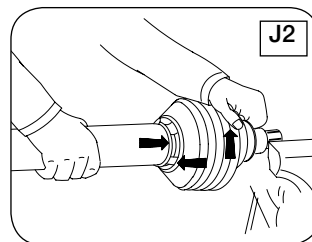
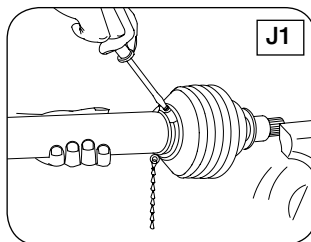
⚠ WARNING

- AVOID EXTENDED AND FREQUENT SLIPPAGE OR OVER-LOAD CLUTCHES.

PTO Shaft & Clutch (Continued)

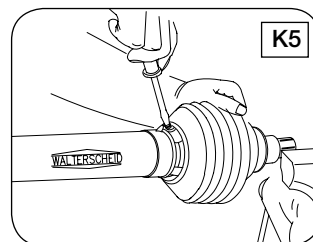
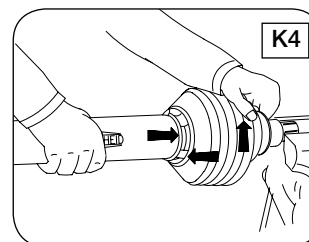
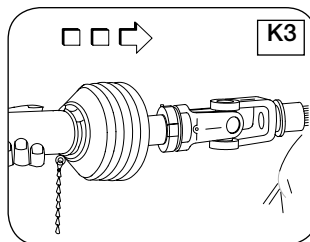
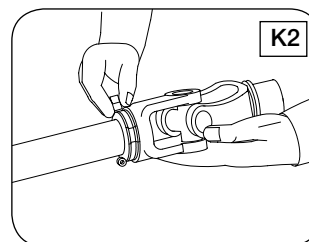
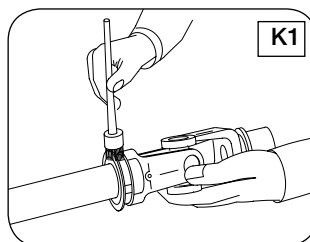
To Dismantle Guard Figs. (J1-J4)

1. Remove locking screw.
2. Align bearing tabs with cone pockets.
3. Remove half-guard.
4. Remove bearing ring.



To Assemble Guards Figs. (K1-K5)

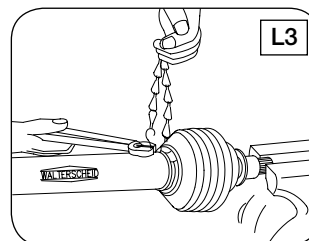
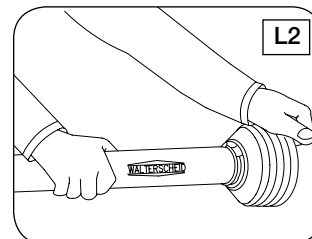
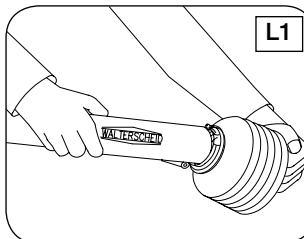
1. Grease yoke groove and inner profile tube.
2. Fit bearing ring in groove with recesses facing profile tube.
3. Slip on half-guard.
4. Turn cone until it engages correctly.
5. Install locking screw.



PTO Shaft & Clutch (Continued)

To Assemble Cone Figs. (L1-L3)

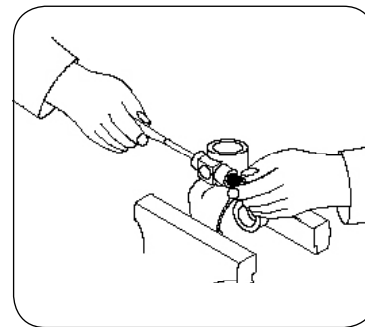
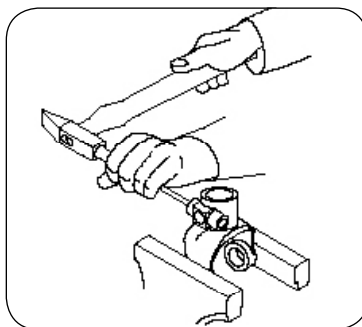
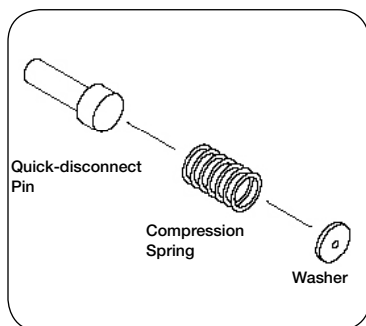
1. Dismantle guard (Figs. J1 - J3). Remove old cone (e.g. cut open with knife). Take off chain. Place neck of new cone in hot water (approx 80° C /180° F) and pull onto bearing housing (Fig. L1).
2. Turn guard cone into assembly position (Fig. L2). Further assembly instructions for guard (Figs. K1 - K5).
3. Reconnect chain if required (Fig. L3).



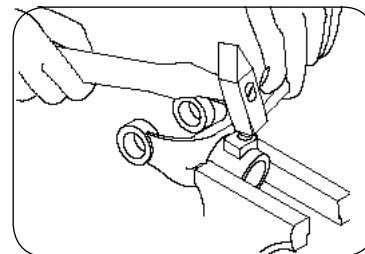
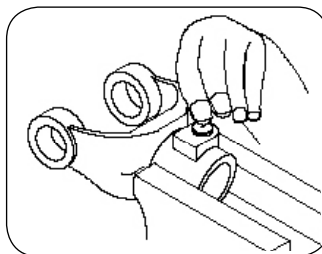
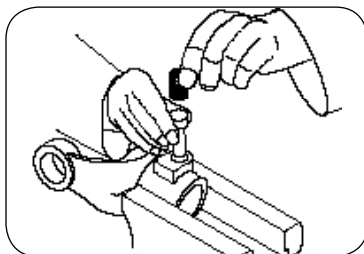
PTO Quick Disconnect

Quick Disconnect Pin

Using a drift punch and hammer, drive the pin towards the retaining washer to force the complete assembly out. Clear the edges of the retaining washer bore to accept the new one by removing the deformed metal from the last peening operation to hold the washer in place.



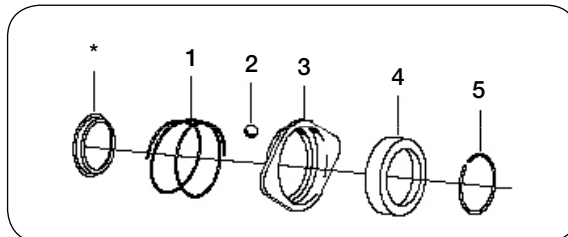
Insert quick-disconnect pin, compression spring and washer into hole, Holding the washer in place, peen the edges of the pore seat to retain the washer, spring and pin.



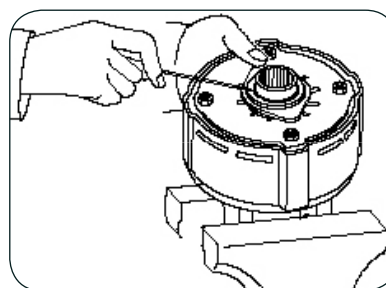
PTO Quick Disconnect (Continued)

Quick Disconnect Disassembly

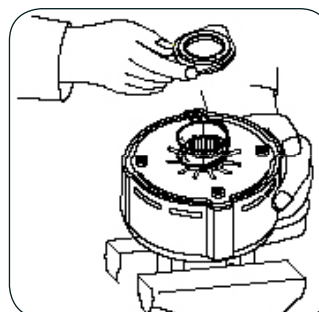
1. Compression Spring
 2. Ball
 3. Lock Collar
 4. Back-up ring
 5. Snap ring
- * Back-up ring
 - * (For some clutch types, place additional back up ring first).



Compress lock collar (#3) and remove snap ring (#5).

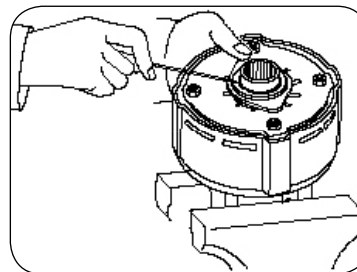
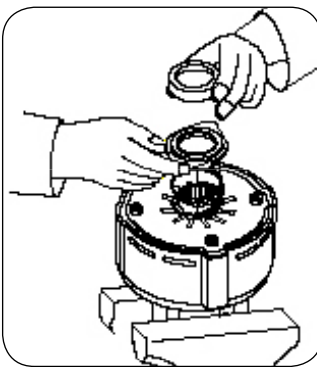
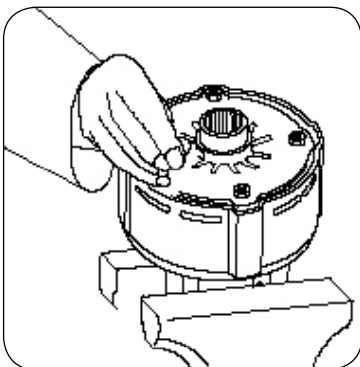


Remove back-up ring, lock collar, compression spring and balls.



Quick Disconnect Assembly

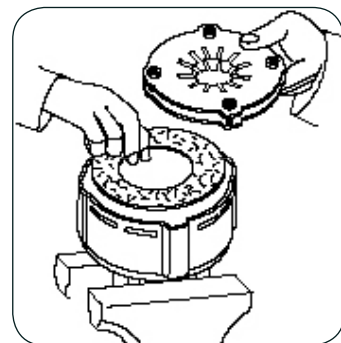
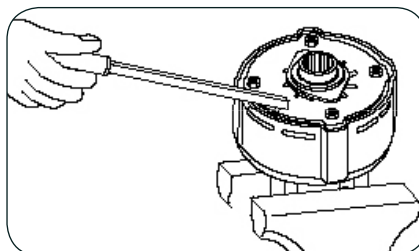
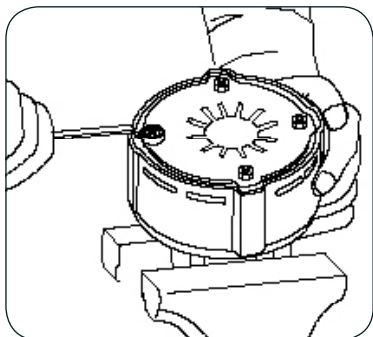
Insert balls. Place compression spring, lock collar and back-up ring onto the hub. Remove back-up ring, lock collar, compression spring and balls.



PTO Quick Disconnect (Continued)

Clutch Disassembly

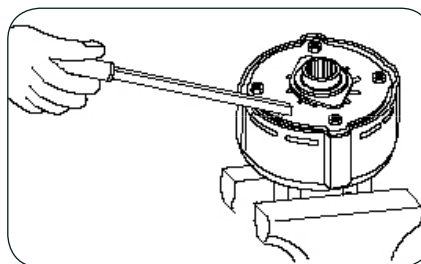
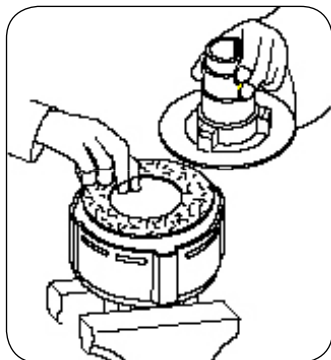
Tighten the four hex nuts (12) uniformly until the clutch pack and hub are loose. Use special tool 9002007 to bend all four retaining lugs back on the edge of the clutch housing. Remove the thrust plate with Belleville springs to get at the friction disks, drive plates and hub for inspection and service.



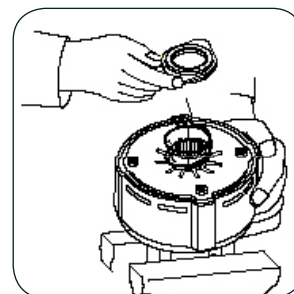
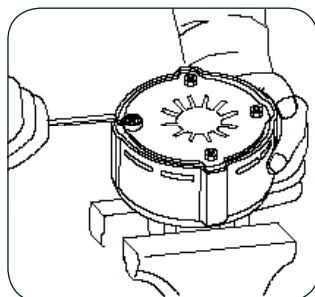
Clutch Assembly

Place hub and friction disks into the clutch housing. Note that items 8 and 9 are only used in the four plate clutch. Next, compress the Belleville spring(s) to the pressure plate by tightening the four hex nuts and placing them into the clutch housing as illustrated.

Use special tool #9002007 to bend the retaining lugs inward over the Belleville spring edges to secure the springs when you back the four hex nuts off. (Note: Wide lugs for one (1) Belleville spring, narrow lugs for two (2) Belleville springs).



With the lugs in place, loosen the four hex nuts completely to the end of the threaded studs. Replace the quick-disconnect assembly.



Auger Maintenance

Horizontal Auger

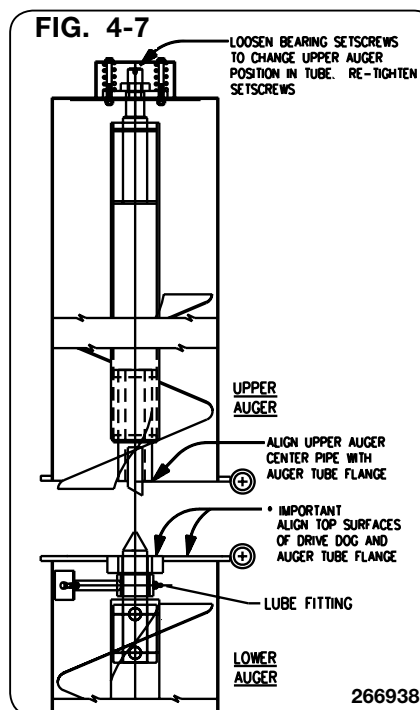
Annually check all bolts, nuts, and set screws. Perform lubrication as specified.

Vertical Auger

Annually check all bolts, nuts and set screws. Perform lubrication as specified.

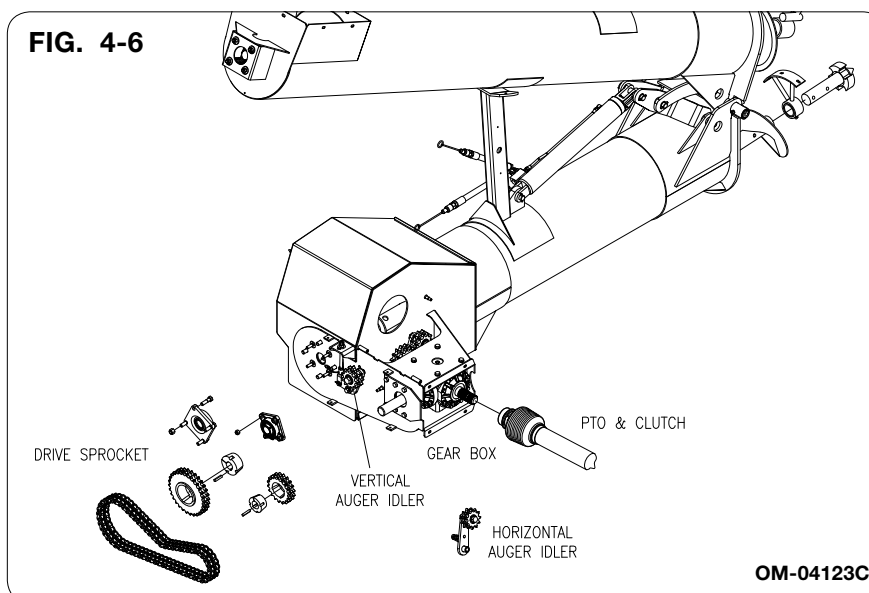
NOTE: The lower auger position is indexed from the drive dog/tube flange hinge surface, as shown.

Annually check all bolts, nuts and set screws. Perform lubrication as specified.



Auger Chain Drive

Annually check all bolts, nuts, and set screws. Perform lubrication as specified in Lubrication chart.



Wheel, Hub and Spindle Disassembly and Assembly

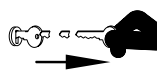
WARNING

- **TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.**
- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 20,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE “MAINTENANCE” SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

IMPORTANT

- *Remove only one wheel and tire from a side at any given time in the following procedure.*
1. Hitch cart to tractor. Park the empty cart on a firm, level surface. Set the tractor's parking brake, shut off engine and remove key. 
 2. With cart empty, use safe lifting device rated at 10 ton to support the weight of your grain cart. Place the safe lifting device under the axle closest to the tire.
 3. Use a 1 1/2 ton lifting device to support the wheel and tire during removal.
 4. Refer to the “Inner Dual Wheel Access” portion in the Maintenance for steps to get access to the inside Wheel, Hub and Spindle. If only changing wheel and tire, skip to Step 8; otherwise continue with Step 4.

Remove the hardware retaining the hubcap. Next, remove the hubcap, gasket, cotter pin, castle nut and spindle washer. Remove hub with bearings from old spindle using a 250 lb. lifting device.

Wheel, Hub and Spindle Disassembly and Assembly

5. Inspect the spindle and replace if necessary. If spindle does not need to be replaced, skip to Step 6; otherwise continue with Step 5.

Remove the bolt and lock nut that retains the spindle to the axle. Using a lifting device rated for 200 lbs, replace the old spindle with a new spindle. Coat axle contact length of spindle shaft (scale or non-scale) with anti-seize lubricant prior to installation. If installing scale spindle, install with 'top' decal facing upwards. Reuse bolt and lock nut to retain spindle to axle. Tighten as outlined in Maintenance Section.

6. Remove seal and inspect bearings, spindle washer, castle nut and cotter pin. Replace if necessary. Pack both bearings with approved grease and reinstall inner bearing. Install new seal in hub with garter spring facing the hub by tapping on flat plate that completely covers seal while driving it square to hub. Install until flush with back face of hub. Using a 250 lb rated lifting device, install hub assembly onto spindle. Install outer bearing, spindle washer and castle nut.
7. Slowly tighten castle nut while spinning the hub until hub stops rotating. Do not use an impact! Turn castle nut counterclockwise until the hole in the spindle aligns with the next notch in castle nut. Hub should spin smoothly with little drag and no end play. If play exists, tighten to next notch of castle nut. If drag exists, then back castle nut to next notch of castle nut. Spin and check again. Install cotter pin. Clean face for hub cap gasket and install gasket, grease filled hub cap and retain hubcap with hardware removed. Tighten hubcap hardware in alternating pattern.
8. Attach the wheel(s) and tire(s) to the hub using the same rated lifting device for removal. Tighten wheel nuts to appropriate requirements and recheck as outlined in the Wheel and Tire section of this manual.
9. Raise cart, remove safe lifting device and lower tire to the ground.

Wheels and Tires

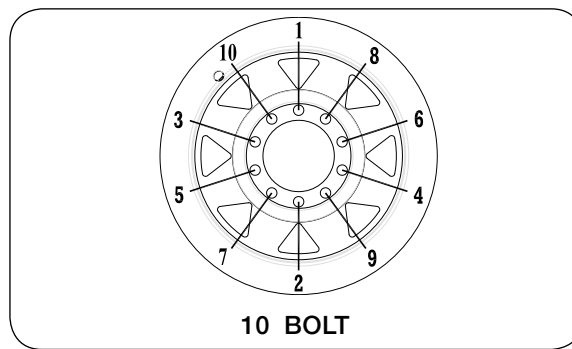
Wheel Nut Torque Requirements

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THERE-AFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

Failure to check torque before first load may damage wheel nut/bolt seats. Once seats are damaged, it will become impossible to keep nuts/bolts tight. Tighten nuts/bolts to applicable torque value shown in table. Start all nuts/bolts by hand to prevent cross threading. Torque nuts/bolts in the recommended sequence as shown in Diagram 1.

WHEEL HARDWARE	
SIZE	FOOT-POUNDS
7/8-14 (UNF)	440 ft.-lbs.
M22x1.5	475 ft.-lbs.



**10 BOLT
DIAGRAM 1**

Wheels and Tires (continued)

Tire Pressure

The following is to be used as a general guide for tire inflation and figures can vary depending on specific brand of tire used. It is important that tires are inspected after unit is loaded. Start with minimum pressure indicated. The tire should stand up with no side-wall buckling or distress as tire rolls. Record the pressure needed to support the full load and maintain this pressure to achieve proper tire life. Do not exceed maximum recommended tire pressure. Each tire must be inflated to 35 PSI max to seat the beads, deflated to 5-10 PSI, then reinflated to the tire's max PSI when mounting.

Tire Pressure for Grain Carts			
Tire Make	Tire Size	Load Index / Ply Rating	Max. PSI
Firestone	23.1x26 R-3	12	32
	23.1x26 R-1	12	32
	28Lx26 R-3	12	26
	24.5x32 R-3	12	32
	24.5x32 R-1	12	32
	30.5x32 R-1	14	28
	30.5x32 R-3	14	28
	30.5x32 R-3	16	34
	30.5x32 R-1	16	26
	35.5x32 R-3	20	36
	76x50.00x32 HF-3	16	40
	76x50.00x32 HF-3	20	50
	800/65R32 R-1W	172A8	44
	800/60R32 R-3	181B	46
	900/65R32 R-3	191B	46
	900/60R32 R-1	176A8	44
	1250/50R32F IF/CFO R-1WNP	201D	46
	1250/50R32F IF/CFO R-1W	188B	30
	520/85R38 R-1	155A8	29
	520/85R38 R-1	173A8	64
	480/80R42 R-1	151A8	36
	520/85R42 R-1	157A8	29
	520/85R42 R-1	165A8	51
	520/85R42 IF/CFO R-1	169A8/B	35
	520/85R42 R-1W	169B	35
	420/80R46 R-1	151A8	44
	480/80R46 R-1	158A8	44
	380/90R46 R-1	152B	51

Wheels and Tires (continued)

Tire Pressure (continued)

Tire Pressure for Grain Carts			
Tire Make	Tire Size	Load Index / Ply Rating	Max. PSI
Titan/Goodyear	23.1x26 R-3	10	26
	23.1x26 R-1	10	26
	24.5R32 R-1	169A8/B (5-Star)	48
	24.5x32 R-3	12	32
	24.5x32 R-1	12	32
	30.5x32 R-3	16	26
	30.5x32 R-3	14	22
	30.5x32 R-1	14	22
	480/80x42 R-1	166A8	23
	1100/45R46 F-1W	195D	35
Mitas	650/75R32 R-1W	172A8	58
	900/60x32 R-1W	176A8	41
	900/70R32 R-1W	188A8	53
	1050/50x32 R-1W	178A8	41
	1250/50R32 R-1W	188A8	41
	900/60x38 R-1W	181A8	44
	520/85x42 R-1W	162A8	44
	650/65x42 R-1W	168A8	44
Alliance	35.5LR32	193A8	44
	900/60R32 R-1W	192D	46
	1050/50R32 R-1W	185A8	63
	1250/50R32 R-1W	201B	46
Trelleborg	VF1050/50R32 R-1	198D	52
	900/50R32 R-1W	181A8	55
	900/60x32	176LI	44
	850/55R42 R-1W	161A8	32

*Each tire must be inflated to 35 PSI max to seat the beads, deflated to 5-10 PSI, then reinflated to the tire's max PSI.

Tire Warranty

For questions regarding new tire warranty, please contact your local original equipment tire dealer. Used tires carry no warranty. Following are phone numbers and Websites for your convenience:

Firestone www.firestoneag.com
Phone 800-847-3364

Titan
or
Goodyear www.titan-intl.com
Phone 800-USA-BEAR
Fax 515-265-9301

Trelleborg www.trelleborg.com
Phone 866-633-8473

Continental/Mitas www.mitas-tires.com
Phone 704-542-3422
Fax 704-542-3474

Alliance www.atgtire.com
Phone 781-325-3801

Complete Torque Chart

Capscrews - Grade 5

NOTE:

- Grade 5 capscrews can be identified by three radial dashes on the head.
- For wheel torque requirements, refer to **Wheels and Tires**.
- Tighten U-bolts to have the same number of threads exposed on each end.



SIZE	FOOT POUNDS	NEWTON METERS
1/4-20	8-10	11-13
1/4-28	9-11	12-15
5/16-18	15-17	20-23
5/16-24	17-19	23-26
3/8-16	25-28	34-38
3/8-24	28-31	38-42
7/16-14	40-45	54-61
7/16-20	45-50	61-68
1/2-13	62-68	84-92
1/2-20	68-75	92-102
9/16-12	90-98	122-133
9/16-18	100-110	134-148
5/8-11	120-135	162-183
5/8-18	124-137	168-186
3/4-10	200-220	270-300
3/4-16	210-230	285-310
7/8-9	330-350	425-475
7/8-14	360-380	460-515
1-8	500-525	675-710
1-14	540-560	730-760
1 1/8-7	600-635	815-860
1 1/8-12	665-700	920-950
1 1/4-7	850-895	1150-1215
1 1/4-12	940-990	1275-1340
1 3/8-6	1125-1175	1525-1590
1 3/8-12	1280-1335	1735-1810
1 1/2-6	1500-1560	2035-2115
1 1/2-12	1685-1755	2285-2380

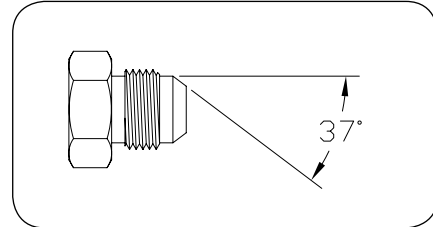
IMPORTANT

- *Follow these torque recommendations except when specified in text.*

Hydraulic Fittings - Torque and Installation

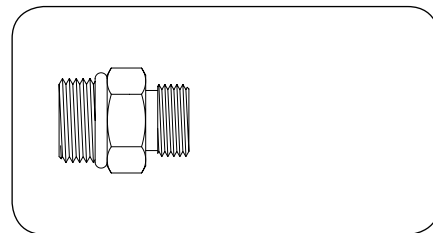
SAE Flare Connection (J. I. C.)

1. Tighten nut with finger until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.

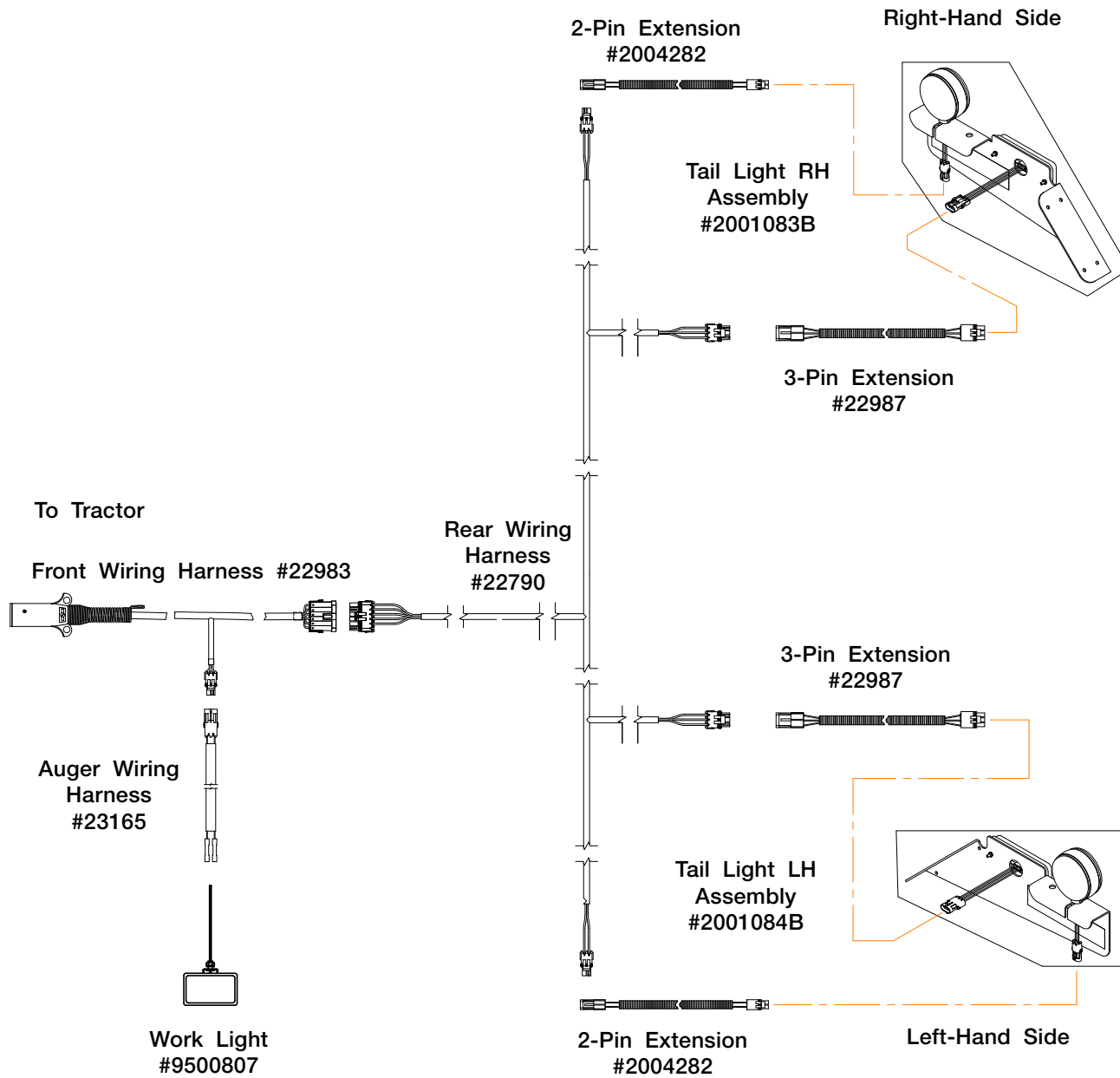


SAE Straight Thread O-Ring Seal

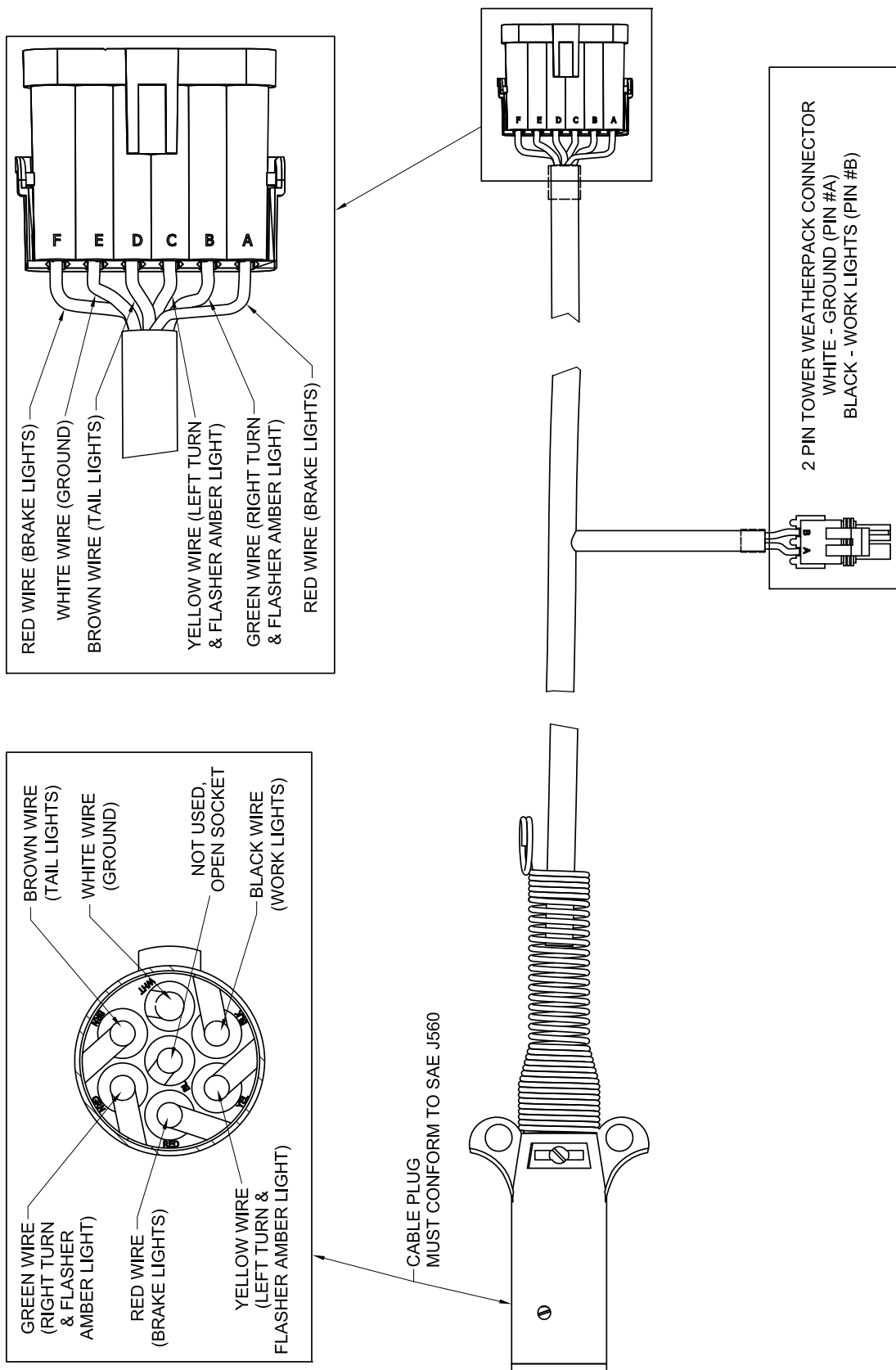
1. Insure jam nut and washer are backed up to the back side of smooth portion of elbow adapter.
2. Lubricate o-ring.
3. Thread into port until washer bottoms onto spot face.
4. Position elbows by backing up adapter.
5. Tighten jam nut.



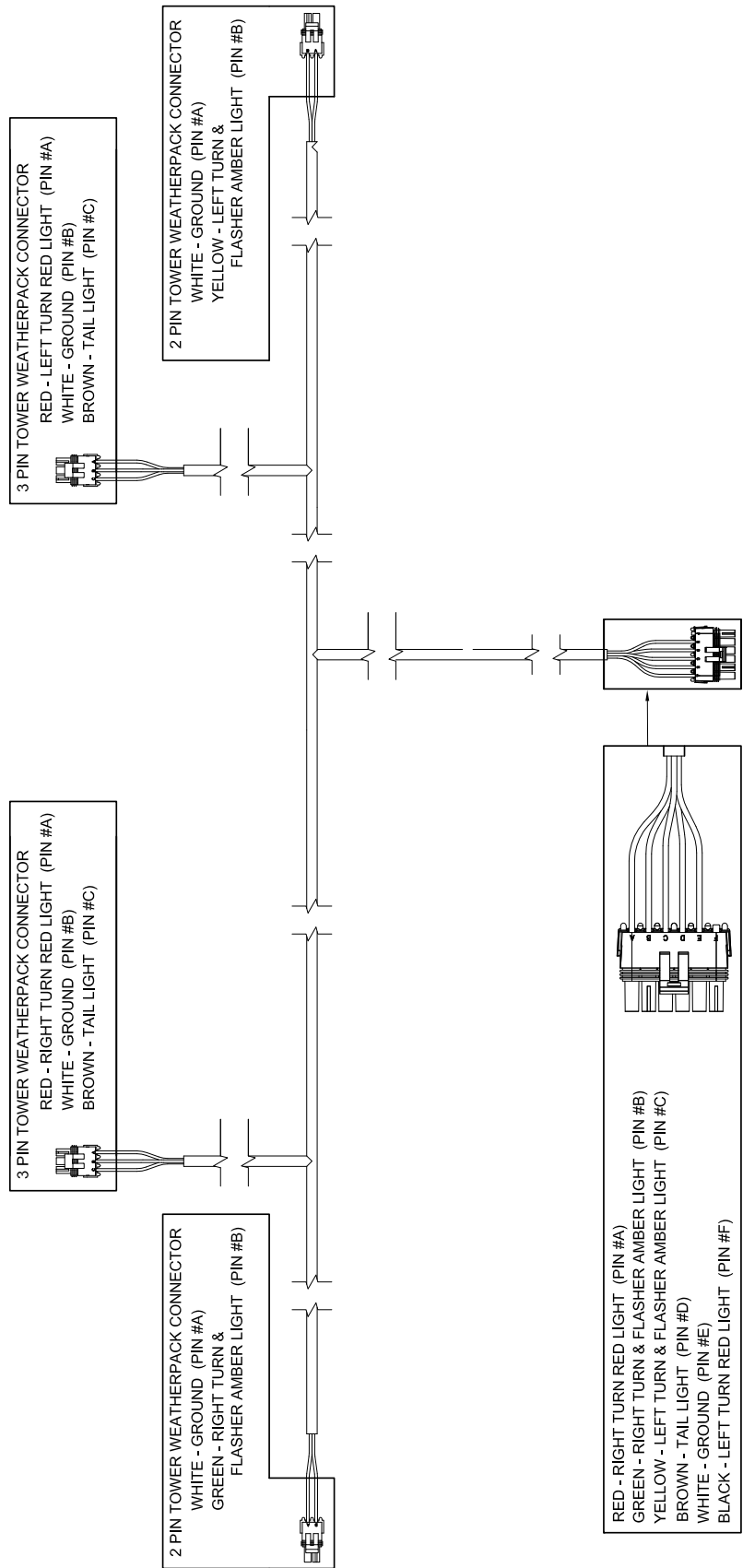
Electrical System Diagram — Overall



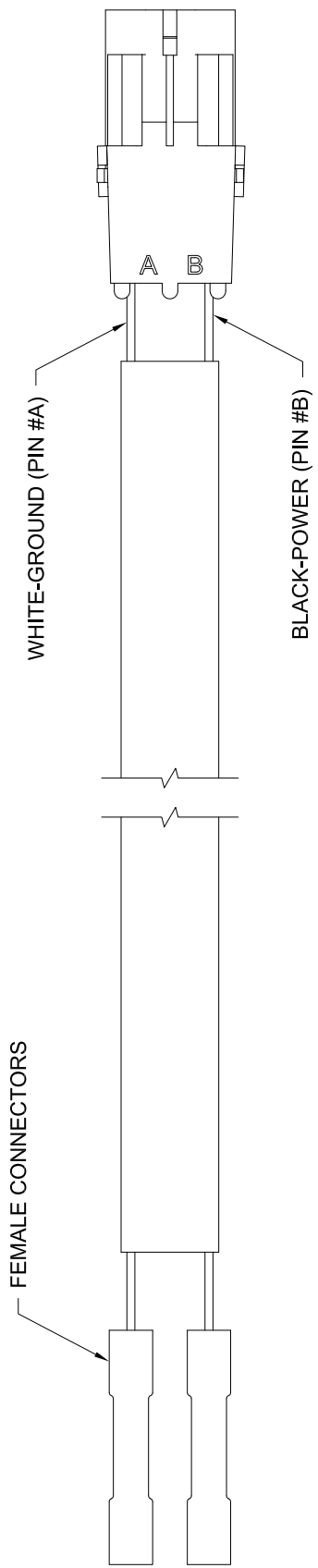
Electrical Diagram — Front Wiring Harness #22983



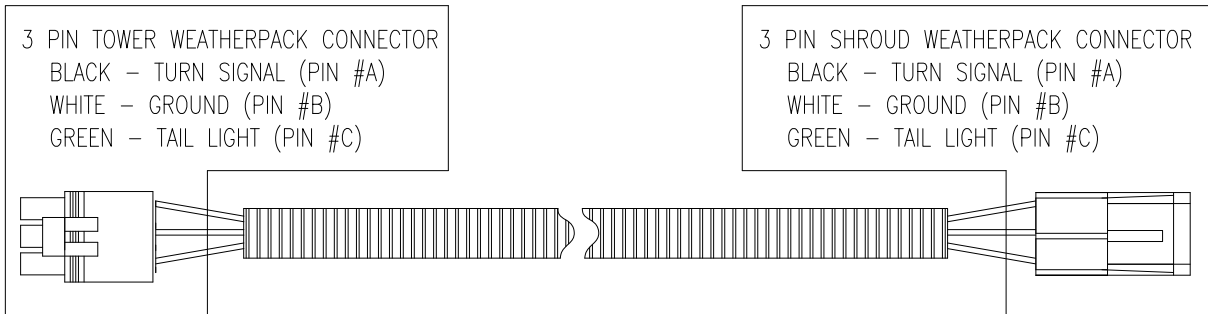
Electrical Diagram — Rear Wiring Harness # 22790



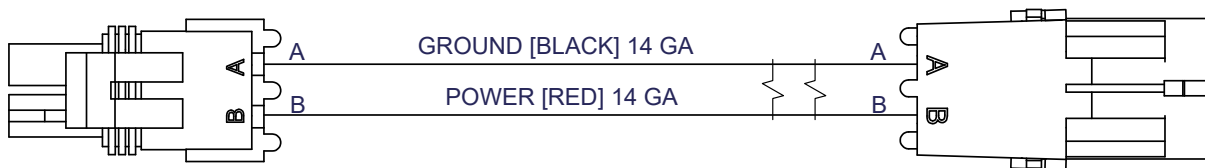
Electrical Diagram — Auger Light Wiring Harness # 23165



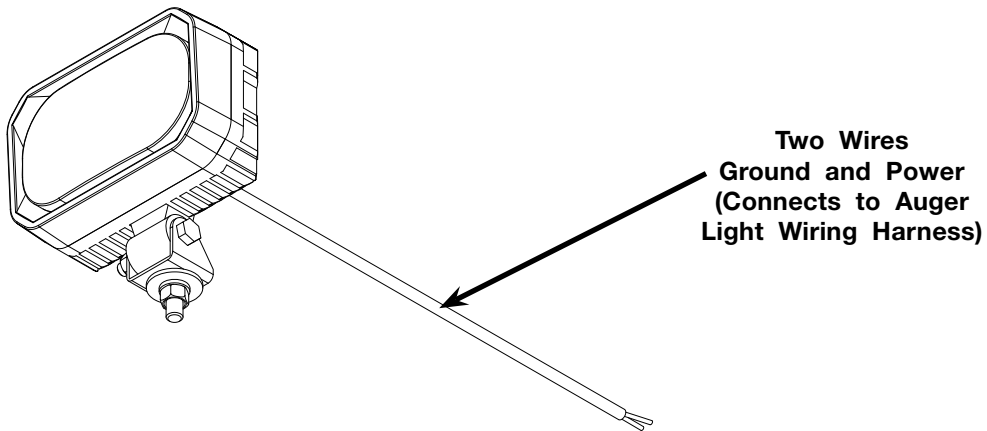
Electrical Diagram — 3 Pin Wiring Harne#22987



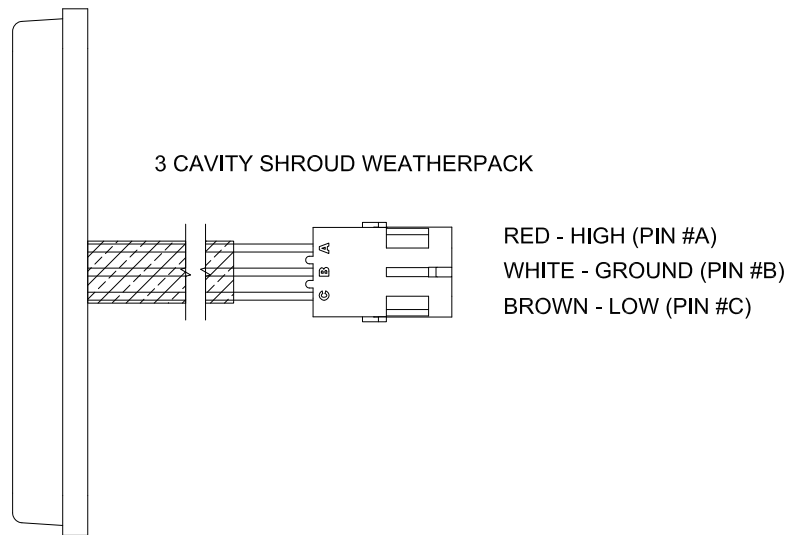
Electrical Diagram — Wiring Harness Extension #2004282



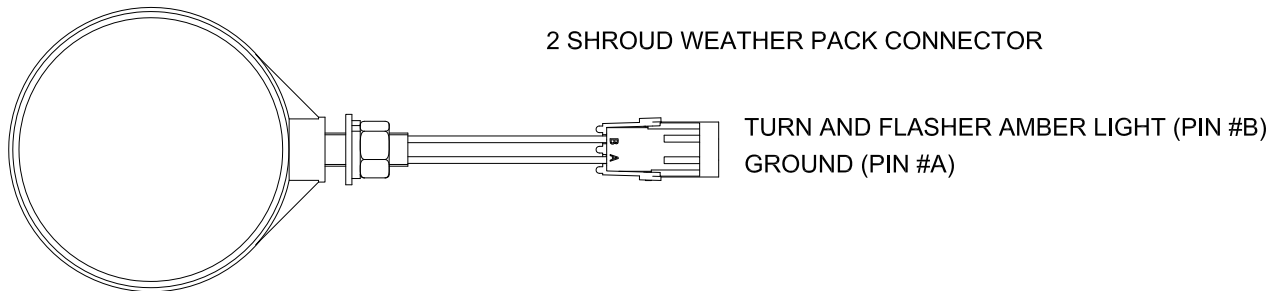
Electrical Diagram — Work Light #9500807



Electrical Diagram — Red Tail/Turn Light #9006282



Electrical Diagram — Amber Lamp Double Face #9005142



Notes

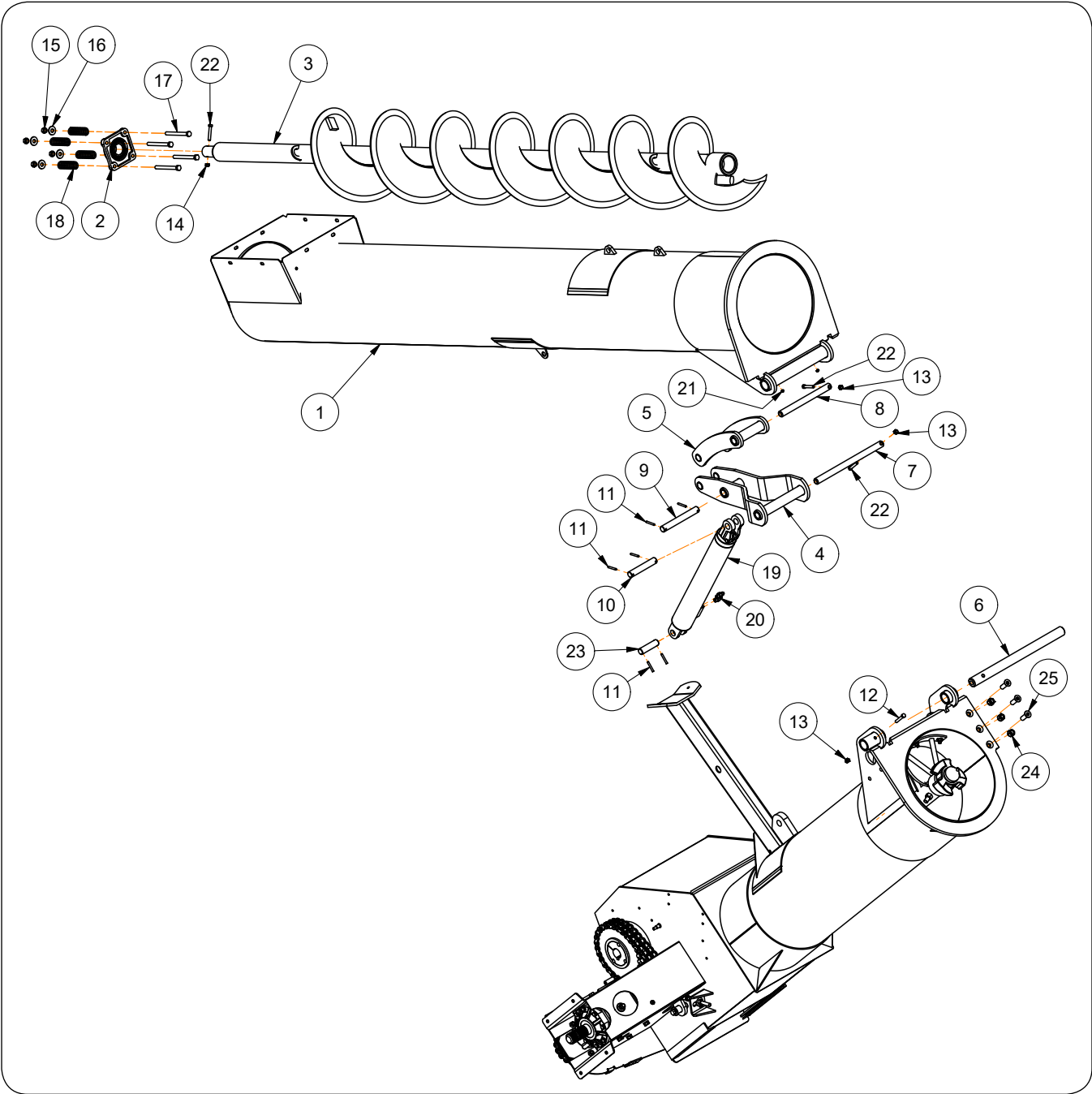
SECTION V

Parts

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- Track Axle Components 5-17
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**FOR TARP INFORMATION, PLEASE REFER TO YOUR TARP MANUAL.
FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.**

Vertical Upper Auger & Folding Components



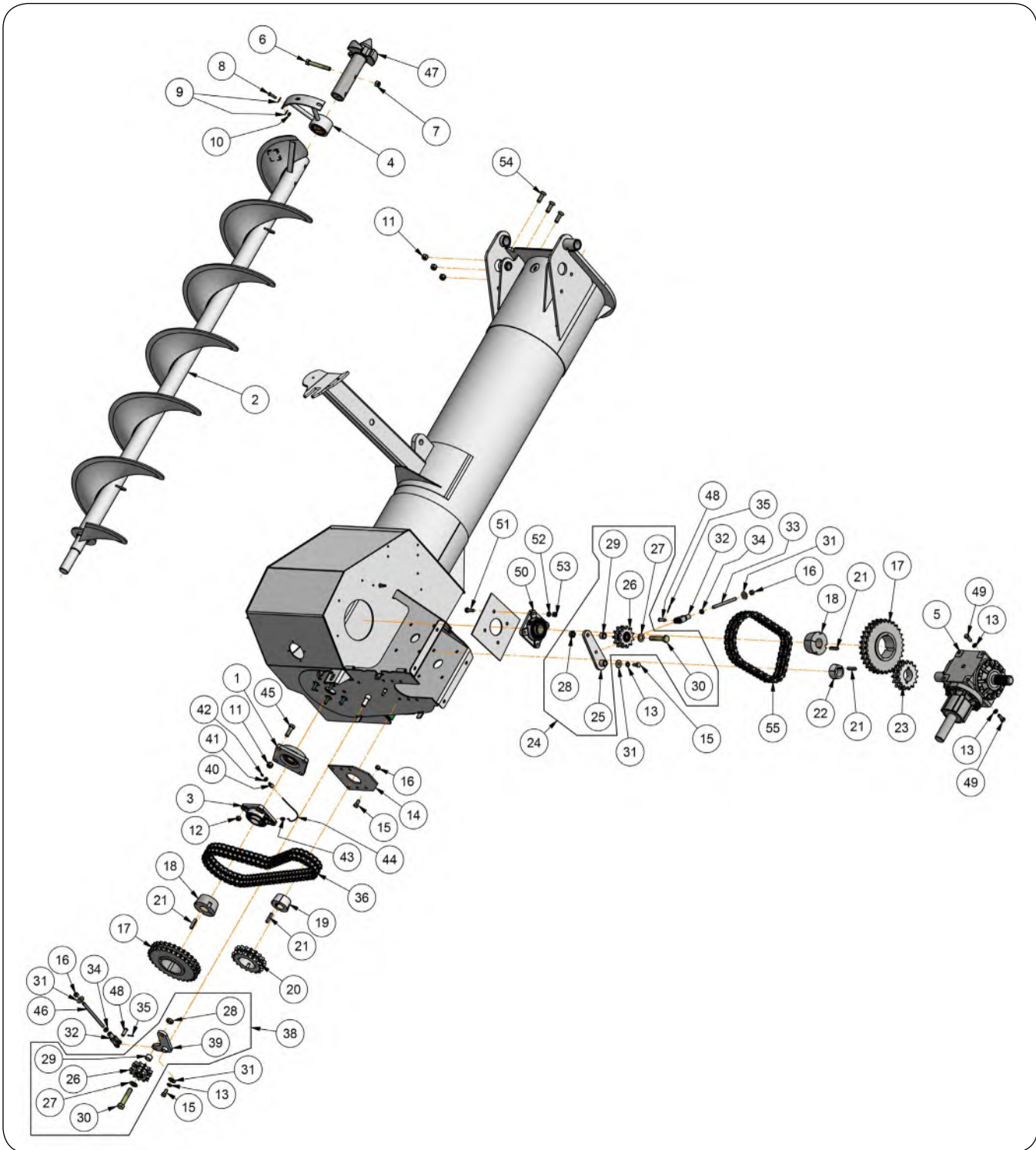
GRAIN CARTS — Parts

Vertical Upper Auger & Folding Components

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	23042G	Auger Tube Weldment (Green)	1	
	23042R	Auger Tube Weldment (Red)		
2	97382	Flange Bearing Assembly w/1 3/4" Bore	2	
3	23084B	Flight Weldment (RH)	1	
4	23049B	Link Weldment	1	
5	23047B	Link Weldment	1	
6	23063	Pin 1" 1/2" Dia. x 20 9/16"	1	
7	23065	Pin 1" Dia. x 14 1/16"	1	
8	23064	Pin 1" Dia. x 10 1/4"	1	
9	23066	Pin 1" Dia. x 7 15/16"	1	
10	23067	Pin 1" Dia. x 5 3/4"	1	
11	91144-164	Spiral Pin 1/4" Dia. x 1 3/4"	4	
12	9390-061	Capscrew 3/8"-16UNC x 2 1/2"	2	
13	9398-012	Elastic Stop Nut 3/8"-16UNC	2	
14	9928	Locknut 3/8"-16UNC	4	
15	9800	Locknut 1/2"-13UNC	8	
16	9405-088	Flat Washer 1/2"	8	
17	9390-114	Capscrew 1/2"-13UNC x 5 1/2"	4	
18	9001812	Spring (Compressed)	4	
19	99509	Cylinder 3 x 20 Assembly	1	
	98660	Seal Kit for 3 x 20 Cylinder		
20	900034	Adapter (Male/Male)	2	
21	91160	Zerk	4	
22	9390-060	Capscrew 3/8"-16UNC x 2 1/4" G5	3	
23	85632	Pin 1" Dia. x 3 3/4"	1	
24	9398-019	Elastic Lock Nut, 5/8"-11UNC	3	
25	98107	Flat Head Capscrew, 5/8"-11UNC x 2"	3	

GRAIN CARTS — Parts

Vertical Lower Auger Components



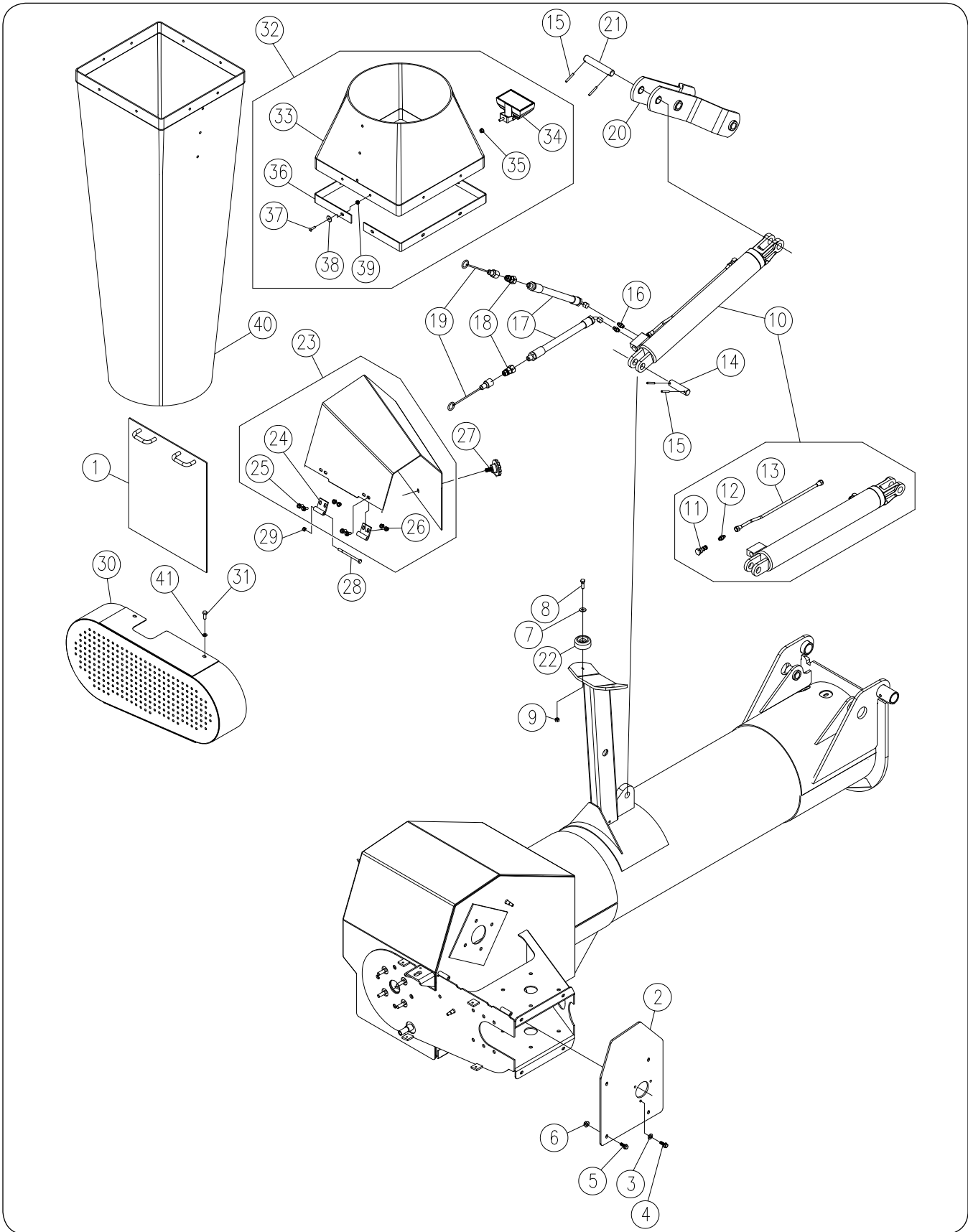
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	98116	Flange Bearing Assembly w/2" Bore	1	
2	23028B	Flight Weldment (RH)	1	
3	97382	Flange Bearing Assembly w/1 3/4" Bore	1	
4	23081B	Bearing Weldment	1	
5	98120	Gearbox	1	

GRAIN CARTS — Parts

Vertical Lower Auger Components

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
6	9390-133	Capscrew 5/8"-11UNC x 4 1/2"	2	
7	9801	Locknut 5/8"-11UNC	2	
8	9390-056	Capscrew 3/8"-16UNC x 1 1/4"	3	
9	9405-076	Flat Washer 3/8"	6	
10	9928	Locknut 3/8"-16UNC	4	
11	9398-019	Elastic Stop Nut 5/8"-11UNC	4	
12	9398-016	Elastic Stop Nut 1/2"-13UNC	4	
13	9404-025	Lock Washer 1/2"	10	
14	23191	Plate w/Holes	1	
15	9390-099	Capscrew 1/2"-13UNC x 1"	8	
16	9800	Locknut 1/2"-13UNC	8	
17	102245	Sprocket Taper (30 Teeth)	1	
18	102248	Bushing Taper 1 3/4" ID x 4 1/4" OD x 2"	1	
19	102247	Bushing Taper 1 3/4" ID x 3 3/8" OD x 1 3/4"	1	
20	102244	Sprocket Taper (18 Teeth)	1	
21	100775	Key	3	
22	102246	Bushing Taper 1 3/4" ID x 2 3/4" OD x 1 1/4"	1	
23	102243	Sprocket Taper (15 Teeth)	1	
24	23090B	Idler Arm Assembly	1	
25	23089B	Idler Arm Weldment	1	
26	9002486	Sprocket (11 Teeth)	1	
27	91050	Flat Washer 13/16"	1	
28	9395-016	Hex Jam Nut 3/4"-10UNC	1	
29	23096	Tube/Bushing	1	
30	9390-152	Capscrew 3/4"-10UNC x 3 3/4"	1	
31	9405-088	Flat Washer 1/2"	8	
32	93383	Clevis Yoke End	2	
33	23092	Threaded Rod 1/2"-13 x 6"	1	
34	9395-010	Hex Jam Nut 1/2"-13UNC	2	
35	9391-023	Cotter Pin 1/8" Dia. x 1"	2	
36	900492	Roller Chain/DbI (66 Links)	1	
	98125	Roller Chain/DbI (65 Links)		
38	24651	Idler Arm Assembly	1	
39	24650B	Chain Idler Arm Weldment	1	
40	98221	Bulkhead Connector	1	
41	98223	Hex Nut, 1/8" NPSM	1	
42	91160	Zerk	4	
43	900932	Snap-On Fitting	1	
44	24397	Grease Line	1	
45	9390-124	Capscrew 5/8"-11UNC x 2"	4	
46	25182	Threaded Rod	1	
47	28977	Drive Dog Weldment	1	
48	104559	Clevis Pin	2	
49	9390-100	Capscrew 1/2"-13UNC x 1 1/4"	8	
50	97382	Flange Bearing Assembly w/1 3/4" Bore	1	
51	9390-101	Capscrew 1/2"-13UNC x 1 1/2"	4	
52	9404-025	Lock Washer 1/2"	4	
53	9394-010	Hex Nut 1/2"-13UNC	4	
54	98107	Flat Head Capscrew, 5/8"-11UNC x 2"	3	
55	98124	Roller Chain (43 Links)	1	

Vertical Auger Hydraulics, Chute & Door Components

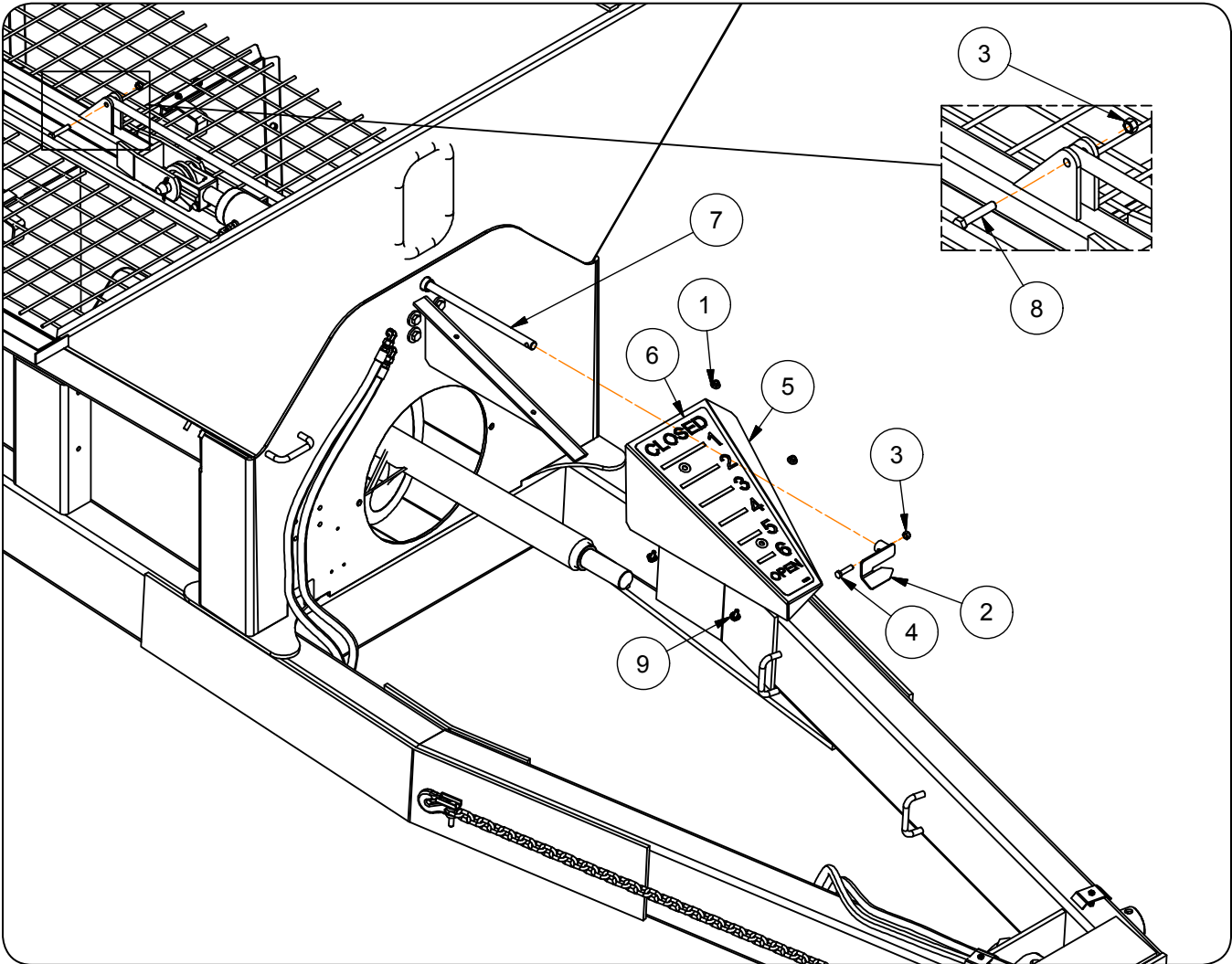


GRAIN CARTS — Parts

Vertical Auger Hydraulics, Chute & Door Components

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	23033B	Door Weldment	1	
2	23106B	Plate w/Holes	1	
3	9404-021	Lock Washer 3/8"	3	
4	9390-051	Capscrew 3/8-16UNC x 1/2	3	
5	91262	Flange Screw 3/8-16UNC x 1	4	
6	91263	Flange Nut 3/8-16UNC	4	
7	9405-076	Flat Washer 3/8"	6	
8	9390-056	Capscrew 3/8-16UNC x 1 1/4	3	
9	9928	Locknut 3/8-16UNC	4	
10	99509	Cylinder 3 x 20 Assembly	1	
	98660	Seal Kit for 3 x 20 Cylinder		
11	99515	Ball Valve	1	
	99516	Seal Kit for Ball Valve		
12	98435	Adapter (Male/Male)	1	
13	99510	Tube Asy (Female/Female)	1	
14	85632	Pin 1" Dia. x 3 3/4	1	
15	91144-164	Spiral Pin 1/4" Dia. x 1 3/4	4	
16	900034	Adapter (Male/Male)	2	
17	98230	Hose 3/8" Dia. x 210" Long	2	
18	91383	Coupling (Male/Female)	2	
19	91511	Dust Cap	2	
20	23049B	Link Weldment	1	
21	23067	Pin 1" Dia. x 5 3/4	1	
22	97896	Bumper 2 1/2" Dia. x 1	2	
23	23380G	Shield Weldment (Green)	1	
	23380R	Shield Weldment (Red)		
24	23378B	Hinge Weldment	2	
25	91256	Flange Screw 5/16-18UNC x 3/4	4	
26	91257	Flange Nut 5/16-18UNC	4	
27	98356	Knob	1	
28	9390-043	Capscrew 5/16-18UNC x 4 1/2	2	
29	9807	Locknut 5/16-18UNC	2	
30	27395B	Guard Weldment w/Handles	1	
30A	23103B	Guard Weldment	1	
31	9390-030	Capscrew 5/16-18UNC x 1	4	
32	106279	Big Rubber Spout Kit	1	
33	9001438	Rubber Hood	1	
34	9500807	LED Work Light	1	
35	91257	Flange Nut 5/16-18UNC	1	
36	106906	Strap	2	
37	903174-537	Screw 1/4-20UNC x 1	11	
38	9405-066	Flat Washer 1/4"	14	
39	97189	Flange Nut 1/4-20UNC	11	
40	107304	Opt. Canvas Spout Extn	1	
41	9404-019	Lock Washer 5/16"	4	

Indicator Components

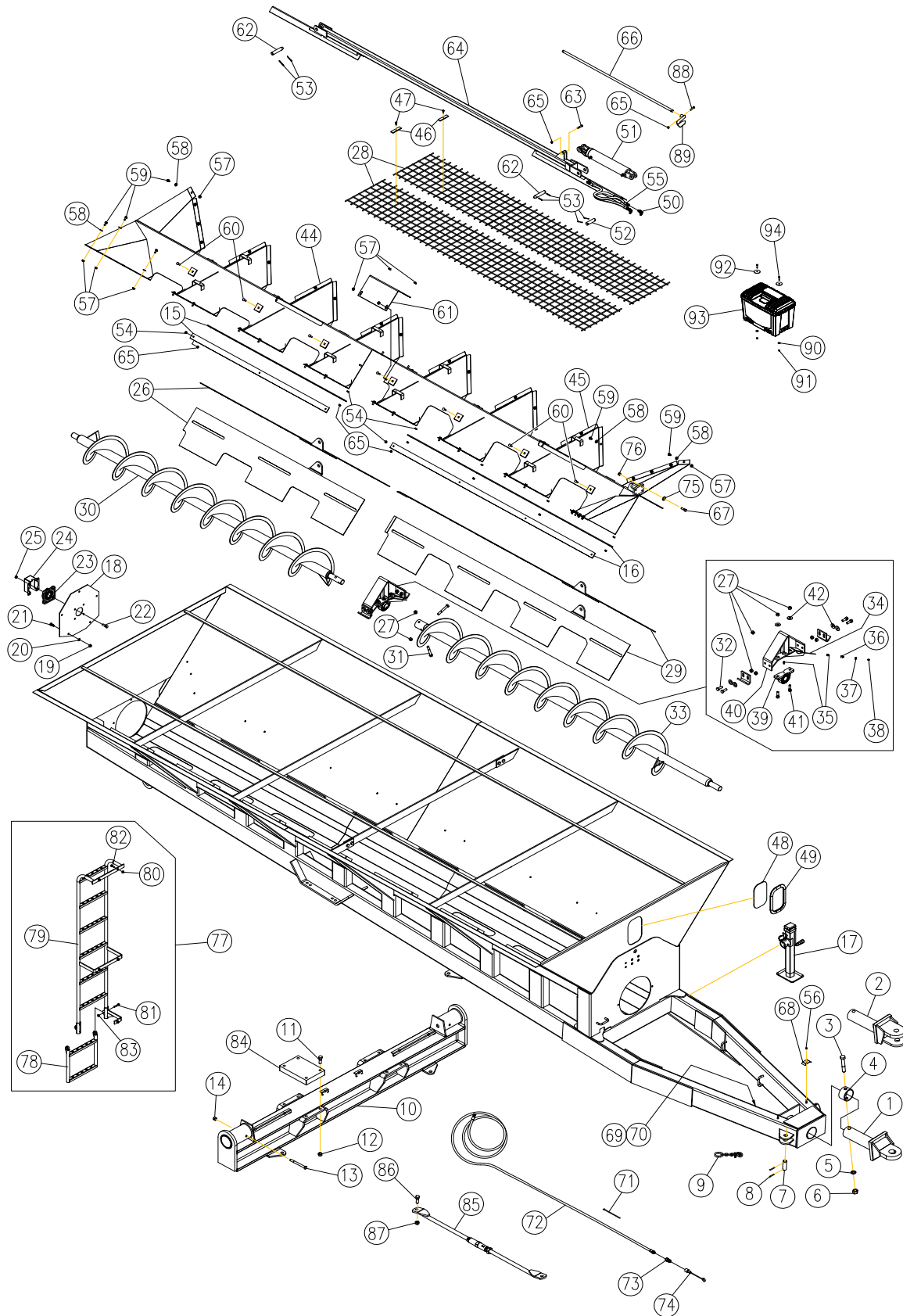


GRAIN CARTS — Parts

Indicator Components

ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	91257	Large Flange Hex Nut 5/16-18UNC	2	
2	24644B	Indicator Weldment =Black=	1	
3	9928	Locknut 3/8-16UNC	2	
4	9390-057	Capscrew 3/8-16UNC x 1 1/2 Gr.5	2	
5	24640B	Cover Assembly =Black= w/Gate Position Decal	1	
6	24641	Gate Position Decal	1	
7	24637B	Gate Rod/Bar =Black=	1	
8	9390-059	Capscrew 3/8-16UNC x 2 Gr.5	1	
9	91256	Flange Screw 5/16-18UNC x 3/4 Gr.5	2	

Cart Frame Components



GRAIN CARTS — Parts

Cart Frame Components

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	103641B	Spade Hitch Weldment	1	
2	102589B	Clevis Hitch Weldment	1	
3	91299-195	Capscrew 1-8UNCx6	1	
4	102586B	Hitch Coupler	1	
5	9404-041	Lock Washer 1"	1	
6	9394-020	Hex Nut 1-8UNC	1	
7	108047	Pin 1 1/4" Dia. x 3 3/4	1	
8	91144-166	Spiral Pin 1/4" Dia. x 2	2	
9	97436	Transport Chain, 16,000#	1	
10	28192B	Axle Weldment	1	
11	91299-154	Capscrew 3/4-10UNC x 4 1/2	8	
12	9802	Locknut 3/4-10UNC	8	
13	9390-138	Capscrew 5/8-11UNC x 7	2	
14	9398-019	Elastic Stop Nut 5/8-11UNC	3	
15	24485B	Rear Tent/Baffle Bar	2	
16	24486B	Front Tent/Baffle Bar	2	
17	901235	Jackstand	1	
18	23569B	Bearing Plate	1	
19	9394-010	Hex Nut 1/2-13UNC	5	
20	9404-025	Lock Washer 1/2"	5	
21	9390-100	Capscrew 1/2-13UNC x 1 1/4	5	
22	9390-102	Capscrew 1/2-13UNC x 1 3/4	4	
23	97382	Flange Bearing Asy 4-Bolt	1	
24	23638B	Bearing Cover	1	
25	9395-010	Hex Jam Nut 1/2-13UNC	4	
26	24482B	Gate Weldment (Rear/LH)	1	
	24606B	Gate Weldment (Rear/RH)	1	
27	9801	Locknut 5/8-11UNC	4	
28	24586B	Screen	4	
29	24480B	Gate Weldment (Front/LH)	1	
	24605B	Gate Weldment (Front/RH)	1	
30	23560B	Flight Weldment LH	1	
31	91299-133	Capscrew 5/8-11UNC x 4 1/2	2	
32	9390-123	Capscrew 5/8-11UNC x 1 3/4	4	
33	23559B	Flight Weldment LH	1	
34	24068	Hyd Line Only	1	
35	98222	Connector Tube	1	
36	98221	Bulkhead Connector	1	
37	98223	Hex Nut/Thin 1/8"	1	
38	91160	Zerk	1	

(Continued on next page)

GRAIN CARTS — Parts

Cart Frame Components

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
39	98146	Pillow Bearing Asy 2-Bolt	1	
40	23579B	Bearing Holder Weldment	1	
41	9390-124	Capscrew 5/8-11UNC x 2	2	
42	9405-100	Flat Washer 5/8"	6	
43	9876	90° Elbow	2	
44	24471	Rear Tent/Baffle Weldment	1	
45	24469	Front Tent/Baffle Weldment	1	
46	23653B	Bar/Strap w/Hole	8	
47	9512	Self-Drilling Screw 1/4-14 x 1	8	
48	102608	Window	3	
49	102693	Window Weatherstrip	3	
50	92761	90° Elbow	2	
51	901047	Cylinder 3 x 14	1	
	98660	Seal Kit for 3 x 14 Cylinder		
52	85632	Pin 1" Dia. x 3 3/4	1	
53	9391-046	Cotter Pin 3/16" Dia. x 2	6	
54	271045	Door/Baffle Bushing	8	
55	91530	Hose 3/8" Dia. x 26" Long	2	
56	9936	Locknut 1/4-20UNC	2	
57	91263	Nut/Large Flange 3/8-16UNC	24	
58	9405-076	Flat Washer 3/8"	24	
59	96972	Screw/Self Tapping 3/8-16UNC x 1	24	
60	9388-053	Carriage Bolt 3/8-16UNC x 1 1/2	14	
61	24474B	Cover	1	
62	24607	Pin 1" Dia. x 5 1/8	1	
63	9390-059	Capscrew 3/8-16UNC x 2	1	
64	24489B	Gate Linkage Weldment	1	
65	9928	Locknut 3/8-16UNC	8	
66	24637B	Bar 3/4" Dia. x 52 1/4" Long	1	
67	9390-102	Capscrew 1/2-13UNC x 1 3/4	2	
68	24901B	Clamp	4	
69	9003645	Locknut 10mm	5	
70	9003646	Capscrew 10mm x 60mm	5	
71	9000106	Cable Tie 6" Long	A/R	
	94038	Cable Tie 32" Long		
72	99954	Hose 3/8" Dia. x 168" Long	2	
73	91383	Male Tip Coupling 3/4-16 Female Thread	2	
74	91511	Dust Cap	2	
75	9002718	Flat Washer 1/2"	2	

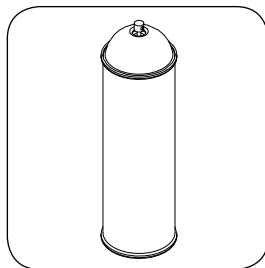
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GRAIN CARTS — Parts

Cart Frame Components

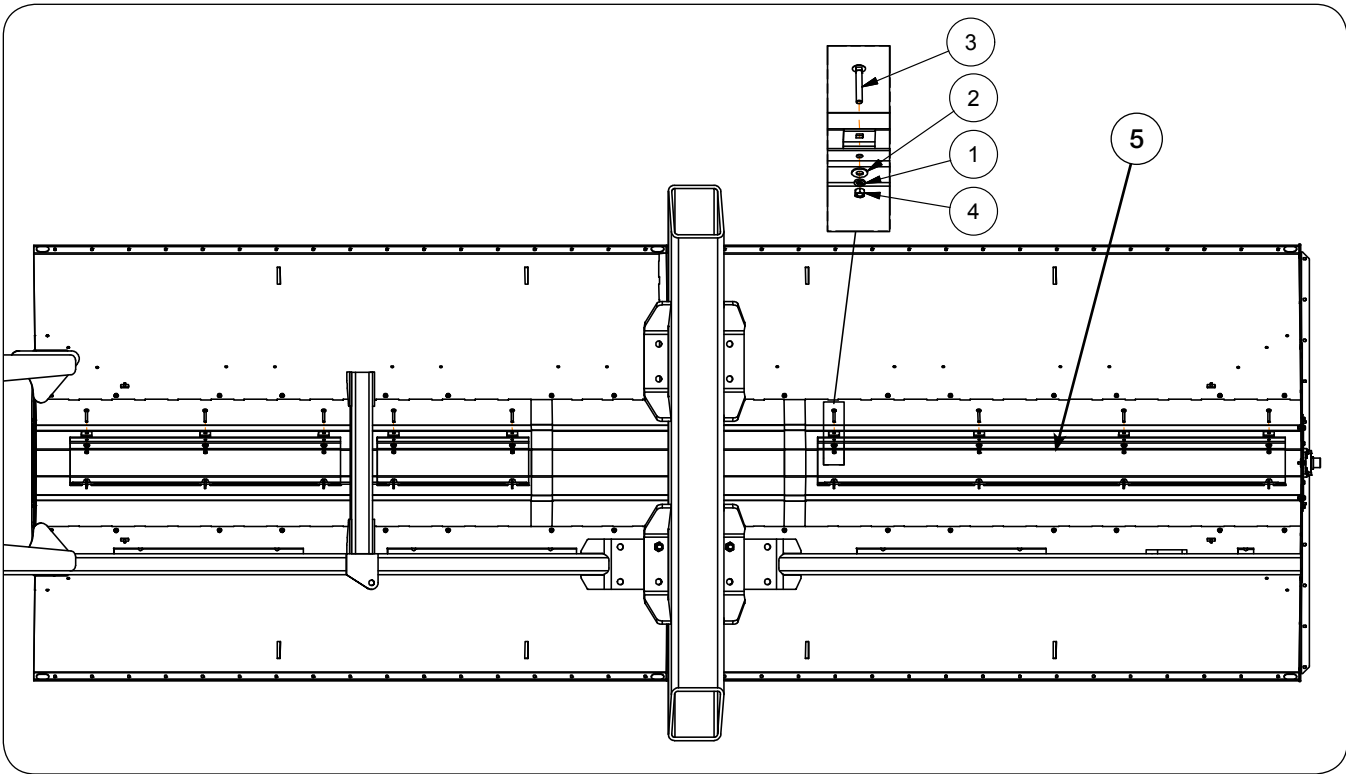
ITEM	PART NO.	DESCRIPTION	QTY	NOTES
76	9800	Locknut 1/2-13UNC	2	
77	24873B	Ladder Assembly =Black=	1	
78	25457B	Ladder Step Weldment =Black=	1	
79	25458B	Ladder Weldment =Black=	1	
80	91257	Flange Hex Nut, 5/16-18	4	
81	9390-059	Capscrew, 3/8-16UNC x 2	2	
82	97604	Flange Screw, 5/16-18 x 1	4	
83	9928	Locknut, 3/8-16UNC	2	
84	28202B	Spacer for 1050R32 Tires	2	
85	266662B	Axle Brace	2	
86	9390-185	Capscrew 1-8UNC x 2 1/2	4	
87	9663	Locknut 1-8UNC	4	
88	9390-057	Capscrew 3/8-16UNC x 1 1/2	1	Grade 5
89	24644B	Indicator Weldment	1	
90	9405-064	Flat Washer 1/4" USS	2	
91	9936	Locknut 1/4-20UNC	2	
92	94763	Fender Washer 2"	2	
93	9005850	Storage Box	1	
94	9390-006	Capscrew 1/4-20UNC x 1 1/4	2	

Touch-Up Paint



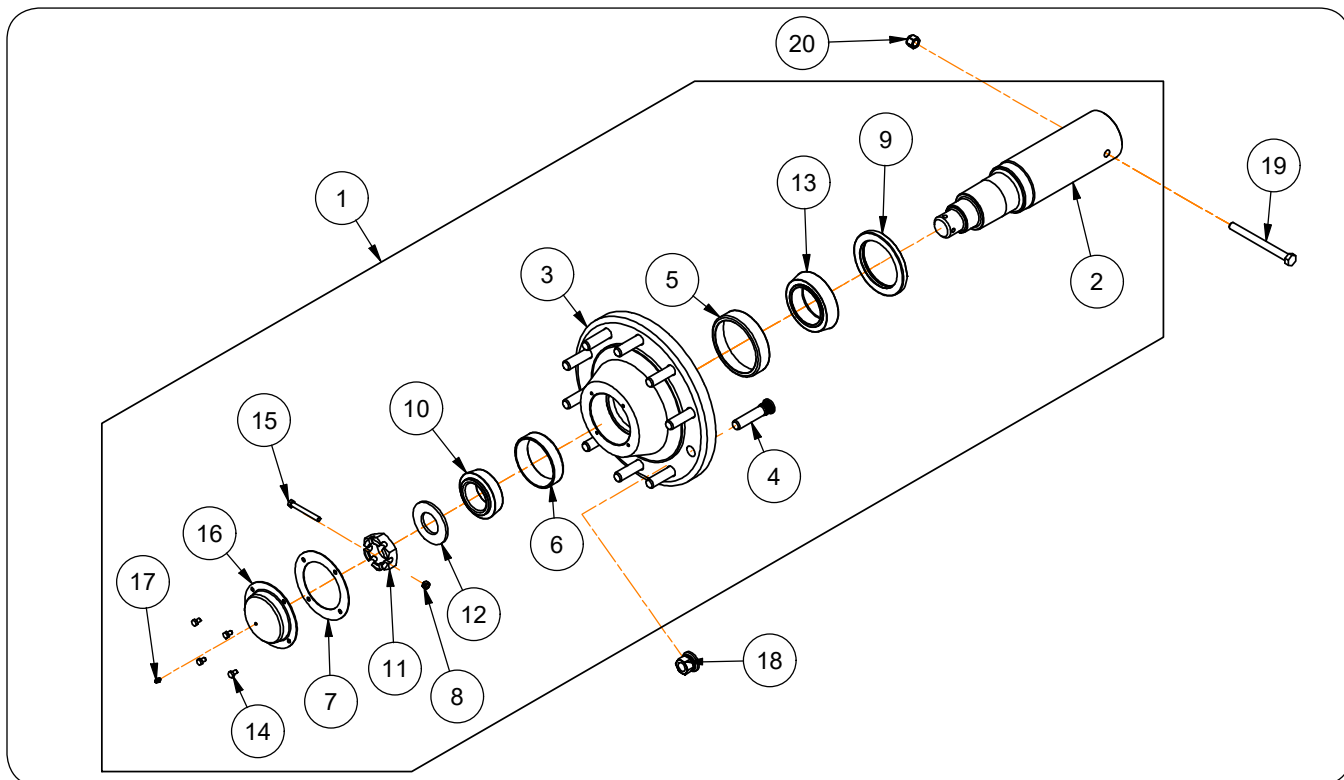
SPRAY PAINT COLOR	TOUCH-UP PAINT
Red	97301
Green	97015
Off-White	97016
Black	97013

Cleanout Door Components



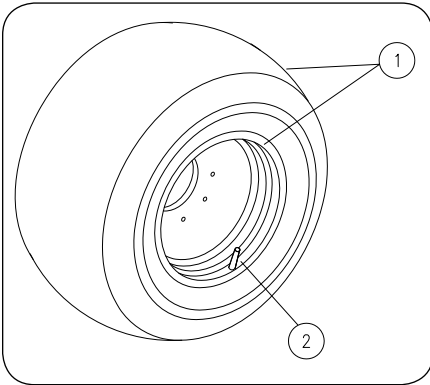
ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES
1	9404-021	Lock Washer 3/8"	9	
2	9405-076	Flat Washer 3/8" USS	9	
3	9388-057	Carriage Bolt 3/8-16UNC x 2 1/2 Gr.5	9	
4	9394-006	Hex Nut 3/8-16UNC	9	
5	23623	Cleanout Door (Unpainted)	2	

Hub Components



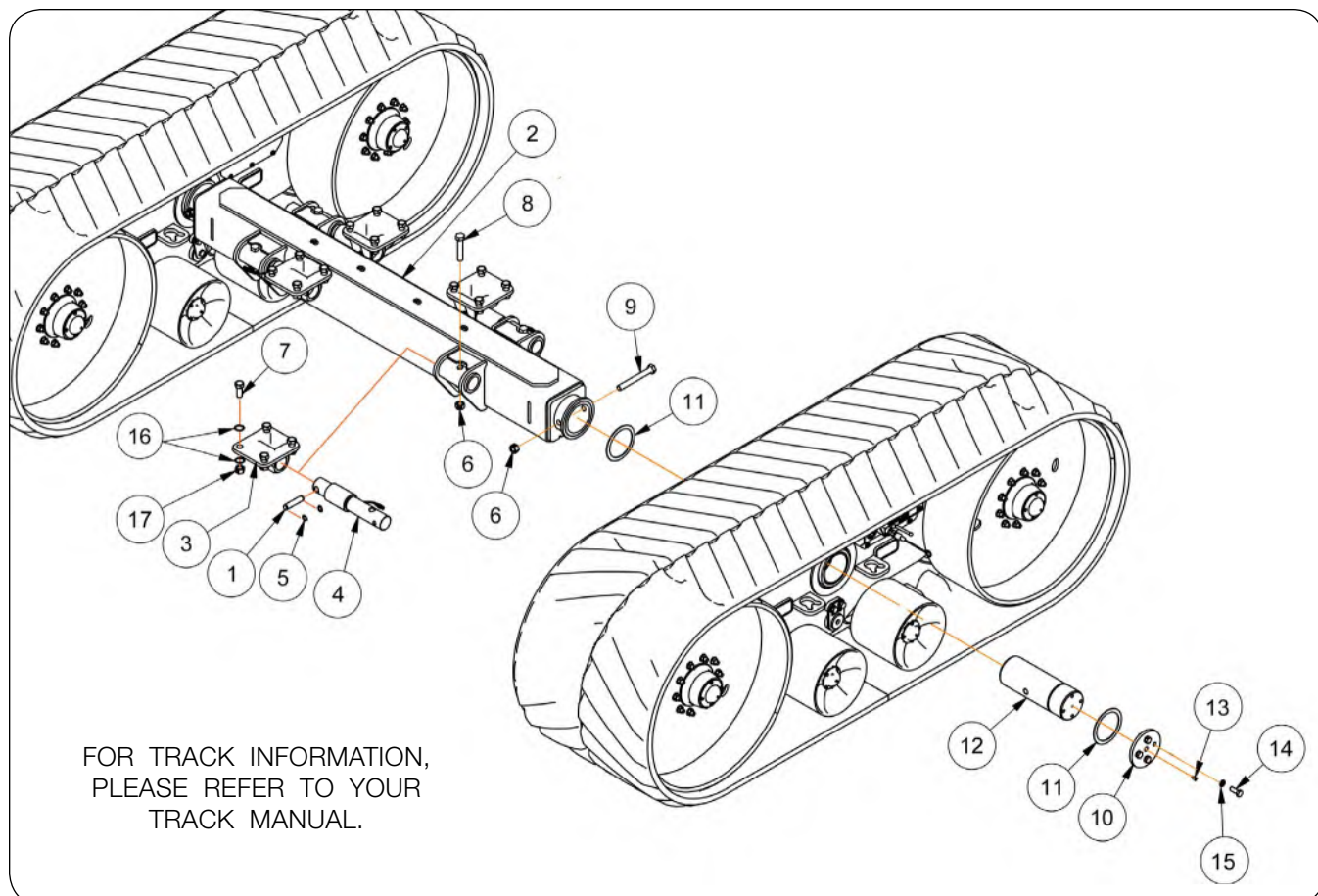
ITEM	DESCRIPTION	PART NUMBER	QTY	NOTES
1	Hub & Spindle Assembly (Green)	267284G	-	Includes 2 through 16
	Hub & Spindle Assembly (Red)	267284R		
2	Spindle Dia. 4.50"	286172	1	2-12UNF Threaded End
3	Hub Sub Assembly (Green)	265390G	1	Includes Items 4, 5, 6
	Hub Sub Assembly (Red)	265390R		
4	Stud Bolt M22x1.5x4	9007001	10	Beginning with S/N D61400100
	Stud Bolt 7/8-14UNF x 3 1/2	95472		Grade 8 - Prior to S/N D61400100
5	Bearing Cup	92476	1	HM218210
6	Bearing Cup	92462	1	HM212011
7	Gasket	284230	1	
8	Locknut 3/8"-16UNC	902875	1	
9	Seal - 4.375" I.D.	92455	1	43605SA
10	Outer Bearing Cone	92464	1	HM212049
11	Nut	92470	1	
12	Washer	92472	1	
13	Inner Bearing Cone	92545	1	HM218248
14	Capscrew 5/16"-18UNC x 1/2"	9390-026	4	Grade 5
	Capscrew 3/8"-16UNC x 3 1/4"	9390-064	1	Grade 5
	Hub Cap (Green)	286171G	1	
Hub Cap (Red)	286171R			
Hub Cap (Black)	286171B			
15	Capscrew 3/8"-16UNC x 3 1/4"	9390-064	1	Grade 5
16	Hub Cap (Green)	286171G	1	
	Hub Cap (Red)	286171R		
Hub Cap (Black)	286171B			
17	Grease Zerk	91160	1	
18	Hex Flange Nut 7/8-14UNF	9000990	10	Grade 8 - Prior to S/N D61400100
	Flanged Cap Nut M22x1.5	97319		Beginning with S/N D61400100
19	Capscrew 5/8"-11UNC x 7"	9390-138	1	
20	Elastic Lock Nut 5/8"-11UNC	9390-019	1	

Wheels & Tires



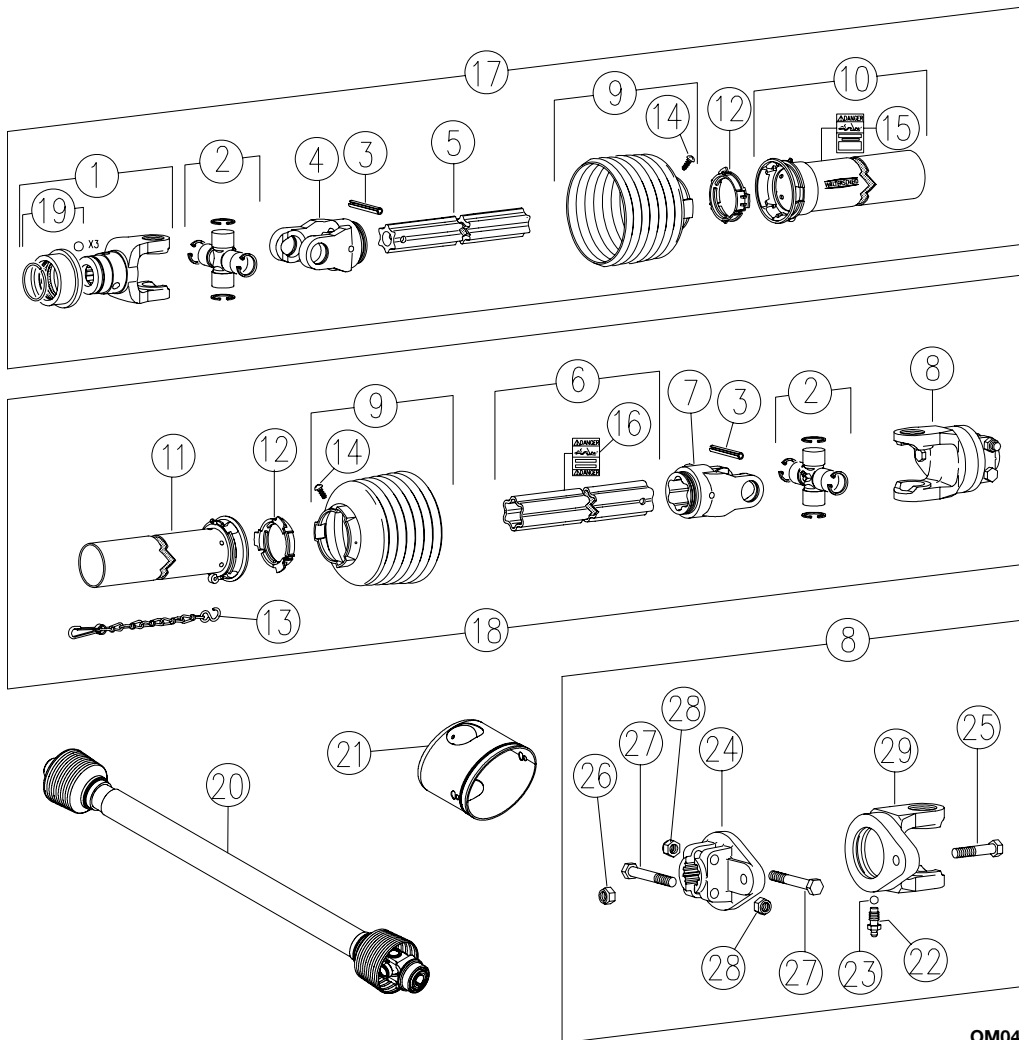
ITEM	PART NO.	DESCRIPTION
1	18904	Wheel & Tire Assembly 30x32 / 900/70R32 R-1W
	17939W0	Wheel Only 30x32
1	17350	Wheel & Tire Assembly 31x32 / 900/60R32 R-1W
	17349W0	Wheel Only 31x32
1	17923	Wheel & Tire Assembly 36x32 / 1050/50R32
	17922W0	Wheel Only 36x32
2	93300	Valve Stem
	95365	Plug

Track Axle Components



ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	250843	Pin 1" Dia. x 4 9/16	4	
2	268764B	Axle Weldment =Black=	1	
3	268836B	Axle Mount Weldment =Black=	4	
4	9004903	Hitch Bar, 2.875" Dia.	4	
5	91192	Retaining Ring 1"	8	
6	92199	Locknut, 1-8UNC	6	
7	91299-1457	Capscrew 1-14UNS x 3 1/4 Grade 8	12	
8	9390-193	Capscrew 1-8UNC x 5 Grade 5	4	
9	9390-462	Capscrew 1-8UNC x 8 1/2 Grade 5	2	
10	268121B	Cover Plate =Black=	2	
11	268619	Washer 7 1/2" OD	4	
12	268640	Track Pivot Shaft 6" Dia. x 16 5/8	2	
	267124	Track Pivot Shaft 6" Dia. x 18 3/8	2	
13	93426	Grease Zerk	2	
14	9390-145	Capscrew 3/4-10UNC x 2 Grade 5	8	
15	9404-033	Lockwasher 3/4	8	
16	804685	Washer 2" OD	32	
17	9008441	Elastic Locknut, 1-14UNS Grade 8	16	

Driveline Components with Shear Bolts



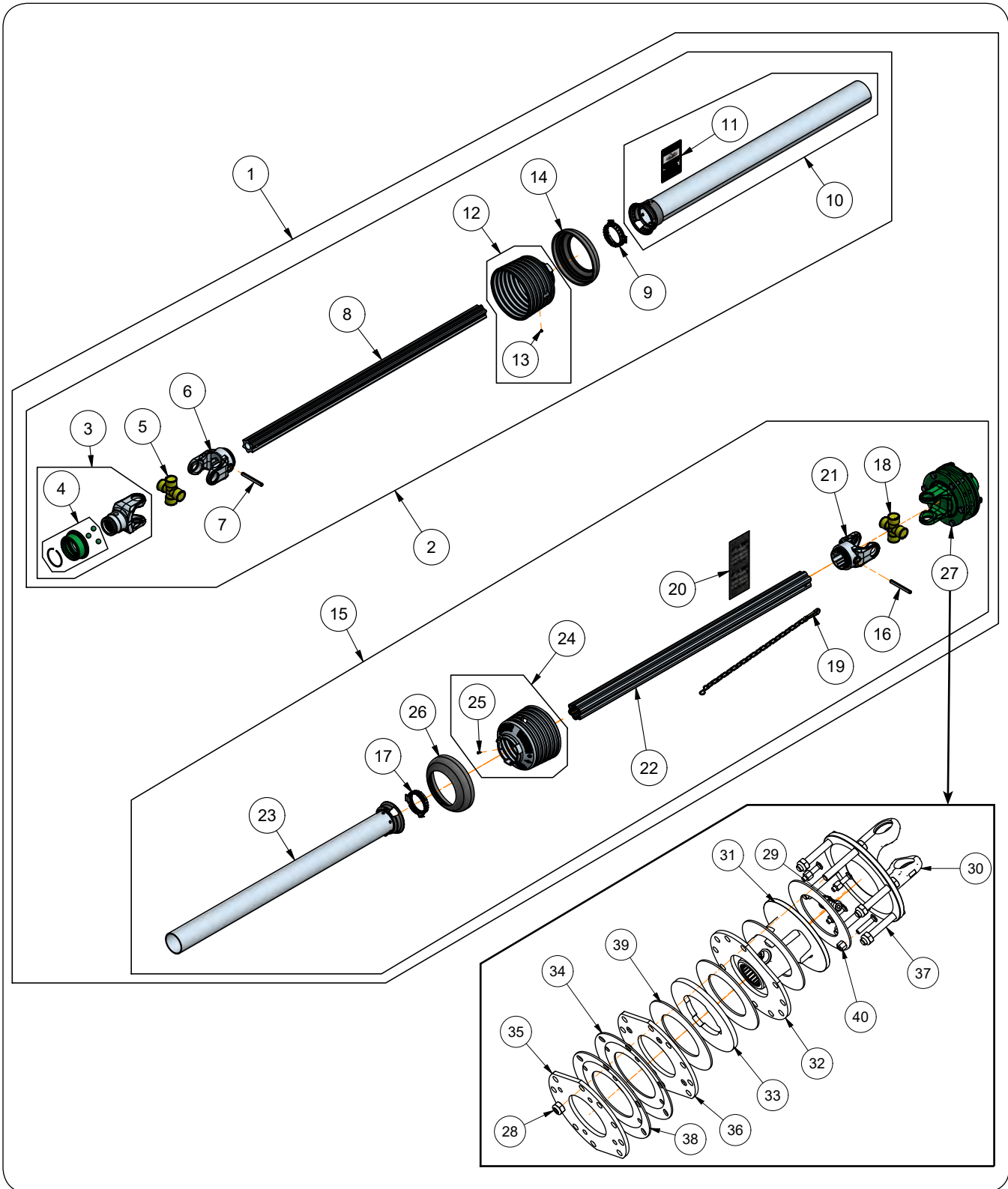
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GRAIN CARTS — Parts

Driveline Components with Shear Bolts

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	9002608	Yoke 1 3/4-20	1	
	9002684	Yoke 1 3/8-21	1	
2	92529	Cross & Bearing Kit	2	
3	9002609	Spring Pin 10 x 80	2	
4	9002610	Inboard Yoke	1	
5	900134	Inner Profile	1	
6	900135	Outer Profile	1	
7	9002613	Inboard Yoke	1	
8	900136	Shearbolt Clutch	1	
9	9002615	Shield Cone	1	
10	900137	Outer Shield Tube	1	
11	900138	Inner Shield Tube	1	
12	92373	Bearing Ring	2	
13	92374	Safety Chain	1	
14	92372	Screw	2	
15	92377	Decal - Shield	1	
16	92378	Decal - Steel	1	
17	900030	Front-Half 1 3/4-20	1	
	900073	Front-Half 1 3/8-21		
18	900031	Rear-Half 1 3/4-20	1	
19	93856	Quick Disconnect 1 3/4-20	1	
	9002669	Quick Disconnect 1 3/8-21		
20	900027	PTO Driveshaft Asy	1	
21	9002499	PTO Shield	1	
22	95256	Zerk	1	
23	95257	Ball	1	
24	900426	Hub	1	
25	9003646	Shear Bolt M10x60-Gr8.8	2	DO NOT SUBSTITUTE
26	9003645	Locknut M10	2	
27	9003714	Bolt M16x80-Gr8.8	2	
28	9003785	Locknut M16	2	
29	900425	Yoke	1	

Optional PTO Assembly With Friction Clutch

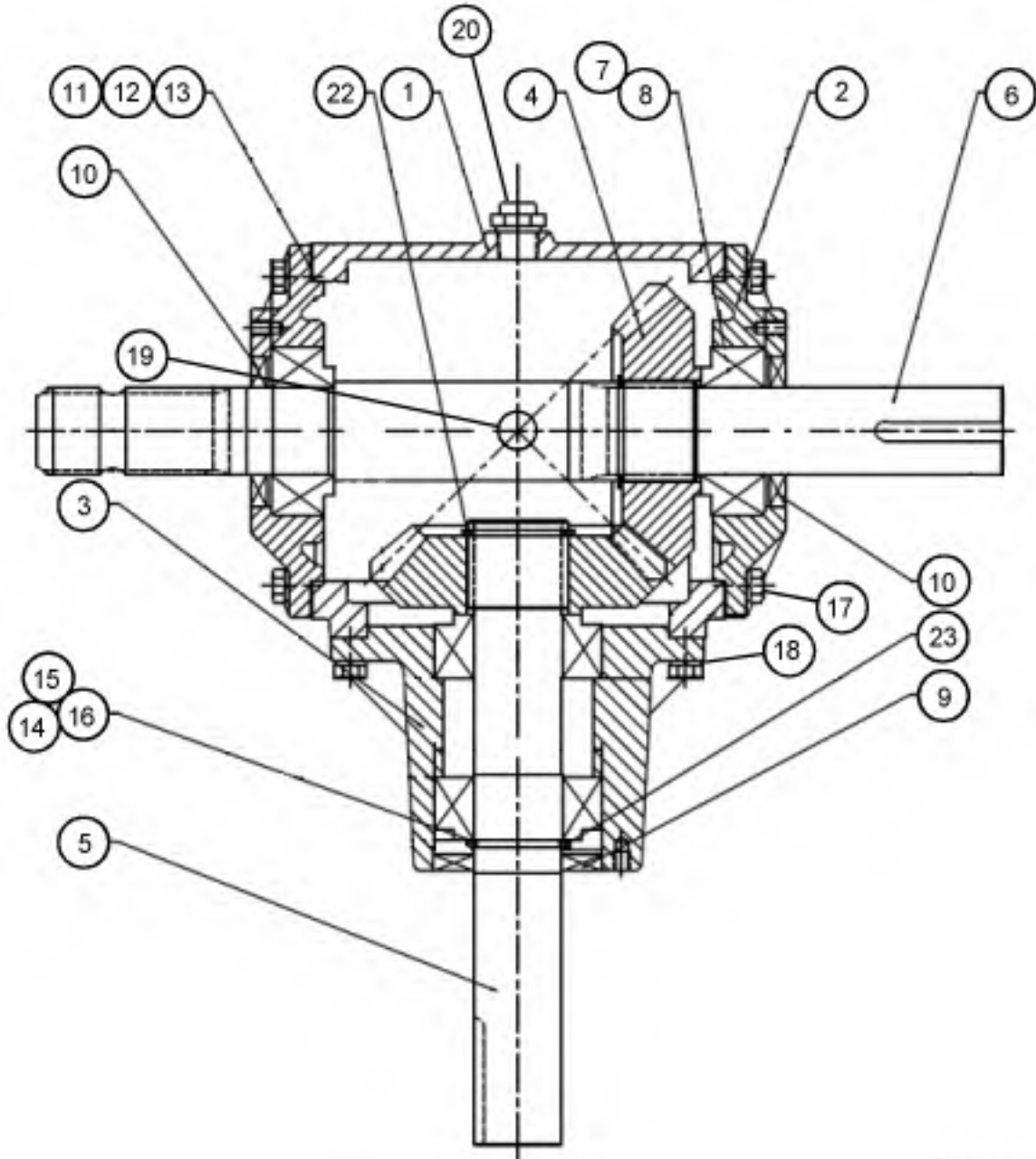


GRAIN CARTS — Parts

Optional PTO Assembly With Friction Clutch

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	900508	PTO Shaft w/ Shielding	1	Includes Items 2-40
2	900030	Front Half PTO	1	Includes Items 3-14
3	9002608	End Yoke	1	includes Item 4
4	93856	Quick Disconnect Kit	1	
5	92529	Cross & Bearing Kit	1	
6	9002610	Inboard Yoke	1	
7	9002609	Spring Pin	1	
8	900134	Inner Profile	1	
9	92373	Bearing Ring	1	
10	900137	Outer Shield Tube w/ Cap	1	Includes Item 11
11	92377	Danger Decal - Shield	1	
12	9002615	Shield Cone - Yoke	1	Includes Item 13
13	92372	Screw	1	
14	9002513	Reinforcing Collar	1	
15	900509	Rear Half PTO	1	Includes Items 16-40
16	9002609	Spring Pin	1	
17	92373	Bearing Ring	1	
18	92529	Cross & Bearing Kit	1	
19	92374	Safety Chain	1	
20	92378	Danger Decal - Steel	1	
21	9002613	Inboard Yoke	1	
22	900135	Outer Profile	1	
23	900138	Inner Shield Tube w/ Cap	1	
24	9002615	Shield Cone - Yoke	1	includes Item 25
25	92372	Screw	1	
26	9002513	Reinforcing Collar	1	
27	900534	Friction Clutch Complete	1	Includes Items 28-40
28	9002268	Elastic Stop Nut, M12 x 1.75-6H	6	
29	9005253	Clutch Clamp Cone Assembly	1	
30	900536	Flange Yoke 188mm	1	
31	900538	Hub, 1 3/4-20 Spline For Clutch Assembly	1	
32	900539	Drive Plate	1	
33	900540	Drive Plate	1	
34	900541	Belleville Spring	1	
35	900542	Backup Plate	1	
36	900543	Thrust Plate	1	
37	900544	Bolt, M12 x 1.75-6G x 85	6	
38	900545	Belleville Spring	1	
39	92382	Clutch Lining	4	
40	92386	Hex Nut, M8-1.25-6H C10	4	

Gearbox

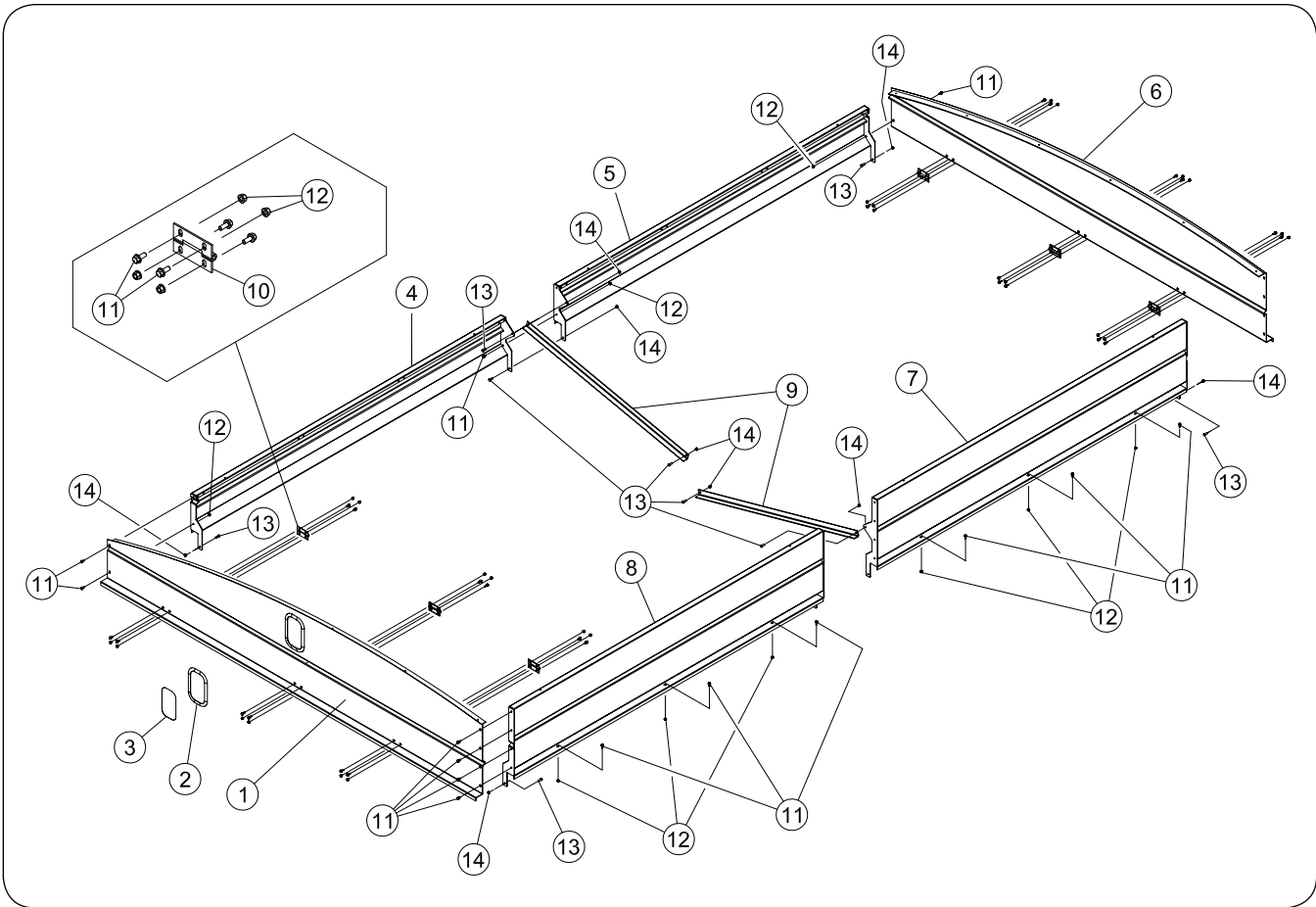


GRAIN CARTS — Parts

Gearbox

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	900220	Housing	1	
2	900221	Cap, Thru	2	
3	900222	Cap, Cantilvrd	1	
4	900223	Gear, 22T	2	
5	900224	Shaft w/Keyway	1	
6	900225	Shaft w/Spline	1	
7	900226	Bearing Cup	4	
8	900227	Bearing Cone	4	
9	900228	Seal 3N2413C	1	
10	900229	Seal 3N2410C	2	
11	900230	Gasket, 0.1mm	3	
12	900231	Gasket, 0.2mm	3	
13	900232	Gasket, 0.5mm	3	
14	900233	Shim, Input 0.1mm	1	
15	900234	Shim, Input 0.2mm	1	
16	900235	Shim, Input 0.3mm	1	
17	9390-056	Capscrew 3/8-16 x 1 1/4"	24	
18	9404-021	Lockwasher 3/8-16	24	
19	900236	Plug	1	
20	900237	Press Relief Plug	2	
22	900238	Retaining Ring	1	
23	900239	Retaining Ring	1	

Sideboards

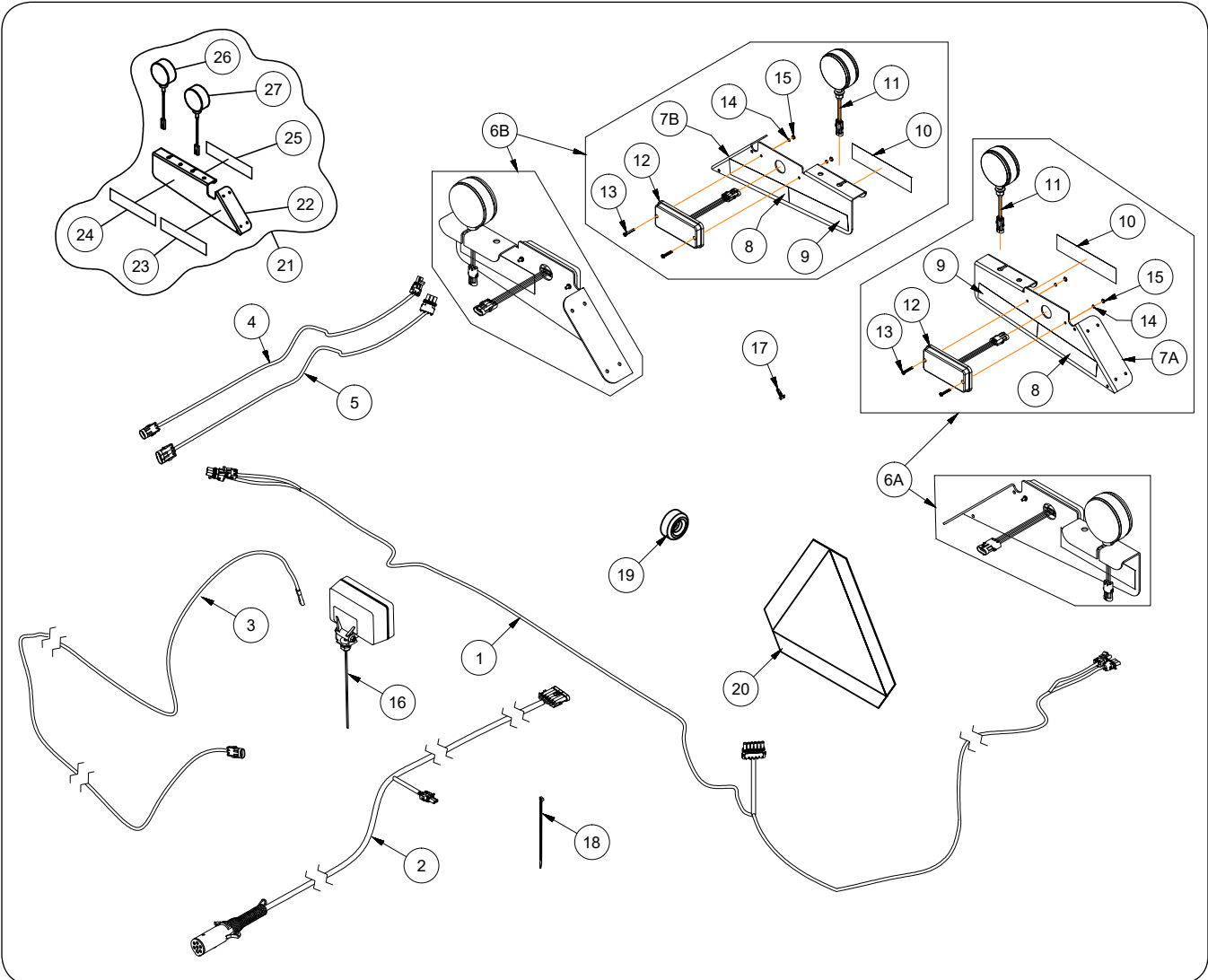


GRAIN CARTS — Parts

Sideboards

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	25326W	Front Panel Weldment 12"-22"	1	
2	102693	Weatherstrip	1	
3	102608	Window (Clear Glass)	1	
4	25321W	Sideboard Weldment 12" (Front)	1	
5	25312W	Sideboard Weldment 12" (Rear)	1	
6	25318W	Rear Board Weldment 12"-22"	1	
7	25324W	Sideboard Weldment 22" (Rear)	1	
8	25311W	Sideboard Weldment 22" (Front)	1	
9	25039W	Sideboard Angle 62 1/2" Long	2	
10	9004626	Hinge	6	
11	91256	Screw/Large Flange 5/16-18UNC x 3/4	42	Grade 5
	97604	Screw/Large Flange 5/16-18UNC x 1		Grade 5
12	91257	Hex Nut/Large Flange 5/16-18UNC	42	Grade 5
13	9390-055	Capscrew 3/8-16UNC x 1	18	Grade 5
14	9928	Locknut 3/8-16UNC	18	Grade 5

Lights



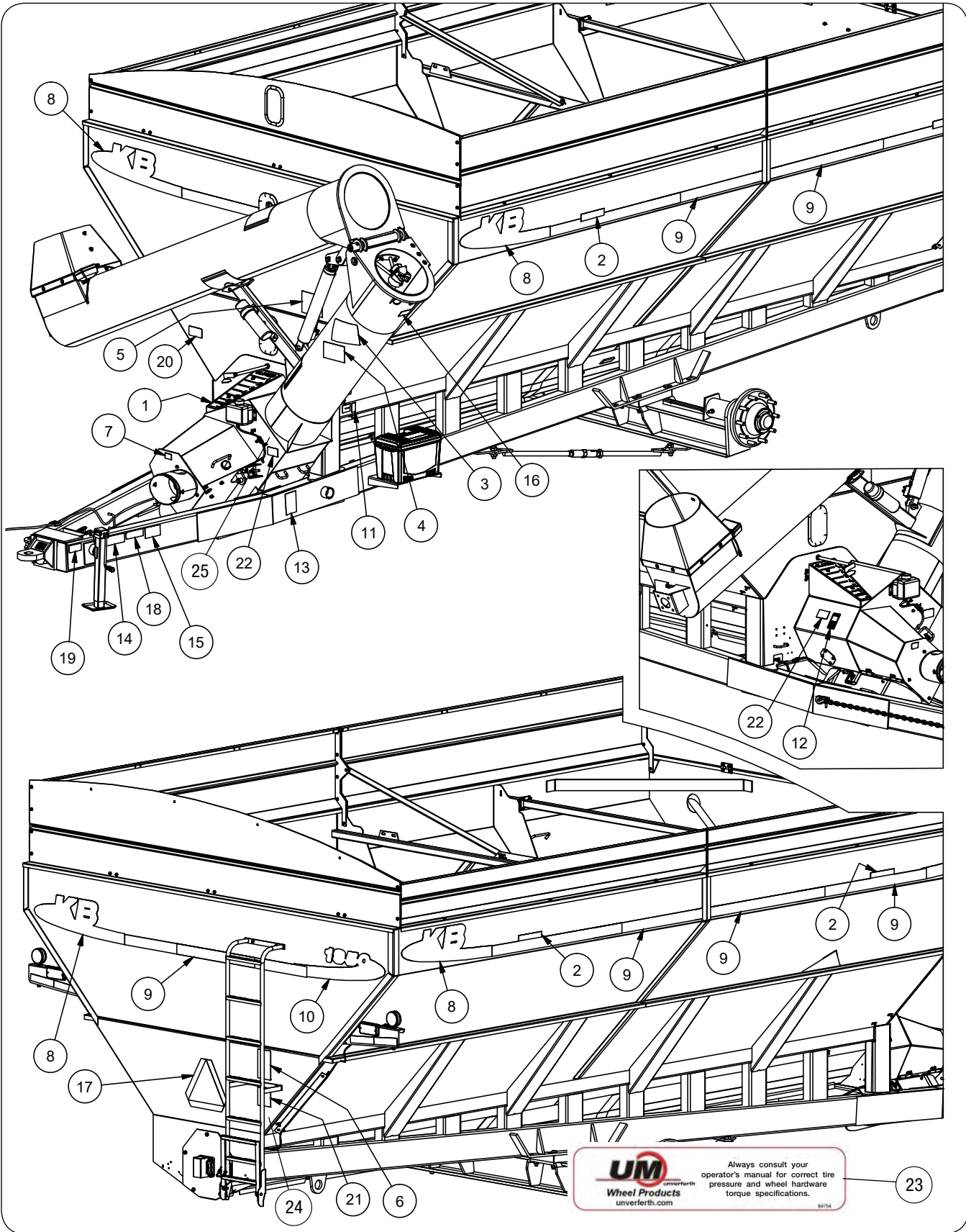
GRAIN CARTS — Parts

Lights

ITEM	PART NUMBER	DESCRIPTION	QTY	NOTES	
1	22790	Wiring Harness 132" 3-T	1		
2	22983	Wiring Harness 396" T	1		
3	23165	Wiring Harness 264"	1		
4	2004282	Wiring Harness 36" (2 Pin Connector)	1		
5	22987	Wiring Harness 36" (3 Pin Connector)	1		
6A	2001084B	Bracket Assembly (Left-Hand)	1	Includes items 7 through 15	
6B	2001083B	Bracket Assembly (Right-Hand)	1		
7A	2001081B	Bracket (Left-Hand)	1		
7B	2001082B	Bracket (Right-Hand)	1		
8	9003125	Fluorescent Strip	2		
9	9003126	Reflector, Red	2		
10	9003127	Reflector, Amber	2		
11	9005142	Light, Amber	2		
12	9006282	Light, Red	2		
13	903172-350	Pan Head Machine Screw #10-32UNF x 1 1/4	2		
14	9404-013	Lock Washer #10	2		
15	9830-016	Hex Nut #10-32UNF	2		
16	9500807	LED - Work Light	1		
17	9473	Self-Tapping Screw 1/4-20 x 3/4	4		
18	9000106	Cable Tie 6"	A/R		
19	103617	Clip	2		
20	97530	Decal, SMV	1		
21	23429B	Bracket Assembly (Left-Hand) SHOWN	1	Includes Items 22 through 27	
	23428B	Bracket Assembly (Right-Hand)	1		
22	22980	Bracket (Right-Hand)	1		
	22981	Bracket (Left-Hand) SHOWN	1		
23	9003125	Fluorescent Strip	2		
24	9003126	Reflector, Red	2		
25	9003127	Reflector, Amber	2		
26	9003876	Light, Amber	2		
27	9003877	Light, Red	2		

GRAIN CARTS — Parts

Decals

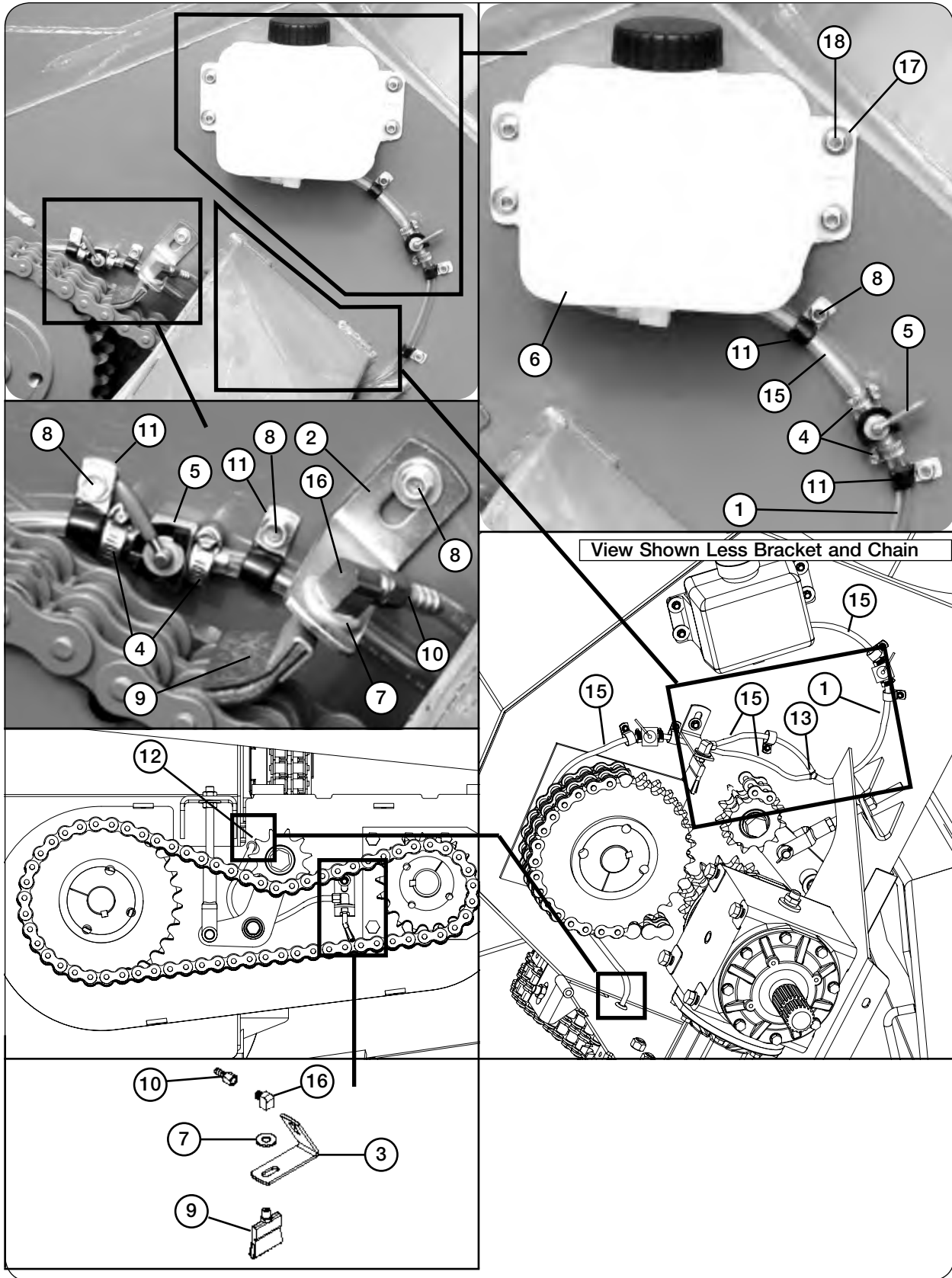


GRAIN CARTS — Parts

Decals

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	24641	Decal, Gate Position	1	
2	9003127	Reflector, Amber 2x9	4	
3	9003474	DANGER (Electrical)	1	
4	9003476	WARNING (No Riders)	1	
5	9003477	IMPORTANT, Operation	1	
6	9003478	DANGER (Safety-Kids)	1	
7	9003574	IMPORTANT, Shear-Bolt	1	
8	9005266	Decal, KILLBROS	4	
9	9005267	Stripe 6x24	9	
10	901726	Decal, 1950	3	
11	91605	Decal, FEMA	1	
12	95445	WARNING (Hydraulics)	1	
13	93552	DANGER (Entanglement)	1	
14	94094	WARNING (Tongue)	1	
15	95046	DANGER (Entanglement)	1	
16	95839	WARNING (Pinch Point)	1	
17	97530	Decal, SMV	1	
18	97575	CAUTION (Transport Chain)	1	
19	97961	WARNING (Read)	1	
20	98229	WARNING (Lower Equipment)	1	
21	98279	DANGER (Keep Away)	1	
22	TA1-906109-0	WARNING (Guards)	2	
23	94754	Wheel Product	2	
24	95008	Decal, CAUTION (Slippery Surface)	1	
25	9008151	Decal, IMPORTANT (PTO)	1	

Chain Oiler

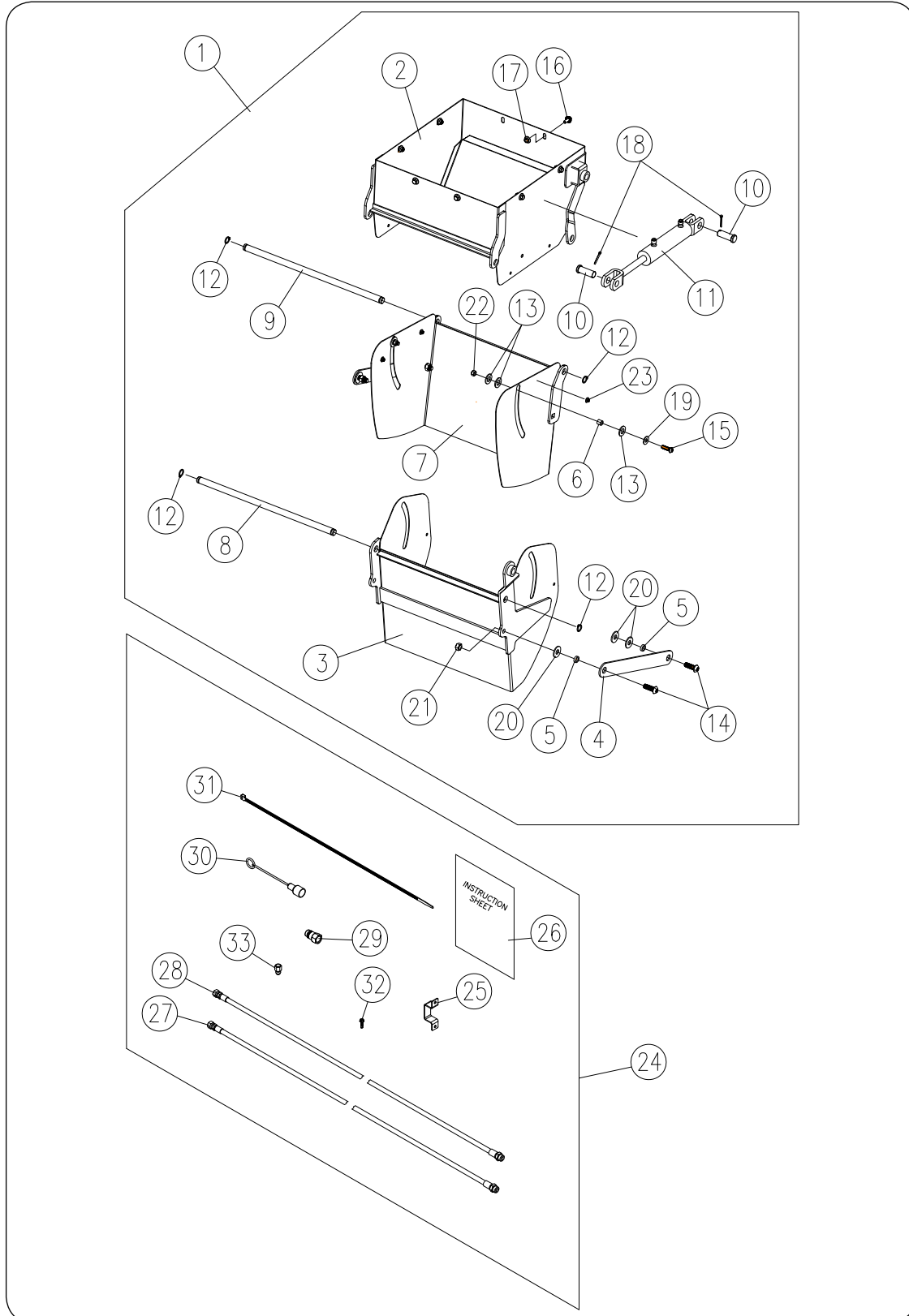


GRAIN CARTS — Parts

Chain Oiler

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
1	105538	Plastic Tubing 18"	1	
2	23111	Plate	1	
3	23112	Plate	1	
4	9000389	Clamp	4	
5	9002794	Ball Valve	2	
6	9501778	Oil Reservoir Tank w/Cap	1	
	98636	Replacement Cap	-	
7	9405-076	Flat Washer 3/8"	2	
8	97420	Screw 1/4-20 x 3/4	7	
9	96863	Brush	2	
10	96869	Hose Barb	2	
11	97063	Hose Clip	6	
12	98136	Grommet	1	
13	98610	Y Fitting	1	
14	23287	Plastic Tubing 32"	1	
15	23161	Plastic Tubing 10"	3	
16	98134	Elbow 90° (1/8 NPT)	1	
17	9405-064	Flat Washer 1/4"	6	
18	97420	Screw 1/4-20 x 3/4	5	

Optional Hydraulic Adjustable Spout



GRAIN CARTS — Parts

Optional Hydraulic Adjustable Spout

ITEM	PART NO.	DESCRIPTION	QTY	NOTES
	24391	Adjustable Hydraulic Spout	-	
1	24390B	Adjustable Spout Assembly =Black=	1	
2	24385B	Shroud Weldment =Black=	1	
3	24387B	Spout Weldment =Black=	1	
4	281368	Arm Link Plate	2	
5	281369	Bushing, 3/4 Dia.	4	
6	281372	Bushing, 9/16 Dia.	2	
7	281377B	Upper Deflector Weldment =Black=	1	
8	281389	Pivot Shaft, 3/4 Dia. x 19 21/32	1	
9	281390	Pivot Shaft, 3/4 Dia. x 19 15/16	1	
10	9002032	Clevis Pin	2	
11	9003789	Hydraulic Cylinder, 3000 PSI	1	
12	9003810	Snap Ring	4	
13	9004494	Nylon Washer	6	
14	902337	Socket Capscrew, 1/2-13 x 1 1/2	4	
15	902338	Socket Capscrew, 3/8-16 x 1 1/4	2	
16	91256	Large Flange Screw, 5/16-18 x 3/4	8	Grade 5
17	91257	Large Flange Hex Nut, 5/16-18	8	Grade 5
18	9391-034	Cotter Pin	2	
19	9405-076	Flat Washer, 3/8	2	
20	9405-088	Flat Washer, 1/2	6	
21	94981	Locknut, 1/2-13UNC	4	
22	9928	Locknut, 3/8-16UNC	2	Grade 5
23	9004457	Plug, Plastic	6	
24	24392	Adjustable Hydraulic Spout Parts Box	1	
25	24389B	Bracket	1	
26	25348	Instruction Sheet	1	
27	9004637	Hose, 1/4 x 430 9/16-18 JIC FM Swivel x 3/4-16 OR M	1	
28	9004638	Hose, 1/4 x 440 9/16-18 JIC FM Swivel x 3/4-16 OR M	1	
29	91383	Male Tip Coupling	2	
30	91511	Dust Cap	2	
31	94038	Cable Tie, 32" Lg.	8	
32	9512	Self Drilling Screw, 1/4-14 x 1	2	
33	95193	Adapter, 9/16-18 JIC FM x 9/16-18 JIC M	1	



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